

UNITED STATES DEPARTMENT OF THE INTERIOR

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GEOLOGICAL SURVEY

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1999

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 4 volumes:

- Volume 1. Arkansas River Basin, Red River Basin, Sabine River Basin, Neches River Basin, Trinity River Basin, and Intervening Coastal Basins
- Volume 2. San Jacinto River Basin, Brazos River Basin, San Bernard River Basin, and Intervening Coastal Basins
- Volume 3. Colorado River Basin, Lavaca River Basin, Guadalupe River Basin, Nueces River Basin, Rio Grande Basin, and Intervening Coastal Basins
- Volume 4. 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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This report was prepared in cooperation with the State of Texas and other agencies under the supervision of Richard O. Hawkinson, District Chief.

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13. ABSTRACT <i>(Maximum 200 words)</i> Water-resources data for the 1998 water year for Texas are presented in four 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 112 gaging stations; stage only at 5 gaging stations; stage and contents at 33 lakes and reservoirs; water quality at 65 gaging stations; and data for 12 partial-record stations comprised of 7 flood-hydrograph, 2 low-flow, and 3 crest-stage 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.			
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GAGING STATIONS, IN DOWNSTREAM ORDER,
FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

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

	Station number	Page
LOWER MISSISSIPPI RIVER BASIN		
ARKANSAS RIVER BASIN		
Arkansas River:		
Canadian River at Logan, NM (d) (c) (t) -----	07227000	25
Revuelto Creek near Logan, NM (d) (c) (t) -----	07227100	28
Canadian River above New Mexico-Texas State line (c) (t) -----	07227140	31
Canadian River near Amarillo (d) (t) -----	07227500	32
RED RIVER BASIN		
Prairie Dog Town Fork Red River near Wayside (d) -----	07297910	38
Prairie Dog Town Fork Red River near Childress (d) -----	07299540	39
Groesbeck Creek at State Highway 6 near Quanah (d) -----	07299670	41
Salt Fork Red River:		
Greenbelt Lake near Clarendon (e) -----	07299840	42
Lelia Lake Creek below Bell Creek near Hedley (d) (c) -----	07299890	43
Salt Fork Red River near Wellington (d) -----	07300000	48
Salt Fork Red River at Mangum, OK (d) -----	07300500	49
Pease River near Childress (d) -----	07307800	51
Pease River near Vernon (d) -----	07308200	53
Red River near Burkburnett (d) (c) (t) -----	07308500	54
North Wichita River near Paducah (d) (c) (t) -----	07311600	62
Middle Wichita River near Guthrie (d) (c) (t) -----	07311630	70
North Wichita River near Truscott (d) (c) (t) -----	07311700	77
South Wichita River at low-flow dam near Guthrie (d) (c) (t) -----	07311782	87
South Wichita River below low-flow dam near Guthrie (d) (c) (t) -----	07311783	96
South Wichita River near Benjamin (d) (c) (t) -----	07311800	100
Wichita River near Seymour (d) (c) (t) -----	07311900	108
Lake Kemp near Mabelle (e) -----	07312000	116
Wichita River near Mabelle (d) (c) (t) -----	07312100	117
South Side Canal near Dundee (d) -----	07312110	125
Wichita River at State Highway 25 near Kamay (d) (t) -----	07312130	126
Beaver Creek near Electra (d) (t) -----	07312200	131
Wichita River at Wichita Falls (d) (t) -----	07312500	136
Wichita River near Charlie (d) (t) -----	07312700	142
North Fork Little Wichita River:		
Lake Kickapoo near Archer City (e) -----	07314000	147
Little Wichita River near Archer City (d) -----	07314500	148
Lake Arrowhead near Henrietta (e) -----	07314800	150
Little Wichita River above Henrietta (d) -----	07314900	151
East Fork Little Wichita River near Henrietta (d) -----	07315200	153
Red River near Terral, OK (d) -----	07315500	154
Moss Lake near Gainesville (e) -----	07315950	156
Red River near Gainesville (d) (c) (t) -----	07316000	157
Red River near De Kalb (d) (c) (t) -----	07336820	166
Red River at Index, AR (d) (c) (b) (t) (s) -----	07337000	170
Sulphur River:		
South Sulphur River at Commerce (d) -----	07342465	176
South Sulphur River near Commerce (c) (t) (b) -----	07342470	177
Middle Sulphur River at Commerce (d) (c) (t) -----	07342480	179
Cooper Lake near Cooper (e) (c) (b) (t) -----	07342495	181
South Sulphur River near Cooper (d) (c) (t) -----	07342500	190
North Sulphur River near Cooper (d) -----	07343000	194
Sulphur River below Talco (d) (c) (t) -----	07343210	196
White Oak Creek near Talco (d) (c) (t) -----	07343500	201
White Oak Creek near Omaha (c) (t) -----	07343850	205
Wright Patman Lake near Texarkana (e) (c) (b) (t) -----	07344200	207
Sulphur River near Texarkana (c) (t) -----	07344210	216
Big Cypress Creek:		
Brushy Creek at Scroggins (d) -----	07344486	217

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

	Station number	Page
LOWER MISSISSIPPI RIVER BASIN--Continued		
RED RIVER BASIN--Continued		
Red River:		
Sulphur River--Continued		
Lake Bob Sandlin near Mount Pleasant (e) -----	07344489	218
Big Cypress Creek near Pittsburg (d) -----	07344500	219
Lake O' the Pines near Jefferson (e) -----	07345900	220
Big Cypress Creek near Jefferson (d) -----	07346000	221
Black Cypress Bayou at Jefferson (d) -----	07346045	222
Little Cypress Creek near Ore City (d) -----	07346050	224
Little Cypress Creek near Jefferson (d) -----	07346070	225
WESTERN GULF OF MEXICO BASINS		
SABINE RIVER BASIN		
Sabine River:		
Cowleech Fork Sabine River at Greenville (d) -----	08017200	226
South Fork Sabine River near Quinlan (d) -----	08017300	228
Lake Tawakoni near Wills Point (e) -----	08017400	230
Sabine River near Wills Point (d) -----	08017410	231
Sabine River near Mineola (d) -----	08018500	232
Lake Fork Creek:		
Lake Fork Reservoir near Quitman (e) -----	08018800	234
Lake Fork Creek near Quitman (d) -----	08019000	235
Sabine River near Hawkins (d) -----	08019200	237
Big Sandy Creek near Big Sandy (d) -----	08019500	238
Sabine River near Gladewater (d) -----	08020000	240
Sabine River above Longview (d) -----	08020450	242
Sabine River below Longview (d) -----	08020900	243
Sabine River near Beckville (d) (c) (t) -----	08022040	244
Martin Lake near Tatum (e) -----	08022060	249
Sabine River at Logansport, LA (e) -----	08022500	250
Toledo Bend Reservoir near Burkeville (e) -----	08025350	251
Sabine River at Toledo Bend Reservoir near Burkeville (d) -----	08025360	252
Sabine River near Burkeville (d) -----	08026000	253
Sabine River near Bon Wier (d) (c) (t) -----	08028500	254
Big Cow Creek near Newton (d) -----	08029500	257
Sabine River near Ruliff (d) (c) (t) -----	08030500	258
NECHES RIVER BASIN		
Neches River:		
Neches River near Neches (d) (c) (t) -----	08032000	265
Neches River near Diboll (d) -----	08033000	268
Neches River near Rockland (d) (c) (t) -----	08033500	269
Angelina River:		
Angelina River near Alto (d) -----	08036500	273
Bayou Loco:		
Lake Nacogdoches near Nacogdoches (e) -----	08036700	274
Angelina River near Lufkin (c) (t) -----	08037000	275
Attoyac Bayou near Chireno (d) (c) (t) -----	08038000	277
Ayish Bayou near San Augustine (d) -----	08039100	280
Sam Rayburn Reservoir near Jasper (e) (c) (b) (t) -----	08039300	281
Angelina River at State Highway 63 near Ebenezer (c) (t) -----	08039500	296
B.A. Steinhagen Lake at Town Bluff (e) -----	08040000	297
Neches River near Town Bluff (d) -----	08040600	298
Neches River at Evadale (d) (t) (c) -----	08041000	299
Village Creek near Kountze (d) -----	08041500	302
Pine Island Bayou near Sour Lake (d) -----	08041700	304
TAYLOR BAYOU BASIN		
Taylor Bayou near LaBelle (e) -----	08042000	305
Hillebrandt Bayou near Lovell Lake (e) -----	08042500	306
TRINITY RIVER BASIN		
West Fork Trinity River (head of Trinity River) near Jacksboro (d) -----	08042800	307
Bridgeport Reservoir above Bridgeport (e) -----	08043000	308
Big Sandy Creek near Chico (d) -----	08043950	309

GAGING STATIONS, IN DOWNSTREAM ORDER,
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	Station number	Page
WESTERN GULF OF MEXICO BASINS--Continued		
TRINITY RIVER BASIN--Continued		
West Fork Trinity River near Boyd (d) -----	08044500	311
Walnut Creek at Reno (d) -----	08044800	312
Eagle Mountain Reservoir above Fort Worth (e) -----	08045000	313
Lake Worth above Fort Worth (e) -----	08045400	314
Clear Fork Trinity River near Weatherford (d) -----	08045850	315
Benbrook Lake near Benbrook (e) -----	08046500	316
Clear Fork Trinity River near Benbrook (d) -----	08047000	317
Clear Fork Trinity River at Fort Worth (d) -----	08047500	318
West Fork Trinity River at Fort Worth (d) -----	08048000	320
West Fork Trinity River at Beach Street, Fort Worth (d) (c) (t) -----	08048543	321
Village Creek:		
Village Creek at Everman (d) (c) (t) -----	08048970	329
Lake Arlington at Arlington (e) (c) (t) -----	08049200	332
West Fork Trinity River at Grand Prairie (d) (c) (t) -----	08049500	338
Mountain Creek near Venus (d) -----	08049580	348
Walnut Creek near Mansfield (d) -----	08049700	349
Joe Pool Lake near Duncanville (e) -----	08049800	350
Mountain Creek Lake near Grand Prairie (e) -----	08050050	351
Mountain Creek at Grand Prairie (d) -----	08050100	352
Elm Fork Trinity River at Gainesville (d) -----	08050400	353
Elm Fork Trinity River near Gainesville (c) (t) -----	08050410	354
Isle du Bois Creek:		
Jordan Creek:		
Timber Creek near Collinsville (d) -----	08050800	356
Jordan Creek Tributary near Collinsville (c) (t) -----	08050815	357
Range Creek near Collinsville (d) -----	08050840	359
Ray Roberts Lake near Pilot Point (e) (c) (b) (t) -----	08051100	360
Clear Creek near Sanger (d)-----	08051500	371
Little Elm Creek near Aubrey (d) -----	08052700	374
Lewisville Lake near Lewisville (e) -----	08052800	376
Elm Fork Trinity River near Lewisville (d) -----	08053000	377
Denton Creek near Justin (d) (c) (t) -----	08053500	379
Elizabeth Creek at State Highway 114 near Roanoke (d) (c) (t) -----	08053800	383
Grapevine Lake near Grapevine (e) (c) (b) (t) -----	08054500	385
Denton Creek near Grapevine (c) (t) -----	08055000	394
Elm Fork Trinity River near Carrollton (d)-----	08055500	395
Trinity River at Dallas (d)-----	08057000	397
Trinity River at Cedar Crest Blvd., Dallas (c) (t) -----	08057055	399
White Rock Creek at Greenville Avenue, Dallas (d) -----	08057200	406
Trinity River below Dallas (d) (c) (t) -----	08057410	408
Prairie Creek at U.S. Highway 175, Dallas (d) -----	08057445	418
East Fork Trinity River at McKinney (d) -----	08058900	419
Pilot Grove Creek:		
Pilot Grove Creek near Blue Ridge (c) (t) -----	08059300	420
Sister Grove Creek near Blue Ridge (d) (c) (t) -----	08059400	422
Lavon Lake near Lavon (e) (c) (b) (t) -----	08060500	425
Rowlett Creek near Sachse (d)-----	08061540	434
Lake Ray Hubbard near Forney (e) -----	08061550	435
East Fork Trinity River near Forney (d) -----	08061750	436
East Fork Trinity River near Crandall (d) (c) (t)-----	08062000	437
Trinity River near Rosser (d) (c) (t)-----	08062500	447
Trinity River at Trinidad (d) (c) (t)-----	08062700	457
Cedar Creek Reservoir near Trinidad (e) -----	08063010	466
Navarro Mills Lake near Dawson (e) -----	08063050	467
Richland Creek near Dawson (d) -----	08063100	468
Chambers Creek:		
Waxahachie Creek:		
Bardwell Lake near Ennis (e)-----	08063700	469
Waxahachie Creek near Bardwell (d) -----	08063800	470
Chambers Creek near Rice (d) (c) (t) -----	08064100	471

GAGING STATIONS, IN DOWNSTREAM ORDER,
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	Station number	Page
WESTERN GULF OF MEXICO BASINS--Continued		
TRINITY RIVER BASIN--Continued		
Trinity River:		
Richland-Chambers Reservoir near Kerens (e)-----	08064550	478
Tehuacana Creek near Streetman (d) (c) (t) -----	08064700	479
Trinity River near Oakwood (d)-----	08065000	483
Upper Keechi Creek near Oakwood (d) -----	08065200	485
Trinity River near Crockett (d) (c) (t) -----	08065350	487
Bedias Creek near Madisonville (d)-----	08065800	496
Kickapoo Creek near Onalaska (d)-----	08066170	498
Livingston Reservoir near Goodrich (e) (c) (t)-----	08066190	500
Long King Creek at Livingston (d)-----	08066200	508
Trinity River near Goodrich (d)-----	08066250	510
Menard Creek near Rye (d) -----	08066300	511
Trinity River at Romayor (d) -----	08066500	512
Trinity River at Liberty (d) -----	08067000	513
CWA Canal near Dayton (d) -----	08067070	514
Lake Charlotte near Anahuac (e) (t) -----	08067118	515
Trinity River at Wallisville (e) (t) -----	08067252	520
CEDAR BAYOU BASIN		
Cedar Bayou near Crosby (d) -----	08067500	526

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

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

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

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Punta De Agua Creek near Channing (d)	07227448	3,568	1968-73
East Chyenne Creek Tributary near Channing (e)	07227460	0.86	1965-74
Canadian River at Tascosa (d)	07227470	18,536	1969-77
Tecovas Creek Tributary near Bushland (e)	07227480	2.5	1966-74
Lake Meredith near Sanford (e)	07227900	20,220	1965-87
Dixon Creek near Borger (d)	07227920	134	1974-89
Canadian River near Canadian (d)	07228000	22,866	1924-25, 1938-97
Palo Duro Creek near Canyon (e)	07229700	982	1942-54
Palo Duro Creek near Spearman (d)	07233500	960	1945-79
White Woman Creek Tributary near Darrouzett (e)	07234150	4.03	1966-74
Wolf Creek at Lipscomb (d)	07235000	697	1937-42, 1961-97
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
MacKenzie Reservoir near Silverton (d)	07298100	188	1975-86
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 below Bell Creek near Hedley (e)	07299890	74.0	1964-95
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
McClellan Creek near McLean (d)	07301200	759	1968-80
North Fork Red River near Shamrock (d)	07301300	1,082.0	1964-92
Sweetwater Creek near Wheeler (e)	07301400	164	1951-64
Doodlebug Creek near Wheeler (e)	07301405	0.19	1967-73

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Sweetwater Creek near Kelton (d)	07301410	287	1961-97
Elm Creek near Shamrock (e)	07303300	N/A	1947-89
Quitaque Creek near Quitaque (d)	07307500	293	1945-59
North Pease River near Childress (d)	07307600	1,434	1973-79
North Pease River near Kirkland (e)	07307660	N/A	1973-79
Roaring Springs near Roaring Springs (e)	07307700	N/A	1937, 1943-95
Cottonwood Creek Tributary near Afton (e)	07307720	0.68	1967-74
Middle Pease River near Paducah (d)	07307750	1,086	1973-79
Middle Pease River near Paducah (d)	07307760	1,123	1980-82
Middle Pease River near Kirkland (e)	07307780	1,250	1973-79
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
Truscott Brine Lake near Truscott (e)	07311669	26.2	1985-93
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
Wichita River near Seymour (d)	07311900	1,874	1960-79
Beaver Creek Tributary near Crowell (e)	07312140	3.43	1966-74
Wolf Creek near Iowa Park (e)	07312300	8.5	1966-74
North Fork Little Wichita River Tributary near Archer City (e)	07314200	0.10	1966-74
Little Wichita River near Henrietta (d)	07315000	1,037	1953-79
Little Wichita River near Ringgold (d)	07315400	1,350	1959-65
Farmers Creek near Saint Jo (e)	07315550	0.82	1966-74
Mineral Creek near Sadler (d)	07316200	26	1968-77
Sandy Creek near Sadler (e)	07316230	24	1968-74
Lake Texoma near Denison (e)	07331500	39,719	1943-93
Red River at Denison Dam near Denison (d)	07331600	39,720	1924-89
Bois D'Arc Creek near Randolph (d)	07332600	72	1963-85
Cooper Creek near Bonham (e)	07332602	6.21	1966-74
Pay Mayse Lake near Chicota (d)	07335390	175	1968-96
Sanders Creek near Chicota (d)	07335400	175	1968-86
	07335500	44,531	1905-11 1936-97
Little Pine Creek near Kanawha (d)	07336750	75.40	1969-80
Pecan Bayou near Clarksville (d)	07336800	100	1962-77
McKinney Bayou near Leary (e)	07336940	3.33	1966-73
Barkman Creek near Leary (e)	07336950	31.5	1958-64
Nelson Branch near Leonard (e)	07342450	0.22	1966-74
South Sulphur River near Commerce (d)	07342470	189	1980-91
Cuthand Creek near Bogata (d)	07343300	69	1964-74
Dial Branch near Bagwell (e)	07343350	1.00	1966-74
White Oak Creek near Mt. Vernon (e)	07343480	434	1966, 1969-75
White Oak Creek below Talco (d)	07343800	579	1938-50
Buck Creek near Cookville (e)	07343900	0.78	1966-74
Sulphur River near Darden (d)	07344000	2,774	1924-56
Sulphur River near Texarkana (d)	07344210	3,443	1980-85
Big Cypress Creek near Winnsboro (d)	07344482	27.2	1974-92
Lake Cypress Springs near Mt. Vernon (d)	07344484	75.0	1974-91
Dragoo Creek near Mt. Pleasant (e)	07344490	4.27	1967-74
Big Cypress Creek near Pittsburg (d)	07344500*	366.0	1943-90
Williamson Creek near Pittsburg (e)	07344600	7.11	1967-74
Boggy Creek near Daingerfield (d)	07345000	72	1943-77

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
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
Sabine River at Hawkins (e)	08019200	2,259	1976-82
Lake Winnsboro near Winnsboro (d)	08019300	27.1	1962-86
Big Sandy Creek near Hawkins (e)	08019430	196	1980-82
Prairie Creek near Gladewater (d)	08020200	48.90	1968-77
Sabine River near Longview (d)	08020500	2,947	1904-07, 1924-33
Rabbit Creek at Kilgore (d)	08020700	75.80	1964-77
Grace Creek Tributary at Longview (e)	08020800	5.05	1967-74
Mill Creek near Henderson (d)	08020960	20.30	1979-81
Mill Creek near Longview (d)	08020980	47.90	1979-81
Tiawichi Creek near Longview (d)	08020990	62.70	1978-81
Cherokee Bayou near Elderville	08021000	120	1940-49
Lake Cherokee near Longview (e)	08021500	158	1951-83
Sabine River near Tatum (d) (e)	08022000	3,493	1939-78, 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 Lake near Gary (d)	08022200	115	1958-78
Murvaul Bayou near Gary (d)	08022300	134	1958-83
Socagee Creek near Carthage (d)	08022400	82.60	1962-73
Sabine River at Logansport, LA (d)	08022500*	4,842	1903-68
Tenaha Creek near Shelbyville (d)	08023200	97.80	1952-81
Dorsey Branch near Milam (e)	08024290	0.70	1967-74
Patroon Bayou near Milam (e)	08024300	130	1952-54, 1959-63
Sabine River near Milam (d)	08024400	6,508	1924-25, 1939-68
Palo Gaucho Bayou near Hemphill (d)	08024500	123	1952-65
Housen Bayou near Yellowpine (e)	08025250	92.1	1952-54, 1957, 1959-63
Sandy Creek near Yellowpine (e)	08025300	135	1952-54, 1957, 1959-63
Mill Creek near Burkeville (d)	08025307	17.6	1974-79
Little Cow Creek below McGraw Creek near Burkeville (e)	08026500	112	1952-58
Moore Branch near Newton (e)	08028505	3.77	1967-74
Nichols Creek near Buna (e)	08029750	54.4	1959-64
Cypress Creek near Buna (d)	08030000	69.20	1952-83
Adams Bayou Tributary near Deweyville (e)	08030700	12.4	1966-74
Cow Bayou near Mauriceville (d)	08031000	83.30	1952-86
Neches River Basin:			
Bethlehem Branch near Van (e)	08031100	1.09	1966-74
Kickapoo Creek near Brownsboro (d)	08031200	232	1962-89
Lake Athens near Athens (e)	08031290	21.6	1966-87
Lake Palestine near Frankston (e)	08031400	839	1962-94
Neches River near Reese (d)	08031500	851	1924-27
Hurricane Creek Tributary near Palestine (e)	08032100	0.39	1966-74

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
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
Neches River near Diboll (d)	08033000*	2,724.0	1924-85
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
Lake Tyler near Whitehouse (e)	08034000	107	1949-86
Mud Creek near Jacksonville (d)	08034500	376	1939-79
Mud Creek at Ponta (d)	08035000	475	1924-27
Angelina River near Lufkin (d)	08037000	1,600	1924-34, 1939-79
Bayou Lanana at Nacogdoches (d)	08037050	31.3	1965-86, 1988-93
Gingham Branch near Mt. Enterprise (e)	08037300	0.90	1967-74
Arenoso Creek near San Augustine (d)	08037500	75.30	1938-40
Attoyac Bayou near Chireno (d)	08038000*	503.0	1924-85
Angelina River near Zavalla (d)	08038500	2,892	1952-65
Ayish Bayou at San Augustine (d)	08039000	15.80	1924-25
Ayish Bayou near San Augustine (d)	08039100*	89.0	1959-85
Angelina River at Horger (d)	08039500	3,486	1928-51, 1967-73
Little Sandy Creek Tributary near Jasper (e)	08039900	0.46	1967-74
Neches River at Town Bluff (d)	08040500	7,573	1951-89
Drakes Branch near Spurger (e)	08041400	5.03	1967-74
Taylor Bayou Basin:			
Hillebrandt Bayou near Lovell Lake (d)	08042500	128	1954-84
Double Bayou Basin:			
West Fork Double Bayou near Anahuac (e)	08042550	4.43	1967-74
Trinity River Basin:			
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
Big Creek near Chico (e)	08042950	50.30	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
Lake Weatherford near Weatherford (e)	08045800	109	1976-80
Clear Fork Trinity River near Weatherford (d)	08045850*	121.0	1980-87
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

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
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 Venus (d)	08049580*	26.0	1989-91
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	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
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
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
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
Newton Creek at Interstate Highway 635, Dallas (e)	08057135	5.91	1974-78
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	08057500	2.14	1952-73
Honey Creek SWS #12 near McKinney	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
Lake Ray Hubbard near Forney (e)	08061550	1,071	1968-94

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
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
Waxahachie Creek near Waxahachie (e)	08063685	111	1981-82, 1986-87
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
Trinity River at Riverside (d)	08066000	15,589	1951-72
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
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	08066400	38.80	1966-89
Gaylor Creek near Moss Hill (e)	08066800	32.3	1966-73
Devers Canal near Liberty (d)	08067080	N/A	1972-82
Cedar Bayou Basin: Cedar Bayou at Crosby (d)	08067500*	65.0	1972-91

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

The following stations were discontinued as continuous-record surface-water-quality stations prior to the 1996 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,
			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
			SC, T	1968-81,
Little Red River near Turkey	07299300	139	S	1979-81
			SC	1974-82
Jonah Creek at Weir near Estelline	07299512	65.50	SC	1974-76
Jonah Creek below Weir near Estelline	07299514	66.60	SC	1974-79
Salt Creek near Estelline	07299530	142	SC, T	1968-82,
Prairie Dog Town Fork Red River near Childress	07299540	7,725	SC, T	1994-97
			SC, T, pH, Cl	1956-61
Salt Fork Red River near Hedley	07300000	1,222	SC, T, pH, Cl	1952-54,
Salt Fork Red River near Wellington	07307600	1,434	SC, T	1968-91
			SC, T	1973-79
North Pease River near Childress	07307750	1,086	SC	1973-79,
Middle Pease River near Paducah	07307750	1,086	T	1973-79,
			S	1994-97
			SC	1980-82,
Middle Pease River near Paducah	07307760	1,128	T	1980
			SC, T	1968-82,
Pease River near Childress	07307800	2,754	SC, T	1994-97
			SC	1942-43
Pease River near Crowell	07308000	3,037	SC, T	1968-81
Red River near Burkburnett	07311600	20,570	SC, T	1968-76
North Fork Wichita River near Paducah	07311622	540	SC	1971-76
North Fork Wichita River near Crowell	07311648	591	SC	1970-76
Middle Fork Wichita River near Truscott	07311669	161	SC, T	1985-90
Truscott Brine Lake near Truscott	07311700	26.2	SC, T	1969-92
North Fork Wichita River near Truscott	07311780	937	SC	1970-76
South Fork Wichita River near Guthrie	07311783	239	SC, T	1987-89
South Wichita River below Low-Flow Dam near Guthrie	07311790	223	SC	1971-79,
South Fork Wichita River at Ross Ranch near Guthrie	07311900	499	Cl	1988-97,
			S	1978-79
			SC, T	1968-79
Wichita River near Seymour	07312200	1,874	SC, T	1968-70
Beaver Creek near Electra	07312500	652	SC, T	1982-89
Wichita River at	07312700	3,140	SC, T	1968-81
Wichita River near Charlie	07314500	3,439	SC	1953-55,
Little Wichita River near Archer City	07315000	481	T	1953-54
			SC, T, pH, Cl	1953-56,
Little Wichita River near Henrietta	07315200	1,037	S, T	1959-66,
			T	1954
East Fork Little Wichita River near Henrietta	07315400	178	SC, pH, Cl	1959-62
Little Wichita River near Ringgold	07316000	1,350	SC, Cl	1944-46,
Red River near Gainesville	07316000	30,872	SC, T, pH, Cl	1953-63,
			SC, T	1967-89,

DISCONTINUED SURFACE-WATER-QUALITY STATIONS--Continued

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Station name	Station number	Drainage area (mi ²)	Type of record	Period of record (water years)
Red River at Denison Dam near Denison	07331600	39,720	SC T	1944-89, 1945-89
Little Pine Creek near Kanawha	07336750	75.40	T	1980
Red River near De Kalb	07336820	47,348	SC, T	1968-91
South Sulphur River near Cooper	07342500	527	SC, T, pH, Cl	1959-66, 1968-72, 1973-89
Sulphur River near Talco	07343200	1,365	SC, T, pH, Cl	1966-72, 1973-91
White Oak Creek near Talco	07343500	494	SC, T, pH, Cl	1966-72, 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, 1973-89
Little Cypress Creek near Jefferson	07346070	675	SC, T, pH, Cl	1968-72, 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, 1973-92
Lake Fork Creek near Quitman	08019000	585	SC, T, pH, Cl	1968-72, 1973-89
Big Sandy Creek near Big Sandy	08019500	231	SC, T, S	1985-86
Sabine River at Logansport	08022500	4,842	SC, T	1939-45
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	pH, DO C Cl	1968-75, 1970-76, 1968
Cow Bayou near Mauriceville	08031000	83.30	SC, T, pH, Cl	1952-54, SC, T 1954-56
Neches River near Neches	08032000	1,145	SC, T	1974-91
Neches River near Alto	08032500	1,945	SC, T	1950-69
Neches River near Diboll	08033000	2,724	SC, T	1970-81
Neches River near Rockland	08033500	3,636	SC	1941-42, 1946-47
Angelina River near Lufkin	08037000	1,600	SC, T, pH, Cl	1955-68, SC, T 1969-79
Angelina River below Sam Rayburn Dam near Jasper	08039400	3,449	SC, T	1964-79
Village Creek near Kountze	08041500	860	SC, T	1968-70
Pine Island Bayou near Sour Lake	08041700	336	SC, T, pH, Cl	1968-72, SC, T 1973-89
Big Sandy Creek near Bridgeport	08044000	333	SC, T, S	1968-77,
Clear Fork Trinity River at Fort Worth	08047500	518	SC, pH, Cl	1949-52, T 1948-62
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 1966-75

Station name	Station number	Drainage area (mi ²)	Type of record	Period of record (water years)
Elm Fork Trinity River near Lewisville	08053000	1,673	SC T	1982-86, 1976-86
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
Cedar Creek near Mabank	08063000	733	SC, T, pH, Cl	1956-57
Pin Oak Creek near Hubbard	08063200	17.60	SC T	1967-72, 1957-60, 1965-72, 1957-60, 1962-72
Richland Creek near Richland	08063500	734	SC, T, pH, Cl SC, T	1968-69, 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 SC, T, S	1948-54, 1977-81
Bedias Creek near Madisonville	08065800	321	SC, T S	1985-87, 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 T	1950-65, 1965
Trinity River at Anahuac	08067300	17,912	SC, pH, Cl	1950-65

WATER RESOURCES DATA—TEXAS, 1998

VOLUME 1

ARKANSAS RIVER BASIN, RED RIVER BASIN, SABINE RIVER BASIN, NECHES RIVER BASIN, TRINITY 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 four 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 112 gaging stations; stage only at 5 gaging stations; stage and contents at 33 lakes and reservoirs; and water quality at 65 gaging stations. Also included are data for 12 partial-record stations comprised of 7 flood-hydrograph, 2 low-flow, and 3 crest-stage 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. 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-98-1." For archiving and general distribution, the reports for the 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or may be purchased on microfiche from the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161 (703) 605-6000.

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

COOPERATION

Federal agencies that assisted the U.S. Geological Survey in the collection of data in this report in the form of funds or services in water year 1998 are:

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

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

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

HYDROLOGIC CONDITIONS

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

Streamflow across the State during water year 1998 generally was normal.

Conservation storage in 77 selected reservoirs throughout the State, with a combined conservation capacity of 34,558,000 acre-feet, decreased from 82 percent at the end of September 1997 to 75 percent at the end of September 1998. Records from these reservoirs indicate that storage decreased in 63, increased in 10, and remained the same in 4.

The area for which water resources data are presented in volume 1 includes the Texas Panhandle and extends across northern and eastern Texas to southeastern Texas. Normal annual precipitation ranges from about 17 inches in the western part of the Texas Panhandle to more than 50 inches in the extreme southeastern part of the State. Average annual runoff ranges from less than 1 inch in parts of the Panhandle to as much as 15 inches in southeastern Texas. The area described in volume 1 and the location of selected streamflow and water-quality stations in the area are shown in figure 1.

Streamflow

In the area covered in volume 1, streamflow was normal during water year 1998 in the Arkansas, Sabine and Neches River Basins, and above normal in the Red and Trinity River Basins. Streamflow for water year 1998 and for the period of record at six 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 1998 ranged from normal to above normal. Monthly mean discharges for water year 1998 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 October through December, April, and August, above normal January through March and September, and below normal for the remaining 3 months of water year 1998. The station North Bosque River near Clifton had above normal streamflow during December through March, and normal streamflow for the remaining 8 months. The station North Concho River near Carlsbad had above normal streamflow during August and normal streamflow for the remaining 11 months. Streamflow for the station Guadalupe River near Spring Branch was above normal February through April, and normal November through January and May through September (no data available for October).

Conservation storage in 36 selected reservoirs in this area of the State, with a total combined conservation capacity of 21,547,000 acre-feet, decreased from 92 percent of capacity at the end of September 1997 to 80 percent of capacity at the end of September 1998. Records from these reservoirs indicate that storage decreased in 32, increased in 3, and remained the same in 1 during the water year.

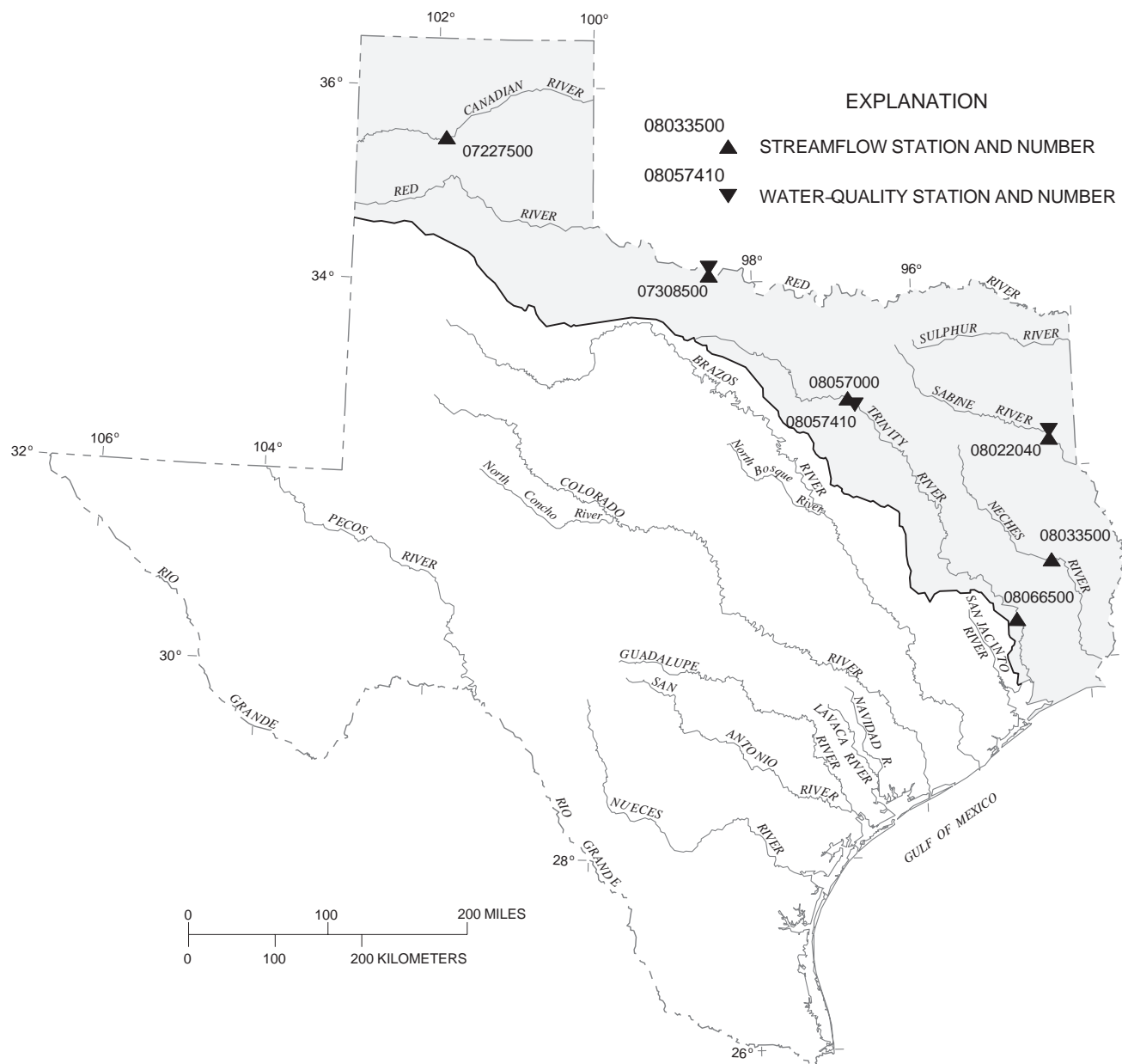
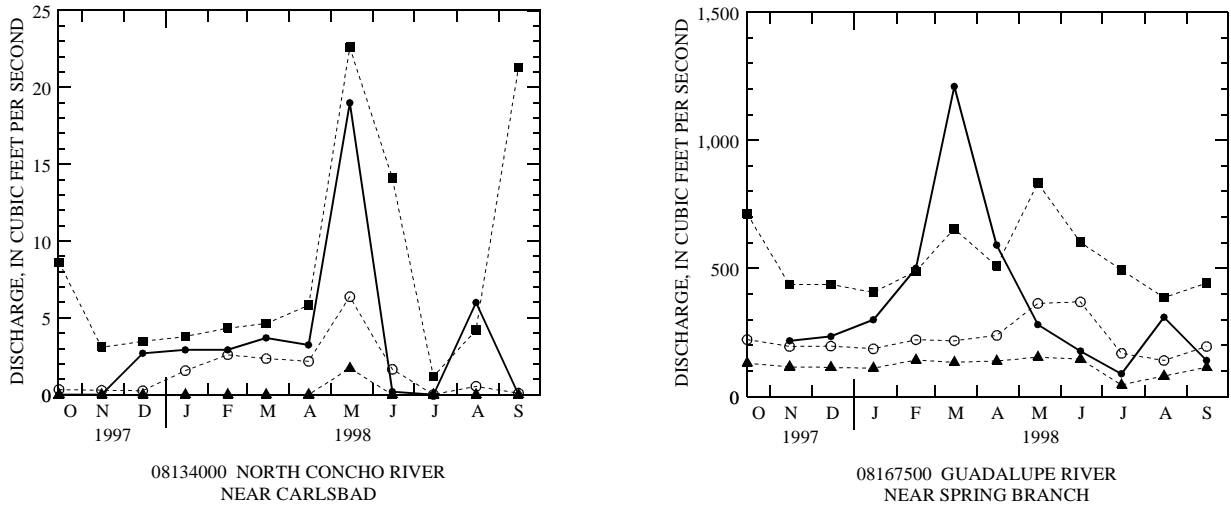
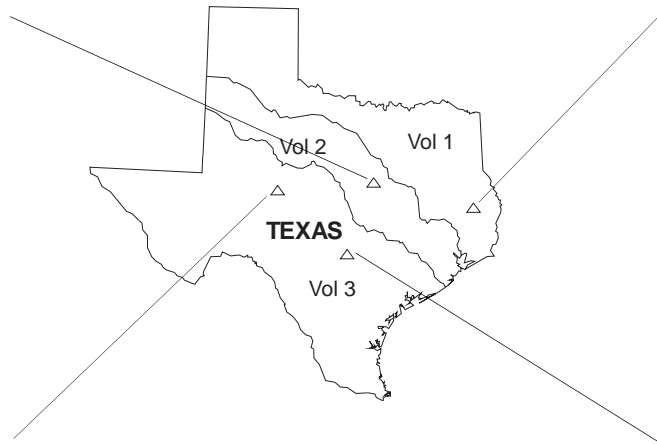
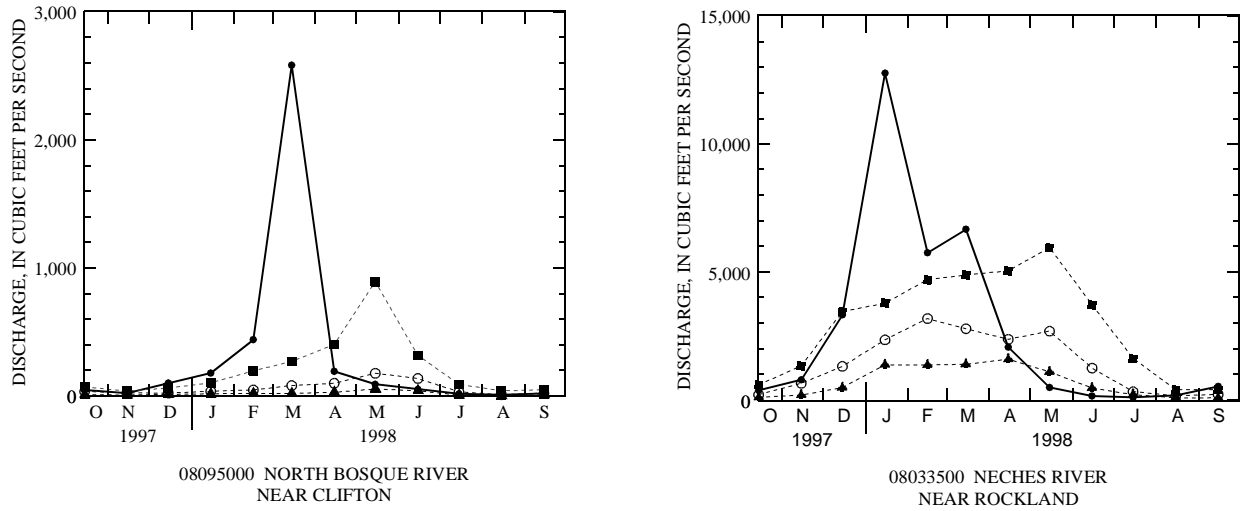


Figure 1. Area of Texas covered by volume 1 (shaded) and location of selected streamflow and water-quality stations in volume 1.

WATER RESOURCES DATA—TEXAS, 1998



EXPLANATION

- MONTHLY MEAN DISCHARGE FOR 1998 WATER YEAR
- MEDIAN OF MONTHLY MEAN DISCHARGE FOR 1961-90 WATER YEARS
- ▲--- 25 PERCENT QUARTILE
- 75 PERCENT QUARTILE

Figure 2. Monthly mean discharges at four long-term hydrologic index stations during 1998 water year and median of the monthly mean discharges for 1961-90 water years.

Water Quality

Dissolved-solids concentrations in most streams in the State are inversely related to streamflow discharges. During years when precipitation and runoff are less than normal, streamflow commonly is more mineralized than during years when precipitation and runoff are normal or greater than normal. However, for streams in which discharge is controlled by reservoirs, the dissolved-solids concentrations may remain relatively constant

despite substantial fluctuations in precipitation and runoff.

Records of discharge-weighted-average concentrations of dissolved solids for water year 1998 are compared with those for water years 1994–98 for selected long-term daily or continuous-record water-quality stations (fig. 1) in the Red, Sabine, and Trinity River Basins. Results are shown in table 2.

Table 1. Streamflow at six selected stations

Station no. and name	Discharge during 1998 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
<u>Arkansas River Basin</u>						
07227500 Canadian River near Amarillo, Tex.	1,050	0	47.3	135,000	0	280 (1939-98)
<u>Red River Basin</u>						
07308500 Red River near Burkburnett, Tex.	59,800	39	2,060	174,000	0	1,283 (1960-98)
<u>Sabine River Basin</u>						
08022040 Sabine River near Beckville, Tex.	13,300	20	2,670	49,400	2.4	2,538 (1961-98)
<u>Neches River Basin</u>						
08033500 Neches River near Rockland, Tex. ^{1/}	21,800	77	2,820	42,300	18	2,349 (1962-98)
<u>Trinity River Basin</u>						
08057000 Trinity River at Dallas, Tex.	28,100	331	2,354	111,000	10	1,836 (1931-98)
08066500 Trinity River at Romayor, Tex.	77,300	716	10,210	122,000	104	7,789 (1924-98)

^{1/} Hydrologic index station.

Table 2. Comparison of records of discharge-weighted-average concentrations of dissolved solids for the 1998 and 1994-98 water years

Station no. and name	Mean discharge (cubic feet per second)		Discharge-weighted-average concentration of dissolved solids (milligrams per liter)	
	1998	1994-98	1998	1994-98
<u>Red River Basin</u>				
07308500 Red River near Burkburnett, Tex.	2,060	2,760	2,560	2,250
<u>Sabine River Basin</u>				
08022040 Sabine River near Beckville, Tex.	2,670	2,930	102	104
<u>Trinity River Basin</u>				
08057410 Trinity River below Dallas, Tex.	2,670	3,120	255	246

SPECIAL NETWORKS AND PROGRAMS

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

National Stream Quality Accounting Network (NASQAN) monitors the water quality of large rivers within four of the Nation's largest river basins--the Mississippi, Columbia, Colorado, and Rio Grande. The network consists of 39 stations. Samples are collected with sufficient frequency that the flux of a wide range of constituents can be estimated. The objective of NASQAN is to characterize the water quality of these large rivers by measuring concentration and mass transport of a wide range of dissolved and suspended constituents, including nutrients, major ions, dissolved and sediment-bound heavy metals, common pesticides, and inorganic and organic forms of carbon. This information will be used (1) to describe the long-term trends and changes in concentration and transport of the constituents; (2) to test findings of the National Water-Quality Assessment Program (NAWQA); (3) to characterize processes unique to large-river systems such as storage and remobilization of sediments and associated contaminants; and (4) to refine existing estimates of off-continent transport of water, sediment, and chemicals for assessing human effects on the world's oceans and for determining global cycles of carbon, nutrients, and other chemicals.

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

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

The National Atmospheric Deposition Program/National Trends Network (NAPD/NTN) provides continuous measurement and assessment of the chemical climate of precipitation throughout the United States. As the lead federal agency, the USGS works together with over 100 organizations to accomplish the following objectives; (1) Provide a long-term, spatial and temporal record of atmospheric deposition generated from a network of 191 precipitation chemistry monitoring sites. (2) Provide the mechanism to evaluate the effectiveness of the significant reduction in SO₂ emissions that began in 1995 as implementation of the Clean Air Act Amendments (CAAA) occurred. (3) Provide the scientific basis and nationwide evaluation mechanism for implementation of the Phase II CAAA emission reductions for SO₂ and NO_x scheduled to begin in 2000.

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

<http://nadp.nrel.colostate.edu/NAPD>

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

Communication and coordination between USGS personnel and other local, State, and federal interests are critical components of the NAWQA Program. Each study unit has a local liaison committee consisting of representatives from key federal, State, and local water resources agencies, Indian nations, and universities in the study unit. Liaison committees typically meet semiannually to discuss their information needs, monitoring plans and progress, desired information products, and opportunities to collaborate efforts among the agencies. There are currently two NAWQA Programs operating in Texas; the Trinity NAWQA and the South Central Texas NAWQA.

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

http://wwwrvares.er.usgs.gov/nawqa/nawqa_home.html

<http://tx.cr.usgs.gov/trin/index.html>

<http://tx.cr.usgs.gov/sctx/index.html>

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 1998 water year that began October 1, 1997, and ended September 30, 1998. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, and water-quality data for surface water. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

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

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 indentation in the “List of Stations” in the front of this report. Each indentation represents one rank. This downstream order and system of indentation shows which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

The station-identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station, such as 08057000, which appears just to the left

of the station name, includes the 2-digit Part number “08” plus the 6-digit downstream-order number “057000.” The Part number designates the major river basin; for example, Part “08” is the Western Gulf of Mexico basin.

Records of Stage and Water Discharge

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

By contrast, partial records are obtained through discrete measurements and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles such as “Flood-hydrograph partial records,” “Crest-stage partial records,” or “Low-flow partial records.” Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow channel gain and loss studies, may be considered as partial records, but they are presented separately in this report. Instantaneous peak discharges are presented for all but the low-flow partial-record stations.

Data Collection and Computation

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

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

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

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

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

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

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

Data Presentation

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

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

Station Manuscript

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

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

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

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

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

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

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

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

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

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

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

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

Data table of daily mean values

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

Statistics of monthly mean data

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

Summary statistics

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

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may not be the same as the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the column heading. When this occurs, it should be noted in the REMARKS paragraph or in footnotes. Selected streamflow

duration curve statistics and runoff data are also given. Runoff data is omitted if there is extensive regulation or diversion of flow in the drainage basin.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Identifying Estimated Daily Discharge

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

Accuracy of the Records

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

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

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

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

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

Other Records Available

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

Records of Surface-Water Quality

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

Classification of Records

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

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

Arrangement of Records

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

On-Site Measurements and Sample Collection

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

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

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

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

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

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

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

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

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

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis.

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

Water Temperature

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

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

Sediment

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

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge-weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that

the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

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

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

Laboratory Measurements

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

Historical and current (1998) dissolved trace-element concentrations are reported herein for water that was collected, processed, and analyzed by using either ultraclean or other than ultraclean techniques. If ultraclean techniques were used, then those concentrations are reported in nanograms per liter. If other than ultraclean techniques were used, then those concentrations are reported in micrograms per liter and could reflect contamination introduced during some phase of the procedure.

Data Presentation

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

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

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

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

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

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

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

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

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

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

The surface-water-quality records for partial-record stations and miscellaneous sampling sites are published in separate

tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

Remarks Codes

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

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

Dissolved Trace-Element Concentrations

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

Change in National Trends Network Procedures

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

WATER QUALITY-CONTROL DATA

Data generated from quality-control (QC) samples are a requisite for evaluating the quality of the sampling and processing techniques as well as data from the actual samples themselves. Without QC data, environmental sample data cannot be adequately interpreted because the errors associated with the sample data are unknown. The various types of QC samples collected by this District are described in the following section. Procedures have been established for the storage of water-quality-control data within the USGS. These procedures allow for storage of all derived QC data and are identified so that they can be related to corresponding environmental samples.

Blank Samples

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

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

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

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

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

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

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

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

Reference Samples

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

Replicate Samples

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

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

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

Spike Samples

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

ACCESS TO USGS WATER DATA

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

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

<http://tx.usgs.gov>

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

DEFINITION OF TERMS

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

Acid neutralizing capacity (ANC) is the equivalent sum of all bases or base-producing materials, solutes plus particulates, in an aqueous system that can be titrated with acid to an equivalence point.

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

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

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

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

Alkalinity is the capacity of solutes in an aqueous system to neutralize acid.

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

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-sha-

ped bacteria which ferment lactose with gas formation within 48 hours at 35 °C. In the laboratory these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at $+35\text{ °C} \pm -1.0\text{ °C}$ on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

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

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

Benthic invertebrates are invertebrate animals inhabiting the bottoms of lakes, streams, and other water bodies. 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 micro-organisms, such as bacteria.

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

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

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

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

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

Bottom material: See Bed material.

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

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

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

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

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

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

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

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

Cubic foot per second per day [$(\text{ft}^3/\text{s})/\text{d}$] is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons, or 2,445 cubic meters.

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

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

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

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

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

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

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

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

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

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

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

Supplementary gage is a gage used to obtain additional data. A supplementary gage may be used in place of the principal gage if the latter is isolated or cut off from the channel, or registers only above (or below) a certain gage height. One or more supplementary gages may be used on bypass channels or overflow channels, or on streams that flow in several channels, each of which is rated independently.

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

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

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

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

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

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

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

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

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

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

Micrograms per gram ($\mu\text{g/g}$) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

Micrograms per liter ($\mu\text{g/L}$, $\mu\text{g/L}$) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Microsiemens per centimeter ($\mu\text{S/cm}$, US/CM) is a unit expressing the amount of electrical conductivity of a solution

as measured between opposite faces of a centimeter cube of solution at a specified temperature. Siemens is the International System of units nomenclature. It is synonymous with mhos and is the reciprocal of resistance in ohms.

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

Most probable number (MPN) is an index of the number of coliform bacteria that, more probably than any other number, would give the results shown by the laboratory examination; it is not an actual enumeration. It 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 eye-bolt.

Organism is any living entity.

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

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

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

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

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

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

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

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

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

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

Periphyton is the assemblage of microorganisms attached to and living upon submerged solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms. Pesticides are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

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

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

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

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

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

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

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

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

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

Suspended-sediment discharge (tons/day) is the rate at which dry mass of sediment passes a section of a stream or is the quantity of sediment, as measured by dry mass or volume, that passes a section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft³/s) x 0.0027.

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

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

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

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

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

Solute is any substance that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25 °C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 55 to 75 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

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

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

Substrate is the physical surface upon which an organism lives.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

PUBLICATIONS OF TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

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

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

- 1-D1. *Water temperature-influential factors, field measurement, and data presentation*, by H.H. Stevens, Jr., J.F. Ficke, and G.F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 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, Chapter D2. 1976. 24 p.
- 2-D1. *Application of surface geophysics to ground-water investigations*, by A.A.R. Zohdy, G.P. Eaton, and D.R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 p.
- 2-D2. *Application of seismic-refraction techniques to hydrologic studies*, by F.P. Haeni: USGS--TWRI Book 2, Chapter D2. 1988. 86 p.
- 2-E1. *Application of borehole geophysics to water-resources investigations*, by W.S. Keys and L.M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 p.
- 2-E2. *Borehole geophysics applied to ground-water investigations*, by W. Scott Keys: USGS--TWRI Book 2, Chapter E2. 1990. 150 p.
- 2-F1. *Application of drilling, coring, and sampling techniques to test holes and wells*, by Eugene Shuter and Warren E. Teasdale: USGS--TWRI Book 2, Chapter F1. 1989. 97 p.
- 3-A1. *General field and office procedures for indirect discharge measurements*, by M.A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 p.

- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M.A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 p.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G.L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 p.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H.F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 p.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 p.
- 3-A6. *General procedure for gaging streams*, by R.W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 p.
- 3-A7. *Stage measurements at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 p.
- 3-A8. *Discharge measurements at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 p.
- 3-A9. *Measurement of time of travel in streams by dye tracing*, by F.A. Kilpatrick, and J.F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1989. 27 p.
- 3-A10. *Discharge ratings at gaging stations*, by E.J. Kennedy: USGS--TWRI Book 3, Chapter A10. 1984. 59 p.
- 3-A11. *Measurement of discharge by moving-boat method*, by G.F. Smoot and C.E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 p.
- 3-A12. *Fluorometric procedures for dye tracing*, by J.F. Wilson, Jr., E.D. Cobb, and F.A. Kilpatrick: USGS--TWRI Book 3, Chapter A12, 1986. 41 p.
- 3-A13. *Computations of continuous records of streamflow*, by E.J. Kennedy: USGS--TWRI Book 3, Chapter A13, 1983. 53 p.
- 3-A14. *Use of flumes in measuring discharge*, by F.A. Kilpatrick and V.R. Schneider: USGS--TWRI Book 3, Chapter A14. 1983. 46 p.
- 3-A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS--TWRI Book 3, Chapter A15. 1984. 48 p.
- 3-A16. *Measurement of discharge using tracers*, by F.A. Kilpatrick and E.D. Cobb: USGS--TWRI Book 3, Chapter A16. 1985. 52 p.
- 3-A17. *Acoustic velocity meter systems*, by Antonius Laenen: USGS--TWRI Book 3, Chapter A17. 1985. 38 p.
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- 3-B2. *Introduction to ground-water hydraulics, a programmed text for self instruction*, by G.D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 p.
- 3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J.E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 p.
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- 3-B5. *Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems--An introduction*, by O.L. Franke, T.E. Reilly, and G.D. Bennett: USGS--TWRI Book 3, Chapter B5. 1987. 15 p.
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- 5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M.J. Fishman and L.C. Friedman: USGS--TWRI Book 5, Chapter A1. 1989. 545 p.

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- 6-A4. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 2: Derivation of finite-element equations and comparisons with analytical solutions*, by R.L. Cooley: USGS--TWRI Book 6, Chapter A4. 1992. 108 p.
- 6-A5. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 3: Design philosophy and programming details*, by L.J. Torak. USGS--TWRI Book 6, Chapter A5. 1993. 243 p.
- 6-A6. *A coupled surface-water and ground-water flow model (MODBRANCH) for simulation of stream-aquifer interaction*, by Eric D. Swain and Eliezer J. Wexler. 1995. 125 p.
- 7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P.C. Trescott, G.F. Pinder, and S.P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 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, Chapter C2. 1978. 90 p.
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- 8-A2. *Installation and service manual for U.S. Geological Survey manometers*, by J.D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 p.
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- 9-A7. *National Field Manual for the Collection of Water-Quality Data: Biological Indicators*, by D.N. Myers and F.D. Wilde: USGS--TWRI Book 9, Chapter A7. 1997. 49 p.
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ARKANSAS RIVER BASIN

07227000 CANADIAN RIVER AT LOGAN, NM--Continued

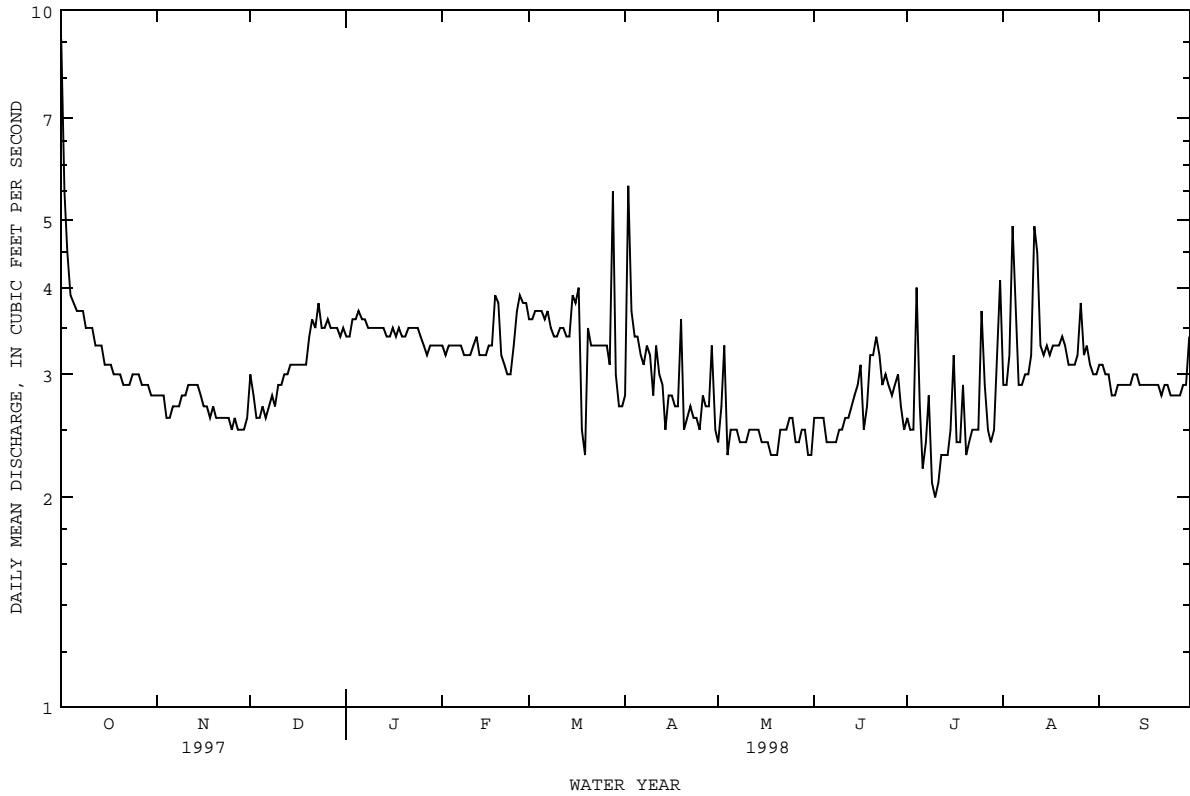
SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1963 - 1998	
ANNUAL TOTAL	26394.8		1116.2		^a 40.3	
ANNUAL MEAN	72.3		3.06		1.62	
HIGHEST ANNUAL MEAN					145	1969
LOWEST ANNUAL MEAN					1.62	1964
HIGHEST DAILY MEAN	280	Aug 18	9.1	Oct 1	6860	Jun 18 1969
LOWEST DAILY MEAN	2.5	Nov 25	2.0	Jul 10	.10	Jan 12 1963
ANNUAL SEVEN-DAY MINIMUM	2.5	Nov 23	2.2	Jul 9	.10	Apr 16 1963
INSTANTANEOUS PEAK FLOW					^b 219000	Sep 22 1941
INSTANTANEOUS PEAK STAGE					^c 29.30	Sep 22 1941
ANNUAL RUNOFF (AC-FT)	52350		2210		29200	
10 PERCENT EXCEEDS	255		3.6		67	
50 PERCENT EXCEEDS	3.6		3.0		2.7	
90 PERCENT EXCEEDS	2.8		2.5		1.7	

e Estimated

^a Average discharge for 15 years (water years 1909, 1912-13, 1927-38), 392 ft³/s, 284,000 acre-ft/yr, prior to completion of Conchas dam. 24 years (water years 1939-62), 257 ft³/s, 186,200 acre-ft/yr, prior to completion of Ute Dam.

^b From rating curve extended above 75,000.

^c From floodmarks.



ARKANSAS RIVER BASIN

07227000 CANADIAN RIVER AT LOGAN, NM--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1957-62, 1992 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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-AITURE AIR (DEG C) (00020)	TEMPER-AITURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
DEC 11...	1250	2.9	8510	8.0	3.5	3.5	675	11.9	105	580	130	65
MAR 17...	1130	3.9	7950	--	11.5	12.0	662	9.7	107	520	110	60
JUN 22...	1145	3.1	7510	8.0	34.0	26.0	670	7.4	107	500	100	58
AUG 18...	1115	3.3	8180	8.0	31.5	26.5	672	7.2	105	500	110	57

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	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)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
DEC 11...	1500	27	8.4	330	490	2400	1.1	11	4790	382	<100
MAR 17...	1400	27	7.0	303	480	2300	.9	10	4530	308	<50
JUN 22...	1300	24	1.0	324	480	2000	1.1	12	4130	324	<50
AUG 18...	1400	26	8.5	325	500	2300	1.1	12	4530	350	<50

ARKANSAS RIVER BASIN

07227100 REVUELTO CREEK NEAR LOGAN, NM

LOCATION.--Lat 35°20'29", long 103°23'37", in SW¼NW¼ sec.24, T.13 N., R.33 E., Quay County, Hydrologic Unit 11080008, on right bank 0.3 mi upstream from bridge on State Highway 469, 1.9 mi southeast of Logan, and at mile 2.3.

DRAINAGE AREA.--786 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder with satellite telemeter. Elevation of gage is 3,660 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Jan. 16, 1981, at site 320 ft upstream at datum 0.56 ft higher.

REMARKS.--Water-discharge records fair except for estimated daily discharges, which are poor. Low flows supplemented by surface and ground-water return from irrigation in vicinity of Tucumcari. Several observations of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD (1941-47).--Maximum discharge determined, about 13,400 ft³/s, Sept. 18, 1946, gage height, 9.04 ft, at site 180 ft downstream at different datum, from unpublished records collected by Bureau of Reclamation. A peak of 26,100 ft³/s, date unknown, gage height, 12.9 ft at former site and datum, was measured by slope-area method in May 1957.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	17	e.18	e38	e2.4	e.80	.00	67	.00	e2.2	601	e17
2	12	5.0	14	e21	e2.8	e.86	.00	24	e.00	e2.7	230	e11
3	4.0	12	e82	e39	e3.2	e.92	.00	31	e.00	e2.7	116	e10
4	29	9.8	e13	e24	e3.5	e.85	e.20	28	e.00	e3.0	508	e9.0
5	33	32	e11	e21	e3.9	e.49	e.20	24	.00	325	443	e8.9
6	29	6.0	e9.5	e17	e4.1	e.40	e.20	16	.00	47	e60	e7.8
7	28	16	e7.2	e12	e4.3	e.36	e.19	12	.00	20	e10	e13
8	111	.30	e5.1	e19	e4.1	e.42	e.26	4.1	3.2	6.6	e9.5	e14
9	63	e.32	e4.7	e24	e3.3	e38	.49	18	24	112	e7.2	e9.0
10	39	e.33	e3.6	e20	e2.1	24	e.35	32	.00	12	e6.7	e7.0
11	39	e.24	e2.1	e19	e1.7	6.4	e.29	39	2.1	e3.2	85	e6.5
12	375	43	e1.9	e22	.74	9.4	.00	17	.11	e3.1	673	e7.2
13	77	16	e2.1	9.1	e.00	3.0	.00	20	.54	e3.0	458	e8.3
14	61	.10	e2.3	2.1	e.00	4.4	.00	27	.38	e2.9	e187	e8.3
15	51	e.50	e2.5	3.2	e.00	96	.00	17	e.29	e2.9	e108	e7.9
16	21	.74	e3.1	2.2	e.00	444	.00	18	4.5	e3.0	e40	e8.1
17	36	e.40	e4.7	e2.1	.00	429	e.22	.64	e2.0	e3.1	e13	e8.1
18	21	e.33	e5.6	e1.9	e1.5	204	e.40	8.3	e2.7	e5.0	e12	e8.3
19	8.9	e.28	e5.0	.98	e1.8	91	43	2.7	e1.9	e3.0	e13	e9.2
20	13	e.25	e4.9	e1.0	e2.1	46	181	.21	e2.1	e2.9	e10	e9.1
21	24	e.25	e4.6	e1.7	e1.8	10	162	.03	e1.9	e3.1	e14	e9.3
22	23	e.20	e8.8	2.7	e.76	.40	114	.00	e2.0	e3.0	e13	e10
23	28	e.20	e32	e2.1	e.76	.00	92	.00	e2.1	e2.9	e15	e9.7
24	38	e.20	e27	e1.7	e.48	.00	46	.00	e2.2	e2.7	e12	e9.7
25	54	e.20	e21	1.4	e.29	.00	21	.00	e1.9	e2.9	e13	e8.7
26	52	e.25	e18	e1.6	e.54	.00	36	.00	e1.8	e3.7	1920	e7.2
27	45	e.20	e16	e1.5	e.57	.00	389	.00	e1.5	e4.2	788	e8.3
28	e38	e.18	e17	e1.6	e.80	.00	223	.00	e1.5	e5.2	607	e7.9
29	e25	e.19	e15	e1.9	---	.00	139	.00	e1.6	e7.1	259	e7.6
30	e13	e.19	e13	2.2	---	.00	90	.00	e2.0	55	129	180
31	9.4	---	e11	e2.1	---	.00	---	.00	---	908	64	---
TOTAL	1411.3	162.65	367.88	319.08	47.54	1410.70	1538.80	405.98	62.32	1563.1	7424.4	446.1
MEAN	45.5	5.42	11.9	10.3	1.70	45.5	51.3	13.1	2.08	50.4	239	14.9
MAX	375	43	82	39	4.3	444	389	67	24	908	1920	180
MIN	4.0	.10	.18	.98	.00	.00	.00	.00	.00	2.2	6.7	6.5
AC-FT	2800	323	730	633	94	2800	3050	805	124	3100	14730	885

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1998, BY WATER YEAR (WY)

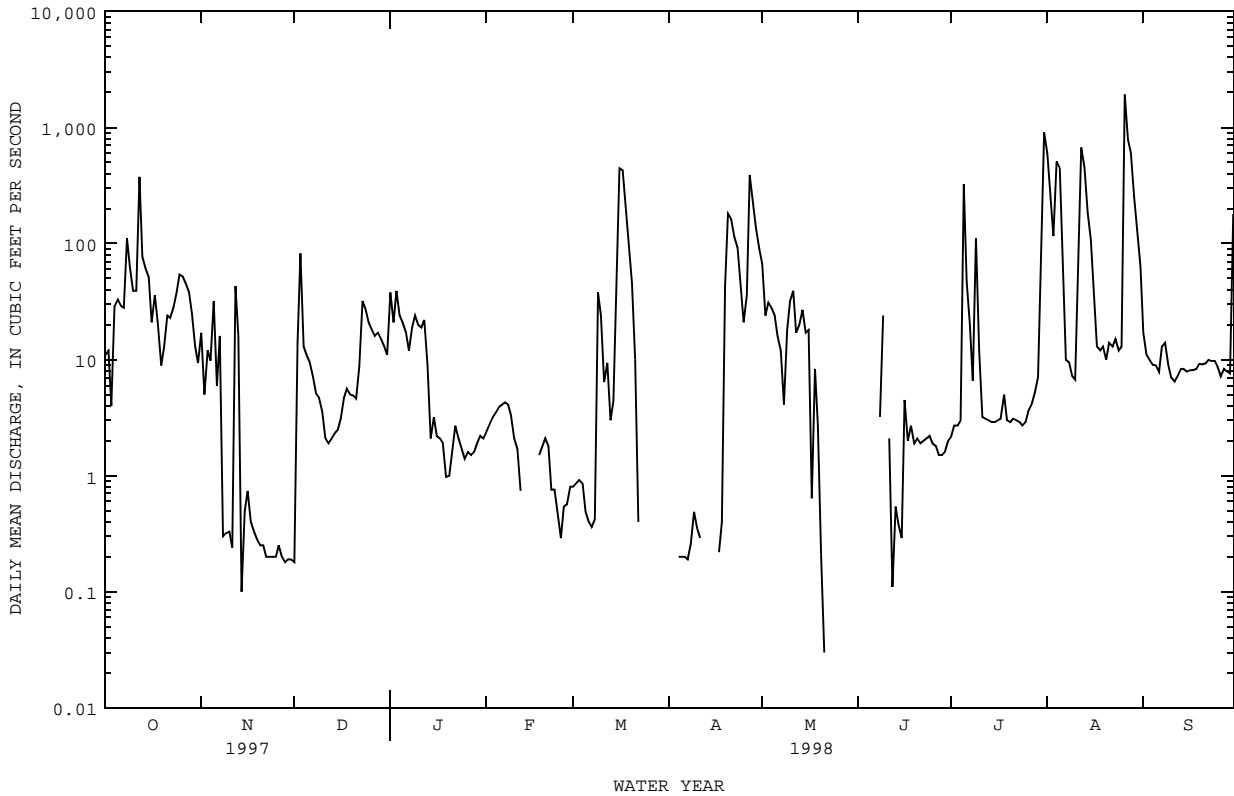
	34.7	8.97	10.2	5.67	7.26	7.47	28.0	45.0	79.2	120	128	72.0
MEAN	34.7	8.97	10.2	5.67	7.26	7.47	28.0	45.0	79.2	120	128	72.0
MAX	320	34.1	129	27.9	42.5	52.1	346	203	492	1203	575	515
(WY)	1961	1962	1960	1990	1983	1985	1970	1991	1960	1960	1981	1969
MIN	.000	.056	.001	.000	.000	.003	.32	.085	.89	.42	.93	1.72
(WY)	1965	1978	1976	1965	1965	1980	1981	1976	1990	1983	1978	1978

07227100 REVUELTO CREEK NEAR LOGAN, NM--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1959 - 1998	
ANNUAL TOTAL	28422.42		15159.85		45.4	
ANNUAL MEAN	77.9		41.5		4.72	
HIGHEST ANNUAL MEAN					204	1960
LOWEST ANNUAL MEAN					4.72	1964
HIGHEST DAILY MEAN	1080	Apr 26	1920	Aug 26	13800	Jul 9 1960
LOWEST DAILY MEAN	.10	Nov 14	.00	Feb 13	.00	Oct 20 1959
ANNUAL SEVEN-DAY MINIMUM	.20	Nov 25	.00	Mar 23	.00	Oct 20 1959
INSTANTANEOUS PEAK FLOW			5380	Aug 26	^a 26700	Jul 9 1960
INSTANTANEOUS PEAK STAGE			6.91	Aug 26	14.30	Jul 9 1960
INSTANTANEOUS LOW FLOW			.00	Feb 13	.00	Oct 20 1959
ANNUAL RUNOFF (AC-FT)	56380		30070		32860	
10 PERCENT EXCEEDS	272		71		63	
50 PERCENT EXCEEDS	14		5.0		5.2	
90 PERCENT EXCEEDS	1.7		.00		.00	

e Estimated

^a From slope-area measurement of peak flow.



ARKANSAS RIVER BASIN

07227100 REVUELTO CREEK NEAR LOGAN, NM--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1959 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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-AITURE AIR (DEG C) (00020)	TEMPER-AITURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
DEC 11...	1400	E2.1	2250	8.3	3.5	4.5	675	11.7	103	350	69	44
MAR 17...	1345	336	760	7.8	15.5	10.5	660	9.6	100	53	12	5.4
JUN 22...	1400	E2.0	1430	8.4	36.5	35.0	670	6.2	103	340	64	44
AUG 18...	1245	E12	1210	8.5	30.5	30.0	683	7.0	104	260	54	30

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	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)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
DEC 11...	320	7	3.4	271	470	280	.7	9.4	1370	282	<30
MAR 17...	130	8	1.9	--	180	27	.4	8.7	--	141	86
JUN 22...	170	4	6.5	208	430	34	.6	6.7	876	222	<10
AUG 18...	140	4	5.1	219	350	53	.5	11	774	217	<10

ARKANSAS RIVER BASIN

07227140 CANADIAN RIVER ABOVE NEW MEXICO-TEXAS STATE LINE, NM

WATER-QUALITY RECORDS

LOCATION.--Lat 35°23'35", long 103°02'30", in SW $\frac{1}{4}$ sec. 32, T.14 N., R.37 E., Quay County, Hydrologic Unit 11080006, 0.1 mi upstream from New Mexico-Texas State line, 5.5 mi downstream from Rana Canyon, and 14.7 mi north of Glenrio.

PERIOD OF RECORD.--Water years 1969-73, 1975-86, 1992 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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 AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, SATUR-ATION (PER-CENT) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
DEC 12...	0905	20	8320	--	7.0	2.0	680	11.6	97	670	150	73
MAR 18...	0900	221	1370	8.3	9.0	9.0	665	--	--	100	23	11
JUN 23...	0930	5.4	6450	8.4	27.5	21.0	672	7.8	102	460	81	63
AUG 19...	0900	12	5430	8.3	24.0	23.0	675	7.2	97	390	80	46

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	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)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
DEC 12...	1500	26	8.3	318	510	2500	.6	14	4940	398	<100
MAR 18...	240	10	2.5	207	220	200	.4	5.7	824	160	<10
JUN 23...	1100	22	9.1	217	520	1600	.7	9.1	3560	331	<40
AUG 19...	910	20	7.4	222	410	1400	.6	12	3000	313	<50

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 mi², of which 4,069 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1341: Drainage area.

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

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

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	255	32	28	70	44	39	55	42	4.6	.04	4.0	154
2	288	30	33	81	42	38	36	53	4.2	.00	50	75
3	228	30	36	101	42	36	33	52	3.4	.00	62	41
4	192	31	36	144	42	32	29	46	3.2	.00	112	23
5	108	29	37	132	44	30	25	39	2.9	.00	79	15
6	74	31	38	e130	44	30	26	35	2.6	.00	77	9.8
7	61	32	38	e125	46	29	29	32	2.4	.11	129	5.6
8	60	31	38	e120	47	29	28	30	2.2	.09	116	3.4
9	62	31	39	111	42	28	29	30	2.0	.06	80	2.2
10	50	31	40	96	42	28	30	28	1.8	.01	44	2.2
11	44	34	39	90	42	27	31	27	1.5	.00	211	.69
12	41	42	47	80	45	26	29	26	1.1	.00	191	.14
13	40	46	44	74	45	26	28	23	.64	.00	163	.04
14	41	47	31	69	42	26	27	19	.25	.00	68	.00
15	35	51	34	65	42	46	25	17	.26	.09	42	.00
16	32	49	30	60	53	314	28	19	.20	.09	60	.00
17	60	45	28	57	86	250	28	16	.06	.08	73	.00
18	53	45	28	56	98	462	29	16	.01	.01	56	.00
19	43	47	28	54	82	556	29	18	.01	.00	38	.00
20	42	41	29	52	87	227	28	17	.00	.00	26	.00
21	35	38	44	52	74	247	25	17	.00	.00	21	.00
22	34	36	48	52	61	236	24	15	.00	.00	20	.00
23	34	34	59	50	54	220	23	14	.00	.00	18	.00
24	34	32	59	47	52	e200	21	12	.00	.00	16	.00
25	35	32	73	47	52	e145	18	11	.00	.00	13	.00
26	33	31	78	47	47	e125	28	11	.00	.00	12	.00
27	34	31	110	46	48	e110	40	9.8	.00	.00	53	.00
28	36	32	77	44	42	e95	44	8.6	.00	.00	474	.00
29	35	31	67	44	---	e80	41	7.4	.00	.00	215	.00
30	34	30	63	44	---	e68	36	5.5	.00	.00	182	.00
31	34	---	72	44	---	e55	---	4.9	---	6.9	219	---
TOTAL	2187	1082	1451	2284	1487	3860	902	701.2	33.33	7.48	2924.0	332.07
MEAN	70.5	36.1	46.8	73.7	53.1	125	30.1	22.6	1.11	.24	94.3	11.1
MAX	288	51	110	144	98	556	55	53	4.6	6.9	474	154
MIN	32	29	28	44	42	26	18	4.9	.00	.00	4.0	.00
AC-FT	4340	2150	2880	4530	2950	7660	1790	1390	66	15	5800	659

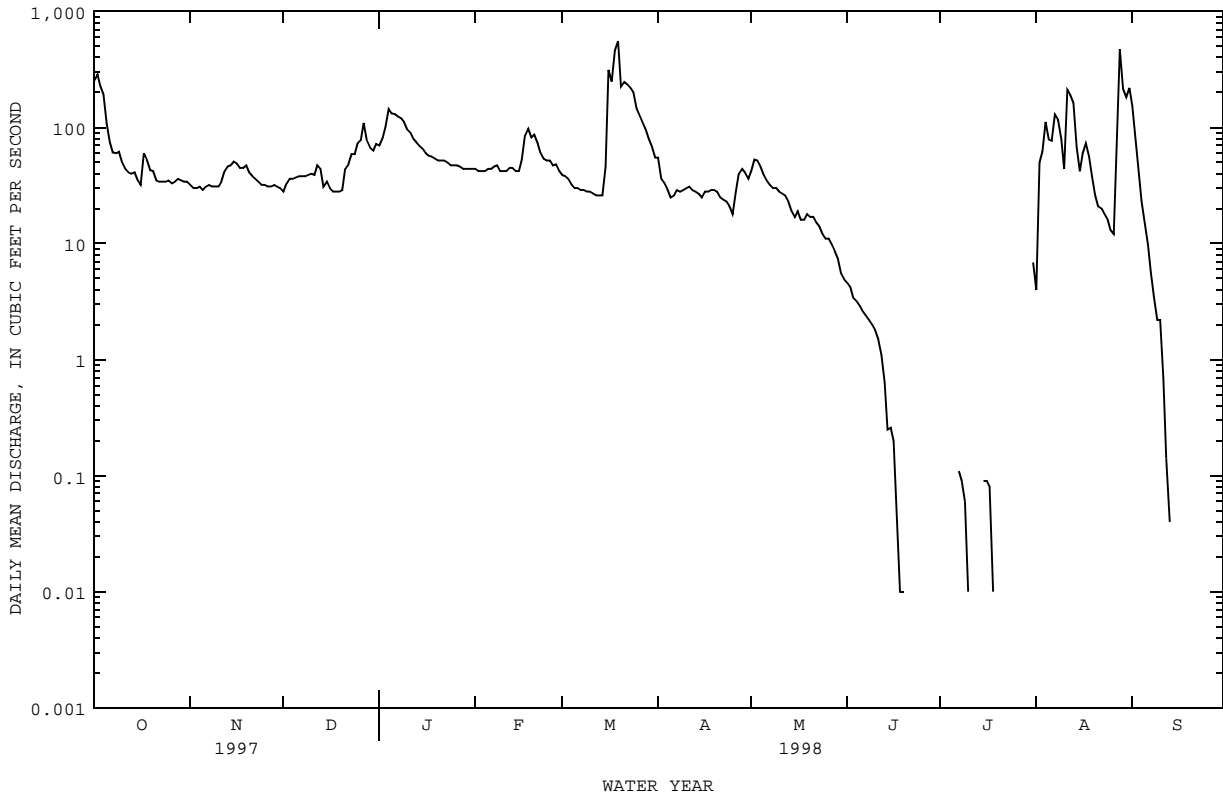
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1998z, BY WATER YEAR (WY)

	312	77.9	51.2	56.9	45.5	43.2	179	433	509	576	529	532
MEAN	312	77.9	51.2	56.9	45.5	43.2	179	433	509	576	529	532
MAX	5663	812	458	519	259	403	5988	6804	5288	4880	3007	8016
(WY)	1942	1942	1942	1943	1980	1961	1942	1941	1941	1941	1981	1941
MIN	.57	1.52	1.25	4.75	3.00	1.86	1.51	4.60	.95	.24	.11	.034
(WY)	1981	1978	1984	1978	1939	1940	1978	1945	1990	1998	1983	1983

07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1939 - 1998z	
ANNUAL TOTAL	56533.6		17251.08		280	
ANNUAL MEAN	155		47.3		2351	
HIGHEST ANNUAL MEAN					37.7	
LOWEST ANNUAL MEAN					1941	
HIGHEST DAILY MEAN	1900	Apr 25	556	Mar 19	79600	Sep 23 1941
LOWEST DAILY MEAN	8.8	Apr 1	.00	Jun 20	.00	Aug 7 1940
ANNUAL SEVEN-DAY MINIMUM	11	Mar 26	.00	Jun 20	.00	Sep 3 1983
INSTANTANEOUS PEAK FLOW			1050	Mar 16	135000	Jul 25 1941
INSTANTANEOUS PEAK STAGE			3.70	Mar 16	15.70	Jul 25 1941
INSTANTANEOUS LOW FLOW					.00	Oct 1 1977
ANNUAL RUNOFF (AC-FT)	112100		34220		202900	
10 PERCENT EXCEEDS	351		99		472	
50 PERCENT EXCEEDS	49		33		27	
90 PERCENT EXCEEDS	26		.00		4.0	

e Estimated
z Period of regulated streamflow.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Jul 1948 to Oct 1949, Feb 1950 to Sep 1997. Chemical and biochemical analyses: Mar 1968 to Sep 1997. Pesticide analyses: Mar 1968 to Jun 1981.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct 1950 to current year.

WATER TEMPERATURE: Aug 1949 to current year.

SUSPENDED SEDIMENT DISCHARGE: Aug 1949 to Sep 1952.

INSTRUMENTATION.--Since Oct 1995, a water-quality instrument has recorded specific conductance and water temperature on 30 minute intervals at this station.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed for previous years using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the U.S. Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 9,180 microsiemens, Jun 8, 1990; minimum daily, 346 microsiemens, Oct 29, 1964.

WATER TEMPERATURE (1949-76, 1988 to current year): Maximum daily, 39.0°C Jul 7, 1973; minimum daily, 0.0°C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 5,930 microsiemens, May 2; minimum, 513 microsiemens, Aug 1.

WATER TEMPERATURE: Maximum, 33.3°C, Jul 15; minimum, 0.0°C, Dec 11-13, 15, 21, 23-24, 26-30, Jan 7.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	1490	1440	1470	3940	3750	3850	4290	4200	4240	3790	3450	3600
2	1510	1340	1440	4060	3940	4000	4300	3730	3940	3640	3070	3450
3	1610	1500	1570	4050	3980	4020	3910	3690	3880	3760	2240	3100
4	1650	1590	1620	4020	3920	3980	3810	3670	3740	3330	2340	2810
5	1820	1650	1720	4000	3900	3970	3790	3420	3680	3120	1960	2640
6	2020	1820	1910	3990	3770	3890	3860	3600	3750	3750	2850	3160
7	2270	2020	2140	4010	3880	3960	4030	3830	3940	3790	3230	3530
8	2500	2010	2270	4070	3990	4030	4130	3940	4020	3260	2020	2540
9	2720	2010	2350	4130	3990	4080	4180	4090	4160	2250	1990	2060
10	3280	2720	3020	4030	3780	3890	4680	4180	4430	2440	2240	2310
11	3400	3210	3300	3780	3620	3720	5020	4600	4870	2720	2440	2580
12	3930	3400	3650	3760	3610	3680	4870	3440	4370	3060	2720	2960
13	4120	3570	3840	3780	3640	3720	3980	3500	3800	3170	2990	3080
14	4130	4010	4100	3660	3260	3500	4060	3050	3700	3380	3160	3270
15	4270	4110	4190	3350	3240	3280	3990	3680	3850	3560	3120	3390
16	4270	4120	4180	3500	3200	3400	4120	3790	3950	3660	3550	3590
17	4160	3570	3800	3580	3470	3540	4200	3990	4090	3820	3640	3710
18	4340	3710	4160	3770	3580	3690	4270	4060	4150	3880	3750	3830
19	3710	2980	3220	4150	3720	3910	4360	4190	4250	4000	3830	3910
20	3090	2920	2990	4540	4150	4330	4360	3930	4230	4070	3990	4040
21	3280	3070	3160	4590	3800	4290	3930	3090	3620	4070	3970	4030
22	3480	3260	3350	3800	3660	3690	3420	3080	3270	4140	4070	4120
23	3560	3480	3530	3890	3690	3790	3200	2880	3010	4200	4130	4160
24	3630	3520	3580	4060	3890	3970	3070	2790	2950	4260	4150	4200
25	3740	3530	3620	4280	4060	4170	3090	2480	2890	4260	4140	4220
26	3790	3720	3760	4290	4190	4250	2990	2490	2800	4310	4220	4260
27	3820	3460	3590	4240	3940	4160	2940	1880	2190	4310	4190	4260
28	3500	3380	3460	4080	3880	4030	3470	2560	3070	4290	4070	4240
29	3580	3410	3500	4100	3880	4000	3730	3280	3510	4260	4230	4250
30	3680	3450	3600	4210	4100	4150	3710	2700	3250	4290	4240	4260
31	3750	3590	3660	---	---	---	3630	3060	3380	4260	4220	4240
MONTH	4340	1340	3090	4590	3200	3900	5020	1880	3710	4310	1960	3540

ARKANSAS RIVER BASIN

07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	4290	4240	4260	4020	3870	3970	3800	2600	3320	4310	3960	4110
2	4290	4250	4270	4030	3980	4000	4090	3800	3940	5930	4310	5190
3	4320	4250	4290	4030	3700	3900	4210	4020	4120	5220	3100	3690
4	4350	4290	4320	4050	3810	3950	4320	4060	4210	3600	3100	3250
5	4340	4280	4300	4010	3730	3910	4490	4270	4360	3880	3600	3700
6	4320	4240	4280	4150	3900	4060	4450	4060	4260	4400	3880	4190
7	4300	4250	4270	4350	4150	4230	4130	3890	3980	4580	4360	4460
8	4310	4240	4280	4440	4290	4350	3940	3840	3890	4720	4530	4620
9	4420	4270	4330	4510	4100	4310	3900	3820	3850	4710	4410	4590
10	4470	4290	4400	4360	4040	4250	3820	3720	3780	4500	3760	4100
11	4360	4290	4320	4440	4100	4260	3820	3680	3730	4800	4120	4380
12	4420	4210	4340	4460	3880	4240	3900	3700	3790	4990	4510	4760
13	4500	4410	4470	4460	3730	4200	3860	3370	3690	5290	4980	5050
14	4560	4460	4510	4440	4040	4360	3600	3340	3430	5250	5090	5140
15	4550	4390	4500	4440	2910	3850	3590	3350	3450	5470	5060	5220
16	4390	3730	4090	3630	1140	2160	3530	3350	3440	5460	5380	5410
17	3750	2550	3450	1520	1170	1410	3740	3480	3600	5480	5360	5410
18	3180	2010	2620	2640	1500	1710	3690	3540	3600	5500	5030	5340
19	3040	2400	2680	2870	1500	1900	3730	3320	3540	5030	4610	4850
20	3350	2340	2810	1740	1570	1650	3650	3330	3490	4610	4180	4360
21	3350	2600	2890	1890	1710	1780	3760	3500	3620	4460	4080	4230
22	3790	3090	3480	1930	1860	1900	3850	3600	3710	4470	4110	4300
23	3980	3790	3900	2090	1860	1980	3940	3600	3760	4830	3870	4300
24	4160	3950	4030	2370	2090	2210	4240	3820	4000	5550	4780	5090
25	5100	4110	4490	2800	2200	2540	4390	4110	4250	5420	5110	5290
26	5270	4830	5100	3100	2800	2960	4640	4200	4350	5580	5140	5320
27	4830	3920	4350	3100	2920	3010	5860	4410	5220	5540	5310	5420
28	4100	3810	3930	3400	3020	3170	4410	3690	3900	---	---	e5540
29	---	---	---	3670	3400	3490	3790	3560	3680	---	---	e4100
30	---	---	---	3780	3670	3710	3960	3650	3770	---	---	e3420
31	---	---	---	3790	3510	3720	---	---	---	---	---	e2760
MONTH	5270	2010	4030	4510	1140	3260	5860	2600	3860	---	---	4570
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	e1890	---	---	e2170	1010	513	707	---	---	e1290
2	---	---	e1910	---	---	---	3180	599	1990	---	---	e1320
3	---	---	e1660	---	---	---	3730	2540	3230	---	---	e1530
4	---	---	e1570	---	---	---	3060	1480	2010	2110	1760	1910
5	---	---	e1470	---	---	---	2050	1780	1960	2400	2110	2250
6	---	---	e1220	---	---	---	2010	1620	1810	2820	2370	2470
7	---	---	e1380	---	---	e2490	1820	1510	1610	---	---	e3000
8	---	---	e2600	---	---	e2550	2140	1820	2000	---	---	e3360
9	---	---	e3140	---	---	e2600	2020	1720	1880	---	---	e3690
10	---	---	e1460	---	---	e2610	2240	1790	1940	---	---	e4100
11	---	---	e1200	---	---	---	3620	777	1200	---	---	e4100
12	---	---	e1320	---	---	---	2170	826	1270	---	---	e4160
13	---	---	e1260	---	---	---	1220	872	1030	---	---	e3900
14	---	---	e900	---	---	---	1200	1090	1120	---	---	---
15	---	---	e880	---	---	e2870	1120	1070	1100	---	---	---
16	---	---	e860	---	---	e2900	1790	1090	1350	---	---	---
17	---	---	e420	---	---	e2950	2000	1720	1870	---	---	---
18	---	---	e350	---	---	e3000	2030	1900	1970	---	---	---
19	---	---	e280	---	---	---	2450	1990	2190	---	---	---
20	---	---	---	---	---	---	2580	2440	2510	---	---	---
21	---	---	---	---	---	---	2440	2360	2400	---	---	---
22	---	---	---	---	---	---	2370	2310	2340	---	---	---
23	---	---	---	---	---	---	2320	2270	2290	---	---	---
24	---	---	---	---	---	---	2270	2200	2230	---	---	---
25	---	---	---	---	---	---	2200	2130	2170	---	---	---
26	---	---	---	---	---	---	2130	1940	2050	---	---	---
27	---	---	---	---	---	---	2140	1730	1830	---	---	---
28	---	---	---	---	---	---	2360	1610	2030	---	---	---
29	---	---	---	---	---	---	1610	1230	1360	---	---	---
30	---	---	---	---	---	---	1240	1210	1230	---	---	---
31	---	---	---	---	---	e2030	1220	1190	1200	---	---	---
MONTH	---	---	---	---	---	---	3730	513	1800	---	---	---

e Estimated

ARKANSAS RIVER BASIN

07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	27.6	19.0	22.5	16.1	9.3	11.8	10.3	3.6	6.4	7.6	.1	3.3
2	23.3	17.8	20.5	12.8	6.5	9.4	7.8	4.7	6.5	8.8	.4	4.3
3	23.7	16.2	19.7	14.8	4.0	8.9	7.8	2.7	4.8	8.7	3.5	5.4
4	26.1	16.6	21.0	18.1	6.2	11.3	8.7	.1	3.8	5.0	2.7	3.7
5	26.4	18.4	22.1	16.1	7.2	11.3	7.4	.1	3.2	8.2	1.6	4.5
6	24.4	17.9	20.8	16.9	5.7	10.8	5.9	2.3	3.7	5.1	2.2	3.0
7	23.9	18.5	20.3	17.0	6.3	11.3	7.2	2.1	4.3	5.2	.0	2.4
8	21.9	16.9	18.9	17.3	7.0	11.4	11.4	3.9	6.7	3.9	.3	1.3
9	23.0	13.0	17.5	9.1	4.8	7.3	6.3	2.8	4.7	3.6	.3	.9
10	22.9	17.8	19.9	6.2	2.5	4.4	3.7	1.4	2.5	4.8	.3	1.8
11	23.6	18.3	20.2	8.0	2.5	5.1	2.6	.0	.8	5.1	.3	2.1
12	19.7	12.6	16.5	6.4	4.9	5.5	2.4	.0	.6	4.5	.3	1.9
13	20.6	10.2	14.6	8.1	5.5	6.6	6.0	.0	1.8	3.9	.4	1.8
14	19.9	9.4	14.1	6.7	.7	2.9	8.2	.1	2.8	6.4	.3	2.9
15	21.0	9.1	14.6	6.7	.6	2.7	9.4	.0	3.7	6.8	.2	2.8
16	20.5	10.4	14.8	5.2	.7	2.3	9.7	1.1	4.7	8.2	.7	3.9
17	20.4	9.5	14.4	10.4	.7	4.6	9.4	.4	4.1	7.1	.4	3.7
18	23.0	11.0	16.2	11.0	1.2	5.7	9.1	.5	4.4	9.6	1.7	5.0
19	18.6	11.3	14.9	11.3	3.5	6.8	9.7	.5	4.5	8.6	.5	4.4
20	16.2	12.2	13.8	11.5	4.6	7.8	3.8	1.4	2.1	10.1	2.5	5.7
21	17.7	11.3	13.5	12.9	6.3	9.3	3.4	.0	1.2	7.6	2.0	4.8
22	19.1	8.3	13.2	14.2	6.2	9.6	4.7	1.5	2.8	10.0	2.5	5.6
23	18.8	12.8	14.7	12.2	3.1	7.3	1.5	.0	.3	9.3	1.4	4.9
24	19.2	9.5	14.1	14.0	3.7	8.3	3.9	.0	1.5	9.2	.3	4.2
25	14.2	1.9	7.0	13.3	4.1	8.6	3.7	.4	1.8	10.3	1.4	5.4
26	12.0	.9	5.5	10.6	6.8	8.6	2.7	.0	.6	11.1	1.4	5.7
27	15.5	2.0	8.0	12.4	6.8	9.0	.1	.0	.0	11.0	1.1	5.6
28	18.2	7.0	11.5	10.0	5.4	7.6	2.9	.0	.7	11.5	2.3	6.3
29	18.7	6.6	11.9	8.6	4.9	6.0	3.8	.0	.7	11.6	1.4	6.1
30	18.3	7.5	12.1	11.3	2.5	6.3	5.0	.0	1.4	13.0	2.9	7.4
31	18.9	7.3	12.5	---	---	---	5.5	.3	2.1	11.5	6.4	8.2
MONTH	27.6	.9	15.5	18.1	.6	7.6	11.4	.0	2.9	13.0	.0	4.2
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	12.7	2.6	7.1	12.3	.2	5.5	20.1	7.0	12.9	26.6	11.9	18.4
2	12.0	2.1	6.7	11.8	.5	5.7	16.1	8.1	11.7	25.6	13.5	19.1
3	11.5	2.8	6.4	15.3	1.7	7.7	19.0	6.5	11.9	25.3	13.6	19.0
4	8.9	3.8	5.8	17.1	4.2	9.7	20.5	7.3	13.0	28.1	13.3	19.9
5	5.3	3.5	4.1	11.6	4.1	7.0	21.8	8.1	13.7	26.1	14.1	19.4
6	7.3	2.8	4.7	11.1	3.0	6.5	17.3	9.0	12.8	26.1	14.6	19.4
7	9.2	4.1	5.8	8.4	.8	5.6	19.5	6.9	12.7	27.2	13.1	19.7
8	13.9	3.2	7.6	8.3	.3	2.8	15.4	8.5	11.5	24.0	15.0	18.2
9	14.6	5.2	9.4	10.3	.3	3.7	21.6	6.6	13.6	21.4	13.0	16.7
10	8.4	4.3	6.4	12.2	.3	5.0	22.9	9.1	15.5	27.0	12.1	18.5
11	12.4	.9	6.1	8.6	.3	3.4	21.4	10.9	15.5	26.6	13.7	19.2
12	9.1	4.5	6.4	11.9	.3	4.6	21.1	10.2	14.7	29.9	12.3	19.9
13	14.1	2.3	7.3	17.9	2.2	9.2	24.6	8.5	15.6	26.6	14.7	20.3
14	15.4	5.5	9.3	16.3	6.8	10.4	21.2	9.3	15.0	25.6	16.2	20.4
15	9.0	7.5	8.5	9.5	6.1	7.2	23.0	9.2	14.6	24.5	10.5	18.1
16	7.5	5.2	6.3	6.1	2.1	4.0	12.6	8.8	10.7	---	---	---
17	9.4	4.6	6.3	11.1	2.1	5.9	15.1	6.3	10.6	---	---	---
18	9.0	3.8	6.5	8.3	6.1	7.2	17.3	6.0	11.3	---	---	---
19	12.6	5.3	8.6	7.4	3.6	5.4	22.4	6.3	13.8	---	---	---
20	13.3	4.4	8.8	12.7	3.6	7.5	20.0	9.8	14.1	---	---	---
21	9.8	7.8	8.8	14.1	4.7	9.3	20.4	7.0	13.3	---	---	---
22	15.3	5.2	9.4	17.3	7.1	12.0	25.3	10.5	17.1	---	---	---
23	17.3	5.2	10.6	18.6	9.3	13.8	25.6	10.4	17.4	---	---	---
24	16.3	6.3	10.7	20.4	10.1	14.8	24.8	12.2	17.5	---	---	---
25	13.6	5.9	9.2	21.0	11.5	15.8	25.5	10.7	17.3	---	---	---
26	12.0	3.8	7.1	18.1	12.8	15.2	16.4	9.6	12.4	---	---	---
27	12.3	3.9	7.6	18.0	10.7	14.6	12.4	9.2	10.6	---	---	---
28	11.1	1.9	5.8	19.8	10.3	14.6	13.7	7.9	10.1	---	---	---
29	---	---	---	17.2	10.5	13.7	21.8	7.1	13.2	---	---	---
30	---	---	---	13.6	7.7	11.1	24.7	8.7	16.4	---	---	---
31	---	---	---	17.1	4.8	10.5	---	---	---	---	---	---
MONTH	17.3	.9	7.4	21.0	.2	8.7	25.6	6.0	13.7	---	---	---

ARKANSAS RIVER BASIN

07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	28.6	21.1	23.9	31.4	21.8	25.0	29.0	20.1	24.3
2	---	---	---	---	---	---	29.5	22.2	25.0	---	---	---
3	24.0	19.1	21.0	---	---	---	31.8	21.5	25.0	---	---	---
4	21.3	16.9	18.7	---	---	---	28.3	19.9	23.3	31.3	19.6	24.9
5	19.3	15.4	16.8	---	---	---	25.9	20.6	22.5	29.7	19.1	24.1
6	19.2	14.9	16.8	---	---	---	30.5	18.2	23.9	28.4	19.3	23.7
7	17.5	15.3	16.3	33.0	21.5	25.5	30.1	20.0	24.7	29.5	20.1	24.1
8	22.1	17.3	18.7	26.4	22.3	24.0	31.1	20.4	25.3	28.2	19.0	23.1
9	20.4	15.6	17.9	28.3	21.6	24.5	30.9	21.0	25.5	28.4	20.1	23.3
10	20.0	16.9	17.9	30.9	21.4	25.4	30.6	21.8	25.6	30.3	19.4	23.9
11	22.1	15.9	18.0	---	---	---	31.2	21.1	25.3	29.0	16.7	22.3
12	23.1	16.2	19.0	---	---	---	29.5	21.7	25.2	30.1	18.4	23.5
13	---	---	---	---	---	---	28.6	22.1	25.1	30.0	18.9	23.8
14	---	---	---	---	---	---	28.8	20.7	24.5	---	---	---
15	21.8	16.8	18.5	33.3	19.9	23.7	29.5	21.1	25.1	---	---	---
16	---	---	---	29.5	20.7	24.0	28.7	21.7	25.1	---	---	---
17	---	---	---	27.0	21.4	23.5	28.5	21.2	24.8	---	---	---
18	---	---	---	31.3	19.4	24.4	28.1	21.6	24.7	---	---	---
19	---	---	---	---	---	---	27.1	22.3	24.6	---	---	---
20	---	---	---	---	---	---	28.4	21.8	24.5	---	---	---
21	---	---	---	---	---	---	28.3	21.4	24.6	---	---	---
22	---	---	---	---	---	---	28.8	21.5	24.8	---	---	---
23	---	---	---	---	---	---	28.0	22.2	24.9	---	---	---
24	---	---	---	---	---	---	25.0	22.5	23.6	---	---	---
25	---	---	---	---	---	---	25.6	21.8	23.4	---	---	---
26	---	---	---	---	---	---	25.0	22.1	23.4	---	---	---
27	---	---	---	---	---	---	26.3	22.3	23.7	---	---	---
28	---	---	---	---	---	---	29.2	23.2	25.7	---	---	---
29	---	---	---	---	---	---	29.6	20.3	24.7	---	---	---
30	---	---	---	---	---	---	28.5	19.6	23.9	---	---	---
31	---	---	---	30.2	20.9	24.5	28.4	18.7	23.3	---	---	---
MONTH	---	---	---	---	---	---	31.8	18.2	24.5	---	---	---

RED RIVER BASIN

07297910 PRAIRIE DOG TOWN FORK RED RIVER NEAR WAYSIDE, TX

LOCATION.--Lat 34°50'15", long 101°24'49", Armstrong County, Hydrologic Unit 11120103, on left bank at downstream side of bridge on Farm Road 284, 13 mi northeast of Wayside, 26 mi south of Claude, and at mile 1.145.

DRAINAGE AREA.--4,211 mi², of which 3,281 mi² probably is noncontributing.

PERIOD OF RECORD.--Oct 1967 to current year.

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

REMARKS.--Records fair, except for estimated daily discharges and those less than 20 ft³/s which are poor. No known regulation. There are several small diversions upstream from station. Wastewater effluent is released into river above station by the city of Amarillo.

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

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

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	1.3	3.8	11	8.1	15	12	14	.70	.35	1.0	1.9
2	1.2	1.3	5.2	10	8.2	13	12	12	.60	.33	.80	2.1
3	1.2	1.3	4.0	11	7.9	15	9.8	10	.62	.30	.60	1.8
4	1.2	1.5	4.1	12	9.5	16	10	9.0	.68	.28	.40	1.4
5	1.1	1.4	4.1	9.8	12	15	10	8.0	.75	.26	.20	1.4
6	1.2	1.4	3.8	9.8	9.8	15	10	7.5	.77	.24	.10	1.0
7	1.6	1.5	3.8	9.5	9.5	20	9.8	6.6	.94	.21	.10	.73
8	21	1.5	3.9	10	9.2	18	9.8	29	1.0	.20	.10	.58
9	1.3	1.5	3.8	9.7	8.1	17	11	7.3	.74	.20	.10	.50
10	1.4	1.6	4.4	8.7	8.1	17	11	3.6	.85	.24	e.95	.44
11	2.0	1.6	5.0	8.8	9.0	17	11	2.1	.79	.20	e1.7	.41
12	4.0	2.1	4.9	8.8	14	18	11	1.7	.55	.20	e1.7	.37
13	1.6	4.1	5.3	10	10	17	11	2.1	.72	e.30	e.38	.33
14	1.5	3.7	4.9	9.7	9.5	16	11	1.9	.81	.24	.19	.32
15	1.5	3.2	4.9	12	13	242	10	1.8	.39	.20	.13	.27
16	1.5	2.8	5.0	11	44	275	11	1.3	.26	.13	.10	.27
17	1.5	2.8	4.7	9.7	55	144	12	1.4	.22	.12	.08	.25
18	1.5	2.6	4.5	8.7	25	185	13	1.5	.17	.11	.07	.23
19	1.4	2.5	4.2	9.1	31	191	13	1.6	.16	.11	.05	.20
20	1.5	2.6	7.9	9.6	21	50	13	1.3	.16	.08	e.28	.16
21	1.5	2.5	23	9.7	24	25	14	1.4	.16	.08	e.59	.15
22	1.5	2.3	21	9.3	24	21	13	1.1	.16	.06	e.27	.13
23	1.8	2.2	48	9.2	17	24	14	1.2	.17	.05	.17	.21
24	1.4	2.1	33	9.0	15	22	14	1.4	.16	.04	.13	.19
25	1.4	2.2	23	8.7	13	17	14	1.3	.17	.02	.10	.11
26	1.2	2.4	20	9.5	14	17	16	3.5	e.16	.02	.06	.10
27	1.4	2.9	20	9.8	16	18	17	1.4	e.15	e.04	.05	.12
28	1.4	3.2	16	8.7	16	14	16	1.1	e.14	e2.0	e140	7.7
29	1.4	3.2	16	8.8	---	15	17	.82	e.48	1.4	e50	1.2
30	1.4	3.3	15	9.5	---	13	14	.72	.40	1.4	e20	.47
31	1.4	---	11	8.6	---	14	---	.69	---	1.4	e5.0	---
TOTAL	66.3	68.6	338.2	299.7	460.9	1516	370.4	138.33	14.03	10.81	225.40	25.04
MEAN	2.14	2.29	10.9	9.67	16.5	48.9	12.3	4.46	.47	.35	7.27	.83
MAX	21	4.1	48	12	55	275	17	29	1.0	2.0	140	7.7
MIN	1.1	1.3	3.8	8.6	7.9	13	9.8	.69	.14	.02	.05	.10
AC-FT	132	136	671	594	914	3010	735	274	28	21	447	50

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1998, BY WATER YEAR (WY)

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
MEAN	23.2	7.67	5.14	4.80	4.41	7.89	24.3	47.3	53.9	30.0	89.6	25.3																				
MAX	147	51.9	20.3	24.7	17.4	48.9	448	472	304	207	1410	110																				
(WY)	1986	1972	1988	1988	1990	1998	1997	1978	1984	1996	1968	1969																				
MIN	.000	.066	.099	.30	.16	.34	.17	.13	.47	.000	.39	.000																				
(WY)	1976	1971	1971	1971	1976	1971	1978	1984	1998	1974	1983	1975																				

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1968 - 1998

ANNUAL TOTAL	22253.5	3533.71	
ANNUAL MEAN	61.0	9.68	
HIGHEST ANNUAL MEAN			27.1
LOWEST ANNUAL MEAN			1.90
HIGHEST DAILY MEAN	5430	Apr 25	2700
LOWEST DAILY MEAN	1.1	Oct 5	.00
ANNUAL SEVEN-DAY MINIMUM	1.2	Sep 30	.00
INSTANTANEOUS PEAK FLOW			58000
INSTANTANEOUS PEAK STAGE			13.00
ANNUAL RUNOFF (AC-FT)	44140	7010	19650
10 PERCENT EXCEEDS	43	17	23
50 PERCENT EXCEEDS	9.1	2.4	2.1
90 PERCENT EXCEEDS	1.6	.16	.07

e Estimated

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 mi², of which 4,767 mi² probably is noncontributing.

PERIOD OF RECORD.--Dec 1964 to Mar 1965 (gage heights only), Apr 1965 to current year.

Water-quality records.--Chemical and pesticide analyses: Oct 1994 to Sep 1997. Specific Conductance: Oct 1994 to Sep 1997. Water temperature: Oct 1994 to Sep 1997.

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

REMARKS.--Records fair. Since water year 1974, at least 10% of contributing drainage area has been regulated by MacKenzie Reservoir, Baylor Lake, and Lake Childress. Flow is also affected by flood-detention pools of 23 floodwater-retarding structures with a combined detention capacity of 20,010 acre-ft. These structures control runoff from 95.2 mi² in the drainage basin above station. Many small diversions upstream from station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--8 years (water years 1966-73) 106 ft³s (76,800 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1965-73).--Maximum discharge, 58,800 ft³s June 26, 1965 (gage height, 12.00 ft); no flow at times.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	15	88	48	287	57	27	35	4.7	6.7	4.5	5.4
2	11	11	137	46	207	62	24	32	4.0	7.0	4.1	5.6
3	10	11	205	51	141	67	17	30	4.4	6.8	4.7	5.5
4	14	13	136	125	117	60	18	28	5.2	7.4	5.1	4.9
5	19	13	104	112	117	56	21	29	5.9	8.6	5.8	4.9
6	13	15	96	72	108	67	21	31	5.6	8.8	5.7	8.3
7	16	15	115	62	109	221	18	30	6.3	8.4	5.3	10
8	24	16	190	60	115	208	14	35	7.5	8.0	4.9	4.8
9	32	19	136	50	114	209	14	72	6.4	8.0	4.6	4.9
10	36	21	95	46	95	551	14	288	7.9	7.6	5.7	4.4
11	335	19	113	48	85	335	12	225	21	7.3	6.2	4.4
12	534	21	168	52	189	290	12	91	7.1	9.6	9.6	5.0
13	97	e100	168	55	234	94	11	43	6.0	205	8.8	5.4
14	51	e95	76	53	198	105	12	110	5.3	4.9	7.9	5.5
15	32	e90	85	52	149	966	12	807	6.4	5.7	6.0	5.5
16	23	e85	89	45	1150	4600	12	72	7.2	9.9	5.3	5.5
17	21	83	86	45	1170	4480	13	25	7.1	5.5	4.9	5.8
18	19	88	86	42	1250	1120	16	12	7.5	4.8	5.2	5.5
19	18	87	94	45	1300	756	36	8.6	7.6	4.1	6.0	5.1
20	20	80	156	44	548	496	26	5.5	7.9	4.0	5.8	5.0
21	63	81	710	47	517	176	23	5.5	8.2	3.8	5.3	5.1
22	37	77	164	46	678	104	21	6.3	46	3.9	5.4	5.0
23	62	74	982	47	491	76	18	6.4	7.9	4.3	5.5	5.4
24	52	75	1530	46	233	66	16	6.4	5.7	4.9	5.5	5.4
25	32	77	670	44	170	42	14	11	5.9	4.4	5.5	4.9
26	19	78	102	44	91	39	28	67	6.0	4.2	5.6	4.9
27	17	84	72	42	100	43	35	5.2	6.1	4.4	5.5	5.0
28	15	125	43	43	72	35	32	4.0	6.0	4.8	5.8	4.9
29	17	116	47	44	---	41	49	3.7	6.2	4.3	5.5	4.7
30	20	95	70	45	---	43	43	3.7	6.2	4.2	5.1	4.5
31	19	---	55	336	---	28	---	4.0	---	4.3	5.1	---
TOTAL	1692	1779	6868	1937	10035	15493	629	2132.3	245.2	385.6	175.9	161.2
MEAN	54.6	59.3	222	62.5	358	500	21.0	68.8	8.17	12.4	5.67	5.37
MAX	534	125	1530	336	1300	4600	49	807	46	205	9.6	10
MIN	10	11	43	42	72	28	11	3.7	4.0	3.8	4.1	4.4
AC-FT	3360	3530	13620	3840	19900	30730	1250	4230	486	765	349	320

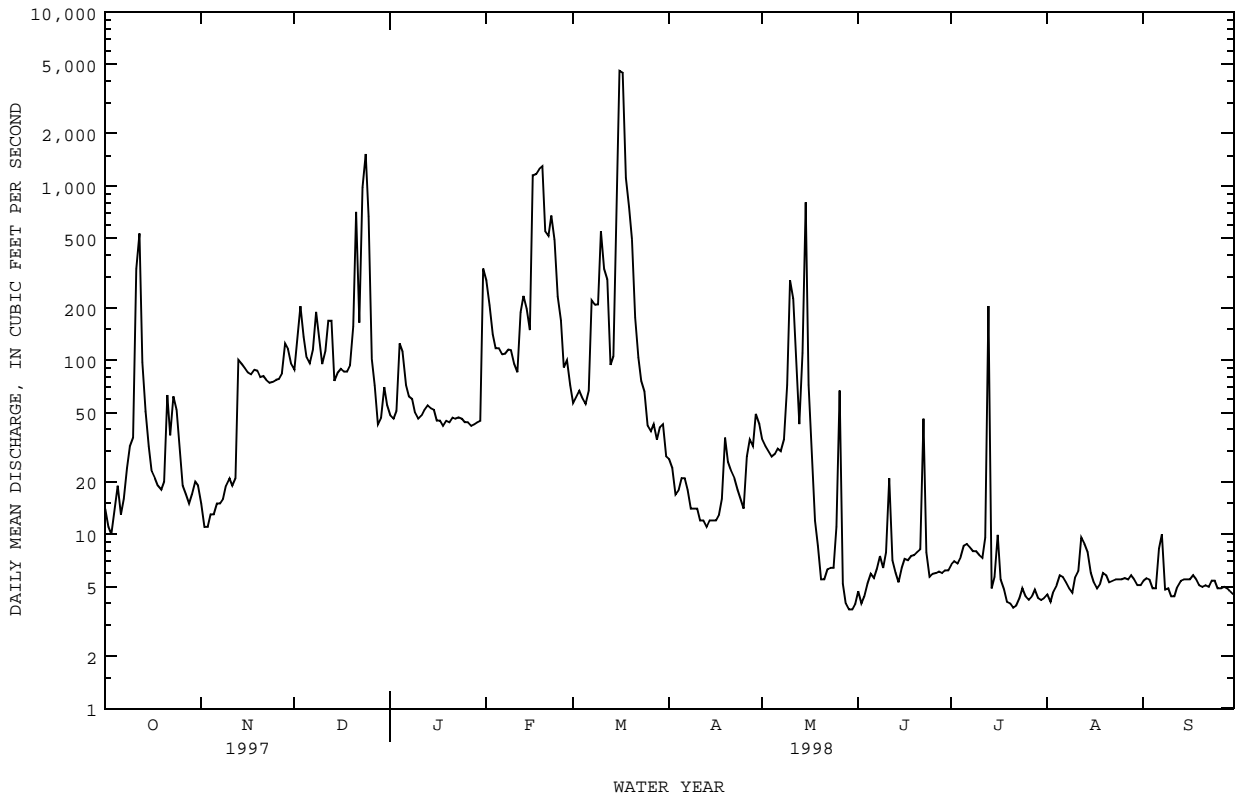
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 1998z, BY WATER YEAR (WY)

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MEAN	118	49.0	45.9	42.6	49.1	56.6	106	272	344	106	126	116													
MAX (WY)	1279	377	265	296	358	500	735	1835	1297	342	535	378													
MIN (WY)	3.14	1.85	2.27	5.04	2.00	4.00	2.95	1.18	3.46	.66	1.56	3.39													
(WY)	1985	1978	1983	1978	1974	1980	1978	1988	1994	1974	1980	1984													

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1974 - 1998z

ANNUAL TOTAL	83128.9	41533.2	
ANNUAL MEAN	228	114	119
HIGHEST ANNUAL MEAN			286
LOWEST ANNUAL MEAN			27.6
HIGHEST DAILY MEAN	8520	Apr 26	4600
LOWEST DAILY MEAN	5.0	Apr 21	3.7
ANNUAL SEVEN-DAY MINIMUM	9.4	Jul 25	4.1
INSTANTANEOUS PEAK FLOW			7410
INSTANTANEOUS PEAK STAGE			9.63
ANNUAL RUNOFF (AC-FT)	164900	82380	86470
10 PERCENT EXCEEDS	606	201	180
50 PERCENT EXCEEDS	56	23	10
90 PERCENT EXCEEDS	14	4.9	1.4

e Estimated
z Period of regulated streamflow.



07299670 GROESBECK CREEK AT STATE HIGHWAY 6 NEAR QUANAH, TX

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

DRAINAGE AREA.--303 mi².

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

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

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

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 16	0330	1,320	14.72	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	22	22	25	26	40	38	32	27	20	20	19
2	23	22	22	24	27	41	38	31	27	24	20	18
3	24	26	22	25	27	40	37	30	26	24	20	18
4	25	23	24	24	25	40	36	30	25	22	21	18
5	23	23	23	25	26	41	37	29	26	22	21	18
6	23	22	22	25	25	41	37	29	27	22	20	20
7	21	23	22	24	25	43	37	28	27	22	20	21
8	22	24	23	25	25	43	36	28	28	22	20	21
9	23	24	23	25	25	47	35	28	27	22	20	22
10	23	24	22	24	25	46	34	28	27	21	20	21
11	30	24	22	24	24	43	33	29	29	22	23	21
12	31	26	21	24	26	42	33	29	27	22	23	22
13	30	25	22	23	29	42	34	30	26	22	22	22
14	27	25	23	23	35	42	33	29	27	22	21	22
15	27	25	22	25	34	119	33	28	27	22	20	22
16	26	22	22	24	34	678	32	26	26	20	19	22
17	26	22	21	23	55	383	32	30	25	21	19	22
18	25	24	23	24	77	342	32	29	25	23	19	22
19	26	24	24	23	85	120	31	29	24	24	19	22
20	26	26	24	22	104	77	32	28	24	21	19	22
21	25	25	34	24	68	60	33	28	23	22	19	22
22	24	25	37	24	54	53	32	27	23	22	19	21
23	25	24	42	23	57	49	31	29	26	21	19	22
24	24	22	47	21	53	48	29	28	27	21	20	22
25	24	23	48	21	48	46	34	28	25	19	19	22
26	22	24	39	22	45	45	36	33	24	20	19	21
27	23	23	31	24	44	44	34	32	22	21	19	21
28	24	22	28	22	42	46	33	32	24	21	25	21
29	23	22	27	23	---	44	32	30	23	20	20	20
30	23	22	26	22	---	42	33	28	20	21	19	20
31	23	---	25	22	---	40	---	28	---	20	19	---
TOTAL	764	708	833	729	1170	2827	1017	903	764	668	623	627
MEAN	24.6	23.6	26.9	23.5	41.8	91.2	33.9	29.1	25.5	21.5	20.1	20.9
MAX	31	26	48	25	104	678	38	33	29	24	25	22
MIN	21	22	21	21	24	40	29	26	20	19	19	18
AC-FT	1520	1400	1650	1450	2320	5610	2020	1790	1520	1320	1240	1240

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1998, BY WATER YEAR (WY)

	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998			
MEAN	33.9	10.6	10.1	8.63	10.5	12.6	21.5	28.4	55.4	21.0	26.6	48.8																												
MAX	393	31.3	43.0	24.3	62.0	91.2	271	163	502	228	545	286																												
(WY)	1984	1995	1992	1992	1997	1998	1997	1987	1995	1996	1995	1974																												
MIN	.68	1.33	1.48	1.33	1.35	1.18	1.12	1.74	1.54	.10	.000	.39																												
(WY)	1969	1969	1969	1971	1971	1971	1969	1967	1967	1964	1964	1968																												

SUMMARY STATISTICS

	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1962 - 1998
ANNUAL TOTAL	21167	11633	
ANNUAL MEAN	58.0	31.9	23.6
HIGHEST ANNUAL MEAN			112
LOWEST ANNUAL MEAN			2.97
HIGHEST DAILY MEAN	3060	Apr 26	9570
LOWEST DAILY MEAN	21	Jan 25	.00
ANNUAL SEVEN-DAY MINIMUM	21	Jan 24	.00
INSTANTANEOUS PEAK FLOW		1320	18000
INSTANTANEOUS PEAK STAGE		14.72	24.78
ANNUAL RUNOFF (AC-FT)	41980	23070	17060
10 PERCENT EXCEEDS	61	42	25
50 PERCENT EXCEEDS	30	24	6.9
90 PERCENT EXCEEDS	22	20	1.5

RED RIVER BASIN

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 mi², of which 191 mi² probably is noncontributing.

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

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

REMARKS.--The lake is formed by a rolled earthfill dam 5,800 ft long. Deliberate impoundment began Dec 5, 1966, and the dam was completed in Aug 1967. The dam is the property of Greenbelt Municipal and Industrial Water Authority and was built to impound water for municipal and industrial uses by the cities of Childress, Clarendon, Crowell, Hedley, and Quanah. The spillway is an uncontrolled open cut through natural ground, 1,450 ft wide and located at the left end of dam, designed to discharge 184,000 ft³/s at an elevation of 2,684.0 ft. A morning-glory-type drop inlet with a 26-foot 8.5-inch-diameter opening at crest discharges into a 7- by 7-foot concrete conduit. The outlet works consists of a 36-inch pipe that is controlled by two 20-inch valves that control the discharge into a stilling basin and to a water treatment plant. The capacity table, dated Apr 1964, is based on Geological Survey topographic maps dated 1962. Figures given herein represent total contents. Data regarding the dam are given in the following table:

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

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 44,650 acre-ft, Jun 26-28, 1975 (elevation, 2,655.71 ft); minimum, 2,950 acre-ft, Aug 29, 30, 1967 (elevation, 2,607.37 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 30,230 acre-ft, Mar 28-29, 31 (elevation, 2,645.89 ft); minimum contents, 24,720 acre-ft, Sep 30 (elevation, 2,641.22 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28470	28110	28080	e28490	28730	29150	30180	29990	29630	28190	26870	25800
2	28440	28070	28120	e28500	28730	29130	30180	29980	29580	28130	26830	25770
3	28410	28060	28110	e28510	28720	29160	30160	29980	29510	28070	26830	25710
4	28400	28060	28100	e28520	28730	29170	30170	29990	29470	28010	26870	25660
5	28390	28050	28100	e28550	28730	29160	30180	29970	29410	27970	26830	25610
6	28380	28030	28100	28570	28730	29150	30200	29970	29370	27940	26790	25560
7	28380	28020	28110	28570	28750	29160	30160	29960	29320	27890	26760	25540
8	28470	28030	28120	28570	28780	29160	30150	29990	29300	27830	26720	25500
9	28460	28010	28110	28560	28790	29150	30150	30040	29220	27790	26670	25450
10	28460	28000	28100	28570	28770	29160	30150	30080	29260	27730	26630	25390
11	28500	28000	28070	28580	28780	29150	30130	30100	29220	27660	26620	25370
12	28460	28000	28080	28600	28800	29170	30130	30080	29180	27640	26570	25330
13	28440	28070	28100	28600	28800	29210	30110	30070	29160	27620	26550	25290
14	28420	28070	28080	28610	28830	29210	30110	30060	29100	27590	26530	25270
15	28400	28070	28100	28620	28840	29460	30080	30080	29020	27530	26480	25230
16	28380	28070	28080	28610	28970	29680	30060	30040	28970	27500	26440	25190
17	28340	28070	28100	28630	29020	29820	30060	30060	28920	27450	26390	25170
18	28340	28080	28100	28620	29080	29930	30080	30030	28860	27400	26340	25130
19	28330	28080	28100	28620	29100	29970	30080	30030	28830	27360	26310	25100
20	28310	28080	28140	28640	29120	30020	30070	29990	28770	27270	26280	25060
21	28280	28100	28240	28630	29160	30060	30070	29960	28710	27200	26220	25020
22	28280	28080	28290	28640	29180	30100	30070	29930	28680	27160	26180	24950
23	28280	28100	28380	28640	29200	30110	30070	29900	28630	27180	26150	24950
24	28250	28080	28410	28660	29210	30150	30080	29870	28580	27130	26100	24910
25	28190	28100	28420	28660	29200	30160	30040	29850	28510	27100	26070	24850
26	28140	28080	e28440	28660	29170	30200	30070	29850	28460	27030	26020	24820
27	28140	28100	e28440	28670	29170	30200	30080	29810	28400	27060	25980	24810
28	28140	28080	e28440	28660	29150	30200	30060	29800	28350	27040	25970	24780
29	28140	28080	e28470	28670	---	30220	29960	29760	28290	26970	25920	24740
30	28140	28070	e28490	28680	---	30180	29990	29710	28230	26920	25870	24720
31	28130	---	e28490	28720	---	30180	---	29670	---	26890	25830	---
MAX	28500	28110	28490	28720	29210	30220	30200	30100	29630	28190	26870	25800
MIN	28130	28000	28070	28490	28720	29130	29960	29670	28230	26890	25830	24720
(+)	2644.19	2644.14	2644.48	2644.67	2645.02	2645.85	2645.70	2645.44	2644.27	2643.14	2642.22	2641.22
(@)	-280	-60	+420	+230	+430	+1030	-190	-320	-1440	-1340	-1060	-1110
(++)	339	270	293	285	250	279	327	423	522	625	542	499
CAL YR 1997	MAX 30890	MIN 22160	(@) +6330	(++) 4047								
WTR YR 1998	MAX 30220	MIN 24720	(@) -3690	(++) 4654								

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

e Estimated

072998900 LELIA LAKE CREEK BELOW BELL CREEK NEAR HEDLEY, TX

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

DRAINAGE AREA.--74 mi².

WATER-DISCHARGE RECORDS

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

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

REMARKS.--Records good. No known regulation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 134 ft³/s, Mar 17 (gage height, 4.74 ft); minimum discharge, 0.31 ft³/s, Jul 14 (gage height, 2.50 ft).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	3.6	4.2	5.0	7.1	5.7	9.7	5.3	2.4	.99	.76	.87
2	2.9	3.5	4.5	5.0	7.1	6.0	9.6	5.5	2.3	.97	.78	.89
3	2.9	3.4	4.5	5.2	7.0	6.1	9.5	5.4	2.3	.95	.84	.87
4	3.0	3.4	4.4	5.6	7.1	6.0	9.3	5.5	2.6	.92	1.2	.84
5	3.0	3.4	4.4	5.5	7.5	6.0	9.2	5.5	2.7	.95	1.0	.82
6	3.0	3.6	4.5	5.6	7.5	6.1	9.2	5.0	2.9	.95	.94	.84
7	3.2	3.7	4.6	5.4	7.3	6.9	e9.0	4.8	2.5	.93	e1.2	.85
8	3.6	3.7	4.6	5.4	7.4	7.2	e8.9	5.1	2.3	.90	e1.1	.83
9	3.6	3.8	4.7	5.4	7.4	7.1	e8.8	7.1	e2.2	.84	e1.1	.86
10	3.5	3.8	4.6	5.5	7.6	7.5	e8.6	5.5	e2.1	.78	e1.1	.85
11	3.6	3.9	4.5	5.6	7.8	7.5	e8.4	4.7	2.0	.75	e1.1	.81
12	4.3	4.0	4.5	5.6	8.0	7.2	e8.3	4.4	2.0	.88	e1.1	.83
13	3.9	4.6	4.5	5.3	8.1	7.4	e8.2	4.1	1.9	.95	e1.1	.81
14	3.7	4.6	4.6	5.3	8.2	7.7	e8.0	3.8	1.6	.76	1.1	.81
15	3.4	4.2	4.6	5.4	8.4	15	e7.9	3.7	1.6	e.76	1.0	.79
16	3.3	4.0	4.6	5.4	9.6	62	e7.6	3.5	1.7	e.75	1.0	.80
17	3.3	4.1	4.6	5.3	11	68	e7.4	3.5	1.4	e.73	.96	.82
18	3.4	4.1	4.6	5.4	8.9	25	e7.1	3.4	1.2	e.71	.92	.81
19	3.3	4.1	4.7	5.4	9.2	22	e6.9	3.2	1.2	e.70	.91	.77
20	3.3	4.2	4.9	5.7	e8.0	14	e6.7	3.0	1.1	e.68	.91	.71
21	3.3	4.2	8.0	5.8	e8.1	12	e6.4	3.0	1.0	.65	.91	.69
22	3.4	4.2	6.5	5.9	e8.2	11	e6.1	2.9	1.1	.63	.89	.78
23	3.5	4.2	6.9	6.0	e8.1	11	e5.9	2.8	1.3	.63	.87	.88
24	3.5	4.1	7.3	6.0	e7.8	11	e5.6	2.8	1.1	.70	.83	.86
25	3.5	4.2	6.2	6.0	e6.8	11	e5.3	2.9	1.1	.65	.85	.80
26	3.4	4.2	5.5	5.9	6.0	11	e5.2	2.9	1.1	.63	.87	.80
27	3.5	4.2	4.9	6.1	5.5	11	e5.1	2.7	1.1	.66	.86	.81
28	3.6	4.4	5.0	6.4	5.6	10	5.3	2.5	1.0	.71	.97	.80
29	3.6	4.4	5.0	6.5	---	9.7	5.6	2.5	1.0	.64	.95	.75
30	3.6	4.3	4.9	6.9	---	9.8	5.6	2.4	1.0	.58	.90	.71
31	3.6	---	4.8	7.3	---	9.8	---	2.3	---	.60	.89	---
TOTAL	105.6	120.1	156.1	176.8	216.3	417.7	224.4	121.7	50.8	23.93	29.91	24.36
MEAN	3.41	4.00	5.04	5.70	7.72	13.5	7.48	3.93	1.69	.77	.96	.81
MAX	4.3	4.6	8.0	7.3	11	68	9.7	7.1	2.9	.99	1.2	.89
MIN	2.9	3.4	4.2	5.0	5.5	5.7	5.1	2.3	1.0	.58	.76	.69
AC-FT	209	238	310	351	429	829	445	241	101	47	59	48

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 1998, BY WATER YEAR (WY)

	1997	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998
MEAN	3.41	4.00	5.04	5.70	7.72	13.5	7.48	3.93	1.69	.77	2.42	2.46
MAX	3.41	4.00	5.04	5.70	7.72	13.5	7.48	3.93	1.69	.77	3.87	4.11
(WY)	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1997	1997
MIN	3.41	4.00	5.04	5.70	7.72	13.5	7.48	3.93	1.69	.77	.96	.81
(WY)	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998

SUMMARY STATISTICS

FOR 1998 WATER YEAR

WATER YEARS 1997 - 1998

ANNUAL TOTAL	1667.70	
ANNUAL MEAN	4.57	4.57
HIGHEST ANNUAL MEAN		4.57
LOWEST ANNUAL MEAN		4.57
HIGHEST DAILY MEAN	68	68
LOWEST DAILY MEAN	.58	.58
ANNUAL SEVEN-DAY MINIMUM	.64	.64
ANNUAL RUNOFF (AC-FT)	3310	3310
10 PERCENT EXCEEDS	8.2	8.0
50 PERCENT EXCEEDS	4.0	3.7
90 PERCENT EXCEEDS	.81	.83

e Estimated

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

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Aug 1997 to current year.
 TEMPERATURE: Aug 1997 to current year.

INSTRUMENTATION.--Since Aug 1997 to current year, a two-parameter monitor continuously records specific conductance and water temperature at this station.

REMARKS.--Interruptions in record are due to malfunctions of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 18,900 microsiemens, May 26, 1996; minimum, 500 microsiemens, Mar 17, 1998.
 TEMPERATURE: Maximum, 36.5°C, Jul 13, 1998; minimum, 1.1°C, Dec 13, 1997.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,530 microsiemens, Mar 4; minimum, 500 microsiemens, Mar 17.
 WATER TEMPERATURE: Maximum, 36.5°C, Jul 13; minimum, 1.1°C, Dec 13.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	1060	978	1030	---	---	e1030	1050	1010	1030	1120	1100	1110
2	1070	991	1040	---	---	e1040	1050	1020	1030	1110	1090	1100
3	---	---	e1040	---	---	e1040	1050	985	1040	1100	1060	1090
4	---	---	e1040	---	---	e1040	1060	979	1040	1090	1060	1080
5	---	---	e1040	---	---	e1040	1070	1040	1060	1090	1040	1070
6	---	---	e1030	---	---	e1040	1060	1040	1050	1100	1050	1060
7	---	---	e1030	---	---	e1040	1060	1050	1060	1070	1030	1040
8	---	---	e1030	---	---	e1040	1060	1030	1050	1040	1020	1030
9	---	---	e1020	---	---	e1040	1060	1030	1050	1040	1020	1030
10	---	---	e1020	---	---	e1050	1070	1050	1060	1030	1020	1030
11	---	---	e1020	---	---	e1050	1070	1050	1060	1030	1020	1020
12	---	---	e1020	---	---	e1050	1080	1050	1070	1030	1000	1020
13	---	---	e1010	---	---	e1050	1080	1050	1070	1020	1010	1010
14	---	---	e1010	---	---	e1050	1080	1040	1060	1020	1010	1010
15	---	---	e1010	---	---	e1050	1060	1020	1050	1010	998	1000
16	---	---	e1010	---	---	e1060	1040	1010	1030	1010	991	1000
17	---	---	e1010	---	---	e1060	1050	1010	1030	1000	989	997
18	---	---	e1010	---	---	e1060	1030	998	1020	999	988	995
19	---	---	e1010	---	---	e1060	1030	999	1020	1000	986	994
20	---	---	e1020	---	---	e1060	1030	1000	1020	996	983	991
21	---	---	e1020	---	---	e1070	1090	997	1030	998	989	994
22	---	---	e1020	---	---	e1070	1130	1060	1100	992	980	988
23	---	---	e1020	---	---	e1070	1130	1090	1110	990	978	985
24	---	---	e1020	---	---	e1080	1150	1120	1140	987	977	984
25	---	---	e1030	---	---	e1030	1170	1140	1150	988	976	983
26	---	---	e1030	1020	986	1010	1170	1150	1160	987	969	980
27	---	---	e1030	1040	994	1010	1150	1140	1150	982	971	977
28	---	---	e1030	1050	1010	1040	1160	1140	1150	979	967	973
29	---	---	e1030	1050	1020	1040	1150	1120	1140	976	966	972
30	---	---	e1030	1050	1010	1040	1140	1120	1130	978	967	972
31	---	---	e1030	---	---	---	1140	1110	1130	972	964	968
MONTH	---	---	1020	---	---	1050	1170	979	1070	1120	964	1010

RED RIVER BASIN

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

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	973	957	966	966	904	934	881	811	849	---	---	e1030
2	966	950	960	1140	904	956	863	806	839	---	---	e1030
3	964	952	959	1320	910	1020	875	803	844	---	---	e1030
4	966	959	963	1530	906	1110	874	809	844	---	---	e1030
5	969	965	967	1410	932	1070	1080	811	871	---	---	e1030
6	975	966	971	1050	897	958	1080	824	880	---	---	e1040
7	973	962	968	1400	905	1120	875	830	854	---	---	e980
8	964	948	957	1400	897	1010	882	836	861	---	---	e1000
9	960	941	951	1470	889	1030	1060	841	898	---	---	e1010
10	956	941	948	1470	883	1030	1220	843	920	---	---	e1020
11	956	940	947	1500	884	1070	883	846	868	---	---	e1030
12	955	946	950	1420	884	1030	919	841	889	---	---	e1030
13	959	943	952	1490	934	1040	945	902	925	---	---	e1040
14	955	943	949	976	934	962	951	920	935	---	---	e1040
15	960	947	954	1320	611	895	957	927	944	1080	988	1050
16	962	927	954	629	545	583	972	947	959	1090	1010	1060
17	1100	926	1010	545	500	514	987	960	975	1090	1000	1060
18	1090	899	1040	708	530	632	992	964	979	1080	994	1050
19	1040	882	971	733	708	717	---	---	e976	1080	1010	1060
20	1070	1000	1040	770	729	743	---	---	e980	1090	992	1050
21	1010	963	987	794	766	780	---	---	e990	1080	1030	1060
22	983	958	972	968	776	812	---	---	e995	1090	1020	1060
23	999	915	960	818	774	797	---	---	e1000	1090	994	1050
24	1050	931	969	848	800	827	---	---	e1010	1070	977	1030
25	1460	969	1130	874	835	850	---	---	e1030	1070	1020	1050
26	1090	937	1020	888	874	881	---	---	e1040	1080	986	1040
27	1010	922	964	909	886	897	1060	1050	1050	1070	989	1040
28	966	910	940	914	871	895	1130	1060	1090	1070	976	1030
29	---	---	---	898	854	880	1080	1040	1060	1070	968	1030
30	---	---	---	886	855	872	1050	1010	1030	1070	963	1030
31	---	---	---	895	830	865	---	---	---	1060	942	1020
MONTH	1460	882	976	1530	500	896	---	---	946	---	---	1040
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	1050	946	1010	992	930	961	1040	938	983	945	840	895
2	1060	951	1020	991	945	966	1040	949	999	946	828	891
3	1060	957	1020	998	939	969	1040	960	1000	950	847	904
4	1330	980	1050	991	934	962	1290	984	1070	979	849	919
5	1090	992	1050	991	923	961	1120	982	1070	979	868	926
6	1070	980	1040	992	912	953	1130	773	1020	982	874	933
7	1050	985	1030	984	889	940	---	---	e1000	981	865	927
8	1050	950	1010	978	891	937	---	---	e990	982	870	930
9	1060	968	1020	978	889	936	---	---	e980	984	854	927
10	1050	986	1020	976	894	938	---	---	e960	983	877	935
11	1020	912	975	973	885	931	---	---	e950	986	885	940
12	1020	917	978	967	877	928	---	---	e942	991	881	940
13	1020	929	982	1040	868	953	---	---	e935	985	869	935
14	1030	930	991	1100	842	919	---	---	e931	986	894	940
15	1030	952	996	956	847	908	983	840	928	980	884	935
16	1030	948	997	953	825	900	992	836	927	976	903	939
17	1030	939	992	941	740	891	982	833	916	976	865	929
18	1020	933	983	940	820	889	970	846	912	980	859	930
19	1030	928	983	940	845	900	962	847	911	972	867	926
20	1010	915	969	949	855	907	967	849	912	965	860	920
21	998	906	954	950	850	909	963	850	910	964	800	916
22	993	918	952	957	863	914	952	838	901	977	919	953
23	982	900	939	1070	879	955	942	855	904	989	879	948
24	957	894	931	1170	924	1050	944	858	905	978	887	940
25	965	928	950	1140	952	1040	944	858	903	974	850	927
26	1010	949	979	1150	956	1040	942	856	903	963	875	924
27	1000	760	973	1120	948	1020	950	852	901	961	867	920
28	999	945	974	1100	921	1020	935	844	897	982	855	919
29	1230	950	977	1070	967	1010	944	837	902	962	843	912
30	993	937	965	1050	985	1000	966	820	889	969	840	911
31	---	---	---	1030	946	984	966	826	890	---	---	---
MONTH	1330	760	990	1170	740	955	---	---	943	991	800	926

e Estimated

RED RIVER BASIN

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

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	26.8	18.2	21.5	16.7	11.4	13.0	9.9	6.2	7.8	10.2	4.7	6.8
2	25.9	18.2	21.1	15.3	10.0	11.9	9.3	8.4	8.9	11.6	5.6	8.1
3	25.8	18.3	21.2	14.8	8.5	10.9	9.5	5.8	7.6	12.3	8.4	9.9
4	26.4	18.9	21.6	15.8	8.7	11.4	10.0	4.2	6.4	9.3	7.7	8.3
5	26.7	18.9	21.7	15.8	9.8	11.8	8.0	3.0	5.2	10.9	7.7	9.0
6	23.5	19.0	20.7	14.9	7.8	10.7	6.1	4.1	4.9	9.5	5.9	7.8
7	23.3	19.5	20.6	14.3	7.5	10.4	6.6	4.7	5.7	7.7	4.4	5.7
8	24.9	19.4	21.1	14.2	8.3	10.9	11.1	6.5	8.1	8.5	3.3	5.2
9	24.0	16.7	19.6	10.5	7.9	9.2	11.3	6.1	8.2	7.8	2.0	4.2
10	22.9	19.0	20.5	8.6	6.3	7.4	6.5	4.6	5.4	6.7	2.9	4.2
11	21.1	19.6	20.3	9.5	5.8	7.4	5.1	2.8	4.0	6.1	4.1	4.9
12	22.2	16.2	19.6	9.3	7.5	8.2	6.5	1.5	3.2	10.0	5.3	6.6
13	19.7	13.4	15.8	8.7	7.2	8.1	7.2	1.1	3.4	5.7	3.7	4.5
14	19.6	12.1	15.0	8.5	4.8	6.5	8.8	2.2	4.7	8.5	3.2	5.1
15	19.7	12.0	15.0	8.6	3.9	5.4	9.6	2.6	5.5	8.7	2.7	5.4
16	19.4	12.3	14.9	8.5	2.3	4.9	9.8	4.4	6.3	9.7	4.3	6.3
17	19.2	11.4	14.5	10.3	4.1	6.4	9.2	2.9	5.7	9.2	3.6	6.2
18	20.0	12.4	15.4	11.5	5.1	7.4	9.8	3.9	6.2	10.6	5.1	7.0
19	19.7	12.4	15.3	11.3	5.6	8.0	10.2	3.8	6.4	9.2	3.3	6.0
20	17.5	13.9	15.1	11.7	6.3	8.6	---	---	---	10.2	5.0	7.2
21	18.7	12.8	15.0	12.9	7.9	9.7	---	---	---	7.4	4.8	6.1
22	17.2	10.5	13.2	13.4	7.8	9.9	6.5	4.1	5.3	10.1	5.1	6.7
23	16.9	13.1	14.7	11.9	5.7	8.4	6.0	3.5	4.6	9.6	4.3	6.1
24	18.6	13.4	15.6	13.0	6.8	9.2	5.7	2.9	4.3	9.4	2.5	5.6
25	14.9	8.0	12.8	13.1	6.0	9.1	5.1	3.6	4.4	10.7	4.4	7.0
26	12.5	5.8	8.4	11.7	8.6	9.8	6.4	2.6	4.1	11.5	4.6	7.2
27	13.8	5.7	9.0	10.7	9.1	9.8	7.2	1.9	4.0	10.8	3.7	7.0
28	16.2	8.8	11.6	13.9	9.0	10.6	6.3	2.8	4.1	11.7	5.8	8.2
29	16.6	9.3	12.2	11.1	7.9	9.0	7.6	1.9	4.2	11.7	4.5	7.5
30	16.9	10.0	12.6	11.8	6.7	8.6	8.8	3.4	5.4	12.5	5.4	8.5
31	17.6	9.7	12.9	---	---	---	8.5	3.2	5.4	12.3	8.9	10.0
MONTH	26.8	5.7	16.4	16.7	2.3	9.1	---	---	---	12.5	2.0	6.7
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	12.9	6.8	9.1	11.7	4.1	7.3	18.2	8.8	13.2	24.6	13.1	18.2
2	12.6	5.2	8.4	11.8	4.4	7.4	17.9	11.1	13.9	25.2	14.7	19.3
3	11.9	5.6	8.1	12.6	4.0	7.8	17.8	9.8	13.2	25.2	15.1	19.5
4	9.2	5.8	6.9	15.1	6.3	10.1	18.1	9.5	13.4	26.2	15.1	20.0
5	6.5	5.2	5.8	12.4	7.3	9.1	19.9	10.8	14.7	24.7	16.1	20.0
6	7.6	4.5	5.6	7.9	6.4	7.0	18.7	12.7	15.5	26.9	17.1	20.9
7	9.9	2.9	5.9	10.1	5.3	7.3	19.2	11.0	14.6	26.9	16.3	20.6
8	11.7	5.7	8.0	9.2	2.4	5.1	17.8	11.0	13.7	20.4	16.1	17.9
9	14.8	8.0	10.3	9.9	1.9	5.4	18.7	9.9	14.0	20.8	14.2	17.4
10	12.6	7.0	9.3	10.8	2.8	6.0	19.9	10.8	15.0	---	---	---
11	13.2	5.9	9.0	9.4	3.0	5.5	20.3	12.4	15.8	---	---	---
12	9.1	6.9	8.0	10.3	2.0	5.6	21.4	13.1	16.5	27.5	16.1	21.1
13	12.9	5.5	8.5	14.6	4.5	9.0	22.1	12.5	16.8	27.9	17.0	21.8
14	11.1	8.2	9.6	13.8	9.2	11.2	21.4	12.4	16.6	27.7	19.5	22.6
15	10.0	8.9	9.7	11.8	7.8	9.6	21.9	12.7	16.5	26.8	16.5	21.1
16	8.9	7.3	8.3	7.8	4.3	6.0	16.3	12.1	13.8	27.3	15.6	20.7
17	10.2	6.9	8.2	9.8	3.4	6.4	18.2	10.6	13.7	27.6	18.3	22.1
18	10.3	6.1	8.3	9.6	8.2	8.9	18.1	10.2	13.9	28.8	19.7	23.6
19	12.5	8.0	9.8	8.2	5.4	6.8	21.0	11.0	15.4	26.5	19.6	22.5
20	13.6	7.0	10.2	11.7	4.3	7.6	15.8	12.0	14.0	29.8	19.5	23.5
21	11.0	9.3	10.1	13.1	5.6	9.1	19.4	9.3	13.9	26.3	19.9	21.9
22	10.2	8.9	9.4	16.7	7.2	11.7	21.1	10.7	15.4	26.2	18.7	21.5
23	15.0	7.1	10.6	18.4	9.3	13.5	22.0	11.9	16.4	29.3	17.7	22.6
24	14.6	8.6	11.5	18.8	10.6	14.5	23.6	13.3	17.8	30.2	18.6	23.5
25	15.3	10.0	12.0	20.2	11.4	15.7	24.1	15.0	18.9	23.6	19.5	21.2
26	12.4	7.8	9.5	19.1	14.5	16.4	18.0	12.5	16.0	28.5	18.1	22.7
27	12.0	6.8	8.7	18.8	13.1	15.9	14.1	11.9	12.9	29.1	19.8	23.5
28	11.5	5.1	7.7	19.4	11.7	15.3	15.2	9.8	12.2	31.3	19.7	24.5
29	---	---	---	20.8	13.7	16.9	20.1	10.2	14.4	31.6	20.7	24.7
30	---	---	---	17.3	11.9	15.1	22.9	11.3	16.5	30.2	19.7	23.8
31	---	---	---	16.5	9.6	12.8	---	---	---	31.1	19.3	24.2
MONTH	15.3	2.9	8.8	20.8	1.9	9.9	24.1	8.8	15.0	---	---	---

RED RIVER BASIN

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

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	31.8	19.5	24.6	35.4	23.0	28.3	---	---	---	33.0	22.2	27.2
2	33.2	19.4	25.1	34.2	23.4	28.0	---	---	---	33.3	22.1	27.2
3	30.2	20.5	24.4	34.1	22.0	27.2	---	---	---	32.9	21.4	26.5
4	28.6	18.1	22.2	35.5	23.0	28.2	---	---	---	33.2	20.4	26.0
5	25.3	16.2	19.5	35.4	23.9	28.4	---	---	---	32.5	20.6	25.9
6	27.0	15.0	19.9	35.4	24.7	29.0	---	---	---	31.2	21.1	25.4
7	20.1	16.3	18.4	36.0	24.4	29.2	---	---	---	32.1	21.6	26.1
8	29.1	18.7	23.0	34.5	23.3	28.1	---	---	---	32.3	20.1	25.4
9	30.9	17.7	23.2	34.9	23.4	28.3	---	---	---	32.7	21.4	26.1
10	26.4	20.9	23.0	34.1	23.4	28.1	---	---	---	31.1	20.8	24.9
11	29.8	18.0	22.9	35.7	23.5	28.8	---	---	---	30.5	17.8	23.5
12	31.3	18.2	23.9	33.5	24.6	27.6	---	---	---	30.8	19.8	24.8
13	31.3	21.2	25.2	36.5	22.1	28.3	---	---	---	31.9	19.8	25.1
14	31.6	18.7	24.3	36.1	23.6	29.2	---	---	---	32.6	21.2	25.9
15	28.9	18.5	22.7	35.2	23.9	28.3	33.3	20.6	26.2	30.3	21.0	25.2
16	29.6	17.9	22.9	35.9	23.2	28.4	32.5	21.1	26.2	29.2	20.0	24.1
17	30.3	20.1	24.2	35.0	23.2	28.0	33.7	22.0	27.0	31.2	20.4	24.9
18	30.1	19.0	24.0	34.7	22.1	27.7	31.4	22.3	26.3	31.7	20.4	25.3
19	31.7	17.9	24.3	33.4	23.0	27.7	31.7	23.0	26.6	31.3	21.2	25.5
20	32.6	20.4	25.7	34.3	23.1	28.0	33.0	22.0	27.0	31.5	21.9	25.7
21	34.4	21.3	26.9	34.3	23.2	27.9	31.9	22.4	26.8	33.1	22.4	26.5
22	32.5	21.6	25.6	34.2	22.9	27.8	32.8	21.5	26.6	24.4	18.6	20.5
23	32.9	21.5	26.0	33.2	23.9	27.4	33.7	22.1	27.2	28.8	18.8	22.5
24	32.7	21.1	25.6	33.3	23.2	27.7	33.4	22.5	27.3	31.8	21.2	25.3
25	33.4	20.7	25.9	32.7	23.1	27.4	33.8	23.5	28.1	31.3	21.4	25.1
26	33.7	21.4	26.4	33.6	23.0	27.5	33.6	23.9	28.0	31.8	21.1	25.4
27	34.5	22.3	27.3	34.0	23.5	28.0	34.0	24.4	28.4	31.4	23.3	26.5
28	35.3	22.9	27.8	34.7	23.2	28.1	34.5	24.3	28.2	32.6	22.2	26.6
29	34.6	22.9	27.8	33.5	23.0	27.5	33.3	20.6	26.1	32.2	21.7	26.3
30	35.5	23.3	28.5	34.2	22.7	27.7	33.3	19.8	25.8	31.3	22.7	26.4
31	---	---	---	34.5	23.3	27.8	33.2	19.8	26.0	---	---	---
MONTH	35.5	15.0	24.4	36.5	22.0	28.1	---	---	---	33.3	17.8	25.4

07300000 SALT FORK RED RIVER NEAR WELLINGTON, TX

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

DRAINAGE AREA.--1,222 mi², of which 209 mi² probably is noncontributing.

PERIOD OF RECORD.--Jun 1952 to current year. Chemical analyses: February 1951 to October 1954, October 1967 to September 1997. Chemical and biochemical analyses: October 1974 to September 1997. Specific conductance: June 1952 to September 1954, October 1967 to September 1991. Water temperature: June 1952 to September 1954, October 1967 to September 1991.

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

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since water year 1967, at least 10% of contributing drainage area has been regulated by upstream reservoirs. There are several small diversions upstream from gage for irrigation. There is some regulation for municipal use by Greenbelt Lake (station 07299840) 42 mi upstream.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--14 years (water years 1953-66) prior to completion of Greenbelt Lake, 72.6 ft³/s (52,600 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1953-66).--Maximum discharge, 146,000 ft³/s May 16, 1957 (gage height, 19.00 ft), from rating curve extended above 11,000 ft³/s on basis of slope-area measurement of 63,400 ft³/s; minimum, 0.1 ft³/s Jun 19, 1952.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	47	62	22	61	85	137	53	13	6.8	2.9	3.1
2	20	45	73	26	62	81	138	44	13	5.9	2.8	3.2
3	19	42	98	68	e60	81	121	32	13	5.7	3.5	3.0
4	24	39	84	216	e65	76	92	28	13	5.7	4.4	2.8
5	33	39	66	46	e65	74	101	28	13	5.7	3.6	2.9
6	26	37	66	50	e70	65	103	30	13	5.4	3.5	3.0
7	24	36	67	43	e75	96	104	27	14	5.2	3.4	2.9
8	41	40	86	41	e80	106	116	30	14	5.0	3.1	2.4
9	121	42	100	38	e82	90	119	203	12	5.0	2.7	2.9
10	55	44	82	41	e83	68	116	201	11	4.4	3.0	2.8
11	89	52	79	49	e85	62	104	91	12	4.2	4.4	3.1
12	239	57	70	58	e88	75	69	53	10	4.3	4.1	3.3
13	191	64	59	62	e90	78	52	42	8.6	4.5	3.8	3.2
14	104	74	60	54	e110	87	51	62	7.8	4.2	3.8	3.5
15	64	58	67	48	e140	180	50	118	8.3	4.2	3.6	3.2
16	42	49	60	49	e150	620	50	46	8.6	4.9	3.3	3.1
17	30	51	53	44	e160	e430	55	41	8.4	4.7	3.2	3.4
18	33	57	50	38	e180	e330	60	31	8.0	4.4	3.1	3.4
19	33	61	50	41	267	e280	68	27	8.1	4.0	3.3	3.4
20	35	58	49	40	251	e210	73	29	7.9	3.7	3.4	3.0
21	36	55	193	45	219	e160	59	29	7.7	3.3	3.3	2.8
22	35	58	171	48	185	e130	70	28	7.2	3.1	3.1	2.8
23	42	59	179	49	148	e200	66	26	7.3	3.5	3.0	3.4
24	49	51	164	53	122	240	57	25	6.7	3.6	2.9	3.3
25	57	59	65	48	101	208	45	24	6.6	3.3	3.0	3.1
26	47	63	54	50	99	161	30	23	6.5	3.0	3.1	3.3
27	42	58	49	49	93	189	75	22	6.5	3.2	2.8	3.6
28	41	73	48	51	93	203	155	19	6.3	3.5	2.7	3.8
29	43	75	32	51	---	174	85	17	6.1	3.0	2.6	3.6
30	48	68	26	48	---	154	64	15	5.8	2.9	2.7	3.6
31	52	---	24	56	---	129	---	13	---	2.9	2.8	---
TOTAL	1736	1611	2386	1622	3284	5122	2485	1457	283.4	133.2	100.9	94.9
MEAN	56.0	53.7	77.0	52.3	117	165	82.8	47.0	9.45	4.30	3.25	3.16
MAX	239	75	193	216	267	620	155	203	14	6.8	4.4	3.8
MIN	19	36	24	22	60	62	30	13	5.8	2.9	2.6	2.4
AC-FT	3440	3200	4730	3220	6510	10160	4930	2890	562	264	200	188

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1998z, BY WATER YEAR (WY)

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998			
MEAN	31.7	28.4	28.3	31.0	38.6	43.5	94.7	111	153	31.1	29.2	32.4																							
MAX	279	213	92.4	86.0	117	165	1218	468	1006	155	301	113																							
(WY)	1987	1987	1992	1993	1998	1998	1997	1995	1993	1968	1981																								
MIN	4.28	8.03	3.59	10.5	10.9	8.15	6.10	2.61	8.17	2.65	1.68	2.22																							
(WY)	1981	1981	1984	1971	1967	1972	1971	1971	1970	1970	1970	1984																							

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	FOR WATER YEARS 1967 - 1998z
ANNUAL TOTAL	62288.0	20315.4	
ANNUAL MEAN	171	55.7	54.3
HIGHEST ANNUAL MEAN			165
LOWEST ANNUAL MEAN			10.5
HIGHEST DAILY MEAN	17500	Apr 3	17500
LOWEST DAILY MEAN	6.0	Sep 2	.40
ANNUAL SEVEN-DAY MINIMUM	7.2	Aug 27	.73
INSTANTANEOUS PEAK FLOW		1680	81100
INSTANTANEOUS PEAK STAGE		4.75	17.10
ANNUAL RUNOFF (AC-FT)	123500	40300	39330
10 PERCENT EXCEEDS	219	133	72
50 PERCENT EXCEEDS	51	43	17
90 PERCENT EXCEEDS	15	3.2	4.2

e Estimated
z Period of regulated streamflow.

07300500 SALT FORK RED RIVER AT MANGUM, OK

LOCATION.--Lat 34°51'30", long 99°30'30", in SW 1/4 SE 1/4 sec.34. T.5 N, R.22 W., Greer County, Hydrologic Unit 11120202, near left bank on downstream side of pier of bridge on State Highway 34, 0.5 mi south of Mangum, 13.0 mi downstream from Fish Creek, and at mile 35.5.

DRAINAGE AREA.--1,566 mi², of which 209 mi² is probably noncontributing.

PERIOD OF RECORD.--April 1905 to June 1906, October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area. WSP 1241: 1938.

GAGE.--Water-stage recorder. Datum of gage is 1,490.87 ft above sea level (levels by U.S. Bureau of Reclamation). Apr. 11, 1905 to June 30, 1906, nonrecording gage at site 0.2 mi upstream at different datum. Oct. 1, 1937 to Nov. 8, 1938, nonrecording gage at present site and datum.

REMARKS.--Records good. No flow at times most years

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

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	75	107	118	362	234	189	142	38	1.7	1.1	.14
2	24	70	118	118	197	245	185	126	36	1.9	.92	.18
3	21	64	130	113	174	240	169	119	32	1.7	1.1	.23
4	19	65	133	208	159	242	161	104	30	1.6	2.3	.12
5	19	68	134	168	166	256	152	93	32	1.8	2.9	.00
6	22	67	121	164	172	271	150	88	36	2.2	2.7	.00
7	38	68	119	150	173	386	149	85	35	1.8	2.4	.00
8	37	70	123	145	177	405	146	82	36	1.8	1.7	.00
9	36	73	126	130	192	337	137	94	34	1.7	1.3	.01
10	52	84	121	123	196	297	136	132	33	1.8	.83	.02
11	148	84	119	125	194	292	135	216	35	2.5	1.6	.00
12	265	86	114	126	181	288	136	167	29	2.3	2.8	.00
13	225	101	107	123	177	277	132	127	27	3.0	2.6	.04
14	208	122	100	125	178	282	114	101	24	2.8	2.4	.20
15	149	137	95	129	192	424	109	178	20	2.5	1.9	.29
16	120	130	99	125	210	1360	110	347	18	3.1	1.6	.42
17	99	111	108	125	348	936	118	184	16	3.0	1.3	e.37
18	90	107	101	121	366	466	121	106	13	2.7	.90	e.40
19	82	114	99	117	439	417	121	87	12	2.8	.79	e.36
20	78	115	102	116	431	338	128	79	11	e2.2	.88	e.38
21	107	106	163	113	425	238	132	73	9.7	1.9	1.1	.37
22	93	104	166	115	380	205	131	71	11	1.6	.91	.30
23	110	103	184	113	393	241	123	70	8.5	1.6	.75	.58
24	99	107	309	109	350	292	114	65	6.3	1.9	.56	1.3
25	82	108	212	112	321	284	107	58	5.0	1.9	.47	1.3
26	73	108	210	110	293	252	108	75	4.4	1.6	.45	.72
27	75	109	184	105	269	258	133	128	3.8	1.5	.38	.56
28	71	115	160	101	243	239	142	76	2.3	1.7	.26	.56
29	76	101	139	99	---	248	164	58	1.6	1.2	.26	.61
30	77	100	130	100	---	221	169	49	1.5	.92	.11	.57
31	78	---	120	229	---	189	---	41	---	1.0	.16	---
TOTAL	2699	2872	4253	3975	7358	10660	4121	3421	601.1	61.72	39.43	10.03
MEAN	87.1	95.7	137	128	263	344	137	110	20.0	1.99	1.27	.33
MAX	265	137	309	229	439	1360	189	347	38	3.1	2.9	1.3
MIN	19	64	95	99	159	189	107	41	1.5	.92	.11	.00
AC-FT	5350	5700	8440	7880	14590	21140	8170	6790	1190	122	78	20

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1998, BY WATER YEAR (WY)

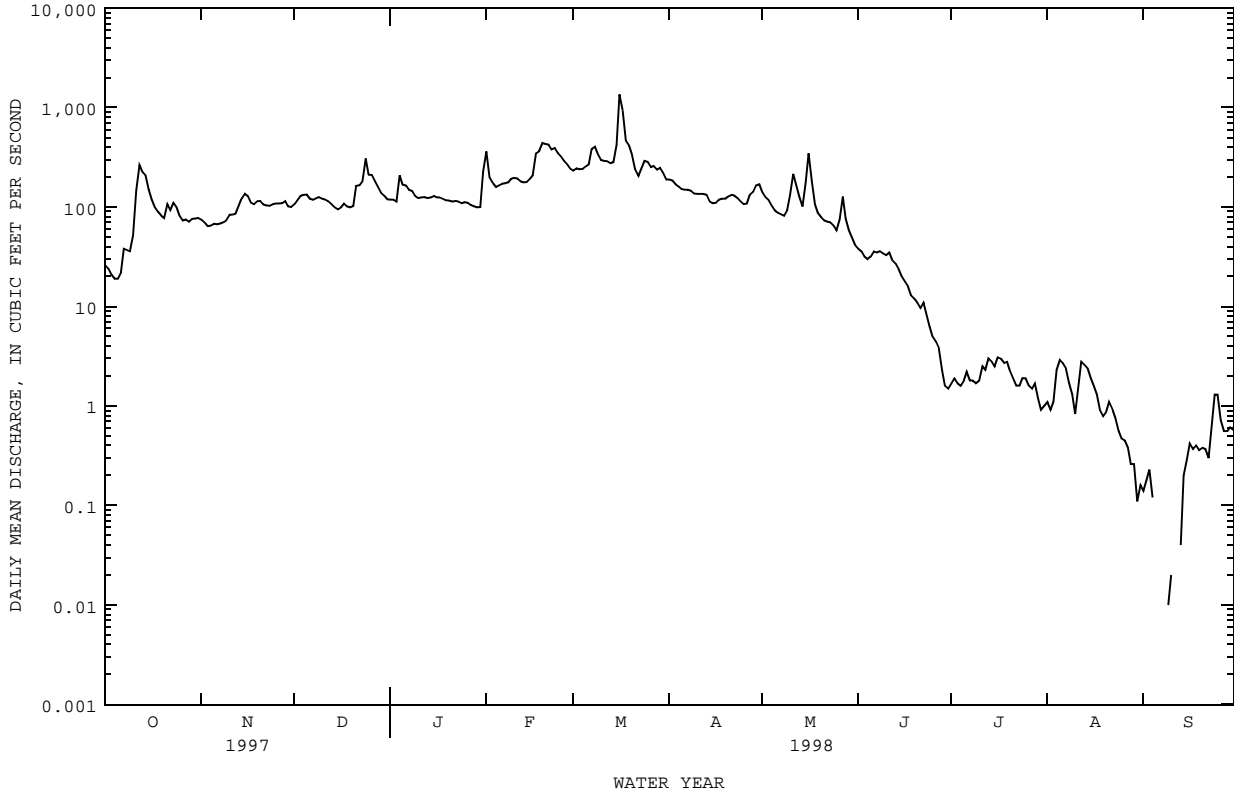
MEAN	79.8	31.5	38.5	47.5	56.8	54.0	105	266	242	65.8	41.2	52.5
MAX	919	196	148	199	263	344	1292	1389	1602	575	539	424
(WY)	1961	1987	1992	1960	1998	1998	1997	1957	1941	1953	1995	1995
MIN	.000	.000	.000	.000	.000	.12	.000	.000	.000	.000	.000	.000
(WY)	1941	1940	1940	1940	1953	1971	1955	1953	1952	1963	1943	1939

RED RIVER BASIN

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

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1938 - 1998	
ANNUAL TOTAL	95552		40071.28		90.1	
ANNUAL MEAN	262		110		277	
HIGHEST ANNUAL MEAN					12.3	
LOWEST ANNUAL MEAN					1941	
HIGHEST DAILY MEAN	13000	Apr 4	1360	Mar 16	22600	May 28 1978
LOWEST DAILY MEAN	13	Sep 21	.00	at times	a.00	Oct 2 1937
ANNUAL SEVEN-DAY MINIMUM	18	Sep 15	.00	Sep 5	.00	Aug 14 1938
INSTANTANEOUS PEAK FLOW			1670	Mar 16	72000	May 16 1957
INSTANTANEOUS PEAK STAGE			7.69	Mar 16	14.70	Jun 16 1938
ANNUAL RUNOFF (AC-FT)	189500		79480		65290	
10 PERCENT EXCEEDS	442		246		130	
50 PERCENT EXCEEDS	103		101		18	
90 PERCENT EXCEEDS	37		.74		.00	

e Estimated

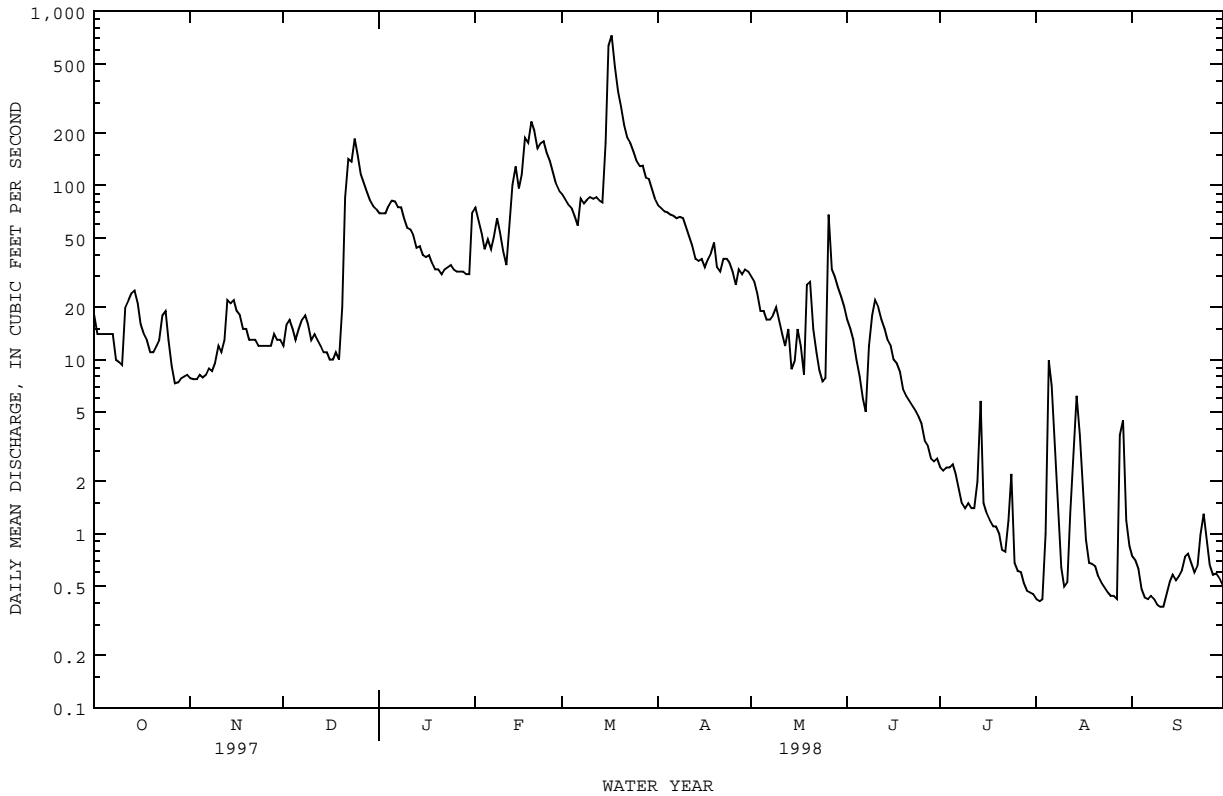


RED RIVER BASIN

07307800 PEASE RIVER NEAR CHILDRESS, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1968 - 1998	
ANNUAL TOTAL	51717.3	14603.60	65.0	
ANNUAL MEAN	142	40.0	15.8	1995
HIGHEST ANNUAL MEAN			204	1994
LOWEST ANNUAL MEAN			15.8	
HIGHEST DAILY MEAN	5700 Apr 26	728 Mar 17	14800	Oct 20 1983
LOWEST DAILY MEAN	2.4 Aug 3	.38 Sep 10	.00	Aug 10 1969
ANNUAL SEVEN-DAY MINIMUM	3.0 Jul 28	.41 Sep 5	.00	Aug 10 1969
INSTANTANEOUS PEAK FLOW		817 Mar 15	28500	Jun 5 1995
INSTANTANEOUS PEAK STAGE		8.54 Mar 15	17.12	Jun 5 1995
ANNUAL RUNOFF (AC-FT)	102600	28970	47090	
ANNUAL RUNOFF (CFSM)	.065	.018	.030	
ANNUAL RUNOFF (INCHES)	.88	.25	.40	
10 PERCENT EXCEEDS	281	95	95	
50 PERCENT EXCEEDS	23	15	9.4	
90 PERCENT EXCEEDS	8.2	.62	1.7	

e Estimated



07308200 PEASE RIVER NEAR VERNON, TX

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

DRAINAGE AREA.--3,488 mi², of which 559 mi² probably is noncontributing.

PERIOD OF RECORD.--Dec 1959 to Sep 1982, and Mar 1992 to current year. Oct 1982 to Sep 1987, annual maximums. Water-quality records.--Chemical analyses: Nov 1967 to Sep 1981.

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

REMARKS.--Records good except those for estimated daily discharges, which are fair. There are four small diversions for irrigation above station. For statement regarding regulation by Natural Resource Conservation Service floodwater-retarding structures, see station 07307800.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 16	0500	12,300	14.68	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	336	36	23	103	96	213	221	104	17	.30	.00	.00
2	308	31	26	99	111	201	205	103	13	.17	.01	.00
3	282	29	27	102	104	188	186	97	9.1	.22	.00	.00
4	263	30	30	114	99	176	174	90	6.7	.11	.91	.07
5	251	26	30	118	99	168	166	85	6.3	.18	.48	.00
6	243	23	30	115	108	168	170	77	5.9	.16	.30	.00
7	241	23	34	108	110	204	228	69	5.7	.11	.14	.00
8	232	22	35	140	110	272	209	65	7.9	.59	.15	.00
9	227	19	33	129	109	244	153	60	6.2	.22	.09	.00
10	222	20	32	111	107	218	139	55	9.0	.10	.16	.00
11	e260	22	29	97	108	200	138	53	20	.08	.33	.00
12	e293	22	29	85	112	194	134	52	7.5	.11	.31	.00
13	e374	30	27	80	280	175	130	43	6.3	.29	.12	.00
14	e268	32	29	82	282	169	131	37	4.7	.20	.14	.08
15	e147	35	28	73	212	701	128	31	3.9	.22	.05	.01
16	112	37	25	75	267	7220	122	28	3.9	.25	.02	.04
17	100	40	27	85	968	2270	119	24	2.8	.33	.00	.06
18	93	37	27	80	734	1400	119	23	2.4	.49	.00	.36
19	81	38	25	80	1860	1010	117	26	2.4	.57	.00	.52
20	71	35	29	78	949	804	114	24	1.9	.51	.12	.45
21	79	30	134	66	613	606	118	21	1.4	.34	.22	.35
22	73	30	147	69	632	510	114	31	1.1	.22	.14	.35
23	101	29	187	73	488	465	109	71	.82	.27	.28	.60
24	101	30	475	71	417	432	109	46	.71	.22	.28	.66
25	79	e26	297	66	383	401	105	29	.64	.05	.13	.00
26	72	23	269	59	323	359	109	49	.74	.07	.01	.23
27	61	24	210	58	277	364	124	64	.69	.04	.00	.00
28	50	25	158	54	234	362	111	96	.47	.00	.00	.11
29	45	24	143	55	---	314	108	126	.23	.00	.00	.00
30	44	23	128	53	---	277	107	72	.28	.01	.00	.00
31	42	---	111	73	---	250	---	25	---	.00	.00	---
TOTAL	5151	851	2834	2651	10192	20535	4217	1776	149.68	6.43	4.39	3.89
MEAN	166	28.4	91.4	85.5	364	662	141	57.3	4.99	.21	.14	.13
MAX	374	40	475	140	1860	7220	228	126	20	.59	.91	.66
MIN	42	19	23	53	96	168	105	21	.23	.00	.00	.00
AC-FT	10220	1690	5620	5260	20220	40730	8360	3520	297	13	8.7	7.7

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1998h, BY WATER YEAR (WY)

MEAN	118	45.0	30.1	27.0	47.6	69.5	109	220	356	124	127	213
MAX	1057	206	163	116	364	662	1009	777	2196	1185	1657	895
(WY)	1961	1993	1960	1973	1998	1998	1997	1977	1995	1975	1995	1965
MIN	.000	.000	.000	.000	.000	.000	.000	6.12	4.99	.000	.000	.13
(WY)	1964	1971	1971	1971	1971	1971	1971	1961	1998	1964	1980	1998

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1960 - 1998h

ANNUAL TOTAL	100178.48		48371.39			
ANNUAL MEAN	274		133		123	
HIGHEST ANNUAL MEAN					441	
LOWEST ANNUAL MEAN					12.6	
HIGHEST DAILY MEAN	11300		7220		Mar 16	
LOWEST DAILY MEAN	.22		.00		Jul 28	
ANNUAL SEVEN-DAY MINIMUM	.68		.00		Aug 27	
INSTANTANEOUS PEAK FLOW			12300		Mar 16	
INSTANTANEOUS PEAK STAGE			14.68		Mar 16	
ANNUAL RUNOFF (AC-FT)	198700		95940		88770	
10 PERCENT EXCEEDS	530		274		200	
50 PERCENT EXCEEDS	79		40		16	
90 PERCENT EXCEEDS	19		.05		.00	

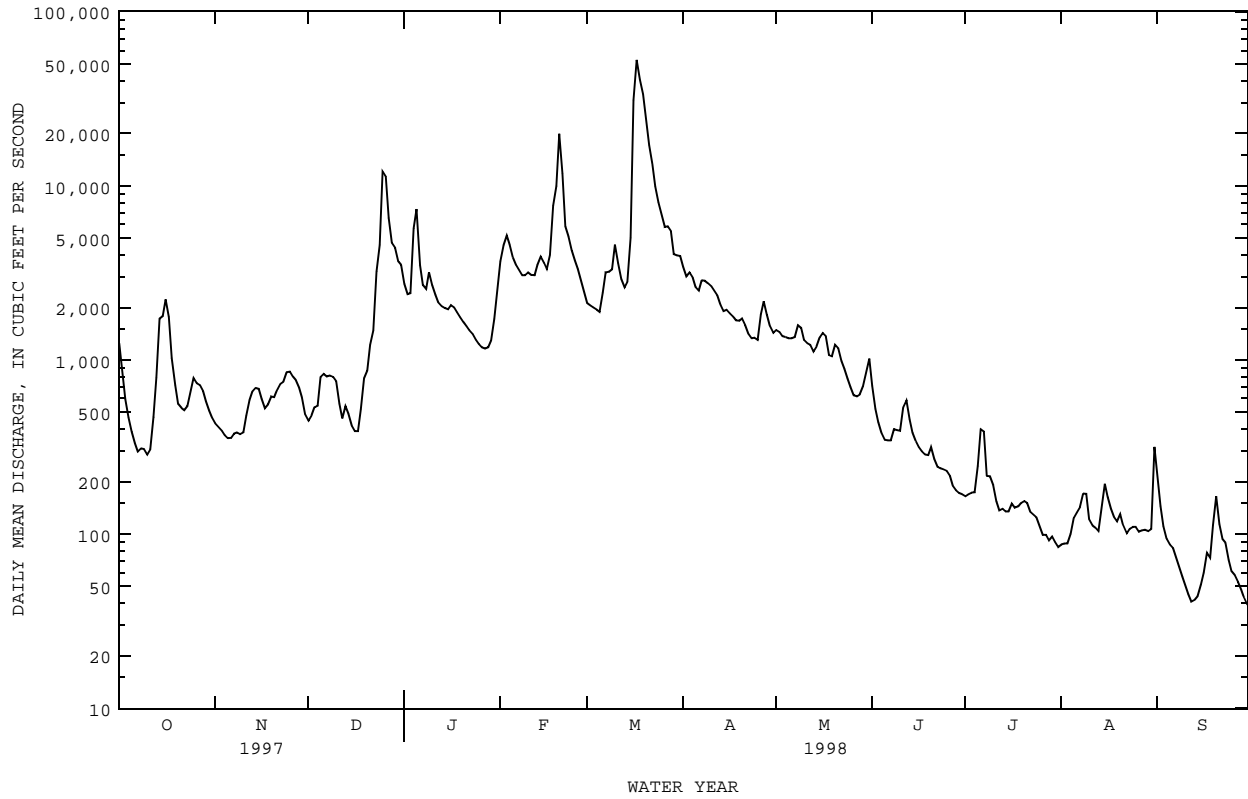
e Estimated

h See PERIOD OF RECORD paragraph

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1960 - 1998	
ANNUAL TOTAL	1272713		752455		1283	
ANNUAL MEAN	3487		2062		178	
HIGHEST ANNUAL MEAN					4424 1987	
LOWEST ANNUAL MEAN					178 1964	
HIGHEST DAILY MEAN	62800	Apr 27	53000	Mar 17	144000	Jun 6 1995
LOWEST DAILY MEAN	196	Jan 14	39	Sep 30	.00	Jul 19 1964
ANNUAL SEVEN-DAY MINIMUM	305	Jul 31	47	Sep 9	.00	Jul 19 1964
INSTANTANEOUS PEAK FLOW			59800	Mar 17	174000	Jun 6 1995
INSTANTANEOUS PEAK STAGE			10.80	Mar 17	16.90	Oct 21 1983
INSTANTANEOUS LOW FLOW					.00	Jul 19 1964
ANNUAL RUNOFF (AC-FT)	2524000		1492000		929400	
10 PERCENT EXCEEDS	7700		3960		2540	
50 PERCENT EXCEEDS	855		716		310	
90 PERCENT EXCEEDS	377		104		53	

e Estimated



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1968 to current year. Biochemical analyses: Oct 1974 to Aug 1994. Pesticide analyses: Oct 1973 to Sep 1982, Oct 1996 to Sep 1997.

PERIOD OF DAILY RECORD.--

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

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

INSTRUMENTATION.--From Dec 1968 to Sep 1979, specific conductance was continuously recorded at this station. From Oct 1994 to current year, specific conductance and water temperature were continuously recorded at this station.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1989 to 1998. The standard error of estimate for dissolved solids is 3%, chloride is 8%, sulfate is 18% and for hardness is 11%. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

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

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

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 8,070 microsiemens, May 19; minimum, 1,450 microsiemens, Jul 7.

WATER TEMPERATURE: Maximum, 36.5°C, Jul 14, 18; minimum, 0.5°C, Dec 13.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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 (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, SATUR-ATION (PER-CENT) (00301)	HARD-NESS TOTAL (MG/L) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED AS CA (00915)	MAGNE-SIUM, DIS-SOLVED AS MG (00925)
NOV											
10...	1135	380	6110	8.1	7.3	9.8	85	1400	1200	370	112
25...	1015	860	5610	8.2	9.9	10.1	93	1200	1000	310	101
JAN											
15...	1210	1960	5210	8.4	3.5	14.1	111	1200	1000	310	106
FEB											
17...	1225	3930	5460	8.3	9.5	13.0	121	1100	910	280	100
MAR											
18...	1430	39900	2470	7.8	12.0	10.3	100	470	400	130	37
APR											
30...	1040	1350	5250	8.2	16.0	10.0	107	1200	1100	300	114
MAY											
20...	1105	1310	7110	8.1	23.5	8.5	106	1300	1200	340	115
28...	1020	604	5570	8.3	24.5	7.3	92	1300	1200	310	117
JUN											
30...	1055	175	6650	8.1	27.5	5.7	76	1400	1400	340	144
JUL											
28...	1240	90	6680	8.2	30.0	5.8	81	1400	1300	330	141
AUG											
12...	1025	111	5460	8.0	26.0	7.4	96	1200	1100	270	118
25...	1350	110	5870	8.3	33.0	7.1	104	1200	1100	280	122

DATE	SODIUM, DIS-SOLVED (MG/L) AS NA (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L) AS K (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L) AS SO4 (00945)	CHLO-RIDE, DIS-SOLVED (MG/L) AS CL (00940)	FLUO-RIDE, DIS-SOLVED (MG/L) AS F (00950)	SILICA, DIS-SOLVED (MG/L) AS SIO2 (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L) AS N (00618)
NOV											
10...	827	10	7.7	170	1100	1400	.47	8.5	3950	10	1.25
25...	739	9	6.8	180	1100	1200	.45	11	3560	67	1.09
JAN											
15...	713	9	6.8	210	930	1100	.49	15	3310	192	1.40
FEB											
17...	724	10	7.1	190	890	1200	.45	9.1	3280	198	--
MAR											
18...	338	7	6.9	72	370	550	.28	8.4	1480	2320	.457
APR											
30...	696	9	6.9	130	1100	1100	.43	5.4	3390	98	.646
MAY											
20...	994	12	8.9	100	1200	1500	.48	8.4	4320	312	.439
28...	740	9	8.1	71	1200	1200	.42	6.8	3550	46	.161
JUN											
30...	928	11	9.3	83	1300	1300	.51	11	4100	28	--
JUL											
28...	937	11	9.9	91	1300	1500	.49	13	4190	23	--
AUG											
12...	742	9	9.1	81	1100	1200	.40	10	3440	29	--
25...	808	10	8.7	72	1100	1300	.48	13	3640	33	--

RED RIVER BASIN

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)
NOV 10...	.032	1.29	.103	1.8	.46	.56	.053	<.010	.021	.06	2
NOV 25...	.011	1.10	<.020	1.7	--	.63	.050	<.010	.026	.08	3
JAN 15...	.013	1.42	.024	2.1	.69	.72	.111	.032	.035	.11	3
FEB 17...	<.010	1.13	<.020	2.1	--	.98	.150	.035	.043	.13	3
MAR 18...	.023	.480	.143	4.1	3.5	3.7	1.49	.014	.022	.07	9
APR 30...	.010	.656	.026	1.6	.91	.94	.089	<.010	.015	.05	<5
MAY 20...	.027	.466	<.020	2.0	--	1.5	.200	.010	.019	.06	3
MAY 28...	.020	.181	.022	1.3	1.1	1.1	.111	.069	<.010	--	3
JUN 30...	<.010	<.050	.040	--	1.0	1.1	<.010	<.010	<.010	--	4
JUL 28...	<.010	.109	.046	.97	.81	.86	.041	.011	.011	.03	5
AUG 12...	.010	<.050	.059	--	.85	.91	.031	<.010	.015	.05	5
AUG 25...	<.010	<.050	<.020	--	--	1.0	.044	<.010	<.010	--	5

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
NOV 10...	2	<100	85	<1	<4.0	<1	<1.0	<1	<40	310	<12
NOV 25...	2	<100	87	<1	<5.0	2	<1.0	2	<50	580	<15
JAN 15...	3	100	120	<1	<32	3	<1.0	5	<40	2000	<40
FEB 17...	2	<100	123	<1	<32	3	<2.0	4	<40	1900	<40
MAR 18...	2	700	163	<1	<24	27	<1.0	36	<30	6300	<30
APR 30...	1	<100	88	<1	<32	2	<1.0	2	<40	660	<40
MAY 20...	2	<100	93	<2	<40	3	<2.0	5	<50	1900	<50
MAY 28...	2	<100	89	<1	<32	4	<2.0	2	<40	300	<40
JUN 30...	4	<100	98	<1	<40	<1	<2.0	1	<50	160	<50
JUL 28...	5	100	92	<1	<40	2	3.7	<1	<50	130	<50
AUG 12...	3	<100	84	<1	<24	2	<2.0	2	<30	180	250
AUG 25...	4	<100	91	<1	<24	<1	<2.0	<1	<30	80	<30

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)
NOV 10...	<1	<40	24	8.5	<.10	<.1	<100	<40	5	6	<1
NOV 25...	<1	<50	32	7.4	<.10	<.1	<100	<50	4	5	<1
JAN 15...	<1	<400	80	<16	<.10	<.1	<100	<160	4	4	<1
FEB 17...	<1	<400	84	<16	<.10	<.1	<100	<160	3	4	<1
MAR 18...	24	<300	1100	24	<.10	<.1	100	<120	2	1	<1
APR 30...	<1	<400	53	<16	<.10	.1	<100	<160	6	5	<1
MAY 20...	4	<500	190	<20	<.10	<.1	<100	<200	4	5	<1
MAY 28...	<1	<400	58	<16	<.10	<.1	<100	<160	4	4	<1
JUN 30...	<1	<500	62	<20	<.10	.1	<100	<200	6	6	<1
JUL 28...	<1	<500	48	<20	<.10	<.1	<100	<200	4	<1	<1
AUG 12...	<1	<300	58	15	.11	1.4	<100	<120	3	4	<1
AUG 25...	<1	<300	11	<12	<.10	<.1	<100	<120	3	3	<1

RED RIVER BASIN

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR- DANE, TECH- NICAL TOTAL (UG/L) (39350)	DI- ELDRIN TOTAL (UG/L) (39380)	ENDRIN WATER REC (UG/L) (39390)	HEPTA- CHLOR, TOTAL (UG/L) (39410)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	TOX- APHENE, TOTAL (UG/L) (39400)
NOV											
10...	<1.0	<10	<12	--	--	--	--	--	--	--	--
25...	<1.0	<10	24	--	--	--	--	--	--	--	--
JAN											
15...	<1.0	<10	<80	--	--	--	--	--	--	--	--
FEB											
17...	<1.0	10	<80	--	--	--	--	--	--	--	--
MAR											
18...	<1.0	90	<60	--	--	--	--	--	--	--	--
APR											
30...	<1.0	<10	<80	<.040	<.100	<.020	<.060	<.030	<.800	<.030	<2.00
MAY											
20...	<1.0	10	<100	--	--	--	--	--	--	--	--
28...	<1.0	<10	<80	<.040	<.100	<.020	<.060	<.030	<.800	<.030	<2.00
JUN											
30...	<1.0	<10	<100	--	--	--	--	--	--	--	--
JUL											
28...	<1.0	<10	<100	<.040	<.100	<.020	<.060	<.030	<.800	<.030	<2.00
AUG											
12...	<1.0	<10	<60	--	--	--	--	--	--	--	--
25...	<1.0	<10	<60	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1997 TO SEPTEMBER 1998

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. 1997	23186	5360	3370	211300	1200	74490	950	59780	1100
NOV. 1997	17067	5640	3550	163700	1300	58250	990	45760	1100
DEC. 1997	69025	4070	2570	478600	870	162600	760	142100	880
JAN. 1998	71090	4580	2890	554900	990	190900	840	162200	970
FEB. 1998	139620	4620	2910	1097500	1000	375900	860	322400	990
MAR. 1998	311470	3060	1930	1624100	630	525700	610	510300	700
APR. 1998	64140	4830	3050	527400	1100	182500	880	153000	1000
MAY 1998	35332	5730	3610	344500	1300	123200	1000	95590	1200
JUNE 1998	10223	5240	3300	91130	1200	32120	930	25800	1100
JULY 1998	4989	5740	3620	48720	1300	17460	1000	13480	1200
AUG. 1998	3944	5790	3640	38810	1300	13890	1000	10760	1200
SEPT 1998	2369	5370	3380	21650	1200	7700	950	6060	1100
TOTAL	752455	**	**	5202400	**	1764600	**	1547200	**
WTD.AVG.	2060	4060	2560	**	870	**	760	**	880

RED RIVER BASIN

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	e3950	5950	5890	5930	---	---	e5920	4510	4070	4280
2	---	---	e4400	5980	5900	5930	6130	5890	5970	4880	4500	4650
3	---	---	e4860	6010	5940	5980	6210	5910	6000	5100	4880	4960
4	5130	4920	5020	6000	5890	5950	6330	6200	6250	5280	2900	4730
5	5240	5130	5200	5930	5730	5810	6390	5940	6250	2900	2350	2450
6	5130	4340	4560	5830	5670	5750	6010	5590	5790	3650	2660	3330
7	5280	4150	4640	5770	5640	5710	5590	5370	5470	3770	3580	3660
8	5410	4800	5240	---	---	e5640	5520	5390	5420	4710	3770	4100
9	5440	4680	5230	---	---	e5810	5710	5520	5610	5060	4710	4860
10	5580	5430	5490	---	---	e5930	5700	5640	5670	5010	4200	4490
11	5610	5430	5540	6060	5920	6010	5930	5600	5710	4570	4060	4330
12	5540	5010	5330	5970	5600	5860	6320	5930	6180	4610	3860	4390
13	5700	5040	5270	5600	5210	5300	6580	5960	6160	4800	4500	4700
14	5830	5420	5590	5370	5090	5230	6600	6270	6400	4930	4790	4850
15	5420	5040	5150	5600	5320	5440	6700	6450	6610	5160	4920	4960
16	6230	5190	5710	5890	5600	5770	6700	4350	6490	---	---	e5230
17	6150	5020	5460	6390	5890	6210	6660	6410	6550	---	---	e5330
18	5020	4800	4870	6320	5200	5480	6690	6560	6620	---	---	e5380
19	5070	4830	4950	6020	5060	5760	6630	6120	6500	---	---	e5420
20	5250	5070	5170	6180	6020	6130	6120	5040	5640	---	---	e5460
21	5360	5220	5280	6180	5860	6060	5040	4380	4660	---	---	e5510
22	5550	5350	5450	5860	5480	5700	4740	4330	4450	---	---	e5600
23	5600	5350	5480	5480	5280	5360	5430	4740	4920	---	---	e5640
24	5390	5200	5310	5590	5390	5470	6470	5430	6160	---	---	e5680
25	6030	5310	5500	---	---	e5200	---	---	e2650	---	---	e5720
26	6320	6010	6160	---	---	e5280	---	---	e3110	---	---	e5770
27	6450	6320	6390	---	---	e5360	---	---	e3350	5630	5530	5580
28	6460	6340	6390	---	---	e5420	---	---	e3510	5670	5600	5630
29	6610	6220	6470	---	---	e5540	---	---	e3810	5700	5650	5680
30	6220	6070	6120	---	---	e5700	---	---	e3920	5770	5690	5730
31	6130	5900	6010	---	---	---	---	---	e4060	6150	1800	4570
MONTH	---	---	5360	---	---	5690	---	---	5350	---	---	4920
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	4480	4200	4350	4380	4310	4340	4420	4210	4320	5220	4850	5050
2	4330	4060	4220	4340	4300	4320	4460	4170	4390	5310	4910	5090
3	4150	3420	3640	4340	4300	4320	4490	1540	4200	5720	5240	5660
4	3510	3400	3460	4300	4220	4270	4310	4180	4230	6000	5660	5810
5	3680	3460	3560	4250	4210	4230	4490	4290	4340	6020	5900	5960
6	4090	3570	3750	4360	4100	4190	4690	4490	4590	5970	5820	5900
7	4040	3810	3930	4610	3900	4200	4740	4470	4650	5860	5680	5780
8	4200	3990	4100	---	---	e4000	4800	4540	4680	5770	5450	5670
9	---	---	e4300	---	---	e3800	5060	4790	4920	6130	3590	5210
10	---	---	e4700	---	---	e3600	4960	4770	4840	5470	3570	4280
11	5220	5010	5110	---	---	e4000	---	---	e4820	5820	5350	5580
12	5180	5090	5140	---	---	e4300	---	---	e5000	6000	5690	5830
13	5090	4770	4930	---	---	e4580	---	---	e5150	6350	6000	6120
14	4900	4720	4810	5480	4480	4820	---	---	e5320	6360	6260	6320
15	5070	4760	4840	5510	4510	5200	5420	5260	5350	6940	6130	6310
16	5090	4970	5020	4510	1980	2980	5570	5160	5470	7120	6300	6820
17	5330	4930	5150	---	---	e1800	5700	5530	5650	6300	5630	5830
18	5330	4670	5190	---	---	e2500	5730	5550	5640	5640	5090	5530
19	5350	4920	5300	2980	2820	2890	5630	5530	5580	8070	5450	7130
20	5360	3860	4970	3170	2910	3040	5620	5480	5570	8030	5750	6870
21	5090	4230	4900	3260	3120	3200	5680	5450	5590	---	---	e6030
22	4450	4100	4380	3400	3240	3330	5620	5490	5560	---	---	e5190
23	4530	4450	4490	3540	3380	3460	5880	5610	5760	---	---	e5240
24	4470	4410	4430	3620	3430	3520	6050	5880	5950	---	---	e5280
25	4410	4350	4400	3720	3490	3610	5980	5680	5840	---	---	e5320
26	4350	4290	4320	3800	3600	3720	5680	4530	5350	---	---	e5370
27	4360	4260	4280	3900	3740	3820	5240	1960	3890	5510	5060	5310
28	4400	4360	4380	4030	3840	3940	4670	2070	2680	5590	5370	5490
29	---	---	---	4100	3940	4040	5420	2130	3620	5660	5300	5460
30	---	---	---	4200	4080	4140	5370	5030	5200	6350	5430	5730
31	---	---	---	4310	4140	4220	---	---	---	6410	5380	5880
MONTH	---	---	4500	---	---	3820	---	---	4940	---	---	5710

RED RIVER BASIN

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	JUNE			JULY			AUGUST			SEPTEMBER		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	1	6030	5700	5890	6700	6610	6670	6610	6250	6500	3920	3320
2	5710	4930	5230	6780	6600	6660	6730	6500	6590	3890	3480	3640
3	5040	4890	4960	6850	6660	6750	6650	6070	6520	4780	3890	4300
4	5210	4940	5080	6660	6540	6600	6590	6030	6260	5290	4780	5060
5	---	---	e5140	6550	4620	5820	6250	5910	6110	5610	5290	5430
6	---	---	e5190	5910	4410	5560	5970	5720	5880	5820	5600	5660
7	5460	4810	5240	4430	1450	3700	5950	5670	5830	5870	5710	5800
8	5330	4160	4880	---	---	e4580	5910	5440	5760	6030	5840	5920
9	---	---	e3680	---	---	e5090	5530	4910	5250	6170	5490	6030
10	---	---	e3700	---	---	e5120	5580	4910	5220	6460	5210	6070
11	---	---	e3800	---	---	e5930	5570	5170	5330	7120	5950	6570
12	---	---	e3300	---	---	e5980	6060	5340	5710	6990	6770	6920
13	---	---	e4200	---	---	e6000	6120	6010	6060	6990	5780	6700
14	---	---	e5700	---	---	e6020	6140	6040	6090	7040	6820	6920
15	---	---	e5900	6240	6020	6130	6230	5500	5890	7100	6740	6950
16	---	---	e6200	6340	6240	6280	5730	5340	5520	7140	6870	7070
17	---	---	e6180	6260	6020	6160	5690	5350	5450	7080	6440	6690
18	---	---	e6000	6100	5950	6020	5980	5690	5810	6490	5850	6060
19	---	---	e5800	6090	5850	5980	6040	5880	5950	6400	5690	5980
20	---	---	e6000	6130	5920	6020	5930	5420	5730	6740	4420	5870
21	---	---	e6050	6010	5490	5820	5760	5400	5600	4420	3830	4020
22	---	---	e6080	5980	5820	5880	5980	5700	5800	4330	3930	4090
23	---	---	e6100	5910	5710	5790	6070	5540	5900	4410	4200	4300
24	---	---	e6050	6090	5800	5980	5910	5750	5830	5220	4250	4720
25	---	---	e6010	6040	5700	5930	5890	5710	5800	6300	5220	5740
26	---	---	e6040	6130	4730	5450	5800	5630	5740	6780	6300	6520
27	6150	5820	5970	6580	5270	6230	5920	5720	5780	6850	6740	6790
28	6380	6150	6240	6700	4600	6480	6030	5880	5970	6910	6760	6830
29	6610	6380	6480	6620	4640	6060	5950	5820	5880	6790	6570	6680
30	6690	6570	6630	6390	6000	6190	5950	5650	5800	6850	6610	6800
31	---	---	---	6500	6060	6250	6200	3920	5430	---	---	---
MONTH	---	---	5460	---	---	5910	6730	3920	5840	7140	3320	5790

e Estimated

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	1	27.1	22.8	24.8	17.5	14.5	15.9	10.5	9.7	10.1	8.7	4.3
2	---	---	---	15.3	12.1	13.5	9.9	9.4	9.6	13.7	8.4	10.9
3	---	---	---	14.5	9.3	12.0	9.5	6.3	8.3	14.9	12.4	13.6
4	26.4	20.9	23.3	16.8	10.7	13.6	9.2	4.5	6.7	14.5	10.2	12.4
5	26.3	20.5	23.2	17.3	13.0	15.0	7.4	3.9	5.7	10.2	9.4	9.8
6	25.3	21.8	23.4	15.1	10.6	12.7	6.6	4.3	5.5	9.9	8.1	9.5
7	24.0	21.8	22.7	14.4	9.3	11.7	6.7	5.1	5.3	8.1	4.7	6.1
8	26.0	21.7	23.5	14.7	9.4	11.9	8.4	5.4	6.7	5.5	3.5	4.6
9	26.2	22.6	24.2	12.0	8.9	10.6	9.9	5.0	7.5	7.0	3.3	5.3
10	25.6	23.0	24.2	9.4	7.0	8.0	6.8	4.1	5.2	5.9	4.4	4.8
11	24.0	22.3	23.0	9.7	5.3	7.5	4.1	2.6	3.2	5.1	4.2	4.6
12	22.4	18.8	21.5	9.3	6.8	8.1	4.6	1.9	3.0	8.9	5.1	6.5
13	20.0	15.8	17.9	8.9	7.1	8.3	5.4	.5	2.8	6.6	4.2	5.1
14	20.2	15.6	17.8	8.6	4.8	7.0	7.0	1.8	4.2	4.6	3.9	4.2
15	20.9	16.1	18.3	6.9	3.3	5.0	8.6	3.0	5.6	6.4	2.3	4.3
16	21.5	16.9	18.9	8.0	2.7	5.2	9.1	4.5	6.6	8.1	4.5	6.1
17	19.0	16.1	17.1	7.0	3.5	5.2	9.3	4.4	6.9	9.5	5.8	7.5
18	19.9	14.8	17.0	9.8	3.8	6.6	9.7	4.9	7.2	10.4	6.8	8.4
19	20.8	15.2	17.7	11.1	5.9	8.4	10.8	5.8	8.2	8.9	6.3	7.5
20	17.7	15.6	16.5	12.1	7.4	9.7	8.8	5.0	6.6	10.0	6.9	8.2
21	16.9	14.5	15.5	12.3	8.2	10.2	5.1	4.5	4.8	8.9	7.2	7.9
22	15.9	12.5	14.2	13.4	9.1	11.0	5.2	3.9	4.5	7.2	6.0	6.7
23	16.7	13.5	15.0	13.4	8.8	11.0	4.9	4.5	4.6	6.9	5.7	6.0
24	20.4	15.2	17.4	13.9	9.1	11.4	5.2	3.6	4.5	6.9	5.1	5.8
25	18.3	10.4	15.8	14.8	8.7	12.2	5.2	4.2	4.8	8.4	6.6	7.2
26	10.4	6.2	8.3	14.6	11.7	12.9	5.3	3.5	4.3	12.0	8.0	9.6
27	12.7	6.5	9.4	14.7	11.2	12.9	5.1	2.7	3.9	10.9	6.8	8.8
28	14.9	9.1	11.7	17.1	13.8	15.0	4.8	3.0	3.9	9.6	8.0	8.8
29	17.3	10.9	14.0	14.0	9.8	11.2	5.3	2.0	3.7	11.6	8.4	9.7
30	19.7	14.4	16.7	11.0	8.1	9.6	7.0	3.6	5.2	12.9	8.6	10.7
31	20.0	14.1	16.9	---	---	---	6.9	4.2	5.6	12.5	11.1	11.6
MONTH	---	---	---	17.5	2.7	10.4	10.8	.5	5.6	14.9	2.3	7.7

RED RIVER BASIN

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	13.4	10.9	11.7	10.6	9.7	10.0	---	---	---	25.7	17.0	21.2
2	13.3	9.5	11.2	9.7	8.9	9.3	---	---	---	27.1	19.3	22.7
3	11.1	8.5	9.1	9.4	8.6	9.0	---	---	---	26.1	18.9	22.3
4	8.5	6.0	7.4	9.8	9.0	9.4	17.2	11.8	14.2	25.8	19.2	22.4
5	6.8	4.4	5.6	10.0	9.8	9.9	18.4	12.7	15.3	28.8	20.3	24.0
6	6.6	2.9	4.7	9.8	8.0	9.2	18.8	14.7	16.7	29.7	22.6	25.4
7	8.3	4.2	6.1	9.0	8.0	8.8	19.0	14.2	16.4	29.8	21.2	25.2
8	10.4	6.1	8.0	---	---	---	18.7	14.5	16.4	26.0	19.8	23.0
9	12.8	7.2	10.1	---	---	---	19.3	13.9	16.4	23.1	18.7	20.3
10	11.2	8.9	10.3	---	---	---	20.8	14.7	17.5	27.4	17.8	22.3
11	11.8	7.0	9.4	---	---	---	---	---	---	27.7	19.9	23.3
12	10.0	7.9	8.7	---	---	---	---	---	---	29.2	19.0	23.9
13	10.7	7.4	8.9	---	---	---	---	---	---	28.8	21.9	24.8
14	11.4	8.3	9.7	12.3	7.2	9.6	---	---	---	28.9	22.3	25.3
15	11.2	9.9	10.5	13.1	11.4	12.2	24.9	18.6	21.2	26.5	22.4	24.4
16	9.9	8.4	9.1	---	---	---	20.3	15.1	17.5	27.4	20.6	23.7
17	10.5	7.9	9.0	---	---	---	18.1	13.8	16.0	28.0	22.0	24.5
18	10.9	8.2	9.6	---	---	---	21.3	13.4	17.1	29.3	22.1	25.6
19	11.5	9.2	10.3	---	---	---	22.6	15.4	18.9	29.7	22.6	25.8
20	12.4	9.4	10.9	---	---	---	19.1	13.4	16.0	28.6	22.7	25.4
21	11.7	10.0	10.5	---	---	---	19.5	11.4	15.5	---	---	---
22	10.3	9.8	10.0	---	---	---	22.7	14.4	18.3	---	---	---
23	12.9	10.3	10.4	---	---	---	23.4	15.9	19.4	23.8	21.7	22.6
24	10.8	10.5	10.6	---	---	---	22.8	15.5	19.1	28.6	20.9	24.4
25	11.5	10.8	11.1	---	---	---	24.5	16.5	20.1	28.0	22.8	25.2
26	11.7	11.5	11.6	---	---	---	20.5	15.6	18.6	29.0	22.6	25.8
27	11.7	11.6	11.7	---	---	---	19.3	13.8	16.7	29.4	24.0	26.6
28	11.7	10.6	11.3	---	---	---	16.1	13.0	14.0	31.6	23.7	27.4
29	---	---	---	---	---	---	17.6	12.4	14.6	31.2	25.4	28.0
30	---	---	---	---	---	---	23.1	13.3	17.9	28.5	24.5	26.6
31	---	---	---	---	---	---	---	---	---	29.9	23.4	26.4
MONTH	13.4	2.9	9.6	---	---	---	---	---	---	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	30.9	24.9	27.7	35.2	27.0	30.8	34.5	25.1	29.2	33.0	25.1	28.7
2	29.4	23.4	26.2	34.5	26.7	30.1	34.0	23.4	28.7	33.1	24.5	28.8
3	30.9	23.1	26.7	33.5	25.4	29.1	34.7	23.8	28.6	32.2	25.0	28.5
4	27.9	23.8	26.1	31.7	25.7	28.4	32.4	23.7	27.7	32.5	24.0	27.9
5	23.8	18.1	20.8	28.7	25.0	26.6	29.3	25.4	27.4	33.0	24.1	28.0
6	26.7	17.2	21.6	34.4	26.1	30.0	32.1	24.0	28.0	33.6	23.8	27.8
7	24.5	19.1	21.6	35.9	28.6	31.9	34.6	25.0	29.1	34.4	23.4	28.3
8	27.7	19.7	23.3	33.9	26.7	30.1	32.0	24.2	27.6	33.7	24.2	28.5
9	---	---	---	34.8	27.9	31.0	32.6	24.4	28.2	31.5	23.8	26.9
10	---	---	---	35.2	27.0	30.9	32.9	23.5	26.8	29.3	19.8	24.3
11	---	---	---	34.7	26.2	30.2	29.7	24.2	26.5	28.0	21.9	24.6
12	---	---	---	35.5	26.9	30.6	33.2	24.7	28.3	25.5	21.6	23.1
13	---	---	---	36.2	27.6	31.0	34.0	24.4	28.6	27.7	21.7	23.9
14	---	---	---	36.5	27.1	31.4	31.7	25.5	28.6	32.4	22.8	26.8
15	---	---	---	36.3	27.4	31.3	35.0	25.5	29.6	30.7	23.8	26.4
16	29.4	23.5	26.3	34.8	25.7	29.9	33.5	25.4	29.1	28.9	23.1	25.3
17	30.1	22.8	26.1	35.7	25.9	30.3	33.6	25.1	28.8	31.4	23.4	26.3
18	32.2	24.3	27.6	36.5	27.2	31.3	32.1	24.7	27.9	31.6	23.5	27.1
19	32.8	24.5	28.1	34.9	26.8	30.6	31.9	25.5	28.3	31.0	23.6	27.0
20	32.0	25.1	28.3	35.1	26.3	30.2	32.8	25.1	28.7	30.8	23.0	26.4
21	30.7	25.0	27.6	34.2	25.8	29.5	32.8	25.4	28.8	30.7	23.2	26.4
22	32.4	23.4	27.2	35.3	25.4	29.7	32.4	25.1	28.5	25.4	20.6	23.4
23	32.0	23.9	27.3	35.8	25.1	29.9	33.7	24.9	28.8	27.9	19.9	22.9
24	31.2	23.2	26.7	35.4	25.4	30.0	33.3	25.1	28.9	31.2	22.5	26.2
25	31.2	23.4	26.8	34.6	26.0	30.0	35.5	25.8	29.9	30.4	22.2	25.4
26	32.0	23.4	27.3	34.7	24.7	29.2	34.6	26.3	29.9	30.0	21.7	25.2
27	33.9	24.8	28.7	34.7	24.2	28.9	32.8	25.2	28.8	32.5	23.1	27.1
28	34.2	25.7	29.5	34.5	24.8	29.0	31.5	24.7	27.4	35.1	24.6	28.8
29	35.0	25.9	29.9	33.5	24.1	28.3	33.4	23.3	27.8	33.6	24.0	28.1
30	35.2	25.5	29.9	33.5	23.2	28.0	33.4	23.5	28.1	32.0	23.0	27.1
31	---	---	---	34.1	23.3	28.5	32.3	25.1	28.3	---	---	---
MONTH	---	---	---	36.5	23.2	29.9	35.5	23.3	28.4	35.1	19.8	26.5

RED RIVER BASIN

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX

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

DRAINAGE AREA.--540 mi².

WATER-DISCHARGE RECORDS

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

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

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 16	0700	1,550	7.62	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	24	25	19	15	17	17	16	15	16	11	15
2	31	25	26	19	15	17	17	15	14	18	11	14
3	22	25	26	18	15	17	16	15	14	18	11	13
4	20	27	27	18	16	17	17	14	15	15	12	13
5	22	28	27	20	16	16	17	14	15	14	13	13
6	25	29	27	19	16	16	17	14	15	14	14	14
7	27	30	28	19	16	18	18	15	16	13	14	13
8	22	30	28	19	16	15	17	16	17	13	15	13
9	19	29	27	18	16	15	17	16	17	13	16	13
10	18	29	27	17	15	15	17	15	17	13	13	12
11	23	30	28	17	15	14	18	15	17	13	13	12
12	24	30	28	17	16	14	17	14	16	13	13	12
13	19	32	28	17	16	14	17	15	17	12	14	12
14	18	28	28	17	16	15	17	15	15	12	14	12
15	17	27	29	17	16	43	16	15	16	12	14	12
16	17	28	30	16	21	695	16	16	16	12	15	12
17	17	27	30	17	34	203	17	14	18	12	13	12
18	17	24	28	17	32	68	17	15	17	12	14	12
19	17	25	27	17	26	39	17	15	18	11	13	13
20	17	24	17	17	25	33	17	15	20	10	13	11
21	18	24	24	17	25	29	17	15	21	10	13	12
22	19	25	20	16	25	26	17	15	21	11	14	12
23	22	26	22	17	23	25	17	14	20	10	14	12
24	23	25	23	17	22	23	17	14	19	10	14	12
25	23	25	22	17	21	22	16	14	20	11	14	12
26	21	25	20	17	20	21	16	17	18	10	15	12
27	23	26	20	17	19	21	17	17	19	10	15	12
28	23	26	19	15	18	20	16	17	19	11	14	12
29	23	26	20	14	---	19	16	16	20	10	15	12
30	24	25	19	14	---	17	16	15	19	10	14	13
31	24	---	19	19	---	16	---	15	---	9.9	15	---
TOTAL	661	804	769	535	546	1540	504	468	521	378.9	423	374
MEAN	21.3	26.8	24.8	17.3	19.5	49.7	16.8	15.1	17.4	12.2	13.6	12.5
MAX	31	32	30	20	34	695	18	17	21	18	16	15
MIN	17	24	17	14	15	14	16	14	14	9.9	11	11
AC-FT	1310	1590	1530	1060	1080	3050	1000	928	1030	752	839	742

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1998h, BY WATER YEAR (WY)

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	
MEAN	19.4	12.7	11.9	10.9	11.2	13.3	27.4	39.7	67.0	15.3	37.4	35.3																	
MAX	62.4	26.8	24.8	19.9	19.7	49.7	265	186	452	80.4	239	141																	
(WY)	1966	1998	1998	1998	1996	1998	1997	1982	1995	1975	1995	1974																	
MIN	3.08	3.94	4.58	4.84	4.77	4.93	5.30	3.63	10.1	2.12	1.98	2.06																	
(WY)	1964	1965	1965	1965	1965	1965	1964	1966	1964	1966	1964	1964																	

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1961 - 1998h

ANNUAL TOTAL	18079.7	7523.9		
ANNUAL MEAN	49.5	20.6		
HIGHEST ANNUAL MEAN			25.3	
LOWEST ANNUAL MEAN			75.5	1995
HIGHEST DAILY MEAN	3880	Apr 26	695	Mar 16
LOWEST DAILY MEAN	8.7	Mar 5	9.9	Jul 31
ANNUAL SEVEN-DAY MINIMUM	9.2	Mar 2	10	Jul 25
INSTANTANEOUS PEAK FLOW			1550	Mar 16
INSTANTANEOUS PEAK STAGE			7.62	Mar 16
ANNUAL RUNOFF (AC-FT)	35860	14920	18330	
10 PERCENT EXCEEDS	30	27	22	
50 PERCENT EXCEEDS	20	17	11	
90 PERCENT EXCEEDS	11	12	5.0	

h See PERIOD OF RECORD paragraph.

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analysis: Oct 1994 to current year. Pesticide analyses: Oct 1996 to Sep 1997.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct 1994 to current year.

WATER TEMPERATURE: Oct 1994 to current year.

INSTRUMENTATION.--From Oct 1994 to current year, a two-parameter water-quality monitor continuously records specific conductance and water temperature at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1995 to 1998. The standard error of estimate for dissolved solids is 3%, chloride is 4%, sulfate is 5% and for hardness is 4%. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 28,600 microsiemens, May 25, 1995; minimum, 325 microsiemens, Aug 2, 1995.

WATER TEMPERATURE: Maximum, 34.5°C, Jul 15, 1997; minimum, 0.0°C, several days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 23,700 microsiemens, Sep 10; minimum, 2,620 microsiemens, Mar 17.

WATER TEMPERATURE: Maximum, 34.4°C, Jun 30, Jul 23; minimum, 3.0°C, Dec 13.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD WATER UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, SATUR-ATION (PER-CENT) (00301)	HARD-NESS TOTAL (MG/L) (00900)	HARD-NESS NONCARB FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED AS CA (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L) (00925)	
NOV												
04...	0945	28	18200	7.9	12.0	9.6	100	2600	2500	770	168	
DEC												
09...	0835	27	18000	8.0	9.0	10.0	98	2500	2300	730	158	
JAN												
13...	0925	17	17600	8.1	7.5	10.7	99	2500	2300	730	160	
FEB												
10...	0925	15	17900	8.0	10.5	9.4	95	2500	2300	740	163	
MAR												
25...	1540	23	14900	8.2	22.5	13.8	178	2400	2300	690	172	
APR												
21...	0940	16	17600	7.9	14.0	8.7	93	2500	2400	730	168	
MAY												
05...	0915	13	18100	7.8	21.5	6.2	79	2500	2400	730	163	
JUN												
02...	0940	14	18200	7.7	24.0	6.6	88	2600	2500	760	165	
16...	0915	17	19500	7.7	23.5	6.5	87	2500	2400	740	168	
JUL												
14...	0935	12	21500	7.6	28.0	--	--	2800	2700	850	176	
AUG												
11...	0940	13	21400	7.6	27.0	5.9	83	2800	2700	810	177	
SEP												
01...	0925	16	22300	7.6	25.0	6.2	85	2700	2600	800	180	
DATE		SODIUM, DIS-SOLVED (MG/L) AS NA (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L) AS K (00935)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L) AS SO4 (00945)	CHLO-RIDE, DIS-SOLVED (MG/L) AS CL (00940)	FLUO-RIDE, DIS-SOLVED (MG/L) AS F (00950)	SILICA, DIS-SOLVED (MG/L) AS SIO2 (00955)	SOLIDS, SUM OF 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)
NOV												
04...	3470	29	13	150	2300	5500	.54	36	12400	5	1.22	
DEC												
09...	3320	29	12	180	2200	5500	.53	11	12000	19	1.81	
JAN												
13...	3380	29	12	170	2200	5500	.83	15	12200	11	1.86	
FEB												
10...	3380	29	13	170	2200	5400	.53	9.4	12000	3	1.73	
MAR												
25...	2880	25	12	170	2100	4500	1.1	7.8	10500	20	.721	
APR												
21...	3320	29	12	140	2200	5200	.56	5.9	11800	6	--	
MAY												
05...	3440	30	13	140	2300	5700	.53	4.0	12500	9	.829	
JUN												
02...	3470	30	15	130	2400	5600	.63	5.4	12500	13	.644	
16...	3650	32	15	130	2400	6100	.66	5.5	13100	15	.681	
JUL												
14...	4150	34	16	120	2500	6900	.58	11	14600	14	.495	
AUG												
11...	4270	35	17	100	2500	6900	.63	20	14700	19	.543	
SEP												
01...	4510	38	17	110	2500	7200	.56	7.5	15300	25	.611	

RED RIVER BASIN

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)
NOV 04...	.042	1.26	<.020	--	--	<.10	<.010	<.010	.013	.04	<1
DEC 09...	.010	1.82	.089	1.9	.03	.12	<.010	<.010	<.010	--	<1
JAN 13...	.022	1.88	.042	--	--	<.10	.030	.030	.027	.08	1
FEB 10...	.016	1.74	.133	1.9	.06	.19	<.010	<.010	.015	.05	<1
MAR 25...	.020	.741	.111	1.3	.43	.54	.034	.020	.020	.06	2
APR 21...	<.010	1.02	.120	1.2	.05	.17	<.010	<.010	.011	.03	<1
MAY 05...	.022	.851	.071	.97	.05	.12	<.010	<.010	<.010	--	<1
JUN 02...	.020	.664	.029	--	--	<.10	<.010	<.010	<.010	--	2
JUN 16...	.011	.692	.064	--	--	<.10	<.010	<.010	<.010	--	2
JUL 14...	.022	.517	.169	.63	--	.11	<.010	<.010	.018	.06	2
AUG 11...	.022	.565	.185	.92	.17	.35	<.010	<.010	.018	.06	1
SEP 01...	.022	.633	.071	--	--	<.10	<.010	--	.032	.10	2

DATE	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
NOV 04...	<1	<100	25	<4	<12	<4	<4.0	<4	<120	100	<36
DEC 09...	<1	100	23	<4	<80	<4	<4.0	<4	<100	80	<100
JAN 13...	<1	<100	22	<4	<96	<4	<4.0	<4	<120	80	<120
FEB 10...	<1	100	22	<4	<96	<4	<4.0	<4	<120	100	<120
MAR 25...	1	<100	78	<4	<120	<4	<4.0	<4	<150	250	<150
APR 21...	<1	<100	30	<4	<80	<4	<4.0	<4	<100	90	<100
MAY 05...	1	<100	29	<4	<120	<4	<4.0	<4	<150	100	<150
JUN 02...	2	<100	40	<4	<120	<4	<4.0	<4	<150	140	<150
JUN 16...	3	<100	36	<4	<120	<4	<4.0	<4	<150	180	<150
JUL 14...	2	<100	33	<4	<120	<4	<4.0	<4	<150	160	<150
AUG 11...	1	<100	34	<5	<96	<5	<5.0	<5	<120	170	<120
SEP 01...	1	<100	32	<4	<96	<5	<5.0	<4	<120	130	<120

RED RIVER BASIN

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1997 TO SEPTEMBER 1998

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. 1997	661	16950	11310	20180	5000	8930	2200	3850	2400
NOV. 1997	804	18240	12140	26350	5400	11820	2200	4860	2500
DEC. 1997	769	17660	11770	24430	5200	10890	2200	4580	2500
JAN. 1998	535	17750	11820	17070	5300	7620	2200	3190	2500
FEB. 1998	546	17110	11400	16810	5100	7460	2200	3180	2400
MAR. 1998	1540	8530	5730	23820	2400	10040	1200	5050	1400
APR. 1998	504	17790	11850	16130	5300	7200	2200	3010	2500
MAY 1998	468	18840	12530	15830	5700	7150	2300	2870	2500
JUNE 1998	521	20230	13420	18880	6200	8660	2300	3290	2600
JULY 1998	378.9	22210	14690	15020	6900	7050	2400	2460	2600
AUG. 1998	423	22790	15050	17190	7100	8110	2400	2770	2700
SEPT 1998	374	22940	15150	15300	7200	7230	2400	2450	2700
TOTAL	7523.9	**	**	227000	**	102200	**	41560	**
WTD.AVG.	21	16800	11170	**	5000	**	2000	**	2300

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	14400	13800	14100	18100	17800	18000	18400	18200	18300	17400	17100	17300
2	14900	14400	14600	18400	18100	18200	18500	18200	18400	17500	17100	17300
3	15300	14900	15100	18500	18300	18400	18500	18200	18300	17500	17100	17300
4	15800	15300	15500	18700	18500	18600	18200	17900	18100	17700	17200	17500
5	16100	15800	15800	18600	18400	18500	18300	18100	18200	17800	17400	17600
6	16500	16000	16200	18700	18300	18400	18600	18300	18400	17700	16900	17200
7	16600	16300	16400	18400	18300	18300	18400	18100	18200	17400	16800	17100
8	16700	16400	16600	18600	18200	18400	18300	17900	18100	17700	17100	17400
9	16900	16700	16800	18600	18100	18300	18000	17800	17900	18100	17700	17900
10	16800	16600	16600	18700	18100	18400	18300	18000	18200	18000	17600	17800
11	16800	16500	16600	18500	18300	18400	18400	18300	18300	17900	17600	17700
12	17100	16600	16800	18700	18300	18500	18600	17900	18300	18000	17800	17900
13	17200	17000	17100	18700	17800	18100	18600	17800	18300	17900	17500	17800
14	17600	17200	17400	18200	17800	18000	18200	17800	18100	17900	17500	17800
15	17800	17600	17700	18200	18000	18100	18200	17900	18000	18300	17700	18100
16	17800	17500	17700	18400	18200	18300	18200	17900	18100	18200	17700	17900
17	17800	17500	17600	18500	18200	18300	18300	17900	18000	18300	18000	18100
18	17800	17500	17600	18400	18100	18200	18100	17800	17900	18100	17800	17900
19	17900	17500	17700	18300	18000	18100	18200	17900	18000	18300	18000	18200
20	17900	17100	17500	18300	18100	18100	17900	17000	17600	18200	17900	18000
21	17500	17200	17400	18400	18000	18200	17200	16600	16800	18200	17800	18100
22	17800	17500	17600	18200	18000	18100	17700	17100	17500	18000	17800	17900
23	17600	17300	17400	18300	18000	18200	17200	15500	16300	18000	17800	17900
24	17600	17400	17500	18200	17900	18100	16700	15700	16400	18100	17800	17900
25	17900	17400	17600	18200	18000	18100	16900	14500	16000	18100	17800	17900
26	18500	17900	18200	18400	18000	18100	15800	14400	15000	18100	17700	17900
27	18600	18200	18400	18400	17900	18100	16300	15800	16100	18100	17800	17900
28	18500	18200	18300	18500	17900	18100	16500	16200	16400	18200	18000	18000
29	18700	18000	18400	18500	18100	18200	17000	16500	16800	18200	17900	18000
30	18300	17600	17900	18400	18200	18200	17600	16700	17000	18000	17900	17900
31	18000	17600	17800	---	---	---	17900	17200	17600	18000	16800	17400
MONTH	18700	13800	17000	18700	17800	18200	18600	14400	17600	18300	16800	17800

RED RIVER BASIN

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	27.6	22.5	24.7	17.2	13.5	15.2	11.3	8.8	10.0	11.3	6.7	8.6
2	27.5	22.8	24.8	15.9	12.2	14.0	10.8	10.0	10.5	13.6	8.9	11.0
3	26.9	22.4	24.3	15.5	10.9	12.9	10.5	8.0	9.7	14.3	11.5	12.9
4	27.1	22.6	24.4	16.8	11.5	13.7	10.5	6.7	8.3	13.4	10.8	12.1
5	27.2	22.6	24.5	16.8	12.9	14.5	9.5	6.4	7.8	12.0	10.4	11.1
6	25.1	22.5	23.5	16.3	11.9	13.8	8.3	6.7	7.3	11.6	9.1	10.9
7	24.8	21.9	22.9	15.5	11.2	13.0	7.6	6.8	7.2	9.1	5.9	7.4
8	26.2	21.9	23.6	15.7	11.4	13.2	10.7	7.2	8.7	8.6	4.8	6.4
9	24.5	21.9	23.0	12.7	10.1	11.7	11.2	8.1	9.4	9.6	5.1	6.8
10	25.4	22.2	23.4	10.6	8.3	9.4	8.2	6.5	7.5	6.8	5.3	6.1
11	23.2	22.2	22.7	10.5	7.5	8.8	6.5	5.0	5.8	8.3	5.3	6.5
12	22.6	18.8	21.6	9.8	8.7	9.2	6.8	3.4	4.9	11.3	7.0	8.7
13	21.0	16.8	18.6	10.0	8.9	9.4	7.3	3.0	4.8	8.0	5.7	7.0
14	20.8	15.5	17.8	9.7	6.7	8.7	8.8	4.2	6.1	7.6	5.5	6.2
15	20.9	15.3	17.8	8.7	5.8	6.9	9.8	4.9	7.0	9.3	4.7	6.6
16	20.7	15.6	17.8	9.4	5.1	6.9	10.3	6.2	7.9	10.3	6.3	7.8
17	20.7	15.5	17.8	10.1	5.8	7.6	10.4	6.0	7.9	10.9	6.6	8.5
18	21.1	16.1	18.2	11.7	7.1	8.9	10.8	6.5	8.3	11.9	8.1	9.5
19	21.2	16.2	18.4	12.1	7.7	9.6	11.7	7.2	9.1	11.2	7.2	8.9
20	18.2	16.8	17.3	12.6	8.8	10.4	9.2	6.7	8.2	11.9	8.0	9.4
21	17.8	15.4	16.4	12.9	9.3	10.8	7.3	6.0	6.5	9.0	7.6	8.6
22	18.3	13.4	15.6	14.0	10.2	11.6	6.9	5.5	6.3	9.3	6.7	7.7
23	19.9	14.8	17.1	13.7	9.4	11.2	6.8	6.5	6.6	8.2	5.9	6.9
24	20.2	16.1	17.8	14.0	9.9	11.5	8.5	5.4	6.8	9.6	4.7	6.8
25	17.3	12.0	16.0	14.2	9.5	11.5	8.6	6.7	7.5	11.6	6.8	8.7
26	13.2	8.8	10.9	13.5	10.9	12.0	8.9	6.1	7.2	12.1	7.7	9.4
27	14.0	8.5	11.0	13.9	11.4	12.5	8.9	5.2	6.7	12.4	7.3	9.4
28	16.2	10.6	13.0	15.2	12.3	13.6	7.8	4.9	6.3	12.3	8.7	10.1
29	17.6	12.4	14.6	12.3	9.9	11.4	8.9	4.3	6.2	13.0	8.1	10.1
30	18.0	13.6	15.5	11.9	8.9	10.2	10.2	5.5	7.4	13.1	8.3	10.3
31	18.7	13.4	15.7	---	---	---	10.2	6.2	7.8	14.4	10.3	12.2
MONTH	27.6	8.5	19.1	17.2	5.1	11.1	11.7	3.0	7.5	14.4	4.7	8.8
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	14.3	10.9	12.3	13.6	8.5	10.5	20.5	13.5	16.8	25.5	18.0	21.4
2	14.3	9.6	11.5	13.4	8.5	10.4	19.9	15.2	17.2	27.2	19.8	23.0
3	13.5	9.7	11.1	14.1	8.4	10.8	19.0	13.2	15.9	26.4	20.3	23.0
4	9.9	8.4	9.5	17.1	10.8	13.3	19.8	13.4	16.3	26.9	20.0	23.0
5	8.4	6.5	7.5	14.6	11.5	12.9	21.2	14.4	17.4	28.3	20.9	24.3
6	7.6	5.7	6.5	11.5	9.3	10.4	20.4	16.4	18.2	27.8	22.3	24.6
7	10.1	5.0	7.1	10.4	8.7	9.5	20.5	15.0	17.6	28.1	20.8	24.1
8	12.5	7.2	9.3	9.9	5.7	7.6	20.1	15.2	17.3	25.0	21.3	22.9
9	14.2	9.4	11.3	10.7	5.2	7.4	21.1	14.2	17.3	24.6	20.1	22.1
10	13.5	10.0	11.4	11.6	5.9	8.2	21.7	15.4	18.2	27.0	19.1	22.6
11	13.6	8.8	10.8	11.0	6.8	8.4	21.9	16.2	18.6	27.9	21.1	24.1
12	10.3	8.5	9.6	10.9	5.7	7.9	22.6	16.1	19.1	28.5	21.0	24.5
13	10.9	7.6	8.9	14.7	7.3	10.5	23.7	16.9	20.1	28.2	21.8	25.1
14	11.4	8.5	9.8	13.8	11.6	12.8	24.1	17.2	20.5	28.3	23.1	25.2
15	11.7	10.1	10.6	13.3	12.9	13.1	24.0	17.4	20.4	27.8	21.8	24.5
16	10.4	9.4	10.0	12.9	9.4	10.8	20.1	16.6	18.3	27.8	20.6	24.0
17	10.8	8.8	9.7	11.8	8.0	9.8	17.9	14.5	16.1	29.3	22.1	25.2
18	11.4	8.2	9.9	13.4	9.8	11.4	19.5	13.4	16.4	29.6	24.2	26.6
19	13.7	10.2	11.5	12.6	8.8	10.5	22.5	15.5	18.6	30.4	23.9	26.8
20	14.6	10.4	12.1	12.8	7.0	9.9	19.4	16.0	18.1	30.3	24.1	26.8
21	12.1	10.7	11.6	14.2	9.0	11.7	20.9	13.5	17.0	27.1	24.4	25.6
22	11.8	10.1	11.0	17.2	10.6	13.9	22.6	15.4	18.7	25.1	22.8	23.7
23	15.2	9.0	11.7	19.6	13.5	16.4	23.3	16.4	19.5	26.7	21.3	23.5
24	15.8	11.4	13.3	20.4	14.8	17.5	23.9	17.5	20.2	29.6	21.8	25.3
25	17.1	13.3	14.7	22.9	16.6	19.4	25.0	18.0	21.3	27.6	23.7	25.4
26	15.7	11.7	13.4	21.8	18.3	19.6	22.7	18.2	21.1	27.4	22.4	24.6
27	14.9	10.4	12.1	19.5	17.2	18.4	18.2	15.9	17.2	30.4	24.2	26.9
28	13.6	9.5	11.3	21.2	15.3	18.2	16.8	13.9	15.2	32.1	25.2	28.3
29	---	---	---	23.3	18.0	20.3	20.5	12.9	16.2	32.1	25.9	28.6
30	---	---	---	21.6	16.4	19.7	23.5	15.3	19.1	31.0	24.7	27.6
31	---	---	---	19.0	13.5	16.3	---	---	---	31.6	24.1	27.5
MONTH	17.1	5.0	10.7	23.3	5.2	12.8	25.0	12.9	18.1	32.1	18.0	24.9

RED RIVER BASIN

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX

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

DRAINAGE AREA.-- 50.3 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.-- Jun 1994 to Sep 1996 (daily discharges above 30 ft³/s not published). Oct 1996 to current year.

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

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	6.8	8.3	6.1	8.5	7.3	5.5	4.6	12	4.1	4.1	4.6
2	5.4	6.8	8.8	6.2	3.7	6.4	5.4	4.6	3.4	4.3	4.1	4.6
3	5.6	7.1	8.7	6.4	6.5	6.6	5.3	4.5	3.6	3.9	4.3	4.6
4	7.6	7.6	8.3	13	6.0	7.1	5.3	4.6	3.6	4.0	4.8	4.7
5	8.1	7.5	8.3	4.4	6.5	6.9	5.4	4.7	3.6	4.1	5.1	4.7
6	7.7	7.5	8.2	6.6	6.2	7.2	5.7	4.8	3.6	4.1	5.0	4.9
7	7.3	7.7	8.3	6.9	6.2	10	5.5	4.9	3.8	4.1	5.0	5.1
8	7.2	7.6	8.4	6.9	6.1	8.3	5.3	14	11	4.1	5.0	5.2
9	7.2	7.1	8.2	6.7	6.0	7.1	5.4	4.9	3.9	4.1	4.8	5.2
10	7.5	6.9	8.1	6.7	6.0	7.0	5.5	4.6	4.1	4.2	9.3	5.3
11	7.8	6.7	8.2	6.9	6.0	6.8	5.5	4.8	4.2	4.3	e5.0	5.1
12	7.8	6.5	8.1	6.5	6.9	6.7	5.6	4.9	3.7	15	e4.8	5.5
13	7.2	6.9	7.9	6.6	6.9	6.8	5.8	5.3	3.7	3.6	e4.5	5.6
14	7.0	6.8	7.9	6.7	6.6	7.0	5.9	5.4	3.7	4.1	e4.1	5.6
15	6.8	6.3	7.8	6.6	6.5	24	5.8	5.4	3.7	17	e4.0	5.6
16	6.7	6.5	7.6	6.5	8.9	15	6.2	4.9	3.9	3.5	e4.0	4.5
17	7.0	6.5	7.4	6.6	8.0	7.1	5.9	5.0	3.9	11	e6.0	4.9
18	7.4	6.5	7.5	6.7	7.2	4.5	5.8	13	3.8	4.0	3.9	5.1
19	7.4	6.7	7.7	6.6	7.2	5.1	5.9	4.9	3.8	4.0	4.0	4.9
20	7.7	6.8	14	6.7	7.1	4.8	6.0	4.3	3.9	4.0	3.9	5.0
21	11	6.9	19	6.7	7.6	4.9	5.5	3.9	3.7	4.0	3.9	5.1
22	6.1	6.9	4.2	6.8	7.7	4.9	5.5	4.3	3.7	4.0	4.0	5.2
23	7.0	7.0	7.4	6.7	7.3	5.0	5.5	4.5	3.7	4.1	4.0	5.4
24	8.5	7.2	7.5	6.7	7.3	5.0	4.5	5.0	3.8	4.1	6.2	5.3
25	8.3	7.3	6.9	6.6	7.4	5.2	4.8	5.8	3.8	4.0	3.6	9.6
26	8.3	7.6	7.1	6.6	7.3	5.3	16	8.7	3.8	3.9	4.2	4.7
27	8.1	8.4	6.7	6.6	7.3	5.5	4.2	6.4	3.9	3.9	4.3	4.7
28	7.6	8.6	12	6.7	7.3	5.3	4.7	5.9	3.9	3.9	4.8	4.8
29	7.1	8.3	4.3	6.8	---	5.5	4.7	5.1	4.0	3.9	6.1	4.8
30	7.1	8.4	5.9	6.6	---	5.4	4.6	4.3	4.0	3.9	4.6	4.9
31	7.0	---	6.0	22	---	5.3	---	4.2	---	4.0	4.5	---
TOTAL	228.0	215.4	254.7	225.1	192.2	219.0	172.7	172.2	129.2	155.2	145.9	155.2
MEAN	7.35	7.18	8.22	7.26	6.86	7.06	5.76	5.55	4.31	5.01	4.71	5.17
MAX	11	8.6	19	22	8.9	24	16	14	12	17	9.3	9.6
MIN	5.4	6.3	4.2	4.4	3.7	4.5	4.2	3.9	3.4	3.5	3.6	4.5
AC-FT	452	427	505	446	381	434	343	342	256	308	289	308

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 1998, BY WATER YEAR (WY)

	1994	1995	1996	1997	1998
MEAN	7.09	6.58	6.53	6.19	6.49
MAX	7.71	7.44	8.22	7.26	7.58
(WY)	1996	1996	1998	1998	1997
MIN	6.34	5.65	5.26	4.70	4.73
(WY)	1997	1995	1995	1995	1995

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1994 - 1998

ANNUAL TOTAL	2544.1	2264.8	
ANNUAL MEAN	6.97	6.20	6.37
HIGHEST ANNUAL MEAN			6.54
LOWEST ANNUAL MEAN			6.20
HIGHEST DAILY MEAN	29	24	30
LOWEST DAILY MEAN	3.1	3.4	2.5
ANNUAL SEVEN-DAY MINIMUM	5.1	3.8	3.5
INSTANTANEOUS PEAK FLOW		442	5630
INSTANTANEOUS PEAK STAGE		11.01	16.02
ANNUAL RUNOFF (AC-FT)	5050	4490	4620
10 PERCENT EXCEEDS	8.3	8.3	8.7
50 PERCENT EXCEEDS	6.5	5.8	6.4
90 PERCENT EXCEEDS	5.0	3.9	4.6

e Estimated

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Oct 1993 to current year. Pesticide analyses: Oct 1996 to Sep 1997.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct 1994 to current year.
TEMPERATURE: Oct 1994 to current year.

INSTRUMENTATION.--Since Oct 1994 to current year, a two-parameter monitor continuously records specific conductance and water temperature at this station.

REMARKS.--Interruptions in record are due to malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1993 to 1998. The standard error of estimate for dissolved solids is 3%, chloride is 4%, sulfate is 4% and for hardness is 4%. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 18,900 microsiemens, May 26, 1996; minimum, 1,060 microsiemens, Aug 11, 1998.
TEMPERATURE: Maximum, 35.0°C, Jul 9, 10, 1995; minimum, 1.0°C, Feb 4, 1996.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 12,200 microsiemens, Nov 15-16, Sep 25; minimum, 1,060 microsiemens, Aug 11.
WATER TEMPERATURE: Maximum, 33.8°C, Aug 10; minimum, 5.3°C, Mar 3.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD WATER UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, SATUR-ATION (MG/L) (00301)	HARD-NESS TOTAL (MG/L) (00900)	HARD-NESS NONCARB DISSOLV AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED AS CA (MG/L) (00915)	MAGNE-SIUM, DIS-SOLVED AS MG (MG/L) (00925)	
NOV												
05...	1145	11	11100	8.0	15.0	12.1	129	2600	2400	800	137	
DEC												
10...	0935	10	11200	8.2	7.0	11.4	102	2400	2200	720	134	
JAN												
14...	0955	7.1	10900	8.1	7.5	11.6	106	2400	2200	730	137	
FEB												
11...	1005	5.3	10900	8.1	9.5	11.2	107	2400	2200	720	136	
MAR												
26...	1320	7.3	10800	8.1	21.5	11.6	144	2500	2400	780	140	
APR												
22...	0950	4.8	11100	7.8	15.5	9.0	97	2600	2400	800	145	
MAY												
06...	0955	6.5	10900	7.8	21.5	8.0	100	2400	2200	730	135	
JUN												
03...	1255	5.4	10900	7.9	29.5	10.7	153	2400	2300	750	136	
17...	1045	6.0	11300	7.8	25.0	10.4	139	2400	2300	730	140	
JUL												
15...	0850	6.0	11300	7.7	26.0	--	--	2400	2200	720	133	
SEP												
02...	1115	5.0	11500	7.9	24.5	10.6	139	2500	2300	750	143	
DATE		SODIUM, DIS-SOLVED (MG/L) AS NA (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L) AS K (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L) AS SO4 (00945)	CHLO-RIDE, DIS-SOLVED (MG/L) AS CL (00940)	FLUO-RIDE, DIS-SOLVED (MG/L) AS F (00950)	SILICA, DIS-SOLVED (MG/L) AS SIO2 (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L) AS N (00618)
NOV												
05...	1840	16	11	180	2300	2700	.51	34	7950	3	.797	
DEC												
10...	1790	16	10	190	2300	2700	.51	14	7860	11	--	
JAN												
14...	1770	16	11	190	2300	2800	.66	15	7940	13	1.02	
FEB												
11...	1730	16	11	180	2300	2700	.52	11	7720	1	.821	
MAR												
26...	1790	16	10	180	2300	2700	.49	9.9	7850	7	.630	
APR												
22...	1850	16	11	180	2300	2800	.56	43	8000	7	.767	
MAY												
06...	1730	15	11	170	2300	2800	.53	15	7820	12	.614	
JUN												
03...	1770	16	12	160	2300	2800	.51	10	7890	14	.567	
17...	1790	16	12	150	2300	2900	.43	14	7970	5	.368	
JUL												
15...	1790	16	12	170	2300	3000	.55	24	8030	9	.244	
SEP												
02...	1940	17	10	150	2200	2900	.41	13	8100	12	.314	

RED RIVER BASIN

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)
NOV 05...	.041	.838	<.020	--	--	<.10	<.010	.023	.017	.05	<1
DEC 10...	<.010	.982	.093	--	--	<.10	<.010	<.010	<.010	--	<1
JAN 14...	.017	1.04	.090	--	--	<.10	<.010	<.010	<.010	--	<1
FEB 11...	.014	.835	.181	1.0	--	.17	<.010	<.010	.021	.06	<1
MAR 26...	.027	.657	.193	.90	.05	.24	.016	.010	.019	.06	<1
APR 22...	.014	.781	.093	.94	.07	.16	<.010	.012	.010	.03	<1
MAY 06...	.017	.631	.087	.94	.22	.31	<.010	<.010	<.010	--	<1
JUN 03...	.022	.589	.058	--	--	<.10	<.010	<.010	<.010	--	1
JUN 17...	.010	.378	.076	.56	.10	.18	.031	<.010	<.010	--	1
JUL 15...	.026	.270	.172	.38	--	.11	<.010	<.010	.021	.06	1
SEP 02...	.028	.342	.094	.58	.14	.24	<.010	.013	<.010	--	<1

DATE	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
NOV 05...	<1	<100	14	<3	<10	<2	<4.0	16	<100	50	<30
DEC 10...	<1	100	16	<4	<80	<2	<2.0	<4	<100	40	<100
JAN 14...	<1	<100	15	<2	<80	<2	<2.0	<2	<100	30	<100
FEB 11...	<1	<100	15	<2	<80	<4	<4.0	<2	<100	60	<100
MAR 26...	<1	<100	22	<2	<80	5	<4.0	<2	<100	160	<100
APR 22...	<1	<100	17	<2	<80	2	<2.0	<2	<100	120	<100
MAY 06...	<1	<100	1.9	<2	<8.0	<2	<2.0	<2	<10	120	<10
JUN 03...	1	200	20	<2	<80	4	<4.0	<8	<100	120	<100
JUN 17...	<1	<100	20	<4	<80	<4	<4.0	<4	<100	100	<100
JUL 15...	<1	<100	21	<2	<80	<2	<2.0	<2	<100	80	<100
SEP 02...	<1	<100	20	<2	<64	<4	<4.0	<2	<80	80	<80

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)
NOV 05...	<3	<100	24	<10	<.10	<.1	<100	<100	12	14	<3
DEC 10...	<4	<1000	<10	<40	<.10	<.1	100	<400	13	15	<4
JAN 14...	<4	<1000	30	<40	<.10	<.1	<100	<400	16	13	<2
FEB 11...	<2	<1000	21	<40	<.10	<.1	110	<400	13	15	<4
MAR 26...	<2	<1000	32	<40	.16	<.1	230	<400	14	14	<2
APR 22...	<2	<1000	29	<40	<.10	<.1	<100	<400	15	12	<2
MAY 06...	<2	<100	25	<4.0	<.10	<.1	<100	<40	12	13	<2
JUN 03...	<4	<1000	27	<40	<.10	<.1	170	<400	15	16	<2
JUN 17...	<4	<1000	25	<40	<.10	<.1	130	<400	11	12	<4
JUL 15...	<2	<1000	25	<40	<.10	<.1	<100	<400	14	13	<2
SEP 02...	<2	<800	33	<32	<.10	<.1	<100	<320	10	12	<2

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR- DANE, TECH- NICAL TOTAL (UG/L) (39350)	DI- ELDRIN TOTAL (UG/L) (39380)	ENDRIN WATER REC (UG/L) (39390)	HEPTA- CHLOR, TOTAL (UG/L) (39410)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	TOX- APHENE, TOTAL (UG/L) (39400)
NOV 05...	<4.0	<10	<30	--	--	--	--	--	--	--	--
DEC 10...	<4.0	<10	<200	--	--	--	--	--	--	--	--
JAN 14...	<2.0	<10	<200	--	--	--	--	--	--	--	--
FEB 11...	<2.0	<10	<200	--	--	--	--	--	--	--	--
MAR 26...	<2.0	<10	<200	<.040	<.100	<.020	<.060	<.030	<.800	<.030	<2.00
APR 22...	<2.0	<10	<200	--	--	--	--	--	--	--	--
MAY 06...	<2.0	<10	<20	--	--	--	--	--	--	--	--
JUN 03...	<2.0	<10	<200	<.040	<.100	<.020	<.060	<.030	<.800	<.030	<2.00
JUN 17...	<4.0	<10	<200	--	--	--	--	--	--	--	--
JUL 15...	<2.0	<10	<200	--	--	--	--	--	--	--	--
SEP 02...	<2.0	<10	<160	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1997 TO SEPTEMBER 1998

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. 1997	228	11340	7940	4890	2800	1730	2300	1410	2400
NOV. 1997	215.4	11650	8080	4700	2900	1690	2300	1330	2500
DEC. 1997	254.7	11390	7960	5480	2800	1950	2300	1570	2400
JAN. 1998	225.1	11220	7880	4790	2800	1690	2300	1390	2400
FEB. 1998	192.2	10820	7690	3990	2700	1390	2300	1180	2400
MAR. 1998	219	10530	7540	4460	2600	1540	2200	1330	2400
APR. 1998	172.7	10950	7760	3620	2700	1270	2300	1060	2400
MAY 1998	172.2	10870	7710	3590	2700	1250	2300	1060	2400
JUNE 1998	129.2	10810	7680	2680	2700	934	2300	790	2400
JULY 1998	155.2	11200	7860	3290	2800	1170	2300	952	2400
AUG. 1998	145.9	11360	7940	3130	2800	1110	2300	897	2400
SEPT 1998	155.2	11620	8070	3380	2900	1210	2300	959	2500
TOTAL	2264.8	**	**	47980	**	16940	**	13920	**
WTD.AVG.	6.2	11150	7850	**	2800	**	2300	**	2400

RED RIVER BASIN

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	11300	11300	11300	11400	11300	11300	11500	11400	11400	11300	11200	11200
2	11300	11300	11300	11400	11300	11300	11500	11400	11400	11200	11100	11200
3	11300	11000	11000	11400	11300	11400	11400	11300	11400	11100	10900	11000
4	11000	11000	11000	11400	11300	11300	11400	11400	11400	11100	10900	11000
5	11000	11000	11000	11300	11300	11300	11400	11400	11400	11000	10900	11000
6	11000	11000	11000	11400	11300	11400	11400	11300	11400	10900	10900	10900
7	11000	11000	11000	11500	11400	11500	11400	11300	11400	11000	10900	10900
8	11000	11000	11000	11600	11500	11500	11300	11300	11300	11000	10900	11000
9	11400	11000	11100	11700	11500	11600	11300	11200	11200	11000	10700	10900
10	11400	11300	11400	11800	11700	11700	11300	11200	11200	11000	10500	10900
11	11300	11300	11300	11900	11800	11900	11500	11200	11400	11000	10900	10900
12	11400	11300	11300	11900	11900	11900	11600	11500	11500	10900	10900	10900
13	11400	11400	11400	12000	11900	11900	11600	11500	11600	10900	10800	10800
14	11500	11400	11500	12100	12000	12000	11600	11600	11600	10900	10900	10900
15	11500	11500	11500	12200	12100	12100	11600	11600	11600	11000	10900	10900
16	11500	11500	11500	12200	11500	12100	11600	11600	11600	11000	11000	11000
17	11500	11500	11500	12100	12000	12100	11600	11600	11600	11100	11000	11000
18	11500	11400	11500	12000	12000	12000	11600	11600	11600	11100	11000	11100
19	11400	11400	11400	12000	11900	11900	11700	11600	11600	11200	11100	11100
20	11400	11200	11400	11900	11900	11900	11700	11600	11600	11200	11200	11200
21	11500	11200	11400	11900	11800	11800	11700	11600	11700	11300	11200	11200
22	11500	11400	11500	11800	11700	11800	11800	11400	11600	11400	11300	11300
23	11500	11400	11500	11700	11700	11700	11500	10700	11000	11500	11400	11400
24	11400	11300	11300	11700	11700	11700	11000	10800	10900	11500	11500	11500
25	11400	11300	11300	11700	11600	11600	11000	11000	11000	11500	11500	11500
26	11600	11400	11500	11600	11100	11600	11100	11000	11000	11600	11500	11600
27	11600	11600	11600	11600	11500	11500	11200	11100	11100	11600	11600	11600
28	11600	11500	11600	11500	11300	11400	11200	11200	11200	11700	11600	11700
29	11500	11400	11500	11400	11300	11300	11400	11200	11300	11800	11700	11700
30	11400	11400	11400	11400	11400	11400	11400	11300	11300	11800	11800	11800
31	11400	11300	11400	---	---	---	11300	11300	11300	---	---	e11700
MONTH	11600	11000	11300	12200	11100	11700	11800	10700	11400	---	---	11200
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	e11500	10800	10600	10700	11400	11100	11300	10900	10800	10900
2	---	---	e11200	10900	8850	10700	11300	11100	11200	11000	10900	11000
3	---	---	e11000	10900	7540	10600	11300	11200	11300	11200	11000	11100
4	---	---	e10900	10800	10700	10800	11300	11100	11200	11300	11200	11200
5	10900	10600	10700	10900	10800	10800	11300	11100	11200	11500	11300	11400
6	10800	10600	10700	10900	10700	10800	11200	11000	11100	11600	11500	11600
7	10900	10700	10800	10800	9610	10300	11200	11100	11200	11700	11600	11700
8	10900	10800	10800	10200	9250	9890	11200	11100	11200	11800	10800	11500
9	10800	10800	10800	11200	10200	10700	11300	11100	11200	10900	10200	10400
10	10900	10800	10800	11300	11200	11200	11200	11100	11100	11200	10200	10800
11	11000	10900	10900	11200	11200	11200	11200	11100	11200	11600	11200	11400
12	10900	10800	10900	11200	11200	11200	11300	11100	11200	11800	11600	11700
13	10800	10600	10600	11200	11100	11200	11300	11100	11200	11800	11200	11600
14	10800	10600	10700	11200	11100	11100	11100	11000	11000	11300	11100	11200
15	10900	10700	10800	11100	8000	10300	11100	11000	11000	11200	11000	11100
16	10900	10300	10700	8900	5840	7800	11100	11000	11000	11200	11000	11100
17	10300	10300	10300	10400	8860	9980	11100	10900	11000	11100	11000	11100
18	10800	10300	10700	10500	4180	8200	11000	10900	11000	11000	10100	10700
19	11000	10800	10900	10700	10500	10600	11000	10800	10900	10400	10100	10200
20	11000	10800	10900	10900	10700	10800	11000	10900	11000	10400	10000	10200
21	10900	10800	10900	11100	10900	11000	11100	10900	11000	10600	10300	10400
22	10900	10700	10800	11000	10900	11000	11100	10800	11000	10400	10300	10400
23	10900	10700	10800	11100	10800	11000	11100	10900	11000	10500	10300	10400
24	10800	10700	10800	11100	10900	11000	11300	10900	11000	10500	10400	10500
25	10900	10700	10800	11100	11000	11100	11100	11000	11100	10600	10300	10500
26	10900	10800	10800	11300	11000	11200	11000	9910	10300	10400	9700	10200
27	10900	10700	10800	11300	11100	11200	10100	10000	10100	10100	9120	9590
28	10800	10600	10700	11300	11200	11300	10400	10100	10200	10800	10100	10400
29	---	---	---	11300	11100	11200	10600	10400	10500	10800	10700	10800
30	---	---	---	11300	11100	11200	10800	10600	10700	10800	10700	10800
31	---	---	---	11400	11200	11300	---	---	---	10800	10700	10800
MONTH	---	---	10800	11400	4180	10700	11400	9910	11000	11800	9120	10900

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	JUNE			JULY			AUGUST			SEPTEMBER		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	10800	4960	9860	11200	11100	11200	11800	11700	11800	12000	11400	11800
2	11000	4680	9280	11200	10100	11000	11800	11700	11700	11600	11400	11500
3	10900	10800	10900	11100	10900	11100	11800	11700	11800	11500	11300	11400
4	11000	10900	10900	11300	11100	11200	11700	11300	11600	11400	11300	11400
5	11000	10900	11000	11300	11000	11100	11400	11000	11300	11500	11300	11400
6	11000	10900	11000	11300	11100	11200	11300	11100	11200	11400	11200	11300
7	11000	10700	11000	11500	11100	11300	11700	11300	11500	11400	11200	11300
8	11100	4350	9470	11600	11400	11500	12000	11600	11900	11500	11300	11400
9	10800	10200	10700	11600	11400	11500	12000	11900	12000	11500	11300	11400
10	10700	9640	10500	11600	11000	11400	12000	1170	8750	11500	11300	11400
11	10600	9740	10300	11600	11200	11400	11900	1060	10600	11600	11300	11500
12	10900	10600	10700	11600	10100	11200	11800	10800	11500	11500	11200	11400
13	11200	10900	11000	11500	2530	8540	11500	10700	11200	11500	11000	11400
14	11300	11100	11200	11500	10900	11300	11700	11100	11400	11500	11200	11400
15	11400	11000	11300	11700	11100	11400	11900	11300	11600	11600	11300	11500
16	11300	11200	11300	11800	1920	8620	11800	11300	11700	11700	11400	11600
17	11300	10800	11300	11900	2410	9480	11900	11700	11800	11600	11300	11600
18	11400	11300	11300	11600	11400	11500	12000	11600	11800	11700	11500	11600
19	11300	11200	11300	11700	11500	11600	11800	11500	11700	11700	11500	11600
20	11300	11200	11300	11800	11700	11700	11700	11400	11600	11800	11500	11700
21	11300	11200	11300	11900	11700	11800	11700	11400	11600	11800	11700	11800
22	11400	11200	11300	12000	11800	11900	11800	11400	11600	12000	11800	11900
23	11400	11200	11400	11800	11700	11800	11800	11500	11600	12000	11900	11900
24	11400	11300	11400	11800	11700	11700	11800	9290	11500	11900	11800	11900
25	11500	11300	11400	11800	11700	11800	12000	8960	11400	12200	11700	11900
26	11400	11200	11300	11800	11800	11800	11800	11700	11700	11900	11800	11800
27	11300	11200	11200	11800	11700	11800	11800	11700	11700	11900	11800	11900
28	11400	11200	11300	11800	11700	11800	11900	11700	11800	11900	11800	11900
29	11300	11200	11300	11800	11700	11800	12000	8840	11000	11900	11800	11900
30	11300	11200	11200	11800	11700	11800	11400	9340	11000	12000	11900	11900
31	---	---	---	11800	11700	11800	11900	11400	11800	---	---	---
MONTH	11500	4350	11000	12000	1920	11300	12000	1060	11500	12200	11000	11600

e Estimated

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	25.2	24.7	24.9	17.1	16.4	16.7	14.5	10.8	11.3	8.4	7.5	7.9
2	25.9	25.2	25.4	16.9	15.0	16.0	11.8	10.8	11.3	10.3	8.4	9.2
3	25.9	25.6	25.7	15.1	13.9	14.6	12.0	11.3	11.8	11.5	10.3	11.1
4	26.0	25.6	25.8	14.9	14.0	14.4	11.3	9.5	10.3	11.8	11.2	11.5
5	26.1	22.3	25.9	15.6	14.9	15.2	9.8	8.6	9.3	11.2	10.7	10.8
6	26.1	25.3	25.8	15.5	14.2	14.9	9.0	8.6	8.8	11.1	10.8	10.9
7	25.4	24.9	25.2	14.3	13.5	13.9	9.3	8.7	9.0	10.9	8.3	9.6
8	25.5	25.0	25.2	14.3	13.6	13.9	10.2	9.3	9.7	8.3	6.4	7.8
9	25.5	24.9	25.2	14.6	13.2	14.1	10.9	10.2	10.6	7.8	7.3	7.6
10	25.3	24.9	25.0	13.2	11.0	12.0	10.7	8.6	9.8	7.9	7.1	7.5
11	25.4	24.9	25.2	11.0	10.4	10.7	8.6	7.4	8.0	7.7	7.1	7.3
12	24.9	23.7	24.6	11.3	10.4	11.0	7.4	6.5	6.9	9.2	7.7	8.4
13	23.7	20.3	21.7	11.7	11.3	11.5	6.7	6.2	6.5	9.4	7.9	8.9
14	20.5	19.3	19.9	11.8	10.7	11.5	7.2	6.2	6.7	7.9	7.3	7.5
15	24.0	19.0	19.4	10.7	8.7	9.7	7.8	7.1	7.4	7.6	7.3	7.5
16	19.5	18.8	19.2	9.3	8.4	8.9	8.8	7.7	8.2	8.4	7.3	7.8
17	19.4	18.6	19.0	9.4	8.5	9.0	8.9	8.0	8.6	8.7	8.3	8.5
18	19.4	18.7	19.1	10.5	9.4	10.0	10.6	8.0	8.3	9.4	8.6	8.9
19	19.8	19.3	19.5	11.0	10.5	10.8	9.3	8.6	9.0	9.5	8.6	9.1
20	20.1	15.4	19.5	11.7	10.8	11.2	9.7	9.0	9.3	9.3	8.6	8.8
21	19.0	18.4	18.8	12.1	11.7	12.0	9.0	7.8	8.4	9.4	8.7	9.2
22	18.8	17.0	17.6	12.7	12.0	12.3	8.4	7.2	7.6	8.7	7.9	8.3
23	18.6	17.0	17.7	12.9	11.9	12.5	7.9	7.1	7.7	7.9	7.1	7.7
24	19.0	18.5	18.8	12.5	11.8	12.1	8.0	6.4	7.8	7.2	6.9	7.1
25	19.1	17.0	18.6	12.6	9.8	12.3	8.4	7.9	8.2	8.9	7.1	7.7
26	17.0	13.0	14.6	12.9	12.3	12.6	8.3	7.8	8.1	9.1	8.4	8.7
27	13.3	12.8	13.1	13.3	12.8	13.1	7.9	7.2	7.5	9.0	8.6	8.8
28	15.0	12.9	13.7	14.4	13.3	13.8	7.8	5.8	7.4	9.3	8.6	9.0
29	16.1	15.0	15.5	14.4	11.6	13.5	7.3	6.3	6.6	9.3	9.0	9.2
30	16.9	16.1	16.5	12.4	11.6	11.9	7.4	6.4	7.0	9.2	8.9	9.1
31	16.9	16.3	16.6	---	---	---	7.8	7.3	7.6	11.6	9.2	9.9
MONTH	26.1	12.8	20.7	17.1	8.4	12.5	14.5	5.8	8.5	11.8	6.4	8.8

RED RIVER BASIN

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	11.9	10.5	11.2	11.8	9.3	10.5	17.8	14.7	16.0	22.2	18.9	20.3
2	11.6	9.1	9.9	---	---	---	18.0	16.1	16.9	22.8	21.0	22.0
3	10.1	9.8	9.9	11.6	5.3	9.8	16.8	14.8	15.8	23.4	21.8	22.5
4	9.9	7.8	9.0	14.5	11.3	12.6	17.0	15.3	16.1	23.0	21.5	22.3
5	7.8	6.1	7.0	14.8	12.2	13.6	18.8	16.2	17.1	24.2	22.1	23.2
6	6.5	5.6	6.0	12.7	9.1	11.0	19.4	17.8	18.4	24.5	23.4	23.9
7	7.7	5.8	6.3	9.6	8.5	9.1	18.1	16.7	17.4	24.1	22.1	23.2
8	10.2	7.6	8.6	9.4	7.7	8.3	17.9	16.0	16.9	24.2	20.5	22.9
9	11.6	9.6	10.6	8.2	6.7	7.4	17.6	15.5	16.4	21.6	19.6	20.7
10	11.9	9.7	10.9	8.7	7.0	8.1	18.9	16.4	17.5	22.9	20.6	21.6
11	10.9	9.3	9.9	9.4	7.4	8.4	19.3	17.7	18.6	23.7	22.1	23.1
12	10.7	8.2	9.4	8.7	7.0	7.8	20.3	18.0	19.0	24.4	22.7	23.5
13	8.6	7.4	7.9	13.1	8.2	10.0	20.9	18.6	19.9	25.7	23.9	24.8
14	9.6	7.9	9.1	14.2	12.8	13.5	21.2	18.5	19.9	26.2	24.7	25.6
15	10.7	9.6	10.3	14.6	13.4	14.0	21.3	18.0	19.8	26.4	24.0	25.1
16	11.0	9.2	10.2	13.6	9.8	12.1	20.9	16.4	18.2	24.1	22.8	23.5
17	9.8	8.9	9.3	17.2	8.4	12.3	17.9	13.1	15.0	26.5	23.3	24.7
18	10.3	9.0	9.6	20.9	10.1	13.8	19.2	12.5	15.6	30.6	25.3	27.2
19	12.4	10.3	11.3	15.7	10.4	13.1	21.1	14.1	17.4	30.9	21.9	26.0
20	12.2	11.0	11.6	11.5	8.7	9.8	21.1	16.0	17.5	31.8	22.2	26.0
21	12.6	10.6	11.5	13.2	10.8	11.7	19.9	11.7	15.3	27.0	21.9	25.1
22	11.3	10.4	10.7	16.3	12.3	13.7	21.8	14.4	18.0	24.6	22.2	23.7
23	13.1	10.2	11.1	18.8	15.1	16.4	22.0	14.9	18.6	23.1	21.9	22.4
24	13.8	12.4	13.1	19.8	16.8	18.2	26.3	16.6	20.3	24.9	22.2	23.5
25	15.2	13.8	14.6	21.4	17.8	19.5	22.4	19.7	20.8	25.2	23.9	24.5
26	14.9	11.9	13.6	21.6	19.5	20.5	22.9	16.9	21.2	25.6	21.8	23.9
27	12.5	10.4	11.7	20.5	18.1	19.2	16.9	13.1	15.0	27.3	23.9	25.6
28	12.1	10.3	11.4	19.6	17.5	18.2	15.4	13.7	14.7	28.5	26.2	27.5
29	---	---	---	21.9	19.2	20.4	17.0	13.7	14.8	28.7	27.3	28.1
30	---	---	---	22.0	18.6	20.7	20.1	16.8	17.9	27.9	26.8	27.5
31	---	---	---	18.7	15.3	16.9	---	---	---	28.0	26.3	27.1
MONTH	15.2	5.6	10.2	---	---	---	26.3	11.7	17.5	31.8	18.9	24.2
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	31.6	22.7	27.6	30.8	29.5	30.0	30.0	28.5	29.1	28.2	25.9	27.2
2	27.5	19.8	25.1	33.3	27.4	29.4	29.7	28.1	28.8	28.0	24.9	26.6
3	29.0	26.6	27.5	29.3	27.9	28.5	29.9	28.0	28.8	28.2	25.2	26.8
4	28.3	24.7	26.6	29.3	28.2	28.8	28.3	26.5	27.6	28.4	25.3	27.1
5	24.7	20.2	22.5	29.9	28.3	29.1	28.0	25.8	26.9	28.4	25.1	26.9
6	22.7	19.7	20.8	31.0	28.9	29.9	27.0	25.4	26.0	28.8	25.1	27.1
7	23.1	21.0	22.1	31.3	29.8	30.5	28.0	26.3	27.0	28.8	24.6	27.0
8	31.0	20.7	24.7	31.0	29.5	30.0	28.5	26.6	27.5	28.7	24.2	26.8
9	26.8	24.7	25.6	31.0	29.4	30.0	29.4	27.5	28.5	28.5	24.1	26.7
10	26.9	24.9	25.6	30.6	29.4	30.0	33.8	25.4	29.2	28.2	23.2	25.6
11	25.7	23.5	24.5	31.1	29.1	29.9	30.2	24.6	27.9	26.7	21.5	24.4
12	28.0	24.9	26.3	33.2	27.9	30.3	27.3	25.7	26.6	26.6	23.1	24.7
13	28.9	26.8	28.0	31.3	22.1	27.3	27.5	26.3	26.8	26.7	22.2	24.4
14	28.9	27.2	28.0	31.2	29.2	30.2	27.2	25.2	26.4	28.4	22.1	25.3
15	28.2	25.9	26.8	31.6	27.8	29.9	28.0	25.3	26.7	30.6	23.7	26.4
16	27.1	26.0	26.5	31.4	22.8	27.0	29.4	25.8	27.6	26.3	24.1	25.7
17	27.8	26.0	26.8	33.2	26.5	29.5	29.7	26.6	28.4	25.8	24.6	25.2
18	29.1	27.4	28.2	29.7	28.1	28.9	29.2	25.5	27.4	26.5	24.6	25.1
19	29.4	27.9	28.6	30.1	28.3	29.2	29.3	25.3	27.5	26.1	24.4	25.3
20	29.8	27.9	28.8	30.7	28.7	29.5	30.5	25.1	27.9	27.0	25.3	26.1
21	29.7	27.9	28.6	30.4	29.0	29.5	30.1	24.8	27.6	27.8	26.1	26.9
22	28.3	27.1	27.6	30.2	28.6	29.2	30.1	24.2	27.4	27.4	21.2	24.6
23	28.8	26.9	27.7	30.0	28.5	29.2	30.7	24.8	28.1	21.8	19.8	20.7
24	28.6	27.0	27.6	30.3	28.7	29.3	33.0	25.5	28.5	25.3	21.6	23.4
25	28.7	27.0	27.7	30.2	28.9	29.4	30.1	25.5	28.9	29.5	23.3	26.0
26	29.1	27.3	28.1	29.8	28.1	28.9	29.6	28.4	29.0	26.3	25.2	25.6
27	30.1	27.8	28.9	30.3	28.4	29.1	29.7	28.4	29.0	27.3	25.5	26.4
28	30.9	28.8	29.7	30.0	28.5	29.2	29.2	26.8	28.1	27.6	26.1	26.7
29	31.5	29.5	30.4	29.6	28.1	28.8	27.5	24.2	26.2	27.0	25.7	26.3
30	31.4	29.4	30.4	29.8	27.8	28.6	27.0	24.2	25.7	26.9	25.5	26.1
31	---	---	---	29.6	28.2	28.8	27.8	24.9	26.4	---	---	---
MONTH	31.6	19.7	26.9	33.3	22.1	29.3	33.8	24.2	27.7	30.6	19.8	25.8

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX

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

DRAINAGE AREA.--937 mi².

WATER-DISCHARGE RECORDS

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

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

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known regulation. There is one small diversion for irrigation upstream from station.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 16	2330	1,670	13.93	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	32	29	28	74	48	47	26	22	12	5.7	13
2	50	31	31	28	52	47	47	25	21	13	6.4	12
3	48	29	33	29	42	46	43	24	22	13	11	12
4	44	29	31	32	36	51	42	22	20	13	21	12
5	43	29	30	32	38	44	42	22	20	13	16	11
6	42	30	28	35	42	51	42	21	24	13	21	11
7	42	30	29	28	40	86	43	19	25	12	17	11
8	43	30	29	29	37	84	41	52	30	12	14	11
9	42	30	30	32	36	63	39	41	46	11	14	11
10	257	33	28	32	34	52	39	34	42	9.7	12	11
11	111	32	28	31	34	51	37	28	29	9.8	12	12
12	124	32	29	31	40	e51	35	23	31	9.5	14	12
13	68	37	29	29	56	51	35	22	27	12	30	13
14	47	40	28	29	49	51	34	22	23	13	17	15
15	38	39	29	29	45	269	34	21	21	14	14	15
16	35	35	29	28	87	1430	32	20	20	32	13	15
17	33	33	29	27	158	806	33	18	19	13	11	15
18	32	31	29	26	133	311	34	18	18	14	10	16
19	32	31	30	25	176	179	34	17	17	8.8	9.3	15
20	32	30	35	24	109	126	34	18	18	9.9	10	15
21	35	30	88	24	83	107	31	18	16	7.5	10	16
22	35	30	75	27	83	95	30	17	15	7.8	9.9	19
23	41	29	61	28	74	85	28	22	16	6.7	9.7	20
24	40	28	66	27	66	77	27	16	14	9.4	9.0	19
25	38	28	55	26	60	70	26	19	13	8.3	10	18
26	34	27	52	24	54	65	30	141	13	7.6	10	18
27	32	27	45	23	51	65	39	61	13	7.2	10	18
28	32	27	40	22	50	62	39	42	12	7.2	26	18
29	32	28	35	22	---	57	28	34	12	7.0	62	16
30	33	27	35	22	---	54	26	28	12	6.7	15	17
31	33	---	28	150	---	50	---	23	---	6.1	13	---
TOTAL	1602	924	1173	979	1839	4684	1071	914	631	339.2	463.0	437
MEAN	51.7	30.8	37.8	31.6	65.7	151	35.7	29.5	21.0	10.9	14.9	14.6
MAX	257	40	88	150	176	1430	47	141	46	32	62	20
MIN	32	27	28	22	34	44	26	16	12	6.1	5.7	11
AC-FT	3180	1830	2330	1940	3650	9290	2120	1810	1250	673	918	867

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1998, BY WATER YEAR (WY)

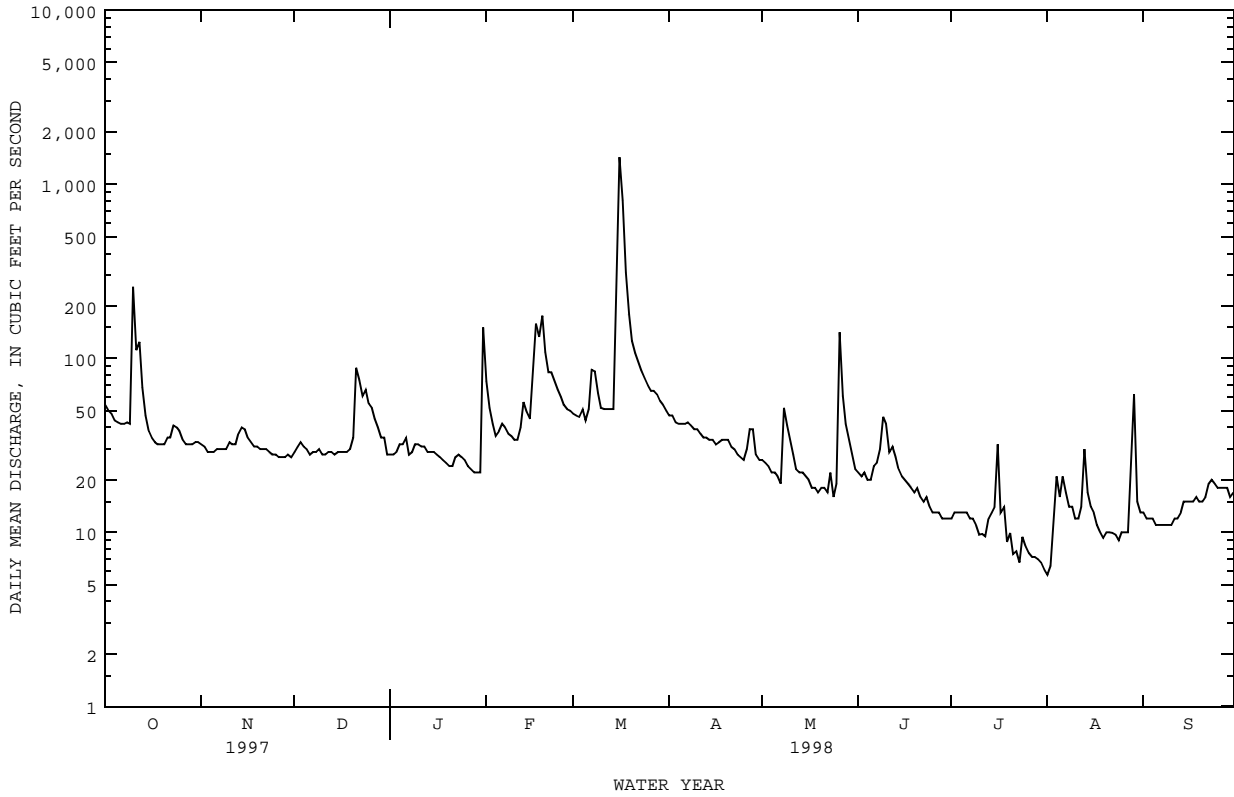
MEAN	105	31.1	27.8	24.6	29.9	34.2	52.6	113	151	47.9	83.5	105
MAX	1170	76.2	120	68.5	149	151	340	771	737	317	1266	818
(WY)	1984	1995	1992	1992	1992	1998	1997	1987	1995	1975	1966	1965
MIN	3.90	10.4	11.8	8.23	6.16	5.49	7.61	16.4	11.9	.72	1.17	3.51
(WY)	1964	1968	1964	1965	1965	1965	1964	1965	1970	1964	1964	1968

RED RIVER BASIN

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1960 - 1998	
ANNUAL TOTAL	30183.5		15056.2		66.9	
ANNUAL MEAN	82.7		41.2		17.2	
HIGHEST ANNUAL MEAN					193	1966
LOWEST ANNUAL MEAN					17.2	1983
HIGHEST DAILY MEAN	4120	Apr 26	1430	Mar 16	19400	Sep 19 1965
LOWEST DAILY MEAN	3.5	Sep 20	5.7	Aug 1	.02	Aug 22 1974
ANNUAL SEVEN-DAY MINIMUM	5.0	Jul 30	6.6	Jul 27	.13	Jul 30 1965
INSTANTANEOUS PEAK FLOW			1670	Mar 16	28900	Sep 19 1965
INSTANTANEOUS PEAK STAGE			13.93	Mar 16	21.96	Sep 19 1965
ANNUAL RUNOFF (AC-FT)	59870		29860		48500	
10 PERCENT EXCEEDS	95		62		67	
50 PERCENT EXCEEDS	29		29		20	
90 PERCENT EXCEEDS	12		11		7.6	

e Estimated



07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Feb 1954 to Mar 1959, Jul 1968 to Dec 1989, Sep 1990 to Jun 1992. Sediment analyses: Apr 1978 to Dec 1989. Chemical and biochemical analyses: Sep 1990 to current year. Pesticide analyses: Sep 1996 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Jul 1968 to Dec 1989, Sep 1990 to Jun 1992, Oct 1994 to current year.
 WATER TEMPERATURE: Jul 1968 to Dec 1989, Sep 1990 to Jun 1992, Oct 1994 to current year.

INSTRUMENTATION.--From Aug 1968 to Dec 1989, Sep 1990 to Jun 1992, Oct 1994 to current year, specific conductance was recorded continuously at this station. From Jun 1982 to Dec 1989, Sep 1990 to Jun 1992, Oct 1994 to current year, water temperature was recorded continuously at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1989 to 1998. The standard error of estimate for dissolved solids is 4%, chloride is 16%, sulfate is 11% and for hardness is 12%. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

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

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 24,300 microsiemens, Sep 22; minimum, 1,460 microsiemens, Mar 17.
 WATER TEMPERATURE: Maximum, 35.7°C, Jul 11; minimum, 0.6°C, Dec 13.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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, SOLVED SATUR-ATION (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L AS CA) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
NOV											
05...	1435	27	14300	8.1	16.5	10.3	115	2600	2500	750	181
DEC											
10...	1215	31	14600	8.2	6.0	11.7	104	2500	2400	710	174
JAN											
14...	1210	28	13600	8.2	5.5	11.9	105	2400	2300	670	179
FEB											
11...	1230	33	13300	8.1	10.5	11.2	110	2400	2200	650	180
MAR											
18...	0955	315	2600	8.1	11.0	9.7	93	760	670	190	68
APR											
22...	1250	28	12800	7.9	18.5	9.4	109	2700	2600	710	220
MAY											
06...	1235	19	13600	7.9	26.0	8.1	112	2600	2500	690	207
JUN											
03...	1545	22	15600	8.0	33.5	7.8	121	2800	2700	770	204
17...	1355	24	17400	7.8	28.5	7.8	113	2900	2900	830	211
JUL											
15...	1450	16	20700	8.2	34.0	--	--	3100	3100	910	214
AUG											
12...	1035	13	22000	8.0	26.0	7.5	103	3100	3100	910	210
SEP											
01...	1705	13	21800	8.5	32.5	8.4	131	3100	3000	880	208

RED RIVER BASIN

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)
NOV 05...	2590	22	13	110	2300	4000	.37	2.2	9930	6	.070
DEC 10...	2570	22	12	140	2200	4200	.43	9.5	9990	19	--
JAN 14...	2350	21	11	140	2200	4000	.51	9.6	9530	9	.781
FEB 11...	2280	20	12	150	2200	3600	.41	4.5	8950	14	--
MAR 18...	265	4	8.6	93	720	420	.20	9.8	1740	60	.296
APR 22...	2230	19	13	130	2300	3400	.40	18	9020	10	--
MAY 06...	2340	20	14	110	2400	3900	.41	3.3	9640	14	--
JUN 03...	2840	24	16	96	2600	4700	.43	2.1	11200	11	--
JUN 17...	3230	26	17	83	2700	5300	.37	13	12300	23	--
JUL 15...	4000	31	19	56	3000	6500	.54	20	14700	10	--
AUG 12...	4010	31	18	52	2900	6500	.52	12	14500	6	--
SEP 01...	4090	32	16	46	2900	6500	.64	18	14600	22	--

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)
NOV 05...	.032	.102	<.020	.20	--	.10	.028	<.010	.012	.04	1
DEC 10...	<.010	.540	.062	.68	.08	.14	<.010	<.010	<.010	--	<1
JAN 14...	.020	.801	.021	.90	.08	.10	<.010	<.010	<.010	--	1
FEB 11...	<.010	.575	.100	.76	.08	.18	<.010	<.010	.015	.05	1
MAR 18...	.017	.313	.028	.88	.54	.57	.075	.029	.017	.05	5
APR 22...	<.010	<.050	.107	--	.08	.19	<.010	<.010	<.010	--	<2
MAY 06...	<.010	<.050	.030	--	.23	.26	<.010	<.010	<.010	--	2
JUN 03...	<.010	<.050	<.020	--	--	<.10	<.010	<.010	<.010	--	4
JUN 17...	<.010	<.050	.049	--	.05	.10	<.010	<.010	<.010	--	--
JUL 15...	.012	<.050	.150	--	--	.14	<.010	<.010	.020	.06	4
AUG 12...	.010	<.050	.170	--	.07	.24	<.010	<.010	.016	.05	3
SEP 01...	.014	<.050	.075	--	--	<.10	<.010	--	.022	.07	5

RED RIVER BASIN

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	ARSENIC	BARIUM,	BARIUM,	CADMIUM	CADMIUM	CHRO-	CHRO-	COPPER,	COPPER,	IRON,	IRON,
	DIS- SOLVED (UG/L AS AS) (01000)	TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	DIS- SOLVED (UG/L AS BA) (01005)	WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	DIS- SOLVED (UG/L AS CD) (01025)	M-IUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	M-IUM, DIS- SOLVED (UG/L AS CR) (01030)	TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	DIS- SOLVED (UG/L AS CU) (01040)	TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	DIS- SOLVED (UG/L AS FE) (01046)
NOV 05...	1	<100	34	<3	<12	<4	<4.0	5	<120	80	<36
DEC 10...	<1	<100	23	<4	<80	14	<4.0	<4	<100	80	<100
JAN 14...	<1	<100	22	<4	<80	<4	<4.0	<4	<100	90	<100
FEB 11...	1	<100	31	<4	<80	4	<4.0	<4	<100	380	<100
MAR 18...	3	200	98	<1	<24	14	<1.0	11	<30	11000	<30
APR 22...	1	<100	34	<4	<80	<2	<4.0	<4	<100	130	<100
MAY 06...	2	<100	41	<4	<80	<4	<4.0	<4	<100	170	<100
JUN 03...	4	400	63	<4	<120	5	<4.0	<4	<150	170	<150
JUN 17...	3	--	48	--	<96	--	<4.0	--	<120	--	<120
JUL 15...	3	<100	47	<4	<120	<4	9.0	<4	<150	50	<150
AUG 12...	--	<100	--	<4	--	<4	--	10	--	80	--
SEP 01...	5	<100	78	<4	<96	<4	<5.0	<4	<120	200	<120
DATE	LEAD,	LEAD,	MANGA-	MANGA-	MERCURY	MERCURY	NICKEL,	NICKEL,	SELE-	SELE-	SILVER,
	TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	NESE, DIS- SOLVED (UG/L AS MN) (01056)	TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	DIS- SOLVED (UG/L AS HG) (71890)	TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	DIS- SOLVED (UG/L AS NI) (01065)	NIUM, DIS- SOLVED TOTAL (UG/L AS SE) (01147)	NIUM, DIS- SOLVED (UG/L AS SE) (01145)	TOTAL RECOV- ERABLE (UG/L AS AG) (01077)
NOV 05...	<3	<120	32	<12	<.10	<.1	<100	<120	8	9	<3
DEC 10...	<4	<1000	30	<40	<.10	<.1	120	<400	11	10	<4
JAN 14...	<4	<1000	31	<40	<.10	<.1	<100	<400	11	12	<4
FEB 11...	<4	<1000	34	<40	<.10	<.1	120	<400	11	12	<4
MAR 18...	5	<300	270	<12	<.10	<.1	<100	<120	3	3	<1
APR 22...	<4	<1000	31	<40	<.10	<.1	<100	<400	8	7	<4
MAY 06...	<4	<1000	33	<40	<.10	<.1	<100	<400	6	7	<4
JUN 03...	<4	<1500	42	<60	<.10	<.1	200	<600	4	5	<4
JUN 17...	--	<1200	--	<48	--	<.1	--	<480	--	4	--
JUL 15...	<4	<1500	42	<60	<.10	<.1	120	<600	3	3	<4
AUG 12...	<4	--	51	--	<.10	--	110	--	3	--	<1
SEP 01...	<4	<1200	52	<48	<.10	<.1	<100	<480	3	3	<4

RED RIVER BASIN

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1997 TO SEPTEMBER 1998

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.	1997	1602	9830	6510	28160	2500	10800	1700	7320	1900
NOV.	1997	924	14160	9450	23580	3800	9590	2200	5560	2400
DEC.	1997	1173	13100	8720	27620	3500	11070	2100	6680	2300
JAN.	1998	979	12710	8470	22380	3400	8950	2100	5430	2300
FEB.	1998	1839	8540	5640	28000	2100	10500	1500	7530	1700
MAR.	1998	4684	5480	3610	45620	1300	16600	1000	12800	1100
APR.	1998	1071	12550	8350	24140	3300	9570	2100	5950	2300
MAY	1998	914	14750	9860	24340	4100	10010	2300	5610	2500
JUNE	1998	631	17000	11420	19460	4900	8300	2500	4180	2700
JULY	1998	339.2	20650	13990	12820	6300	5760	2700	2440	2900
AUG.	1998	463	18140	12270	15340	5500	6830	2400	2990	2600
SEPT	1998	437	23110	15740	18570	7300	8610	2800	3260	3000
TOTAL		15056.2	**	**	290000	**	116600	**	69760	**
WTD.AVG.		41	10710	7130	**	2900	**	1700	**	1900

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	1	8990	8550	8780	14100	13800	13900	14200	14200	14200	12300	11800
2	9440	8990	9210	14300	14000	14200	14200	13900	14100	12800	12300	12700
3	10000	9430	9730	14400	14200	14300	14100	14000	14100	12800	12500	12700
4	10500	10000	10300	14500	14200	14400	14300	14100	14200	---	---	13000
5	10900	10400	10600	14500	14300	14400	14400	14300	14400	---	---	e12900
6	11400	10800	11100	14600	14300	14500	14400	14200	14300	---	---	e13100
7	11800	11400	11600	14500	14300	14400	14400	14300	14400	---	---	e13300
8	12100	11800	11900	14500	14200	14400	14400	14200	14300	---	---	e13400
9	12300	12000	12200	14500	14400	14400	14500	14300	14400	---	---	13500
10	12100	3920	6830	14600	14400	14500	14600	14500	14600	13600	13500	13600
11	5580	3950	4690	14700	14600	14600	14600	14400	14500	13600	13100	13500
12	7460	5330	6660	14700	14500	14600	14600	14500	14500	13500	13100	13400
13	8730	6840	7810	14500	14000	14200	14700	14500	14600	13500	13000	13400
14	9890	8730	9330	14100	14000	14100	14700	14500	14600	13800	13500	13700
15	10500	9890	10200	14300	14000	14100	14700	14500	14600	14000	13800	13900
16	10700	10500	10600	14000	13800	13900	14600	14500	14500	14100	13900	14000
17	11500	10700	11100	13900	13800	13800	14900	14600	14800	14100	13900	14000
18	12100	11500	11800	14000	13800	13900	15000	14900	14900	14100	14000	14000
19	12500	12100	12300	14100	13900	14000	15000	14900	15000	14300	13200	14000
20	12600	12300	12500	14000	13900	14000	14900	13800	14600	14200	13400	14100
21	12800	12300	12600	14100	13900	14000	13800	9600	12100	14500	13900	14300
22	13100	12800	12900	14000	13800	14000	12000	10400	11300	14600	14400	14400
23	13100	12700	12900	14100	13900	14000	11700	10300	11200	14600	14400	14600
24	13000	12600	12800	14100	13900	14000	11100	10400	10900	14700	14400	14600
25	13400	12600	13000	14100	13800	14000	11400	10700	10900	14500	14200	14300
26	13600	13200	13400	14000	14000	14000	12100	11400	11600	14400	14100	14200
27	13600	13200	13400	14100	14000	14000	12400	12100	12300	14400	14200	14300
28	13700	13400	13600	14000	13800	14000	12100	11900	12000	14500	14200	14300
29	13800	13500	13700	14200	13900	14100	12600	12000	12300	14500	14200	14400
30	13900	13600	13800	14200	14100	14200	12800	12600	12700	14700	14400	14500
31	14000	13700	13900	---	---	---	12800	12000	12500	14400	2560	7350
MONTH	14000	3920	11100	14700	13800	14200	15000	9600	13500	---	---	13500

RED RIVER BASIN

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	11000	8380	9590	8950	8800	8870	11100	11000	11100	13600	13300	13400
2	10700	8370	9440	9130	8950	9050	11600	11100	11400	13400	13200	13300
3	11700	10700	11400	9280	9130	9180	11800	11600	11700	13600	13400	13500
4	12300	11700	12100	9170	8910	9070	11800	11700	11800	13700	13400	13600
5	12300	11600	12100	9300	9000	9170	11900	11700	11800	13800	13600	13700
6	12700	12100	12500	14300	9290	12000	12100	11900	12000	14100	13700	13900
7	12600	12400	12500	14000	8550	11600	12100	12000	12100	14300	14100	14200
8	12600	12400	12500	11400	9990	10900	12200	12100	12100	14600	5210	12900
9	13400	12600	13000	11600	11200	11400	12400	12200	12300	14000	3780	9300
10	13600	13400	13400	12800	10400	11700	12400	12300	12300	14300	14000	14200
11	13700	13600	13600	---	---	11800	12500	12400	12400	14600	14200	14400
12	13700	12200	13200	---	---	e12200	12600	12400	12500	14600	14200	14400
13	---	---	e10000	---	---	12800	12600	12400	12500	15000	14500	14800
14	---	---	e7720	12800	12800	12800	12800	12400	12700	15100	14800	15000
15	11800	10700	11500	12800	1840	9340	13000	12800	12900	15300	15000	15200
16	12600	7370	10600	6830	1520	3310	13200	13000	13100	15500	15200	15400
17	8460	6530	7510	2490	1460	1830	13400	13000	13200	15500	15100	15300
18	12200	4380	7990	2990	2470	2640	13300	13000	13200	15500	15300	15400
19	6570	3310	4490	4170	2990	3580	13300	13000	13200	15700	15400	15500
20	5790	3920	5080	5130	4170	4680	13300	13200	13300	15700	15300	15500
21	6470	5790	6220	6030	5130	5580	13400	13000	13200	15700	15500	15600
22	6490	6160	6310	6800	6030	6410	13300	13000	13100	15800	15200	15500
23	6580	6210	6330	7370	6800	7120	13400	13100	13200	15700	15300	15600
24	7320	6580	6990	7900	7370	7660	13400	13200	13300	15800	13800	15500
25	7990	7320	7650	8420	7900	8130	13600	13300	13400	15900	15400	15600
26	8530	7990	8340	8900	8420	8660	13500	11600	13200	---	---	e15700
27	8700	8530	8630	9490	8900	9160	13400	9020	12300	---	---	e15800
28	8840	8690	8770	9800	9490	9710	13900	13400	13700	---	---	e16000
29	---	---	---	10100	9710	9920	13900	12900	13300	---	---	e16200
30	---	---	---	10600	10100	10300	13400	13000	13200	---	---	e16400
31	---	---	---	11000	10600	10900	---	---	---	---	---	e16500
MONTH	---	---	9620	---	---	8760	13900	9020	12700	---	---	14800

DAY	JUNE			JULY			AUGUST			SEPTEMBER		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	e16700	20900	20400	20700	23800	23300	23600	22100	21700	21900
2	---	---	e16900	20800	20400	20700	23900	23500	23600	22200	21900	22100
3	---	---	e17000	20900	20400	20700	23700	13800	22200	22200	21800	22000
4	---	---	e17200	20900	20500	20700	21100	12300	17600	22200	21800	21900
5	---	---	17300	20900	20100	20700	21400	16800	18700	22500	22200	22300
6	17700	17100	17300	20800	20400	20600	21700	21400	21600	22700	22300	22500
7	18700	17700	18300	20900	20500	20700	22000	21500	21800	22900	22500	22700
8	18100	16500	17100	21000	20300	20700	22200	21500	21900	23100	22800	23000
9	16800	4790	14900	21100	20400	20800	22200	21500	21800	23400	23000	23200
10	16000	5970	11400	21200	20800	21000	21800	20900	21300	23600	23300	23500
11	16200	15400	16000	21300	20900	21100	21700	21100	21300	23800	23500	23600
12	16100	15400	15800	21400	20800	21200	22000	21700	21800	23900	23600	23700
13	16700	16100	16500	21300	20600	21000	22000	1650	19100	23900	23500	23700
14	16500	15600	16200	21100	20900	21000	19400	9310	16800	23700	23200	23400
15	16800	16300	16600	21100	20600	20900	20500	15500	19900	23500	23100	23300
16	17400	16700	17000	20900	17600	19400	21600	20300	20600	23400	23000	23200
17	17700	17300	17400	18900	8400	12100	21800	21300	21700	23200	22800	23000
18	17800	17200	17500	18600	12000	17400	22000	21500	21800	23200	22500	22800
19	17900	17300	17500	20800	18200	19600	22100	21500	21900	23000	22500	22700
20	18500	17600	17900	21100	20700	20900	21800	21300	21600	23300	22900	23100
21	18700	17800	18300	21200	20700	21000	21700	21200	21500	23500	23100	23200
22	18900	18300	18600	22300	21200	21700	21700	21300	21400	24300	23500	24100
23	19600	18800	19100	22600	22000	22300	21900	21500	21700	24200	23300	23600
24	19900	19200	19600	23000	22300	22600	22200	21700	21900	23400	23000	23200
25	20000	19500	19800	23100	22400	22800	22300	21900	22100	23800	23300	23500
26	20000	19500	19800	23300	22800	23000	22300	21900	22100	23800	23300	23500
27	20300	19800	20000	23500	23000	23300	22400	22000	22200	23600	23200	23400
28	20600	20000	20200	23800	23400	23500	22300	20400	21900	23400	23000	23200
29	20800	20000	20500	23800	23300	23500	21900	2530	4820	23400	23000	23200
30	20800	20300	20600	23800	23400	23600	8700	3310	4890	23500	23200	23300
31	---	---	---	23900	23600	23700	21700	8700	17300	---	---	---
MONTH	---	---	17600	23900	8400	21100	23900	1650	20100	24300	21700	23100

e Estimated

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	27.2	22.6	25.0	16.7	13.7	15.0	10.2	8.4	9.5	8.7	4.2	6.5
2	27.4	23.0	25.1	15.2	12.1	13.5	9.9	9.6	9.7	12.2	7.7	9.8
3	26.4	22.2	24.3	14.4	9.9	12.1	9.6	6.8	8.7	13.1	10.8	11.9
4	26.9	22.1	24.3	16.1	10.8	13.3	8.4	4.8	6.6	---	---	---
5	26.9	22.3	24.5	16.2	12.3	14.0	7.1	4.6	6.0	---	---	---
6	25.0	22.5	23.6	14.7	10.9	12.7	6.6	5.4	6.0	---	---	---
7	24.5	21.8	22.9	13.8	9.7	11.8	6.5	5.6	6.0	---	---	---
8	25.8	21.7	23.6	14.4	10.2	12.4	9.1	5.9	7.4	---	---	---
9	25.9	22.1	23.9	12.7	9.2	11.1	9.5	6.6	7.8	---	---	---
10	24.2	22.1	23.3	9.2	7.2	8.3	7.2	4.8	5.7	5.7	4.0	4.6
11	23.4	22.2	22.5	9.1	5.7	7.5	4.8	3.3	3.9	5.8	3.8	4.7
12	22.8	19.3	21.8	8.4	7.8	8.1	4.3	1.6	2.9	9.6	5.7	7.3
13	19.4	16.0	17.9	8.6	7.6	8.1	4.5	.6	2.6	7.6	4.4	5.6
14	19.4	14.8	17.2	8.3	5.5	7.3	6.0	1.9	3.9	6.0	4.1	4.8
15	19.8	15.0	17.4	6.9	4.1	5.4	6.8	2.5	4.8	7.0	2.4	4.7
16	19.7	15.1	17.5	6.7	3.0	4.9	8.1	4.4	6.1	8.5	4.9	6.5
17	19.7	15.1	17.4	8.1	4.2	6.1	7.7	3.8	5.8	9.1	5.0	7.2
18	20.1	15.2	17.7	9.4	5.4	7.3	8.3	4.4	6.4	10.5	6.8	8.5
19	20.3	15.8	18.1	10.0	5.7	7.9	9.1	5.2	7.2	9.2	5.4	7.5
20	18.0	15.1	17.1	11.1	7.6	9.4	8.0	5.0	6.6	10.0	6.8	8.3
21	17.6	15.1	16.2	11.3	8.0	9.6	5.2	4.1	4.6	8.4	6.3	7.2
22	17.1	12.5	14.9	12.6	9.0	10.6	4.5	2.9	3.9	7.2	5.1	6.0
23	18.4	15.1	16.5	11.8	7.9	10.0	4.6	4.1	4.3	5.5	3.8	4.6
24	19.0	14.8	16.9	12.4	8.9	10.5	5.9	3.2	4.7	7.1	2.3	4.8
25	17.5	11.6	15.4	13.1	8.2	10.7	6.3	4.2	5.4	9.9	5.2	7.4
26	11.9	7.6	9.9	12.6	10.4	11.5	6.1	3.9	4.9	10.5	6.4	8.3
27	12.5	7.6	10.2	13.6	10.9	12.1	5.6	2.6	4.3	10.5	5.6	8.2
28	15.1	9.7	12.5	14.7	12.0	13.3	5.8	3.3	4.4	10.9	7.6	9.2
29	16.6	11.6	14.1	12.0	9.2	10.4	5.9	2.2	4.1	11.3	6.7	8.9
30	17.6	13.6	15.5	11.0	7.9	9.6	6.8	3.2	5.1	11.2	6.8	9.1
31	17.7	12.9	15.3	---	---	---	7.0	3.8	5.4	12.8	7.3	10.7
MONTH	27.4	7.6	18.8	16.7	3.0	10.1	10.2	.6	5.6	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	12.7	9.8	11.1	12.3	6.9	9.7	21.3	13.4	17.5	26.0	17.8	21.8
2	12.1	7.8	10.2	12.1	6.9	9.7	20.9	15.4	18.1	27.8	19.9	23.6
3	10.9	8.2	9.7	13.1	6.8	10.1	20.0	13.0	16.7	26.8	19.9	23.3
4	9.4	7.2	8.1	16.6	9.8	13.0	20.2	13.5	16.9	27.2	19.4	23.1
5	7.2	4.9	6.0	14.9	11.2	13.0	22.0	14.4	18.1	28.8	20.6	24.5
6	6.1	4.3	5.0	16.1	8.0	9.4	21.0	16.6	18.8	28.8	22.3	25.2
7	7.9	2.9	5.5	8.6	7.6	8.2	21.3	14.9	18.1	28.6	20.5	24.4
8	10.4	5.4	8.0	9.0	4.9	7.1	21.0	15.1	18.1	25.8	19.8	22.9
9	12.9	7.9	10.4	9.3	3.5	6.5	21.4	13.9	17.7	24.7	19.0	21.6
10	11.9	9.1	10.4	10.0	4.0	7.0	22.3	15.1	18.6	27.2	18.4	22.7
11	12.3	7.2	9.8	---	---	---	22.7	16.1	19.3	28.3	21.1	24.6
12	10.4	7.4	8.7	---	---	---	23.6	15.9	19.6	29.3	20.5	24.8
13	9.1	6.5	7.7	---	---	---	24.4	17.1	20.7	29.8	23.2	26.2
14	9.6	7.1	8.6	13.8	11.5	12.5	24.7	17.1	21.0	30.0	23.2	26.3
15	10.9	9.2	9.9	13.4	12.5	13.0	24.7	17.8	21.2	28.2	22.2	25.3
16	9.9	8.3	9.1	12.6	10.6	11.7	21.1	16.4	18.5	28.5	20.2	24.3
17	9.9	7.5	8.6	12.2	8.9	10.5	17.8	13.6	15.9	30.5	22.5	26.0
18	10.7	6.8	8.7	14.3	10.8	12.3	21.4	13.5	17.2	30.5	24.0	27.1
19	12.2	7.3	9.8	13.0	8.8	11.0	22.7	15.1	18.8	31.1	23.4	27.1
20	13.5	7.9	10.8	12.8	6.8	9.6	20.0	15.1	17.6	31.5	24.3	27.5
21	11.9	9.7	10.3	14.0	8.1	11.0	20.9	12.3	16.4	27.4	24.6	26.0
22	11.6	9.2	10.1	17.0	9.7	13.3	22.5	14.4	18.4	25.4	23.2	24.1
23	13.8	7.4	10.7	19.9	12.9	16.3	23.5	15.7	19.5	26.0	21.4	23.2
24	14.9	9.5	12.5	20.5	14.4	17.5	24.3	17.1	20.5	30.4	21.0	25.1
25	16.4	12.8	14.4	23.7	16.2	19.8	26.1	17.9	21.9	28.0	22.7	25.5
26	14.9	10.6	12.8	22.4	18.2	20.0	23.5	18.6	21.5	25.9	18.0	22.3
27	13.4	8.9	11.2	20.6	17.2	19.1	18.9	15.3	17.2	30.4	23.1	26.5
28	12.8	8.7	10.8	22.4	15.6	19.1	17.0	13.6	15.2	32.8	24.6	28.5
29	---	---	---	24.5	18.2	21.3	20.8	12.3	16.4	33.4	25.9	29.4
30	---	---	---	23.0	18.4	20.8	23.9	14.8	19.3	32.2	24.7	28.3
31	---	---	---	20.0	13.9	17.2	---	---	---	32.4	24.0	28.0
MONTH	16.4	2.9	9.6	---	---	---	26.1	12.3	18.5	33.4	17.8	25.1

RED RIVER BASIN

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	32.9	25.5	29.0	34.7	27.3	30.7	34.9	26.5	30.2	32.6	25.7	29.1
2	32.8	23.9	28.2	33.6	26.9	30.0	34.7	25.9	29.9	32.9	24.3	28.7
3	34.2	24.2	28.4	33.8	25.6	29.4	34.4	26.3	29.2	33.2	25.1	29.1
4	28.4	23.9	26.1	33.3	26.3	29.6	30.7	24.7	27.2	33.2	24.9	29.0
5	24.3	19.2	21.4	32.7	26.4	29.0	28.6	25.8	27.2	32.8	25.0	28.9
6	27.2	17.3	21.9	35.0	26.7	30.5	31.9	24.5	27.9	33.0	26.4	29.5
7	24.4	20.1	22.3	35.2	27.7	30.9	33.1	24.9	28.8	33.1	24.9	28.9
8	29.2	21.2	24.8	34.7	26.0	30.2	33.7	25.5	29.5	32.2	24.9	28.6
9	29.6	23.7	26.0	35.2	26.9	30.6	34.3	26.4	30.2	32.4	25.1	28.4
10	29.1	22.8	25.7	35.3	26.7	30.5	34.7	26.6	30.2	29.9	23.3	26.6
11	30.1	22.4	26.2	35.7	26.3	30.7	30.0	26.7	28.2	29.2	23.2	26.2
12	32.6	22.8	27.5	32.6	27.3	29.4	30.5	25.5	27.4	28.1	23.7	25.4
13	34.1	26.0	29.7	35.0	25.3	30.1	31.6	21.5	27.2	28.3	23.3	25.3
14	33.0	24.1	28.5	34.0	27.5	30.7	31.5	24.2	27.7	30.9	22.8	26.8
15	31.2	23.0	27.1	34.8	27.2	30.5	34.2	25.3	29.6	30.6	24.6	27.0
16	31.4	23.1	27.0	34.1	26.6	30.0	34.3	26.2	30.1	29.3	24.0	26.4
17	31.1	24.1	27.1	34.3	27.0	30.3	34.2	26.5	30.1	29.2	23.7	26.1
18	33.4	25.1	28.7	35.1	26.3	30.5	31.6	26.1	28.4	29.7	23.4	26.5
19	34.5	25.7	29.6	34.8	27.0	30.6	32.6	26.0	29.0	31.2	24.2	27.4
20	34.9	26.3	29.8	34.7	26.5	30.3	33.8	26.0	29.7	31.2	24.4	27.6
21	33.6	25.2	28.9	34.8	26.5	30.2	32.9	26.0	29.3	31.5	25.1	28.1
22	33.3	24.5	28.3	33.9	26.1	29.6	33.2	25.9	29.5	27.5	20.4	23.1
23	33.0	24.6	28.4	34.9	26.0	29.9	34.0	26.2	30.0	25.5	19.3	21.9
24	32.7	24.0	28.0	34.9	26.4	30.2	34.2	26.8	30.3	30.3	22.5	26.1
25	32.9	24.2	28.1	34.4	26.4	30.1	33.9	27.3	30.5	30.2	24.0	26.7
26	33.2	24.4	28.5	34.5	25.7	29.6	34.3	27.3	30.6	30.5	23.1	26.5
27	34.3	25.3	29.4	34.8	25.8	29.6	34.1	26.9	30.4	31.8	24.7	28.0
28	35.0	25.9	30.1	34.2	26.2	29.7	31.8	26.7	28.7	31.9	24.9	28.2
29	35.3	26.6	30.6	34.0	25.2	29.3	31.0	23.3	27.2	31.8	24.7	28.2
30	35.4	26.6	30.7	34.4	24.8	29.2	32.3	23.2	27.7	31.0	25.0	27.9
31	---	---	---	34.1	25.3	29.7	32.6	24.3	28.6	---	---	---
MONTH	35.4	17.3	27.5	35.7	24.8	30.1	34.9	21.5	29.0	33.2	19.3	27.2

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

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

DRAINAGE AREA.--223 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1984 to Sep 1985, May 1987 to current year. (discharge to "Truscott Brine Lake near Truscott" (station 07311669)).

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

REMARKS.--No estimated daily discharges. Records good. Discharge represents flow diverted by pumping from South Wichita River at Low Flow Dam near Guthrie (station 07311782) via pipeline to Truscott Brine Lake near Truscott. Flow is determined from digital recorder monitoring flowmeter in pipeline.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	6.8	6.5	6.2	8.7	6.7	2.6	6.7	6.5	6.5	6.7	3.3
2	.00	6.8	6.5	6.1	6.2	9.0	2.0	6.8	5.9	6.5	6.7	2.7
3	.16	6.8	6.6	6.1	6.2	7.7	5.9	6.8	6.7	5.9	6.7	5.7
4	4.8	6.7	6.5	5.9	6.6	5.1	6.9	6.8	6.6	3.2	6.7	6.9
5	6.6	6.7	9.0	8.7	6.6	6.2	6.9	5.5	6.6	6.6	6.6	7.0
6	6.5	5.6	10	10	7.9	8.1	6.8	5.5	6.6	6.5	6.8	3.1
7	2.8	7.8	10	9.9	6.4	3.0	6.9	3.8	6.6	4.7	6.8	.00
8	.00	3.8	7.7	9.7	6.4	.00	6.8	6.8	6.6	2.6	6.8	4.1
9	2.0	.00	6.2	6.1	9.0	3.8	6.8	.00	4.6	5.1	6.8	6.3
10	.02	3.9	6.6	2.5	8.8	11	6.8	.00	5.8	4.8	4.2	6.3
11	.00	11	6.5	.00	8.5	7.6	6.8	5.6	4.3	5.7	1.1	5.9
12	.00	8.5	6.5	4.9	6.1	6.8	6.8	8.9	6.7	.14	4.3	6.3
13	.00	7.0	6.6	8.2	7.3	6.8	8.8	6.4	6.7	.00	5.3	7.8
14	.00	6.9	6.7	6.7	6.6	6.8	11	6.4	6.6	.06	4.3	4.0
15	3.6	6.9	6.7	8.4	6.6	6.8	6.8	2.5	6.6	.01	6.7	6.3
16	5.2	6.9	6.6	8.0	6.6	8.1	6.8	3.8	6.6	.04	6.6	6.2
17	6.7	6.9	8.9	6.1	9.1	7.7	6.8	5.0	6.5	.13	6.6	6.2
18	7.1	6.8	4.9	6.0	11	9.1	6.9	2.8	6.5	.00	5.6	.28
19	7.1	6.8	8.9	5.7	10	11	6.8	5.0	6.4	.00	6.3	1.4
20	6.2	6.8	10	3.2	7.2	11	6.8	6.4	5.0	.96	3.3	6.5
21	7.0	6.8	10	6.1	6.6	8.9	6.8	6.1	.04	3.0	3.5	4.5
22	7.0	6.8	10	7.1	6.6	.92	6.4	6.6	6.6	6.8	6.4	4.3
23	7.0	6.8	10	8.2	6.6	1.9	6.8	6.9	5.9	6.7	5.1	.00
24	7.0	8.2	10	6.2	5.1	5.6	6.8	6.4	4.2	6.7	.00	3.9
25	6.9	9.9	10	6.2	5.2	5.8	6.7	6.7	2.4	6.8	3.8	6.4
26	6.9	11	10	8.9	5.2	4.0	6.6	4.4	3.3	6.8	3.6	4.9
27	6.9	9.6	10	10	6.8	.00	6.8	3.6	6.6	6.7	4.0	.00
28	9.1	6.6	8.3	8.9	6.6	.00	6.8	6.8	6.6	5.4	6.3	.39
29	11	6.6	5.5	6.5	---	.00	4.4	6.8	6.6	5.4	7.0	2.8
30	11	6.5	8.5	6.0	---	1.2	5.2	6.8	6.6	4.7	7.0	5.6
31	8.3	---	7.5	9.3	---	7.0	---	6.8	---	2.9	7.0	---
TOTAL	146.88	208.20	247.7	211.80	200.5	177.62	196.0	169.40	173.24	121.34	168.60	129.07
MEAN	4.74	6.94	7.99	6.83	7.16	5.73	6.53	5.46	5.77	3.91	5.44	4.30
MAX	11	11	10	10	11	11	11	8.9	6.7	6.8	7.0	7.8
MIN	.00	.00	4.9	.00	5.1	.00	2.0	.00	.04	.00	.00	.00
AC-FT	291	413	491	420	398	352	389	336	344	241	334	256

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

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Oct 1984 to current year. Pesticide analyses: Sep 1996 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct 1984 to current year. Oct 1986 to Apr 1987 published under station 07311783.

WATER TEMPERATURE: Oct 1984 to current year. Oct 1986 to Apr 1987 published under station 07311783.

INSTRUMENTATION.--Since Oct 1984, a two-parameter water-quality monitor continuously records specific conductance and water temperature at this station.

REMARKS.--Interruptions in the record are due to malfunction of the instrument or when the pumps were not running. Where maximum and minimum specific conductance values are not shown, mean values are sometimes estimated. Temperature and specific conductance values for days of zero flow through the pipeline are published if water is present behind the low flow dam. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1989 to 1998. The standard error of estimate for dissolved solids is 6%, chloride is 8%, sulfate is 10% and for hardness is 8%. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request. Samples for chemical analyses are collected a half a mile upstream from the collection pool.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 47,000 microsiemens, Jul 16, 1998; minimum, 200 microsiemens, Jul 3, 1986.

WATER TEMPERATURE: Maximum, 36.0°C, Jul 5, 11-13, 21, 1996; minimum, 0.0°C, Dec 23, 1989, Dec 22, 1990.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 47,000 microsiemens, Jul 16; minimum, 2,610 microsiemens, Oct 10.

WATER TEMPERATURE: Maximum, 33.0°C, Jul 11; minimum, 4.4°C, Dec 13.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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 SATUR- ATION (00301)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
NOV											
04...	1425	6.7	36600	7.7	15.0	12.4	149	3900	3800	1100	271
DEC											
09...	1155	6.7	37800	7.8	11.0	10.0	112	3700	3500	1000	257
JAN											
13...	1225	6.3	37500	7.7	9.0	8.8	92	3700	3600	1100	265
FEB											
10...	1020	10	38700	7.8	12.0	9.2	105	3900	3700	1100	265
MAR											
17...	1150	6.6	27200	7.7	12.0	10.0	109	3100	3000	880	233
APR											
21...	1230	6.8	40000	7.9	16.0	11.4	140	3800	3700	1100	267
MAY											
05...	1235	6.8	41500	7.7	22.5	9.9	141	3900	3800	1100	273
JUN											
02...	1250	6.7	44400	7.7	25.5	9.4	143	4100	4000	1200	277
16...	1215	6.6	45600	7.6	25.5	8.0	123	4200	4100	1200	296
JUL											
14...	1210	6.6	47600	7.4	29.0	--	--	4600	4500	1300	309
AUG											
11...	1225	6.0	45800	7.5	27.5	5.7	89	4300	4200	1200	308
SEP											
01...	1220	6.9	46200	7.5	26.5	6.6	102	4200	4100	1200	295

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)
NOV 04...	8140	57	32	130	2800	13000	.44	55	25700	12	.131
DEC 09...	8160	59	31	140	2700	14000	.45	15	26100	26	.173
JAN 13...	8310	59	30	130	2800	14000	.76	14	26900	29	.147
FEB 10...	8330	58	33	130	3000	13000	.45	7.1	26000	3	.119
MAR 17...	5480	42	24	140	2500	9200	<.50	8.8	18400	1	.077
APR 21...	8880	63	37	120	3000	15000	.47	14	28300	8	--
MAY 05...	9300	65	38	100	3100	16000	.42	4.6	29800	2	--
JUN 02...	10100	69	43	97	3300	17000	.52	5.1	31700	22	--
JUN 16...	10200	68	40	97	3200	17000	.62	5.0	32300	23	--
JUL 14...	11400	73	42	98	3200	19000	.44	9.7	35100	12	.074
AUG 11...	11000	73	44	96	3200	18000	.50	11	34100	9	.060
SEP 01...	11000	74	41	110	3200	19000	.41	38	34600	7	.113

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)
NOV 04...	.080	.211	<.020	--	--	<.10	<.010	<.010	.023	.07	<1
DEC 09...	.066	.239	.234	.47	--	.23	<.010	<.010	<.010	--	<1
JAN 13...	.078	.225	.292	.33	--	.11	<.010	.014	.024	.07	<1
FEB 10...	.063	.182	.329	.49	--	.31	<.010	<.010	.019	.06	<1
MAR 17...	.044	.121	.258	.55	.17	.43	<.010	<.010	<.010	--	1
APR 21...	<.010	.074	.109	.37	.19	.29	<.010	<.010	<.010	--	<1
MAY 05...	<.010	<.050	.211	--	.07	.28	<.010	<.010	<.010	--	<1
JUN 02...	.010	<.050	.043	--	--	<.10	<.010	<.010	<.010	--	<1
JUN 16...	.013	<.050	.112	--	.01	.12	<.010	<.010	.015	.05	1
JUL 14...	.051	.125	.323	.71	.26	.58	<.010	<.010	.030	.09	1
AUG 11...	.037	.097	.384	.54	.05	.44	<.010	<.010	.030	.09	<1
SEP 01...	.049	.162	.215	--	--	<.10	<.010	--	.035	.11	<1

RED RIVER BASIN

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	ARSENIC	BARIUM,	BARIUM,	CADMIUM	CADMIUM	CHRO-	CHRO-	COPPER,	COPPER,	IRON,	IRON,
	DIS- SOLVED (UG/L AS AS) (01000)	TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	DIS- SOLVED (UG/L AS BA) (01005)	WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	DIS- SOLVED (UG/L AS CD) (01025)	M-IUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	M-IUM, DIS- SOLVED (UG/L AS CR) (01030)	TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	DIS- SOLVED (UG/L AS CU) (01040)	TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	DIS- SOLVED (UG/L AS FE) (01046)
NOV 04...	<1	<100	34	<10	<20	<10	<10	<10	<200	70	<60
DEC 09...	<1	<100	31	<10	<200	15	<10	<10	<250	50	<250
JAN 13...	<1	<100	22	<10	<160	<10	<10	<10	<200	90	<200
FEB 10...	<1	<100	27	<10	<200	<10	<10	<10	<250	110	<250
MAR 17...	1	<100	24	<5	<120	<5	<5.0	<5	<150	90	<150
APR 21...	<1	<100	26	<10	<200	<10	<10	<10	<250	110	<250
MAY 05...	<1	<100	<25	<10	<200	<10	<10	<10	<250	120	<250
JUN 02...	<1	300	36	<10	<240	<10	<10	<10	<300	130	<300
JUN 16...	<1	<100	37	<10	<200	<10	<10	<10	<250	170	<250
JUL 14...	<1	<100	35	<10	<200	<10	<10	<10	<250	130	<250
AUG 11...	<1	<100	37	<10	<200	<10	<10	<10	<250	160	720
SEP 01...	<1	<100	37	<10	<200	<10	<10	<10	<250	130	<250
DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, TOTAL SOLVED (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)
NOV 04...	<10	224	81	41	<.10	<.1	290	<200	2	2	<10
DEC 09...	<10	<2500	76	<100	<.10	<.1	200	<1000	2	2	<10
JAN 13...	<10	<2000	150	141	<.10	.2	190	<800	2	2	<10
FEB 10...	<10	<2500	130	135	<.10	<.1	190	<1000	2	2	<10
MAR 17...	<5	<1500	130	159	<.10	<.1	130	<600	3	4	<5
APR 21...	<10	<2500	94	<100	<.10	<.1	250	<1000	1	1	<10
MAY 05...	<10	<2500	280	123	<.10	<.1	300	<1000	1	1	<10
JUN 02...	<10	<3000	150	<120	<.10	<.1	640	<1200	<1	<1	<10
JUN 16...	<10	<2500	140	<100	<.10	<.1	740	<1000	<1	<1	<10
JUL 14...	<10	<2500	130	140	<.10	<.1	240	<1000	<1	<1	<10
AUG 11...	<10	<2500	180	146	<.10	<.1	290	<1000	<1	<1	<10
SEP 01...	<10	<2500	170	141	<.10	1.6	280	<1000	<1	<1	<10

RED RIVER BASIN

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

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1997 TO SEPTEMBER 1998

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. 1997	146.88	32670	21590	8560	10900	4310	2700	1080	3400
NOV. 1997	208.2	33640	22330	12550	11300	6350	2800	1550	3500
DEC. 1997	247.7	32750	21650	14480	10900	7290	2700	1810	3400
JAN. 1998	211.8	34280	22840	13060	11600	6620	2800	1600	3600
FEB. 1998	200.5	35390	23710	12830	12100	6540	2800	1540	3600
MAR. 1998	177.62	34230	22840	10950	11600	5560	2800	1330	3500
APR. 1998	196	37910	25730	13620	13300	7010	2900	1560	3800
MAY 1998	169.4	39230	26800	12260	13900	6350	3000	1370	3900
JUNE 1998	173.24	40700	28030	13110	14600	6830	3000	1430	3900
JULY 1998	121.34	43370	30260	9910	15900	5220	3100	1030	4100
AUG. 1998	168.6	41480	28680	13050	15000	6830	3100	1400	4000
SEPT 1998	129.07	43420	30300	10560	16000	5560	3100	1090	4100
TOTAL	2150.35	**	**	144900	**	74480	**	16780	**
WTD.AVG.	5.9	36900	24970	**	12800	**	2900	**	3700

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	1	37300	35800	36000	33300	32700	32900	34500	33900	34200	34400	32300
2	36000	35800	35900	33600	33100	33300	34800	32400	34300	33900	33200	33600
3	36100	34300	35400	34200	33600	34000	34900	32400	33900	33800	33400	33600
4	35000	34300	34700	34400	33900	34200	35800	33900	34700	33900	33400	33600
5	35100	34500	34900	34200	33600	34000	35500	33700	34500	34100	33500	33800
6	35500	35100	35200	34400	33800	34200	35500	33000	34400	34000	31700	33000
7	35800	35100	35400	34500	34000	34300	35400	33600	34400	33700	31500	32600
8	36000	35500	35800	34500	34000	34200	35100	32500	33800	33000	30000	31700
9	36000	13400	35200	34800	34200	34500	34200	33200	33600	34600	32000	32900
10	16100	2610	13500	35400	34700	34900	35400	32800	33900	33800	31700	32400
11	16200	16000	16100	36000	34000	34500	33900	33400	33700	34600	32900	33800
12	16200	15900	16000	34600	33300	33900	34300	33600	33900	35400	30000	33200
13	16100	15800	15900	33500	31600	32400	35100	34100	34600	34500	29900	32700
14	27200	15800	21000	33100	28700	31000	35200	32700	34300	35400	32900	34100
15	28400	27100	27800	33900	30900	32600	35600	33600	34500	35800	33200	34700
16	29500	28400	29000	34600	32900	33500	35700	33400	34400	35200	33200	34000
17	30900	29500	30300	34600	32400	33000	35900	33800	34700	36600	32900	34600
18	31800	30900	31400	34000	32300	32900	36100	34200	35100	34800	33900	34500
19	31800	31200	31500	34500	32400	33000	35900	34000	34700	36500	34500	35000
20	32000	31300	31700	33600	32900	33200	35600	30300	33800	35600	34800	35100
21	33000	31900	32300	33900	33400	33600	34200	28700	31700	36100	34700	35300
22	33300	32300	32700	34000	33400	33700	33900	29300	30400	37000	35700	36200
23	32900	31800	32400	34400	33800	34100	30400	27900	29100	36800	34100	35500
24	32300	31800	32100	34600	33700	34200	30300	28100	28700	37100	34800	35700
25	32900	32200	32700	34400	33600	34200	31500	28800	30200	36300	34600	35500
26	33300	32900	33100	34300	33900	34100	31900	29800	30600	36300	34600	35300
27	33500	33000	33200	34100	33500	33800	31800	30000	30900	36600	34800	35600
28	33600	33100	33400	33700	33200	33400	31500	28200	29400	35700	34700	35100
29	33500	33000	33300	34100	33500	33900	31200	29200	30100	35600	28600	34000
30	33600	33100	33300	34400	33800	34200	34000	30600	31600	36300	34600	35700
31	33500	32800	33100	---	---	---	34000	31800	33200	36500	33900	35900
MONTH	37300	2610	30500	36000	28700	33700	36100	27900	32900	37100	28600	34300

RED RIVER BASIN

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

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	21.9	21.5	21.7	16.5	14.5	15.3	11.1	9.5	10.4	10.9	7.5	9.2
2	22.0	21.7	21.9	15.0	13.3	14.1	11.2	9.6	10.9	12.5	9.3	11.0
3	26.1	21.7	23.3	15.1	11.8	13.5	10.6	9.4	10.1	13.4	11.5	12.3
4	26.4	22.0	24.2	15.4	12.1	13.8	11.8	8.0	9.7	13.3	11.2	12.1
5	25.8	21.9	23.8	15.4	12.9	14.3	10.4	8.4	9.5	13.4	11.0	12.2
6	24.2	22.1	22.9	14.6	12.4	13.7	9.3	8.4	8.8	12.9	10.3	11.7
7	22.6	21.6	21.9	14.8	12.2	13.6	9.2	8.4	8.8	10.3	8.3	8.9
8	22.6	21.8	22.0	14.4	12.6	13.6	11.3	8.5	9.7	10.7	7.3	8.9
9	25.5	20.1	22.9	14.3	11.5	12.8	11.2	9.0	9.9	10.8	7.2	8.6
10	21.7	18.9	20.9	11.5	10.0	10.7	9.3	8.0	8.5	8.6	7.4	7.7
11	21.9	21.7	21.7	11.2	8.3	10.1	8.0	6.1	7.1	8.1	7.3	7.6
12	21.9	21.8	21.9	10.9	9.4	10.2	7.4	5.1	6.1	10.8	8.0	9.1
13	21.8	20.3	20.9	11.1	8.6	9.8	7.1	4.4	5.8	9.4	7.8	8.7
14	20.3	19.2	19.7	10.2	7.0	9.0	9.9	4.7	7.0	9.1	7.6	8.1
15	19.4	16.5	17.9	8.9	7.4	8.2	9.3	6.3	8.0	9.9	6.9	8.3
16	19.6	15.5	17.3	9.2	6.2	8.0	10.1	7.6	8.7	10.7	7.9	9.4
17	19.6	15.8	17.8	11.1	6.9	9.1	10.1	7.4	8.8	11.5	7.8	10.0
18	19.3	16.1	17.7	11.9	7.9	9.9	10.0	8.4	8.9	11.7	9.3	10.6
19	20.4	16.5	18.5	11.2	8.3	10.0	11.3	8.4	9.7	10.8	8.6	9.9
20	18.7	16.7	17.5	12.3	10.1	11.2	10.7	6.8	8.8	11.8	9.4	10.7
21	17.6	16.3	17.0	12.4	10.1	11.2	8.6	6.1	7.5	10.9	8.9	9.7
22	17.6	14.3	16.0	14.2	10.9	12.3	7.8	5.4	6.9	9.9	8.4	9.1
23	18.3	16.2	17.0	13.3	10.8	12.2	7.6	6.6	7.2	9.4	8.0	8.8
24	18.4	15.1	16.9	14.5	11.5	12.8	8.8	6.4	7.6	10.1	7.5	8.9
25	17.6	13.3	15.8	14.6	11.2	12.9	9.0	7.5	8.3	12.1	8.5	9.9
26	13.3	10.2	11.9	14.0	12.3	13.2	9.0	7.3	8.0	11.6	8.6	10.1
27	13.4	10.5	11.9	14.6	12.4	13.5	9.4	6.6	8.1	12.9	8.8	10.7
28	14.8	11.4	13.0	15.0	13.5	14.1	8.2	6.3	7.3	13.0	10.2	11.7
29	16.8	12.8	14.8	13.6	11.0	12.1	8.5	5.3	6.9	13.7	9.5	11.7
30	17.7	14.5	15.8	12.1	9.7	11.0	9.2	6.2	7.7	13.4	10.4	11.9
31	18.1	14.2	16.1	---	---	---	10.4	6.9	8.8	14.7	12.2	13.3
MONTH	26.4	10.2	18.8	16.5	6.2	11.9	11.8	4.4	8.4	14.7	6.9	10.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	14.7	11.4	13.2	14.1	10.0	11.9	17.5	15.1	15.7	23.0	18.0	20.4
2	15.3	10.3	12.6	13.7	10.0	11.9	18.7	15.6	16.6	26.3	19.8	22.7
3	13.6	11.0	12.6	14.3	9.3	12.1	18.0	14.3	16.1	24.5	20.6	22.6
4	13.2	11.1	11.6	16.5	12.2	13.9	19.0	14.8	16.9	25.0	20.4	22.6
5	11.1	8.1	9.4	14.5	12.2	13.4	19.8	15.3	17.5	27.1	21.3	23.9
6	9.2	8.1	8.7	13.2	11.6	12.1	19.5	17.0	18.3	25.8	22.9	24.3
7	11.4	5.9	9.3	12.3	10.9	11.8	19.8	15.7	17.9	27.4	21.7	24.2
8	12.5	8.2	10.3	12.2	7.9	9.1	19.0	16.0	17.6	24.8	22.1	23.3
9	13.8	9.6	11.9	10.4	7.9	9.2	21.0	15.1	17.8	23.0	21.3	21.8
10	13.6	11.3	12.3	12.2	7.1	9.9	20.2	16.2	18.2	22.3	20.8	21.2
11	14.3	9.9	12.2	12.6	7.4	10.8	20.1	17.0	18.6	26.2	21.1	23.1
12	13.0	10.3	11.6	11.6	8.3	10.1	21.7	17.0	19.2	27.9	21.4	24.3
13	12.5	9.6	11.2	14.3	9.1	11.5	23.1	17.8	20.2	26.3	22.5	24.6
14	11.9	10.3	11.3	14.3	12.3	13.3	22.8	17.7	20.2	27.4	22.8	24.8
15	11.9	10.7	11.3	14.6	13.0	13.9	23.6	17.9	20.5	25.3	22.2	23.0
16	11.5	9.6	10.4	13.8	11.1	12.5	20.4	17.0	19.0	25.3	20.9	23.1
17	11.8	10.0	10.8	14.0	9.9	11.8	18.8	15.7	17.2	27.7	21.6	24.2
18	13.4	10.5	11.9	17.1	11.8	14.0	19.1	14.5	16.9	27.6	24.3	25.8
19	14.5	10.9	12.5	14.8	10.6	12.3	21.1	15.2	18.0	27.6	23.6	25.5
20	14.8	11.1	13.0	13.9	8.9	11.6	19.4	16.9	18.3	27.4	24.3	25.9
21	14.0	12.1	12.8	15.7	10.8	13.1	21.2	15.1	18.1	26.3	24.1	25.0
22	14.3	12.3	13.3	14.3	12.0	13.4	21.8	16.2	18.9	24.9	23.1	23.8
23	14.7	10.5	13.0	19.6	13.9	15.6	21.8	16.7	19.3	24.8	21.6	22.9
24	15.2	12.0	13.5	19.3	15.2	17.3	22.6	18.0	20.1	26.7	20.9	23.5
25	15.6	13.8	14.6	20.9	17.0	19.0	24.5	18.9	21.5	25.7	22.1	23.8
26	14.8	12.3	13.8	20.9	18.7	19.8	22.4	19.3	21.1	25.3	21.8	23.2
27	14.3	11.5	13.1	20.1	18.4	18.9	19.3	17.9	18.5	27.8	23.5	25.5
28	13.4	11.3	12.4	18.8	17.5	17.8	18.2	15.1	16.8	29.3	24.8	27.0
29	---	---	---	20.0	18.2	18.5	20.1	14.9	16.5	29.4	25.5	27.2
30	---	---	---	20.0	17.7	19.0	24.0	16.2	19.0	28.4	24.6	26.5
31	---	---	---	19.4	15.5	17.5	---	---	---	30.3	24.4	27.1
MONTH	15.6	5.9	11.9	20.9	7.1	13.8	24.5	14.3	18.4	30.3	18.0	24.1

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

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

DRAINAGE AREA.--223 mi².

WATER-DISCHARGE RECORDS

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

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

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation. Diversions from station 07311782 via pipeline to station 07311669 began in May 1987.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1950, 20.8 ft in May 1954, at station 07311780 located about 1.1 mi upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	.03	.07	.22	.06	.75	2.2	.36	.23	e.04	e.03	.01
2	4.9	.03	.07	.13	.07	.40	2.9	.06	.22	e.03	e.03	e.01
3	3.1	.03	.07	.30	.06	.06	.77	.06	.19	e.03	e.03	e.01
4	.02	.04	.07	.83	.06	.10	.55	.06	.13	e.03	e.02	e.01
5	.02	.04	.10	.43	.06	.77	.45	.06	.13	e.03	e.02	e.01
6	.02	.20	.04	.10	.09	.58	.57	.05	.13	e.03	e.02	e.01
7	.03	.44	.04	.06	.10	3.0	.34	3.2	.13	e.02	e.02	.20
8	3.1	2.0	.04	.06	.32	5.4	.36	.12	.13	e.02	e.02	.40
9	43	6.1	.04	.06	.56	3.5	.35	4.1	.13	e.02	e.02	e.04
10	184	4.0	.04	.07	.25	.06	.34	6.0	.12	e.02	e.02	e.03
11	16	.04	.04	3.7	.26	.06	.27	2.9	.08	e.02	7.2	e.02
12	9.3	.04	.04	1.7	.23	.05	.26	.13	.08	.10	e.04	e.01
13	7.6	.04	e.03	.06	.34	.06	.25	.14	.10	4.2	e.03	e.01
14	3.6	.04	e.03	.07	.15	.06	.13	.14	.08	5.7	e.03	e.01
15	.03	.05	.02	.07	.11	.93	.13	7.1	.07	5.4	e.03	e.01
16	.03	.90	.03	.06	.42	3.8	.13	.16	.07	5.1	e.03	e.01
17	5.4	1.7	.06	.07	.47	4.7	.13	.16	.06	4.9	e.02	e.02
18	.04	.02	.26	.10	.06	1.7	.13	.15	.06	5.0	e.02	9.0
19	.05	.02	.10	.15	.06	.08	.13	.18	e.05	4.9	e.02	e.04
20	.28	.03	.01	1.8	.06	.10	.13	.16	e.04	3.6	e.02	e.03
21	11	.20	.01	.75	.06	.21	.15	.17	e.04	2.5	e.02	e.02
22	.05	.33	.01	.57	.06	1.4	.18	.15	e.04	e.04	.06	.40
23	.05	.37	.01	.06	.38	3.9	.13	.16	.07	e.04	11	.60
24	.16	.26	.01	.06	1.4	1.1	.13	.18	.07	e.04	1.4	e.04
25	.53	.04	.03	.33	1.4	.88	.13	.18	.07	e.04	e.05	e.03
26	.40	.05	.09	.35	1.2	1.9	.13	.21	.11	e.04	3.7	e.02
27	.42	.05	.30	.06	.74	4.4	.08	2.1	.12	e.04	e.04	e.02
28	.23	.05	.44	.06	.76	4.2	.07	.19	.08	e.03	e.03	.20
29	.03	.05	.65	.06	---	4.1	.10	e.20	e.04	e.03	e.03	.50
30	.03	.05	.54	.06	---	3.5	.34	e.21	e.04	e.03	e.02	e.04
31	.03	---	.38	.06	---	.64	---	e.22	---	e.03	e.02	---
MEAN	9.61	.57	.12	.40	.35	1.69	.40	.94	.097	1.36	.78	.39
MAX	184	6.1	.65	3.7	1.4	5.4	2.9	7.1	.23	5.7	11	9.0
MIN	.02	.02	.01	.06	.06	.05	.07	.05	.04	.02	.02	.01
AC-FT	591	34	7.3	25	19	104	24	58	5.8	83	48	23

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1998, BY WATER YEAR (WY)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MEAN	5.22	1.43	2.50	2.78	3.19	1.69	2.37	7.37	3.98	13.9	3.69	14.3	
MAX	30.6	8.51	9.34	9.16	17.8	5.20	10.4	53.2	13.8	154	15.7	90.1	
(WY)	1987	1987	1992	1990	1992	1992	1997	1987	1991	1986	1995	1996	
MIN	.030	.018	.028	.073	.038	.016	.011	.043	.097	.025	.021	.016	
(WY)	1989	1997	1989	1989	1995	1991	1996	1988	1998	1993	1994	1990	

SUMMARY STATISTICS

	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1986 - 1998
ANNUAL MEAN	3.11	1.41	5.21
HIGHEST ANNUAL MEAN			20.8
LOWEST ANNUAL MEAN			.75
HIGHEST DAILY MEAN	184 Oct 10	184 Oct 10	3520 Jul 3 1986
LOWEST DAILY MEAN	.01 Jan 20	.01 Dec 20	.00 Jan 4 1986
ANNUAL SEVEN-DAY MINIMUM	.01 Mar 27	.01 Aug 31	.01 Sep 15 1990
INSTANTANEOUS PEAK FLOW		1570 Oct 9	13100 Jul 3 1989
INSTANTANEOUS PEAK STAGE		9.02 Oct 9	19.01 Jul 3 1989
ANNUAL RUNOFF (AC-FT)	2250	1020	3770
10 PERCENT EXCEEDS	5.5	3.5	7.6
50 PERCENT EXCEEDS	.05	.09	.06
90 PERCENT EXCEEDS	.01	.02	.02

e Estimated

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

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1987 to Sep 1989, Oct 1990 to Sep 1991, Oct 1996 to Sep 1997. Pesticide analyses: Oct 1996 to Sep 1997.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1987 to Sep 1989.

WATER TEMPERATURE: May 1987 to Sep 1989.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 41,600 microsiemens, Aug 17, 1989; minimum, 350 microsiemens, May 28, 1987.

WATER TEMPERATURE: Maximum, 34.5°C, Jun 8, 1988; minimum, 0.0°C, Feb 5-8, 1989.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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, (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)
NOV											
04...	1250	.04	32000	7.9	17.0	12.4	152	3700	3600	1100	255
DEC											
09...	1325	.01	32900	8.0	11.0	12.9	141	3700	3600	1100	251
JAN											
13...	1400	.01	33300	7.7	10.0	9.4	99	3700	3500	1000	254
FEB											
10...	1420	.05	33900	7.7	15.0	11.0	131	3700	3600	1100	260
MAR											
26...	1000	.25	33600	7.7	19.0	7.9	102	3800	3600	1100	265
APR											
21...	1420	.01	35100	7.6	22.0	10.9	147	3900	3700	1100	270
MAY											
05...	1410	.01	34400	7.9	26.5	11.2	167	3800	3600	1100	260
JUN											
02...	1455	.01	35700	8.0	31.5	11.3	184	4000	3900	1100	274
16...	1405	.01	34600	7.8	28.0	11.7	179	3800	3700	1100	272
JUL											
14...	1400	.84	40100	7.7	32.0	--	--	3900	3800	1100	272
AUG											
11...	1405	11	38700	7.6	29.0	7.6	118	4000	3900	1200	283
SEP											
01...	1425	.01	37200	7.4	28.5	7.7	119	4100	3900	1200	284

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF TOTAL 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)
NOV											
04...	6750	48	30	140	2900	11000	.43	53	22200	11	.042
DEC											
09...	6880	49	30	150	2800	12000	.46	14	22700	35	--
JAN											
13...	7050	51	27	140	2800	12000	.78	20	23400	14	--
FEB											
10...	7240	52	30	130	3000	13000	.46	7.9	24200	3	.084
MAR											
26...	7140	51	31	130	2800	12000	1.3	6.0	23500	1	.046
APR											
21...	7320	51	31	130	3100	12000	.45	6.3	24100	12	--
MAY											
05...	7450	53	31	120	3100	13000	.42	9.2	24700	21	--
JUN											
02...	7810	54	35	100	3200	13000	.51	5.7	25700	18	--
16...	7240	51	33	120	3100	13000	.55	5.8	24500	8	--
JUL											
14...	8870	62	39	91	3100	15000	.45	11	28500	14	--
AUG											
11...	8850	61	38	110	3100	14000	.53	16	27800	24	--
SEP											
01...	8640	59	35	150	3100	13000	.43	30	26600	63	--

RED RIVER BASIN

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)
NOV 04...	.030	.072	<.020	--	--	<.10	<.010	<.010	.012	.04	2
DEC 09...	<.010	.068	.166	.34	.10	.27	<.010	<.010	<.010	--	<1
JAN 13...	--	--	--	--	--	--	--	--	--	--	2
FEB 10...	.020	.104	.356	.28	--	.17	<.010	<.010	.024	.07	2
MAR 26...	.023	.069	.178	.43	.18	.36	<.010	<.010	.024	.07	<1
APR 21...	<.010	<.050	.112	--	.27	.39	.018	<.010	<.010	--	2
MAY 05...	<.010	<.050	.218	--	.17	.39	<.010	<.010	<.010	--	2
JUN 02...	<.010	<.050	<.020	--	--	<.10	<.010	<.010	<.010	--	2
JUN 16...	<.010	<.050	.040	--	.16	.20	.012	<.010	<.010	--	2
JUL 14...	.014	<.050	.201	--	.31	.51	<.010	<.010	.025	.08	1
AUG 11...	.016	<.050	.263	--	.16	.42	.011	<.010	.020	.06	<1
SEP 01...	.015	<.050	.455	--	.00	.46	<.010	--	.033	.10	3

DATE	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
NOV 04...	<1	<100	34	<10	<20	<10	<10	<10	<200	250	<60
DEC 09...	<1	100	24	<10	<160	18	<10	<10	<200	310	<200
JAN 13...	<1	<100	24	<10	<160	<10	<10	<10	<200	260	<200
FEB 10...	<1	100	28	<10	<160	<10	<10	<10	<200	240	<200
MAR 26...	<1	<100	35	<10	<160	<10	<10	<10	<200	180	<200
APR 21...	<1	<100	25	<10	<160	<10	<10	<10	<200	560	<200
MAY 05...	1	<100	25	<10	<160	<10	<10	<10	<200	530	<200
JUN 02...	2	400	38	<10	<160	<10	<10	<10	<200	170	<200
JUN 16...	3	<100	34	<10	<160	<10	<10	<10	<200	240	<200
JUL 14...	<1	<100	29	<10	<200	<10	<10	<10	<250	140	<250
AUG 11...	--	<100	--	<10	--	<10	--	<10	--	210	--
SEP 01...	3	<100	37	<10	<160	<10	<10	<10	<200	250	<200

RED RIVER BASIN

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX

LOCATION.--Lat 33°38'39", long 99°48'02", Knox County, Hydrologic Unit 11130205, on right bank at upstream side of bridge on State Highway 6, 2 mi downstream from Panhandle and Santa Fe Railway Co. bridge, 4 mi north of Benjamin, and 41 mi upstream from confluence with North Wichita River.

DRAINAGE AREA.--584 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,334.23 ft above sea level. Prior to Jan 2, 1960, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation. There are low flow diversions upstream on the South Wichita River at Low Flow Dam near Guthrie (station 07311782) to evaporation lake (station 07311669). There were other minor diversions upstream from station during the year.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct 11	1300	1,690	13.21	Mar 15	2330	1,550	12.83
Feb 19	0800	1,300	12.05	May 25	0730	1,380	12.30

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

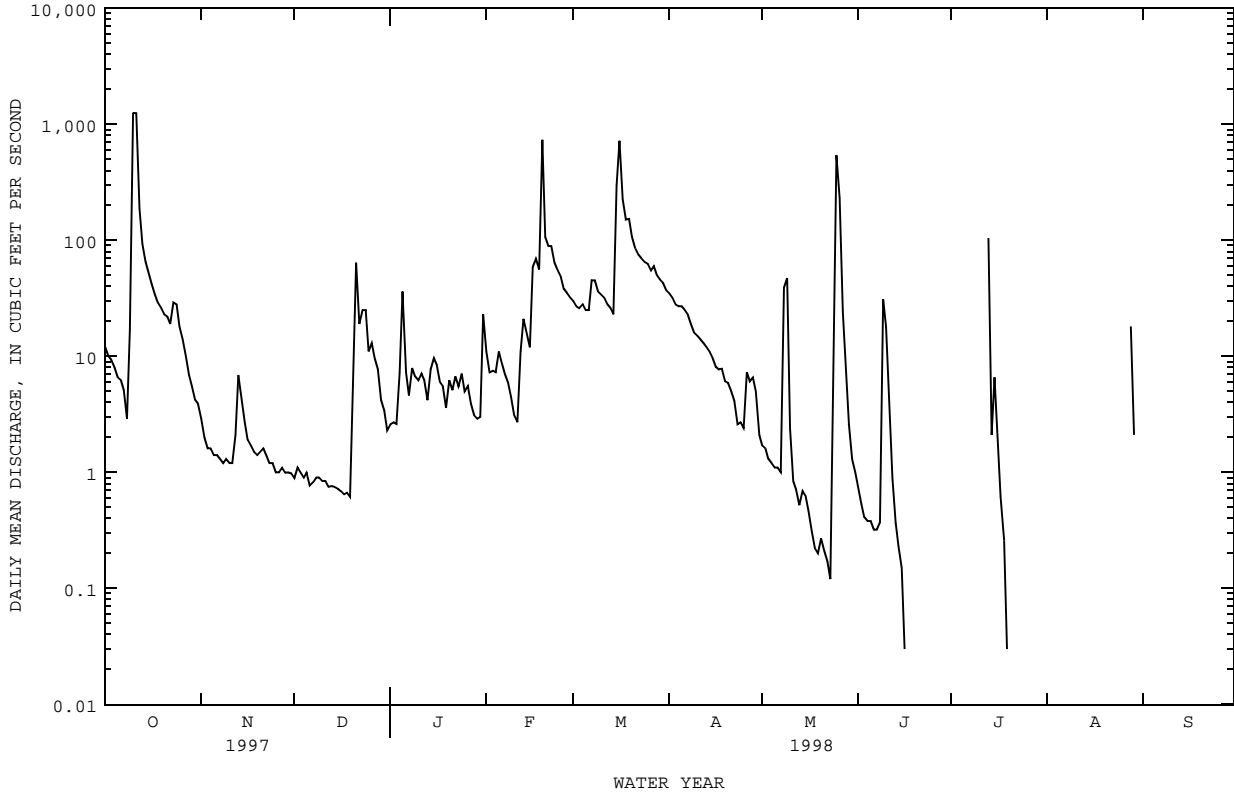
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	2.9	.89	2.6	11	30	35	1.7	.74	.00	.00	.00
2	10	2.0	1.1	2.7	7.3	27	32	1.6	.53	.00	.00	.00
3	9.3	1.6	1.0	2.6	7.5	26	28	1.3	.41	.00	.00	.00
4	8.0	1.6	.90	7.2	7.3	28	27	1.2	.38	.00	.00	.00
5	6.6	1.4	1.0	36	11	25	27	1.1	.38	.00	.00	.00
6	6.2	1.4	.77	7.3	8.6	25	25	1.1	.32	.00	.00	.00
7	5.1	1.3	.82	4.6	7.0	45	23	1.0	.32	.00	.00	.00
8	2.9	1.2	.90	7.9	5.9	45	19	39	.37	.00	.00	.00
9	17	1.3	.90	6.7	4.5	36	16	47	31	.00	.00	.00
10	1250	1.2	.84	6.2	3.1	34	15	2.4	18	.00	.00	.00
11	1240	1.2	.84	7.1	2.7	32	14	.84	4.2	.00	.00	.00
12	188	2.1	.75	6.2	11	28	13	.71	.89	.00	.00	.00
13	94	6.9	.76	4.2	21	26	12	.52	.37	104	.00	.00
14	65	4.3	.75	7.7	16	23	11	.69	.23	2.1	.00	.00
15	52	2.7	.72	9.6	12	298	9.6	.62	.15	6.6	.00	.00
16	42	1.9	.69	8.4	59	719	8.1	.46	.03	1.9	.00	.00
17	34	1.7	.65	6.0	69	226	7.7	.31	.00	.61	.00	.00
18	29	1.5	.67	5.5	56	151	7.8	.22	.00	.26	.00	.00
19	26	1.4	.61	3.6	735	153	6.1	.20	.00	.03	.00	.00
20	23	1.5	4.4	6.2	106	107	5.9	.27	.00	.00	.00	.00
21	22	1.6	64	5.1	89	85	5.0	.21	.00	.00	.00	.00
22	19	1.4	19	6.7	89	75	4.1	.17	.00	.00	.00	.00
23	29	1.2	25	5.5	64	70	2.6	.12	.00	.00	.00	.00
24	28	1.2	25	7.1	55	65	2.7	55	.00	.00	.00	.00
25	18	1.0	11	5.0	48	63	2.4	540	.00	.00	.00	.00
26	14	1.0	13	5.6	38	55	7.3	231	.00	.00	.00	.00
27	10	1.1	9.6	3.9	35	60	6.1	24	.00	.00	.00	.00
28	6.9	.99	7.7	3.1	32	50	6.6	7.2	.00	.00	18	.00
29	5.5	1.0	4.2	2.9	---	46	5.0	2.6	.00	.00	2.1	.00
30	4.2	.98	3.4	3.0	---	43	2.1	1.3	.00	.00	.00	.00
31	3.9	---	2.3	23	---	37	---	1.0	---	.00	.00	---
TOTAL	3280.6	52.57	204.16	219.2	1610.9	2733	386.1	964.84	58.32	115.50	20.10	0.00
MEAN	106	1.75	6.59	7.07	57.5	88.2	12.9	31.1	1.94	3.73	.65	.000
MAX	1250	6.9	64	36	735	719	35	540	31	104	18	.00
MIN	2.9	.98	.61	2.6	2.7	23	2.1	.12	.00	.00	.00	.00
AC-FT	6510	104	405	435	3200	5420	766	1910	116	229	40	.00
IN.	.21	.00	.01	.01	.10	.17	.02	.06	.00	.01	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1998, BY WATER YEAR (WY)

MEAN	74.7	18.4	12.5	11.6	18.9	21.3	30.7	75.4	83.2	24.0	48.2	80.5
MAX	656	65.1	77.5	60.3	172	88.7	187	256	458	162	578	502
(WY)	1984	1987	1992	1992	1992	1970	1990	1989	1990	1986	1995	1966
MIN	.17	1.14	.73	.68	1.39	.97	.073	.92	1.49	.013	.000	.000
(WY)	1980	1988	1989	1989	1989	1989	1989	1988	1976	1965	1963	1998

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1960 - 1998	
ANNUAL TOTAL	15016.38		9645.29		42.1	
ANNUAL MEAN	41.1		26.4		11.2	
HIGHEST ANNUAL MEAN					107	1966
LOWEST ANNUAL MEAN					11.2	1988
HIGHEST DAILY MEAN	1250	May 9	1250	Oct 10	8260	Oct 20 1983
LOWEST DAILY MEAN	.00	Sep 9	.00	Jun 17	.00	May 24 1960
ANNUAL SEVEN-DAY MINIMUM	.00	Sep 9	.00	Jun 17	.00	Jun 27 1960
INSTANTANEOUS PEAK FLOW			1690	Oct 11	14900	Jun 1 1990
INSTANTANEOUS PEAK STAGE			13.21	Oct 11	17.07	Jun 1 1990
INSTANTANEOUS LOW FLOW					.00	May 24 1960
ANNUAL RUNOFF (AC-FT)	29780		19130		30510	
ANNUAL RUNOFF (INCHES)	.96		.61		.98	
10 PERCENT EXCEEDS	66		46		46	
50 PERCENT EXCEEDS	8.5		2.1		7.0	
90 PERCENT EXCEEDS	.71		.00		.24	



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Jul 1949 to Mar 1959, Jul 1966 to current year. Pesticide analyses: Oct 1996 to Sep 1997.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct 1967 to current year.

WATER TEMPERATURE: Oct 1967 to current year.

INSTRUMENTATION.--Since Aug 1968, specific conductance and water temperature was recorded continuously at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1989 to 1998. The standard error of estimate for dissolved solids is 5%, chloride is 32%, sulfate is 13% and for hardness is 13%. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 48,900 microsiemens, May 13, 1971; minimum, 384 microsiemens, Sep 18, 1996.

WATER TEMPERATURE: Maximum, 39.0°C, Jul 31, 1989; minimum, 0.0°C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 22,800 microsiemens, Oct 8; minimum, 1,040 microsiemens, Feb 19.

WATER TEMPERATURE: Maximum, 38.6°C, Jul 19; minimum, 0.5°C, Dec 13.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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, (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CAC03) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CAC03 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	
NOV												
05...	0915	1.5	13800	8.2	12.5	9.4	96	2800	2700	770	225	
DEC												
09...	1530	.77	14300	8.2	11.5	10.4	106	3000	2800	770	257	
JAN												
13...	1610	4.2	10200	8.3	4.5	12.4	103	2700	2600	660	263	
FEB												
10...	1640	3.1	12100	8.3	12.0	10.2	104	2900	2700	690	279	
MAR												
17...	1510	187	4170	8.1	14.0	9.8	102	1800	1700	450	161	
APR												
21...	1720	4.9	12300	8.0	22.0	8.8	109	3300	3100	740	350	
MAY												
05...	1635	1.1	12300	7.9	30.5	7.7	113	3200	3000	740	336	
JUN												
03...	0920	.41	9280	8.1	25.0	7.3	96	2700	2600	700	237	
JUL												
15...	1235	11	3190	7.8	31.5	--	--	1400	1400	440	84	
DATE		SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS S04) (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)
NOV												
05...	2310	19	17	160	2400	3900	.26	33	9680	38	.046	
DEC												
09...	2410	19	16	180	2500	4100	.20	5.7	10100	40	--	
JAN												
13...	1450	12	14	170	2400	2500	.37	8.2	7420	52	--	
FEB												
10...	1800	15	16	170	2500	3100	.24	3.8	8470	44	--	
MAR												
17...	334	3	12	130	1600	520	.28	7.2	3210	24	--	
APR												
21...	1840	14	20	170	2700	2900	.26	20	8720	9	--	
MAY												
05...	1880	14	21	170	2800	3200	.23	6.8	9140	18	--	
JUN												
03...	1280	11	21	150	2300	2200	.26	6.8	6830	28	--	
JUL												
15...	206	2	15	54	1400	340	.33	18	2530	296	.335	

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)
NOV 05...	.031	.077	<.020	.24	--	.16	<.010	<.010	.011	.03	4
DEC 09...	<.010	.064	.053	.26	.14	.19	<.010	<.010	<.010	--	2
JAN 13...	<.010	.065	<.020	--	--	<.10	<.010	<.010	<.010	--	3
FEB 10...	<.010	.085	.128	.28	.07	.20	<.010	<.010	.017	.05	2
MAR 17...	<.010	.118	.040	.85	.69	.73	.502	<.010	<.010	--	10
APR 21...	<.010	<.050	.060	--	.13	.19	<.010	<.010	.010	.03	3
MAY 05...	<.010	<.050	.022	--	.17	.20	<.010	<.010	<.010	--	3
JUN 03...	.012	<.050	<.020	--	--	.38	<.010	.022	<.010	--	7
JUL 15...	.035	.370	.160	1.0	.47	.63	.090	<.010	.018	.06	5

DATE	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
NOV 05...	4	<100	57	<4	<12	<4	<4.0	<4	<120	770	<36
DEC 09...	2	100	34	<4	<80	8	<4.0	<4	<100	390	<100
JAN 13...	3	<100	33	<2	<80	<2	<2.0	<2	<100	780	<100
FEB 10...	2	<100	28	<4	<80	5	<4.0	<4	<100	730	<100
MAR 17...	4	400	101	<1	<24	21	<1.0	14	<30	13000	<30
APR 21...	2	<100	30	<2	<80	2	1.7	<2	<100	340	<100
MAY 05...	2	<100	34	<4	<80	<4	<4.0	<4	<100	240	<100
JUN 03...	9	300	109	<2	<80	3	<2.0	2	<100	240	<100
JUL 15...	4	<100	52	<1	<24	7	<1.0	6	<30	1800	<30

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)
NOV 05...	7	<120	43	20	<.10	.2	<100	<120	<1	<1	<4
DEC 09...	<4	<1000	45	<40	<.10	<.1	<100	<400	<1	<1	<4
JAN 13...	<2	<1000	45	<40	<.10	<.1	<100	<400	2	2	<2
FEB 10...	<4	<1000	42	<40	<.10	<.1	120	<400	2	2	<4
MAR 17...	2	<300	380	<12	<.10	<.1	<100	<120	2	4	<1
APR 21...	<2	<1000	46	<40	<.10	<.1	<100	<400	2	2	<2
MAY 05...	<4	<1000	54	<40	<.10	<.1	<100	<400	<1	<1	<4
JUN 03...	<2	<1000	36	<40	<.10	<.1	160	<400	<1	<1	<2
JUL 15...	<1	<300	79	<12	<.10	<.1	<100	<120	1	<1	<1

RED RIVER BASIN

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR- DANE, TECH- NICAL TOTAL (UG/L) (39350)	DI- ELDRIN TOTAL (UG/L) (39380)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	HEPTA- CHLOR, TOTAL (UG/L) (39410)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	TOX- APHENE, TOTAL (UG/L) (39400)
NOV 05...	<4.0	90	110	--	--	--	--	--	--	--	--
DEC 09...	<4.0	<10	<200	--	--	--	--	--	--	--	--
JAN 13...	<2.0	<10	<200	--	--	--	--	--	--	--	--
FEB 10...	<4.0	<10	<200	--	--	--	--	--	--	--	--
MAR 17...	<1.0	70	<60	<.040	<.100	<.020	<.060	<.030	<.800	<.030	<2.00
APR 21...	<2.0	<10	<200	--	--	--	--	--	--	--	--
MAY 05...	<4.0	<10	220	--	--	--	--	--	--	--	--
JUN 03...	<2.0	<10	<200	<.040	<.100	<.020	<.060	<.030	<.800	<.030	<2.00
JUL 15...	<1.0	10	<60	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1997 TO SEPTEMBER 1998

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. 1997	3280.6	4840	3460	30610	1100	9490	1200	10610	1400
NOV. 1997	52.57	14340	9920	1410	3700	526	2800	391	3200
DEC. 1997	204.16	7420	5260	2900	1700	934	1800	965	2000
JAN. 1998	219.2	8540	6040	3570	2000	1170	2000	1170	2300
FEB. 1998	1610.9	3770	2700	11760	800	3490	980	4240	1100
MAR. 1998	2733	4720	3380	24940	1000	7460	1200	8940	1400
APR. 1998	386.1	10990	7710	8040	2700	2780	2400	2470	2800
MAY 1998	964.84	3180	2280	5940	680	1780	810	2120	930
JUNE 1998	58.32	6070	4320	681	1400	214	1500	233	1700
JULY 1998	115.5	3420	2470	772	700	218	930	290	1100
AUG. 1998	20.1	2720	1970	107	540	29.5	760	41.2	860
SEPT 1998	0	--	--	--	--	--	--	--	--
TOTAL	9645.29	**	**	90730	**	28100	**	31470	**
WTD.AVG.	26	4880	3480	**	1100	**	1200	**	1400

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	18600	16100	17000	14100	13600	13900	14000	13700	13800	10300	9390	9850
2	17400	15900	16500	14200	13800	13900	13800	12200	13100	10400	9560	9920
3	19900	17300	18600	14200	13900	14100	13600	12800	13200	10200	9790	9970
4	21000	19900	20600	14500	14000	14300	13900	13500	13700	10500	2870	9930
5	21600	21000	21200	14500	14200	14400	14000	13700	13800	8310	2870	5630
6	21900	21500	21700	14500	14200	14400	13900	13800	13900	7780	4090	4910
7	22300	21600	21900	14500	14200	14400	14000	13500	13800	8370	4750	6820
8	22800	21900	22200	14500	14300	14400	14400	13800	14000	8800	7410	8100
9	---	---	22500	14600	14100	14400	14600	14100	14300	9470	8490	9190
10	---	---	e4510	14600	14300	14500	14700	14400	14600	---	---	9370
11	---	---	e2600	14700	14400	14500	14600	14300	14500	---	---	e9750
12	---	---	e5340	14800	14500	14600	14700	14400	14500	---	---	e9980
13	---	---	e6000	14600	13900	14300	15000	14100	14600	---	---	e10200
14	---	---	e7450	14700	14300	14500	14800	14100	14600	---	---	e10200
15	---	---	e8120	14500	14200	14400	14800	14000	14400	---	---	e10300
16	---	---	e8650	14800	14300	14500	14600	14000	14300	---	---	e10300
17	---	---	e9000	14700	14200	14500	14700	14100	14400	---	---	e10400
18	---	---	e9200	14500	14300	14400	14500	14000	14300	---	---	e10500
19	---	---	e10100	14500	14200	14400	14700	14000	14400	---	---	e10600
20	---	---	e10400	14600	14200	14400	14600	5230	12200	---	---	e10700
21	---	---	e10500	14800	14500	14600	---	---	e5200	---	---	e10800
22	---	---	e10600	15000	14600	14700	---	---	e3950	11000	10600	10800
23	---	---	e7200	15100	14600	14800	7470	5370	6520	11200	10600	10800
24	---	---	e8500	14800	14400	14600	8760	6640	8090	11300	10900	11100
25	---	---	e9480	14600	14200	14400	9340	8250	8870	11400	11000	11100
26	---	---	e10700	14400	14000	14200	9520	6960	8710	11600	11200	11400
27	---	---	e11800	14200	13900	14000	9670	9180	9480	11500	9340	11000
28	12500	12000	12300	14000	13500	13800	9580	9140	9290	9340	5340	7250
29	13000	12500	12700	14100	13700	13900	9820	8950	9460	5340	4760	5030
30	13500	12800	13100	14100	13700	13800	9970	9260	9620	5130	4830	4980
31	13800	13400	13600	---	---	---	10200	9440	9870	7640	3690	5490
MONTH	---	---	12400	15100	13500	14300	---	---	11900	---	---	9240
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	9500	6480	8430	---	---	e6880	8450	7910	8340	12200	11800	12000
2	---	---	e9000	---	---	e7030	9450	7500	8750	12500	12100	12300
3	---	---	e9800	---	---	e7400	10500	8140	9850	12600	12300	12400
4	---	---	e10700	---	---	e7700	10600	10400	10500	12700	12300	12500
5	10800	10300	10500	---	---	e7800	10800	10600	10600	12800	12300	12500
6	11300	10500	10900	8010	7680	7910	11200	10200	10800	13300	12700	12900
7	11700	11200	11500	7800	6470	7130	11900	11200	11500	13700	13200	13400
8	12100	11600	11800	7050	4700	5710	12400	11900	12100	13800	1340	10500
9	12400	12000	12200	7270	6530	6940	12500	12300	12400	11600	3110	5960
10	12400	12100	12300	7540	7270	7420	12500	12100	12300	6410	4990	5670
11	12300	12000	12100	7680	7410	7540	12500	12200	12300	8780	6410	7530
12	12000	7860	10400	7830	7630	7730	12500	12100	12400	11500	8780	10100
13	9470	7840	8910	8200	7780	7960	12500	11600	12300	12100	11500	11800
14	9280	8760	8970	8500	8200	8370	12300	11900	12200	12100	11400	11700
15	9950	9140	9600	8540	1230	6250	12400	12100	12300	12200	11200	11500
16	10000	3510	6940	2640	1500	2110	12500	12100	12400	12400	11700	12100
17	5180	2260	3490	4460	2620	3650	12400	12000	12200	12300	11900	12100
18	3530	2290	2640	4950	3980	4620	12100	10100	11800	12300	12000	12200
19	3840	1040	1940	5910	4450	5330	---	---	11900	12400	12100	12200
20	---	---	e2650	5970	5810	5900	---	---	e12100	13100	12200	12400
21	---	---	e3600	5940	2890	5740	---	---	e11900	13200	12800	13000
22	---	---	e4170	2890	2820	2850	---	---	e12400	12800	12600	12700
23	---	---	e4590	3060	2860	2920	---	---	e12600	12800	12500	12700
24	---	---	e4990	3240	3060	3160	---	---	e12800	12800	1180	10400
25	---	---	e5770	3240	2970	3080	13000	12700	12900	4160	1310	2080
26	---	---	e6090	6710	3040	6220	12900	4500	10800	2210	1230	1530
27	---	---	e6420	7060	5660	6470	12300	10900	11900	3390	2210	2840
28	---	---	e6700	7630	7060	7310	12200	9820	11200	---	---	e5400
29	---	---	---	7930	7100	7740	12100	10500	11600	---	---	e7700
30	---	---	---	8220	6910	7960	12100	11400	11700	---	---	e8400
31	---	---	---	8330	7360	8220	---	---	---	---	---	e9000
MONTH	---	---	7750	---	---	6230	---	---	11600	---	---	9980

RED RIVER BASIN

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	JUNE			JULY			AUGUST			SEPTEMBER		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	e9300	---	---	---	---	---	---	---	---	---
2	---	---	e9600	---	---	---	---	---	---	---	---	---
3	---	---	e9500	---	---	---	---	---	---	---	---	---
4	9760	9300	9500	---	---	---	---	---	---	---	---	---
5	10000	9620	9860	---	---	---	---	---	---	---	---	---
6	10000	9550	9830	---	---	---	---	---	---	---	---	---
7	10000	9630	9830	---	---	---	---	---	---	---	---	---
8	9780	9170	9480	---	---	---	---	---	---	---	---	---
9	9870	2260	8190	---	---	---	---	---	---	---	---	---
10	2750	2020	2320	---	---	---	---	---	---	---	---	---
11	---	---	e3400	---	---	---	---	---	---	---	---	---
12	---	---	e6500	---	---	---	---	---	---	---	---	---
13	---	---	e6750	8900	2160	3350	---	---	---	---	---	---
14	---	---	e6950	3970	2050	2620	---	---	---	---	---	---
15	---	---	e7200	3330	2600	2890	---	---	---	---	---	---
16	---	---	e8200	11200	2900	5650	---	---	---	---	---	---
17	---	---	---	14100	11200	13300	---	---	---	---	---	---
18	---	---	---	13600	12200	13000	---	---	---	---	---	---
19	---	---	---	12400	11300	11600	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	e2780	---	---	---
29	---	---	---	---	---	---	---	---	e2230	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

e Estimated

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	29.0	19.8	24.3	18.6	13.5	15.4	10.6	8.1	9.2	9.9	3.7	6.9
2	28.9	21.6	24.7	17.1	12.0	13.6	10.2	9.2	9.7	13.9	8.1	10.7
3	28.0	20.6	23.6	16.2	9.4	12.3	10.5	6.0	8.6	14.6	11.4	13.1
4	29.3	21.0	24.2	18.1	10.9	13.8	11.0	4.0	6.5	14.6	6.4	11.8
5	28.9	21.3	24.1	18.2	12.4	14.4	---	---	---	10.5	6.4	8.8
6	25.2	21.6	22.8	16.6	10.3	12.7	6.6	4.1	5.4	10.5	8.3	9.9
7	25.9	21.3	22.9	16.0	8.9	11.7	6.9	5.6	6.2	8.3	5.5	6.4
8	26.8	21.5	23.8	16.7	10.0	12.6	11.6	5.5	7.8	7.0	3.6	5.4
9	28.3	21.9	24.7	12.5	8.8	11.0	11.5	6.2	8.0	8.5	2.8	5.5
10	23.2	21.6	22.2	9.8	6.3	7.9	6.9	4.3	5.4	6.3	3.5	4.2
11	22.4	21.1	21.8	10.6	5.0	7.2	4.8	2.7	3.6	7.2	3.7	5.1
12	23.1	19.8	22.1	8.8	7.7	8.1	7.1	1.4	3.2	11.3	6.3	8.3
13	20.3	16.9	18.7	8.8	7.7	8.3	6.5	.5	2.9	7.9	4.3	5.7
14	20.3	15.1	17.8	8.8	4.4	7.1	8.2	1.5	3.9	6.5	4.1	5.0
15	20.7	14.6	17.7	7.8	2.8	5.0	9.9	2.2	5.2	6.9	1.5	4.6
16	20.5	14.7	17.8	8.1	2.7	5.0	10.7	3.6	6.1	8.7	4.1	6.3
17	20.0	14.7	17.8	10.0	4.1	6.3	10.9	3.0	6.0	9.2	4.2	6.8
18	20.5	15.0	18.1	11.9	5.6	7.9	11.5	3.6	6.7	10.6	6.3	8.3
19	20.6	15.6	18.5	12.8	5.9	8.7	12.0	4.3	7.4	9.6	4.6	7.0
20	19.2	16.4	17.6	12.5	7.9	9.6	7.9	3.6	5.9	10.5	6.7	8.2
21	17.7	15.5	16.6	12.4	7.9	9.8	5.4	3.0	4.1	8.4	6.2	7.3
22	17.7	12.6	15.5	15.0	9.2	11.0	4.6	1.8	3.3	8.4	4.9	6.0
23	19.2	15.0	17.5	13.8	7.5	10.1	4.5	3.9	4.2	5.5	3.2	4.3
24	19.5	14.7	17.4	14.9	8.2	10.5	7.1	2.6	4.8	7.8	1.5	4.5
25	18.7	12.1	15.8	16.5	8.0	11.6	6.7	3.8	5.4	10.9	4.9	7.5
26	12.9	8.4	10.9	14.2	10.9	12.0	6.9	3.1	4.7	10.8	5.8	8.0
27	13.8	9.0	11.4	15.3	11.0	12.9	6.1	1.6	3.9	10.3	4.6	7.2
28	16.8	10.3	13.5	17.5	11.8	14.2	6.5	2.5	4.2	9.5	6.2	7.6
29	18.3	11.9	15.2	11.8	8.4	10.3	6.8	1.1	3.9	10.3	5.2	7.3
30	18.7	14.1	16.3	12.5	7.2	9.4	7.7	2.8	5.2	9.7	5.5	7.5
31	19.1	12.5	15.7	---	---	---	7.7	3.4	5.5	12.2	8.0	10.0
MONTH	29.3	8.4	19.1	18.6	2.7	10.3	---	---	---	14.6	1.5	7.3

RED RIVER BASIN

07311900 WICHITA RIVER NEAR SEYMOUR, TX

LOCATION.--Lat 33°42'01", long 99°23'18", Baylor County, Hydrologic Unit 11130206, on left bank at downstream side of bridge on farm road 1919, 6 mi upstream from the head of Lake Kemp (07312000), 10 mi downstream from the confluence of the North and South Forks of the Wichita River, and 10.5 mi northwest of Seymour.

DRAINAGE AREA.--1,874 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1952-57 (occasional low-flow measurements made 4 mi downstream), Nov 1959 to Sep 1979, Oct 1996 to Sep 1997.

GAGE.--Water-stage recorder. Datum of gage is 1,152.7 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 16	1030	4,150	13.52	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	45	40	75	335	132	123	57	50	19	2.3	5.9
2	54	43	83	70	142	125	117	54	40	18	2.1	4.4
3	45	41	69	67	103	120	111	51	34	17	2.0	3.6
4	40	39	52	221	80	116	105	50	31	18	15	3.1
5	36	39	49	203	89	110	101	49	30	215	84	2.9
6	33	38	44	134	80	103	99	47	29	45	16	2.6
7	32	38	45	104	72	273	94	44	28	13	9.5	2.3
8	32	38	47	174	67	347	89	46	30	7.9	8.0	2.1
9	37	39	44	114	61	230	86	213	47	5.7	6.6	2.1
10	118	41	42	84	57	154	82	180	736	4.9	5.5	1.8
11	1150	41	42	77	56	135	80	85	560	4.2	6.9	1.7
12	936	41	42	71	134	123	77	61	161	4.7	5.8	1.9
13	789	53	40	64	305	119	76	51	76	5.9	5.5	2.1
14	329	53	40	64	130	114	75	46	48	6.4	32	2.4
15	185	57	40	62	103	226	73	42	33	28	37	2.4
16	142	54	39	60	495	3570	69	41	27	8.2	10	2.6
17	119	50	38	59	986	3010	68	40	23	6.0	7.1	7.8
18	103	45	39	58	445	1730	70	38	21	7.5	6.3	50
19	89	43	38	54	1470	805	68	36	21	6.0	6.0	8.4
20	78	42	108	54	912	519	66	34	20	5.0	5.4	5.3
21	74	41	781	51	612	375	66	33	18	4.7	5.1	4.2
22	70	40	331	50	443	305	65	34	18	4.2	5.3	3.3
23	190	38	316	50	312	261	63	34	18	3.9	4.6	3.5
24	160	38	450	51	237	224	61	33	17	3.6	4.4	4.0
25	94	37	190	49	196	199	59	36	17	3.4	4.0	4.2
26	72	37	151	46	167	177	60	437	17	3.1	4.3	3.7
27	63	37	132	44	148	192	70	514	17	2.9	3.6	3.6
28	57	48	112	43	138	194	75	197	17	2.8	3.4	3.6
29	52	41	96	42	---	145	64	105	18	2.8	3.3	3.5
30	50	40	87	41	---	132	60	74	18	2.6	11	3.3
31	48	---	78	412	---	127	---	59	---	2.4	10	---
TOTAL	5341	1277	3705	2748	8375	14392	2372	2821	2220	481.8	332.0	152.3
MEAN	172	42.6	120	88.6	299	464	79.1	91.0	74.0	15.5	10.7	5.08
MAX	1150	57	781	412	1470	3570	123	514	736	215	84	50
MIN	32	37	38	41	56	103	59	33	17	2.4	2.0	1.7
AC-FT	10590	2530	7350	5450	16610	28550	4700	5600	4400	956	659	302

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1998, BY WATER YEAR (WY)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
MEAN	230	88.1	50.2	50.3	64.5	101	160	249	271	142	180	347																	
MAX	1464	262	222	375	299	464	664	742	979	726	1353	1492																	
(WY)	1961	1973	1960	1968	1998	1998	1967	1997	1967	1967	1966	1966																	
MIN	2.89	9.29	13.5	11.5	12.5	8.10	7.36	32.3	18.4	1.11	1.46	4.23																	
(WY)	1964	1971	1971	1964	1971	1965	1964	1962	1970	1964	1970	1968																	

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1960 - 1998

ANNUAL TOTAL	82228	44217.1	
ANNUAL MEAN	225	121	161
HIGHEST ANNUAL MEAN			389
LOWEST ANNUAL MEAN			71.6
HIGHEST DAILY MEAN	8320	May 9	3570
LOWEST DAILY MEAN	12	Sep 21	1.7
ANNUAL SEVEN-DAY MINIMUM	15	Sep 16	2.0
INSTANTANEOUS PEAK FLOW			4150
INSTANTANEOUS PEAK STAGE			13.52
ANNUAL RUNOFF (AC-FT)	163100	87700	116400
10 PERCENT EXCEEDS	417	225	225
50 PERCENT EXCEEDS	54	49	32
90 PERCENT EXCEEDS	28	4.0	6.5

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Oct 1967 to Sep 1979, Oct 1996 to current year. Pesticide analyses: Oct 1996 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct 1967 to Sep 1979, Oct 1996 to current year.
 WATER TEMPERATURE: Oct 1967 to Sep 1979, Oct 1996 to current year.

INSTRUMENTATION.--From Aug 1968 to Sep 1979 and Oct 1996 to current year, specific conductance and water temperature were recorded continuously at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1997 to 1998. The standard error of estimate for dissolved solids is 3%, chloride is 18%, sulfate is 10% and for hardness is 11%. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 30,800 microsiemens, Feb 12, 1969; minimum, 428 microsiemens, Aug 17, 1997.
 WATER TEMPERATURE: Maximum, 39.4°C, Jul 13-14, 1998; minimum, 0.0°C, on several days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 21,900 microsiemens, Aug 31; minimum, 1,140 microsiemens, Mar 16.
 WATER TEMPERATURE: Maximum, 39.4°C, Jul 13-14; minimum, 0.0°C, Dec 13.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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, (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L) (00900)	HARD-NESS NONCARB FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
NOV											
06...	0910	35	12300	8.2	10.5	10.2	98	2300	2100	620	169
DEC											
10...	1445	43	12800	8.3	7.0	11.7	106	2300	2100	630	168
JAN											
14...	1445	66	11200	8.3	5.5	11.8	103	2200	2000	580	174
FEB											
11...	1455	54	11400	8.2	14.5	10.9	116	2100	2000	580	173
MAR											
18...	1345	1760	1870	8.0	13.0	10.0	100	670	590	180	54
APR											
22...	1635	66	12100	7.9	24.5	8.7	113	2800	2600	750	228
MAY											
06...	1605	48	12100	7.9	31.0	7.2	108	2500	2300	640	218
JUN											
04...	1115	31	11700	8.0	24.0	7.5	97	2300	2100	610	178
17...	1645	19	11600	8.0	32.5	--	--	2100	2000	580	162
JUL											
15...	1720	24	6830	8.0	35.5	--	--	1700	1600	470	127
AUG											
12...	1335	7.7	14500	8.2	27.5	9.2	127	2400	2300	680	180
SEP											
02...	1445	5.6	17500	8.1	35.5	8.6	139	2700	2600	760	198

DATE	TIME	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END CACO3 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF 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)
NOV												
06...	2030	19	12	150	2000	3200	.28	11	8150	14	.064	
DEC												
10...	2160	20	10	160	2000	3500	.35	10	8580	19	--	
JAN												
14...	1820	17	10	180	1900	3100	.43	6.3	7710	48	.585	
FEB												
11...	1880	18	11	170	1900	3100	.33	5.0	7730	27	--	
MAR												
18...	146	2	7.2	88	630	210	.25	9.2	1290	32	--	
APR												
22...	1910	16	14	160	2200	3000	.32	16	8230	7	--	
MAY												
06...	2050	18	15	140	2300	3300	.32	6.1	8630	16	--	
JUN												
04...	1940	18	15	130	2100	3200	.34	6.1	8060	32	--	
17...	2010	19	13	140	1900	3300	.33	6.4	8080	39	--	
JUL												
15...	1040	11	14	83	1700	1600	.40	9.1	4940	130	.519	
AUG												
12...	2630	23	15	90	2100	4200	.37	7.4	9870	14	--	
SEP												
02...	3340	28	16	80	2600	5500	.49	13	12400	14	--	

RED RIVER BASIN

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)
NOV 06...	.030	.094	<.020	--	--	<.10	<.010	<.010	.013	.04	2
DEC 10...	<.010	.243	.023	.36	.10	.12	<.010	<.010	<.010	--	1
JAN 14...	.015	.600	<.020	.73	--	.13	<.010	<.010	<.010	--	2
FEB 11...	<.010	.376	.075	.55	.10	.17	<.010	<.010	.015	.05	2
MAR 18...	<.010	.249	.038	.65	.36	.40	.059	<.010	.010	.03	7
APR 22...	<.010	<.050	.054	--	.09	.14	<.010	<.010	<.010	--	2
MAY 06...	<.010	<.050	.034	--	.28	.31	<.010	<.010	<.010	--	2
JUN 04...	<.010	<.050	<.020	--	--	<.10	<.010	<.010	<.010	--	4
JUN 17...	<.010	<.050	.049	--	.21	.26	.022	<.010	<.010	--	5
JUL 15...	.029	.548	.078	.90	.28	.36	.087	<.010	.019	.06	8
AUG 12...	<.010	<.050	.180	--	.09	.27	<.010	<.010	.017	.05	4
SEP 02...	.014	<.050	.054	--	.22	.28	<.010	<.010	.019	.06	4
DATE	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
NOV 06...	2	<100	56	<3	<10	<2	<4.0	40	<100	180	<30
DEC 10...	1	<100	35	<4	<80	<4	<4.0	<4	<100	110	<100
JAN 14...	2	<100	50	<2	<80	<4	<2.0	<2	<100	400	<100
FEB 11...	2	<100	52	<2	<80	<4	<4.0	<2	<100	470	<100
MAR 18...	3	400	71	<1	<8.0	20	<1.0	14	<10	14000	<10
APR 22...	2	<100	46	<2	<80	<2	<4.0	2	<100	60	<100
MAY 06...	2	<100	50	<4	<80	<4	<4.0	<4	<100	120	<100
JUN 04...	5	400	89	<4	<80	7	<4.0	<4	<100	280	<100
JUN 17...	5	200	142	<4	<80	<4	<4.0	<4	<100	490	<100
JUL 15...	3	<100	66	<1	<40	28	3.7	17	<50	6600	<50
AUG 12...	4	<100	89	<4	<64	<4	<4.0	<4	<80	50	<80
SEP 02...	4	<100	52	<4	<80	<4	<4.0	<4	<100	70	<100

RED RIVER BASIN

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1997 TO SEPTEMBER 1998

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. 1997	5341	3930	2660	38300	900	12990	810	11730	930
NOV. 1997	1277	12440	8480	29220	3400	11720	2100	7100	2300
DEC. 1997	3705	6640	4510	45100	1700	16800	1200	12270	1400
JAN. 1998	2748	8790	5970	44280	2200	16690	1600	11850	1800
FEB. 1998	8375	4170	2820	63740	960	21760	860	19390	980
MAR. 1998	14392	3640	2460	95430	840	32450	750	29150	850
APR. 1998	2372	11070	7530	48220	2900	18820	1900	12250	2200
MAY 1998	2821	7940	5390	41030	2000	15400	1500	11050	1600
JUNE 1998	2220	5720	3880	23260	1400	8670	1100	6330	1200
JULY 1998	481.8	11890	8110	10540	3300	4290	1900	2490	2200
AUG. 1998	332	12420	8470	7600	3500	3130	2000	1760	2200
SEPT 1998	152.3	14560	9960	4100	4300	1760	2100	876	2400
TOTAL	44217.1	**	**	450800	**	164500	**	126200	**
WTD.AVG.	121	5570	3780	**	1400	**	1100	**	1200

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	6530	3690	6300	---	---	e10600	13100	12900	13000	10800	10700	10800
2	6940	6530	6740	---	---	e11100	13100	4440	10100	11000	10700	10800
3	7250	6940	7090	---	---	e11400	11200	7550	10400	11100	10800	11000
4	7400	7250	7320	---	---	e11700	12200	11200	11600	10900	2460	5840
5	7610	7400	7500	---	---	e12000	13100	12200	12700	7540	2330	4450
6	7780	7610	7690	---	---	e12300	13200	13100	13200	8280	5230	6440
7	7990	7780	7880	12400	12300	12400	13300	12800	13100	9190	6810	8030
8	8190	7990	8090	12500	12400	12400	12900	12700	12800	7250	5060	6020
9	8400	3120	8000	12500	12500	12500	13200	12700	12900	6990	4910	6160
10	8930	3120	5970	12500	12500	12500	13500	13200	13300	9750	6690	8420
11	5060	1390	2740	12500	12400	12500	13500	13500	13500	10100	9750	10000
12	1940	1370	1730	12500	12400	12400	13800	13400	13600	10500	10100	10200
13	---	---	e2160	12400	11800	12000	13900	13200	13600	11100	10500	10800
14	---	---	e2770	12200	11700	11900	13800	13400	13600	11300	11100	11200
15	---	---	e3540	12700	12000	12200	13700	13400	13500	11600	11000	11300
16	---	---	e4160	13100	12700	12900	13600	13400	13500	11400	11300	11300
17	---	---	e4720	13200	13000	13100	13700	13500	13600	11500	11200	11400
18	---	---	e5210	13100	12900	13000	13700	13400	13600	11700	11400	11500
19	---	---	e5690	13100	12900	13000	13700	13400	13600	11900	11700	11800
20	---	---	e6180	13100	12900	13000	13600	3350	10200	11900	11600	11800
21	---	---	e6580	13000	12800	12900	3510	2040	2760	12100	11900	12000
22	---	---	e7000	12900	12700	12900	4590	2040	3570	12200	12000	12100
23	---	---	e6240	13000	12800	12900	5230	2550	4090	12300	12100	12200
24	---	---	e6240	13100	12900	13000	4550	2260	3300	12400	12100	12300
25	---	---	e6810	13100	12900	13000	5800	2880	4360	12400	12200	12400
26	---	---	e7730	13100	13000	13100	7140	5000	5950	12600	12400	12500
27	---	---	e8400	13200	13000	13100	8060	7140	7690	12700	12300	12500
28	---	---	e9050	13000	12300	12600	9190	8060	8640	12700	12500	12600
29	---	---	e9460	12600	12300	12400	9920	9190	9590	12800	12600	12700
30	---	---	e9800	12900	12600	12800	10500	9920	10100	12800	12500	12600
31	---	---	e10200	---	---	---	10800	10500	10700	12600	2890	6860
MONTH	---	---	6420	---	---	12500	13900	2040	10500	12800	2330	10300

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	8210	1690	4580	8810	8370	8580	8960	8740	8830	12100	11100	11500
2	5720	5020	5400	9100	8810	8950	9380	8960	9150	12400	12000	12200
3	7160	5310	6140	9340	9100	9190	9630	9380	9520	12400	12000	12200
4	8400	7160	7850	9550	9340	9410	9680	9550	9610	12300	12000	12100
5	8420	7440	7940	9890	9550	9690	9870	9630	9700	12400	12000	12200
6	8950	7940	8470	10100	9890	10000	10400	9870	9990	12500	12100	12300
7	10100	8950	9550	10000	4660	7140	10600	10300	10400	12600	12300	12500
8	10900	10100	10500	5390	2700	3960	10900	10600	10700	12700	10300	12400
9	11500	10900	11200	6760	4870	5810	11000	10800	10900	11600	4180	8260
10	11900	11500	11700	8270	6760	7310	11200	10900	11000	8510	4340	5990
11	11900	11700	11800	9500	8240	8800	11500	11200	11300	7620	4740	6590
12	11900	3680	9070	9580	9340	9480	11900	11500	11700	9550	7620	9060
13	5700	3530	4300	9730	9560	9650	11900	11700	11800	10800	8430	9130
14	6970	3880	4880	9760	9660	9710	12000	11700	11900	11800	10800	11400
15	9760	6970	8760	9770	2520	7170	12000	11700	11800	12300	11700	12000
16	9980	2220	6150	3310	1140	1730	12100	11900	12000	12500	12100	12300
17	3120	1620	2290	3660	1290	2170	12100	11900	12000	12700	12200	12500
18	5140	2780	4170	2240	1530	1860	11900	11800	11900	13100	12500	12700
19	3080	1540	2230	3130	2240	2780	12000	11700	11900	13300	12900	13100
20	3190	1990	2530	3910	3130	3520	12100	12000	12000	13500	13000	13300
21	2600	2050	2240	4590	3910	4260	12200	11900	12000	13500	13200	13400
22	3550	2600	3040	5050	4590	4810	12100	11900	12000	13500	13100	13300
23	4710	3550	4300	5470	5050	5250	12200	11900	12100	13400	13200	13400
24	5410	4710	5190	5870	5470	5680	12800	12000	12300	13500	13100	13300
25	6440	5410	5830	6300	5870	6050	13000	12700	12800	13500	13200	13300
26	7150	6440	6780	6730	6300	6500	13000	11400	12500	13200	2440	7200
27	7830	7150	7500	7160	6530	6730	12500	12200	12400	4840	2080	3250
28	8370	7830	8110	7260	5450	6400	12400	10700	11600	5690	3370	4100
29	---	---	---	7610	6530	7140	12100	10800	11600	7220	5690	6470
30	---	---	---	8400	7610	8000	12000	10900	11500	9060	7170	8010
31	---	---	---	8740	8400	8620	---	---	---	9230	8640	8990
MONTH	11900	1540	6520	10100	1140	6660	13000	8740	11300	13500	2080	10600
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	9270	8570	8740	16200	15700	16000	17400	16900	17200	21600	20500	21200
2	10600	9270	9840	16400	15900	16100	17600	17000	17200	20500	18300	18900
3	11500	10600	11000	16700	16100	16400	17400	16500	17100	19500	18400	18800
4	11800	11500	11600	16700	16300	16500	19500	11900	16600	19800	19300	19500
5	12100	11800	11900	16700	1820	9090	11900	4160	7100	19700	18100	18800
6	12300	12000	12200	11200	2710	7390	13100	8990	12100	18300	16900	17300
7	12500	12000	12300	15300	11200	13400	13000	11800	12200	17000	16400	16600
8	12900	12100	12400	16500	14200	15600	11900	11500	11700	16400	15800	16000
9	13100	5810	11800	17200	15900	16400	11500	11100	11200	15800	15400	15600
10	8190	1890	3880	17400	16800	17000	12200	11300	11600	15900	15500	15600
11	2480	1470	2030	17800	17200	17400	13200	11600	12200	16200	15600	15800
12	2530	1850	2050	17800	17000	17400	14600	13200	14300	17300	16100	16500
13	4970	2530	3550	17200	16100	16900	15600	14200	15000	18000	17300	17600
14	7250	4970	6040	17800	16700	16900	16900	11400	15100	18900	18000	18300
15	8290	7250	7660	19100	6660	9130	12300	5970	9670	19300	18800	19000
16	11500	8290	10100	12300	8240	10200	14400	10900	12300	19800	19300	19500
17	12200	11500	11900	15700	12300	14000	15300	14400	15100	19900	3000	15900
18	12700	12200	12500	19200	15700	17600	15100	12300	13600	19400	7860	10300
19	13200	12100	12900	19400	19000	19200	13600	12100	12600	9530	7840	8720
20	14100	13200	13500	19200	18800	19000	15400	13600	14600	10700	9530	10100
21	14300	13800	14000	19200	18600	18900	15200	13800	14300	12600	10700	11700
22	14700	14300	14500	19100	18400	18700	16200	14400	15000	14000	12600	13300
23	14900	14600	14700	18700	18300	18500	16900	16200	16500	15900	14000	14800
24	15200	14800	15000	18700	18200	18500	17900	16900	17200	17800	15900	16800
25	15600	15100	15300	18600	18200	18400	18000	17500	17700	19300	17800	18400
26	15800	15400	15600	18400	18200	18300	18400	17700	18100	20100	19200	19600
27	16100	15500	15700	18400	18000	18200	18400	17700	18100	20400	19900	20100
28	16200	15700	15900	18300	18000	18200	18500	17900	18200	20600	20200	20400
29	16200	15700	15900	18300	17800	18100	18300	18000	18200	20800	20300	20600
30	16200	15700	15900	18200	17600	17800	21500	17700	19000	21000	20500	20800
31	---	---	---	17700	17100	17400	21900	21500	21700	---	---	---
MONTH	16200	1470	11300	19400	1820	16200	21900	4160	14900	21600	3000	16900

e Estimated

RED RIVER BASIN

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	30.3	22.4	26.2	19.0	13.0	15.4	11.7	9.3	10.4	11.5	3.8	7.5
2	29.5	22.0	25.3	17.4	11.8	13.8	10.5	9.7	10.0	15.6	8.5	11.6
3	27.9	20.7	24.0	16.7	9.0	12.6	10.0	6.2	8.7	15.4	11.1	13.3
4	28.6	20.0	23.7	19.8	10.7	14.6	10.8	3.7	6.8	15.0	8.2	11.8
5	29.1	20.4	24.0	18.7	11.9	14.9	8.8	3.6	6.1	9.4	7.5	8.7
6	26.3	21.4	23.5	17.0	10.0	13.1	7.4	5.1	6.2	10.0	7.2	9.2
7	25.8	21.4	23.2	16.5	8.6	12.2	6.7	5.6	6.2	7.2	2.8	4.8
8	28.1	21.3	24.1	17.2	9.5	12.9	11.7	5.5	8.1	6.5	1.4	3.7
9	28.5	22.6	25.0	13.0	8.8	11.0	11.5	6.5	8.5	8.4	2.0	5.0
10	26.5	22.7	24.4	9.8	6.3	7.8	6.8	4.0	5.5	6.0	3.5	4.2
11	24.1	22.0	22.6	11.1	4.6	7.7	4.4	2.1	3.2	9.5	3.6	6.3
12	22.6	20.5	22.0	9.1	7.3	8.3	6.1	.7	2.8	12.4	6.2	8.5
13	20.5	17.5	19.1	9.6	7.9	8.7	7.2	.0	3.1	7.7	4.1	5.3
14	20.3	15.3	17.8	9.0	4.2	7.3	9.2	1.4	4.8	5.3	3.3	4.4
15	21.2	14.9	18.0	9.1	3.0	5.6	10.4	2.5	6.1	8.9	1.0	4.8
16	21.6	14.9	18.4	9.5	2.0	5.6	10.9	4.2	7.1	10.2	4.0	6.8
17	21.2	14.8	17.9	10.0	3.8	6.5	10.7	3.3	6.7	11.2	4.3	7.7
18	22.3	14.7	18.0	12.6	4.8	8.3	11.8	4.4	7.8	12.4	6.3	9.0
19	22.7	15.1	18.6	13.1	5.4	9.1	13.0	5.5	8.9	11.3	4.4	7.7
20	18.5	16.3	17.2	13.2	7.8	10.2	9.4	4.3	6.7	12.0	6.5	8.8
21	18.3	14.7	16.0	13.6	7.5	10.3	4.7	3.9	4.2	8.8	6.3	7.3
22	19.5	11.6	15.3	16.0	9.1	11.9	4.2	2.6	3.6	8.4	4.7	6.1
23	17.6	10.9	14.8	15.0	7.6	11.1	4.4	4.0	4.1	6.5	3.1	4.8
24	20.0	13.8	16.7	15.8	8.8	11.8	6.3	3.1	4.7	10.1	1.9	5.6
25	17.5	10.0	15.0	17.1	8.3	12.5	6.8	3.6	5.2	12.9	5.1	8.5
26	12.7	5.3	9.0	14.7	11.2	12.9	6.7	3.1	4.6	13.3	6.3	9.4
27	15.0	6.7	10.6	15.6	11.1	13.2	6.8	1.6	4.2	13.3	5.2	9.0
28	17.8	9.5	13.1	15.9	12.4	14.3	6.2	2.4	4.1	12.3	6.8	9.4
29	19.8	11.5	15.3	12.4	9.3	10.4	7.7	1.3	4.3	13.8	5.7	9.4
30	20.3	13.8	16.8	12.7	7.6	10.1	9.2	2.8	5.8	14.2	6.1	10.0
31	20.8	12.1	16.3	---	---	---	9.2	3.1	6.0	13.4	10.5	12.0
MONTH	30.3	5.3	19.1	19.8	2.0	10.8	13.0	.0	6.0	15.6	1.0	7.8
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	14.1	11.0	12.3	13.2	5.9	9.6	22.2	12.3	17.1	28.2	16.8	22.3
2	13.1	7.6	10.5	13.4	6.2	9.7	21.4	13.7	17.2	30.0	18.6	23.7
3	11.9	7.2	9.6	14.5	5.8	10.1	19.7	11.2	15.5	27.8	18.5	22.8
4	9.3	6.9	7.7	18.4	8.9	13.3	20.8	12.0	16.2	28.3	17.8	22.5
5	6.9	4.6	5.7	15.7	10.5	12.8	22.7	12.7	17.4	31.5	19.7	24.7
6	6.3	2.8	4.5	11.6	8.2	9.1	20.7	15.0	17.5	30.4	21.7	25.1
7	9.9	1.7	5.6	9.3	7.6	8.3	21.2	12.5	17.0	31.1	19.1	24.5
8	13.3	5.1	8.9	8.4	3.9	6.3	21.5	13.8	17.5	25.6	19.5	22.3
9	15.8	7.9	11.6	9.1	2.6	5.7	22.6	12.6	17.4	24.1	18.3	20.9
10	12.0	8.4	10.2	10.5	2.5	6.3	23.7	13.8	18.6	27.1	18.4	22.3
11	14.3	5.7	9.7	10.7	4.3	7.2	23.5	14.4	18.6	27.5	19.5	23.1
12	10.7	6.5	8.0	9.1	2.9	6.1	24.8	14.7	19.3	30.3	18.1	23.7
13	9.8	6.3	7.7	13.8	5.5	9.1	25.8	15.7	20.5	30.1	21.9	25.6
14	11.1	6.8	9.1	15.0	10.6	12.7	26.0	16.0	20.9	31.5	22.1	26.0
15	12.1	9.4	10.4	14.2	12.5	13.4	26.8	16.9	21.3	28.5	20.5	24.4
16	10.1	8.4	9.0	13.1	11.7	12.4	21.2	14.6	17.9	30.2	18.5	23.8
17	9.9	7.6	8.7	12.0	10.3	11.3	17.5	12.6	15.3	31.1	21.2	25.1
18	10.6	7.1	8.9	14.5	10.9	12.6	22.7	11.9	17.0	31.7	22.1	26.1
19	10.1	7.3	8.9	14.0	8.9	11.6	24.6	14.0	19.1	31.8	21.0	26.0
20	11.2	8.0	9.8	12.3	7.3	9.7	19.8	13.6	16.5	32.4	22.3	26.4
21	10.8	9.3	9.7	13.8	8.4	11.1	22.4	10.4	16.1	27.2	22.5	24.7
22	11.1	9.0	9.9	16.9	9.8	13.3	24.2	13.4	18.8	25.4	21.7	23.5
23	14.1	7.6	10.8	20.4	13.0	16.5	25.3	14.6	19.7	26.1	20.9	22.5
24	15.8	9.8	12.7	21.0	14.2	17.6	25.9	14.9	20.0	32.8	19.6	25.0
25	17.4	13.1	14.8	23.9	16.3	19.7	27.9	16.3	21.6	29.4	21.9	25.4
26	14.8	9.6	12.4	22.6	17.5	19.5	23.9	17.9	20.6	24.8	22.0	23.0
27	14.1	7.9	10.9	20.1	16.6	18.4	19.9	14.9	17.3	27.3	22.2	24.4
28	13.6	7.9	10.6	21.7	14.6	18.2	17.0	12.7	14.8	32.1	23.4	27.2
29	---	---	---	24.5	17.2	20.5	22.2	11.3	16.3	32.6	23.6	27.4
30	---	---	---	22.9	16.2	19.8	26.5	13.7	19.8	31.9	22.0	26.4
31	---	---	---	19.3	12.0	15.9	---	---	---	33.1	22.0	26.9
MONTH	17.4	1.7	9.6	24.5	2.5	12.5	27.9	10.4	18.1	33.1	16.8	24.4

RED RIVER BASIN

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 mi².

PERIOD OF RECORD.--Oct 1922 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by U.S. Army Corps of Engineers). Prior to Oct 1, 1972, nonrecording gage at different site and at datum 2.40 ft higher. Satellite telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 8,890 ft long. The original dam was completed Aug 25, 1923, but deliberate impoundment had begun Oct 1, 1922. Enlargement of the dam was completed in Nov 1973. The 3,000-foot-wide uncontrolled spillway is located approximately 600 ft to right and slightly upstream from right end of dam. The controlled outlet works near center of dam consist of two hydraulically operated slide gates 5 ft 8-in by 13 ft with a 13-foot-diameter conduit and spillway basin. The dam and lake are owned by the city of Wichita Falls and the Wichita County Water Improvement District No. 2. Water is used for irrigation in the Wichita River Valley, oil field operation, municipal, and industrial uses. The capacity table is based on a resurvey made in 1973. Figures given herein represents total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	1,183.0
Crest of spillway.....	1,160.0
Top of flood-control pool.....	1,156.0
Top of conservation pool.....	1,144.0
Lowest gated outlet (invert).....	1,090.0

COOPERATION.--Capacity table No. 4-C was provided by the U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 420,900 acre-ft, Jun 30, 1941 (elevation, 1,152.0 ft), present datum; minimum since first appreciable storage, 26,160 acre-ft, Jun 30, 1953 (elevation, 1,108.0 ft), present datum.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 295,100 acre-ft, Mar 23 (elevation, 1,145.67 ft); minimum contents, 154,700 acre-ft, Sep 30 (elevation, 1,134.70 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	240800	239200	237800	249300	257800	267700	288500	269900	251800	236700	204100	177000
2	240000	238600	239100	249700	258000	267700	287000	269400	250800	235400	202800	176100
3	239200	237900	239200	249900	257800	267800	284200	269400	249600	234300	201800	175300
4	238500	237400	239100	250800	258000	267800	282100	269100	248700	233200	201100	174500
5	237900	237100	239400	250900	259000	267500	280200	268600	247500	232800	200400	173700
6	237900	236900	239200	250800	259200	267800	279200	268500	246200	234700	199400	173000
7	236900	236800	239700	252100	259200	270600	277100	267800	245800	234100	198600	172100
8	236500	236500	240000	252100	259000	271400	275200	267100	245100	233400	197500	171300
9	236100	236900	239700	252200	259800	270600	273600	267800	245900	232600	196400	170500
10	235700	236500	240000	252200	259500	269600	273100	267100	248400	231600	195400	169600
11	239100	236400	239800	252500	259300	268200	272600	266800	249900	230900	194800	168700
12	242000	236400	240000	252400	260700	268600	272500	265600	250300	230800	193900	167900
13	243000	237100	240000	252500	261600	269100	271400	265000	250200	229800	194400	167100
14	243600	237400	240100	252800	261900	269100	271400	264400	249900	229400	192800	166300
15	243500	237100	240000	252800	261800	273100	270100	263600	249400	228800	192000	165700
16	243500	237100	240100	252700	264200	281000	270100	262800	249000	226000	191100	164800
17	243000	237100	239800	252700	266500	285500	270100	262100	248700	224800	190300	164000
18	242700	237100	239700	252700	268800	290300	270100	261600	248100	223800	189100	163200
19	242400	237400	239500	252400	273800	292700	270100	260700	249600	222600	188400	162200
20	242300	237400	241600	252700	273600	293400	270200	260100	248900	221400	187400	161300
21	241900	237200	244300	252100	272000	294200	270100	259800	248000	219900	186400	160800
22	241900	237200	245200	252700	270200	294700	270100	259000	247100	218700	185500	160200
23	243200	237100	247400	252700	268800	293700	269900	257200	245900	217300	184700	159500
24	243300	237100	248400	252700	268600	292700	270400	256000	244600	215800	183800	158700
25	243600	237500	248700	253000	268800	291600	269900	255200	243200	214200	183100	157800
26	242100	237200	249200	252700	268000	291100	271400	255400	242100	212800	181900	157200
27	241600	237200	249900	252800	268000	291600	271400	255700	241000	211200	181100	156600
28	241000	238200	249400	252800	268000	291800	271000	255400	240000	209600	180400	156000
29	240700	238300	249000	252800	---	291800	270400	254500	239100	208400	179400	155400
30	240200	237900	249000	252800	---	292900	270400	253600	237800	206700	178600	154700
31	239700	---	249200	257100	---	290600	---	252400	---	205400	177700	---
MAX	243600	239200	249900	257100	273800	294700	288500	269900	251800	236700	204100	177000
MIN	235700	236400	237800	249300	257800	267500	269900	252400	237800	205400	177700	154700
(+)	1142.10	1141.98	1142.75	1143.28	1144.00	1145.40	1144.15	1142.97	1141.97	1139.56	1137.16	1134.70
(@)	-2000	-1800	+11300	+7900	+10900	+22600	-20200	-18000	-14600	-32400	-27700	-23000
CAL YR 1997	MAX 296500	MIN 204100	(@)	+42100								
WTR YR 1998	MAX 294700	MIN 154700	(@)	-87000								

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

RED RIVER BASIN

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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 mi², all of which is above Lake Kemp Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1952-58 (occasional discharge measurements), Oct 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,062.72 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since installation of gage in Oct 1959, at least 10% of contributing drainage area has been regulated by Lake Kemp (07312000). Water is released from Lake Kemp to supply Lake Diversion, 12.5 mi downstream. Water from Lake Diversion is released for mining, recreation, and for irrigation in the vicinity of Wichita Falls.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	268	179	1.2	.68	.82	1.4	1160	126	270	282	399	240
2	269	179	1.4	.67	.64	1.4	1160	126	269	282	360	239
3	e233	179	1.2	.70	.66	1.3	1150	126	269	282	271	239
4	e190	179	1.1	.76	.64	1.3	1160	125	269	282	271	239
5	e190	107	1.2	.71	1.1	1.3	1150	125	269	290	271	240
6	e190	1.4	1.2	.73	.84	1.3	1050	125	269	200	269	240
7	e190	1.2	1.2	1.0	.68	2.2	839	125	271	131	269	239
8	e190	1.2	1.2	1.5	.65	1.5	1040	188	271	131	269	237
9	e190	1.2	1.1	.80	.65	176	887	272	205	130	268	237
10	e190	1.1	1.2	.72	.67	674	250	272	e130	129	268	237
11	e190	1.1	1.2	.70	.62	513	250	273	e40	129	269	237
12	e158	1.1	1.2	.72	1.2	45	248	273	e.90	129	268	236
13	e91	1.1	1.2	.70	1.0	1.5	248	273	e.90	129	267	236
14	e91	1.1	1.1	.70	.67	1.3	248	273	e.90	129	268	274
15	90	1.1	39	.65	.63	7.1	248	269	e.90	222	267	353
16	88	1.1	65	.66	2.1	17	98	270	e.90	285	266	353
17	89	1.1	65	.64	1.6	2.1	1.9	270	e75	287	265	352
18	88	1.1	65	.69	2.2	1.5	1.7	270	131	287	266	351
19	89	1.1	65	.64	9.2	1.5	1.6	270	131	288	271	349
20	90	1.1	69	.67	890	1.4	1.4	271	131	333	273	349
21	90	1.2	29	.69	1700	1.3	1.3	270	e130	404	274	314
22	90	1.2	1.1	.68	1700	1.4	1.2	269	e225	405	275	246
23	91	1.2	2.4	.66	1080	531	1.1	269	e281	402	277	245
24	90	1.2	1.2	.64	392	832	1.1	270	282	402	277	242
25	89	1.2	1.0	.64	260	832	1.1	271	282	401	276	243
26	89	1.2	.99	.64	262	569	1.2	271	281	401	272	243
27	144	1.2	.80	.64	133	2.2	1.1	272	282	401	248	242
28	181	1.2	.77	.64	1.7	1.8	1.0	271	283	400	241	241
29	181	1.2	.67	.64	---	1.5	1.1	271	282	400	241	241
30	180	1.2	.71	.64	---	1.7	38	269	282	399	241	241
31	179	---	.70	2.1	---	637	---	270	---	399	241	---
TOTAL	4568	852.1	424.04	23.65	6445.27	4864.0	11240.8	7295	5614.50	8771	8458	7975
MEAN	147	28.4	13.7	.76	230	157	375	235	187	283	273	266
MAX	269	179	69	2.1	1700	832	1160	273	283	405	399	353
MIN	88	1.1	.67	.64	.62	1.3	1.0	125	.90	129	241	236
AC-FT	9060	1690	841	47	12780	9650	22300	14470	11140	17400	16780	15820

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1998z, BY WATER YEAR (WY)

MEAN	134	105	41.0	61.8	69.0	146	170	175	308	318	284	176
MAX	952	1271	247	648	769	659	659	1246	1810	923	1742	915
(WY)	1987	1987	1987	1992	1992	1968	1968	1990	1992	1967	1995	1986
MIN	.66	.39	.24	.60	.51	.50	.89	6.53	2.59	140	30.9	1.66
(WY)	1985	1974	1997	1979	1979	1989	1981	1977	1989	1975	1978	1974

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1960 - 1998z
ANNUAL TOTAL	54897.73	66531.36	
ANNUAL MEAN	150	182	166
HIGHEST ANNUAL MEAN			522
LOWEST ANNUAL MEAN			59.9
HIGHEST DAILY MEAN	1660	May 15	1700 Feb 21
LOWEST DAILY MEAN	.22	Feb 4	.62 Feb 11
ANNUAL SEVEN-DAY MINIMUM	.25	Jan 31	.64 Jan 24
INSTANTANEOUS PEAK FLOW		1710	Feb 21
INSTANTANEOUS PEAK STAGE		6.47	Feb 21
ANNUAL RUNOFF (AC-FT)	108900	132000	120300
10 PERCENT EXCEEDS	271	352	403
50 PERCENT EXCEEDS	69	131	13
90 PERCENT EXCEEDS	.37	.72	.71

e Estimated

z Period of regulated streamflow.

RED RIVER BASIN

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Dec 1965 to May 1993, Oct 1994 to current year. Pesticide analyses: Oct 1996 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Jul 1968 to May 1993, Oct 1994 to current year.

WATER TEMPERATURE: Jul 1968 to May 1993, Oct 1994 to current year.

INSTRUMENTATION.--From 1968 to May 1993 daily samples collected manually, Oct 1994 to current year specific conductance and temperature continuously recorded on an hourly basis by automatic monitors.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1989 to 1998. The standard error of estimate for dissolved solids is 3%, chloride is 4%, sulfate is 14% and for hardness is 6%. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 7,110 microsiemens, May 13, 14, 1980; minimum daily, 561 microsiemens, May 28, 1975.
 WATER TEMPERATURE: Maximum, 34.0°C, Aug 5, 1995; minimum daily, 0.0°C, Dec 20, 1973, Feb 9, 17, 1980.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 5,920 microsiemens, Sep 15; minimum, 1,250 microsiemens, Mar 16.
 WATER TEMPERATURE: Maximum, 32.7°C, Jun 13; minimum, 3.2°C, Dec 9, Jan 7-8.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD WATER UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, SATUR-ATION (00301)	HARD-NESS TOTAL (MG/L) (00900)	HARD-NESS NONCARB FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED AS CA (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L) (00925)		
DATE		SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	
NOV													
06...	1335			.92	4720	8.2	16.5	11.6	123	910	800	240	73
DEC													
11...	0905			.76	4850	8.1	5.5	10.4	85	940	800	250	75
JAN													
15...	0830			.64	4880	8.0	6.0	9.0	76	930	760	250	77
FEB													
12...	1120			.70	4800	7.9	10.0	8.6	80	900	720	230	76
MAR													
19...	0950			1.4	4630	8.1	9.5	10.5	96	870	730	230	73
APR													
23...	0910			1.2	4720	7.6	14.5	8.2	84	950	810	250	79
MAY													
07...	1005	126			4580	8.3	19.5	9.3	107	870	780	230	70
JUN													
04...	0900	269			4700	8.2	25.0	8.1	104	950	850	260	75
18...	0935	131			4760	8.2	25.0	--	--	940	840	250	77
JUL													
16...	0850	286			4790	8.3	28.0	--	--	930	830	250	77
AUG													
12...	1645	267			4940	8.3	28.0	8.1	108	990	900	260	82
SEP													
02...	1700	239			5030	8.3	28.0	8.2	112	1000	910	260	84
NOV													
06...	670	10		7.7	110	790	1100	.29	7.8	2930	4	.056	
DEC													
11...	687	10		7.3	140	800	1100	.33	9.2	3020	16	--	
JAN													
15...	695	10		6.2	170	780	1100	.42	9.0	3020	10	--	
FEB													
12...	684	10		5.7	180	740	1100	.36	8.3	2930	11	--	
MAR													
19...	657	10		7.0	140	750	1000	.34	6.4	2830	48	--	
APR													
23...	701	10		6.7	140	770	1100	.35	6.3	2960	5	--	
MAY													
07...	629	9		16	97	790	1000	.32	6.8	2820	2	--	
JUN													
04...	667	9		8.1	100	830	1000	.32	6.2	2950	5	--	
18...	678	10		8.2	100	840	1100	.31	6.2	3010	4	--	
JUL													
16...	675	10		8.1	96	850	1100	.34	9.5	3030	10	--	
AUG													
12...	716	10		9.1	91	860	1100	.32	9.5	3120	7	--	
SEP													
02...	743	10		8.0	87	890	1100	.32	12	3200	7	--	

RED RIVER BASIN

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)
NOV 06...	.031	.087	<.020	.38	--	.30	.016	<.010	.020	.06	3
DEC 11...	<.010	.084	.128	.45	.23	.36	<.010	<.010	<.010	--	3
JAN 15...	<.010	.058	.204	.43	.17	.37	<.010	<.010	<.010	--	3
FEB 12...	<.010	.096	.260	.54	.19	.44	<.010	<.010	.014	.04	3
MAR 19...	<.010	.050	.075	.32	.19	.27	.012	<.010	<.010	--	3
APR 23...	<.010	.054	.152	.36	.16	.31	<.010	<.010	<.010	--	2
MAY 07...	<.010	.050	.041	.35	.26	.30	<.010	<.010	<.010	--	2
JUN 04...	<.010	.053	<.020	.38	--	.33	<.010	<.010	<.010	--	2
JUN 18...	.011	<.050	.070	--	.25	.32	.033	<.010	<.010	--	2
JUL 16...	.012	<.050	.070	--	.31	.38	<.010	<.010	.018	.06	3
AUG 12...	.011	<.050	.043	--	.25	.29	<.010	<.010	.015	.05	3
SEP 02...	.013	<.050	.046	--	.36	.40	.028	<.010	.018	.06	3

DATE	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
NOV 06...	3	<100	90	<1	<1.0	<1	<1.0	<1	<10	130	5.1
DEC 11...	2	<100	85	<1	<32	1	<1.0	1	<40	270	<40
JAN 15...	3	<100	41	<1	<32	<1	<1.0	<1	<40	280	<40
FEB 12...	2	100	32	<1	<24	2	<1.0	<1	<30	340	<30
MAR 19...	2	<100	75	<1	<24	1	<1.0	7	<30	230	<30
APR 23...	2	<100	68	<1	<24	1	<1.0	1	<30	180	<30
MAY 07...	2	<100	118	<1	<24	<1	<1.0	2	<30	40	<30
JUN 04...	3	<100	117	<1	<24	1	<1.0	<1	<30	30	<30
JUN 18...	2	200	121	<1	<24	<1	<1.0	1	<30	50	<30
JUL 16...	3	<100	118	<1	<24	<1	9.0	1	<30	20	<30
AUG 12...	2	<100	113	<1	<24	<1	<2.0	1	<30	30	<30
SEP 02...	3	<100	112	<1	<24	2	<2.0	1	<30	20	<30

RED RIVER BASIN

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1997 TO SEPTEMBER 1998

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. 1997	4568	4550	2790	34380	1000	12400	750	9200	870
NOV. 1997	852.1	4530	2780	6390	1000	2300	740	1710	870
DEC. 1997	424.04	4700	2890	3310	1100	1200	760	872	890
JAN. 1998	23.65	4500	2760	176	1000	63.6	740	47.2	860
FEB. 1998	6445.27	4690	2880	50140	1100	18270	760	13220	890
MAR. 1998	4864	4470	2740	36010	990	12940	740	9690	860
APR. 1998	11240.8	4290	2620	79610	930	28300	720	21750	830
MAY 1998	7295	4600	2820	55600	1000	20130	750	14800	880
JUNE 1998	5614.5	4790	2940	44630	1100	16340	770	11680	910
JULY 1998	8771	4630	2840	67220	1000	24400	750	17830	880
AUG. 1998	8458	4840	2970	67910	1100	24960	770	17670	910
SEPT 1998	7975	5180	3200	68840	1200	25820	810	17350	960
TOTAL	66531.36	**	**	514200	**	187100	**	135800	**
WTD.AVG.	182	4660	2860	**	1000	**	760	**	890

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	1	---	---	4310	4580	4550	4570	4710	4430	4620	4800	4710
2	---	---	e4400	4570	4540	4560	4730	3130	4300	4750	4670	4720
3	---	---	e4490	4560	4510	4540	4750	4300	4580	4730	4530	4690
4	---	---	4580	4540	4460	4490	4790	4710	4760	4670	4450	4560
5	4620	4320	4560	4590	4430	4480	4790	4740	4770	4670	4600	4640
6	4620	4590	4610	4680	4560	4600	4790	4750	4770	4750	4630	4680
7	4610	4580	4590	4690	4580	4630	4790	4730	4760	4760	2180	4400
8	4590	4550	4570	4700	4580	4630	4770	4700	4740	4190	1970	3610
9	4560	4540	4550	4680	4610	4650	4810	4740	4770	4490	4150	4310
10	4550	4530	4540	4730	4650	4690	4820	4790	4800	4640	4410	4530
11	4530	4500	4510	4730	4650	4690	4830	4790	4810	4660	4590	4620
12	4520	4440	4510	4700	4630	4680	4830	4770	4810	4740	4340	4670
13	4530	4480	4500	4650	4540	4590	4820	4750	4790	4760	4730	4750
14	4510	4480	4500	4720	4650	4690	4820	4750	4780	4780	4740	4760
15	4600	4390	4530	4750	4670	4720	4800	4700	4740	4810	4700	4760
16	4610	4580	4600	---	---	e4730	4740	4700	4720	4790	4730	4760
17	4610	4590	4600	---	---	e4740	4730	4710	4720	4770	4730	4750
18	4610	4580	4600	---	---	4750	4730	4720	4720	4780	4740	4760
19	4600	4570	4590	---	---	e4740	4740	4730	4740	4790	4720	4760
20	4620	4590	4610	---	---	e4740	4750	4640	4730	4780	4710	4750
21	4620	4600	4610	---	---	e4730	4720	4250	4480	4790	4750	4770
22	4620	4600	4610	---	---	e4740	4710	4560	4680	4790	4720	4750
23	4620	4530	4600	---	---	e4750	4730	2000	3730	4770	4720	4750
24	4600	4590	4590	---	---	4750	4380	3580	4020	4780	4700	4750
25	4610	4590	4600	4940	2790	3830	4660	4370	4550	4760	4690	4730
26	4620	4610	4610	3220	2950	3060	4620	4320	4470	4770	4710	4740
27	4620	4600	4610	3270	3150	3210	4710	4540	4650	4780	4720	4760
28	4620	4600	4610	3590	3160	3330	4800	4690	4760	4780	4700	4750
29	4610	4590	4600	4090	3590	3890	4820	4730	4780	4800	4720	4760
30	4610	4580	4600	4430	4090	4240	4810	4720	4770	4810	4720	4770
31	4600	4570	4580	---	---	---	4790	4700	4760	4780	1940	3380
MONTH	---	---	4560	---	---	4450	4830	2000	4650	4810	1940	4620

RED RIVER BASIN

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	
													FEBRUARY
1	4150	3350	3870	4810	4520	4660	4500	4410	4460	4650	4610	4630	
2	4370	4080	4230	4850	4780	4810	4490	4340	4410	4630	4590	4610	
3	4550	4370	4450	4850	4750	4790	4480	4320	4410	4620	4600	4610	
4	4600	4400	4540	4820	4660	4740	4480	4340	4410	4610	4570	4590	
5	4610	3000	3900	4760	4670	4720	4500	4350	4440	4630	4580	4600	
6	4440	3210	3930	4750	4700	4720	4460	4360	4410	4600	4550	4580	
7	4600	4440	4510	4720	2610	3910	4450	4270	4380	4610	4560	4580	
8	4670	4520	4600	4520	4100	4340	4450	3930	4300	4700	4610	4650	
9	4710	4540	4640	4680	4450	4620	4460	4280	4410	4700	4580	4650	
10	4810	4710	4760	4670	4650	4660	4300	3350	3910	4710	4520	4630	
11	4870	4810	4840	4670	4650	4660	3440	3100	3290	4690	4480	4600	
12	4900	2930	4310	4740	4640	4680	3650	3310	3420	4690	4370	4550	
13	4310	3360	3930	4770	4670	4720	4420	3480	3870	4550	4330	4430	
14	4570	4170	4420	4740	4620	4670	3870	3270	3470	4540	4290	4420	
15	4630	4260	4560	4670	1630	3700	3610	3300	3470	4640	4380	4490	
16	4640	2670	3800	3360	1250	2200	3860	3370	3600	4530	4370	4450	
17	3660	2780	3160	4400	3360	4070	3950	3840	3880	4620	4110	4360	
18	4180	1560	3820	4520	4400	4480	4250	3870	4050	4880	4430	4560	
19	2210	1460	1900	4600	4440	4530	4320	4150	4240	4870	4100	4610	
20	4920	2200	3900	4680	4560	4600	4350	4240	4290	4890	4100	4530	
21	4890	4810	4870	4670	4490	4580	4400	4260	4330	4900	4780	4830	
22	4890	4840	4870	4620	4410	4520	4430	4140	4290	4820	4490	4680	
23	4860	4550	4830	4530	4240	4360	4810	4080	4500	4600	4540	4570	
24	4820	4590	4750	4430	4290	4360	4350	3990	4170	4610	4580	4590	
25	4810	4680	4750	4400	4270	4370	4240	3990	4110	4640	4610	4620	
26	4720	4530	4640	4540	4400	4440	4140	3850	3980	4650	4630	4650	
27	4530	4310	4400	4680	4380	4510	4090	3890	4040	4680	4650	4660	
28	4550	4440	4500	4730	4530	4640	4140	4050	4100	4710	4670	4690	
29	---	---	---	4690	4350	4540	4120	3970	4050	4730	4700	4720	
30	---	---	---	4730	4290	4480	4720	3960	4260	4760	4730	4740	
31	---	---	---	4770	4190	4550	---	---	---	4800	4750	4770	
MONTH	4920	1460	4270	4850	1250	4440	4810	3100	4100	4900	4100	4600	
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	
		JUNE			JULY			AUGUST			SEPTEMBER		
1	4830	4800	4810	4370	4000	4280	5090	4950	5050	5360	5290	5310	
2	4880	4820	4850	4380	3960	4170	5180	4610	4920	5310	5140	5240	
3	4890	4870	4880	4810	4370	4740	5250	4860	5050	5430	5050	5150	
4	4900	4820	4860	4690	4610	4660	5250	4990	5150	5100	4880	5040	
5	4820	4690	4760	4730	4570	4680	5200	4990	5120	5010	4540	4690	
6	4690	4570	4630	4890	4710	4800	---	---	e5110	4550	4340	4460	
7	---	---	4560	5020	4890	4980	---	---	e5120	4390	4110	4280	
8	---	---	e4650	5040	5010	5020	---	---	e5140	4530	3980	4080	
9	---	---	4760	5170	5010	5080	---	---	e5160	5520	3980	5350	
10	4830	4700	4810	5110	5040	5080	---	---	e5180	5510	5130	5350	
11	4880	4700	4790	5070	4970	5050	---	---	e5200	5280	5010	5140	
12	4940	4710	4840	5080	4910	4960	---	---	e5110	5460	5150	5300	
13	4870	4570	4770	5110	4850	4940	5240	4950	5120	5460	5370	5430	
14	4890	4670	4800	4880	4810	4840	5110	4720	4930	5420	5200	5370	
15	4880	4720	4790	4820	4580	4730	4960	4720	4860	5920	5190	5420	
16	4840	4750	4790	4810	4690	4750	4890	4670	4800	5900	5780	5840	
17	4840	4690	4790	4780	4670	4730	4900	4560	4760	5790	5410	5650	
18	4800	4770	4790	4760	4560	4690	4830	4730	4810	5630	5400	5570	
19	4830	4630	4800	4580	4060	4330	4820	4570	4710	5540	5030	5390	
20	4880	4800	4840	4580	4210	4400	4580	4300	4450	5640	4960	5280	
21	4920	4880	4890	4550	3950	4230	4400	4180	4310	5530	5050	5350	
22	4940	4860	4910	4280	3710	4000	4430	4140	4280	5490	5310	5410	
23	4880	4750	4830	4240	3630	4050	4470	4230	4330	5360	5000	5200	
24	4920	4780	4850	4520	3980	4300	4450	4230	4330	5060	4990	5020	
25	4850	4720	4780	4590	4160	4380	4320	4230	4270	5060	5030	5050	
26	5140	4690	4870	4830	4420	4590	4370	4060	4250	5050	5000	5020	
27	5130	4990	5050	5040	4750	4890	4530	4240	4430	5020	4990	5010	
28	5030	4700	4860	4980	4680	4890	4520	4450	4480	5040	5010	5020	
29	4780	4540	4690	5050	4780	4930	5290	4450	4580	5030	5010	5020	
30	4740	4370	4560	5120	4900	5060	5580	5290	5480	5040	5000	5020	
31	---	---	---	5110	5030	5080	5470	5320	5400	---	---	---	
MONTH	---	---	4800	5170	3630	4690	---	---	4840	5920	3980	5150	

e Estimated

RED RIVER BASIN

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	23.3	22.7	22.9	16.7	16.2	16.5	12.0	10.6	11.3	14.4	6.8	10.1
2	23.9	22.7	23.1	16.6	16.0	16.3	11.6	11.1	11.4	17.1	11.0	13.5
3	23.7	23.0	23.4	16.4	15.7	16.0	11.4	8.5	10.3	17.5	13.1	15.0
4	23.4	22.6	23.0	16.8	15.8	16.3	12.6	6.2	9.2	15.8	11.3	12.9
5	23.5	22.7	23.0	17.7	15.1	16.5	11.1	7.1	9.0	13.4	11.0	11.9
6	23.3	22.8	23.0	18.1	12.3	14.9	10.8	8.4	9.4	12.5	8.7	11.3
7	23.0	22.6	22.8	18.0	11.3	14.4	9.3	8.6	8.9	8.7	3.2	6.9
8	23.3	22.5	22.8	18.1	12.2	14.9	14.0	8.7	10.7	12.7	3.2	7.0
9	23.2	22.7	22.9	15.0	11.4	13.2	12.9	3.2	10.5	12.6	5.5	8.6
10	23.3	22.6	22.9	12.0	9.6	10.5	9.2	6.8	7.9	9.1	6.6	7.8
11	23.1	22.8	23.0	14.2	8.5	11.1	7.5	5.5	6.5	9.9	7.7	8.7
12	22.9	22.1	22.6	12.5	10.4	11.7	9.4	4.8	6.6	17.1	9.2	11.4
13	22.4	21.6	22.0	13.2	11.4	12.2	10.9	4.1	7.1	9.2	7.2	8.0
14	22.1	21.3	21.7	12.6	7.4	10.8	12.3	6.2	8.6	9.4	7.0	8.0
15	22.0	21.2	21.6	12.5	6.5	9.0	9.0	5.6	8.1	15.3	5.6	9.2
16	21.8	21.0	21.3	---	---	---	8.7	7.8	8.3	12.7	6.6	9.5
17	21.4	20.6	20.9	---	---	---	8.4	7.5	7.9	14.8	8.0	10.7
18	21.2	20.3	20.7	---	---	---	8.8	7.8	8.2	13.7	8.4	10.7
19	21.1	20.3	20.6	---	---	---	8.7	7.8	8.1	14.4	7.4	10.0
20	20.3	19.9	20.1	---	---	---	7.9	7.5	7.7	15.3	9.0	11.1
21	20.1	19.5	19.8	---	---	---	8.9	7.1	7.9	10.3	8.0	8.9
22	20.0	19.2	19.5	---	---	---	8.4	6.7	7.6	11.6	7.0	8.5
23	19.7	19.0	19.3	---	---	---	7.9	5.8	7.0	9.5	6.1	7.3
24	19.6	18.9	19.2	---	---	---	11.2	5.5	7.9	14.7	4.6	8.8
25	19.2	17.7	18.8	17.4	10.4	13.8	10.9	7.3	8.8	15.3	8.0	10.8
26	17.7	16.9	17.3	15.4	13.0	14.1	11.2	6.7	8.0	15.6	8.1	11.2
27	17.7	16.9	17.3	16.1	12.5	14.1	11.3	4.4	7.5	16.4	7.9	11.3
28	17.4	16.7	17.0	17.7	13.2	15.2	9.7	5.0	6.8	15.8	9.1	11.5
29	17.1	16.4	16.8	13.2	9.3	10.7	12.4	4.1	7.7	16.8	8.6	11.7
30	17.1	16.6	16.8	13.8	8.6	10.9	13.0	6.0	9.1	17.1	8.2	12.0
31	17.1	16.5	16.8	---	---	---	13.5	6.9	9.4	16.5	11.1	13.3
MONTH	23.9	16.4	20.7	---	---	---	14.0	3.2	8.5	17.5	3.2	10.2
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	17.3	11.7	13.4	14.1	6.9	10.4	15.6	14.4	14.7	17.5	16.7	16.9
2	18.9	9.0	12.8	14.8	7.4	10.6	15.7	14.4	14.8	17.3	16.3	16.8
3	15.6	9.0	11.6	15.6	7.4	11.0	14.7	14.4	14.5	17.4	16.3	16.8
4	10.8	9.1	9.9	19.2	9.6	13.6	14.5	14.1	14.3	18.6	16.7	17.5
5	9.6	5.7	7.7	14.6	10.1	12.3	15.2	14.0	14.5	18.2	16.8	17.7
6	13.0	5.3	8.4	11.4	8.6	9.7	15.0	14.5	14.8	20.6	17.4	18.5
7	17.1	5.9	10.2	11.8	9.3	10.1	15.4	14.5	14.9	20.7	18.9	19.7
8	18.1	8.2	11.8	10.1	4.9	7.5	15.3	15.0	15.2	19.5	17.4	18.2
9	17.9	9.9	13.2	12.2	3.6	7.3	15.4	15.1	15.2	19.5	17.2	18.6
10	13.1	10.4	11.6	9.1	8.7	8.9	16.1	15.1	15.4	19.8	19.3	19.5
11	18.8	7.4	11.9	8.8	8.2	8.6	16.1	15.1	15.5	21.0	19.4	20.2
12	11.4	8.2	9.5	12.9	7.8	9.9	16.2	15.2	15.7	20.4	19.8	20.1
13	15.8	8.2	11.2	14.4	7.4	10.3	16.8	15.6	15.9	21.2	19.7	20.3
14	15.9	9.6	12.1	14.4	10.6	12.5	17.5	15.7	16.5	21.3	19.8	20.6
15	13.5	11.3	12.2	13.9	11.7	12.8	17.1	16.3	16.7	21.4	20.6	21.0
16	11.3	9.3	10.6	13.1	10.6	12.0	20.5	15.4	17.2	21.9	21.1	21.4
17	15.8	8.6	11.3	15.7	8.8	11.8	18.1	12.5	15.3	22.2	21.0	21.6
18	16.0	5.3	11.7	19.5	9.9	14.3	22.5	12.8	17.5	22.6	21.7	22.1
19	16.4	4.9	10.9	14.1	7.7	10.6	22.9	13.6	18.4	22.6	21.9	22.4
20	11.3	8.6	9.4	15.6	6.1	10.2	18.8	13.8	15.7	22.5	21.8	22.3
21	8.9	8.4	8.6	17.1	8.3	12.3	21.5	11.4	16.1	22.9	22.2	22.6
22	8.8	8.3	8.5	19.6	9.5	14.1	23.5	13.5	18.3	22.9	21.6	22.7
23	9.4	8.7	8.9	14.8	10.2	12.0	24.0	14.4	18.8	22.8	22.3	22.5
24	10.6	9.3	9.7	11.7	10.5	11.1	24.0	15.0	19.2	23.4	22.2	22.7
25	10.7	9.4	10.2	12.6	11.1	12.0	26.4	15.8	20.5	22.9	22.2	22.5
26	10.2	9.7	9.8	14.7	11.9	12.9	21.7	16.7	19.1	22.9	22.2	22.5
27	12.1	9.7	10.2	18.3	13.7	15.7	18.7	13.8	16.4	23.2	22.5	22.7
28	14.1	7.6	10.6	20.9	11.1	16.3	16.1	11.9	14.1	23.4	22.4	22.8
29	---	---	---	23.1	14.9	18.7	21.4	12.1	16.0	23.9	22.8	23.3
30	---	---	---	22.3	15.0	18.4	25.1	14.1	17.4	25.6	23.2	24.1
31	---	---	---	15.0	10.1	13.5	---	---	---	24.9	23.8	24.2
MONTH	18.9	4.9	10.6	23.1	3.6	12.0	26.4	11.4	16.3	25.6	16.3	20.8

RED RIVER BASIN

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	26.4	23.6	24.8	28.8	27.6	28.2	28.6	27.8	28.2	27.9	27.5	27.7
2	26.4	25.2	25.9	29.2	27.9	28.7	28.7	27.9	28.3	27.9	27.2	27.5
3	25.8	24.8	25.4	28.8	28.0	28.5	28.7	27.9	28.3	28.9	27.5	28.1
4	25.5	24.9	25.1	28.3	27.8	28.0	28.5	28.1	28.3	28.9	28.3	28.6
5	25.0	24.1	24.4	27.8	27.1	27.5	28.4	27.9	28.1	28.7	28.2	28.5
6	24.2	23.7	24.0	28.3	27.3	27.7	28.1	27.6	27.8	28.6	27.9	28.2
7	---	---	---	28.9	27.7	28.2	28.2	27.8	28.0	28.0	27.5	27.8
8	---	---	---	28.7	27.7	28.2	28.6	27.7	28.0	27.7	27.3	27.5
9	---	---	---	29.2	27.9	28.6	28.5	27.5	27.9	27.5	26.9	27.2
10	24.8	23.9	24.3	29.1	28.4	28.7	28.3	27.3	27.8	27.2	26.4	26.8
11	28.8	23.0	25.6	29.3	28.5	29.0	27.8	27.4	27.5	26.9	26.5	26.7
12	31.6	20.5	26.0	29.5	28.3	29.0	27.9	27.5	27.6	26.6	26.1	26.3
13	32.7	22.9	27.9	29.5	28.4	29.0	28.0	27.6	27.8	26.2	25.9	26.0
14	31.1	22.5	27.0	29.4	28.2	28.9	28.2	27.6	27.9	26.4	25.9	26.1
15	30.3	21.3	26.0	28.9	28.2	28.5	27.9	27.5	27.7	26.3	25.8	26.0
16	30.3	21.4	25.9	28.8	28.1	28.4	28.2	27.2	27.6	26.1	25.8	25.9
17	---	---	25.0	28.9	28.7	28.8	28.5	27.2	27.7	26.2	25.7	25.9
18	26.5	25.1	25.7	29.6	28.5	29.1	28.3	27.3	27.6	26.2	25.8	26.0
19	27.0	26.0	26.5	30.0	28.5	29.5	28.3	27.1	27.4	26.8	26.0	26.4
20	27.0	26.0	26.6	29.8	28.8	29.4	27.6	27.2	27.4	27.0	25.9	26.4
21	27.1	26.0	26.6	29.4	28.8	29.1	27.5	26.9	27.1	26.7	25.8	26.2
22	27.6	26.2	26.7	29.5	28.3	28.9	28.0	26.8	27.2	26.2	25.1	25.6
23	---	---	26.8	29.4	28.4	28.8	28.5	27.1	27.6	25.4	25.0	25.1
24	27.0	26.1	26.5	29.4	28.7	29.0	28.7	27.5	28.0	25.8	25.2	25.5
25	---	---	26.7	29.5	28.7	29.1	28.4	27.5	27.9	25.8	25.2	25.5
26	27.5	26.4	26.9	29.4	28.4	28.9	29.1	27.5	28.2	25.7	25.0	25.3
27	28.1	26.9	27.4	29.4	28.2	28.6	28.9	27.9	28.4	25.7	25.1	25.4
28	28.2	27.1	27.7	29.3	28.1	28.5	28.3	27.6	27.9	25.6	25.1	25.4
29	28.6	27.6	27.9	28.9	28.1	28.5	28.1	27.7	27.9	25.8	25.1	25.4
30	28.3	27.6	27.9	28.7	27.7	28.2	28.2	27.6	27.8	26.6	25.1	25.8
31	---	---	---	28.5	27.5	28.0	28.5	27.9	28.2	---	---	---
MONTH	---	---	---	30.0	27.1	28.6	29.1	26.8	27.8	28.9	25.0	26.5

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 mi² (for Lake Diversion on Wichita River, provided by Wichita County Water Improvement District No. 2).

PERIOD OF RECORD.--Oct 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,039.70 ft above sea level (Wichita County Water Improvement District benchmark).

REMARKS.--Records good except those for estimated daily discharges, which are fair. Records of discharge are of water released from Lake Diversion into a canal system for mining, industrial, recreation, and irrigation use.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	154	92	5.3	.12	1.4	1.2	24	130	207	239	206	206
2	159	91	5.1	.15	1.3	1.2	23	129	234	261	208	205
3	164	47	4.1	.22	1.2	1.2	11	128	237	260	210	204
4	165	7.3	e3.8	.19	1.2	1.2	4.0	129	238	257	213	203
5	164	7.1	e3.1	.22	1.2	1.2	4.3	127	242	254	211	204
6	162	7.3	e2.8	.31	1.1	1.2	16	123	241	189	211	204
7	160	7.2	e2.3	.44	1.0	1.3	23	144	245	168	212	205
8	159	7.1	e1.9	.47	1.2	1.4	23	165	245	167	212	204
9	159	6.8	e1.4	.50	1.1	1.2	25	161	238	164	210	204
10	159	6.8	e1.2	.53	1.2	1.2	31	162	173	163	207	205
11	161	6.8	e1.0	.55	1.2	1.3	31	163	153	162	204	206
12	150	6.8	e.92	.63	1.3	1.4	44	160	150	160	203	206
13	106	6.8	e.80	.72	1.3	1.4	86	163	149	166	203	204
14	104	6.6	e.70	.72	1.4	1.5	109	163	147	170	202	204
15	103	6.4	e.46	.74	1.4	1.5	135	162	145	172	204	200
16	104	6.0	e.32	.66	1.4	1.6	167	165	145	188	207	197
17	104	6.0	e.25	.59	1.4	1.7	192	169	143	183	207	200
18	106	5.8	e.14	.58	1.4	1.7	190	179	143	184	207	201
19	103	5.7	.10	.55	1.5	1.4	190	189	168	184	204	203
20	112	5.5	.16	.60	1.5	1.1	191	199	167	211	203	206
21	119	5.5	.13	.71	1.7	1.1	188	219	165	211	203	190
22	118	5.7	.17	.80	2.0	1.2	187	221	171	212	203	170
23	120	5.3	.32	.88	2.2	1.6	186	223	189	220	203	173
24	118	5.2	.33	.90	2.1	1.9	185	226	201	235	203	173
25	118	5.3	.34	.81	1.5	2.8	181	226	202	241	204	174
26	105	5.8	.31	.79	1.3	2.9	181	213	211	238	204	174
27	95	5.9	.25	.86	1.3	2.9	154	201	218	201	204	175
28	93	5.8	.23	1.0	1.3	2.7	131	201	217	199	204	179
29	95	5.6	.15	1.0	---	2.8	131	201	216	203	204	178
30	94	5.3	.13	1.1	---	3.2	130	203	214	205	206	178
31	93	---	.12	1.2	---	6.0	---	202	---	205	205	---
TOTAL	3926	397.4	38.33	19.54	39.1	56.0	3173.3	5446	5814	6272	6387	5835
MEAN	127	13.2	1.24	.63	1.40	1.81	106	176	194	202	206	195
MAX	165	92	5.3	1.2	2.2	6.0	192	226	245	261	213	206
MIN	93	5.2	.10	.12	1.0	1.1	4.0	123	143	160	202	170
AC-FT	7790	788	76	39	78	111	6290	10800	11530	12440	12670	11570

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 1998z, BY WATER YEAR (WY)

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MEAN	74.1	11.0	14.8	19.9	12.2	27.6	65.7	82.2	128	203	183	119															
MAX	141	41.0	76.3	66.1	52.2	127	150	218	240	344	282	219															
(WY)	1978	1978	1978	1989	1975	1996	1972	1984	1984	1974	1980	1983															
MIN	3.10	.000	.000	.000	.000	.000	2.56	17.6	20.1	124	50.8	3.39															
(WY)	1977	1985	1985	1985	1985	1985	1979	1982	1982	1992	1989	1996															

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1972 - 1998z
ANNUAL TOTAL	31160.79	37403.67	
ANNUAL MEAN	85.4	102	78.9
HIGHEST ANNUAL MEAN			120
LOWEST ANNUAL MEAN			46.6
HIGHEST DAILY MEAN	235	Aug 7	374
LOWEST DAILY MEAN	.03	Jan 21	.10
ANNUAL SEVEN-DAY MINIMUM	.06	Jan 15	.15
INSTANTANEOUS PEAK FLOW			261
INSTANTANEOUS PEAK STAGE			6.94
ANNUAL RUNOFF (AC-FT)	61810	74190	57140
10 PERCENT EXCEEDS	187	210	203
50 PERCENT EXCEEDS	86	119	54
90 PERCENT EXCEEDS	.12	.72	.22

e Estimated
z Period of regulated streamflow.

07312130 WICHITA RIVER AT STATE HIGHWAY 25 NEAR KAMAY, TX

LOCATION.--Lat 33°52'09", long 98°50'20", Wichita County, Hydrologic Unit 11130206, near center of stream at upstream side of bridge on State Highway 25, 1 mile north of intersection with State Highway 258 at Kadane Corner, and 4.1 miles upstream from the confluence with Beaver Creek.

DRAINAGE AREA.--2,182 mi², of which 2,086 mi² is above Lake Kemp.

WATER-DISCHARGE RECORDS

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

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

REMARKS.--Records good, except those for estimated daily discharges which are fair. Since installation of gage in Jun 1996, at least 10% of contributing drainage area has been regulated by Lake Kemp (capacity 603,000 acre-ft) 43 mi upstream. Since completion of Lake Kemp in 1923, no outflow has been permitted to pass over the spillway. Water is diverted from Lake Diversion (capacity 40,000 acre-ft) 13 mi upstream for the irrigation of 42,000 acres under permit in the vicinity of Wichita Falls. During the current water year, the Wichita County Water Improvement District No. 2 diverted 74,180 acre-ft from Lake Diversion for mining, industrial, irrigation, and for recreational uses.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.6	7.1	5.6	4.9	19	209	84	13	14	11	9.2	14
2	9.1	7.2	10	5.0	9.5	131	272	12	14	11	9.6	15
3	9.2	7.7	9.9	4.9	7.1	88	592	11	13	12	15	15
4	7.5	8.5	7.5	7.6	6.4	66	740	11	11	11	22	12
5	7.8	8.7	6.7	7.8	7.6	53	839	11	10	65	10	12
6	7.2	8.3	6.5	6.4	8.1	38	896	11	9.0	41	7.4	e12
7	10	7.8	6.5	8.6	7.0	51	912	12	10	12	6.7	e12
8	12	7.3	6.8	25	6.1	81	821	14	9.7	9.1	5.9	e13
9	11	7.3	6.3	15	5.8	89	774	15	30	8.2	5.6	e13
10	10	7.3	6.9	8.8	5.5	66	805	14	31	7.6	5.4	15
11	11	8.9	6.4	7.8	5.7	143	614	13	92	6.8	9.5	14
12	12	9.6	5.8	7.3	7.0	262	436	9.5	55	5.9	13	13
13	10	9.7	5.4	7.3	9.4	250	331	13	19	6.8	16	13
14	8.8	10	5.2	7.2	7.2	e167	232	12	10	9.9	14	14
15	9.6	10	5.1	6.3	6.2	e119	193	12	8.3	9.4	13	14
16	7.8	8.8	5.0	6.0	15	e573	148	12	8.0	9.0	14	14
17	7.1	8.7	4.8	6.0	27	1340	e102	9.8	7.8	9.4	12	18
18	7.1	8.2	5.2	5.4	20	1000	e51	8.3	8.5	10	13	19
19	6.7	7.3	4.4	5.3	28	474	e33	9.1	8.5	10	14	19
20	6.7	6.6	7.3	5.5	30	255	28	9.7	8.3	10	15	18
21	9.3	6.4	22	5.2	32	161	24	e9.0	8.6	10	14	16
22	7.9	6.2	13	5.6	292	115	24	11	8.0	11	13	15
23	8.1	6.1	13	5.4	950	89	22	10	8.5	11	12	12
24	8.7	6.0	18	5.2	1210	104	19	10	10	8.8	13	11
25	7.8	6.1	9.2	5.1	958	265	17	11	9.7	9.0	16	12
26	7.4	5.9	7.7	4.9	661	499	24	12	9.1	10	13	12
27	8.1	6.0	6.9	4.9	434	615	34	18	9.4	11	14	12
28	9.4	6.6	5.7	4.7	321	448	19	14	9.1	10	14	12
29	7.6	6.4	5.4	4.9	---	214	15	12	10	12	13	14
30	7.4	5.7	5.3	4.7	---	137	14	11	11	11	13	14
31	6.8	---	5.1	27	---	120	---	11	---	9.7	14	---
TOTAL	268.7	226.4	238.6	235.7	5095.6	8222	9115	361.4	470.5	388.6	379.3	419
MEAN	8.67	7.55	7.70	7.60	182	265	304	11.7	15.7	12.5	12.2	14.0
MAX	12	10	22	27	1210	1340	912	18	92	65	22	19
MIN	6.7	5.7	4.4	4.7	5.5	38	14	8.3	7.8	5.9	5.4	11
AC-FT	533	449	473	468	10110	16310	18080	717	933	771	752	831

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1998, BY WATER YEAR (WY)

	1996	1997	1998	1996	1997	1998	1996	1997	1998	1996	1997	1998
MEAN	9.96	10.4	7.50	6.04	97.0	135	158	305	24.4	11.9	13.4	20.1
MAX	11.2	13.3	7.70	7.60	182	265	304	598	41.5	14.2	15.3	36.9
(WY)	1997	1997	1998	1998	1998	1998	1998	1997	1997	1997	1996	1996
MIN	8.67	7.55	7.29	4.47	12.1	4.49	12.1	11.7	15.7	8.96	12.2	9.32
(WY)	1998	1998	1997	1997	1997	1997	1997	1998	1998	1996	1998	1997

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1996 - 1998

ANNUAL TOTAL	22611.2	25420.8	
ANNUAL MEAN	61.9	69.6	66.1
HIGHEST ANNUAL MEAN			69.6
LOWEST ANNUAL MEAN			62.6
HIGHEST DAILY MEAN	1960	May 21	1960
LOWEST DAILY MEAN	2.5	Mar 23	2.5
ANNUAL SEVEN-DAY MINIMUM	3.2	Mar 20	3.2
INSTANTANEOUS PEAK FLOW			1510
INSTANTANEOUS PEAK STAGE			12.04
ANNUAL RUNOFF (AC-FT)	44850	50420	47910
10 PERCENT EXCEEDS	36	153	70
50 PERCENT EXCEEDS	8.2	11	10
90 PERCENT EXCEEDS	4.1	5.9	5.0

e Estimated

07312130 WICHITA RIVER AT STATE HIGHWAY 25 NEAR KAMAY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Jun 1996 to Sep 1997.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Jun 1996 to current year.

WATER TEMPERATURE: Jun 1996 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 9,350 microsiemens, Mar 31, 1997; minimum, 804 microsiemens, Sep 15, 1996.

WATER TEMPERATURE: Maximum, 37.1°C, Jul 13, 1998; minimum, 0.0°C, Jan 11-14, 1997.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 8,990 microsiemens, Jan 1; minimum, 1,430 microsiemens, Mar 16.

WATER TEMPERATURE: Maximum, 37.1°C, Jul 13; minimum, 1.8°C, Dec 13.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	6490	5800	6080	6780	6200	6580	7240	7140	7200	8990	8500	8750
2	6060	5820	5960	6680	6210	6370	7220	3160	6170	8860	8340	8630
3	6140	5910	6020	6860	6530	6740	5890	4150	5320	8750	7840	8420
4	6650	6140	6370	6820	6440	6640	6370	5800	6200	8400	6270	7490
5	6730	6550	6660	6490	6300	6420	6480	6230	6380	7500	6740	7150
6	6900	6590	6760	6620	6430	6560	6530	6440	6490	7910	7160	7440
7	6660	5690	6100	7030	6480	6820	6470	6360	6410	7760	4960	7220
8	6170	5440	5750	7320	7030	7190	6670	6420	6500	4960	3260	3760
9	6010	5580	5710	7320	7220	7290	6830	6460	6660	4750	3700	4000
10	6010	5650	5820	7260	7190	7220	7200	6660	6860	5280	3770	4540
11	5900	5550	5700	7240	6380	6860	6920	6390	6520	5900	5170	5610
12	5820	2310	5110	6380	6260	6290	7150	6580	6960	6470	5870	6200
13	5690	4170	5290	6400	6040	6220	7560	7120	7260	7150	6470	6760
14	6430	5690	6090	6400	6100	6300	7500	7100	7230	7310	2740	6490
15	5940	5360	5530	6170	5940	6030	7570	7100	7250	6960	6330	6610
16	6400	5560	6100	6330	6140	6250	7690	7150	7300	7730	6530	7080
17	6560	6400	6500	6610	6300	6480	7620	7150	7290	7680	7210	7340
18	6590	6430	6490	6820	6590	6660	7650	7080	7280	8010	7270	7720
19	6840	6480	6680	7220	6820	7040	7490	6940	7100	8260	7500	7800
20	6840	6730	6790	7530	7220	7360	7640	5540	7070	7870	7520	7670
21	6970	6150	6630	7640	7510	7560	6310	2870	4130	7940	7580	7700
22	6270	6000	6100	7760	7610	7660	5270	4830	4970	8010	7430	7630
23	6490	5070	6140	7700	7590	7660	5280	2980	4610	7740	7400	7500
24	6220	5880	6100	7710	7610	7660	4230	3170	3700	8080	7480	7760
25	6320	6030	6190	7700	7510	7590	5140	4230	4750	8170	7750	7870
26	6190	6020	6120	7650	7450	7540	6090	5140	5660	8080	7760	7880
27	6240	5980	6130	7490	7350	7420	6870	6030	6300	8220	7800	7930
28	5980	5800	5870	7460	6850	7230	7520	6810	7230	8180	7830	7970
29	6580	5950	6290	7150	6840	7040	7810	7380	7570	8050	7680	7880
30	6610	6480	6560	7220	7000	7110	7880	7670	7770	8130	7730	7880
31	6650	6550	6580	---	---	---	8600	7770	7910	7890	2420	5280
MONTH	6970	2310	6140	7760	5940	6930	8600	2870	6450	8990	2420	7100

RED RIVER BASIN

07312130 WICHITA RIVER AT STATE HIGHWAY 25 NEAR KAMAY, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	4470	3360	3870	4490	4360	4390	4260	3840	4080	7750	7630	7690
2	5200	4470	4860	4520	4390	4420	3860	3780	3810	7800	7590	7730
3	5920	5050	5490	4880	4450	4540	3960	3840	3900	7850	7650	7760
4	6610	5900	6240	4940	4560	4650	3990	3950	3970	7690	7290	7530
5	6870	6400	6750	5180	4620	4810	4040	3970	4000	7610	6860	7350
6	6490	6260	6370	5480	5020	5250	4140	4040	4090	7410	6660	7120
7	7090	6460	6670	5450	3210	4550	4220	3960	4110	7560	6260	6880
8	7590	6920	7150	4380	3830	4060	4300	4220	4260	6680	6340	6590
9	7660	7320	7390	4340	4120	4210	4340	4290	4310	6790	3940	6220
10	7920	7460	7610	4510	4340	4450	4380	4300	4320	6770	6100	6390
11	7740	7380	7560	4400	4350	4370	4410	4330	4370	7180	6130	6500
12	7710	6990	7340	4390	4360	4370	4350	4310	4330	7650	7040	7420
13	7040	5790	6040	4390	4360	4370	4430	4350	4410	7490	6300	6840
14	6570	6040	6290	4370	4340	4360	4430	4140	4310	6900	6340	6660
15	7120	6570	6800	4350	2220	3870	4180	4110	4140	6940	6670	6830
16	7130	3690	6100	2480	1430	1790	4310	4170	4240	7060	6740	6910
17	3750	3150	3330	3850	2040	3150	4240	4120	4160	7580	6830	7200
18	3400	3060	3200	4110	3850	3990	4810	4240	4510	7700	7500	7630
19	3160	2200	2460	4290	4100	4210	5720	4810	5300	7680	7090	7360
20	2350	1710	2140	4320	4260	4290	6310	5720	6100	---	---	6930
21	2120	1690	1790	4320	4240	4290	6670	6300	6530	---	---	7220
22	3310	2120	2790	4390	4320	4350	6670	6510	6580	---	---	6820
23	---	---	e3500	4380	4110	4210	6750	6480	6620	6780	6600	6710
24	---	---	4420	4220	3920	4060	7010	6750	6850	6670	6470	6590
25	4360	4200	4240	3990	3910	3940	7080	6930	7010	6620	6150	6390
26	4280	4210	4250	3980	3920	3950	7160	3250	6310	6310	5870	6120
27	4390	4250	4300	3920	3860	3890	5940	2730	4840	5960	5140	5430
28	4440	4340	4360	3890	3850	3870	6900	5940	6550	5770	5450	5570
29	---	---	---	3890	3860	3870	7520	6900	7300	5860	5610	5750
30	---	---	---	3910	3860	3880	7640	7510	7570	5800	5560	5670
31	---	---	---	3980	3890	3920	---	---	---	5860	5530	5710
MONTH	---	---	5120	5480	1430	4140	7640	2730	5100	---	---	6760
DAY	JUNE			JULY			AUGUST			SEPTEMBER		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	5810	5320	5580	6000	4250	5410	5790	5230	5450	6180	5980	6080
2	5390	5160	5250	5240	4380	4810	5230	4660	4890	6150	5870	6000
3	5430	5200	5310	5540	4170	4990	6010	3720	4650	6140	5920	6000
4	5690	5430	5580	5440	4680	5180	6190	1760	4920	6550	6130	6330
5	6070	5690	5830	5540	1740	3750	6660	5980	6240	6490	6240	6330
6	6230	6070	6150	3670	1900	2700	6970	6390	6630	6320	6080	6190
7	6250	6040	6160	6200	3670	4120	7110	6750	6970	6370	6110	6200
8	6270	6020	6140	6730	4440	5720	7490	7110	7290	6970	6080	6240
9	6360	3610	5750	6990	5200	5890	7590	7360	7500	6250	6020	6140
10	3610	3220	3390	6880	5070	5850	7780	7490	7650	6490	5830	6140
11	3600	2390	2760	7110	5310	6090	7780	6310	6650	6560	6320	6440
12	2390	1780	2030	7540	5240	6300	6320	5720	5950	6840	6560	6650
13	2650	1820	2120	7290	4190	5600	5800	5590	5690	6840	6580	6700
14	5340	2650	3850	6810	3470	4110	5810	5610	5670	6680	6410	6530
15	6700	5340	6050	7930	6800	7310	5900	5790	5840	6480	6270	6370
16	7210	6700	6940	7870	7180	7510	5800	5670	5730	6530	6340	6420
17	7370	7050	7230	7640	7270	7410	6120	5750	5830	6390	6090	6200
18	7460	5860	6630	7270	6780	7040	6120	5920	5990	6190	5980	6080
19	6880	6350	6550	7120	6670	6870	5950	5770	5870	6180	5820	5940
20	7000	6520	6770	6980	6810	6890	5980	5860	5910	6110	5780	5900
21	6950	6400	6670	6980	6750	6890	6040	5510	5880	6160	5940	6030
22	7060	6330	6620	6950	6700	6790	5950	5620	5730	7120	5910	6060
23	7160	6230	6660	6800	6580	6700	5900	5780	5850	6280	6060	6140
24	7160	6290	6690	6940	6770	6830	6040	5730	5860	6370	6030	6200
25	6890	6090	6410	7030	6840	6950	5880	5420	5570	6230	6010	6100
26	7160	6270	6540	7020	6810	6920	5820	5490	5610	6600	6080	6250
27	7280	6270	6670	6860	6660	6770	5890	5660	5740	6660	6440	6530
28	7150	6340	6690	6870	6660	6760	5910	5660	5780	6610	6410	6500
29	6960	6180	6570	6700	6340	6490	6040	5710	5860	6650	6190	6410
30	7000	5250	6180	6450	5910	6250	6040	5940	5980	6630	6240	6370
31	---	---	---	6160	5720	5880	6170	5940	6040	---	---	---
MONTH	7460	1780	5730	7930	1740	6030	7780	1760	5970	7120	5780	6250

e Estimated

07312130 WICHITA RIVER AT STATE HIGHWAY 25 NEAR KAMAY, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	29.5	23.3	25.7	18.4	14.1	15.8	11.5	10.0	10.8	11.9	5.2	8.3
2	29.4	23.2	25.4	17.4	12.1	14.1	10.9	10.2	10.6	16.1	9.5	12.3
3	28.0	22.7	24.6	16.3	10.6	12.8	10.5	7.5	9.5	16.6	12.6	14.5
4	28.7	21.7	24.2	17.9	10.9	13.9	10.6	5.9	8.0	15.3	10.5	13.1
5	28.6	21.7	24.2	18.6	13.2	15.2	8.9	5.2	7.1	11.4	10.1	10.7
6	26.6	22.5	24.1	16.6	11.4	13.3	8.4	5.6	7.1	11.4	8.5	10.7
7	25.3	22.5	23.5	16.0	10.0	12.3	7.3	7.0	7.2	8.5	3.8	6.5
8	27.2	22.5	24.4	17.0	10.6	13.0	11.1	7.2	9.0	6.4	2.2	4.2
9	28.0	23.8	25.3	12.9	10.5	12.1	11.6	7.6	9.4	7.6	3.7	5.4
10	27.4	23.7	25.1	10.9	7.8	9.5	8.3	5.4	6.7	6.3	5.1	5.6
11	24.9	23.0	23.9	11.6	6.7	8.7	5.9	4.2	5.1	7.3	5.3	6.2
12	23.0	18.8	22.0	10.8	8.6	9.7	6.2	3.6	4.8	12.8	6.8	9.0
13	21.6	16.1	18.4	10.6	9.4	9.9	6.5	1.8	4.2	7.9	5.4	6.6
14	21.9	15.1	18.0	10.0	6.8	9.0	8.0	2.9	5.5	6.2	4.3	5.5
15	22.1	15.4	18.2	10.0	5.5	7.1	9.4	3.6	6.6	9.9	3.1	5.8
16	22.7	15.8	18.6	10.4	4.6	6.8	9.5	4.8	7.4	10.8	5.2	7.3
17	21.1	16.1	17.9	9.6	5.5	7.0	9.8	4.7	7.5	11.7	5.8	8.3
18	22.3	15.7	18.1	12.4	5.9	8.4	10.6	5.4	8.1	12.6	6.8	9.1
19	23.1	16.0	18.7	13.7	7.1	9.7	11.4	6.1	8.9	11.8	5.7	8.2
20	17.8	16.1	17.1	14.0	9.0	11.0	9.8	6.1	7.8	12.5	7.1	9.2
21	18.3	15.1	16.1	14.5	9.3	11.3	6.1	4.6	5.3	8.9	6.9	8.0
22	19.4	12.9	15.5	15.8	10.1	12.1	6.1	4.5	5.4	8.8	5.4	6.8
23	18.0	15.1	16.2	15.3	8.8	11.6	6.0	5.3	5.7	7.2	4.0	5.2
24	21.6	15.2	17.6	16.0	9.7	12.3	7.3	4.0	5.7	10.8	3.0	6.3
25	18.8	12.0	16.4	17.2	9.3	13.0	8.4	5.1	6.5	12.6	5.8	8.8
26	13.8	8.2	10.7	15.3	12.1	13.6	8.3	4.9	6.1	14.0	7.1	10.1
27	15.1	8.5	11.2	16.0	12.2	14.0	8.3	3.4	5.4	14.4	6.2	9.8
28	17.0	10.6	13.3	17.9	13.6	15.6	7.8	4.3	5.5	13.9	7.8	10.4
29	19.3	12.2	15.2	13.6	10.6	11.9	8.6	2.9	5.3	15.3	7.4	10.8
30	20.6	15.2	17.1	12.6	9.0	10.9	10.6	4.4	6.9	15.3	7.1	10.8
31	20.9	14.3	16.8	---	---	---	10.2	4.7	7.1	13.0	10.2	11.8
MONTH	29.5	8.2	19.5	18.6	4.6	11.5	11.6	1.8	7.0	16.6	2.2	8.6
DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	15.2	11.7	12.9	11.1	8.8	10.3	19.4	15.7	17.6	24.7	17.5	20.9
2	15.5	9.2	11.9	11.2	9.1	10.4	19.4	17.0	18.3	26.4	19.2	22.5
3	13.3	9.2	10.9	11.8	9.4	10.7	18.4	14.9	16.5	25.5	19.3	22.2
4	9.7	7.9	9.1	14.6	10.7	12.5	18.1	14.4	16.4	25.5	14.6	22.0
5	7.9	5.5	6.8	13.5	11.4	12.5	18.5	14.7	16.7	28.2	20.7	23.9
6	10.2	3.6	6.2	11.4	9.6	10.0	18.2	16.0	17.3	28.4	22.5	24.7
7	11.9	4.8	7.6	9.8	8.9	9.5	18.7	15.5	17.3	28.0	20.7	23.9
8	14.9	6.7	10.0	9.6	6.8	7.6	18.7	15.7	17.4	24.6	20.4	22.4
9	17.5	9.2	12.5	8.8	5.5	7.1	18.9	15.1	17.2	24.5	19.0	21.3
10	13.7	10.2	11.7	9.9	6.7	8.2	19.2	15.7	17.6	26.6	18.0	22.0
11	15.9	7.4	11.0	8.8	6.9	8.2	19.8	15.9	18.0	27.3	20.2	23.3
12	10.3	8.1	9.1	8.4	5.4	7.2	20.8	16.5	18.7	28.3	20.2	23.7
13	12.7	7.7	9.6	9.3	7.0	8.1	21.2	17.6	19.6	27.5	22.8	24.9
14	14.1	8.6	10.9	11.3	9.3	10.1	21.2	18.1	20.0	28.9	22.9	25.4
15	13.6	10.8	11.8	12.6	10.6	11.3	21.6	18.6	20.5	27.8	21.7	25.0
16	10.8	9.0	10.0	13.0	11.7	12.4	21.1	17.6	18.9	27.6	20.6	23.7
17	12.1	7.9	9.8	11.7	9.8	10.7	18.2	16.1	16.9	27.6	22.3	24.4
18	13.0	7.8	10.5	13.9	9.7	11.7	19.9	15.3	17.5	29.4	22.7	25.4
19	13.4	9.2	11.2	13.0	8.4	10.5	21.1	16.0	18.5	---	---	---
20	14.5	8.6	11.6	11.3	7.1	9.2	19.1	14.2	16.5	---	---	---
21	12.7	10.5	11.1	11.8	8.9	10.5	19.3	12.5	15.7	---	---	---
22	11.3	9.6	10.4	13.4	10.4	12.1	21.3	14.8	18.0	---	---	---
23	12.1	9.3	10.7	16.1	12.7	14.4	22.2	15.7	18.9	23.5	21.6	22.4
24	15.7	10.0	11.4	16.7	14.1	15.4	23.0	16.9	19.7	28.9	20.5	24.0
25	14.4	11.9	13.0	18.6	13.8	16.4	24.4	17.5	20.7	26.6	23.3	24.9
26	13.4	10.9	12.2	18.0	15.1	16.8	21.7	17.3	19.6	27.5	22.4	24.6
27	12.6	9.9	11.5	17.9	15.8	17.0	18.3	14.6	16.6	29.2	23.8	26.3
28	11.9	9.6	11.0	19.1	14.9	17.1	16.9	14.3	15.2	31.3	24.5	27.7
29	---	---	---	20.3	17.3	18.9	18.7	13.2	15.5	31.7	25.7	28.3
30	---	---	---	20.2	18.5	19.4	22.6	14.5	18.3	30.8	25.1	27.5
31	---	---	---	18.7	15.2	16.9	---	---	---	31.4	23.8	27.1
MONTH	17.5	3.6	10.6	20.3	5.4	12.0	24.4	12.5	17.9	---	---	---

RED RIVER BASIN

07312130 WICHITA RIVER AT STATE HIGHWAY 25 NEAR KAMAY, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	31.3	25.4	28.1	35.5	28.1	30.9	34.5	26.1	29.4	32.2	26.0	28.8
2	30.5	24.5	27.3	34.5	27.7	30.3	33.7	25.5	29.0	31.9	25.8	28.7
3	31.5	24.7	27.7	34.2	26.4	29.6	34.1	26.5	28.8	31.9	25.9	28.7
4	28.3	24.5	27.0	31.5	27.1	29.0	28.6	24.8	26.5	32.8	25.6	28.6
5	24.9	20.6	22.4	27.8	25.3	26.6	28.4	26.1	27.2	32.8	25.9	28.6
6	27.1	18.8	22.4	33.7	26.1	29.6	31.8	25.0	27.7	33.0	26.6	29.2
7	25.8	21.0	22.8	36.5	29.1	32.1	34.3	25.8	29.0	32.9	25.8	28.8
8	29.1	21.5	24.7	35.7	28.7	31.6	34.4	26.4	29.3	32.0	25.8	28.7
9	31.4	23.1	26.0	36.3	29.2	31.9	35.3	26.3	29.7	32.1	26.6	28.9
10	27.5	22.5	25.1	36.6	29.0	32.0	35.7	26.3	29.5	29.3	23.9	26.7
11	28.2	22.2	25.1	36.7	28.3	31.5	30.0	26.7	27.7	28.5	25.0	26.7
12	30.4	23.6	27.0	36.2	28.2	31.4	29.6	25.5	27.1	26.5	23.9	25.0
13	32.7	25.9	28.9	37.1	27.9	31.4	31.1	25.2	27.9	26.0	23.5	24.4
14	32.6	25.2	28.6	36.5	28.8	31.8	29.8	25.6	27.7	30.8	23.5	26.5
15	31.3	24.3	27.4	36.4	29.1	32.0	32.9	24.9	28.3	30.1	25.5	27.2
16	31.2	24.0	27.0	35.2	27.9	30.9	32.1	25.7	28.7	28.4	24.8	26.2
17	31.1	23.3	26.9	35.9	27.7	31.1	32.6	26.0	28.9	27.7	24.9	26.2
18	32.6	25.1	28.0	36.4	28.1	31.6	28.5	25.9	27.0	29.5	24.9	26.7
19	34.3	25.7	29.0	35.6	28.4	31.3	31.3	25.6	27.8	30.0	24.8	27.3
20	34.1	26.4	29.3	35.2	28.1	31.0	31.3	25.7	28.5	30.5	24.9	27.4
21	32.9	25.9	28.4	34.8	27.8	30.7	31.8	26.3	28.8	30.4	25.1	27.5
22	34.0	24.7	28.3	34.9	27.2	30.5	32.0	26.4	29.0	27.5	22.4	25.3
23	33.6	24.8	28.2	35.5	27.1	30.6	32.2	26.3	28.9	27.0	21.3	23.5
24	32.5	22.8	27.7	35.9	27.1	30.6	31.9	26.3	28.9	30.6	23.7	26.4
25	32.9	25.0	28.1	35.4	27.2	30.6	32.8	27.1	29.6	30.3	24.5	26.8
26	33.6	24.9	28.5	35.0	26.5	30.0	33.5	27.0	29.7	29.1	24.2	26.3
27	34.5	26.3	29.5	34.9	26.5	29.9	32.7	26.8	29.4	30.6	24.8	27.2
28	35.4	26.8	30.2	35.0	27.3	30.3	30.9	26.7	28.6	31.3	25.5	28.0
29	35.7	27.2	30.6	33.8	26.8	29.8	32.5	25.6	28.5	31.0	25.5	28.0
30	35.1	27.2	30.4	34.0	26.4	29.6	31.7	25.0	28.0	30.9	25.4	27.6
31	---	---	---	34.1	26.1	29.3	31.5	25.0	28.1	---	---	---
MONTH	35.7	18.8	27.4	37.1	25.3	30.6	35.7	24.8	28.5	33.0	21.3	27.2

07312200 BEAVER CREEK NEAR ELECTRA, TX

LOCATION.--Lat 33°54'21", long 98°54'17", Wichita County, Hydrologic Unit 11130207, near right bank at downstream side of bridge on Farm Road 2326, 6.5 mi northwest of Kamay, 8 mi upstream from Wichita River, and 9 mi south of Electra.

DRAINAGE AREA.--652 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 991.3 ft above sea level (Texas Department of Transportation reference point).

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in Feb 1960, at least 10% of contributing drainage area has been regulated by Santa Rosa Lake (capacity, 11,570 acre-ft) about 30 miles upstream. There are several diversions above station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	8.7	13	22	440	41	28	5.2	5.6	1.8	.10	.18
2	2.1	9.1	15	22	67	34	24	5.0	4.8	2.0	.15	.87
3	2.5	9.1	22	23	31	29	22	4.6	2.8	1.8	.30	1.8
4	2.9	9.0	20	136	24	27	21	5.4	1.8	1.7	.44	1.7
5	2.8	8.9	16	265	22	25	18	5.8	1.8	117	.40	1.4
6	2.3	8.7	14	181	37	22	17	5.8	1.9	35	.45	1.7
7	2.1	8.6	13	85	29	122	17	5.5	1.8	2.9	1.6	2.1
8	2.1	8.5	13	263	23	350	16	5.4	1.8	9.5	2.7	2.1
9	1.9	8.5	12	136	20	195	15	5.6	24	6.8	2.1	1.8
10	2.5	9.3	12	70	18	89	13	5.4	130	2.4	1.5	1.7
11	2.4	9.5	11	51	16	60	12	5.3	270	1.1	1.3	1.5
12	9.5	9.7	11	44	17	44	11	5.3	64	.70	1.9	.61
13	56	10	11	39	164	37	11	5.1	11	.46	1.6	.68
14	16	11	11	33	123	34	11	5.0	5.0	.25	1.3	.55
15	8.1	12	11	31	55	175	9.3	4.8	3.3	.05	1.1	.10
16	5.8	12	11	28	114	2000	8.1	4.5	1.6	.06	1.1	.17
17	5.4	12	12	27	633	3120	7.6	4.5	1.1	.09	1.6	.35
18	5.5	12	12	25	355	1790	6.9	4.0	1.3	.19	1.6	2.3
19	5.2	11	12	24	855	809	6.8	3.9	1.2	.44	1.4	2.7
20	5.3	11	12	22	977	813	6.9	7.5	1.1	.49	1.0	2.5
21	5.9	11	186	21	524	824	10	10	1.3	.50	.65	2.3
22	6.6	11	119	20	355	732	7.3	10	2.2	.60	.40	1.3
23	7.6	11	72	19	295	476	6.5	9.0	2.2	1.2	.33	.74
24	103	11	205	17	204	222	6.3	8.3	2.1	1.3	.32	.44
25	28	11	87	15	138	126	5.7	7.8	2.0	1.4	.27	.18
26	11	11	44	14	102	94	46	8.0	2.4	1.9	.29	.09
27	7.4	12	38	11	64	72	52	8.6	2.3	1.4	.23	.02
28	6.3	12	32	9.8	49	66	15	8.4	2.1	.78	.15	.00
29	6.3	12	29	9.2	---	43	9.0	8.2	2.0	.65	.29	.00
30	7.8	13	25	8.5	---	39	6.1	5.9	1.8	.32	.20	.00
31	8.7	---	24	173	---	33	---	4.9	---	.12	.17	---
TOTAL	341.1	313.6	1125	1844.5	5751	12543	445.5	192.7	556.3	194.90	26.94	31.88
MEAN	11.0	10.5	36.3	59.5	205	405	14.9	6.22	18.5	6.29	.87	1.06
MAX	103	13	205	265	977	3120	52	10	270	117	2.7	2.7
MIN	1.9	8.5	11	8.5	16	22	5.7	3.9	1.1	.05	.10	.00
AC-FT	677	622	2230	3660	11410	24880	884	382	1100	387	53	63

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1998, BY WATER YEAR (WY)

MEAN	113	37.7	29.6	21.5	56.2	83.3	62.1	144	149	61.1	71.5	111
MAX	1108	319	385	185	553	592	760	921	1435	727	1324	1108
(WY)	1987	1973	1992	1985	1993	1961	1990	1987	1995	1975	1995	1986
MIN	.14	.82	.71	.27	.84	.65	.89	2.26	3.37	1.84	.87	1.06
(WY)	1964	1966	1971	1966	1963	1965	1982	1996	1966	1964	1998	1998

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1960 - 1998

ANNUAL TOTAL	19919.68	23366.42	
ANNUAL MEAN	54.6	64.0	79.1
HIGHEST ANNUAL MEAN			300
LOWEST ANNUAL MEAN			11.4
HIGHEST DAILY MEAN	1400	May 9	3120
LOWEST DAILY MEAN	.17	Jul 20	.00
ANNUAL SEVEN-DAY MINIMUM	.39	Jul 17	.10
INSTANTANEOUS PEAK FLOW			3320
INSTANTANEOUS PEAK STAGE			27.47
ANNUAL RUNOFF (AC-FT)	39510	46350	57330
10 PERCENT EXCEEDS	115	120	115
50 PERCENT EXCEEDS	6.8	8.7	5.8
90 PERCENT EXCEEDS	.69	.48	.73

07312200 BEAVER CREEK NEAR ELECTRA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Oct 1968 to Jun 1970, Jun 1996 to Sep 1997. Sediment analyses: Apr 1966 to Sep 1975.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct 1968 to Jun 1970, Jun 1996 to current year.

WATER TEMPERATURE: Oct 1968 to Jun 1970, Jun 1996 to current year.

INSTRUMENTATION.--From 1968 to Jun 1970, daily samples collected manually. From Jun 1996 to current year, specific conductance and temperature were continuously monitored with a water-quality monitor.

REMARKS.--Interruptions to the record are due to malfunctions of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 29,600 microsiemens, Apr 19, 1970; minimum recorded, 336 microsiemens, Apr 12, 1997.

WATER TEMPERATURE: Maximum recorded, 37.0°C, Jul 7, Aug 11 1969; minimum recorded, 0.0°C, on several days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 19,300 microsiemens, May 26; minimum, 631 microsiemens, Feb 19.

WATER TEMPERATURE: Maximum, 36.4°C, Jul 18; minimum, 2.2°C, Dec 13.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	1040	964	1010	1530	1450	1480	3510	3450	3480	1730	1710	1720
2	1100	1040	1080	1610	1520	1570	3490	2920	3360	1720	1670	1690
3	1170	1090	1130	1720	1610	1660	8340	3170	4980	1680	1630	1660
4	1260	1170	1220	1780	1700	1750	6750	5080	5850	1640	1510	1570
5	1350	1260	1320	1870	1770	1840	5080	4670	4830	1540	1420	1480
6	1470	1350	1420	1950	1860	1910	4980	4630	4730	1420	1370	1390
7	1560	1430	1500	2020	1930	1990	5360	4980	5230	1450	1390	1430
8	1600	1520	1550	2120	2020	2080	5520	5360	5420	1460	1380	1410
9	1700	1530	1590	2290	1940	2200	6000	5510	5750	1400	1370	1380
10	1700	1670	1690	2330	2210	2270	6140	6000	6100	1450	1400	1430
11	1870	1690	1740	2280	2240	2260	6150	6100	6130	1450	1430	1440
12	1910	927	1630	2360	2260	2320	6260	6120	6170	1450	1430	1440
13	6140	1050	3100	2380	2270	2350	6460	6260	6380	1460	1450	1460
14	5520	3210	3560	2440	2330	2390	6500	6410	6470	1520	1460	1480
15	3330	2690	3010	2570	2430	2470	6420	6350	6390	1620	1520	1570
16	2690	2520	2590	2590	2540	2570	6370	6290	6340	1690	1620	1660
17	2770	2550	2640	2580	2540	2560	6560	6280	6400	1710	1680	1690
18	3100	2770	2900	2630	2580	2610	6940	6550	6770	1710	1690	1700
19	3390	3100	3250	2700	2610	2670	7460	6930	7190	1730	1700	1710
20	3470	3350	3440	2760	2690	2730	7590	7350	7510	1750	1710	1730
21	3490	3440	3460	2870	2710	2780	7350	2070	3810	1770	1740	1750
22	3440	3300	3380	2900	2830	2870	2590	2060	2300	1810	1760	1780
23	3310	3010	3170	2980	2890	2940	2060	2020	2040	1830	1800	1810
24	3440	820	2080	3080	2950	3010	2020	1830	1890	1840	1820	1830
25	838	780	819	3150	3070	3110	1890	1760	1840	1880	1840	1860
26	913	816	870	3270	3150	3210	1820	1760	1790	1910	1870	1890
27	1070	913	985	3350	3270	3320	1820	1760	1780	1950	1910	1920
28	1230	1070	1140	3410	3330	3360	1810	1720	1770	2000	1930	1950
29	1390	1230	1320	3510	3400	3430	1810	1730	1790	2030	1970	2000
30	1410	1370	1390	3490	3420	3470	1790	1710	1750	2090	2020	2050
31	1450	1390	1420	---	---	---	1710	1690	1700	2320	1370	2060
MONTH	6140	780	1980	3510	1450	2510	8340	1690	4450	2320	1370	1680

07312200 BEAVER CREEK NEAR ELECTRA, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	1370	762	938	1640	1450	1520	3230	3050	3180	8610	7870	8180
2	980	778	834	1710	1570	1630	3430	3200	3310	10500	8610	9850
3	2090	980	1750	1770	1690	1720	3600	3420	3550	11300	10500	11000
4	2490	2030	2250	1900	1750	1830	3980	3560	3740	11600	11300	11400
5	2960	2470	2740	2070	1860	1990	4290	3980	4140	11600	11500	11600
6	3050	2500	2760	2310	2070	2200	4520	4290	4440	11700	11500	11600
7	2500	2150	2290	3770	1770	2300	4560	4330	4480	11800	11600	11800
8	2980	2160	2700	3770	1020	1570	4680	4380	4560	12000	11800	11900
9	2480	2190	2280	1830	1110	1630	5120	4680	4850	12300	11900	12100
10	3010	2160	2470	1560	1510	1540	5470	5090	5340	12500	12300	12400
11	3340	3010	3210	1520	1390	1440	5640	5430	5510	12500	12100	12400
12	3370	2600	2860	1450	1390	1430	5830	5540	5710	12400	12100	12300
13	3070	1350	2230	1510	1440	1470	5850	5700	5750	12300	12100	12200
14	2090	1230	1550	1690	1510	1610	5840	5730	5770	12200	11900	12100
15	2470	1960	2210	2250	1120	1720	5960	5790	5840	12200	11900	12100
16	2440	1360	1900	---	---	610	6240	5960	6170	12400	12200	12300
17	1720	940	1200	---	---	531	6430	6210	6370	12300	12200	12300
18	1440	1050	1360	---	---	e846	6590	6220	6470	12300	11900	12300
19	1380	631	895	---	---	1190	6860	6590	6760	12300	11900	12200
20	---	---	673	1070	957	1020	7050	6780	6910	17400	10900	13100
21	---	---	e720	957	841	893	13200	6890	8260	14500	10400	10900
22	---	---	e800	920	841	877	8280	7880	8100	13000	10500	11600
23	---	---	e900	1070	920	990	7890	7730	7810	15000	13000	14000
24	---	---	e985	1240	1070	1160	7970	7720	7830	16400	15000	15800
25	---	---	e1050	1490	1240	1380	8210	7970	8100	17600	16400	17200
26	---	---	e1140	---	---	1570	10500	1860	7140	19300	17500	18400
27	---	---	1230	---	---	1870	5570	1630	4250	---	---	19800
28	1650	1350	1470	---	---	2040	8590	5500	6790	---	---	18400
29	---	---	---	---	---	e2100	10000	8160	9450	15500	11500	13300
30	---	---	---	---	---	e2170	9530	7490	7960	11500	11200	11300
31	---	---	---	---	---	3050	---	---	---	11300	10600	11000
MONTH	---	---	1690	---	---	1550	13200	1630	5950	---	---	12800

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	10600	9530	10000	7710	6240	6930	7530	7360	7470	7980	7370	7640
2	9530	9240	9370	8630	7710	8190	7910	7500	7620	7390	6900	7120
3	9320	9140	9230	9140	8630	8920	8520	7900	8160	7690	6980	7400
4	9330	9100	9200	9340	9100	9230	10100	8500	9230	7320	7090	7220
5	9240	9080	9170	9360	1440	4800	10500	9930	10400	7110	6750	6940
6	9180	8910	9050	1680	1540	1600	10500	9670	10100	6780	6640	6710
7	9060	8910	9000	1760	1480	1540	9800	8480	8970	6700	6550	6660
8	9070	8880	8980	2470	1490	1830	9360	8490	8900	7020	6670	6870
9	---	---	8880	2150	1390	1830	10100	9320	9800	7330	7000	7170
10	---	---	e5200	1450	1330	1360	10400	9880	10200	7570	7270	7430
11	---	---	e1900	1700	1450	1580	10800	10200	10600	7660	7540	7590
12	---	---	e1200	1860	1700	1810	10900	10500	10800	7740	7610	7700
13	---	---	e2000	2070	1860	2020	11000	10700	10900	7780	7650	7750
14	---	---	e2300	2470	2060	2300	11000	10600	10900	7800	7650	7750
15	---	---	2580	2610	2460	2530	11000	10500	10800	7760	7560	7680
16	3070	2660	2880	3220	2610	2790	10800	10200	10700	7730	7540	7660
17	3490	3070	3330	4390	3220	3810	10700	10200	10500	7810	7530	7740
18	3710	3490	3640	4860	4390	4600	10400	9850	10200	7980	7380	7740
19	3770	3640	3720	5900	4370	5090	10100	9470	9820	7400	7020	7210
20	4010	3630	3910	4500	4280	4410	9670	9140	9470	7110	6790	7000
21	4300	3970	4190	5190	4480	4820	9390	9120	9250	6950	6660	6790
22	4480	4280	4360	5960	5190	5600	9150	8910	9030	6880	6720	6790
23	4780	4460	4650	7060	5920	6360	9030	8810	8930	7000	6880	6940
24	4780	4660	4710	7740	6930	7510	8950	8700	8860	7070	6940	7010
25	4920	4740	4780	7990	7700	7870	8910	8510	8780	7220	7040	7110
26	4940	4700	4820	8070	7490	7840	8760	8500	8630	7410	7210	7300
27	4710	4320	4490	7710	7380	7570	8580	8380	8500	7540	7290	7430
28	4320	4140	4210	7550	7360	7470	8530	8270	8430	7620	7460	7560
29	5030	4120	4460	7500	7250	7430	8630	8460	8580	7770	7620	7680
30	6240	5030	5620	7530	7350	7450	8600	8200	8420	7910	7740	7790
31	---	---	---	7560	7370	7500	8340	7800	8120	---	---	---
MONTH	---	---	5390	9360	1330	4990	11000	7360	9390	7980	6550	7310

e Estimated

RED RIVER BASIN

07312200 BEAVER CREEK NEAR ELECTRA, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN												
													OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	27.2	23.5	25.1	15.5	13.7	14.5	10.4	9.5	9.9	6.7	3.8	5.1												
2	27.8	23.5	25.3	14.5	12.6	13.3	10.1	9.7	9.9	9.9	6.1	7.8												
3	27.6	23.6	25.3	12.8	10.7	11.7	9.7	8.1	9.2	11.9	8.8	10.4												
4	27.4	23.3	24.9	13.6	10.3	11.8	8.1	6.5	7.4	14.9	9.0	11.7												
5	27.5	22.8	24.7	14.2	12.1	13.0	7.5	5.4	6.0	9.9	8.4	9.4												
6	26.4	23.3	24.7	13.0	11.1	11.9	6.2	5.2	5.7	9.9	8.8	9.6												
7	25.5	23.3	24.3	11.5	9.4	10.5	6.2	5.9	6.1	8.8	5.0	7.5												
8	27.3	23.4	25.0	12.4	9.8	10.9	8.0	6.2	7.0	5.0	3.5	4.2												
9	26.8	24.3	25.4	11.7	10.4	11.2	8.2	6.6	7.4	4.8	2.9	3.7												
10	26.8	24.1	25.3	10.4	8.6	9.5	7.3	5.4	5.9	4.6	3.9	4.2												
11	25.6	23.9	24.5	8.8	7.2	8.1	5.4	4.1	4.7	5.1	3.9	4.6												
12	23.9	19.7	22.8	9.1	8.2	8.7	4.7	3.5	4.0	6.7	5.0	5.7												
13	21.0	17.9	19.7	9.3	8.8	9.0	3.5	2.2	2.9	6.4	5.0	5.5												
14	20.2	17.0	18.7	9.2	7.5	8.7	3.6	2.3	2.9	5.0	4.2	4.7												
15	19.0	15.6	17.5	7.5	6.0	6.8	4.2	2.8	3.4	5.5	3.3	4.3												
16	19.0	15.8	17.6	6.1	4.2	5.1	5.2	3.6	4.4	6.1	4.2	5.0												
17	18.4	16.0	17.2	6.2	3.8	5.0	5.4	3.9	4.6	6.9	4.7	5.6												
18	18.9	15.2	16.8	7.2	4.9	5.9	6.3	4.5	5.4	7.7	5.7	6.4												
19	19.6	16.2	17.7	7.8	5.3	6.5	7.2	5.6	6.3	7.4	5.4	6.2												
20	17.8	16.5	17.1	9.1	6.9	7.9	7.3	6.5	7.0	8.2	5.9	7.0												
21	17.1	15.3	16.0	9.5	8.1	8.8	6.5	4.4	5.3	7.4	6.7	7.1												
22	16.4	13.2	14.8	10.0	8.6	9.2	4.7	4.2	4.5	7.0	5.8	6.4												
23	16.6	14.7	15.4	9.6	8.2	8.9	4.8	4.6	4.7	5.8	4.1	4.9												
24	16.1	15.1	15.7	10.3	8.7	9.4	5.3	4.3	4.8	6.2	2.8	4.4												
25	15.6	12.6	14.5	10.9	8.6	9.7	5.2	4.4	4.9	7.9	4.1	5.8												
26	12.6	9.9	11.0	11.6	10.7	11.2	5.4	4.4	4.8	8.9	5.6	7.2												
27	11.6	8.7	10.1	12.8	11.0	11.7	4.5	3.1	3.9	9.0	5.4	7.2												
28	13.8	9.8	11.4	13.8	12.8	13.2	4.6	3.4	4.0	9.2	7.0	8.2												
29	15.2	11.4	13.1	13.0	10.7	11.3	4.9	2.8	3.7	9.6	6.9	8.4												
30	16.7	13.4	14.8	10.8	9.7	10.3	5.5	3.4	4.1	9.6	6.7	8.4												
31	16.4	13.3	14.7	---	---	---	5.5	3.6	4.4	11.4	9.3	10.2												
MONTH	27.8	8.7	19.1	15.5	3.8	9.8	10.4	2.2	5.5	14.9	2.8	6.7												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN												
													FEBRUARY			MARCH			APRIL			MAY		
1	12.5	11.4	11.9	10.7	8.1	9.4	19.9	16.3	18.1	23.8	17.2	20.3												
2	11.7	10.3	11.0	10.1	7.6	8.8	20.4	17.1	18.5	25.7	18.8	22.2												
3	11.2	9.5	10.3	10.3	7.4	8.8	18.5	16.0	17.2	25.4	20.2	22.7												
4	10.1	8.4	9.3	12.8	8.9	10.6	18.7	15.0	16.5	26.1	19.8	22.9												
5	8.4	6.3	7.6	12.2	10.9	11.6	19.8	15.3	17.1	28.1	22.0	24.8												
6	6.7	5.1	5.9	10.9	9.3	10.0	19.5	16.7	18.0	29.2	23.9	26.1												
7	6.9	4.5	5.6	9.3	8.1	8.9	20.7	16.4	18.3	28.7	22.7	25.6												
8	8.5	5.5	6.8	8.4	6.5	7.0	20.2	16.6	18.2	26.4	23.1	24.6												
9	11.0	7.1	8.8	6.8	4.7	5.9	20.4	15.5	17.8	26.1	21.4	23.4												
10	10.6	8.9	9.7	6.4	4.4	5.5	21.2	15.5	18.1	27.0	20.4	23.6												
11	11.5	8.1	9.7	7.0	5.2	6.1	22.1	16.6	19.1	28.4	22.3	25.1												
12	9.6	7.1	8.7	6.8	5.2	5.9	23.0	17.6	20.1	29.4	22.9	26.0												
13	8.5	7.1	7.8	8.0	5.2	6.5	23.8	18.5	21.0	29.2	24.9	27.1												
14	9.6	7.2	8.3	10.7	7.5	8.9	23.9	18.5	21.2	29.8	25.1	27.2												
15	9.9	9.3	9.5	12.7	10.4	11.3	24.1	19.4	21.8	29.6	25.1	27.3												
16	9.5	8.7	9.2	---	---	---	22.4	18.4	20.1	29.0	23.0	25.9												
17	9.2	8.3	8.7	---	---	---	19.2	16.7	17.9	28.8	24.6	26.5												
18	9.5	8.0	8.7	---	---	---	20.7	15.7	18.1	30.7	25.2	27.7												
19	9.3	8.3	8.9	---	---	---	21.5	16.2	18.8	31.2	25.9	28.4												
20	---	---	---	10.0	8.9	9.5	20.1	15.2	17.4	30.5	24.6	27.7												
21	---	---	---	10.5	9.2	9.8	18.9	11.7	15.5	28.5	26.0	27.1												
22	---	---	---	12.2	9.5	10.6	20.3	14.9	17.8	26.8	25.4	25.9												
23	---	---	---	14.1	11.0	12.4	22.0	16.1	19.0	25.5	24.2	24.8												
24	---	---	---	15.5	13.1	14.3	23.2	17.4	20.2	29.3	22.7	25.6												
25	---	---	---	18.2	14.8	16.3	25.1	19.0	21.9	27.7	24.8	26.3												
26	---	---	---	---	---	---	23.7	17.5	20.4	28.3	24.0	26.0												
27	---	---	---	---	---	---	18.8	16.4	17.4	30.2	24.6	27.2												
28	11.6	9.9	10.6	---	---	---	17.9	15.7	16.5	31.9	25.5	28.5												
29	---	---	---	---	---	---	18.3	14.4	16.0	32.6	27.0	29.6												
30	---	---	---	---	---	---	21.3	14.8	17.9	32.5	26.3	29.4												
31	---	---	---	---	---	---	---	---	---	32.2	25.9	29.0												
MONTH	---	---	---	---	---	---	25.1	11.7	18.5	32.6	17.2	26.0												

RED RIVER BASIN

07312200 BEAVER CREEK NEAR ELECTRA, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN												
													JUNE			JULY			AUGUST			SEPTEMBER		
1	32.8	27.4	29.9	35.2	29.3	32.1	35.2	27.3	30.9	31.8	26.6	28.9												
2	32.6	26.6	29.4	33.3	29.2	31.2	35.0	27.4	30.9	30.8	26.3	28.5												
3	33.2	26.7	29.7	34.3	28.2	31.1	34.3	29.1	31.2	30.5	26.4	28.3												
4	30.7	26.4	28.6	32.1	28.7	30.5	31.3	27.8	29.4	31.4	26.6	28.7												
5	26.4	22.5	24.0	30.1	25.1	26.9	29.6	27.9	28.6	31.3	26.8	28.7												
6	27.3	20.4	23.6	32.4	25.9	28.4	33.2	26.3	29.1	31.7	27.4	29.2												
7	25.2	21.7	23.7	34.7	28.3	31.2	32.5	26.6	29.4	30.9	27.3	28.9												
8	29.3	22.4	25.3	32.6	29.5	31.0	33.6	27.7	30.2	30.2	27.1	28.4												
9	---	---	---	34.0	28.3	31.0	34.5	28.5	31.3	30.7	27.6	28.7												
10	---	---	---	35.1	28.1	31.4	35.1	29.0	31.5	29.3	25.7	27.4												
11	---	---	---	36.3	29.5	32.7	31.3	28.6	29.6	28.1	25.6	26.7												
12	---	---	---	35.2	29.4	32.1	29.8	26.8	28.0	26.8	25.1	25.9												
13	---	---	---	35.6	28.8	31.9	31.9	26.4	28.9	26.3	24.6	25.2												
14	---	---	---	36.1	28.8	32.0	30.1	27.0	28.8	28.9	24.0	26.1												
15	---	---	---	36.2	28.5	32.0	33.1	26.5	29.4	28.4	24.9	26.3												
16	32.4	25.2	28.5	36.0	27.7	31.3	32.7	27.2	29.8	27.6	24.7	25.9												
17	32.4	26.6	29.2	35.2	28.0	31.3	33.6	27.6	30.4	27.5	25.0	26.2												
18	33.3	27.4	30.1	36.4	28.0	31.5	31.0	28.1	29.2	27.8	25.3	26.3												
19	35.1	27.7	31.0	36.0	28.5	32.0	31.6	27.3	29.1	29.3	25.3	26.9												
20	35.9	28.8	32.0	36.0	28.7	32.1	31.7	27.0	29.3	30.0	26.0	27.6												
21	34.5	28.6	31.5	35.8	28.5	31.8	32.1	27.3	29.5	30.6	26.2	28.1												
22	33.9	28.1	30.7	35.9	28.2	31.8	32.8	27.4	29.8	28.5	23.5	26.0												
23	34.1	28.1	30.9	35.5	28.7	31.9	32.5	27.2	29.8	26.5	22.2	24.0												
24	34.0	27.7	30.6	35.8	29.4	32.3	33.4	27.5	30.3	29.8	23.6	26.2												
25	33.9	27.8	30.6	36.2	29.4	32.6	33.3	28.8	30.9	29.8	25.3	27.3												
26	33.9	27.6	30.5	35.3	29.5	32.2	34.0	28.4	30.9	28.8	25.2	27.0												
27	34.8	28.3	31.2	35.4	29.0	32.0	34.6	28.3	31.1	30.3	25.6	27.7												
28	35.0	28.9	31.7	35.7	28.9	32.0	32.0	28.6	30.1	29.9	25.9	27.9												
29	34.9	29.4	32.0	35.9	28.6	32.0	33.0	27.4	29.6	30.1	25.3	27.6												
30	35.2	29.1	32.0	36.0	28.3	31.6	31.8	26.2	28.8	29.9	25.1	27.6												
31	---	---	---	34.6	27.7	31.1	31.8	26.1	28.6	---	---	---												
MONTH	---	---	---	36.4	25.1	31.5	35.2	26.1	29.8	31.8	22.2	27.3												

07312500 WICHITA RIVER AT WICHITA FALLS, TX

LOCATION.--Lat 33°54'34", long 98°32'00", Wichita County, Hydrologic Unit 11130206, near center of stream at downstream side of bridge on Beverly Drive in Wichita Falls, 4 mi upstream from Fort Worth and Denver Railway Co. bridge, 8.4 mi upstream from Holliday Creek, and 55.3 mi upstream from mouth.

DRAINAGE AREA.--3,140 mi², of which 2,086 mi² is above Lake Kemp Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Feb 1901 to Jan 1902 (monthly discharge only, published in WSP 1311), Oct 1910 to Dec 1911 (gage heights only), Mar 1938 to current year.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 924.26 ft above sea level. Feb 1900 to Feb 1902 and Oct 1, 1910, to Dec 31, 1911, nonrecording gages at site 4 mi downstream at different datum. Mar 30, 1938, to Dec 1, 1959, nonrecording gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since installation of gage in Mar 1938, at least 10% of contributing drainage area has been regulated by Lake Kemp (capacity 603,000 acre-ft) 71 mi upstream. Since completion of Lake Kemp in 1923, no outflow has been permitted to pass over the spillway. Water is diverted from Lake Diversion (capacity 40,000 acre-ft) 41 mi upstream for the irrigation of 42,000 acres under permit in the vicinity of Wichita Falls. During the current water year, the Wichita County Water Improvement District No. 2 diverted 74,180 acre-ft from Lake Diversion for mining, industrial, irrigation, and for recreational uses. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s Jun 8, 1915, computed by Vernon L. Sullivan, engineer for Big Wichita River Irrigation Co.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	47	15	39	577	336	224	106	58	52	74	70
2	66	51	29	37	453	253	195	98	44	51	74	66
3	66	49	49	33	152	190	355	94	50	50	111	68
4	65	53	46	56	88	152	594	94	51	53	121	68
5	74	44	36	147	73	124	722	81	51	140	e150	65
6	79	33	30	304	66	110	829	69	50	379	e121	66
7	98	25	28	234	65	141	898	67	51	272	e109	58
8	107	17	35	258	66	360	916	59	62	155	e103	61
9	129	14	26	363	51	540	816	91	113	122	e98	72
10	120	15	23	206	42	352	777	102	308	121	e104	77
11	119	15	20	134	34	214	780	91	480	107	e94	86
12	115	16	20	99	35	241	578	84	528	97	e93	82
13	127	24	21	80	50	313	430	83	259	95	e101	85
14	142	25	20	67	157	289	387	71	147	77	e103	88
15	111	21	22	58	172	327	316	67	125	78	e91	86
16	e80	19	23	51	123	2330	262	59	115	65	e67	82
17	e65	21	24	45	278	3030	225	57	107	48	62	80
18	60	20	22	40	687	3130	199	59	72	63	82	91
19	63	19	23	35	868	3420	166	57	74	63	78	99
20	e63	18	56	32	1170	2760	150	55	66	60	80	107
21	e62	17	169	28	928	1350	149	52	57	50	92	121
22	66	15	226	26	568	1150	136	77	56	55	93	118
23	78	14	237	24	667	975	113	81	51	56	89	107
24	83	14	263	19	1040	657	107	90	48	55	92	105
25	128	14	280	16	1170	446	110	92	51	60	100	101
26	128	15	171	16	899	505	127	94	66	71	96	91
27	93	15	115	13	606	643	234	89	63	87	79	75
28	68	21	87	13	421	689	233	78	60	69	75	72
29	57	18	69	12	---	516	142	73	51	61	84	73
30	53	15	52	11	---	328	119	65	53	66	82	73
31	46	---	44	261	---	250	---	62	---	81	77	---
TOTAL	2676	704	2281	2757	11506	26121	11289	2397	3367	2859	2875	2493
MEAN	86.3	23.5	73.6	88.9	411	843	376	77.3	112	92.2	92.7	83.1
MAX	142	53	280	363	1170	3420	916	106	528	379	150	121
MIN	46	14	15	11	34	110	107	52	44	48	62	58
AC-FT	5310	1400	4520	5470	22820	51810	22390	4750	6680	5670	5700	4940

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1998z, BY WATER YEAR (WY)

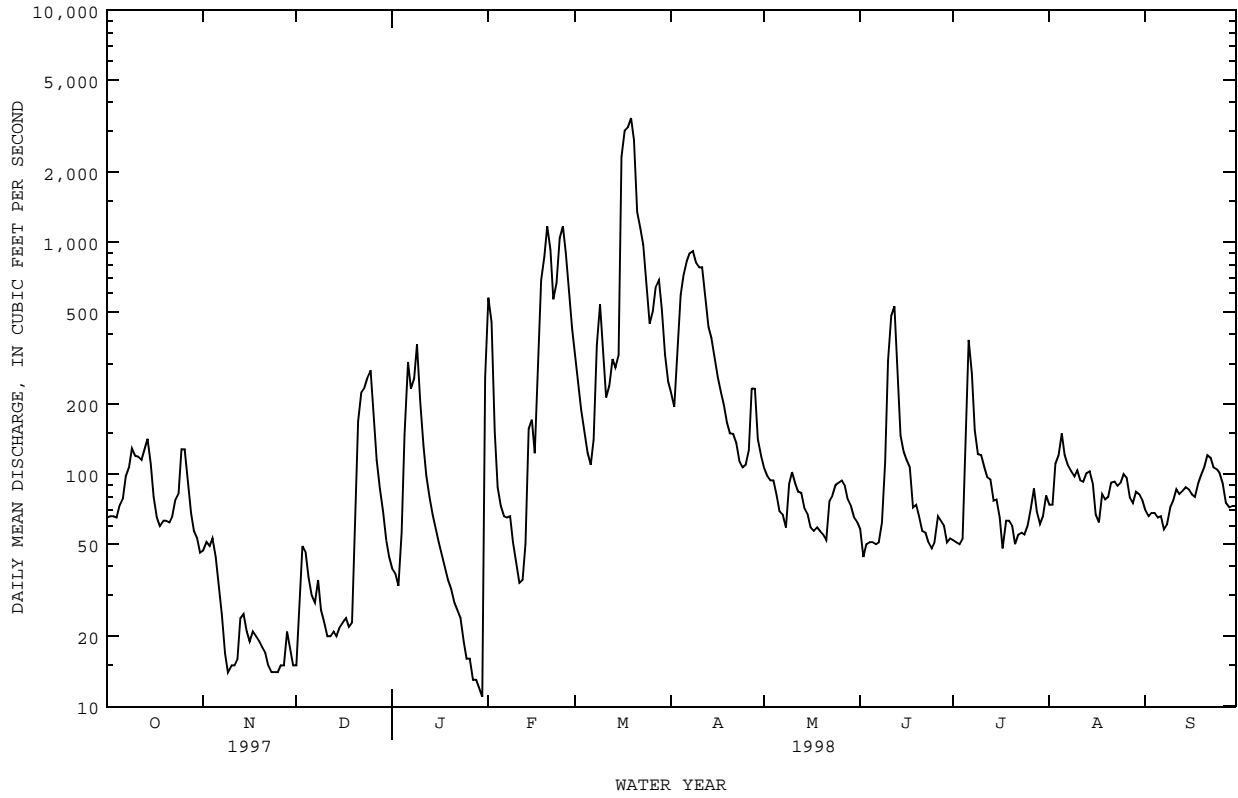
MEAN	413	207	119	91.5	154	199	233	570	526	240	266	325
MAX	4017	1784	1091	859	1252	1412	1450	4105	4475	1201	2791	2619
(WY)	1942	1973	1992	1992	1992	1993	1990	1941	1941	1975	1950	1950
MIN	55.1	23.5	25.3	22.5	17.8	26.9	37.3	52.0	71.0	60.6	61.9	63.8
(WY)	1983	1998	1979	1974	1995	1975	1989	1988	1944	1986	1986	1994

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1938 - 1998z

ANNUAL TOTAL	68969	71325										
ANNUAL MEAN	189	195								276		
HIGHEST ANNUAL MEAN										977		1941
LOWEST ANNUAL MEAN										64.3		1983
HIGHEST DAILY MEAN		2710	May 10		3420	Mar 19			17300		Oct 3	1941
LOWEST DAILY MEAN		14	Nov 9		11	Jan 30			7.7		Apr 9	1978
ANNUAL SEVEN-DAY MINIMUM		15	Nov 21		14	Jan 24			11		Mar 6	1975
INSTANTANEOUS PEAK FLOW					3480	Mar 19			17800		Oct 3	1941
INSTANTANEOUS PEAK STAGE						14.32	Mar 19		24.00		Oct 3	1941
ANNUAL RUNOFF (AC-FT)	136800	141500							199700			
10 PERCENT EXCEEDS	493	464							577			
50 PERCENT EXCEEDS	77	80							84			
90 PERCENT EXCEEDS	21	23							36			

07312500 WICHITA RIVER AT WICHITA FALLS, TX--Continued

e Estimated
z Period of regulated streamflow.



07312500 WICHITA RIVER AT WICHITA FALLS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Apr 1966 to Jul 1975. Chemical and biochemical analyses: Nov 1981 to Aug 1989 and Jun 1996 to Sep 1997. Sediment analyses: Apr 1966 to Jul 1975.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct 1981 to Sep 1989, Jun 1996 to current year.

WATER TEMPERATURE: Oct 1981 to Sep 1989, Jun 1996 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 9,490 microsiemens, Mar 2, 1984; minimum daily, 245 microsiemens, Oct 24, 1983.

WATER TEMPERATURE: Maximum daily, 35.1°C, Jul 14, 1998; minimum daily, 0.0°C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 6,800 microsiemens, Dec 2; minimum, 776 microsiemens, Mar 17.

WATER TEMPERATURE: Maximum, 35.1°C, Jul 14; minimum, 1.4°C, Dec 13.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	4370	4070	4200	5240	5170	5200	6790	6680	6730	3370	3070	3230
2	4780	4370	4590	5330	5240	5300	6800	4660	6220	3620	3370	3490
3	5050	4780	4900	5420	5330	5360	6320	4890	5710	3900	3610	3780
4	5260	5040	5160	5510	5290	5390	6740	5670	6410	3890	3210	3620
5	5430	5260	5350	5450	5280	5350	6730	4940	6050	3880	1970	3310
6	5460	5410	5430	5600	5450	5540	5750	4950	5360	1970	1300	1550
7	5420	5310	5370	5850	5600	5750	5600	4370	5040	1600	1270	1370
8	5310	5110	5210	6010	5850	5900	5050	4370	4770	1590	1280	1430
9	5110	4510	4760	6050	6010	6030	5300	4560	4890	1880	1210	1510
10	4590	4220	4340	6320	6020	6200	5770	5300	5550	1450	1310	1380
11	4610	4330	4500	6410	6310	6360	6040	5770	5940	1610	1390	1520
12	4340	4210	4300	6360	6260	6310	6230	6040	6120	1990	1590	1790
13	4270	4160	4220	6260	5620	6040	6520	6220	6360	2320	1990	2170
14	4350	4170	4260	6260	6130	6200	6510	6270	6380	2550	2320	2420
15	4170	2960	3310	6570	6220	6480	6320	6240	6280	2770	2550	2650
16	---	---	e3600	6680	6540	6620	6370	6180	6330	3050	2770	2920
17	---	---	e4420	6780	6640	6730	6430	6350	6390	3280	3050	3180
18	5090	4550	4800	6670	6530	6590	6420	6320	6360	3490	3280	3370
19	---	---	5030	6550	6490	6530	6340	6240	6290	3730	3490	3610
20	---	---	e5200	6570	6430	6510	6330	4000	5350	3920	3730	3810
21	---	---	e5320	6470	6290	6380	4310	2450	3000	4080	3920	4000
22	---	---	5420	6380	6260	6350	3490	2540	3000	4220	4040	4140
23	5410	4840	5200	6370	6220	6340	3780	1610	2720	4420	4220	4310
24	5210	4820	4990	6380	6300	6330	1860	1480	1660	4570	4420	4510
25	5970	5050	5360	6400	6220	6320	1540	1230	1390	4680	4570	4630
26	5420	3040	3560	6520	6400	6470	1510	1290	1410	4860	4680	4750
27	4180	3970	4060	6600	6520	6570	1830	1510	1670	5040	4860	4950
28	4290	4020	4170	6590	6340	6450	2080	1830	1950	5120	5040	5080
29	4610	4290	4470	6560	6470	6540	2470	2080	2280	5250	5060	5160
30	4850	4610	4730	6680	6550	6600	2670	2470	2580	5360	5250	5320
31	5170	4850	4990	---	---	---	3070	2670	2850	5320	1060	3400
MONTH	---	---	4680	6780	5170	6160	6800	1230	4610	5360	1060	3300

07312500 WICHITA RIVER AT WICHITA FALLS, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	1880	1010	1420	3690	3600	3630	3820	3780	3800	---	---	e4520
2	1850	954	1190	3750	3690	3720	4050	3820	3920	---	---	e4800
3	1400	1080	1240	3770	3710	3740	4170	3980	4040	---	---	e5010
4	1900	1400	1640	3710	3640	3670	3990	3960	3980	---	---	5270
5	2370	1900	2070	3690	3650	3670	3980	3950	3960	5470	5270	5400
6	2640	1500	2350	3730	3670	3700	3970	3950	3960	5760	5470	5620
7	1630	1510	1560	3740	2830	3430	3990	3970	3980	6040	5760	5950
8	1750	1630	1700	2990	2330	2720	4050	3990	4010	6050	2590	5530
9	1750	1650	1710	2410	1940	2220	4110	4040	4080	4390	2520	3250
10	1890	1700	1810	2120	1860	1930	4120	4100	4110	5040	4070	4600
11	2000	1880	1930	2340	2120	2230	4150	4110	4130	4930	3830	4410
12	2130	1920	2020	2730	2340	2510	4230	4140	4200	5010	4000	4540
13	4290	2030	2390	3090	2730	2910	4260	4220	4240	5290	4730	5060
14	4860	2790	4040	3220	3090	3160	4480	4250	4360	5530	5260	5410
15	3070	1950	2520	3230	2460	3010	4380	4360	4370	5870	5390	5650
16	2200	1890	1980	2460	1000	1540	4470	4380	4420	6090	5870	5990
17	2830	2150	2390	1000	776	837	4600	4470	4530	5950	5670	5790
18	2180	1160	1520	966	779	858	4640	4570	4610	5820	5590	5740
19	1310	1100	1190	1290	966	1100	4630	4570	4590	6040	5690	5910
20	1200	878	1040	1610	1290	1510	4730	4570	4670	---	---	5840
21	1030	791	898	---	---	e1600	4920	4600	4780	---	---	e5600
22	1230	1030	1090	---	---	e1620	5050	4920	4980	5800	5310	5610
23	3090	1230	2280	---	---	e1480	---	---	e5280	5870	5680	5780
24	3710	3090	3480	---	---	e2100	---	---	e5370	5990	5620	5870
25	3820	3650	3740	---	---	e2750	---	---	e5340	5870	5620	5790
26	3760	3640	3710	---	---	e3070	---	---	e4930	5790	5720	5760
27	3700	3520	3630	---	---	e3150	5050	4260	4620	5760	5590	5680
28	3610	3510	3540	---	---	e3400	5020	4440	4860	5710	5640	5680
29	---	---	---	---	---	e3600	4440	4120	4210	5720	5610	5680
30	---	---	---	---	---	e3740	---	---	4500	---	---	e5760
31	---	---	---	---	---	3800	---	---	---	---	---	e5950
MONTH	4860	791	2150	---	---	2660	---	---	4430	---	---	5400

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	---	---	e6270	5600	5390	5500	5450	5340	5420	---	---	e5890
2	---	---	e6580	5450	5390	5420	5440	5360	5410	---	---	e6000
3	---	---	6370	5420	5300	5350	5450	3370	5010	6020	5830	5930
4	6440	6000	6190	5340	5260	5310	4480	3570	4060	5930	5830	5860
5	6610	6050	6390	5350	3530	4570	4820	3320	4270	5990	5840	5920
6	6180	5760	5970	4140	3370	3780	4220	3880	4080	5910	5840	5870
7	6110	5660	5770	3570	2880	3260	3910	3780	3850	5890	1930	2330
8	6110	5080	5830	4280	3530	3980	3890	3810	3850	5930	1960	3110
9	6090	3160	5050	4590	4280	4430	3970	3890	3930	6050	3260	5690
10	6330	3530	4740	4770	4590	4670	4050	3960	4020	6100	5990	6050
11	6010	2520	3550	4910	4530	4720	4120	3970	4060	6110	6020	6060
12	3470	2020	2580	4820	4560	4700	4180	4120	4150	6090	6010	6050
13	3490	2030	2920	4940	4720	4900	4330	4180	4240	6030	5890	5970
14	3640	2930	3290	4940	4720	4860	4490	4330	4410	6010	5870	5960
15	4230	3640	3970	5060	4820	4880	4610	4480	4520	5930	5820	5870
16	4650	4230	4450	5500	5060	5230	5710	4590	5110	5980	5920	5960
17	4880	4650	4780	5870	5500	5730	5760	5610	5700	6090	5950	5990
18	5000	4880	4950	5660	5380	5490	5680	5500	5610	6120	5870	5980
19	5140	4940	5030	5420	5310	5370	5540	5450	5500	5990	5930	5950
20	5330	5140	5220	5510	5360	5450	5580	5420	5510	5980	5830	5910
21	5560	5330	5400	5590	5440	5520	5610	5550	5590	5960	5790	5870
22	5590	5460	5540	5650	5550	5580	5550	5320	5430	5860	5790	5820
23	5590	5470	5520	5710	5600	5660	5390	5330	5370	5950	5800	5860
24	5690	5530	5570	5840	5680	5790	5400	5360	5390	5980	5910	5940
25	5770	5470	5650	5880	5180	5710	5400	5370	5390	6020	5910	5970
26	5540	5410	5500	5290	5170	5230	5520	5390	5450	6010	5940	5980
27	5510	5390	5430	5190	5020	5100	5590	5520	5560	6100	3090	5720
28	5540	5290	5410	5270	5110	5180	5640	5590	5620	6110	3070	4860
29	5520	5410	5460	5520	5270	5390	5710	5640	5680	6090	5740	5950
30	5580	5470	5520	5610	5520	5580	---	---	e5680	6140	2860	4710
31	---	---	---	5590	5410	5560	---	---	e5750	---	---	---
MONTH	---	---	5160	5880	2880	5090	---	---	4960	---	---	5630

e Estimated

RED RIVER BASIN

07312500 WICHITA RIVER AT WICHITA FALLS, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	27.3	23.4	25.2	17.3	14.4	15.7	11.7	11.0	11.3	8.9	4.3	6.7
2	27.6	23.2	25.3	15.7	12.9	14.1	11.2	10.7	10.9	13.2	8.6	10.9
3	26.6	23.0	24.5	14.4	10.9	12.8	10.7	8.0	9.9	15.5	12.4	13.9
4	26.4	22.1	24.0	15.9	11.2	13.6	9.3	6.2	7.8	15.2	11.2	13.3
5	26.3	21.6	23.7	16.7	13.5	15.1	7.8	5.1	6.7	11.2	10.3	10.7
6	25.5	22.8	24.0	14.5	11.4	13.1	7.3	5.1	6.3	11.1	9.0	10.4
7	24.5	22.8	23.5	13.6	9.7	11.8	7.0	6.3	6.5	9.0	6.2	7.8
8	25.8	22.7	24.1	14.6	10.3	12.4	9.9	6.6	8.0	6.4	4.9	5.7
9	25.6	23.3	24.5	13.0	10.8	12.1	10.6	7.1	8.6	5.5	4.6	5.0
10	25.7	23.8	24.5	10.8	8.1	9.6	8.3	5.7	6.6	5.2	4.4	4.7
11	24.6	23.2	23.8	10.4	6.6	8.5	5.7	4.5	4.9	5.3	4.3	4.8
12	23.2	20.7	22.5	10.2	8.4	9.4	5.6	3.2	4.2	8.8	5.3	7.0
13	20.7	17.9	19.1	9.9	9.2	9.6	5.5	1.4	3.3	7.5	5.0	6.2
14	19.3	16.4	17.7	9.8	6.9	8.8	6.6	2.5	4.2	5.3	4.7	5.0
15	19.9	16.2	17.9	8.9	5.5	7.0	7.8	3.2	5.3	6.8	3.3	5.1
16	---	---	---	8.3	4.0	6.0	8.9	5.0	6.6	8.2	4.9	6.4
17	---	---	---	7.6	4.8	6.1	8.7	4.6	6.4	8.9	5.2	7.1
18	18.8	14.2	16.5	9.8	5.1	7.3	9.7	5.5	7.3	10.2	6.4	8.2
19	---	---	---	10.6	6.3	8.5	10.9	6.7	8.5	8.8	5.7	7.3
20	---	---	---	11.9	8.3	10.1	9.0	6.4	7.7	10.2	6.5	8.2
21	---	---	---	12.7	9.3	10.8	6.4	5.5	5.8	8.9	7.1	8.0
22	---	---	---	13.6	9.9	11.4	5.7	4.9	5.2	7.7	5.8	6.6
23	16.5	14.2	15.3	13.2	9.1	10.9	5.1	4.9	5.0	5.8	3.9	5.0
24	19.3	15.1	17.0	14.1	9.8	11.7	5.8	4.6	5.2	7.6	2.9	5.2
25	17.8	14.7	16.6	15.0	10.4	12.6	5.7	4.7	5.2	9.4	5.3	7.5
26	14.7	10.8	11.9	15.0	12.4	13.5	5.6	4.3	4.9	11.8	7.6	9.5
27	12.8	9.5	11.1	15.3	12.5	14.0	5.4	3.3	4.4	11.6	6.7	9.2
28	14.4	10.6	12.3	17.4	14.3	15.4	5.4	3.7	4.3	11.9	8.1	10.1
29	16.6	12.1	14.3	14.3	11.4	12.3	5.9	2.7	4.2	12.6	7.9	10.3
30	18.6	14.7	16.5	12.4	10.1	11.2	7.1	3.6	5.3	12.1	7.6	10.1
31	18.2	14.1	16.3	---	---	---	7.1	3.8	5.5	12.5	10.9	11.6
MONTH	---	---	---	17.4	4.0	11.2	11.7	1.4	6.3	15.5	2.9	8.0
DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	13.4	12.0	12.7	11.2	9.8	10.5	19.6	16.2	17.9	23.5	17.8	20.5
2	12.0	10.6	11.4	11.1	9.0	10.1	19.9	16.4	18.2	25.7	20.1	22.6
3	11.5	9.6	10.4	11.5	8.3	9.9	18.6	16.3	17.4	24.8	19.3	22.5
4	9.6	8.3	8.9	14.1	9.7	11.8	17.4	15.4	16.6	25.0	19.7	22.2
5	8.3	6.1	7.2	13.2	11.2	12.4	18.3	15.3	16.8	27.7	21.7	24.4
6	8.1	4.6	6.2	11.2	9.6	10.1	18.8	16.6	17.8	28.6	23.8	25.9
7	9.1	4.8	6.8	9.8	9.2	9.5	19.0	16.9	18.1	28.3	22.9	25.5
8	11.0	7.0	8.7	9.6	6.8	7.8	19.1	16.8	18.1	26.3	22.8	24.5
9	13.3	8.6	10.7	7.1	5.5	6.4	19.0	16.4	17.8	25.5	21.0	22.9
10	12.6	10.5	11.3	7.3	5.1	6.3	19.4	16.4	18.0	26.0	20.6	23.1
11	12.9	8.2	10.6	8.4	5.5	6.9	20.1	17.3	18.7	27.1	22.2	24.4
12	11.2	8.7	9.4	7.7	5.5	6.8	20.7	18.0	19.3	28.4	22.2	25.2
13	10.8	8.1	9.5	8.1	6.7	7.4	21.5	19.2	20.4	27.9	24.3	26.1
14	10.8	8.6	9.6	10.6	8.1	9.4	22.1	19.9	21.1	28.9	24.5	26.6
15	11.2	9.7	10.3	12.8	10.5	11.6	23.1	20.5	21.8	29.2	25.1	27.0
16	10.4	9.3	9.8	13.4	12.6	13.0	22.0	18.8	20.0	28.5	23.3	25.9
17	10.6	8.8	9.6	13.0	12.2	12.6	19.3	17.0	17.9	28.4	24.4	26.2
18	9.9	8.6	9.3	13.0	11.8	12.4	19.4	15.8	17.6	29.6	24.8	27.0
19	10.8	9.3	10.0	12.9	11.2	12.1	21.0	17.0	18.9	30.3	25.0	27.5
20	10.5	9.2	10.0	11.2	10.2	10.8	19.7	15.8	18.0	30.6	25.0	27.6
21	10.4	9.9	10.1	10.6	9.2	10.0	18.6	14.0	16.2	28.4	25.1	27.0
22	11.0	10.1	10.5	11.8	9.7	10.7	20.9	16.2	18.3	27.2	25.2	25.8
23	11.5	10.0	10.8	13.6	11.0	12.1	22.1	17.4	19.6	25.5	23.5	24.4
24	12.3	10.1	11.3	15.3	12.9	13.9	23.2	18.4	20.5	28.1	22.0	24.8
25	13.7	11.7	12.7	18.1	15.1	16.4	24.3	19.5	21.7	26.9	24.6	25.8
26	14.2	12.7	13.4	18.6	17.1	17.7	22.7	18.7	20.9	27.3	23.7	25.4
27	13.1	11.3	12.2	18.6	17.5	18.1	18.8	17.2	17.9	28.7	24.1	26.3
28	11.9	10.5	11.3	19.0	16.9	18.0	18.0	15.2	16.2	30.4	24.7	27.4
29	---	---	---	---	---	---	17.0	14.1	15.3	31.0	26.1	28.6
30	---	---	---	---	---	---	20.9	14.8	17.5	30.0	25.8	28.0
31	---	---	---	---	---	---	---	---	---	30.6	25.1	27.7
MONTH	14.2	4.6	10.2	---	---	---	24.3	14.0	18.5	31.0	17.8	25.4

07312500 WICHITA RIVER AT WICHITA FALLS, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	31.1	26.0	28.5	34.6	29.7	32.1	33.2	27.6	30.2	31.7	25.5	28.8
2	---	---	---	33.5	29.8	31.4	33.0	27.2	30.0	30.9	24.1	27.9
3	---	---	---	33.8	28.1	30.8	33.1	26.3	29.6	31.1	26.3	28.6
4	29.5	26.8	28.2	32.5	28.6	30.3	29.8	27.3	28.4	31.4	26.5	28.9
5	26.8	22.3	23.9	30.0	26.7	27.9	28.4	27.0	27.6	31.2	26.5	28.9
6	26.1	20.1	22.9	30.8	27.2	28.6	30.9	26.1	28.2	31.3	26.8	29.1
7	25.0	21.6	23.3	32.6	29.2	30.7	31.8	26.9	29.0	31.5	26.2	28.8
8	26.8	22.1	24.2	33.6	29.5	31.5	31.5	27.0	29.0	31.2	26.0	28.7
9	29.6	24.7	26.3	34.0	29.8	31.8	32.3	27.4	29.6	30.8	26.9	28.8
10	26.0	22.6	24.6	34.2	29.4	31.7	32.6	27.8	29.8	28.4	24.0	26.5
11	26.5	22.6	24.3	34.0	29.2	31.5	29.7	27.7	28.6	27.5	25.0	26.3
12	27.7	24.3	25.9	34.3	29.5	31.7	30.2	26.5	28.1	26.0	24.4	25.0
13	30.5	26.6	28.3	34.7	29.7	31.9	31.2	26.7	28.7	25.5	23.4	24.3
14	31.9	27.7	29.6	35.1	29.5	32.0	30.7	27.3	28.9	29.1	23.9	26.1
15	30.7	27.0	28.9	35.0	29.3	32.1	31.6	26.5	28.8	29.3	25.5	27.3
16	30.9	26.3	28.4	34.1	28.9	31.4	32.2	27.1	29.5	27.5	25.4	26.3
17	30.8	26.6	28.5	33.8	28.7	31.0	32.4	27.3	29.7	28.1	24.8	26.2
18	31.8	27.2	29.5	34.2	28.6	31.2	30.4	27.5	28.9	28.5	24.5	26.4
19	33.4	27.4	30.1	34.1	29.0	31.5	31.1	27.4	29.1	29.3	25.2	27.1
20	33.8	28.4	30.8	34.1	28.6	31.2	31.4	27.3	29.2	29.4	25.5	27.3
21	33.1	28.3	30.6	34.0	28.0	30.8	31.5	27.5	29.3	29.3	26.0	27.6
22	33.5	27.4	30.2	33.8	27.7	30.5	31.5	27.7	29.4	27.8	24.2	26.2
23	33.4	27.7	30.3	33.6	27.7	30.5	31.5	27.7	29.4	25.3	22.6	23.9
24	32.9	27.2	29.8	34.4	27.9	30.9	32.1	27.8	29.7	28.5	23.8	25.8
25	32.7	27.3	29.8	34.3	28.5	31.2	32.5	28.1	30.0	28.8	25.0	26.8
26	32.9	27.2	29.9	33.7	28.2	30.8	32.6	28.5	30.3	28.6	24.6	26.6
27	34.1	28.2	30.9	32.6	28.1	30.3	32.1	28.0	29.9	29.7	25.2	27.3
28	34.5	29.0	31.6	33.3	27.6	30.3	30.0	27.8	28.8	30.1	26.0	28.1
29	34.9	29.3	31.9	33.2	27.5	30.2	31.2	26.4	28.6	30.5	26.1	28.2
30	34.6	29.0	31.7	33.0	27.2	29.9	30.4	26.2	28.2	29.7	25.6	27.7
31	---	---	---	32.8	27.4	29.9	31.2	25.8	28.3	---	---	---
MONTH	---	---	---	35.1	26.7	30.9	33.2	25.8	29.1	31.7	22.6	27.2

RED RIVER BASIN

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 mi², of which 2,086 mi² is above Lake Kemp Dam and 143 mi² is above Lake Wichita Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 872.71 ft above sea level.

REMARKS.--Records good. Since installation of gage in Oct 1967, at least 10% of contributing drainage area has been regulated by Lake Kemp (capacity 603,000 acre-ft) 71 mi upstream. Records furnished by the City of Wichita Falls show that 14,206 acre-ft was returned to river above this station as wastewater effluent. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	119	105	e29	64	1030	631	413	261	138	97	90	130
2	105	91	28	63	949	492	350	253	125	99	85	134
3	106	91	101	64	692	382	309	230	116	119	78	126
4	101	97	65	66	329	287	599	209	120	101	336	130
5	103	102	54	200	218	230	873	210	120	111	243	120
6	106	85	41	252	248	181	985	197	120	507	194	117
7	107	63	35	495	162	184	1070	e194	120	590	152	120
8	114	50	72	738	113	601	1120	191	124	370	137	110
9	153	43	79	618	103	755	1120	222	176	202	140	91
10	311	41	40	575	85	787	1040	262	813	164	137	94
11	155	40	34	340	70	515	1030	230	907	158	157	94
12	262	37	29	222	63	354	996	222	950	134	154	103
13	270	45	27	155	118	412	804	209	845	116	145	100
14	204	79	25	117	99	491	640	202	519	149	158	102
15	207	50	23	101	265	554	571	184	338	129	119	109
16	158	43	23	87	271	2320	463	184	259	109	116	116
17	126	37	23	78	399	3960	428	158	220	99	106	116
18	116	37	23	69	676	3910	370	154	196	81	100	116
19	113	36	21	62	1280	3880	339	170	156	85	110	120
20	108	33	30	57	2050	4000	265	168	133	92	105	133
21	105	34	565	56	1630	3560	289	155	125	87	122	143
22	120	32	516	55	1230	1960	241	162	115	75	126	195
23	120	28	474	58	911	1540	210	190	120	70	130	187
24	209	27	856	48	1060	1280	184	205	116	72	128	156
25	155	28	550	45	1380	962	178	e200	111	74	132	151
26	208	29	463	44	1410	792	198	187	111	78	173	144
27	194	30	326	43	1110	869	922	187	116	100	147	135
28	136	31	183	39	830	978	607	180	120	120	130	102
29	118	e33	118	40	---	963	437	164	103	90	125	91
30	105	e31	95	37	---	766	305	159	96	74	141	101
31	105	---	76	76	---	559	---	147	---	75	162	---
TOTAL	4619	1508	5024	4964	18781	39155	17356	6046	7628	4427	4378	3686
MEAN	149	50.3	162	160	671	1263	579	195	254	143	141	123
MAX	311	105	856	738	2050	4000	1120	262	950	590	336	195
MIN	101	27	21	37	63	181	178	147	96	70	78	91
AC-FT	9160	2990	9970	9850	37250	77660	34430	11990	15130	8780	8680	7310

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1998, BY WATER YEAR (WY)

MEAN	373	308	199	176	278	403	344	585	688	297	323	429
MAX	2032	2194	1556	1005	1411	1832	2377	3094	2815	1330	2766	2598
(WY)	1987	1973	1992	1992	1992	1993	1990	1990	1995	1992	1995	1986
MIN	101	50.3	51.5	46.1	45.6	70.2	61.2	103	135	92.5	111	111
(WY)	1971	1998	1979	1974	1995	1972	1989	1988	1994	1972	1994	1994

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1968 - 1998	
ANNUAL TOTAL	110795		117572			
ANNUAL MEAN	304		322		367	
HIGHEST ANNUAL MEAN					986	
LOWEST ANNUAL MEAN					125	
HIGHEST DAILY MEAN	3540		4000		7740	
LOWEST DAILY MEAN	21		21		21	
ANNUAL SEVEN-DAY MINIMUM	24		24		24	
INSTANTANEOUS PEAK FLOW			4020		7760	
INSTANTANEOUS PEAK STAGE			16.39		25.80	
ANNUAL RUNOFF (AC-FT)	219800		233200		265700	
10 PERCENT EXCEEDS	854		849		892	
50 PERCENT EXCEEDS	130		136		142	
90 PERCENT EXCEEDS	40		43		65	

e Estimated

07312700 WICHITA RIVER NEAR CHARLIE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Oct 1967 to Sep 1981, Oct 1989 to Sep 1997.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct 1967 to Sep 1981, Jun 1996 to current year.

WATER TEMPERATURE: Oct 1967 to Sep 1981, Jun 1996 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 10,000 microsiemens, Apr 25, 1972; minimum daily, 213 microsiemens, Apr 15, 1997.

WATER TEMPERATURE: Maximum daily, 34.5°C, Jul 25, 1981; minimum daily, 0.0°C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 5,570 microsiemens, Sep 24; minimum, 553 microsiemens, Jan 9.

WATER TEMPERATURE: Maximum, 33.9°C, Jul 11; minimum, 2.8°C, Dec 13.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	3630	3220	3460	4210	3910	4020	---	---	e3260	2950	2620	2800
2	3720	3390	3620	4280	3950	4130	---	---	e3410	3080	2920	2970
3	3870	3570	3740	4380	4060	4180	4160	3430	3750	3370	2970	3080
4	4040	3620	3860	4480	4170	4300	3730	2620	3080	3510	3320	3400
5	4170	3720	3990	4460	4230	4310	3070	2020	2430	3560	2250	3000
6	4330	4070	4240	4520	4210	4320	4180	3070	3660	3590	2260	2650
7	4620	4280	4440	---	---	e4290	4350	3740	4040	4560	1630	2830
8	4630	4340	4450	---	---	e4400	4540	4070	4340	1820	578	1400
9	4450	3770	4180	---	---	e4510	4490	2550	3260	1180	553	872
10	4550	2030	3280	---	---	e4570	2580	1970	2240	1750	1180	1480
11	4060	2020	3070	---	---	e4590	2840	2320	2470	1430	1160	1290
12	4230	3290	3860	---	---	e4600	3410	2840	3140	1570	1370	1510
13	3700	2830	3190	---	---	e4410	3360	3090	3280	1770	1540	1670
14	3990	3310	3570	---	---	e3650	3660	3300	3420	1910	1760	1820
15	4380	3990	4170	---	---	e3880	3750	3470	3580	2230	1910	2100
16	4650	4380	4530	---	---	e3970	3920	3520	3690	2390	2230	2320
17	4500	3410	3980	---	---	e4040	4060	3630	3800	2530	2340	2430
18	3650	3390	3480	---	---	e4150	4110	3670	3880	2700	2480	2580
19	3890	3650	3760	---	---	e4200	4090	3660	3820	2880	2640	2740
20	4200	3860	4040	---	---	e4290	3920	3630	3710	3090	2690	2880
21	4480	4060	4250	4440	3990	4220	3630	717	2240	3150	2940	3020
22	4550	4250	4350	4330	4000	4160	1710	672	1120	3240	2990	3080
23	4410	3900	4210	4260	3960	4060	3950	1710	2660	3340	3180	3250
24	4420	3770	4180	4330	3940	4080	3350	1600	2190	3410	3140	3290
25	3770	2890	3320	4300	3990	4100	2180	1510	1810	3290	3130	3220
26	4280	3560	4090	---	---	e3900	2080	1890	1940	3510	3250	3370
27	5060	4280	4710	---	---	e3700	1940	1740	1830	3670	3390	3500
28	4970	3370	4000	---	---	e2800	2120	1780	1980	3890	3480	3660
29	3950	3370	3770	---	---	e2950	2330	2120	2210	3890	3530	3690
30	3950	3770	3870	---	---	e3190	2430	2330	2390	3920	3620	3740
31	4050	3830	3910	---	---	---	2620	2390	2530	3860	2770	3620
MONTH	5060	2020	3920	---	---	4070	---	---	2940	4560	553	2690

RED RIVER BASIN

07312700 WICHITA RIVER NEAR CHARLIE, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	3460	890	1660	3550	3480	3510	3390	3040	3270	3390	3240	3280
2	1850	1140	1500	3640	3550	3590	3420	3390	3400	3420	3250	3320
3	1800	1340	1570	3690	3590	3620	3430	3390	3410	3490	3310	3410
4	1890	1610	1780	3630	3570	3600	3850	3410	3660	3490	3360	3450
5	2060	1890	1990	3610	3520	3550	3830	3620	3750	3610	3490	3550
6	2240	2040	2150	3630	3430	3510	3800	3660	3720	---	---	3520
7	2170	1760	1980	3630	3060	3420	3790	3580	3740	---	---	e4060
8	2470	2070	2320	3490	1250	2350	3900	3710	3780	---	---	e4590
9	2780	2470	2610	2800	1710	2240	3850	3660	3790	---	---	e4490
10	3130	2780	3010	2750	1770	2130	3900	3710	3790	---	---	e4400
11	3330	3030	3240	2050	1800	1960	3920	3690	3780	---	---	e4350
12	3180	3010	3070	2670	2050	2410	3980	3730	3840	4720	4530	4620
13	3290	3070	3150	2970	2650	2740	4010	3720	3960	4740	4410	4530
14	3180	2160	2660	3590	2970	3350	4050	3820	3960	4630	4440	4540
15	3780	2070	2860	3660	3100	3530	4010	3830	3940	4710	4460	4560
16	3750	2470	3090	3170	884	1580	4180	3830	3970	4700	4430	4540
17	2470	1160	2010	1050	779	897	4080	3900	3960	4620	4260	4450
18	2320	1100	1530	1110	990	1050	4140	3840	3970	4790	4420	4620
19	2360	810	1480	1360	1110	1230	4190	3890	4040	4910	4380	4650
20	1150	620	878	1830	1360	1530	4070	3960	4010	4630	4240	4450
21	1180	1060	1130	2080	1830	1970	4030	3810	3930	4570	4330	4440
22	1230	1020	1090	1840	1680	1770	3970	3230	3590	4690	4390	4540
23	1330	1230	1290	1680	1540	1590	4030	3800	3890	4550	4380	4450
24	2790	1320	1940	1600	1520	1550	4100	3960	4010	---	---	e4620
25	3360	2790	3150	1790	1600	1690	4190	3990	4100	---	---	e4690
26	3550	3340	3430	2120	1790	1950	4220	4050	4130	---	---	e4760
27	3570	3450	3490	2620	1890	2270	4130	980	2410	4960	4730	4840
28	3510	3470	3490	3090	2150	2620	3440	1290	2370	4980	4690	4810
29	---	---	---	3270	2490	3060	4070	3440	3880	4940	4680	4810
30	---	---	---	3420	3000	3340	4050	3390	3830	4980	4620	4790
31	---	---	---	3360	2990	3260	---	---	---	5010	4730	4840
MONTH	3780	620	2270	3690	779	2480	4220	980	3730	---	---	4350
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	4990	4650	4810	4700	4520	4610	5020	4680	4850	5240	5000	5150
2	4960	4690	4830	4780	4560	4670	5300	4470	5030	5360	5050	5190
3	4890	4540	4760	4760	4590	4680	5080	4750	4900	5130	4910	5020
4	4850	4260	4670	4780	4590	4670	4920	1470	4110	5180	4960	5060
5	4990	4420	4720	4700	4490	4620	2520	1830	2240	5350	4980	5190
6	4980	4360	4650	4500	1440	2620	4100	2180	3250	5360	4960	5160
7	4770	4390	4590	3940	2180	3290	4450	4100	4300	5300	4970	5180
8	4740	4110	4600	3670	2800	3230	4500	4250	4350	5430	5030	5210
9	5060	4210	4540	3440	2780	3160	4320	4150	4250	5260	5000	5150
10	4260	996	2730	4090	3440	3740	4530	4240	4350	5240	4950	5090
11	4080	1340	2660	4300	4070	4160	4620	4330	4480	5470	5070	5210
12	3620	1490	2590	4400	4300	4350	4730	3970	4410	5430	5180	5310
13	3420	2170	2660	4500	3950	4370	4560	4000	4320	5560	5270	5400
14	3140	2250	2760	---	---	e3700	---	---	e4490	5500	5110	5340
15	3110	2790	2890	---	---	3800	---	---	e4640	5550	5090	5260
16	---	---	e3090	4140	3640	3990	---	---	e4810	5370	5090	5190
17	---	---	e3510	4350	4040	4260	---	---	e4990	5430	5080	5230
18	---	---	e3860	4700	4280	4490	---	---	e5100	5250	5010	5130
19	---	---	e4070	4720	4580	4680	---	---	e5280	5260	4980	5120
20	---	---	e4230	4940	4580	4810	5540	5220	5390	5360	5010	5110
21	---	---	e4290	4960	4780	4860	5460	5050	5260	5180	4970	5090
22	---	---	e4330	4920	4730	4800	5220	5000	5090	5420	4930	5260
23	4300	2620	3490	4860	4790	4820	5350	5070	5190	5560	4940	5250
24	4450	2940	4110	4860	4710	4770	5380	4990	5160	5570	4970	5280
25	4370	2960	3870	5020	4790	4870	5100	4820	4960	5510	5050	5240
26	4500	2960	4160	5020	4890	4940	5200	4740	4960	5440	5130	5260
27	4600	3260	4320	5200	4930	5060	4990	4730	4830	5480	5100	5300
28	4840	3020	4550	5150	4990	5050	5100	4770	4980	5390	5130	5280
29	4890	3870	4710	5310	4980	5150	5110	4780	4960	5350	5030	5210
30	4940	4510	4760	5040	4920	4970	5040	4790	4900	5410	5030	5210
31	---	---	---	4950	4750	4830	5170	4910	5050	---	---	---
MONTH	---	---	3990	---	---	4390	---	---	4670	5570	4910	5200

e Estimated

RED RIVER BASIN

07312700 WICHITA RIVER NEAR CHARLIE, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN												
													OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	26.7	24.2	25.4	17.3	16.1	16.7	---	---	---	8.4	5.5	6.8												
2	26.6	24.1	25.5	16.4	14.6	15.4	---	---	---	12.0	8.4	10.0												
3	26.1	24.0	25.2	14.9	13.1	13.7	11.0	9.3	10.3	14.7	12.0	13.0												
4	25.7	23.4	24.7	14.5	11.7	13.1	9.3	7.8	8.6	14.9	12.3	13.8												
5	25.6	22.9	24.4	15.2	13.6	14.5	8.3	6.3	7.1	12.3	11.5	11.8												
6	25.3	23.7	24.5	14.7	12.6	13.4	6.8	5.9	6.5	11.8	11.2	11.7												
7	24.7	23.7	24.2	---	---	---	6.8	6.5	6.6	11.2	8.1	9.5												
8	24.9	23.3	24.1	---	---	---	8.4	6.6	7.5	8.1	5.3	6.8												
9	25.1	23.5	24.3	---	---	---	8.8	7.3	8.1	6.6	5.2	5.9												
10	24.9	24.0	24.5	---	---	---	8.3	6.4	7.1	6.6	5.8	6.2												
11	24.4	23.8	24.0	---	---	---	6.4	5.2	5.7	6.0	5.5	5.7												
12	23.8	21.8	23.1	---	---	---	5.4	4.4	4.9	8.1	6.0	7.0												
13	21.8	19.4	20.4	---	---	---	4.4	2.8	3.6	7.6	6.3	6.8												
14	19.5	17.3	18.6	---	---	---	4.6	3.2	4.0	6.3	5.5	5.7												
15	19.5	16.9	18.2	---	---	---	5.6	3.8	4.7	6.4	4.5	5.4												
16	19.7	17.0	18.3	---	---	---	6.6	5.3	6.0	7.1	5.2	6.2												
17	19.2	17.2	17.8	---	---	---	6.6	5.6	6.3	8.0	5.8	6.9												
18	17.8	15.5	16.7	---	---	---	7.6	6.0	6.8	8.6	6.8	7.9												
19	18.9	16.1	17.4	---	---	---	8.4	7.0	7.8	8.3	6.6	7.3												
20	18.5	17.0	17.3	---	---	---	8.7	7.5	8.1	8.5	6.7	7.6												
21	17.0	15.6	16.2	11.0	9.6	10.4	7.6	6.7	7.1	8.4	7.4	7.9												
22	15.6	14.0	14.7	11.4	10.1	10.9	6.8	6.0	6.3	7.4	6.5	7.0												
23	15.7	14.2	14.8	11.3	9.9	10.7	6.5	6.2	6.3	6.6	4.9	5.4												
24	18.0	15.5	16.5	11.8	10.3	11.2	6.4	5.4	6.0	6.0	3.6	4.9												
25	17.5	15.5	16.9	13.1	10.8	11.8	6.7	6.3	6.5	7.6	5.3	6.4												
26	15.5	12.1	13.0	---	---	---	6.6	5.7	6.2	9.4	7.3	8.3												
27	12.5	10.8	11.8	---	---	---	5.8	4.9	5.4	9.4	7.5	8.7												
28	13.4	10.9	12.0	---	---	---	6.0	4.8	5.3	10.2	8.6	9.5												
29	15.2	12.3	13.6	---	---	---	6.1	4.0	5.0	10.4	8.7	9.7												
30	17.3	14.5	15.9	---	---	---	6.7	4.8	5.8	10.6	8.6	9.7												
31	17.6	15.4	16.6	---	---	---	6.7	5.2	6.2	11.3	10.2	10.6												
MONTH	26.7	10.8	19.4	---	---	---	---	---	---	14.9	3.6	8.1												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN												
													FEBRUARY			MARCH			APRIL			MAY		
1	12.5	11.2	11.9	11.6	10.5	11.0	20.0	17.1	18.6	22.0	17.2	19.2												
2	12.2	11.3	11.8	11.2	9.9	10.5	20.4	17.5	18.9	24.0	19.8	21.6												
3	11.6	10.0	10.5	11.4	9.2	10.3	19.1	16.9	18.0	24.4	21.0	22.6												
4	10.0	8.7	9.2	13.7	9.9	11.7	17.7	15.8	16.8	24.6	21.0	22.7												
5	8.7	7.0	7.8	13.1	12.0	12.5	17.7	16.3	16.9	26.5	22.4	24.1												
6	7.4	5.9	6.7	12.0	10.3	10.7	18.3	17.2	17.7	---	---	---												
7	7.8	5.4	6.6	10.3	9.8	10.0	19.0	17.5	18.2	---	---	---												
8	9.4	6.6	7.8	10.2	7.6	8.9	18.9	17.7	18.4	---	---	---												
9	11.6	8.3	9.8	7.6	6.4	7.0	18.8	17.1	18.0	---	---	---												
10	11.4	10.3	10.8	7.2	6.0	6.6	18.7	17.1	18.0	---	---	---												
11	11.4	9.3	10.5	7.9	6.2	6.9	19.3	17.7	18.5	---	---	---												
12	11.1	9.2	9.8	7.8	5.9	6.9	20.1	18.5	19.3	28.2	24.0	25.9												
13	10.4	8.9	9.5	8.5	6.7	7.6	21.1	19.5	20.2	27.9	25.2	26.5												
14	11.1	8.9	9.9	10.4	8.2	9.3	22.1	19.9	20.9	28.2	25.3	26.6												
15	12.0	10.6	11.2	12.3	10.4	11.2	22.9	21.0	21.7	28.3	25.7	27.0												
16	11.1	9.9	10.6	13.7	12.3	13.2	21.6	19.4	20.5	27.5	24.4	26.0												
17	10.6	9.5	10.0	13.7	12.8	13.3	19.4	17.7	18.3	27.4	24.8	26.0												
18	10.7	9.4	10.1	13.2	12.5	12.8	19.0	16.4	17.7	28.8	25.1	26.8												
19	10.4	9.8	10.2	12.9	12.1	12.7	20.1	16.8	18.3	29.4	25.8	27.5												
20	11.1	10.1	10.6	12.1	11.5	11.8	19.0	16.2	17.7	29.1	26.1	27.6												
21	10.8	10.3	10.4	11.5	10.9	11.2	17.5	14.5	16.0	28.3	26.4	27.2												
22	10.5	10.0	10.3	12.1	10.4	11.2	19.7	15.6	17.5	27.3	25.6	26.1												
23	12.0	10.1	10.9	13.9	11.6	12.7	20.9	16.8	18.7	25.6	24.1	24.7												
24	12.6	11.3	11.9	15.3	13.4	14.2	22.0	18.3	20.0	---	---	---												
25	13.8	12.1	12.9	17.6	15.3	16.3	23.6	19.8	21.4	---	---	---												
26	13.9	12.8	13.4	19.2	17.4	18.1	22.8	19.8	21.3	---	---	---												
27	13.5	12.4	13.0	19.6	18.5	19.0	19.8	17.1	18.0	28.4	25.1	26.5												
28	12.8	11.5	12.1	19.6	18.3	19.0	17.1	15.9	16.6	29.9	25.6	27.5												
29	---	---	---	20.4	19.1	19.6	16.4	15.3	15.8	31.3	27.3	29.1												
30	---	---	---	20.9	19.7	20.2	19.0	14.9	16.7	30.9	27.7	29.3												
31	---	---	---	20.0	18.4	19.2	---	---	---	31.1	27.2	29.0												
MONTH	13.9	5.4	10.4	20.9	5.9	12.4	23.6	14.5	18.5	---	---	---												

RED RIVER BASIN

07312700 WICHITA RIVER NEAR CHARLIE, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	31.7	28.0	29.8	33.6	30.3	31.9	32.5	29.0	30.8	30.8	27.8	29.4
2	31.7	27.9	29.8	33.0	30.3	31.7	32.2	28.5	30.5	30.8	27.8	29.3
3	31.7	27.8	29.7	32.9	29.2	31.1	32.4	29.6	31.0	30.5	27.8	29.3
4	30.8	28.5	29.3	32.1	29.4	30.7	31.0	28.1	29.2	31.1	28.1	29.6
5	28.5	24.1	25.5	31.0	28.3	29.1	---	---	---	31.3	28.2	29.8
6	25.6	21.8	23.7	29.6	26.6	28.0	30.0	26.6	28.1	31.3	28.5	30.0
7	25.2	22.5	23.9	31.4	29.4	30.2	30.8	27.7	29.1	31.2	28.1	29.8
8	26.9	23.1	24.6	31.9	30.0	30.8	31.7	28.2	29.8	31.0	28.0	29.6
9	29.1	25.4	26.8	33.0	29.4	31.0	32.3	28.8	30.4	30.5	28.3	29.4
10	26.3	24.0	24.9	33.6	29.9	31.6	31.7	29.1	30.3	29.3	26.1	27.7
11	26.4	20.4	25.3	33.9	30.5	32.1	30.0	27.9	28.8	28.1	26.2	27.3
12	27.5	24.7	25.9	33.7	30.5	32.0	30.9	27.8	29.2	27.0	25.3	25.9
13	29.4	27.0	28.1	33.7	30.7	32.0	31.2	28.1	29.6	25.6	24.6	25.1
14	30.8	28.6	29.5	---	---	---	30.5	27.6	29.4	28.5	25.1	26.6
15	29.9	27.7	28.9	33.7	30.0	31.8	32.0	28.3	30.0	29.2	26.7	27.9
16	30.1	26.9	28.5	33.1	30.0	31.5	32.1	28.8	30.4	28.4	21.8	27.6
17	30.3	27.3	28.7	32.5	29.7	31.1	32.2	28.8	30.5	28.2	26.3	27.3
18	---	---	---	33.1	29.4	31.3	31.4	29.1	30.2	28.8	26.1	27.5
19	---	---	---	33.7	29.9	31.7	31.2	28.6	29.8	29.1	26.4	27.9
20	---	---	---	33.2	30.0	31.7	31.5	28.2	29.8	29.9	27.2	28.5
21	---	---	---	32.9	29.7	31.4	31.5	28.7	30.0	30.3	27.6	28.9
22	---	---	---	33.1	29.3	31.2	31.6	28.9	30.2	29.4	26.4	27.9
23	32.4	28.7	30.5	33.5	29.6	31.6	31.5	28.6	30.1	29.0	24.8	25.5
24	32.0	28.3	30.2	33.7	30.0	31.9	32.3	29.0	30.6	28.6	25.0	26.5
25	32.1	28.4	30.3	33.4	30.1	31.9	32.6	29.5	30.9	29.0	26.8	27.8
26	32.4	28.4	30.3	33.2	29.9	31.6	32.4	29.8	31.0	28.9	26.4	27.6
27	33.1	29.0	30.9	32.9	29.6	31.4	32.5	29.4	31.0	29.5	26.8	28.0
28	33.6	29.7	31.6	32.8	29.3	31.1	31.4	29.5	30.1	29.8	27.1	28.5
29	33.5	30.1	31.9	32.6	29.3	31.0	30.9	27.7	29.4	29.5	27.0	28.4
30	33.6	30.0	31.8	32.5	29.0	30.9	30.7	27.7	29.2	29.1	26.6	28.0
31	---	---	---	32.6	29.1	30.9	30.6	27.3	29.0	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	31.3	21.8	28.1

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 mi²

PERIOD OF RECORD.--Feb 1946 to current year. Prior to Oct 1965, end of month contents only.
Water-quality records.--Chemical analyses: Oct 1969 to Sep 1984.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by City of Wichita Falls). Prior to Oct 8, 1946, water-stage recorder at same site and datum. Non-recording gage read twice daily prior to Feb 17, 1974, once daily thereafter.

REMARKS.--The lake is formed by a rolled earthfill dam 8,200 ft long, including a 483-foot-wide reinforced concrete ogee-type uncontrolled spillway near right end of dam. The dam was completed Dec 15, 1945, and storage began Feb 1, 1946. The service outlet consists of two gate-controlled 4- by 5-foot conduits. The dam and lake are owned by the City of Wichita Falls, which uses the water for their municipal supply. The capacity table is based on U.S. Geological Survey topographic maps, dated 1929. The capacity curve, dated Nov 1946, was entitled "Lake Kickapoo Area & Capacity Curve". Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	1,062.0
Design flood (2-foot freeboard).....	1,060.0
Crest of spillway.....	1,045.0
Lowest gated outlet (invert).....	1,000.92

COOPERATION.--Capacity curve, record of lake elevations, and diversions for municipal use are provided by the city of Wichita Falls.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 134,300 acre-ft, Aug 2, 1950 (elevation, 1,049.2 ft); minimum observed since first filling in Jul 1950, 35,660 acre-ft, Jun 30, 1953 (elevation, 1,029.8 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 71,300 acre-ft Mar 19-22, 24, 28-Apr 3, (elevation, 1,039.0 ft); minimum daily contents, 52,820 acre-ft Sep 27-30, (elevation, 1,034.8 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 0800 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61140	58990	57290	58130	56470	59420	71300	68420	65600	63350	59420	56060
2	61140	58990	57290	58130	58560	59420	71300	68420	65150	62900	59420	55650
3	60710	58990	57290	57700	58560	59420	71300	68420	65150	62900	58990	55650
4	60710	58560	57290	58560	58990	59420	70340	68420	65600	62450	59420	55650
5	60710	58130	57290	58130	58990	59420	70340	68420	64700	62900	58990	55650
6	60710	58130	57290	58130	58990	59420	70340	68420	65150	63800	58990	55240
7	60280	58130	56880	58130	58990	59420	70340	68420	64700	63350	58990	55240
8	60280	58130	57290	58130	58990	59420	70340	68420	64700	62900	58990	55240
9	60280	57700	57700	58560	58990	59420	70340	68420	64700	63350	58990	54830
10	60280	57700	57700	58560	58990	59850	70340	67940	64250	63350	58560	54420
11	60280	57700	56880	58560	58560	59850	70340	67940	64250	62900	58560	54420
12	60280	57700	56880	58990	58560	59850	70340	67940	66500	62900	58560	54420
13	e60280	57700	56880	58130	58560	59850	70340	67460	66500	62900	58560	54420
14	60280	57700	56880	58560	58560	59420	69380	66980	66500	62000	57700	54420
15	e60280	57700	56060	57700	58560	59850	68900	67460	65150	62000	57700	54420
16	e59850	57700	56060	58560	58990	60710	68900	67460	66050	62000	57700	54010
17	59850	57700	56060	58560	58560	69380	68900	67460	66050	62000	57700	54010
18	59850	57700	56060	58560	58990	70820	68900	66980	65600	62000	57700	54010
19	59850	57700	56060	58130	59850	71300	68900	67460	65150	62000	57700	54010
20	59420	57700	56060	58130	59420	71300	68420	67460	65150	62000	57290	54010
21	59420	57700	57290	58130	59420	71300	67940	66500	65150	62000	57290	54010
22	59420	e57700	57290	58130	59850	71300	68420	66500	64700	62000	56880	54010
23	59420	e57700	57700	57700	59850	70820	67940	66500	65150	62000	56880	54010
24	59420	57700	58130	57700	59420	71300	67940	66500	65150	62000	56880	54010
25	59420	57290	58130	57700	59850	70820	68420	66500	64700	62000	56880	54010
26	59850	57290	58130	57700	59850	70340	68420	66500	64700	62000	56880	54010
27	58990	57290	58130	57700	59850	70340	68900	66500	64700	62000	56880	52820
28	59850	57290	58130	56880	59850	71300	68900	66500	63800	62000	56880	52820
29	59420	57290	58130	56060	---	71300	68420	66500	63800	60280	56880	52820
30	58990	57290	57700	56060	---	71300	68420	66500	63800	61570	56880	52820
31	58560	---	58130	56470	---	71300	---	66500	---	59420	56060	---
MAX	61140	58990	58130	58990	59850	71300	71300	68420	66500	63800	59420	56060
MIN	58560	57290	56060	56060	56470	59420	67940	66500	63800	59420	56060	52820
(+)	1036.2	1035.9	1036.1	1035.7	1036.5	1039.0	1038.4	1038.0	1037.4	1036.4	1035.6	1034.8
(@)	-2580	-1270	+840	-1660	+3380	+11450	-2880	-1920	-2700	-4380	-3360	-3240
(++)	731	674	1059	1103	944	819	885	1016	1119	1112	997	1006
CAL YR 1997	MAX 74420	MIN 56060	(@) -7920	(++) 13045								
WTR YR 1998	MAX 71300	MIN 52820	(@) -8320	(++) 11465								

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.
(++) Diversions, in acre-feet, for municipal use by the City of Wichita Falls, and for wholesale customer use.

e Estimated

RED RIVER BASIN

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 mi², of which 275 mi² is above Lake Kickapoo.

PERIOD OF RECORD.--May 1932 to Jan 1956, Aug 1966 to current year.

Water-quality records.--Chemical analyses: Jan 1953 to Jan 1956. Water temperatures: Jan 1953 to Jan 1956. Sediment records: May 1968 to Sep 1975.

REVISED RECORDS.--WSP 827: 1932-35. WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 934.72 ft above sea level. Aug 17, 1954, to Jan 6, 1956, nonrecording gage at present site and datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since water year 1946, at least 10% of contributing drainage area has been regulated by Lake Kickapoo (07314000) on North Fork Little Wichita River. Records furnished by the city of Wichita Falls show that 11,470 acre-ft was diverted from Lake Kickapoo for municipal use and wholesale customers during the current year.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--13 years (water years 1933-45) 110 ft³/s (79,700 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1933-45).--Maximum discharge, 17,900 ft³/s Oct 31, 1941 (gage height, 21.80 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jun 1930 reached a stage of about 28 ft, from information by Texas Department of Transportation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	2.3	139	1.8	1.0	.91	.03	.00	.00	.00
2	.00	.00	.01	2.2	38	1.6	.82	.65	.05	.00	.00	.00
3	.00	.00	.00	2.0	12	1.6	.70	.57	.03	.00	.00	.00
4	.00	.00	.00	6.9	6.6	1.5	.63	.49	.02	.00	.00	.00
5	.00	.00	.00	31	5.5	1.3	.63	.50	.01	13	14	.00
6	.00	.00	.00	23	13	1.2	.61	.42	.01	238	7.9	.00
7	.00	.00	.02	19	19	2.6	.60	.38	.01	38	2.9	.00
8	.00	.00	.00	174	8.3	55	.54	.38	.02	5.0	1.3	.00
9	.00	.00	.00	215	4.7	50	.45	1.5	.10	1.8	.76	.00
10	.00	.00	.00	42	3.1	23	.42	2.0	3.4	.92	.65	.00
11	.00	.00	.00	12	1.9	8.6	.36	1.5	69	.68	.60	.00
12	e.00	.00	.00	5.4	1.7	4.5	.30	1.9	63	.65	.49	.00
13	e.00	.00	.00	3.2	1.8	3.0	.24	1.7	5.2	.53	.37	.00
14	.00	.00	.00	2.4	1.7	2.5	.17	1.4	1.2	.53	.30	.00
15	.00	.00	.00	1.9	3.7	4.9	.05	.75	.84	.48	.22	.00
16	.00	.00	.00	1.5	4.5	703	.06	.54	.56	.34	.10	.00
17	.00	.00	.00	1.0	58	1350	.04	.51	.41	.23	.04	.00
18	.00	.00	.00	.79	80	1270	.11	.52	.26	.15	.01	.00
19	.00	.00	.00	.73	35	235	.08	.45	.09	.09	.02	.00
20	.00	.00	.91	.71	41	50	.04	.44	.08	.05	.08	.00
21	.00	.00	148	.72	15	16	.02	.43	.02	.04	.04	.00
22	.00	.00	123	.83	9.9	6.8	.00	.38	.03	.00	.03	.00
23	.01	.00	38	.79	8.0	3.8	.00	.36	.01	.00	.00	.00
24	.00	.00	175	.74	6.2	2.7	.00	.36	.00	.00	.00	.00
25	.00	.00	80	.74	4.2	2.1	.00	.16	.00	.00	.00	.00
26	.00	.00	20	.71	3.1	1.6	.06	.15	.00	.00	.00	.00
27	.00	.00	10	.63	2.5	1.1	6.4	.17	.00	.00	.00	.00
28	.00	.00	9.1	.60	2.0	.77	6.8	.13	.00	.00	.00	.00
29	.00	.00	6.2	.61	---	.80	3.0	.11	.00	.00	.00	.00
30	.00	.00	4.1	.64	---	.99	1.5	.10	.00	.00	.00	.00
31	.00	---	2.9	7.5	---	1.2	---	.08	---	.00	.00	---
TOTAL	0.01	0.00	617.24	561.54	529.4	3808.96	25.63	19.94	144.38	300.49	29.81	0.00
MEAN	.000	.000	19.9	18.1	18.9	123	.85	.64	4.81	9.69	.96	.000
MAX	.01	.00	175	215	139	1350	6.8	2.0	69	238	14	.00
MIN	.00	.00	.00	.60	1.7	.77	.00	.08	.00	.00	.00	.00
AC-FT	.02	.00	1220	1110	1050	7560	51	40	286	596	59	.00

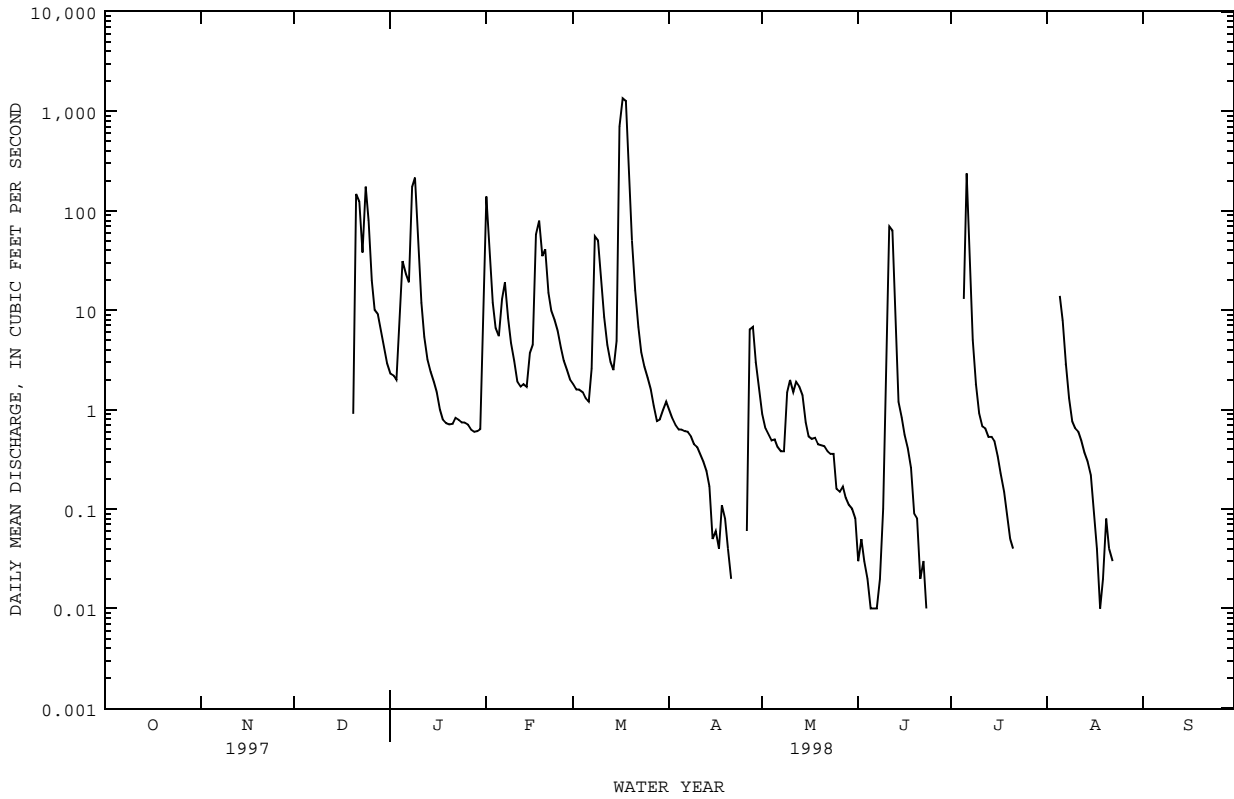
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 1998z, BY WATER YEAR (WY)

	MEAN	MAX	MIN	(WY)	MEAN	MAX	MIN	(WY)	MEAN	MAX	MIN	(WY)
	56.6	771	.000	1982	16.1	160	.000	1987	22.7	194	.000	1992
	14.4	154	.000	1990	24.5	176	.000	1993	43.1	309	.000	1990
	41.1	637	.000	1982	160	1224	.000	1985	120	944	.000	1950
	23.3	282	.000	1950	44.9	1337	.000	1967	65.7	624	.000	1954

07314500 LITTLE WICHITA RIVER NEAR ARCHER CITY, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1946 - 1998z	
ANNUAL TOTAL	4215.47		6037.40		52.5	
ANNUAL MEAN	11.5		16.5		2.49	
HIGHEST ANNUAL MEAN					1990	
LOWEST ANNUAL MEAN					1984	
HIGHEST DAILY MEAN	857	Feb 21	1350	Mar 17	9550	Aug 2 1950
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Oct 31 1945
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Oct 31 1945
INSTANTANEOUS PEAK FLOW			1470	Mar 18	20100	May 16 1989
INSTANTANEOUS PEAK STAGE			20.07	Mar 18	27.03	May 16 1989
ANNUAL RUNOFF (AC-FT)	8360		11980		38040	
10 PERCENT EXCEEDS	10		12		61	
50 PERCENT EXCEEDS	.01		.11		.31	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated
z Period of regulated streamflow.



RED RIVER BASIN

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 mi².

PERIOD OF RECORD.--Jun 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 0.40 ft below sea level. Satellite telemeter at station.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam 15,900 ft long, including an uncontrolled reinforced concrete ogee spillway 1,581 ft wide located near the left end of dam. The dam was completed in Dec 1966 and storage began in Jun 1967. The service outlet works, located in a cylindrical service tower at upstream side of dam, consist of two gated 5-foot-diameter inlets that can be used for controlled releases. The dam was built by the city of Wichita Falls to impound water for municipal, industrial, and recreational uses. The area-capacity curves are based on U.S. Geological Survey topographic maps. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Gage height (feet)
Top of dam.....	944.4
Design flood.....	939.95
Crest of spillway (top of conservation pool).....	926.4
Lowest gated outlet (invert).....	874.1

COOPERATION.--Capacity table provided by Homer Hunter and Associates and Biggs and Mathews, Consulting Engineers, for the city of Wichita Falls. Area-capacity curves provided by Homer Hunter and Associates. Record of diversions provided by the city of Wichita Falls.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 287,500 acre-ft, May 4, 1990 (gage height, 927.92 ft); minimum since first appreciable storage, 4,640 acre-ft, Aug 31 to Sep 4, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 236,600 acre-ft, Mar 30 (elevation, 924.77 ft); minimum contents, 181,700 acre-ft, Sep 24, 30 (elevation, 920.83 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	205200	200000	197300	204300	209400	211100	234400	230800	223100	212500	199600	191200
2	205200	200000	198000	204700	210000	210900	234100	230300	222500	212200	199300	190900
3	204100	199800	197700	204600	209700	211100	232700	229900	221800	212100	199100	190500
4	204000	199700	197300	205100	209300	210700	232900	229900	220900	211100	200000	190100
5	203900	199600	196900	205800	209700	210400	233000	229900	220300	211900	199600	190000
6	203300	199500	197300	205400	209700	210200	232700	229500	219900	212200	199600	189400
7	203200	199600	197700	206500	209700	210800	232300	229300	219700	211900	199800	189100
8	203200	e199300	197800	207200	209500	211600	232000	228900	219900	211400	199200	188300
9	202800	e199200	198100	207000	210100	211900	231800	229600	220300	210900	198800	188300
10	202500	e198800	197400	208000	209100	212300	231700	229500	220600	210700	198500	187700
11	202800	e198500	197000	208300	209700	211600	232400	229300	222100	210100	198100	187300
12	202500	e198200	197300	207600	209800	211900	230500	228600	222000	210500	197700	186100
13	202600	198200	197300	208000	210000	211900	230800	228300	222500	209700	197700	186200
14	202500	198200	197300	207700	209700	212100	231100	228700	221700	208800	197400	186100
15	202000	198000	197400	208100	209700	214600	229200	227800	221100	208400	197300	186000
16	201300	198100	197000	207900	210200	222100	229500	227800	220800	207400	196600	186000
17	201400	198000	197400	207700	210500	227700	229300	227800	219600	207400	196200	185700
18	201100	197800	196900	207700	210400	231700	229300	227300	220000	207200	195800	185700
19	200300	197500	196200	207600	211800	234100	229000	227300	219300	206800	195400	185600
20	200000	197500	199200	207300	212100	234200	229000	227300	218900	206200	195300	185100
21	200300	197400	201000	207900	212100	234100	228900	227100	218200	205700	194900	184900
22	200400	197100	201800	208000	212200	234500	228600	226500	216900	205000	194600	184000
23	201400	197400	203000	207900	212200	234200	228700	225200	216600	204600	194200	183900
24	201400	197000	203600	207900	212600	234500	229300	225900	216000	204300	193800	181700
25	201100	197300	203900	208000	212200	234700	228000	225300	215500	203700	193600	e181800
26	200000	196700	204400	207700	212100	234500	231700	225300	214900	203000	193400	e181900
27	200900	197100	204700	208100	211800	234500	230900	224900	214300	202500	192900	e182100
28	200200	197400	204700	207700	211600	234500	231200	225100	214200	202100	192600	e182300
29	200400	197300	204300	207600	---	234500	230900	224600	214200	201400	192200	182300
30	200300	197000	204400	207700	---	234800	230900	224300	212800	200700	192200	181900
31	199900	---	204400	209500	---	234100	---	223100	---	200200	191700	---
MAX	205200	200000	204700	209500	212600	234800	234400	230800	223100	212500	200000	191200
MIN	199900	196700	196200	204300	209100	210200	228000	223100	212800	200200	191700	181700
(+)	922.21	922.00	922.54	922.91	923.06	924.60	924.39	923.86	923.14	922.23	921.60	920.85
(@)	-5300	-2900	+7400	+5100	+2100	+22500	-3200	-7800	-10300	-12600	-8500	-9800
(++)	1585	1374	517	418	406	776	1217	2042	2855	3662	3019	2949
CAL YR 1997	MAX 241200	MIN 194100	(@) +7100	(++) 13025								
WTR YR 1998	MAX 234800	MIN 181700	(@) -23300	(++) 20820								

(+) Elevation, in feet, at end of month.
 (@) Change in contents, in acre-feet.
 (++) Diversions, in acre-feet, for municipal use by the City of Wichita Falls, and for wholesale customer use.

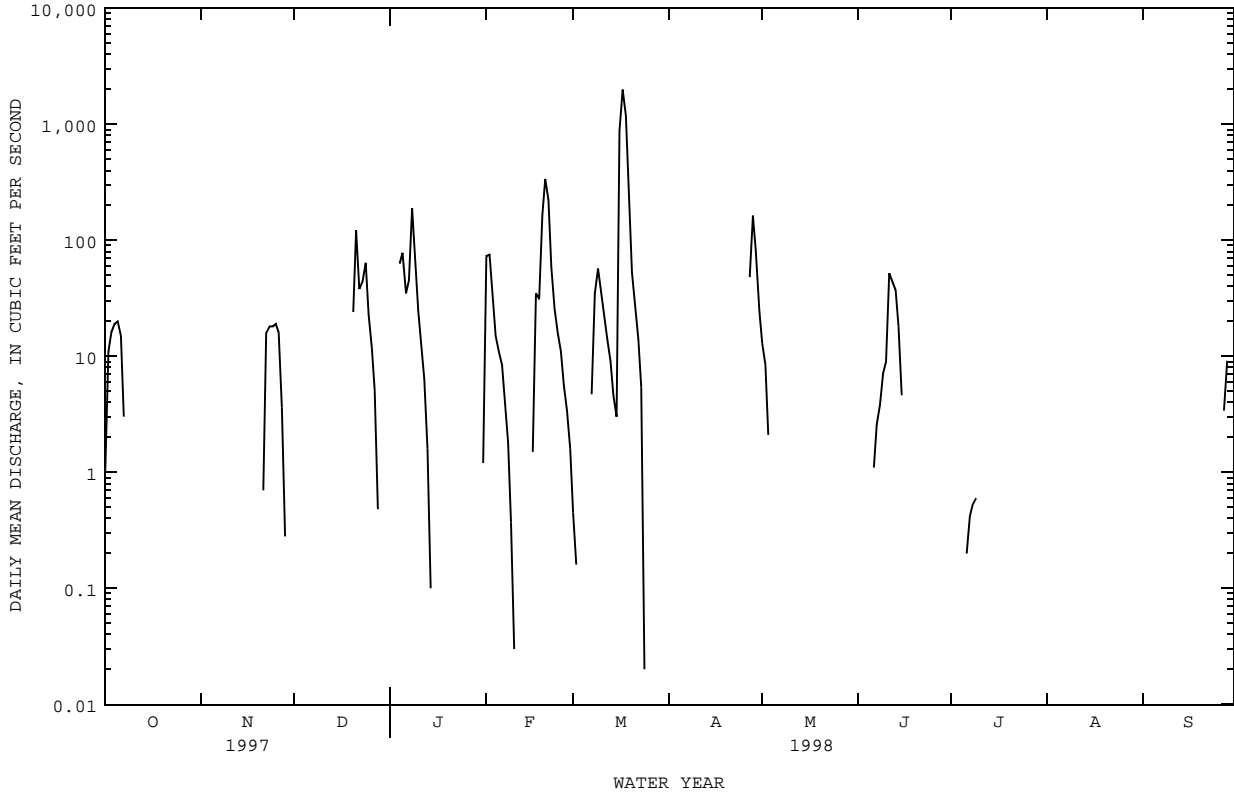
e Estimated

RED RIVER BASIN

07314900 LITTLE WICHITA RIVER ABOVE HENRIETTA, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1967 - 1998	
ANNUAL TOTAL	8225.04		7245.76		66.6	
ANNUAL MEAN	22.5		19.9		498	
HIGHEST ANNUAL MEAN					1.00	
LOWEST ANNUAL MEAN					1990	
HIGHEST DAILY MEAN	1840	May 10	1990	Mar 17	10500	May 3 1990
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 8	.00	Oct 16 1966
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 10	.00	Oct 19 1966
INSTANTANEOUS PEAK FLOW			2210	Mar 16	14200	May 3 1990
INSTANTANEOUS PEAK STAGE			20.91	Mar 16	24.96	May 3 1990
ANNUAL RUNOFF (AC-FT)	16310		14370		48230	
10 PERCENT EXCEEDS	22		25		49	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated



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 mi².

PERIOD OF RECORD.--Nov 1963 to current year.

REVISED RECORDS.--WRD TX-72-1: 1966(M).

GAGE.--Water-stage recorder. Datum of gage is 825.32 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No known regulation or diversions.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Oct 1941 reached a stage of 28.8 ft, from information by local residents.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 17	0500	4,880	25.16	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	1.1	2.1	2.1	11	2.3	.22	.00	.00	.00
2	.00	.00	.01	1.0	1.9	2.0	8.2	1.6	.16	.00	.00	.00
3	.00	.00	.00	.97	2.1	1.8	5.7	1.2	.15	.00	.00	.00
4	.00	.00	.00	1.2	1.9	1.7	4.2	1.1	.14	.00	.00	.00
5	.00	.00	.00	1.1	1.8	1.5	3.7	1.0	.12	.00	.00	.00
6	.00	.00	.00	1.0	1.7	1.5	3.4	.98	.09	.00	.00	.00
7	.00	.00	.00	1.7	1.9	13	3.2	.93	.06	.00	.00	.00
8	.00	.00	.01	141	2.4	105	3.0	.87	.09	.00	.00	.00
9	.00	.00	.00	77	2.1	149	2.9	.99	.13	.00	.00	.00
10	.00	.00	.00	22	2.0	101	2.8	.90	.29	.00	.00	.00
11	.00	.00	.00	8.6	1.9	34	2.6	.86	.79	.00	.00	.00
12	.00	.00	.00	4.2	1.7	16	2.3	.84	.62	.00	.00	.00
13	.00	.00	.00	2.4	1.7	10	2.3	.90	.58	.00	.00	.00
14	.00	.00	.00	1.6	1.7	7.2	2.1	.90	.52	.00	.00	.00
15	.00	.00	.00	1.3	1.9	103	2.0	.85	.50	.00	.00	.00
16	.00	.00	.00	1.1	1.4	2160	2.0	.77	.46	.00	.00	.00
17	.00	.00	.00	1.0	2.3	3900	1.8	.72	.41	.00	.00	.00
18	.00	.00	.00	.97	4.1	1600	1.9	.65	.37	.00	.00	.00
19	.00	.00	.00	.92	18	130	1.8	.60	.37	.00	.00	.00
20	.00	.00	.24	.88	19	e30	1.7	.54	.22	.00	.00	.00
21	.00	.00	130	.90	13	e27	1.6	.51	.15	.00	.00	.00
22	.00	.00	91	2.2	8.4	e24	1.5	.49	.12	.00	.00	.00
23	.00	.00	25	55	5.7	e23	1.6	.50	.07	.00	.00	.00
24	.00	.00	107	18	5.0	e22	1.6	.46	.04	.00	.00	.00
25	.00	.00	58	7.1	3.8	e21	1.6	.45	.01	.00	.00	.00
26	.00	.00	15	26	3.4	e20	1.9	.36	.00	.00	.00	.00
27	.00	.00	7.1	24	2.7	e19	3.7	.36	.00	.00	.00	.00
28	.00	.00	3.7	8.5	2.2	e17	14	.33	.00	.00	.00	.00
29	.00	.00	2.2	4.4	---	e16	7.7	.29	.00	.00	.00	.00
30	.00	.00	1.6	2.8	---	e14	3.7	.27	.00	.00	.00	.00
31	.00	---	1.2	2.4	---	e13	---	.23	---	.00	.00	---
TOTAL	0.00	0.00	442.06	422.34	117.8	8584.8	107.5	23.75	6.68	0.00	0.00	0.00
MEAN	.000	.000	14.3	13.6	4.21	277	3.58	.77	.22	.000	.000	.000
MAX	.00	.00	130	141	19	3900	14	2.3	.79	.00	.00	.00
MIN	.00	.00	.00	.88	1.4	1.5	1.5	.23	.00	.00	.00	.00
AC-FT	.00	.00	877	838	234	17030	213	47	13	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1998, BY WATER YEAR (WY)

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
MEAN	37.2	12.2	21.3	12.3	28.4	51.6	41.0	110	66.0	6.15	5.56	12.6							
MAX	902	97.3	303	139	411	295	686	453	508	123	48.7	102							
(WY)	1982	1974	1992	1985	1997	1985	1990	1989	1992	1973	1995	1980							
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000							
(WY)	1979	1972	1966	1966	1966	1967	1971	1971	1971	1964	1969	1979							

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1964 - 1998

ANNUAL TOTAL	19512.70	9704.93	
ANNUAL MEAN	53.5	26.6	34.5
HIGHEST ANNUAL MEAN			128
LOWEST ANNUAL MEAN			.44
HIGHEST DAILY MEAN	6200	Feb 21	3900
LOWEST DAILY MEAN	.00	Aug 13	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 13	.00
INSTANTANEOUS PEAK FLOW			4880
INSTANTANEOUS PEAK STAGE			25.16
ANNUAL RUNOFF (AC-FT)	38700	19250	24960
10 PERCENT EXCEEDS	18	14	19
50 PERCENT EXCEEDS	.18	.09	.15
90 PERCENT EXCEEDS	.00	.00	.00

e Estimated

RED RIVER BASIN

07315500 RED RIVER NEAR TERRAL, OK

LOCATION.--Lat 33°52'43", long 97°56'03", Jefferson County, Hydrologic Unit 11130201, on left bank at downstream side of bridge abutment on U.S. Highway 81, 0.5 mi downstream from Chicago, and Rock Island Railroad Co. bridge, 1.2 mi south of Terral, 3.6 mi downstream from Little Wichita River, and at mile 872.

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

PERIOD OF RECORD.--Apr 1938 to current year. Monthly discharge only for some periods, published in WSP 1311.
Water-quality records.--Chemical analyses: Oct 1967 to Sep 1997. Microbiological analyses: May 1997 to Sep 1997.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 770.31 ft above sea level. Prior to Jan 12, 1939, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since installation of gage in Apr 1938, at least 10% of contributing drainage area has been regulated by upstream reservoirs. There are many small diversions upstream from station for irrigation, oil field operations, and for municipal uses.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2550	1360	1160	4170	3470	6050	6100	3010	1170	e570	188	e231
2	2200	1300	1100	3780	7970	5650	5720	2780	1210	e560	177	e266
3	1920	1220	1120	3410	8940	5250	5400	2830	947	e570	193	e332
4	1780	1140	1200	3320	7820	4940	5490	2710	842	e590	218	e290
5	1670	1050	1290	8050	6190	4720	5450	2460	765	e750	218	e241
6	1470	991	1350	9150	5940	4610	5350	2160	711	e1130	348	e212
7	1410	975	1560	9180	5660	4630	5070	1930	695	e1300	302	e192
8	1250	963	1630	8820	5290	5640	5110	1820	670	e1200	289	e183
9	2580	946	1600	7880	4850	8550	5500	1680	712	e1010	281	180
10	3150	943	1620	6760	4520	8870	5190	1690	1010	710	286	169
11	2010	947	1550	5770	4270	7800	4570	1640	1550	500	340	164
12	2730	971	1470	4950	3990	6800	4330	1430	1920	457	305	156
13	2160	1130	1280	4510	3950	6460	4250	1360	2560	419	291	165
14	2590	1240	1250	4340	4150	6000	3980	1320	2220	376	265	175
15	4150	1290	1290	4250	4490	6180	3490	1290	1340	362	274	166
16	3490	1280	1180	4480	4500	24100	3130	1360	908	370	274	177
17	2780	1260	1080	4600	4400	76800	2950	1540	768	334	295	180
18	2780	1170	1040	4530	5810	84000	2840	1480	730	316	301	182
19	2400	1090	1010	4430	8750	48900	2680	1290	712	303	267	183
20	1920	1130	1140	4340	14700	27900	2650	1340	761	285	e231	191
21	1740	1150	2490	4280	12100	17400	2640	1460	633	279	e192	187
22	1610	1120	4130	4310	8820	11800	2570	1550	614	275	e158	241
23	2110	1200	5060	4300	7800	9310	2410	1370	570	261	e136	276
24	1800	1240	6540	3990	7970	9660	2280	1320	523	246	e108	263
25	1570	1240	7890	3550	7590	9380	2200	1250	521	230	e123	255
26	2040	1310	8090	3560	7370	8410	2290	1180	510	224	e171	232
27	2000	1330	6150	3410	7260	7700	4210	1130	519	214	e241	213
28	1720	1370	4950	3160	6610	7860	7520	1040	536	208	e263	195
29	1540	1320	4560	2900	---	7590	4740	997	531	215	e259	182
30	1420	1230	4630	2650	---	6780	3590	978	589	220	e252	165
31	1380	---	4450	2640	---	6260	---	1000	---	203	e231	---
TOTAL	65920	34906	84860	149470	185180	456000	123700	50395	27747	14687	7477	6244
MEAN	2126	1164	2737	4822	6614	14710	4123	1626	925	474	241	208
MAX	4150	1370	8090	9180	14700	84000	7520	3010	2560	1300	348	332
MIN	1250	943	1010	2640	3470	4610	2200	978	510	203	108	156
AC-FT	130800	69240	168300	296500	367300	904500	245400	99960	55040	29130	14830	12380

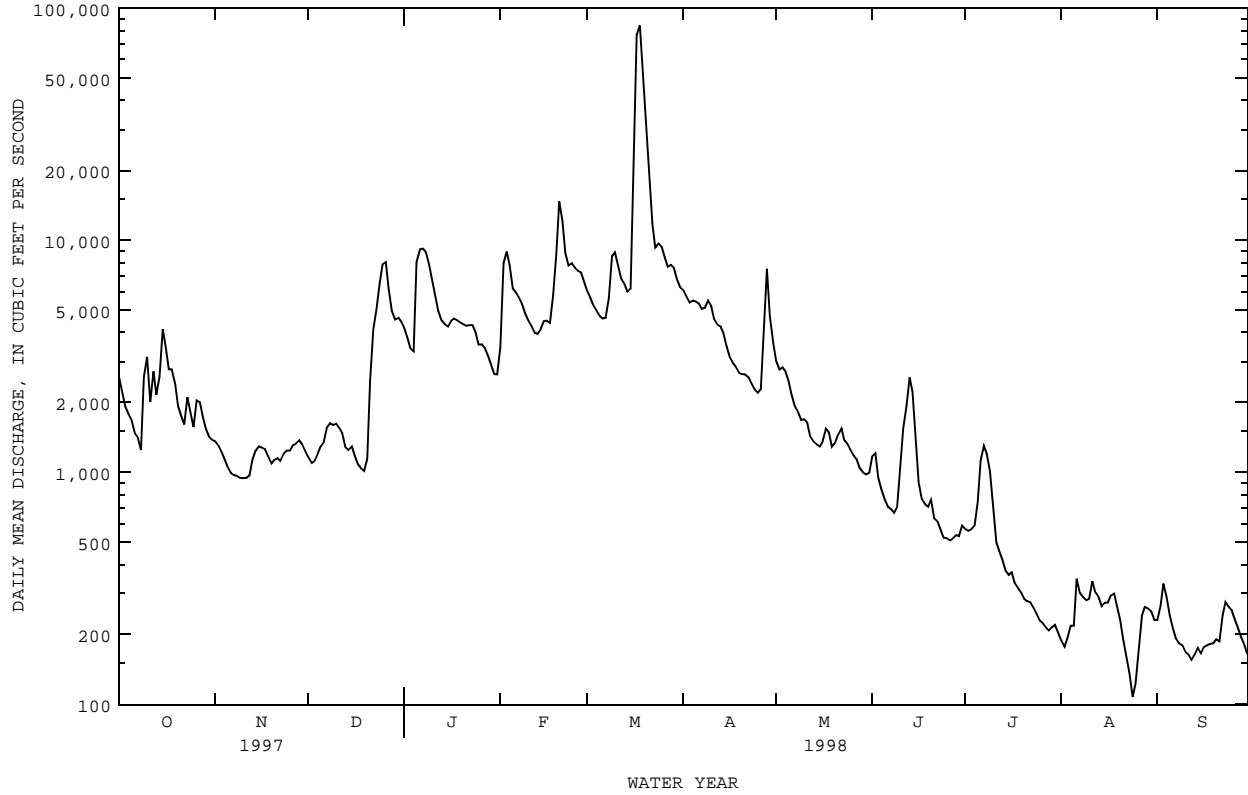
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1998, BY WATER YEAR (WY)

	3047	1517	1150	956	1373	2030	2665	6675	6351	1670	1356	2069
MEAN	3047	1517	1150	956	1373	2030	2665	6675	6351	1670	1356	2069
MAX	23900	9713	11810	5306	9320	14710	18080	43580	37460	8077	14730	9653
(WY)	1987	1987	1992	1992	1987	1998	1990	1957	1941	1950	1995	1986
MIN	108	102	91.2	76.5	136	66.1	142	134	517	158	155	109
(WY)	1953	1940	1939	1940	1953	1940	1971	1971	1966	1964	1970	1956

07315500 RED RIVER NEAR TERRAL, OK--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1938 - 1998	
ANNUAL TOTAL	1501760		1206586		2571	
ANNUAL MEAN	4114		3306		8925	
HIGHEST ANNUAL MEAN					523	
LOWEST ANNUAL MEAN					1987	
HIGHEST DAILY MEAN	44200	Apr 28	84000	Mar 18	215000	Jun 7 1995
LOWEST DAILY MEAN	551	Sep 19	108	Aug 24	46	Mar 20 1940
ANNUAL SEVEN-DAY MINIMUM	603	Sep 13	160	Aug 20	47	Mar 18 1940
INSTANTANEOUS PEAK FLOW			99400	Mar 18	236000	Jun 7 1995
INSTANTANEOUS PEAK STAGE			22.32	Mar 18	33.60	Oct 22 1983
ANNUAL RUNOFF (AC-FT)	2979000		2393000		1862000	
10 PERCENT EXCEEDS	9640		7300		5700	
50 PERCENT EXCEEDS	1840		1460		607	
90 PERCENT EXCEEDS	894		222		177	

e Estimated



RED RIVER BASIN

07315950 MOSS LAKE NEAR GAINESVILLE, TX

LOCATION.--Lat 33°46'26", long 97°12'50", Cooke County, Hydrologic Unit 11130201, on top of upstream side of dam adjacent to guardrail of roadway about 250 ft from right end of Fish Creek dam on Fish Creek, 1.6 mi upstream from Bearhead Creek, 3.7 mi upstream from mouth, and 10 mi northwest of Gainesville.

DRAINAGE AREA.--65.0 mi².

PERIOD OF RECORD.--Oct 1967 to current year.
Water-quality records.--Chemical analyses: Oct 1969 to Sep 1984.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Apr 20, 1979, recording gage at site about 150 ft upstream at same datum. Satellite telemeter at station.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam 1,460 ft long. The dam was completed and storage began Dec 2, 1966. An uncontrolled morning-glory-type spillway with a 7- by 7-foot opening is designed to discharge 2,500 ft³/s at a 10-foot head. A 400-foot-wide spillway has been cut through natural ground, and is located about 100 ft to left of the left end of dam. The dam was built by the city of Gainesville to impound water for municipal use. Capacity table is based on a 1961 survey. There was no known diversion from the lake during the current water year. Data regarding the dam is given in the following table:

	Elevation (feet)
Top of dam.....	740.0
Top of design flood pool.....	736.0
Crest of spillway.....	725.0
Crest of spillway morning-glory type (top of conservation pool).....	715.0
Lowest gated outlet (invert).....	666.0

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 50,990 acre-ft, Oct 13, 1981 (elevation, 733.72 ft); minimum contents since lake filled in May 1968, 11,490 acre-ft, Jan 18, 1990 (elevation, 702.08 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 26,590 acre-ft, Mar 16 (elevation, 717.85 ft); minimum contents, 18,280 acre-ft, Dec 5-6 (elevation, 710.25 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21520	21460	19010	19150	23340	23220	23370	23230	22970	22870	21890	21440
2	21500	21440	18870	19170	23310	23200	23340	23220	22940	22850	21850	21410
3	21480	21410	18660	19210	23290	23190	23290	23210	22910	22800	21830	21390
4	21460	21400	18450	19410	23270	23200	23280	23200	23050	22770	22050	21360
5	21450	21390	18280	19560	23260	23190	23270	23200	23020	22760	22020	21330
6	21430	21370	18290	19670	23240	23190	23280	23190	23000	22730	22000	21300
7	21430	21350	18350	19980	23230	24200	23240	23200	22980	22700	21970	21290
8	21500	21340	18360	20710	23220	24060	23230	23240	22980	22670	21950	21260
9	21530	21320	18360	20920	23220	23830	23220	23220	23060	22640	21920	21220
10	21520	21300	18340	21020	23220	23670	23210	23210	23160	22620	21890	21180
11	21540	21280	18330	21090	23200	23550	23210	23200	23430	22580	21870	21150
12	21640	21260	18320	21150	23200	23490	23210	23180	23360	22550	21850	21110
13	21610	21240	18330	21180	23200	23430	23190	23170	23300	22530	21840	21130
14	21600	21220	18330	21210	23200	23390	23190	23170	23260	22500	21830	21130
15	21580	21200	18320	21240	23210	23920	23190	23130	23200	22470	21810	21100
16	21560	21180	18320	21260	23240	26470	23170	23120	23170	22440	21790	21190
17	21540	21170	18320	21290	23260	24990	23170	23120	23130	22410	21770	21180
18	21520	21150	18320	21300	23260	24340	23170	23110	23210	22370	21750	21170
19	21520	21230	18320	21320	23270	24070	23170	23090	23220	22340	21740	21160
20	21510	21230	18490	21340	23270	23830	23190	23090	23180	22310	21710	21150
21	21500	21100	18670	21490	23320	23690	23190	23080	23130	22280	21680	21130
22	21490	20900	18690	21990	23410	23590	23180	23070	23110	22230	21660	21200
23	21590	20680	18910	22100	23380	23530	23180	23050	23080	22200	21640	21190
24	21590	20460	19040	22160	23370	23470	23170	23050	23050	22160	21620	21170
25	21580	20270	19060	22460	23350	23440	23140	23020	23010	22120	21610	21150
26	21520	20060	19100	23280	23310	23410	23280	23030	22990	22090	21580	21130
27	21500	19860	19110	23370	23280	23390	23280	23050	22970	22060	21550	21110
28	21490	19650	19140	23390	23240	23360	23260	23050	22950	22020	21520	21100
29	21490	19450	19120	23370	---	23360	23240	23030	22920	21980	21510	21090
30	21480	19220	19130	23350	---	23440	23230	23010	22890	21940	21490	21070
31	21480	---	19130	23350	---	23410	---	22990	---	21910	21460	---
MAX	21640	21460	19140	23390	23410	26470	23370	23240	23430	22870	22050	21440
MIN	21430	19220	18280	19150	23200	23190	23140	22990	22890	21910	21460	21070
(+)	713.41	711.21	711.12	715.12	715.03	715.17	715.02	714.80	714.71	713.81	713.39	713.03
(@)	-50	-2260	-90	+4220	-110	+170	-180	-240	-100	-980	-450	-390

CAL YR 1997 MAX 28460 MIN 18280 (@) -4080
WTR YR 1998 MAX 26470 MIN 18280 (@) -460

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

RED RIVER BASIN

07316000 RED RIVER NEAR GAINESVILLE, TX

LOCATION.--Lat 33°43'40", long 97°09'35", in SW ¼ sec.36, T.9 S., R.1 E., Love County, OK, Hydrologic Unit 11130201, on downstream right bank at end of bridge on Interstate 35, 0.2 mi downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 5.0 mi downstream from Fish Creek, 4.5 mi southwest of Thackerville, OK, 7.0 mi north of Gainesville, and at mile 791.5.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--30,782 mi² of which 5,936 mi² probably is noncontributing.

PERIOD OF RECORD.--May 1936 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 627.91 ft above sea level. Prior to Jan. 17, 1939, and Feb. 13, 1965 to Nov. 14, 1966, nonrecording gage at same site and datum.

REMARKS.--Records poor. Flow slightly regulated by Lake Kemp (station 07312000 in Texas), since 1943 by Lake Altus (station 07302500 in Oklahoma), since 1946 by Lake Kickapoo (station 07314000 in Texas), since 1967 by Lake Arrowhead (station 07314800 in Texas) and Moss Lake (station 07315950 in Texas). Satellite telemeter at station.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 19	1030	102,000	29.62	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3250	e1450	e1430	4780	3550	7340	9090	7070	e1250	570	e410	e308
2	e2390	e1400	1440	4270	3410	6810	8450	4340	e1300	e550	e415	e305
3	e2080	e1370	1440	3820	7640	6170	7910	3260	e1290	e490	e420	295
4	e1940	1340	1400	3610	14400	5600	7410	3000	1280	e485	410	e295
5	e1830	e1300	1340	4380	12600	4990	7130	2940	1240	e470	e400	359
6	e1630	e1250	1250	11800	8500	4630	7030	2760	1080	e490	e390	395
7	e1560	e1200	1340	15500	7640	5100	6730	2480	989	e500	e380	339
8	e1400	e1150	1460	19100	7050	6240	6330	2240	e970	e530	e470	302
9	e2700	e1100	1580	16900	6510	7140	e6000	2110	955	e520	e560	276
10	e2800	e1080	1570	14000	5960	9910	e6200	2010	1020	e800	e450	258
11	e3180	e1100	1530	12100	5240	11500	e5800	1970	e1050	e890	371	250
12	e2900	e1200	1550	9430	4860	10200	e5200	1880	e1300	e730	361	e229
13	e2330	e1280	1490	6920	4510	8160	e4900	1810	e1350	e610	398	e224
14	e2860	e1310	1410	6060	4190	7050	e4700	1670	e1500	570	424	e216
15	e2900	e1370	1290	e5600	4140	6650	4510	1630	e1800	e550	408	210
16	e3000	e1360	1240	5410	4370	16400	4010	1600	e1200	e500	384	253
17	e3380	e1350	1240	5290	4730	54300	3480	1580	e1000	e480	359	308
18	e3150	1330	1190	5480	4810	88900	3210	1540	e950	e460	354	e290
19	e2650	e1300	1120	5350	5020	98800	3000	1610	e900	e440	360	e274
20	e2160	e1280	1170	5160	12400	65400	2890	1560	e1500	e420	383	e247
21	1980	e1300	1630	4980	18800	33800	e2750	1470	e1600	e400	376	e233
22	e1760	e1280	2670	6160	13900	24400	e2700	1520	e1800	e390	346	224
23	e2310	e1350	4750	7770	11600	17500	e2600	1590	e1300	380	328	329
24	e1940	e1380	6880	6840	9510	e14800	e2500	1600	e900	e380	320	331
25	e1710	e1400	10300	5450	8550	14500	e2400	1550	e650	e385	324	288
26	e2230	e1450	13500	e5300	8230	14200	e2350	1540	e630	e380	324	e319
27	e2100	e1470	12500	e6000	7810	13600	e2500	e1700	e620	e385	314	310
28	e1800	e1500	9010	5530	7590	12300	e4500	e1800	e610	e390	314	301
29	e1700	e1450	6960	4310	---	11100	10000	e1600	e590	e395	e317	290
30	e1600	e1430	5680	3940	---	10100	9720	e1400	e580	e400	e315	268
31	e1500	---	5050	3750	---	9640	---	e1300	---	e405	e312	---
TOTAL	70720	39530	106410	224990	217520	607230	156000	66130	33204	15345	11697	8526
MEAN	2281	1318	3433	7258	7769	19590	5200	2133	1107	495	377	284
MAX	3380	1500	13500	19100	18800	98800	10000	7070	1800	890	560	395
MIN	1400	1080	1120	3610	3410	4630	2350	1300	580	380	312	210
AC-FT	140300	78410	211100	446300	431500	1204000	309400	131200	65860	30440	23200	16910

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 1998, BY WATER YEAR (WY)

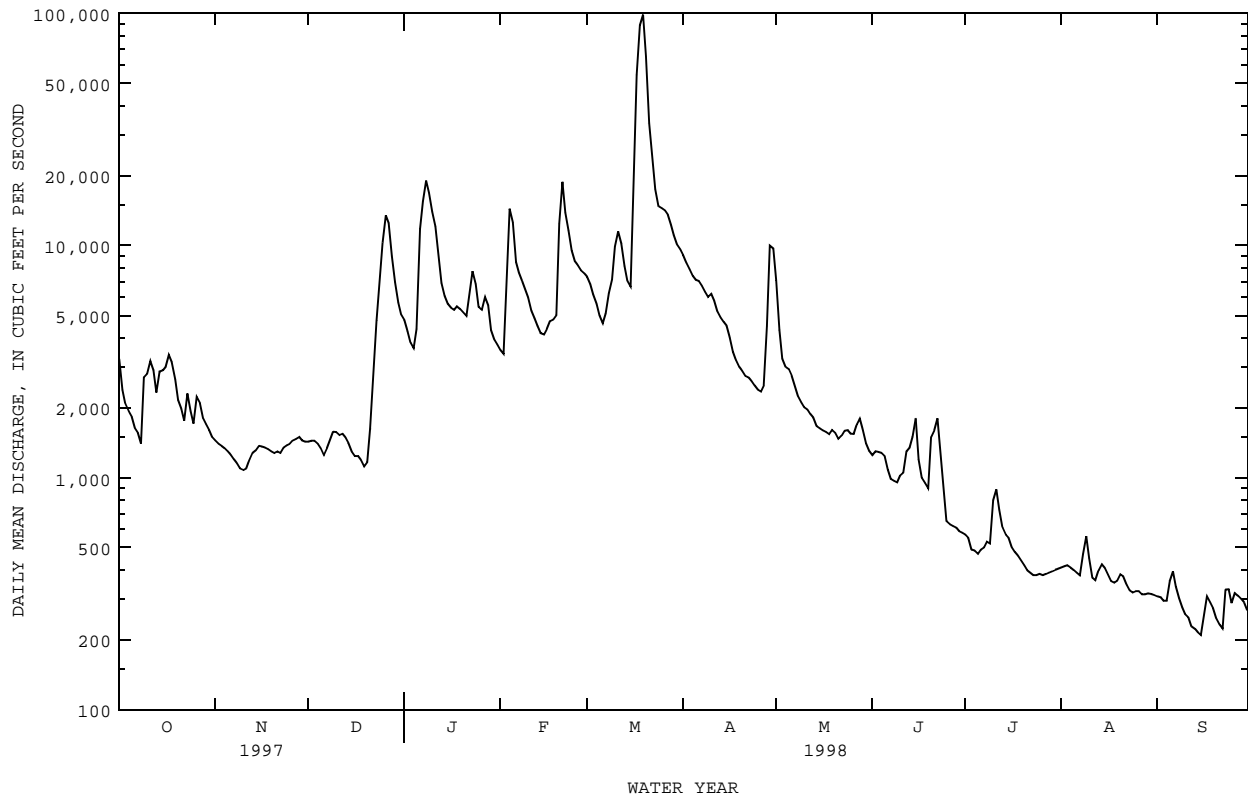
MEAN	3832	1990	1640	1296	1878	2899	3593	8167	8414	2184	1641	2552
MAX	31080	14020	14990	7258	9984	19590	27400	47780	43510	9857	20730	12880
(WY)	1942	1942	1992	1998	1997	1998	1990	1957	1941	1950	1995	1986
MIN	119	137	125	82.4	151	90.5	153	204	640	166	163	108
(WY)	1953	1955	1940	1940	1953	1940	1971	1971	1966	1964	1970	1956

RED RIVER BASIN

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1937 - 1998	
ANNUAL TOTAL	1962368		1557302		3343	
ANNUAL MEAN	5376		4267		11890	
HIGHEST ANNUAL MEAN					1987	
LOWEST ANNUAL MEAN					1953	
HIGHEST DAILY MEAN	58500	Apr 29	98800	Mar 19	232000	May 31 1987
LOWEST DAILY MEAN	791	Jan 17	210	Sep 15	48	Jan 18 1940
ANNUAL SEVEN-DAY MINIMUM	839	Sep 18	234	Sep 10	48	Jan 18 1940
INSTANTANEOUS PEAK FLOW			102000	Mar 19	265000	May 31 1987
INSTANTANEOUS PEAK STAGE			29.62	Mar 19	40.08	May 31 1987
ANNUAL RUNOFF (AC-FT)	3892000		3089000		2422000	
10 PERCENT EXCEEDS	13000		9560		7400	
50 PERCENT EXCEEDS	2060		1600		869	
90 PERCENT EXCEEDS	1060		336		217	

e Estimated



07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1994 to current year.

WATER TEMPERATURE: October 1994 to current year.

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

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 7,800 microsiemens July 15, 16 1997; minimum, 402 microsiemens Nov. 14, 1994.

WATER TEMPERATURE: Maximum, 36.5°C July 15, 1998; minimum, 0.0°C several days in winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 6,130 microsiemens May 25; minimum, 739 microsiemens Mar. 18.

WATER TEMPERATURE: Maximum, 36.5°C July 15; minimum, 2.0°C Dec. 13.

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)	TEMPERATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	AGENCY COL-LECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER) (00028)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	GAGE HEIGHT (FEET) (00065)	SPE-CIFIC CONDUCTANCE (US/CM) (00095)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD STAND-ARD (UNITS) (00400)
SEP											
22...	1153	90.0	27.5	752	1028	1028	224	7.55	4520	7.7	7.6
22...	1156	80.0	27.5	752	1028	1028	224	7.55	4330	7.5	7.6
22...	1159	70.0	27.5	752	1028	1028	224	7.55	4510	7.6	7.6
22...	1202	60.0	27.5	752	1028	1028	224	7.55	4510	7.5	7.6
22...	1205	50.0	27.5	752	1028	1028	224	7.55	4510	7.5	7.6
22...	1208	40.0	27.5	752	1028	1028	224	7.55	4510	7.5	7.6
22...	1211	30.0	27.5	752	1028	1028	224	7.55	4510	7.4	7.6
22...	1214	20.0	27.5	752	1028	1028	224	7.55	4510	7.5	7.6
22...	1217	10.0	27.5	752	1028	1028	224	7.55	4510	7.5	7.6
22...	1220	50.0	27.0	752	1028	1028	224	7.55	4520	7.6	7.6
22...	1223	40.0	27.0	752	1028	1028	224	7.55	4510	7.5	7.6
22...	1226	30.0	27.0	752	1028	1028	224	7.55	4510	7.5	7.6
22...	1229	20.0	27.0	752	1028	1028	224	7.55	4510	7.5	7.6
22...	1232	10.0	27.5	752	1028	1028	224	7.55	4510	7.4	7.6

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	AGENCY COL-LECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER) (00028)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD STAND-ARD (UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED SATUR-ATION (PER-CENT) (00301)	HARD-NESS TOTAL (MG/L AS CaCO3) (00900)
OCT												
21...	1430	1028	80020	1980	5070	8.6	13.0	17.5	758	12.1	129	920
NOV												
04...	1430	1028	80020	1340	4920	8.6	22.0	14.0	750	12.2	123	860
DEC												
10...	0830	1028	80020	1570	5000	8.5	6.5	7.0	750	11.5	98	980
JAN												
14...	1200	1028	80020	6070	2290	8.3	4.0	5.5	754	11.6	93	490
FEB												
11...	1600	1028	80020	5120	2430	8.2	18.0	10.5	755	12.0	109	590
MAR												
19...	1530	1028	80020	100000	1090	7.9	6.0	12.0	749	8.7	82	220
APR												
16...	1615	1028	80020	3950	3220	8.4	22.0	21.5	748	11.2	131	720
MAY												
21...	1315	1028	80020	1440	4980	8.0	31.0	26.5	750	7.1	91	1100
JUN												
10...	1400	1028	80020	1020	4260	8.3	26.0	26.5	748	8.3	107	920
JUL												
14...	1930	1028	80020	570	3660	8.1	39.5	35.5	745	9.6	144	640
AUG												
19...	1200	1028	80020	362	4400	8.4	33.0	30.0	754	8.4	114	870
SEP												
03...	0845	1028	80020	295	5080	8.1	24.5	27.0	745	5.3	69	950

RED RIVER BASIN

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS- SOLVED AS CA) (MG/L) (00915)	MAGNE- SIUM, DIS- SOLVED AS MG) (MG/L) (00925)	SODIUM, DIS- SOLVED AS NA) (MG/L) (00930)	SODIUM PERCENT (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED AS K) (MG/L) (00935)	BICAR- BONATE WATER DIS IT FIELD HCO3 MG/L AS (00453)	CAR- BONATE WATER DIS IT FIELD CO3 MG/L AS (00452)	ALKA- LINITY WAT DIS TOT IT FIELD CACO3 MG/L AS (39086)	SULFATE DIS- SOLVED AS SO4) (MG/L) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L) AS CL) (00940)
OCT 21...	830	240	79	746	64	11	8.1	105	4	93	740	1200
NOV 04...	770	210	78	664	62	10	8.2	93	5	84	790	1100
DEC 10...	820	250	86	660	59	9	2.1	201	*0	165	820	1100
JAN 14...	350	130	42	285	56	6	6.0	172	0	141	350	430
FEB 11...	420	150	52	285	51	5	5.8	203	0	166	430	420
MAR 19...	130	60	17	124	54	4	5.1	105	0	86	140	190
APR 16...	590	180	66	390	54	6	1.2	151	*0	124	590	620
MAY 21...	970	260	104	637	56	8	8.3	149	0	122	950	1000
JUN 10...	780	230	86	548	56	8	6.7	166	0	136	740	860
JUL 14...	580	140	68	469	60	8	37	65	0	53	550	810
AUG 19...	770	200	87	599	60	9	9.6	110	7	102	730	970
SEP 03...	840	220	97	695	61	10	9.8	140	0	115	810	1100

DATE	FLUO- RIDE, DIS- SOLVED (MG/L) AS F) (00950)	SILICA, DIS- SOLVED AS SIO2) (MG/L) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L) AS N) (00618)	NITRO- GEN, DIS- SOLVED (MG/L) AS NO3) (71851)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L) AS N) (00613)	NITRO- GEN, DIS- SOLVED (MG/L) AS NO2) (71856)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L) AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L) AS N) (00608)
OCT 21...	.36	4.9	3040	4.13	16200	106	--	--	<.010	--	<.050	<.015
NOV 04...	.34	4.7	2930	3.99	10600	39	--	--	.031	.10	<.050	<.020
DEC 10...	.37	7.3	3030	4.12	12900	85	--	--	<.010	--	1.05	<.020
JAN 14...	.34	9.8	1330	1.81	21800	360	.864	3.8	.016	.05	.880	.027
FEB 11...	.37	8.8	1460	1.98	20100	232	.897	4.0	.013	.04	.910	.059
MAR 19...	.20	7.8	591	.80	160000	1140	--	--	<.010	--	.351	.098
APR 16...	.37	3.5	1920	2.61	20500	231	--	--	<.010	--	<.050	.033
MAY 21...	.39	4.6	3090	4.21	12000	40	--	--	.010	.03	<.050	.068
JUN 10...	.30	7.8	2560	3.49	7060	34	--	--	<.010	--	.102	.023
JUL 14...	.43	2.4	2120	2.88	3260	49	--	--	.011	.04	<.050	.051
AUG 19...	.50	9.9	2670	3.63	2610	--	--	--	.010	.03	<.050	.084
SEP 03...	.53	10	3030	4.12	2410	48	--	--	.011	.04	<.050	.075

*pH of filtered sample <8.3; therefore no carbonate value.

RED RIVER BASIN

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BIARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BIARIUM, DIS- SOLVED (UG/L AS BA) (01005)
OCT 21...	--	--	1.4	--	.133	<.010	<.010	--	2	2	200	214
NOV 04...	--	--	.87	--	.062	<.010	<.010	--	2	2	<100	116
DEC 10...	--	--	.75	1.8	.074	<.010	.017	.05	2	2	<100	115
JAN 14...	.03	.52	.55	1.4	.093	.067	.071	.22	4	2	400	169
FEB 11...	.08	.40	.46	1.4	.088	.059	.061	.19	3	2	<100	147
MAR 19...	.13	1.4	1.5	1.9	.503	.015	.017	.05	5	2	500	100
APR 16...	.04	.91	.94	--	.124	<.010	<.010	--	3	1	<100	161
MAY 21...	.09	.68	.75	--	.082	<.010	<.010	--	2	2	<100	172
JUN 10...	.03	1.0	1.1	1.2	.126	<.010	<.010	--	2	2	200	145
JUL 14...	.07	1.2	1.3	--	.200	<.010	.017	.05	3	3	<100	120
AUG 19...	.11	1.3	1.4	--	.106	<.010	.019	.06	5	3	<100	128
SEP 03...	.10	1.5	1.5	--	.124	<.010	.014	.04	5	3	<100	134

DATE	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	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)
OCT 21...	<1	<4.0	4	<1.0	4	<40	980	<12	1	<40	51
NOV 04...	<1	<3.0	1	<1.0	3	<30	230	<9.0	<1	<30	30
DEC 10...	<1	<4.0	3	<1.0	2	<40	710	<12	1	<40	48
JAN 14...	<1	<24	10	2.2	10	<30	5400	<30	7	<300	220
FEB 11...	<1	<24	8	<1.0	7	<30	3400	<30	55	<300	130
MAR 19...	<1	<8.0	21	<1.0	25	<10	16000	<10	24	<100	700
APR 16...	<1	<24	6	2.4	5	<30	2400	<30	2	<300	150
MAY 21...	<1	<24	5	3.1	4	<30	330	<30	1	<300	77
JUN 10...	<1	<24	2	<1.0	2	<30	290	<30	<1	<300	160
JUL 14...	<1	<8.0	1	<1.0	3	<10	310	<10	2	<100	90
AUG 19...	<1	<24	<1	<1.0	3	<30	440	<30	<1	<300	200
SEP 03...	<1	<24	2	<1.0	3	<30	510	<30	2	<300	240

RED RIVER BASIN

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	MANGANESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT 21...	<4.0	<.10	<.1	<100	<40	3	2	<1	<1.0	<10	23
NOV 04...	5.0	<.10	<.1	<100	<30	3	3	<1	<1.0	<10	<9.0
DEC 10...	7.9	<.10	.1	<100	<40	3	4	<1	<1.0	<10	<20
JAN 14...	<12	.15	<.1	<100	<120	2	1	<1	<1.0	40	<60
FEB 11...	<12	<.10	<.1	<100	<120	1	2	<1	<1.0	20	<60
MAR 19...	4.5	<.10	<.1	<100	<40	<1	<1	<1	<1.0	70	<20
APR 16...	<12	<.10	<.1	<100	<120	3	2	<1	<1.0	10	<60
MAY 21...	<12	<.10	<.1	<100	<120	3	4	<1	<1.0	10	<60
JUN 10...	<12	<.10	<.1	<100	<120	2	2	<1	<1.0	<10	<60
JUL 14...	<4.0	<.10	<.1	<100	<40	1	<1	<1	<1.0	10	<20
AUG 19...	<12	<.10	<.1	--	--	<1	1	<1	<1.0	<10	<60
SEP 03...	<12	<.10	<.1	<100	<120	<1	<1	<1	<1.0	<10	<60

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	AROCLO 1016 PCB TOTAL (UG/L) (34671)	AROCLO 1221 PCB TOTAL (UG/L) (39488)	AROCLO 1232 PCB TOTAL (UG/L) (39492)	AROCLO 1242 PCB TOTAL (UG/L) (39496)	AROCLO 1248 PCB TOTAL (UG/L) (39500)	AROCLO 1254 PCB TOTAL (UG/L) (39504)	AROCLO 1260 PCB TOTAL (UG/L) (39508)
FEB 11...	1600	1028	80020	<.100	<1.00	<.100	<.100	<.100	<.100	<.100
JUN 10...	1400	1028	80020	<.100	<1.00	<.100	<.100	<.100	<.100	<.100

DATE	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TECHNICAL TOTAL (UG/L) (39350)	CHLOR-DANE, CIS WATER TOTAL (UG/L) (39062)	CHLOR-DANE, TRANS WATER TOTAL (UG/L) (39065)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDRIN WATER UNFLTRD REC TOTAL (UG/L) (39390)	ENDRIN ALDEHYDE TOTAL (UG/L) (34366)	HEPTACHLOR, EPOXIDE TOTAL (UG/L) (39410)	HEPTACHLOR, EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)
FEB 11...	<.040	<.100	<.100	<.100	<.020	<.060	<.200	<.030	<.800	<.030
JUN 10...	<.040	<.100	<.100	<.100	<.020	<.060	<.200	<.030	<.800	<.030

DATE	TOXAPHENE, TOTAL (UG/L) (39400)	BETA BENZENE HEXACHLORIDE TOTAL (UG/L) (39338)	DELTA BENZENE HEXACHLORIDE TOTAL (UG/L) (34259)	ALPHA BHC TOTAL (UG/L) (39337)	P,P' DDT, TOTAL (UG/L) (39300)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	ENDO-SULFAN-I WATER WHOLE REC TOTAL (UG/L) (34361)	ENDO-SULFAN-II TOTAL (UG/L) (34356)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)
FEB 11...	<2.00	<.030	<.090	<.030	<.100	<.100	<.040	<.100	<.040	<.600
JUN 10...	<2.00	<.030	<.090	<.030	<.100	<.100	<.040	<.100	<.040	<.600

RED RIVER BASIN

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	2320	1970	2140	5040	4720	4900	4350	4270	4310	3660	3460	3600
2	2720	2320	2500	5230	5010	5140	4310	4100	4210	3460	3350	3390
3	2990	2720	2870	5230	5180	5190	4160	4030	4110	3500	3350	3420
4	3260	2990	3120	5180	4760	4980	4060	4000	4020	3500	3140	3370
5	3550	3260	3410	4820	4750	4790	4420	4010	4060	3140	2430	2620
6	3850	3550	3710	4780	4730	4740	4890	4420	4750	3290	1930	2690
7	4090	3850	3950	4780	4710	4730	4990	4790	4920	1930	935	1240
8	4130	4000	4060	4940	4710	4820	4940	4790	4860	1010	914	970
9	4300	4090	4200	5070	4940	5010	5010	4840	4930	986	844	894
10	4450	4300	4370	5140	5040	5090	5250	4850	5070	977	889	937
11	4450	3680	4090	5190	5130	5170	5190	4940	5060	1310	977	1140
12	3680	2140	2470	---	---	e5090	4940	4780	4860	1790	1310	1500
13	2650	2360	2450	5110	4850	4990	4860	4770	4810	2250	1790	2100
14	4080	2650	3390	4980	4860	4910	5130	4850	4980	2380	2240	2310
15	4060	3180	3470	4880	4720	4870	5180	5100	5150	2560	2370	2470
16	4190	3200	3610	5090	4840	4930	5120	4970	5030	2790	2550	2680
17	4180	2450	2930	5220	5060	5170	5320	4950	5080	2930	2790	2870
18	3140	2490	2750	5130	4910	5070	5470	5300	5410	2950	2670	2850
19	3900	3140	3580	4910	4810	4840	5610	5310	5460	2680	2660	2670
20	4580	3900	4220	4850	4800	4830	---	---	e5280	2720	2670	2690
21	5070	4580	4920	4890	4300	4770	4880	4110	4470	2700	2410	2650
22	4980	4270	4610	4520	4290	4380	4140	3420	3830	2420	2110	2300
23	4280	3750	3990	4940	4510	4740	3420	2270	2690	2170	1860	2020
24	3780	3690	3730	5230	4940	5080	2270	2000	2110	2080	1890	1950
25	3830	3700	3770	5540	5230	5380	2130	1340	1610	2440	1940	2260
26	4010	3830	3910	5680	5540	5610	3060	1620	2360	2250	1690	2080
27	4200	4010	4130	5670	5300	5530	3140	2820	2950	2310	2080	2230
28	4420	3980	4140	5300	4860	5090	2840	2610	2730	2300	2080	2170
29	4450	3480	3930	4860	4640	4760	2610	2510	2540	2630	2140	2410
30	4060	3480	3720	4640	4360	4510	3140	2590	2850	2890	2630	2750
31	4720	4080	4420	---	---	---	3590	3140	3390	3070	2890	3010
MONTH	5070	1970	3630	---	---	4970	---	---	4130	3660	844	2330
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	3360	3060	3200	4160	3950	4050	2580	2460	2500	1490	1280	1360
2	3590	3360	3510	4180	4100	4150	2830	2580	2710	2240	1490	1840
3	4480	2450	3710	4100	4020	4050	2850	2810	2840	2760	2240	2520
4	2450	1560	1790	4030	3990	4020	2820	2780	2800	2970	2760	2890
5	2520	1900	2290	4120	3950	4010	2820	2780	2800	3120	2970	3070
6	2000	1700	1790	4150	4120	4130	2880	2810	2850	3080	2950	3020
7	1790	1700	1740	4140	1290	2920	2850	2690	2770	3000	2930	2960
8	2050	1790	1910	2800	2500	2620	2740	2690	2720	3250	2990	3140
9	2270	2050	2170	2800	2590	2710	2950	2720	2820	3600	3150	3350
10	2360	2270	2330	2730	2530	2610	3070	2950	3000	3810	3600	3690
11	2490	2350	2420	2710	2170	2340	3090	2870	2980	3870	3800	3850
12	2710	2480	2600	3100	2160	2540	2950	2870	2910	4050	3850	3920
13	2950	2710	2780	3320	3100	3260	3240	2940	3120	4420	4050	4290
14	3380	2950	3160	3340	3060	3190	3330	3240	3280	4410	4250	4340
15	3640	3380	3550	3070	2500	2920	3340	3290	3320	4300	4070	4140
16	3750	3640	3690	2540	832	1590	3290	3180	3230	4170	4050	4100
17	3750	3590	3640	1530	925	1100	3380	3170	3220	4350	4140	4240
18	3610	3500	3580	925	739	800	3640	3380	3540	4500	4320	4410
19	3610	3370	3450	1250	841	1040	3760	3630	3700	4730	4490	4590
20	3630	3190	3360	1370	1250	1320	3780	3660	3750	4770	4660	4730
21	3210	2600	2910	1540	1370	1440	3800	3720	3760	5130	4750	5070
22	2600	2150	2280	1740	1540	1650	3830	3790	3810	5170	4720	5010
23	2230	2170	2210	1770	1720	1740	3820	3780	3800	4720	4600	4650
24	2280	2160	2190	2000	1770	1880	3820	3790	3800	5600	4650	4890
25	2900	2280	2560	2210	1990	2110	3840	3790	3810	6130	5450	5920
26	3320	2900	3170	2290	2210	2240	3850	3310	3740	5530	4610	4940
27	3350	3280	3300	2330	2290	2310	3630	3420	3500	4620	4110	4360
28	3950	3350	3660	2370	2270	2300	3710	3390	3550	4110	3740	3920
29	---	---	---	2540	2370	2480	3680	1380	2050	3820	3720	3750
30	---	---	---	2590	2480	2540	1450	1280	1380	---	---	e3710
31	---	---	---	2560	2480	2510	---	---	---	---	---	e3730
MONTH	4480	1560	2820	4180	739	2530	3850	1280	3140	---	---	3880

RED RIVER BASIN

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN												
													JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	e3770	4390	4280	4320	4260	4060	4160	4990	4920	4950												
2	---	---	e3800	4540	4390	4460	4300	4140	4230	5050	4940	5000												
3	---	---	e3840	4620	4530	4560	4460	4240	4350	5230	5040	5130												
4	---	---	e3870	4680	4600	4630	4530	3720	4330	5130	5020	5070												
5	---	---	e4000	4680	4550	4620	4540	4320	4460	5160	5000	5070												
6	---	---	e4030	4590	4530	4560	4640	4520	4560	5320	5150	5230												
7	---	---	e4070	4650	4580	4600	4880	4620	4750	5330	5220	5280												
8	---	---	e4100	4680	4600	4650	5190	4870	5050	5710	5270	5480												
9	---	---	e4130	4660	4390	4570	5220	5000	5100	5760	5310	5620												
10	---	---	e4150	4390	3790	4140	5410	5130	5260	5310	4580	4960												
11	4120	3140	3610	3790	3220	3600	5510	5380	5460	4580	4120	4350												
12	3740	3220	3470	3220	2770	2930	---	---	e5280	---	---	e4000												
13	3520	3310	3380	3520	3110	3330	---	---	e4510	---	---	e3870												
14	3680	3500	3600	3670	3510	3610	---	---	e4320	---	---	e3730												
15	3500	2850	3060	3600	3440	3530	---	---	e4550	---	---	e3590												
16	3330	2550	2810	3880	3450	3640	---	---	e4580	3710	3330	3570												
17	2910	2780	2830	4100	3870	4020	---	---	e4430	3560	3130	3400												
18	2950	2850	2920	4360	4100	4240	---	---	e4430	4110	3250	3680												
19	3180	2850	3070	4430	4350	4390	---	---	e4400	4200	4080	4150												
20	3160	2150	2390	4480	4400	4460	4650	4470	4540	4420	4170	4270												
21	2410	1630	1930	4620	4450	4510	4670	4420	4560	4520	4360	4440												
22	1650	1430	1530	4700	4570	4630	4650	4440	4580	4580	3960	4450												
23	1660	1440	1530	4620	4460	4530	4960	4650	4780	4530	4170	4380												
24	2420	1470	1850	4770	4570	4670	5120	4960	5050	4170	3880	4000												
25	3700	2420	3120	4830	4730	4790	5000	4820	4930	4080	3790	3940												
26	4110	3700	3940	4920	4780	4860	4920	4700	4800	4740	3870	4310												
27	4230	4100	4160	4810	4500	4710	4960	4690	4850	5140	4740	5030												
28	4310	4060	4220	4530	4250	4420	5010	4250	4850	5350	5140	5190												
29	4160	4060	4130	4320	4070	4230	5020	4880	4950	5450	5350	5400												
30	4290	4160	4240	4260	4030	4140	5080	4820	5020	5370	4960	5190												
31	---	---	---	4210	4020	4120	5080	4860	4980	---	---	---												
MONTH	---	---	3390	4920	2770	4270	---	---	4710	---	---	4560												

e Estimated

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN												
													OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	26.5	24.5	25.5	18.5	17.0	18.0	11.5	11.0	11.5	7.0	5.0	5.5												
2	27.0	24.0	25.5	17.0	15.0	16.0	11.0	11.0	11.0	11.0	7.0	9.0												
3	26.5	24.0	25.5	15.5	13.0	14.0	11.0	9.0	10.5	13.5	11.0	12.5												
4	26.0	23.0	24.5	15.0	12.5	14.0	10.5	8.0	9.0	14.5	13.5	14.0												
5	25.5	22.5	24.0	17.0	14.5	15.5	8.5	7.0	8.0	13.5	12.5	13.0												
6	25.5	23.5	24.5	15.0	12.5	14.0	8.0	6.0	7.0	12.5	10.5	11.5												
7	25.0	24.0	24.5	14.0	11.0	12.5	7.5	6.5	7.0	10.5	8.0	9.0												
8	24.5	23.0	24.0	14.5	11.5	13.0	8.5	6.5	7.5	8.0	6.5	7.0												
9	26.0	23.0	24.5	13.5	12.5	13.0	10.0	7.5	8.5	6.5	5.5	6.0												
10	26.0	24.5	25.5	12.5	9.0	10.5	8.5	6.5	7.5	5.5	5.0	5.5												
11	25.0	23.5	24.5	11.0	8.0	9.5	6.5	5.0	5.5	5.5	5.0	5.0												
12	23.5	21.5	23.0	10.5	8.0	9.5	5.0	3.5	4.5	6.5	5.5	6.0												
13	21.5	19.5	20.5	10.0	8.5	9.5	4.5	2.0	3.5	6.5	5.5	6.0												
14	20.5	17.5	19.0	9.5	7.5	9.0	6.0	3.0	4.5	5.5	5.0	5.5												
15	21.0	17.5	19.0	9.0	7.0	8.0	7.0	3.5	5.5	6.0	4.5	5.0												
16	20.5	17.5	19.0	9.0	6.0	7.5	8.5	5.5	6.5	6.5	4.5	5.5												
17	20.5	18.5	19.5	7.5	6.0	7.0	8.5	6.0	7.0	7.0	5.0	6.0												
18	19.5	17.5	18.5	9.5	6.0	7.5	9.0	6.0	7.5	8.5	6.5	7.0												
19	20.0	17.0	18.5	10.5	7.5	9.0	11.0	7.5	9.0	8.5	6.5	7.5												
20	21.0	18.0	19.5	11.0	9.0	10.0	10.0	7.5	9.0	8.5	7.0	8.0												
21	19.5	16.5	18.0	12.0	9.5	11.0	8.5	7.0	8.0	9.0	8.0	8.5												
22	16.5	15.0	16.0	13.0	10.5	11.5	7.0	6.0	6.5	8.0	6.5	7.0												
23	15.5	14.5	15.0	13.0	10.0	11.5	6.5	6.0	6.0	6.5	5.0	5.5												
24	18.5	15.0	16.5	13.0	10.5	11.5	6.0	5.5	5.5	6.0	4.0	5.0												
25	19.5	16.5	18.0	14.5	11.5	13.0	6.0	5.5	5.5	6.0	5.0	5.5												
26	16.5	11.5	13.0	16.0	14.0	15.0	6.0	5.0	5.5	7.5	6.0	7.0												
27	13.5	10.0	11.5	16.5	14.0	15.5	5.5	4.5	5.0	9.0	6.5	7.5												
28	14.0	11.0	12.5	16.5	15.0	16.0	5.0	4.0	4.5	10.0	8.0	9.0												
29	15.5	12.5	14.0	15.0	12.5	14.0	5.0	3.5	4.5	11.0	8.5	9.5												
30	18.5	15.0	17.0	12.5	11.5	12.0	6.0	4.0	5.0	11.0	8.5	10.0												
31	20.5	17.5	18.5	---	---	---	6.0	4.5	5.5	11.0	10.0	10.5												
MONTH	27.0	10.0	20.0	18.5	6.0	11.9	11.5	2.0	6.8	14.5	4.0	7.7												

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	12.0	10.5	11.0	12.0	10.5	11.0	18.5	16.5	17.5	20.5	17.5	18.5
2	12.0	9.5	11.0	11.0	9.5	10.0	18.5	17.0	17.5	23.0	19.0	21.0
3	11.0	9.5	10.5	11.0	9.0	10.0	18.0	16.0	17.0	24.5	21.0	22.5
4	10.5	9.5	10.0	13.0	9.5	11.0	17.0	15.5	16.0	25.0	21.5	23.0
5	9.5	7.5	8.5	13.0	11.5	12.5	17.5	15.0	16.0	25.5	22.0	23.5
6	8.0	6.5	7.0	11.5	10.0	10.5	18.0	16.0	17.0	27.5	23.5	25.0
7	8.0	6.0	7.0	10.5	9.5	10.0	19.0	17.0	18.0	28.5	24.0	26.0
8	8.5	6.5	7.5	10.5	7.0	8.5	19.5	17.5	18.0	27.5	24.5	26.0
9	10.0	7.5	8.5	7.5	5.0	6.5	19.0	17.0	18.0	26.0	23.5	24.5
10	10.0	9.5	10.0	7.0	5.0	6.0	19.5	16.5	18.0	26.5	21.5	24.0
11	10.5	8.5	9.5	7.5	5.5	6.5	20.0	17.5	18.5	27.0	23.0	25.0
12	10.0	9.0	9.5	7.5	5.5	6.5	20.0	17.5	18.5	27.5	23.0	25.0
13	10.0	9.0	9.5	7.5	7.0	7.0	21.5	18.0	19.5	27.0	24.0	25.5
14	10.0	8.5	9.5	9.0	7.5	8.0	22.5	19.5	21.0	27.5	24.5	26.0
15	11.0	10.0	10.5	11.5	9.0	10.0	23.0	20.5	22.0	27.5	25.0	26.0
16	10.5	10.0	10.0	12.5	11.5	12.0	22.5	20.0	21.0	28.5	23.5	26.0
17	10.5	9.5	10.0	12.5	12.0	12.5	20.5	18.5	19.0	27.0	25.0	26.0
18	11.5	9.0	10.0	12.5	11.5	12.0	20.0	17.0	18.5	28.0	24.0	26.0
19	11.5	10.5	11.0	12.5	11.5	12.0	20.5	17.0	18.5	28.5	24.5	26.5
20	12.0	10.5	11.0	11.5	10.0	10.5	19.5	17.5	18.5	29.0	25.0	26.5
21	11.5	10.5	11.0	10.5	9.5	10.0	19.0	16.0	17.5	28.0	25.0	27.0
22	11.5	10.5	11.0	11.5	10.0	10.5	19.5	16.5	18.0	27.0	25.0	26.0
23	12.0	10.5	11.0	13.5	11.0	12.0	21.0	16.5	18.5	26.5	24.0	25.5
24	13.5	11.5	12.5	15.5	13.0	14.0	21.5	18.0	20.0	28.5	24.5	26.0
25	15.5	13.0	14.5	17.0	15.0	16.0	21.5	18.5	20.0	27.0	24.5	26.0
26	15.5	14.5	15.0	18.0	16.5	17.5	21.0	20.0	20.5	27.5	24.5	26.0
27	14.5	13.0	14.0	18.5	17.0	17.5	20.0	19.0	19.5	26.5	24.5	25.5
28	13.5	12.0	12.5	19.0	16.5	17.5	20.0	17.5	18.5	29.5	23.5	26.5
29	---	---	---	19.5	18.0	18.5	17.5	16.0	16.5	31.5	26.5	29.0
30	---	---	---	19.5	18.5	19.0	18.5	15.5	17.0	---	---	---
31	---	---	---	18.5	17.5	18.0	---	---	---	---	---	---
MONTH	15.5	6.0	10.5	19.5	5.0	11.7	23.0	15.0	18.5	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	34.5	29.5	31.5	34.0	27.5	30.5	32.5	26.5	29.5
2	---	---	---	34.5	29.5	32.0	34.5	27.0	30.5	33.5	26.5	30.0
3	---	---	---	34.5	29.0	31.5	33.5	28.5	31.0	33.5	27.0	30.0
4	---	---	---	31.5	28.5	30.0	30.5	25.0	28.0	33.0	27.0	30.0
5	---	---	---	30.5	27.5	29.0	31.0	26.5	28.5	32.0	27.0	29.5
6	---	---	---	33.5	27.5	30.5	33.0	27.0	30.0	32.0	26.5	29.0
7	---	---	---	34.5	28.5	31.5	34.0	27.0	30.0	33.0	26.5	29.5
8	---	---	---	34.5	29.5	32.0	33.0	27.0	29.5	33.5	27.0	30.0
9	---	---	---	34.5	29.5	32.0	33.5	27.5	30.5	31.0	26.5	29.0
10	---	---	---	35.0	29.5	32.0	32.5	27.5	30.0	30.0	23.5	26.5
11	28.5	24.0	26.0	34.5	29.5	32.0	30.0	28.0	29.0	27.0	24.5	25.5
12	31.0	25.0	27.5	35.0	29.5	32.0	34.0	27.5	30.5	---	---	---
13	32.5	28.0	30.0	35.5	30.0	32.5	34.0	28.0	30.5	---	---	---
14	32.5	28.0	30.0	35.5	30.0	33.0	32.0	29.0	30.5	---	---	---
15	31.0	28.0	29.5	36.5	29.5	33.0	34.5	27.0	30.5	---	---	---
16	30.0	26.5	28.5	35.5	30.0	32.5	34.0	28.5	31.0	27.5	25.0	26.0
17	29.5	26.0	27.5	33.0	29.5	31.5	34.5	28.5	31.0	30.5	24.5	27.0
18	30.5	26.0	28.0	35.0	28.5	31.5	33.0	28.0	30.5	32.5	25.5	29.0
19	32.0	25.5	28.5	34.0	29.0	31.5	33.5	29.0	31.0	31.5	26.5	29.0
20	31.0	27.0	29.0	34.0	29.0	31.5	34.5	28.5	31.5	32.0	26.5	29.0
21	30.5	27.0	29.0	33.5	28.5	31.0	34.0	28.5	31.0	32.5	27.0	29.0
22	31.5	27.0	29.5	33.5	28.5	31.0	32.5	28.5	30.5	30.0	26.5	28.0
23	31.5	28.0	30.0	34.0	28.0	31.0	32.5	27.5	30.0	29.5	25.0	27.5
24	32.0	27.5	29.5	34.0	28.0	31.0	33.0	28.5	30.5	30.5	26.0	28.0
25	32.0	27.5	29.5	33.5	28.5	31.0	33.5	28.5	31.0	31.0	26.0	28.0
26	33.0	27.5	30.0	34.0	28.0	30.5	33.5	28.5	31.0	29.5	25.5	27.5
27	34.0	28.0	30.5	34.0	28.0	31.0	33.5	28.5	30.5	31.5	26.0	28.5
28	34.5	28.5	31.5	34.0	28.0	31.0	32.5	28.0	29.5	32.5	27.0	29.5
29	33.5	28.5	31.0	33.5	28.0	30.5	34.0	27.5	30.5	32.5	26.5	29.5
30	33.5	28.5	31.0	33.0	27.5	30.0	33.5	27.5	30.5	31.5	26.5	29.0
31	---	---	---	33.5	27.0	30.0	33.5	28.0	30.5	---	---	---
MONTH	---	---	---	36.5	27.0	31.3	34.5	25.0	30.3	---	---	---

LOCATION.--Lat 33°40'59", long 94°41'39", Bowie County, Hydrologic Unit 11140106, on right bank at downstream side of bridge on U.S. Highway 259, 4.8 mi upstream from North Mill Creek, 13 mi north of De Kalb, and at mile 556.9.

DRAINAGE AREA.--47,348 mi², of which 5,936 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Dec 1967 to Sep 1998 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 302.92 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in Dec 1967, at least 10% of contributing drainage area has been regulated by Lake Texoma (station 07331500) located approximately 169 mi upstream, and low flows may be affected by releases for the generation of electric power. Storage and/or releases from Lake Hugo on the Kiamichi River, a tributary to the Red River about 45 mi upstream, may also affect flows.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since 1957, 205,000 ft³/s Jun 1957 (gage height, 32.2 ft), from rating curve extended above 186,500 ft³/s. The greatest flood since 1936 occurred in Feb 1938, stage unknown.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3400	4160	4120	31500	42900	38000	56200	9510	4440	2280	4560	4490
2	3590	4120	4090	34800	37400	30800	56100	9170	4140	1670	4560	3570
3	3690	4060	6980	34200	32300	26900	55900	8790	2560	1700	4610	2420
4	5220	4140	8880	33600	28800	24400	56100	8400	1920	2430	4570	1780
5	6180	4610	9520	45000	27700	21500	56900	8190	3350	3710	3870	2240
6	6260	3960	10500	72100	22300	17400	56100	8000	4520	4590	3320	2390
7	5970	5090	9220	76200	19900	10000	55000	7920	4780	4650	3930	2400
8	4650	5670	10700	68700	19600	7040	50100	7870	4900	3230	4490	2490
9	4690	4790	14300	70600	19000	10100	39600	7820	4470	2000	4620	2040
10	5580	4710	14900	71000	20800	22600	26700	7830	2670	2600	4720	1360
11	4540	4650	12400	66700	32700	25500	22800	7810	1870	4140	4620	1230
12	4510	3790	9640	67400	26800	22300	21000	7770	2060	4540	3130	1980
13	4980	3350	7490	65200	22800	26000	17800	7740	2930	4680	1970	2590
14	4890	4640	6120	65500	19300	28300	16300	7790	3800	4620	2780	3220
15	3770	5470	5120	64300	16300	25600	15700	7770	4210	3170	4350	4240
16	2840	6400	3460	62100	15200	27900	14400	7840	4320	1950	4790	5530
17	3230	6400	2670	61700	15400	50600	15700	7780	3100	2580	4820	4490
18	4500	6100	2410	60500	18000	59300	16700	5120	2130	4100	4670	3720
19	4530	5530	3640	58300	19600	58000	14600	2900	2110	4620	3110	7980
20	4470	5400	4570	57200	19800	63100	13500	2180	2650	4740	1860	6430
21	4480	5480	9120	57300	19500	65800	13000	2310	2820	4550	2560	5920
22	4150	4370	31900	56500	19300	67300	12200	4700	2780	3100	4100	5820
23	3190	4080	39000	56700	19000	71300	12800	5240	2710	1880	4460	5340
24	3580	4020	36800	55800	21200	72100	12000	5170	2220	2470	4540	4170
25	4520	3820	36100	53100	23100	68100	12400	5150	1630	3990	4510	2540
26	4690	2910	35800	52400	26600	64800	12500	4440	1670	4370	3040	2890
27	4700	2470	31200	52400	40000	61300	11500	2600	2480	4450	1790	2440
28	4630	3300	29300	53400	43900	54900	10400	2440	2770	4550	2460	1790
29	4400	4480	27900	51100	---	52100	10400	3530	2740	4960	4040	2230
30	4220	5010	28800	47400	---	52800	10100	2670	2670	4930	4420	2290
31	4200	---	29300	45200	---	54600	---	3570	---	4660	4530	---
TOTAL	138250	136980	485950	1747900	689200	1280440	794500	190020	91420	111910	119800	102020
MEAN	4460	4566	15680	56380	24610	41300	26480	6130	3047	3610	3865	3401
MAX	6260	6400	39000	76200	43900	72100	56900	9510	4900	4960	4820	7980
MIN	2840	2470	2410	31500	15200	7040	10100	2180	1630	1670	1790	1230
AC-FT	274200	271700	963900	3467000	1367000	2540000	1576000	376900	181300	222000	237600	202400

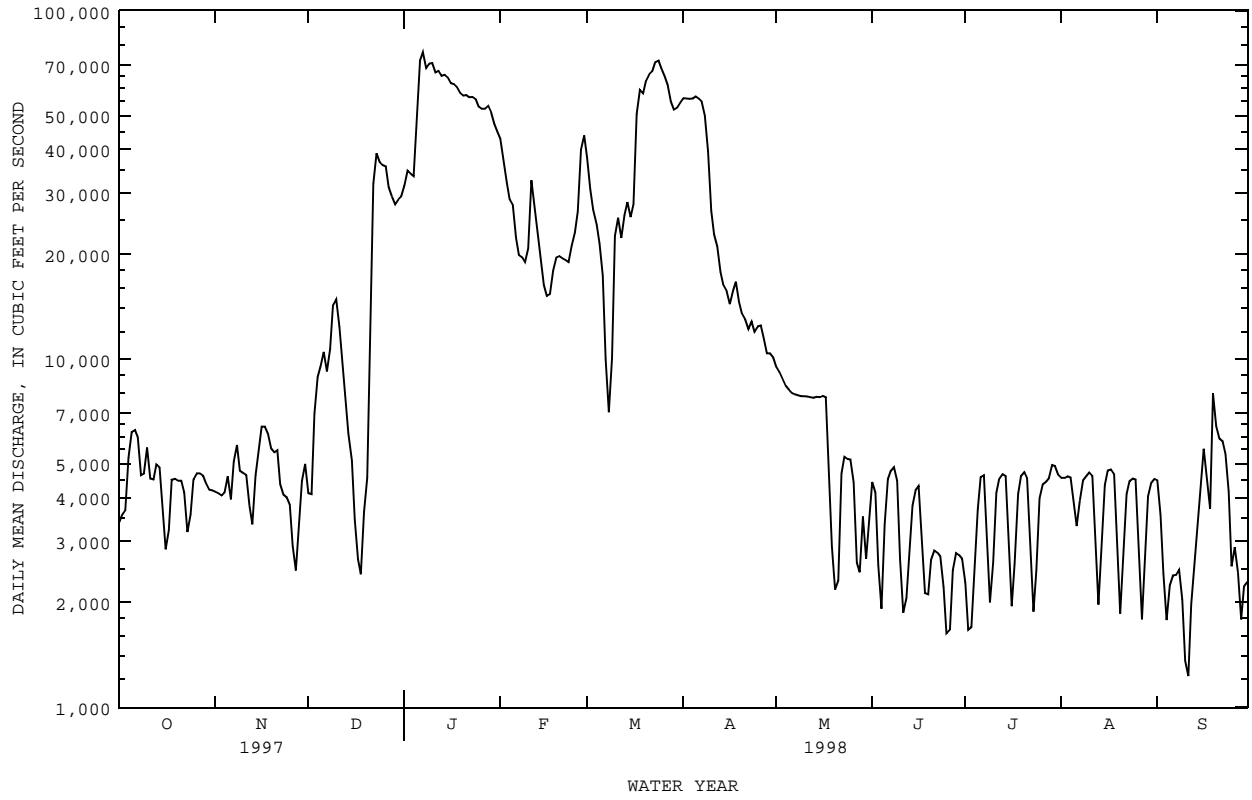
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1998, BY WATER YEAR (WY)

MEAN	9114	14670	14850	12810	14820	20770	19130	24990	25860	9562	5811	6064
MAX	39980	53170	45440	56380	31000	48590	62330	125500	67360	35030	21150	24010
(WY)	1982	1975	1972	1998	1969	1987	1990	1990	1987	1982	1995	1974
MIN	1783	2105	1608	1699	2876	2492	3005	4707	2909	2598	1418	1368
(WY)	1979	1980	1978	1981	1976	1980	1981	1972	1988	1972	1972	1988

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1968 - 1998

ANNUAL TOTAL		5607180		5888390								
ANNUAL MEAN		15360		16130						14810		
HIGHEST ANNUAL MEAN										30100		1990
LOWEST ANNUAL MEAN										4690		1980
HIGHEST DAILY MEAN				67700	Feb 22		76200	Jan 7	278000		May 7	1990
LOWEST DAILY MEAN				2400	Sep 26		1230	Sep 11	254		Nov 29	1979
ANNUAL SEVEN-DAY MINIMUM				2750	Sep 21		1980	Sep 6	529		Aug 31	1972
INSTANTANEOUS PEAK FLOW							79100	Jan 7	279000		May 6	1990
INSTANTANEOUS PEAK STAGE							25.00	Jan 7		34.42	May 6	1990
ANNUAL RUNOFF (AC-FT)			11120000				11680000			10730000		
10 PERCENT EXCEEDS			34200				54900			40900		
50 PERCENT EXCEEDS			9460				5120			7130		
90 PERCENT EXCEEDS			3820				2470			2220		

07336820 RED RIVER NEAR DE KALB, TX--Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Jan 1968 to Sep 1998(discontinued). Pesticide analyses: Oct 1970 to Jul 1981. Sediment analyses: Nov 1979 to Sep 1997.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Jan 1968 to Sep 1991.
 WATER TEMPERATURE: Jan 1968 to Sep 1991.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,140 microsiemens, Jul 13, 1980; minimum daily, 114 microsiemens, Oct 31, 1984.
 WATER TEMPERATURE (1968-89): Maximum daily, 34.0°C, on several days during Jul and Aug of 1969 and 1970; minimum daily, 0.0°C, Jan 11, 1977.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (MG/L) (00300)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	
DEC 16...	0944	3290	1040	7.7	7.0	--	--	11.8	98	2.3	370
FEB 25...	1140	23600	1060	8.0	9.5	--	--	10.8	97	1.6	270
MAY 06...	1235	8000	1290	8.4	25.0	21	23	8.4	104	1.9	340
JUL 09...	1150	2000	1320	7.7	33.0	--	--	7.8	110	3.2	340
AUG 06...	0915	3300	1480	8.2	28.5	--	--	6.6	86	2.1	380

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
DEC 16...	270	97	31	130	3	5.5	98	260	190	.28	8.7
FEB 25...	170	71	23	98	3	3.9	100	190	140	.22	7.2
MAY 06...	190	88	29	119	3	4.5	150	220	180	.28	7.2
JUL 09...	210	84	31	128	3	4.6	130	230	190	.29	.26
AUG 06...	240	92	36	147	3	5.1	140	260	210	.34	6.2

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L) (00535)	RESIDUE FIXED NON FILTER-ABLE (MG/L) (00540)	NITRO-GEN, 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-SOLVED (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
DEC 16...	781	--	--	--	<.010	<.050	.021	.36	.38	.033	.038
FEB 25...	593	--	--	--	<.010	.285	.040	.24	.28	.016	.022
MAY 06...	730	46	8	38	<.010	.258	.032	.24	.28	<.010	<.010
JUL 09...	750	--	--	--	<.010	<.050	.036	.25	.29	.032	.019
AUG 06...	840	--	--	--	<.010	<.050	.033	.26	.30	<.010	<.010

RED RIVER BASIN

07337000 RED RIVER AT INDEX, AR

LOCATION.--Lat 33°33'07", long 94°02'28", in NW $\frac{1}{4}$ SW $\frac{1}{4}$ 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, AR, 2.2 mi south of Ogden, 20.6 mi upstream from Little River, and at mile 485.3.

DRAINAGE AREA.--48,030 mi², of which 5,936 mi² is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jul 1936 to current year. Gage-height records collected at same site since 1917 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 246.87 ft above sea level. Prior to Dec 12, 1939, nonrecording gage, and Dec 12, 1939, to Jul 19, 1979, water-stage recorder, at site 500 ft downstream at present datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Water-discharge records good. Some regulation since Oct 31, 1943, by Lake Texoma, 241 mi upstream, capacity, 5,392,900 acre-ft. Additional regulation since Sep 28, 1967, by Pat Mayse Lake, capacity, 352,700 acre-ft, and since Jan 18, 1974, by Hugo Lake (Oklahoma) capacity, 966,700 acre-ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4000	4160	6340	29400	42300	40400	51000	11200	3960	3160	4620	4410
2	3400	4100	5990	31500	40000	34500	51800	10800	4760	3140	4510	4490
3	3270	4040	4760	34200	35300	28800	51200	10400	5030	2910	4520	4420
4	3380	3990	5650	32900	31300	25200	50800	10100	4420	2490	4640	3790
5	3750	4260	7900	33900	28600	22700	50100	9790	3540	2490	4610	2960
6	5050	4820	8970	60900	27400	20100	50300	9590	3450	2970	4440	2620
7	5600	4890	9860	84100	23000	17000	49300	9470	4510	3830	4010	2850
8	5730	4620	10400	86000	20400	14300	48400	9410	5010	4340	3750	2950
9	5400	5500	11400	79800	19600	11400	42500	9280	5190	4250	4210	2970
10	4880	5410	14400	79300	19600	12600	33600	9190	5170	3360	4480	2950
11	5430	4880	15200	77700	30000	22000	24900	9150	4490	2680	4570	2670
12	5240	4860	13200	82300	37800	23700	21200	9100	3410	3180	4660	2460
13	4860	4810	10900	82200	30100	21300	19900	9030	2950	4100	4450	2540
14	5310	4340	8910	77500	23700	24500	17700	8950	3200	4380	3480	3210
15	5640	4490	7400	74500	19500	25700	16400	8910	3850	4470	2790	4110
16	4960	5370	6370	71300	16600	24100	16000	8870	4380	4300	3510	6170
17	3720	5980	4900	68100	15800	33300	15100	8850	4570	3340	4380	6930
18	2990	6360	3560	66500	16700	54100	15500	8820	4400	2660	4640	6430
19	3560	6290	2910	64300	18800	55800	16700	7650	3580	3220	4670	4900
20	4360	5940	3080	61000	19700	56600	15400	5410	3010	4070	4430	5050
21	4390	5550	4780	59100	19500	61600	14300	4420	3070	4420	3380	6190
22	4360	5540	9250	58700	19000	64500	13800	3930	3340	4490	2660	5580
23	4360	5140	32500	57200	18600	66600	13100	4880	3400	4260	3310	5340
24	4140	4370	41000	56700	18200	70300	13300	6090	3340	3350	4190	5180
25	3570	4160	39900	54700	19800	70100	12800	6110	3230	2610	4440	4770
26	4070	4100	39000	52900	24100	65900	12800	5970	2850	3150	4500	3890
27	4590	3680	36100	52700	31100	62300	13600	5740	2480	4000	4330	3120
28	4650	3000	31800	52000	41000	57500	13000	5040	2570	4280	3340	3180
29	4620	3220	30000	51500	---	51100	11700	4240	3020	4340	2610	2820
30	4480	5260	28500	47800	---	49000	11400	4230	3180	4440	3220	2480
31	4320	---	29200	44400	---	49700	---	4320	---	4640	4130	---
TOTAL	138080	143130	484130	1865100	707500	1236700	787600	238940	113360	113320	125480	121430
MEAN	4454	4771	15620	60160	25270	39890	26250	7708	3779	3655	4048	4048
MAX	5730	6360	41000	86000	42300	70300	51800	11200	5190	4640	4670	6930
MIN	2990	3000	2910	29400	15800	11400	11400	3930	2480	2490	2610	2460
AC-FT	273900	283900	960300	3699000	1403000	2453000	1562000	473900	224800	224800	248900	240900

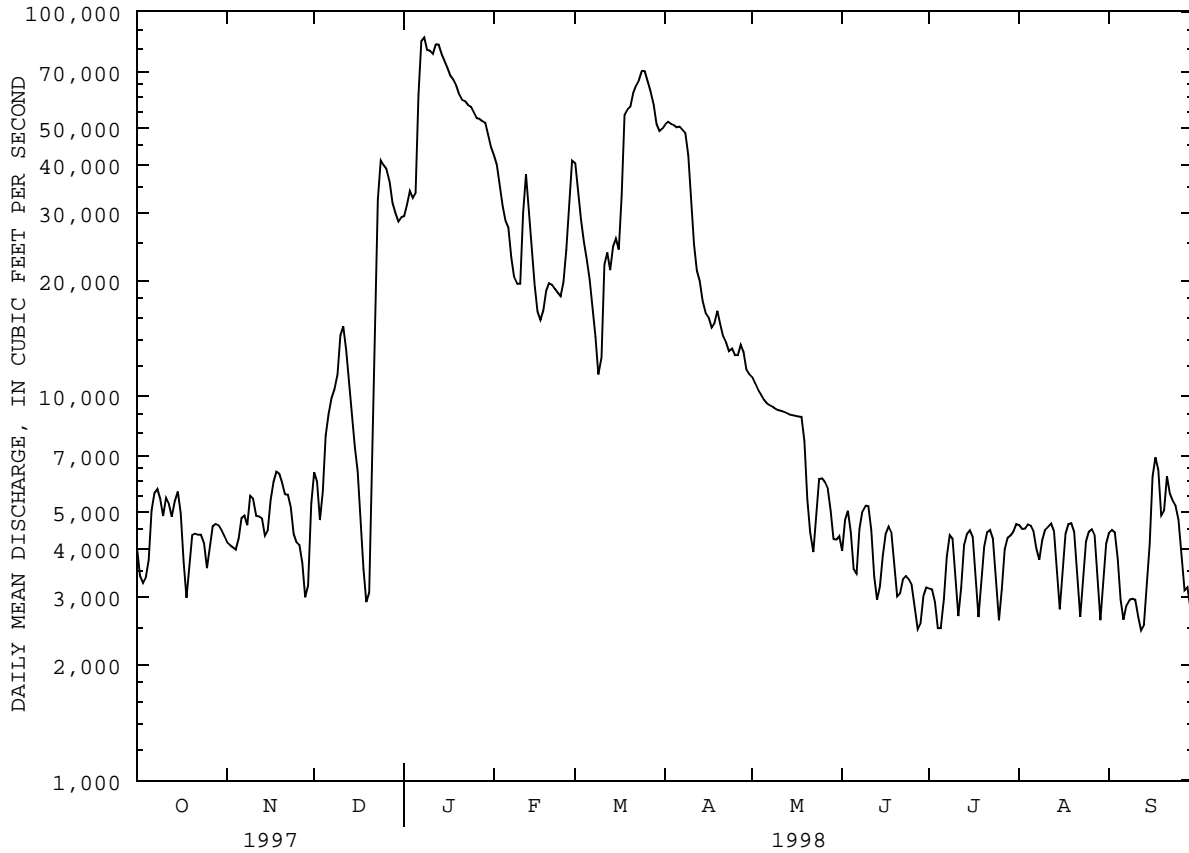
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1998, BY WATER YEAR (WY)

	8315	10930	12040	11360	14140	17110	17410	24280	22480	9863	5853	6071
MEAN	8315	10930	12040	11360	14140	17110	17410	24280	22480	9863	5853	6071
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

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SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1944 - 1998	
ANNUAL TOTAL	5794970		6074770		13310	
ANNUAL MEAN	15880		16640		30420	
HIGHEST ANNUAL MEAN					4383	
LOWEST ANNUAL MEAN					1990	
HIGHEST DAILY MEAN	69700	Feb 23	86000	Jan 8	268000	May 10 1990
LOWEST DAILY MEAN	2230	Sep 27	2460	Sep 12	384	Nov 28 1956
ANNUAL SEVEN-DAY MINIMUM	2600	Sep 23	2770	Sep 7	397	Oct 19 1956
INSTANTANEOUS PEAK FLOW			89100	Jan 8	270000	May 10 1990
INSTANTANEOUS PEAK STAGE			16.39	Jan 8	32.30	May 10 1990
INSTANTANEOUS LOW FLOW			2400	at times	378	Nov 28 1956
ANNUAL RUNOFF (AC-FT)	11490000		12050000		9639000	
10 PERCENT EXCEEDS	35400		51300		35800	
50 PERCENT EXCEEDS	8560		5500		5990	
90 PERCENT EXCEEDS	4060		3170		2310	

- a Prior to regulaton, water years 1937-43, 11,970 ft³/s
- b Maximum discharge for period of record, 297,000 ft³/s Feb. 23, 1938
- c Maximum gage height for period of record, 34.25 ft Feb. 23, 1938 from graph based on gage readings



RED RIVER BASIN

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WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water analyses 1947 to 1956, Apr 1980 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER)	SAMPLING METHOD, CODES (82398)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED SATURATION (PERCENT) (00301)	HARDNESS TOTAL AS CACO3 (MG/L) (00900)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
OCT 11...	1000	1028	30	272	819	7.3	27.0	24	5.7	71	180	93
FEB 10...	0910	1028	30	189	1240	8.0	20.5	20	8.8	98	280	170

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER)	AGENCY ANALYZING SAMPLE (CODE NUMBER)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	BAROMETRIC PRES-SURE OF WATER (MM HG) (00025)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED SATURATION (PERCENT) (00301)
NOV 19...	1245	80513	81213	8630	1000	8.3	771	9.4	9.7	84
JAN 21...	1335	80513	81213	54400	1130	7.4	764	9.0	10.7	93
FEB 25...	1230	80513	81213	19800	1150	8.0	756	12.4	12.5	118
APR 22...	1330	80513	81213	13000	1260	8.3	760	19.1	10.3	112
JUN 18...	1315	80513	81213	4080	1240	8.1	758	29.4	9.0	119

DATE	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	E. COLI TOTAL UREASE (COL / 100 ML) (31633)	STREPTOCOCCI KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS TOTAL AS CACO3 (MG/L) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNESIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORPTION RATIO (00931)	POTASSIUM, DIS-SOLVED (MG/L AS K) (00935)
NOV 19...	<1	K9	63	240	63	21	97	45	3	12
JAN 21...	<3	<3	180	280	70	25	110	46	3	3.9
FEB 25...	<1	<1	52	300	79	25	100	42	3	3.6
APR 22...	K7	K10	K10	330	86	28	120	44	3	4.3
JUN 18...	K30	K13	K29	330	83	29	130	46	3	4.8

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLORIDE, DIS-SOLVED (MG/L AS CL) (00940)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L AS N) (70300)	NITROGEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITROGEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)
NOV 19...	180	150	650	--	--	<.010	--	.170	.050	.06
JAN 21...	220	160	720	--	--	<.010	--	.220	.044	.06
FEB 25...	210	170	692	--	--	<.010	--	.290	.029	.04
APR 22...	210	180	778	.286	1.3	.014	.05	.300	.032	.04
JUN 18...	200	190	812	--	--	<.010	--	<.020	.016	.02

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 19...	.44	.49	.66	.070	.020	.010	.03	129	3010	96
JAN 21...	.84	.88	1.1	.300	.040	.010	.03	2660	391000	32
FEB 25...	.40	.43	.72	.100	<.020	.020	.06	1030	55100	29
APR 22...	.76	.79	1.1	.100	<.020	.010	.03	326	11400	75
JUN 18...	.72	.74	--	.110	<.020	<.010	--	334	3680	91

DATE	TIME	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	STREAM WIDTH (FT) (00004)	SAM- PLING DEPTH (FEET) (00003)	DEPTH AT SAMPLE LOC- ATION, TOTAL (FEET) (81903)	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK) (00009)
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DATE	TIME	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	STREAM WIDTH (FT) (00004)	SAM- PLING DEPTH (FEET) (00003)	DEPTH AT SAMPLE LOC- ATION, TOTAL (FEET) (81903)	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK) (00009)
SEP 01...	1205	80513	80513	360	3.00	15.0	718
SEP 01...	1206	80513	80513	360	12.0	15.0	718
SEP 01...	1207	80513	80513	360	3.50	17.0	754
SEP 01...	1208	80513	80513	360	13.5	17.0	754
SEP 01...	1209	80513	80513	360	5.00	25.0	790
SEP 01...	1210	80513	80513	360	20.0	25.0	790
SEP 01...	1211	80513	80513	360	4.00	19.0	826
SEP 01...	1212	80513	80513	360	15.0	19.0	826
SEP 01...	1213	80513	80513	360	4.00	20.0	862
SEP 01...	1214	80513	80513	360	16.0	20.0	862
SEP 01...	1215	80513	80513	360	4.50	9.00	898
SEP 01...	1216	80513	80513	360	3.00	14.0	934
SEP 01...	1217	80513	80513	360	10.0	14.0	934
SEP 01...	1218	80513	80513	360	3.50	7.00	970
SEP 01...	1219	80513	80513	360	3.00	6.00	1010
SEP 01...	1220	80513	80513	360	5.00	10.0	1040
SEP 01...	1245	80513	81213	--	--	--	--

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 SATUR- ATION) (00301)	BARO- METRIC PRES- SURE (MM OF HG) (00025)
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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 SATUR- ATION) (00301)	BARO- METRIC PRES- SURE (MM OF HG) (00025)
SEP 01...	--	1390	8.0	30.1	7.0	93	763	
SEP 01...	--	1390	7.9	30.1	6.9	92	763	
SEP 01...	--	1410	8.0	30.2	7.4	98	763	
SEP 01...	--	1410	8.0	30.2	7.3	98	763	
SEP 01...	--	1430	8.0	30.2	7.3	97	763	
SEP 01...	--	1420	8.0	30.2	7.2	96	763	
SEP 01...	--	1430	8.0	30.2	7.3	97	763	
SEP 01...	--	1430	7.9	30.2	7.2	96	763	
SEP 01...	--	1440	8.0	30.2	7.2	96	763	
SEP 01...	--	1440	7.9	30.1	7.2	96	763	
SEP 01...	--	1440	7.9	30.2	7.2	96	763	
SEP 01...	--	1450	7.9	30.3	7.1	95	763	
SEP 01...	--	1450	7.9	30.1	7.0	93	763	
SEP 01...	--	1450	7.9	30.2	7.1	94	763	
SEP 01...	--	1450	7.9	30.2	7.0	94	763	
SEP 01...	--	1440	7.9	30.2	7.0	94	763	
SEP 01...	4510	1440	8.0	30.2	7.2	96	763	

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	E. COLI WATER WHOLE TOTAL UREASE (COLS / 100 ML) (31633)	STREP- TOCOCCI KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
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SEP 01...	1245	230	K51	330	360	88	33	150	47
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RED RIVER BASIN

07337000 RED RIVER AT INDEX, AR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	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, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)
SEP 01...	3	5.1	250	220	906	<.010	<.020	.010	.01

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, PENDEDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN (70331)
SEP 01...	1.2	1.2	.100	.040	.010	.03	185	2250	99

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	26.9	25.3	26.0	17.4	16.6	17.0	13.9	13.1	13.5	6.8	6.3	6.6
2	26.1	24.1	25.0	16.6	15.6	16.0	13.1	12.1	12.5	8.1	6.8	7.4
3	26.1	23.8	24.9	15.6	14.4	14.9	12.5	11.7	12.1	9.6	8.0	8.9
4	25.9	23.9	24.9	14.7	13.6	14.2	11.7	10.7	11.2	10.6	9.6	10.0
5	26.0	23.8	24.8	15.2	14.2	14.6	11.0	9.7	10.2	11.5	10.6	11.0
6	25.7	24.1	24.9	14.5	13.2	13.8	9.8	8.7	9.2	12.4	11.5	11.8
7	25.2	24.5	25.0	13.2	12.5	12.9	9.0	7.9	8.4	13.0	12.4	12.8
8	25.2	24.5	24.9	13.7	12.2	12.9	7.9	7.6	7.7	12.6	11.3	12.1
9	25.5	24.4	24.9	13.5	12.5	13.0	8.1	7.4	7.7	11.3	9.5	10.4
10	25.6	24.3	24.9	13.4	12.6	13.1	7.9	7.0	7.4	9.5	8.3	8.9
11	24.9	24.0	24.5	12.6	12.0	12.3	7.0	6.8	6.9	---	---	8.2
12	24.6	23.6	23.9	12.0	10.7	11.5	6.8	6.5	6.7	---	---	8.5
13	23.6	21.7	22.5	10.8	10.1	10.3	6.5	5.8	6.2	8.8	8.6	8.7
14	21.7	20.2	20.9	10.3	9.8	10.1	6.4	5.2	5.8	8.7	8.2	8.4
15	20.7	19.1	20.0	10.0	9.0	9.5	6.8	5.4	6.2	8.2	8.0	8.1
16	20.5	18.8	19.7	9.7	8.3	9.0	7.6	6.0	6.8	8.0	7.7	7.9
17	19.7	18.4	19.0	9.1	8.0	8.6	8.3	6.8	7.6	8.2	7.7	7.9
18	19.1	17.0	18.2	9.3	8.5	8.9	8.8	7.3	8.0	8.4	8.0	8.2
19	19.9	17.6	18.6	9.8	8.6	9.2	10.1	7.8	8.9	8.7	8.2	8.5
20	20.9	18.7	19.7	10.6	9.2	9.8	11.3	9.6	10.4	8.6	8.4	8.5
21	20.4	18.8	19.8	11.5	10.4	10.9	11.2	10.2	10.8	8.9	8.6	8.7
22	19.3	17.9	18.5	11.8	10.8	11.3	10.2	9.5	9.9	8.9	8.7	8.8
23	18.4	17.0	17.5	12.1	10.7	11.4	9.8	8.9	9.5	8.7	8.3	8.5
24	19.2	16.9	17.8	12.3	10.8	11.5	8.9	8.0	8.5	8.4	7.9	8.2
25	19.7	18.4	18.9	12.8	11.5	12.1	8.0	7.7	7.8	8.0	7.7	7.9
26	19.0	15.6	16.7	14.4	12.8	13.6	7.8	7.3	7.6	8.1	7.9	8.0
27	16.1	14.8	15.4	15.4	14.0	14.6	7.3	6.8	7.0	8.3	7.7	8.0
28	15.1	13.8	14.4	16.5	15.1	15.9	6.8	6.1	6.4	8.6	7.9	8.2
29	14.7	13.8	14.2	16.4	15.2	15.8	6.2	5.8	6.0	9.0	8.4	8.6
30	15.6	14.4	14.9	15.2	13.8	14.4	6.4	5.7	6.1	9.2	8.5	8.9
31	17.4	15.5	16.4	---	---	---	6.7	6.0	6.3	9.2	8.9	9.0
MONTH	26.9	13.8	20.7	17.4	8.0	12.4	13.9	5.2	8.4	---	---	8.9

RED RIVER BASIN

07337000 RED RIVER AT INDEX, AR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	9.3	9.0	9.1	12.4	11.7	12.1	16.3	15.6	15.9	21.4	18.9	20.1
2	9.4	9.0	9.2	11.8	11.2	11.5	16.1	15.4	15.8	21.2	19.5	20.5
3	9.8	8.9	9.3	11.5	10.6	11.1	16.5	15.7	16.0	22.3	20.0	21.2
4	10.1	9.3	9.7	11.5	10.8	11.1	16.3	15.6	16.0	23.1	20.6	21.9
5	9.8	9.3	9.5	12.3	11.5	11.8	---	---	15.8	22.9	21.4	22.2
6	9.3	8.8	9.1	12.1	11.6	11.8	15.9	15.1	15.5	23.7	21.9	22.8
7	9.1	8.3	8.7	11.6	11.4	11.5	16.8	15.6	16.1	24.8	22.8	23.7
8	8.7	8.2	8.4	11.4	10.2	11.1	17.4	16.4	16.8	25.1	23.3	24.3
9	9.0	8.1	8.5	10.4	9.3	9.9	17.2	16.3	16.8	24.9	23.0	23.8
10	9.3	8.8	9.0	9.8	8.4	9.2	17.7	16.4	17.0	24.8	22.7	23.8
11	9.9	9.1	9.5	9.0	8.2	8.6	18.2	16.7	17.4	25.6	23.2	24.5
12	9.9	9.4	9.7	8.6	7.6	8.2	18.7	17.2	17.9	26.1	24.0	25.1
13	10.5	9.8	10.1	8.2	8.0	8.1	19.3	17.8	18.4	26.4	24.4	25.5
14	10.9	10.0	10.4	8.4	8.0	8.2	20.7	18.7	19.6	26.3	24.9	25.6
15	10.6	10.0	10.3	9.3	8.2	8.7	21.3	19.8	20.4	26.1	25.0	25.6
16	10.3	10.0	10.1	10.2	9.3	9.7	21.9	20.5	21.1	27.1	24.8	26.0
17	10.2	9.9	10.2	11.6	10.2	10.9	21.1	19.9	20.4	26.8	25.2	26.1
18	10.6	9.4	10.0	12.1	11.3	11.7	20.4	19.1	19.5	27.3	25.2	26.3
19	10.8	10.0	10.4	12.5	11.8	12.2	19.9	18.2	19.0	27.3	25.7	26.6
20	11.0	10.0	10.4	11.8	10.7	11.2	19.8	18.4	19.0	27.7	25.8	26.7
21	11.2	10.1	10.6	10.9	10.0	10.5	19.9	18.4	19.1	28.6	26.4	27.4
22	11.3	10.9	11.0	11.0	10.2	10.6	19.8	18.2	19.0	28.7	27.2	27.9
23	12.1	10.9	11.4	11.8	10.7	11.2	20.2	17.9	19.0	28.2	27.1	27.6
24	12.7	11.3	12.0	12.3	11.6	11.9	20.4	18.4	19.4	27.5	26.8	27.1
25	12.8	12.3	12.6	13.3	12.2	12.7	20.7	19.1	19.8	27.6	26.4	27.0
26	13.2	12.6	12.9	14.5	13.2	13.8	20.4	19.4	19.8	27.7	26.6	27.1
27	13.0	12.3	12.7	15.2	14.4	14.8	20.4	19.3	19.8	27.2	26.1	26.6
28	12.8	12.1	12.5	16.1	15.1	15.5	20.8	19.3	19.9	26.4	24.8	25.4
29	---	---	---	16.5	15.6	16.0	20.7	18.9	19.8	27.5	24.2	25.6
30	---	---	---	16.6	16.0	16.3	20.7	18.7	19.7	29.5	26.5	27.8
31	---	---	---	16.7	16.1	16.4	---	---	---	30.7	28.3	29.4
MONTH	13.2	8.1	10.3	16.7	7.6	11.6	---	---	18.3	30.7	18.9	25.2

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	31.6	29.0	30.2	31.8	30.5	31.3	32.5	30.2	31.3	31.3	29.5	30.4
2	31.3	29.2	30.3	31.5	29.4	30.4	32.9	30.4	31.5	31.0	29.2	30.0
3	31.0	29.5	30.3	33.3	28.1	30.2	32.4	30.5	31.5	30.9	28.8	29.8
4	30.9	29.5	30.2	33.8	27.4	30.1	30.6	29.3	29.9	30.8	28.8	29.8
5	30.3	27.4	28.7	37.2	27.2	31.3	31.1	28.8	29.7	30.2	27.7	29.0
6	27.4	25.5	26.4	36.6	28.8	32.6	30.1	29.0	29.4	34.4	24.9	28.5
7	26.6	24.8	25.7	33.7	31.3	32.4	29.8	28.4	29.0	32.2	26.3	29.0
8	26.4	24.7	25.5	33.9	31.5	32.7	31.0	28.0	29.3	32.8	27.4	29.9
9	27.9	25.8	26.7	34.3	32.1	33.0	31.5	28.8	30.1	29.6	23.0	26.1
10	29.0	26.8	27.7	33.9	31.8	32.6	31.3	29.6	30.4	24.9	22.1	23.7
11	28.5	27.4	27.9	37.3	29.5	33.5	30.8	29.3	29.9	23.9	22.4	23.2
12	30.2	27.3	28.5	32.9	29.8	31.4	29.9	28.7	29.2	22.8	21.9	22.3
13	32.1	27.5	30.0	32.0	30.3	31.1	29.2	28.2	28.7	24.4	22.7	23.4
14	31.0	28.9	30.0	32.6	30.4	31.4	30.3	28.0	28.9	24.4	23.6	24.0
15	31.1	28.7	29.9	33.4	30.9	32.1	30.5	26.4	28.4	24.3	23.6	23.9
16	31.0	28.5	29.8	33.6	31.5	32.5	31.3	28.1	29.7	---	---	23.5
17	30.8	28.9	29.8	33.1	30.3	31.9	31.7	29.2	30.4	25.6	23.4	24.3
18	30.2	29.0	29.6	37.2	28.6	32.3	32.5	29.8	30.9	26.9	24.8	25.8
19	31.3	28.8	29.9	33.6	29.5	32.0	32.6	30.4	31.4	28.2	26.0	27.0
20	32.2	29.2	30.7	33.9	31.5	32.6	---	---	31.4	29.2	27.1	28.0
21	32.8	28.7	30.9	33.6	31.6	32.5	31.5	28.0	30.1	29.7	27.9	28.9
22	32.5	30.2	31.3	33.4	30.9	32.0	32.3	26.1	29.0	29.8	28.1	29.1
23	32.5	30.5	31.5	32.7	30.9	31.7	31.7	27.8	30.0	29.4	28.0	28.8
24	32.6	30.7	31.5	32.4	29.0	30.7	32.1	29.8	30.9	29.5	27.7	28.6
25	32.7	30.6	31.7	34.9	28.3	31.3	32.8	30.3	31.4	29.5	27.9	28.7
26	33.0	28.3	30.6	33.0	28.9	31.2	33.0	30.7	31.7	29.4	27.9	28.6
27	31.4	26.7	29.0	33.1	30.8	31.9	32.6	30.5	31.4	30.1	27.5	28.8
28	31.5	25.7	29.1	33.1	31.1	32.0	32.2	29.5	31.0	30.1	28.2	29.1
29	32.5	28.2	30.6	33.0	31.0	32.0	32.5	27.7	30.3	30.8	27.1	29.0
30	32.5	30.1	31.3	32.5	30.9	31.6	32.3	28.9	30.7	34.9	26.1	29.4
31	---	---	---	32.3	30.2	31.2	32.0	30.3	31.1	---	---	---
MONTH	33.0	24.7	29.5	37.3	27.2	31.8	---	---	30.3	---	---	27.4

RED RIVER BASIN

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 mi².

PERIOD OF RECORD.--Oct 1991 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 460.74 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. No known regulation or diversions.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,700 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 21	0700	6,770	23.96	Jan 12	0100	3,650	16.83
Dec 24	0215	3,040	15.07	Feb 27	0230	3,490	16.36
Jan 7	2100	3,590	16.67	Mar 16	1645	2,870	14.55

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	1.1	11	16	24	63	90	7.1	.23	.01	.00	.00
2	.01	.62	7.3	12	29	36	33	4.3	.17	.00	.00	.00
3	.01	.38	128	9.9	28	24	18	2.7	.32	.00	.00	.00
4	.01	.28	97	9.7	20	18	12	1.7	.35	.00	.00	.00
5	.01	.22	29	915	16	16	10	1.3	.44	.00	.00	.00
6	.00	.17	12	1940	13	14	7.5	.99	.32	.00	.00	.00
7	.02	.17	34	2640	11	17	5.8	.77	.21	.00	.00	.00
8	.04	.17	813	2400	10	539	5.2	.72	.17	.00	.00	.00
9	.53	.18	179	785	8.8	192	4.4	17	.12	.00	.08	.00
10	.33	.22	51	227	622	79	3.5	18	.44	.00	.06	.00
11	.11	.19	21	731	392	37	2.8	7.7	47	.00	.02	.00
12	.10	.40	11	2620	107	23	2.5	3.8	36	.00	.02	.01
13	.43	1.2	6.6	392	45	17	2.3	2.3	9.3	.00	.02	.18
14	7.8	15	4.4	137	26	48	1.9	1.5	3.4	.00	.64	.10
15	3.3	9.4	3.2	112	18	1160	1.9	1.1	1.6	.00	1.2	1.2
16	1.2	4.6	2.3	80	15	2140	2.2	.62	.84	.00	1.2	4.0
17	.60	2.5	1.8	46	19	2370	2.1	.35	.46	.00	1.1	.52
18	.36	1.4	1.5	30	72	418	3.9	.29	.27	.00	.41	.47
19	.24	.87	1.2	21	83	468	3.3	.25	.22	.00	.12	.74
20	.15	.66	1220	17	96	373	2.8	.21	.16	.00	.05	.98
21	.14	.72	6030	15	55	107	4.6	.20	.08	.00	.02	.96
22	.15	1.5	2840	87	160	53	12	.18	.04	.00	.01	1.1
23	72	1.2	645	190	206	33	12	.15	.02	.00	.00	.57
24	289	.49	2600	69	80	24	6.5	.19	.01	.00	.00	.16
25	47	.53	691	37	43	19	5.4	.24	.01	.00	.00	.07
26	12	.34	142	1200	2390	16	6.4	.22	.01	.00	.00	.04
27	6.7	1.4	250	832	1700	15	301	.47	.01	.00	.00	.03
28	6.3	19	130	174	144	13	124	2.3	.01	.00	.00	.02
29	3.9	64	62	85	---	12	31	.97	.01	.00	.00	.41
30	2.8	18	38	48	---	15	14	.41	.01	.00	.00	.32
31	2.0	---	22	31	---	49	---	.26	---	.00	.00	---
TOTAL	457.25	146.91	16084.3	15908.6	6432.8	8408	732.0	78.29	102.23	0.01	4.95	11.88
MEAN	14.8	4.90	519	513	230	271	24.4	2.53	3.41	.000	.16	.40
MAX	289	64	6030	2640	2390	2370	301	18	47	.01	1.2	4.0
MIN	.00	.17	1.2	9.7	8.8	12	1.9	.15	.01	.00	.00	.00
AC-FT	907	291	31900	31550	12760	16680	1450	155	203	.02	9.8	24
CFSM	.10	.03	3.46	3.42	1.53	1.81	.16	.02	.02	.00	.00	.00
IN.	.11	.04	3.99	3.95	1.60	2.09	.18	.02	.03	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1998, BY WATER YEAR (WY)

	1992	1993	1994	1995	1996	1997	1998	1992	1993	1994	1995	1996	1997	1998
MEAN	164	190	298	149	242	202	164	248	89.0	71.3	6.42	19.0		
MAX	451	646	804	513	682	346	411	734	433	333	32.0	91.5		
(WY)	1994	1997	1992	1998	1997	1992	1997	1992	1992	1994	1992	1994		
MIN	.008	.093	.33	8.89	.12	8.01	10.4	2.53	.93	.000	.005	.002		
(WY)	1993	1996	1996	1996	1996	1996	1996	1998	1996	1998	1993	1993		

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1992 - 1998

ANNUAL TOTAL	56279.94	48367.22	
ANNUAL MEAN	154	133	153
HIGHEST ANNUAL MEAN			297
LOWEST ANNUAL MEAN			7.81
HIGHEST DAILY MEAN	6030	Dec 21	8230
LOWEST DAILY MEAN	.00	Jul 24	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 24	.00
INSTANTANEOUS PEAK FLOW			6770
INSTANTANEOUS PEAK STAGE			23.96
ANNUAL RUNOFF (AC-FT)	111600	95940	111000
ANNUAL RUNOFF (CFSM)	1.03	.88	1.02
ANNUAL RUNOFF (INCHES)	13.96	12.00	13.88
10 PERCENT EXCEEDS	172	176	252
50 PERCENT EXCEEDS	3.1	1.6	3.1
90 PERCENT EXCEEDS	.00	.00	.00

07342470 SOUTH SULPHUR RIVER NEAR COMMERCE, TX

LOCATION.--Lat 33°13'11", long 95°51'45", Hunt County, Hydrologic Unit 11140301, at State Highway 11, 0.7 mi upstream from St. Louis Southwestern Railroad bridge, 1.8 mi downstream from Dunbar Creek, and 3.0 mi southeast of Commerce.

DRAINAGE AREA.--189 mi².

PERIOD OF RECORD.--Chemical and biochemical analyses: Oct 1987 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (MG/L) (00300)	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)		
OCT	09...	1030	2.1	672	7.5	24.0	40	31	7.6	91	3.3	73	--
DEC	10...	1129	70	200	7.7	8.0	300	86	11.3	98	3.2	72	--
MAR	04...	1030	24	432	7.9	11.0	80	30	9.0	83	1.8	160	11
APR	28...	1148	129	213	7.6	16.0	110	74	--	--	3.2	84	16
JUN	04...	1501	1.4	719	7.7	31.5	35	22	9.9	137	2.6	130	9
JUL	07...	1754	1.3	701	9.8	37.0	100	6.6	16.3	247	6.4	79	--

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	
OCT	09...	24	2.9	95	5	7.7	110	67	56	.30	6.5	395
DEC	10...	25	2.3	11	.6	4.1	72	16	6.7	.22	8.7	124
MAR	04...	54	5.4	26	.9	3.2	150	44	14	.18	8.9	249
APR	28...	29	2.6	11	.5	4.1	68	17	6.5	.17	6.7	131
JUN	04...	43	4.8	96	4	7.3	120	81	58	.32	6.0	426
JUL	07...	27	2.9	108	5	6.9	180	63	57	.34	6.9	403

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L) (00535)	RESIDUE FIXED NON-FILTER-ABLE (MG/L) (00540)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	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-SOLVED (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	
OCT	09...	83	18	65	15.1	.092	15.2	--	.095	.84	.93	1.85
DEC	10...	110	18	92	1.23	.038	1.27	--	<.020	--	.58	.289
MAR	04...	48	10	38	--	<.010	1.26	23.6	<.020	--	.58	.209
APR	28...	198	28	170	2.64	.065	2.70	--	.236	1.0	1.3	.190
JUN	04...	53	6	47	12.3	.121	12.4	--	<.020	--	.85	1.29
JUL	07...	16	9	7	5.08	.250	5.33	--	.039	1.2	1.3	.437

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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1991 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage not determined. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 21	0715	3,960	15.66	Jan 12	0415	2,000	14.43
Dec 24	1300	1,140	13.33	Feb 26	1500	1,830	14.28
Jan 7	2000	1,180	13.44	Mar 16	2400	1,040	13.03

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.05	3.4	4.3	6.1	14	19	1.3	.00	.00	.00	.00
2	.00	.03	2.8	2.9	5.5	8.1	6.6	.85	.00	.00	.00	.00
3	.00	.02	82	2.3	4.1	4.6	2.4	.57	.00	.00	.00	.00
4	.00	.03	34	6.0	3.1	3.1	1.4	.34	.00	.00	.00	.00
5	.00	.03	9.1	149	2.4	2.6	1.0	.23	.00	.00	.00	.00
6	.00	.02	2.3	214	2.0	2.2	.76	.17	.00	.00	.00	.00
7	.00	.02	27	819	1.4	2.5	.64	.12	.00	.00	.00	.00
8	.00	.02	291	866	1.3	23	.39	.08	.00	.00	.00	.00
9	.35	.02	52	151	1.1	23	.31	21	.00	.00	.00	.00
10	.08	.02	13	44	130	11	.25	.97	.00	.00	.00	.00
11	.02	.01	3.1	212	140	4.8	.24	.01	.08	.00	.00	.00
12	.04	.04	1.0	1070	35	2.5	.20	.00	.00	.00	.00	.00
13	3.7	1.4	.41	72	16	1.6	.17	.00	.00	.00	.00	.00
14	16	5.4	.26	35	9.1	9.4	.16	.00	.00	.00	.00	.00
15	2.3	1.9	.14	28	6.1	262	.23	.00	.00	.00	.00	.00
16	.52	.55	.10	23	5.2	583	.20	.00	.00	.00	.00	.00
17	.17	.24	.06	13	15	711	.40	.00	.00	.00	.00	.00
18	.07	.15	.05	7.6	32	76	.25	.00	.00	.00	.00	.00
19	.05	.10	.04	4.9	31	102	.13	.00	.00	.00	.00	.00
20	.03	.13	327	3.3	29	69	.14	.00	.00	.00	.00	.00
21	.02	.17	2770	2.8	17	24	.24	.00	.00	.00	.00	.00
22	.02	.13	407	57	51	12	.21	.00	.00	.00	.00	7.1
23	27	.10	185	54	46	7.5	.22	.00	.00	.00	.00	13
24	135	.07	841	21	21	4.7	.17	.00	.00	.00	.00	.00
25	18	.06	79	12	11	3.1	.11	.00	.00	.00	.00	.00
26	3.2	.05	36	316	1050	1.9	1.5	.00	.00	.00	.00	.00
27	.88	.05	52	187	125	1.8	173	.00	.00	.00	.00	.00
28	.16	21	30	38	30	2.1	32	.00	.00	.00	.00	.00
29	.13	43	15	20	---	1.7	8.8	.00	.00	.00	.00	.00
30	.11	14	8.2	12	---	1.8	3.0	.00	.00	.00	.00	.00
31	.07	---	4.6	7.8	---	24	---	.00	---	.00	---	---
TOTAL	207.92	88.81	5276.56	4454.9	1826.4	2000.0	254.12	25.64	0.08	0.00	0.00	20.10
MEAN	6.71	2.96	170	144	65.2	64.5	8.47	.83	.003	.000	.000	.67
MAX	135	43	2770	1070	1050	711	173	21	.08	.00	.00	13
MIN	.00	.01	.04	2.3	1.1	1.6	.11	.00	.00	.00	.00	.00
AC-FT	412	176	10470	8840	3620	3970	504	51	.2	.00	.00	40

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1998, BY WATER YEAR (WY)

	1992	1993	1994	1995	1996	1997	1998	1992	1993	1994	1995	1996	1997	1998
MEAN	47.2	65.1	105	50.1	90.0	72.0	67.7	86.1	41.5	29.6	4.98	3.55		
MAX	179	212	257	144	290	130	171	247	126	119	31.6	11.5		
(WY)	1994	1997	1992	1998	1997	1992	1993	1992	1992	1994	1992	1995		
MIN	.001	.41	.000	3.45	.10	5.41	2.02	.83	.003	.000	.000	.000		
(WY)	1993	1996	1996	1996	1996	1996	1992	1998	1998	1993	1993	1993		

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1992 - 1998

ANNUAL TOTAL	24982.20	14154.53		
ANNUAL MEAN	68.4	38.8	55.1	
HIGHEST ANNUAL MEAN			99.8	1992
LOWEST ANNUAL MEAN			2.37	1996
HIGHEST DAILY MEAN	3400	2770	3400	Jun 14 1997
LOWEST DAILY MEAN	.00	.00	.00	Oct 1 1991
ANNUAL SEVEN-DAY MINIMUM	.00	.00	.00	Oct 1 1991
INSTANTANEOUS PEAK FLOW		3960	6870	Dec 21 1997
INSTANTANEOUS PEAK STAGE		15.66	16.68	Dec 21 1997
ANNUAL RUNOFF (AC-FT)	49550	28080	39890	
10 PERCENT EXCEEDS	55	45	76	
50 PERCENT EXCEEDS	.61	.11	.56	
90 PERCENT EXCEEDS	.00	.00	.00	

07342495 COOPER LAKE NEAR COOPER, TX

LOCATION.--Lat 33°20'00", long 95°37'30", Delta-Hopkins County line, Hydrologic Unit 11140301, in control room near center of dam on South Sulphur River, about 4.0 mi southeast of Cooper, and at river mile 23.2.

DRAINAGE AREA.--479.0 mi².

WATER-CONTENT RECORDS

PERIOD OF RECORD.--Oct 1991 to current year.

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

REMARKS.--The lake is formed by a rolled earthfill dam, 28,070 ft long, including the dike. Closure of dam and deliberate impoundment of water began Sep 28, 1991. The spillway is a 700-foot wide vertical faced uncontrolled ogee weir located near the right abutment of the dam. The service spillway (outlet works) consists of both service and emergency gates and low-flow release facilities. The outlet works structures is 452 feet long, and consists of an approach channel, approach channel U-frame structure, intake structure and service bridge, over 10.5-foot diameter conduits, and a stilling basin and discharge channel. The emergency part of the outlet structure consists of five 40- x 20-foot tainter gates. The dam was built, and is owned by the U.S. Army Corps of Engineers in cooperation with the North Texas Municipal Water District, the Sulphur River Municipal Water District, and the city of Irving. The principal uses of the dam and lake are for flood control, water supply, and recreation. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	459.0
Top of Flood Control Pool.....	446.2
Top of Conservation Pool.....	440.0
Invert, lowest gated outlet.....	398.0

COOPERATION.--Area and capacity tables provided by the U.S. Army Corps of Engineers. Record of contents provided by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 441,900 acre-ft, May 10, 1995 (elevation, 445.05 ft); minimum since first appreciable storage and after deliberate impoundment, 77 acre-ft, Oct 1-3, 1991 (elevation, 395.00 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 378,700 acre-ft, Dec 24 (elevation, 443.30 ft); minimum daily contents, 271,300 acre-ft, Sep 10-11 (elevation, 437.77 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	286200	288200	288000	343100	312800	321400	312600	311700	306100	297900	286900	276700
2	285800	288000	289300	338100	312200	317900	312200	310900	304900	299600	286300	276100
3	285400	286900	290800	333100	311900	315700	311500	310500	304400	299200	286200	275800
4	285100	286500	291000	328900	311500	314800	310700	309700	306500	299400	286500	275400
5	284900	286700	291000	327700	311300	313600	310500	311700	305900	300000	286300	274700
6	284700	286300	290600	331900	311300	312600	310500	312200	304700	299200	286200	274300
7	284300	285800	292800	349000	310900	313800	310100	311700	303800	298300	285600	274000
8	286000	285600	297500	361300	310500	314800	310300	311300	303600	297700	285100	273200
9	286500	285800	300600	360500	310700	314200	309700	313800	302800	297300	284900	272200
10	286300	285600	300600	357000	319800	313600	309300	312600	306500	297000	284300	271300
11	286000	285200	300400	359100	323800	312800	309000	312200	306300	296200	284100	271300
12	287600	286000	300200	369900	321000	312400	308200	311900	306100	297500	284900	272900
13	287300	286900	300400	368000	318900	312200	308600	311300	306100	297000	284900	273200
14	286900	286700	300000	363800	317300	314400	308200	311100	305500	296600	284700	273200
15	286500	286500	300000	358700	315900	319300	308200	311100	304900	296200	283900	277200
16	286200	286200	300000	353900	315400	332700	308200	310300	304400	295600	283400	279000
17	285800	286000	299800	348400	314600	341500	307800	309900	304000	295500	283000	279200
18	285600	285100	299600	343500	313400	341700	307600	309500	303600	294700	282500	278800
19	285400	284900	299800	337700	312400	341300	307400	309000	303800	294300	282100	278700
20	285200	284900	310900	332700	311900	336900	307800	308800	302800	294000	281600	278500
21	284900	284900	348200	327700	311700	331700	307600	308200	302300	293200	281200	278300
22	284700	284900	363800	324000	312100	326700	307400	307800	301700	292700	280700	278500
23	288000	284500	369700	321000	312200	321600	306800	306800	301300	292100	280300	278500
24	289100	284300	378700	318700	312100	317700	306500	306700	300700	291700	280100	278300
25	290400	284300	377300	317300	313000	315400	306100	306500	300200	291000	279700	277900
26	289100	284300	373900	320800	325300	313000	309700	306300	299800	290600	279200	277700
27	288600	284300	369100	322200	330100	313000	315000	308000	299200	290000	278800	277600
28	288200	287100	365300	319600	326500	312200	315500	307600	299000	289500	278500	277400
29	288000	288700	359300	316300	---	311900	314400	307400	298700	288700	278100	277000
30	288000	288400	353900	314000	---	313200	312600	307000	298300	288000	277700	276800
31	288000	---	348400	313600	---	313000	---	306500	---	287300	277000	---
MAX	290400	288700	378700	369900	330100	341700	315500	313800	306500	300000	286900	279200
MIN	284300	284300	288000	313600	310500	311900	306100	306300	298300	287300	277000	271300
(+)	438.73	438.75	441.84	440.16	440.78	440.13	440.11	439.78	439.31	438.69	438.10	438.09
(@)	+1500	+400	+60000	-34800	+12900	-13500	-400	-6100	-8200	-11000	-10300	-200
CAL YR 1997	MAX 425600	MIN 284300	(@) +34400									
WTR YR 1998	MAX 378700	MIN 271300	(@) -9700									

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

RED RIVER BASIN

07342495 COOPER LAKE NEAR COOPER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Sep 1992 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

331938095374701 - COOPER LAKE SITE AC

DATE	TIME	RESER- VOIR STORAGE (AC-FT) (00054)	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED SATUR- ATION (PER- CENT ATION) (00301)	COLI- FORM, FECAL, UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)
MAR												
04...	0947	316000	1.00	189	8.2	11.5	.55	8.8	81	K12	K17	66
04...	0949	--	10.0	189	8.2	11.0	--	8.6	78	--	--	--
04...	0951	--	20.0	189	8.2	11.0	--	8.5	77	--	--	--
04...	0953	--	30.0	189	8.2	11.0	--	8.4	76	--	--	--
04...	0955	--	43.0	189	8.2	10.5	--	8.4	75	--	--	67
JUN												
04...	1432	305000	1.00	192	8.6	28.5	.67	7.4	98	K1	K1	71
04...	1436	--	10.0	193	8.5	28.5	--	7.5	100	--	--	--
04...	1441	--	20.0	192	8.4	28.0	--	7.1	94	--	--	--
04...	1446	--	30.0	194	7.7	27.0	--	5.1	66	--	--	--
04...	1451	--	41.0	204	7.1	22.5	--	.4	5	--	--	75
AUG												
12...	1316	286000	1.00	213	8.5	31.0	1.04	8.4	114	K1	K1	78
12...	1321	--	10.0	215	8.0	29.5	--	6.4	85	--	--	--
12...	1327	--	20.0	215	7.8	29.0	--	5.8	76	--	--	--
12...	1332	--	30.0	217	7.2	29.0	--	2.2	29	--	--	--
12...	1336	--	39.0	226	7.0	28.5	--	.0	0	--	--	80

331938095374701 - COOPER LAKE 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)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
MAR											
04...	22	2.3	8.6	.5	3.1	70	11	4.2	.14	5.6	101
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	23	2.4	8.6	.5	3.3	72	11	4.3	.14	5.6	103
JUN											
04...	24	2.5	9.6	.5	2.9	74	12	4.5	.18	.47	102
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	26	2.7	9.3	.5	3.1	80	12	4.2	.20	4.6	113
AUG											
12...	27	2.8	10	.5	3.3	80	12	4.5	.22	2.2	109
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	27	2.9	10	.5	3.4	89	11	5.1	.22	3.0	117

07342495 COOPER LAKE NEAR COOPER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

331938095374701 - COOPER LAKE SITE AC

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
MAR											
04...	--	<.010	.429	<.020	--	.31	.017	.027	.08	15	<4.0
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	<.010	.443	<.020	--	.34	.019	.029	.09	100	4.3
JUN											
04...	.173	.014	.187	<.020	--	.30	<.010	<.010	--	<10	19
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	.392	.014	.406	<.020	--	.35	<.010	<.010	--	26	446
04...	.291	.011	.302	.220	.35	.57	.054	.074	.23	250	732
AUG											
12...	--	<.010	<.050	.084	.21	.29	<.010	.012	.04	<10	<4.0
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	<.010	<.050	.094	.19	.29	<.010	.012	.04	<10	26
12...	--	.011	<.050	.115	.20	.32	<.010	.019	.06	<10	134
12...	--	<.010	<.050	.200	.28	.47	.024	.038	.12	87	516

332110095422201 - COOPER LAKE SITE BC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (PER- CENT SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM- FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOC- CI FECAL, KF AGAR PER (COLS. 100 ML) (31673)	HARD- NESS TOTAL AS CACO3 (MG/L CACO3) (00900)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
MAR												
04...	1042	1.00	185	8.2	11.0	--	8.6	78	42	42	67	--
04...	1044	10.0	187	8.2	10.5	--	8.4	75	--	--	--	--
04...	1046	20.0	189	8.1	10.5	--	8.2	74	--	--	63	--
JUN												
04...	1511	1.00	197	8.4	29.0	.49	7.8	105	K1	K1	73	--
04...	1516	10.0	198	7.9	28.0	--	5.8	76	--	--	--	--
04...	1521	19.0	204	7.3	27.5	--	1.4	18	--	--	74	--
AUG												
12...	1354	1.00	215	8.6	31.0	.73	8.7	118	K1	K2	79	--
12...	1359	10.0	216	8.2	30.0	--	7.2	96	--	--	--	--
12...	1404	17.0	226	7.2	29.5	--	.1	1	--	--	82	2

332110095422201 - COOPER LAKE SITE BC

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
MAR											
04...	23	2.4	9.2	.5	3.1	71	10	4.3	.14	5.2	102
04...	--	--	--	--	--	--	--	--	--	--	--
04...	22	2.2	9.5	.5	3.0	71	11	5.1	.17	5.6	103
JUN											
04...	25	2.6	9.6	.5	3.2	76	12	4.3	.21	.82	104
04...	--	--	--	--	--	--	--	--	--	--	--
04...	25	2.6	9.4	.5	2.9	81	12	4.3	.17	2.0	108
AUG											
12...	27	2.8	10	.5	3.4	82	11	5.0	.23	2.7	112
12...	--	--	--	--	--	--	--	--	--	--	--
12...	28	2.9	10	.5	3.5	80	11	5.1	.22	3.9	114

RED RIVER BASIN

07342495 COOPER LAKE NEAR COOPER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

332110095422201 - COOPER LAKE SITE BC

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
MAR											
04...	--	<.010	.439	<.020	--	.34	.014	.024	.07	23	4.5
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	<.010	.391	.040	.30	.34	.020	.024	.07	15	5.6
JUN											
04...	.091	.012	.103	<.020	--	.32	<.010	<.010	--	<10	83
04...	--	--	--	--	--	--	--	--	--	--	--
04...	.076	.013	.089	.258	.28	.54	.017	<.010	--	<10	192
AUG											
12...	--	<.010	<.050	.082	.24	.32	<.010	.017	.05	<10	7.4
12...	.169	.010	.179	.091	.25	.34	<.010	.014	.04	<10	47
12...	--	<.010	<.050	.161	.22	.38	.014	.027	.08	130	410

331818095422501 - COOPER LAKE 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 (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (PER- CENT SOLVED SATUR- ATION) (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SOLVED SATUR- ATION) (MG/L) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)
MAR											
04...	1207	1.00	185	8.2	11.0	.50	9.1	83	--	--	67
04...	1209	10.0	187	8.2	11.0	--	9.0	82	--	--	--
04...	1211	20.0	186	8.2	11.0	--	8.8	80	--	--	--
04...	1213	34.0	189	8.1	11.0	--	8.7	79	--	--	66
JUN											
04...	1546	1.00	194	7.7	27.0	.27	6.0	78	K1	K1	74
04...	1551	10.0	195	7.7	27.0	--	5.7	74	--	--	--
04...	1600	20.0	196	7.4	26.0	--	3.8	48	--	--	--
04...	1604	31.0	230	7.0	23.0	--	.4	5	--	--	86
AUG											
12...	1430	1.00	214	8.6	30.5	.85	9.7	131	K1	K7	78
12...	1435	10.0	217	7.7	29.0	--	5.3	70	--	--	--
12...	1440	20.0	219	7.1	29.0	--	1.2	16	--	--	--
12...	1445	30.0	225	7.0	28.5	--	.1	1	--	--	81

331818095422501 - COOPER LAKE SITE CC

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
MAR											
04...	23	2.4	8.8	.5	3.0	72	11	3.9	.13	5.7	103
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	23	2.3	8.5	.5	3.1	71	10	3.9	.14	6.0	102
JUN											
04...	25	2.6	9.4	.5	3.0	74	12	4.2	.19	.85	103
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	30	2.9	10	.5	3.3	96	8.4	4.5	.20	4.3	127
AUG											
12...	27	2.8	10	.5	3.3	84	11	5.0	.23	3.2	113
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	28	2.9	10	.5	3.4	82	11	5.0	.22	3.2	114

RED RIVER BASIN

07342495 COOPER LAKE NEAR COOPER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

331818095422501 - COOPER LAKE SITE CC

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
MAR											
04...	--	<.010	.444	<.020	--	.46	.014	.024	.07	12	4.3
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	<.010	.441	.047	.33	.38	.014	.024	.07	19	29
JUN											
04...	.325	.017	.342	<.020	--	.34	.017	<.010	--	16	19
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	<.010	<.050	.795	--	<.10	.627	.663	2.0	2300	806
AUG											
12...	--	<.010	<.050	.088	.26	.35	<.010	.012	.04	<10	<4.0
12...	--	<.010	<.050	.090	.17	.26	<.010	.014	.04	<10	10
12...	--	<.010	<.050	.087	.19	.27	.014	.024	.07	20	100
12...	--	<.010	<.050	.240	.28	.51	.049	.063	.19	220	361

332019095441901 - COOPER LAKE SITE DC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, (PER- CENT SATUR- ATION) (00301)
MAR							
04...	1142	1.00	200	8.1	12.0	8.9	83
04...	1144	13.0	245	8.0	11.0	8.7	79
JUN							
04...	1613	1.00	227	8.2	29.5	6.8	92
04...	1615	12.0	228	7.8	29.0	5.8	78
AUG							
12...	1458	1.00	234	8.4	31.0	8.2	112
12...	1501	10.0	250	7.3	30.0	2.2	29

RED RIVER BASIN

07342495 COOPER LAKE NEAR COOPER, TX--Continued

Cooper Lake Site AC (331938095374701)

Phytoplankton Analyses October 1997 to September 1998

Date	3-4-98
Time	947

TOTAL CELLS/mL	5,129
NUMBER OF SPECIES	10
DEPTH COLLECTED (ft.)	0.90

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	60
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	120
<i>Pinnularia brevicostata</i> var. <i>brevicostata</i>	30
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	390
<i>Cosmarium</i> sp.	30
<i>Mougeotia</i> sp.	240
<i>Scenedesmus opoliensis</i>	30
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	3,599
<i>Chroococcus limneticus</i>	120
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	510

Cooper Lake Site AC (331938095374701)

Phytoplankton Analyses October 1997 to September 1998

Date	6-4-98
Time	1432

TOTAL CELLS/mL	9,267
NUMBER OF SPECIES	6
DEPTH COLLECTED (ft.)	1.1

Organisms	Cells/mL
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	210
<i>Scenedesmus opoliensis</i>	30
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	7,797
<i>Merismopedia tenuissima</i>	960
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	240
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	30

07342495 COOPER LAKE NEAR COOPER, TX--Continued

Cooper Lake Site AC (331938095374701)

Phytoplankton Analyses October 1997 to September 1998

Date	8-12-98
Time	1316

TOTAL CELLS/mL	40,788
NUMBER OF SPECIES	15
DEPTH COLLECTED (ft.)	1.7

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	60
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	90
<i>Navicula</i> sp.	60
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	360
<i>Cosmarium</i> sp.	30
<i>Staurastrum</i> sp.	120
<i>Tetrastrum punctatum</i>	30
CYANOPHYTA	
<i>Anabaena spiroides</i>	600
<i>Aphanocapsa delicatissima</i>	22,193
<i>Aphanocapsa elachista</i>	1,200
<i>Chroococcus limneticus</i>	480
<i>Merismopedia tenuissima</i>	5,278
<i>Oscillatoria</i> sp.	10,197
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	60
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	30

RED RIVER BASIN

07342495 COOPER LAKE NEAR COOPER, TX--Continued

Cooper Lake Site CC (331818095422501)

Phytoplankton Analyses October 1997 to September 1998

Date	3-4-98
Time	1207
TOTAL CELLS/mL	4,049
NUMBER OF SPECIES	11
DEPTH COLLECTED (ft.)	0.8

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	60
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	90
<i>Synedra ulna</i> var. <i>ulna</i>	30
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	180
<i>Chlamydomonas</i> sp.	150
<i>Scenedesmus acuminatus</i>	30
<i>Scenedesmus opoliensis</i>	60
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	2,999
EUGLENOPHYTA	
<i>Phacus</i> sp.	30
<i>Trachelomonas</i> sp.	360
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	60

Cooper Lake Site CC (331818095422501)

Phytoplankton Analyses October 1997 to September 1998

Date	6-4-98
Time	1546
TOTAL CELLS/mL	4,589
NUMBER OF SPECIES	7
DEPTH COLLECTED (ft.)	0.4

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	270
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	120
<i>Scenedesmus opoliensis</i>	30
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	2,999
<i>Merismopedia tenuissima</i>	960
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	180
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	30

07342495 COOPER LAKE NEAR COOPER, TX--Continued

Cooper Lake Site CC (331818095422501)

Phytoplankton Analyses October 1997 to September 1998

Date	8-12-98
Time	1430

TOTAL CELLS/mL	25,763
NUMBER OF SPECIES	13
DEPTH COLLECTED (ft.)	1.4

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	30
Order Pennales	
<i>Synedra ulna</i> var. <i>ulna</i>	30
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	120
<i>Chlamydomonas</i> sp.	150
<i>Scenedesmus opoliensis</i>	30
<i>Staurastrum</i> sp.	150
CYANOPHYTA	
<i>Anabaena spiroides</i>	600
<i>Anabaena</i> sp.	570
<i>Aphanocapsa delicatissima</i>	13,196
<i>Aphanocapsa elachista</i>	600
<i>Chroococcus limneticus</i>	1,080
<i>Oscillatoria</i> sp.	8,997
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	210

RED RIVER BASIN

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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jun 1942 to current year. Monthly discharge only for some periods, published in WSP 1311.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 371.91 ft above sea level. Prior to Feb 15, 1985, at site 360 ft to right and 90 ft upstream at same datum. Oct 1, 1970, at datum 3.00 ft higher. May 9, 1942, to Nov 8, 1949, nonrecording gage, and Nov 9, 1949, to May 13, 1955, water-stage recorder at site 1,060 ft to right of present gage. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since Sep 28, 1991, at least 10% of contributing drainage area has been regulated by Cooper Dam, 13.4 miles upstream from station. No known diversions.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--49 years (water years 1943-91), 416 ft³/s (10.72 in/yr), 301,400 acre-ft/yr.

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1943-1991).--Maximum discharge 47,200 ft³/s May 13, 1982 (gage height, 27.21 ft, from floodmark in gage well); no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	2.8	6.8	2360	351	1990	225	323	17	18	17	17
2	8.9	3.0	6.8	2340	279	1610	212	218	17	19	17	17
3	8.6	3.4	27	2320	179	825	210	167	17	19	17	17
4	7.2	3.8	12	2300	176	498	166	72	17	18	18	16
5	6.3	4.5	7.5	2720	89	495	15	21	18	18	19	16
6	5.5	4.9	6.4	2850	2.7	364	11	21	17	18	19	16
7	5.3	5.0	11	4630	2.2	199	9.6	21	17	18	18	16
8	6.0	4.8	179	4730	1.7	262	9.8	20	17	18	17	15
9	5.4	4.9	17	3130	1.8	236	9.8	22	17	18	17	16
10	4.7	5.0	9.8	2570	412	211	9.7	21	18	18	17	15
11	4.6	4.9	8.3	2820	857	204	9.6	21	18	18	17	16
12	5.4	5.2	8.1	3890	1530	176	9.7	21	18	19	18	16
13	6.1	5.5	7.8	2800	1250	96	9.5	22	18	18	18	16
14	5.0	4.8	7.6	2500	671	125	9.4	22	17	18	18	15
15	4.4	4.5	7.2	2410	658	607	9.4	21	18	17	18	19
16	4.4	3.4	7.1	2350	655	1080	9.8	21	18	17	18	17
17	4.5	3.6	7.0	2320	700	1530	9.8	20	18	17	21	15
18	4.9	3.5	7.0	2280	691	1770	9.8	20	18	17	39	14
19	5.0	3.5	7.0	2260	675	1680	9.7	18	18	17	19	14
20	5.0	3.6	235	2240	473	2060	9.8	19	18	17	19	13
21	4.7	4.1	1290	2240	222	2010	10	17	18	17	19	14
22	1.8	3.5	645	2260	222	1970	9.4	17	18	17	19	13
23	5.4	2.9	1480	1780	224	1950	2.2	17	18	17	20	13
24	8.0	2.8	2500	922	220	1730	18	17	17	18	19	13
25	3.7	2.8	2770	908	218	970	15	17	17	18	19	13
26	3.9	3.9	2680	1120	925	885	17	17	18	17	18	13
27	4.0	4.9	2630	1220	1550	546	422	18	19	17	18	13
28	3.8	7.3	2510	1480	2040	207	47	17	18	17	18	9.6
29	3.6	13	2440	1450	---	204	200	17	18	17	17	2.1
30	2.7	9.1	2400	1140	---	206	394	17	18	18	17	1.6
31	2.7	---	2390	362	---	291	---	17	---	17	17	---
TOTAL	160.6	138.9	24320.4	70702	15275.4	26987	2109.0	1299	530	547	582	421.3
MEAN	5.18	4.63	785	2281	546	871	70.3	41.9	17.7	17.6	18.8	14.0
MAX	9.1	13	2770	4730	2040	2060	422	323	19	19	39	19
MIN	1.8	2.8	6.4	362	1.7	96	2.2	17	17	17	17	1.6
AC-FT	319	276	48240	140200	30300	53530	4180	2580	1050	1080	1150	836
CFSM	.01	.01	1.49	4.33	1.04	1.65	.13	.08	.03	.03	.04	.03
IN.	.01	.01	1.72	4.99	1.08	1.90	.15	.09	.04	.04	.04	.03

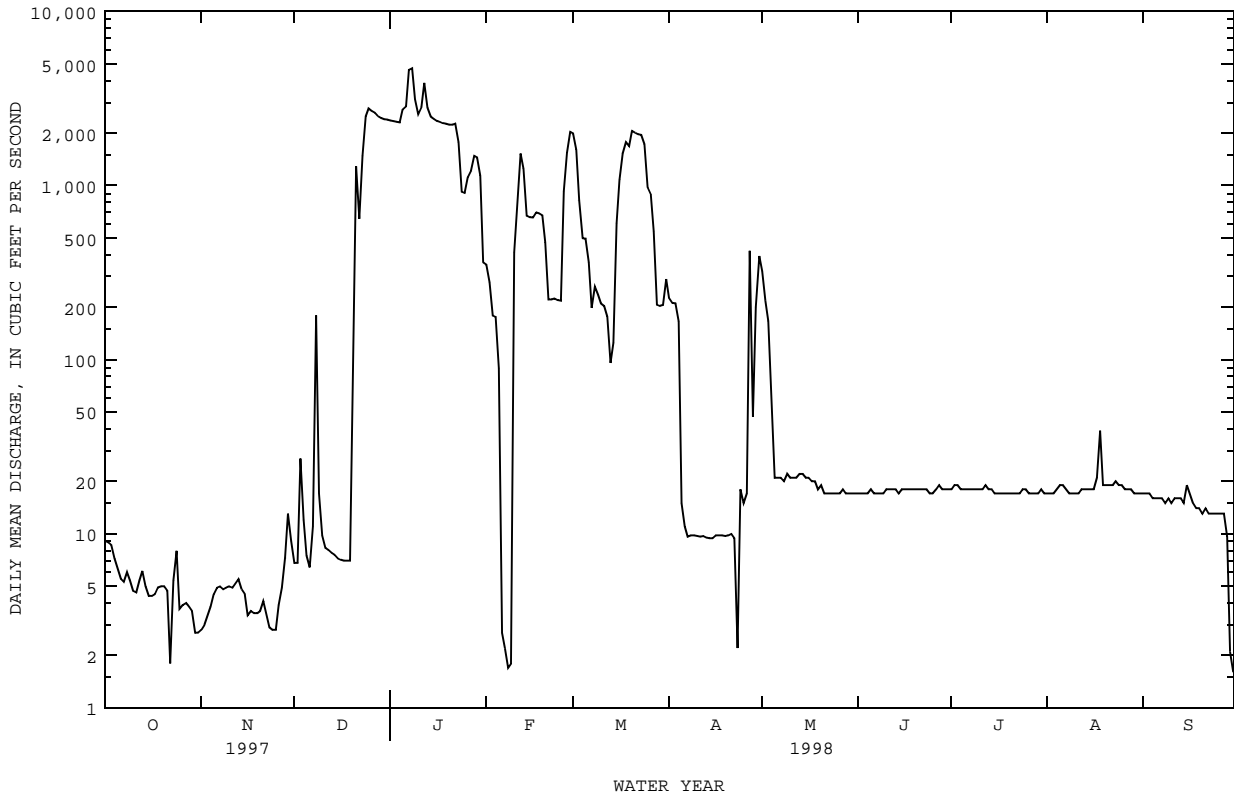
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1998z, BY WATER YEAR (WY)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
MEAN	119	508	897	732	584	1311	665	626	348	233	200
MAX	551	1280	1965	2281	1513	2768	1316	1902	939	839	1205
(WY)	1994	1995	1997	1998	1997	1992	1997	1995	1995	1992	1992
MIN	2.22	3.12	3.39	3.68	.71	4.17	5.16	15.7	5.95	2.32	3.07
(WY)	1996	1996	1996	1996	1996	1996	1996	1996	1993	1996	1993

07342500 SOUTH SULPHUR RIVER NEAR COOPER, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1992 - 1998z	
ANNUAL TOTAL	212838.2		143072.6		521	
ANNUAL MEAN	583		392		759	
HIGHEST ANNUAL MEAN					1997	
LOWEST ANNUAL MEAN					1996	
HIGHEST DAILY MEAN	4850	Feb 21	4730	Jan 8	4850	Feb 21 1997
LOWEST DAILY MEAN	1.2	Jun 7	1.6	Sep 30	.00	Oct 1 1991
ANNUAL SEVEN-DAY MINIMUM	2.3	Jun 3	3.1	Oct 28	.00	Oct 1 1991
INSTANTANEOUS PEAK FLOW			5630	Jan 8	6160	Feb 21 1997
INSTANTANEOUS PEAK STAGE			19.16	Jan 8	19.90	May 14 1995
ANNUAL RUNOFF (AC-FT)	422200		283800		377800	
ANNUAL RUNOFF (CFSM)	1.11		.74		.99	
ANNUAL RUNOFF (INCHES)	15.02		10.10		13.44	
10 PERCENT EXCEEDS	2450		1850		1700	
50 PERCENT EXCEEDS	14		18		18	
90 PERCENT EXCEEDS	4.2		4.7		1.4	

z Period of regulated streamflow.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Oct 1958 to Sep 1966, Oct 1967 to current year. Chemical and biochemical analyses: Dec 1979 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct 1958 to Sep 1966, Oct 1967 to Sep 1989.

WATER TEMPERATURE: Oct 1958 to Sep 1966, Oct 1967 to Sep 1989.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 4,710 microsiemens, Aug 14, 1973; minimum daily, 82 microsiemens, Jul 2, 1976, Jul 12, 1988.

WATER TEMPERATURE: Maximum daily, 36.0°C, Aug 6, 1960, Aug 10, 1962; minimum daily, 0.0°C, on many days during winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY SATUR-ATION (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	
OCT 08...	1301	6.0	221	7.8	24.0	40	33	6.5	79	1.3	87
DEC 17...	0900	7.7	236	7.1	9.0	18	2.6	9.6	84	.6	88
MAR 04...	1240	500	180	7.7	12.0	70	24	11.7	110	1.9	68
JUN 04...	1110	16	205	6.8	28.0	40	31	5.9	76	1.6	77
JUL 07...	1530	17	215	8.1	36.5	40	20	7.5	112	2.0	75
AUG 12...	1245	16	207	8.2	30.5	17	2.7	8.0	108	1.7	80

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
OCT 08...	29	3.2	9.6	.5	3.2	89	9.9	5.9	.24	3.9	119
DEC 17...	30	3.3	12	.6	3.4	90	13	7.4	.19	1.9	125
MAR 04...	23	2.4	8.7	.5	3.0	72	10	4.4	.16	5.4	103
JUN 04...	26	2.8	10	.5	3.1	77	14	5.7	.19	1.3	110
JUL 07...	25	2.7	11	.5	3.1	78	13	5.3	.24	1.1	109
AUG 12...	27	2.8	10	.5	3.4	82	11	5.1	.21	2.1	112

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L) (00535)	RESIDUE FIXED NON-FILTER-ABLE (MG/L) (00540)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
OCT 08...	67	12	55	.088	.011	.099	.034	.29	.32	.017	.023
DEC 17...	17	8	9	--	<.010	.098	.079	.43	.51	<.010	.020
MAR 04...	26	4	22	--	<.010	.376	.022	.36	.38	.016	.029
JUN 04...	79	8	71	.200	.015	.215	.034	.36	.40	.021	<.010
JUL 07...	62	11	51	--	<.010	<.050	<.020	--	.38	.083	.026
AUG 12...	12	5	7	--	.011	<.050	<.020	--	.31	.012	.016

07342500 SOUTH SULPHUR RIVER NEAR COOPER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)
OCT 08...	.07	7.3	--	--	--	--	--	--	--	--	--
DEC 17...	.06	6.7	--	--	--	--	--	--	--	--	--
MAR 04...	.09	7.7	1	37	<1.0	<8.0	<14	<12	<10	13	<100
JUN 04...	--	6.6	1	49	<1.0	<8.0	<14	<12	<10	<10	<100
JUL 07...	.08	7.0	--	--	--	--	--	--	--	--	--
AUG 12...	.05	7.2	2	46	<1.0	<8.0	19	<12	<10	89	<100

DATE	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)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
OCT 08...	--	--	--	--	--	--	--	--	--	--
DEC 17...	--	--	--	--	--	--	--	--	--	--
MAR 04...	<4	<4.0	<.1	<60	<40	<1	<4.0	183	<10	<20
JUN 04...	<4	6.9	<.1	<60	<40	<1	<4.0	215	<10	<20
JUL 07...	--	--	--	--	--	--	--	--	--	--
AUG 12...	4	<4.0	<.1	<60	<40	<1	<4.0	220	<10	<20

LOCATION.--Lat 33°28'29", long 95°35'15", Lamar County, Hydrologic Unit 11140301, on left bank at downstream side of highway embankment near left end of downstream 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 mi².

PERIOD OF RECORD.--Oct 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is 372.42 ft above sea level. Prior to Nov 8, 1949, nonrecording gage, Nov 8, 1949, to May 21, 1960, water-stage recorder at site 50 ft upstream at datum 9.00 ft higher, and from May 22, 1960, to Sep 30, 1970, at datum 5.00 ft higher. Satellite telemeter at station.

REMARKS.--Records good. No known regulation or diversion. In 1928-29, the channel was rectified for a distance of 28 mi upstream and 18 mi downstream from this station.

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.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20,000 ft³/s:

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	.12	5.9	42	79	112	96	12	2.7	e.00	e.00	.00
2	.07	.05	4.2	40	74	81	44	10	2.1	e.00	e.00	.00
3	.06	.03	952	45	53	67	31	8.9	1.8	e.00	e.00	.00
4	.05	.02	69	55	42	63	24	8.2	7.6	e.00	e.00	.00
5	.05	.02	12	2560	35	62	22	7.6	6.1	e.00	e.00	.00
6	.05	.02	4.9	2670	31	57	21	7.3	4.5	e.00	e.00	.00
7	.05	.02	116	7270	27	590	19	7.6	3.4	e.00	e.00	.00
8	.46	.02	2350	3890	24	1310	17	8.1	3.0	e.00	e.00	.00
9	2.8	.02	281	1140	25	521	16	7.7	.50	e.00	e.00	.00
10	44	.04	89	326	1090	141	13	6.9	.00	e.00	e.00	.00
11	8.0	.03	39	3040	825	85	12	6.2	.00	e.00	e.00	.00
12	5.6	.56	27	2880	145	63	12	5.6	.00	e.00	e.00	.00
13	424	6.4	21	510	75	55	13	5.4	.00	e.00	e.00	.00
14	23	18	19	244	54	325	11	5.4	.00	e.00	e.00	.00
15	6.6	6.8	17	219	46	4130	11	5.0	.00	e.00	e.00	933
16	3.3	2.9	15	130	59	5930	13	4.6	.00	e.00	e.00	675
17	1.9	1.3	14	91	879	3070	10	4.3	.00	e.00	e.00	316
18	1.3	.74	13	70	395	669	10	4.1	.00	e.00	.00	105
19	.91	.46	13	57	232	2290	9.9	3.9	.00	e.00	.00	32
20	.73	.31	2190	50	173	512	10	3.8	.00	e.00	.00	12
21	.69	.20	7080	48	94	179	16	3.7	.00	e.00	.00	6.1
22	.79	.13	803	1210	413	107	18	3.6	.00	e.00	.00	314
23	240	.09	1640	333	220	77	11	3.6	.00	e.00	.00	1410
24	563	.07	3500	125	97	61	9.9	3.6	.00	e.00	.00	207
25	26	.06	421	80	70	50	9.1	4.0	.00	e.00	.00	57
26	27	.06	580	2160	3340	41	11	6.5	.00	e.00	.00	18
27	6.1	.05	705	640	598	38	701	9.5	e.00	e.00	.00	6.5
28	2.0	302	199	202	197	45	74	7.6	e.00	e.00	.00	2.5
29	.90	386	109	112	---	37	26	6.0	e.00	e.00	.00	.87
30	.54	19	69	74	---	33	16	4.4	e.00	e.00	.00	.32
31	.30	---	52	60	---	325	---	3.4	---	e.00	.00	---
TOTAL	1390.33	745.52	21410.0	30373	9392	21126	1306.9	188.5	31.70	0.00	0.00	4095.29
MEAN	44.8	24.9	691	980	335	681	43.6	6.08	1.06	.000	.000	137
MAX	563	386	7080	7270	3340	5930	701	12	7.6	.00	.00	1410
MIN	.05	.02	4.2	40	24	33	9.1	3.4	.00	.00	.00	.00
AC-FT	2760	1480	42470	60240	18630	41900	2590	374	63	.00	.00	8120
CFSM	.16	.09	2.50	3.55	1.22	2.47	.16	.02	.00	.00	.00	.49
IN.	.19	.10	2.89	4.09	1.27	2.85	.18	.03	.00	.00	.00	.55

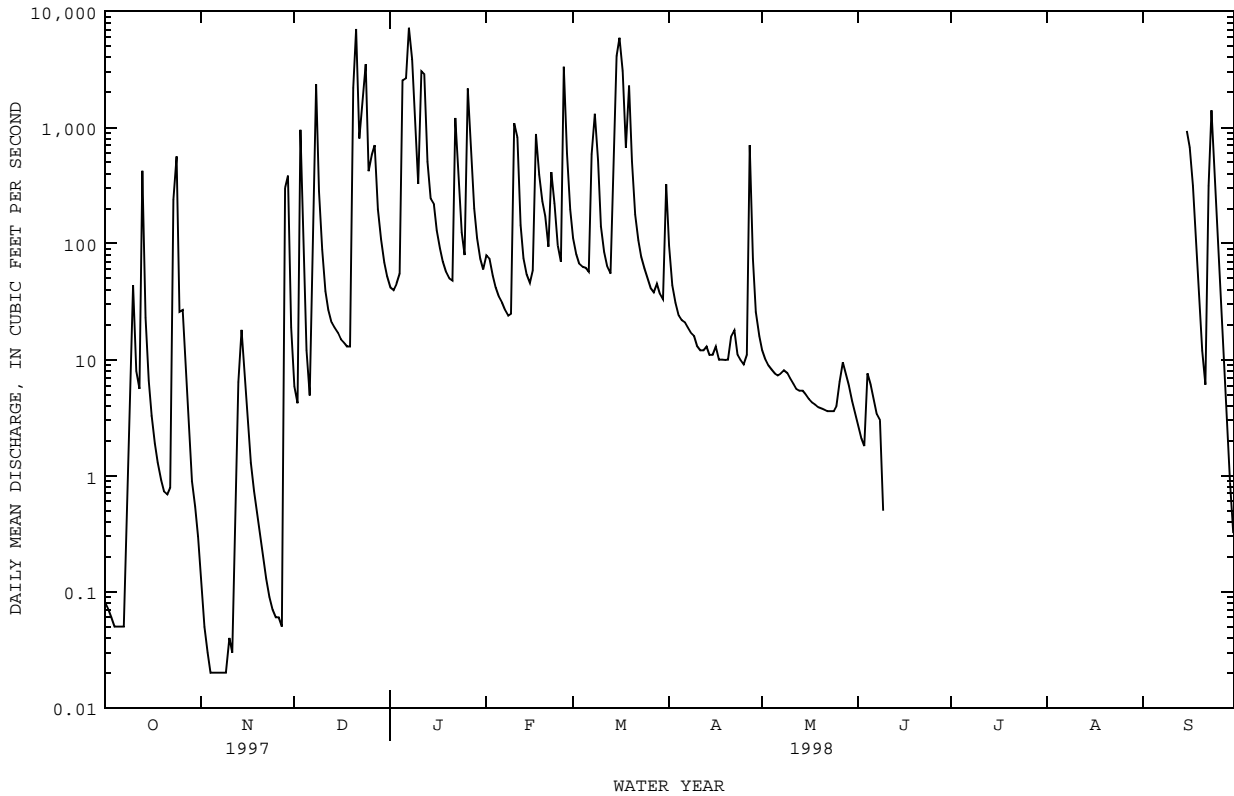
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 1998, BY WATER YEAR (WY)

MEAN	223	253	281	213	366	344	397	473	306	99.8	21.0	114
MAX	1784	1406	1527	1172	1483	1223	3017	2461	1792	872	160	584
(WY)	1972	1958	1992	1950	1950	1968	1966	1982	1989	1976	1971	1973
MIN	.000	.000	.000	.16	.81	4.43	2.97	2.43	.28	.000	.000	.000
(WY)	1953	1956	1956	1964	1976	1954	1972	1972	1988	1954	1952	1952

07343000 NORTH SULPHUR RIVER NEAR COOPER, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1950 - 1998	
ANNUAL TOTAL	99919.52		90059.24		256	
ANNUAL MEAN	274		247		34.7	
HIGHEST ANNUAL MEAN					541	1957
LOWEST ANNUAL MEAN					34.7	1996
HIGHEST DAILY MEAN	8290	Feb 20	7270	Jan 7	40900	Oct 19 1971
LOWEST DAILY MEAN	.02	Nov 4	.00	Jun 10	.00	Oct 1 1949
ANNUAL SEVEN-DAY MINIMUM	.02	Nov 3	.00	Jun 10	.00	Aug 2 1951
INSTANTANEOUS PEAK FLOW			10700	Dec 21	90600	Oct 19 1971
INSTANTANEOUS PEAK STAGE			12.34	Dec 21	36.16	Oct 19 1971
ANNUAL RUNOFF (AC-FT)	198200		178600		185800	
ANNUAL RUNOFF (CFSM)	.99		.89		.93	
ANNUAL RUNOFF (INCHES)	13.47		12.14		12.62	
10 PERCENT EXCEEDS	475		538		293	
50 PERCENT EXCEEDS	14		7.3		11	
90 PERCENT EXCEEDS	.08		.00		.00	

e Estimated



LOCATION.--Lat 33°23'26", long 95°03'44", Red River County, Hydrologic Unit 11140302, downstream side at left end of bridge on County Road 2152, 2.3 mi downstream from U.S Highway 271, 1.0 mi downstream from Little Mustang Creek, 2.8 mi northeast of Talco.

DRAINAGE AREA.--1,405 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Dec 1956 to current year. Prior to October 1997, published as "near Talco" (station 080343200).

REVISED RECORDS.--WDR TX-76-1: (P).

GAGE.--Water-stage recorder. Datum of gage is 275.48 ft above sea level. Prior to May 21 1997, at site 2.3 mi upstream at datum 15.34 ft higher. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. The River Crest Steam Electric Generating Plant diverts an unknown amount of water upstream from station. Since Sep 1991, at least 10% of contributing drainage area has been regulated by Cooper Lake (see station 07342495), capacity 441,400 acre-ft, 44 mi upstream. Flow may be slightly affected at times by discharge from the flood-detention pools of 14 floodwater-retarding structures with a combined detention capacity of 8,210 acre-ft. These structures control runoff from 23.4 mi² in the Auds and Depot Creek drainage basin.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--35 years (water years 1957-91) prior to regulation by Cooper Lake (station 07342495), 1,408 ft³/s (1,020,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1957-91).--Maximum discharge 48,000 ft³/s Dec 11,1971 (gage height, 21.20 ft); no flow at times, at site 2.3 mi upstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in 1908 and 1914 each reached a stage of 27.5 ft, and flood in 1945 reached a stage of 26.5 ft, from information by local residents, at site 2.3 mi upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	161	653	14600	333	334	4610	719	3700	373	236	7.5	14
2	105	3820	9150	299	219	7140	452	2840	256	226	7.7	12
3	76	3220	3880	294	161	10600	246	2260	153	187	7.5	11
4	59	1050	3020	243	219	10500	676	1530	97	157	7.6	11
5	53	563	3180	218	172	6240	14800	1360	64	113	7.5	13
6	46	336	3170	209	130	4570	19900	1140	44	71	6.4	22
7	48	2310	3060	210	730	3430	9690	665	34	52	7.6	32
8	50	18100	2920	348	3740	2760	4480	235	28	39	13	37
9	47	11800	2810	674	2520	2580	2900	123	25	31	50	32
10	43	4080	2740	835	1320	2580	2000	87	41	26	59	23
11	44	1490	2710	670	1190	2750	2350	69	477	23	44	17
12	39	947	2680	502	1530	2700	2780	58	415	21	32	13
13	29	875	2650	400	12700	8900	2820	50	602	20	25	12
14	22	1380	2630	355	21300	14100	2450	45	2310	19	20	11
15	19	1480	2940	313	11900	9720	2340	41	5080	19	17	11
16	17	1460	7900	217	5350	5390	2300	46	4450	21	21	9.8
17	16	1960	6780	175	2900	3640	2120	69	2040	25	23	9.1
18	14	6170	4470	151	2030	2830	1740	62	1150	24	19	9.2
19	13	4180	3160	137	1930	2540	1480	50	1180	18	16	9.2
20	12	2290	2560	130	10200	2420	914	43	1380	14	15	9.2
21	24	1890	2280	125	28900	2360	828	e150	1420	12	13	8.6
22	1670	1670	1840	122	26800	2320	870	618	1410	11	14	7.8
23	3960	1400	1680	120	12500	2310	988	441	1400	10	13	9.7
24	1920	6510	1570	300	7600	2300	801	213	1340	9.3	14	9.9
25	991	27700	1350	887	4920	2300	636	148	1050	9.7	19	9.8
26	572	30700	1280	790	4650	2270	7150	131	908	9.8	21	10
27	339	13800	1200	639	8550	2140	15600	121	809	9.3	20	11
28	986	5820	800	557	6660	1660	12900	141	415	8.6	19	10
29	5680	3800	560	512	---	1230	8780	176	275	8.1	18	9.9
30	2450	12500	489	455	---	873	5110	131	248	7.8	16	10
31	734	---	450	377	---	822	---	230	---	7.6	15	---
TOTAL	20239	173954	100509	11597	181155	130585	130820	16973	29474	1445.2	587.8	414.2
MEAN	653	5798	3242	374	6470	4212	4361	548	982	46.6	19.0	13.8
MAX	5680	30700	14600	887	28900	14100	19900	3700	5080	236	59	37
MIN	12	336	450	120	130	822	246	41	25	7.6	6.4	7.8
AC-FT	40140	345000	199400	23000	359300	259000	259500	33670	58460	2870	1170	822
CFSM	.48	4.25	2.38	.27	4.74	3.09	3.19	.40	.72	.03	.01	.01
IN.	.55	4.74	2.74	.32	4.94	3.56	3.57	.46	.80	.04	.02	.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1997z, BY WATER YEAR (WY)

	858	2187	2927	1254	2124	2600	1751	2183	955	812	445	134
MEAN	858	2187	2927	1254	2124	2600	1751	2183	955	812	445	134
MAX	2208	5798	5315	2416	6470	4213	4361	6191	1799	3164	1832	299
(WY)	1994	1997	1992	1995	1997	1992	1997	1995	1992	1992	1992	1996
MIN	12.8	12.9	24.0	62.6	12.7	50.3	83.1	439	133	4.39	2.15	2.18
(WY)	1996	1996	1996	1996	1996	1996	1996	1996	1993	1993	1993	1993

RED RIVER BASIN

07343210 SULPHUR RIVER BELOW TALCO, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1992 - 1998z	
ANNUAL TOTAL	577556.5		334849.1		1432	
ANNUAL MEAN	1582		917		2207	
HIGHEST ANNUAL MEAN					161	
LOWEST ANNUAL MEAN					2207	
HIGHEST DAILY MEAN	28900	Feb 21	9040	Jan 9	31200	Oct 30 1991
LOWEST DAILY MEAN	6.4	Aug 6	7.1	Jun 29	1.0	Aug 31 1993
ANNUAL SEVEN-DAY MINIMUM	7.4	Jul 31	7.3	Jun 26	1.1	Aug 27 1993
INSTANTANEOUS PEAK FLOW			9530	Jan 9	h39500	Feb 22 1997
INSTANTANEOUS PEAK STAGE			27.13	Jan 9	27.13	Jan 9 1998
ANNUAL RUNOFF (AC-FT)	1146000		664200		1037000	
ANNUAL RUNOFF (CFSM)	1.16		.67		1.05	
ANNUAL RUNOFF (INCHES)	15.74		9.13		14.25	
10 PERCENT EXCEEDS	4650		3490		3710	
50 PERCENT EXCEEDS	172		65		271	
90 PERCENT EXCEEDS	10		8.9		9.3	

e Estimated

07343210 SULPHUR RIVER BELOW TALCO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Jan 1965 to Sep 1995. Chemical and biochemical analyses: Jan 1968 to Sep 1995, Oct 1996 to current year. Pesticide analyses: Jan 1968 to Sep 1995

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct 1966 to Sep 1991.

WATER TEMPERATURES: Oct 1966 to Sep 1991.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,800 microsiemens Feb 17, 1976; minimum daily 65 microsiemens Jan 15, 1989.

WATER TEMPERATURE: Maximum daily, 39.0°C, Aug 13, 1987; minimum daily, 0.0°C, on several days during winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

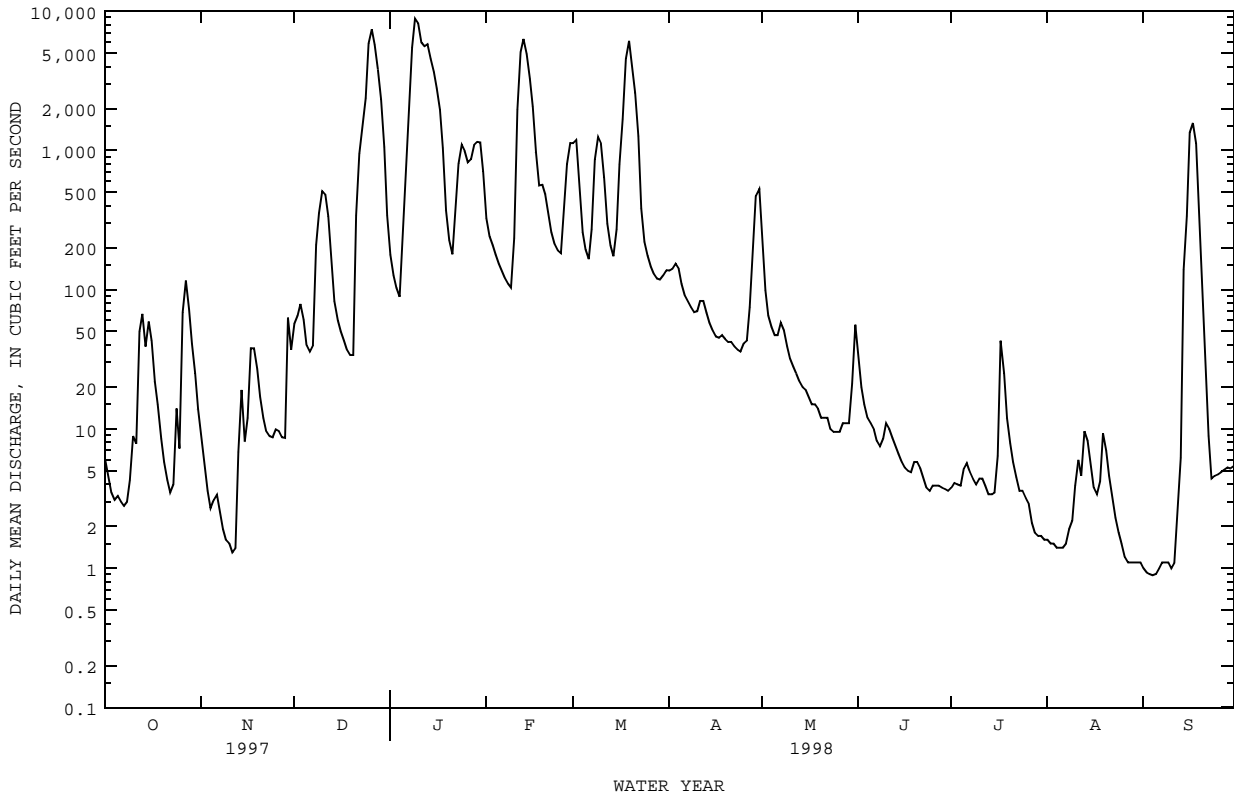
DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CAC03) (00900)	
DATE		HARD-NESS NONCARB DISSOLV FLD. AS CAC03 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
DATE		SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDE (MG/L) (00530)	RESIDUE VOLA-TILE, SUS-PENDE (MG/L) (00535)	RESIDUE FIXED NON FILTER-ABLE (MG/L) (00540)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)
FEB	27...											
	1050	6450	238	8.0	12.5	140	300	9.7	93	3.0	94	
APR	15...	98	470	8.7	22.0	24	18	--	--	.2	180	
	0920											
	1140	284	320	7.7	17.5	65	120	7.5	79	3.1	110	
JUN	24...	8.2	706	7.9	30.0	14	7.2	6.5	87	6.6	220	
AUG	06...	1100	9.3	490	7.9	27.5	110	28	5.6	71	1.0	160
SEP	10...	1315	8.9	401	8.0	27.5	55	9.0	6.5	85	1.5	--
FEB	27...	7	34	2.3	11	.5	2.3	87	19	5.3	.23	5.7
APR	15...	25	63	4.7	28	.9	3.4	150	51	20	.25	2.5
	30...	23	40	3.0	17	.7	3.4	89	36	12	.23	5.3
JUN	24...	48	75	6.9	52	2	3.6	170	100	47	.35	3.8
AUG	06...	9	55	5.4	36	1	3.4	150	56	23	.32	5.0
SEP	10...	--	--	--	--	--	--	140	--	--	--	--
FEB	27...	133	658	90	568	--	<.010	.206	.032	.29	.32	.031
APR	15...	264	35	7	28	--	<.010	<.050	.045	.38	.42	.016
	30...	180	259	33	226	1.85	.092	1.94	.261	1.0	1.3	.087
JUN	24...	393	20	6	14	--	<.010	<.050	.029	.25	.28	<.010
AUG	06...	275	60	10	50	--	<.010	.059	.060	.38	.44	<.010
SEP	10...	--	23	8	15	--	<.010	<.050	.038	.29	.33	<.010

RED RIVER BASIN

07343500 WHITE OAK CREEK NEAR TALCO, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1973 - 1998z	
ANNUAL TOTAL	293096.0		176636.84		564	
ANNUAL MEAN	803		484		1160	
HIGHEST ANNUAL MEAN					1992	
LOWEST ANNUAL MEAN					55.8	
HIGHEST DAILY MEAN	15900	Feb 22	8840	Jan 9	31700	Jan 24 1980
LOWEST DAILY MEAN	1.3	Nov 11	.89	Sep 4	.00	Aug 30 1973
ANNUAL SEVEN-DAY MINIMUM	2.0	Nov 6	.96	Aug 31	.00	Jul 24 1978
INSTANTANEOUS PEAK FLOW			9850	Jan 9	34600	Jan 24 1980
INSTANTANEOUS PEAK STAGE			17.98	Jan 9	19.86	Jan 24 1980
ANNUAL RUNOFF (AC-FT)	581400		350400		408600	
ANNUAL RUNOFF (CFSM)	1.63		.98		1.14	
ANNUAL RUNOFF (INCHES)	22.07		13.30		15.51	
10 PERCENT EXCEEDS	2600		1130		1560	
50 PERCENT EXCEEDS	88		34		56	
90 PERCENT EXCEEDS	4.2		2.0		1.6	

e Estimated
z Period of regulated streamflow.



07343500 WHITE OAK CREEK NEAR TALCO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Oct 1967 to Jun 1989. Chemical and biochemical analyses: Nov 1982 to Sep 1985, Oct 1991 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct 1967 to Sep 1989.
WATER TEMPERATURES: Oct 1967 to Sep 1989.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,220 microsiemens Jun 15, 1972; minimum daily 33 microsiemens May 16, 1969.
WATER TEMPERATURE: Maximum daily, 37.0°C, Jul 18, Aug 3, 15, 1975, and Aug 7, 1986; minimum daily, 0.0°C, on several days during Jan 1968, 1970, 1978, and 1984.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, (PER-CENT SATUR-5 DAY) (MG/L) (00301)	OXYGEN DEMAND, (PER-CENT SATUR-5 DAY) (MG/L) (00310)	HARD-NESS TOTAL (MG/L) (00900)	HARD-NESS NONCARB FLD. AS CACO3 (MG/L) (00904)
DEC 15...	1420	59	134	7.6	7.0	280	34	13.1	107	3.5	39	9
MAR 06...	0806	180	240	6.8	12.0	130	26	9.4	88	1.7	59	21
APR 30...	1440	592	133	7.0	17.5	55	57	7.2	76	2.6	33	3
JUN 24...	1431	1.0	568	7.7	32.0	60	13	7.2	100	2.1	120	--

DATE	CALCIUM DIS-SOLVED (MG/L) AS CA (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L) AS MG (00925)	SODIUM, DIS-SOLVED (MG/L) AS NA (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L) AS K (00935)	ALKA-LINITY WAT DIS-FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L) AS SO4 (00945)	CHLO-RIDE, DIS-SOLVED (MG/L) AS CL (00940)	FLUO-RIDE, DIS-SOLVED (MG/L) AS F (00950)	SILICA, DIS-SOLVED (MG/L) AS SIO2 (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
DEC 15...	9.9	3.5	11	.8	7.9	30	20	12	.16	8.7	92
MAR 06...	14	5.8	19	1	4.5	38	37	17	<.10	8.0	131
APR 30...	7.9	3.1	10	.8	5.0	30	15	8.9	.12	3.7	74
JUN 24...	28	12	54	2	8.7	120	68	49	.41	6.3	301

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L) (00535)	RESIDUE FIXED NON-FILTER-ABLE (MG/L) (00540)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L) AS N (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L) AS N (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L) AS N (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L) AS N (00610)	NITRO-GEN, AMMONIA SOLVED (MG/L) AS N (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L) AS N (00607)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L) AS N (00623)	PHOS-PHORUS DIS-SOLVED (MG/L) AS P (00666)
DEC 15...	44	8	36	--	<.010	<.050	--	.040	.83	.87	.208
MAR 06...	31	5	26	--	<.010	.459	180	.068	.69	.75	.092
APR 30...	102	15	87	.311	.027	.338	--	.257	.61	.86	.129
JUN 24...	30	14	16	--	<.010	<.050	--	.025	.60	.63	.057

DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L) AS P (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L) AS PO4 (00660)	CARBON, ORGANIC TOTAL (MG/L) AS C (00680)	ARSENIC DIS-SOLVED (UG/L) AS AS (01000)	BARIIUM, 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)
DEC 15...	.202	.62	14	--	--	--	--	--	--	--	--
MAR 06...	.084	.26	14	<1	52	<1.0	<8.0	<14	<12	<10	180
APR 30...	.138	.42	13	--	--	--	--	--	--	--	--
JUN 24...	.064	.20	14	2	79	<1.0	<8.0	<14	<12	<10	<10

RED RIVER BASIN

07343500 WHITE OAK CREEK NEAR TALCO, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	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)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
DEC 15...	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	<100	6	119	<.1	<60	<40	<1	<4.0	125	<10	<20
APR 30...	--	--	--	--	--	--	--	--	--	--	--
JUN 24...	<100	6	448	<.1	<60	<40	<1	<4.0	266	<10	<20

07343850 WHITE OAK CREEK NEAR OMAHA, TX

LOCATION.--Lat 33°16'30", long 94°44'30", Morris County, Hydrologic Unit 11140303, at bridge, on U.S Highway 259, 6.2 mi north of Omaha, and 10.5 mi upstream from mouth.

DRAINAGE AREA.--772 mi².

PERIOD OF RECORD.--Occasional discharge measurements: Feb 1965 to Aug 1967. Water-quality records.--Chemical and biochemical analyses: Oct 1968 to Sep 1977, Oct 1991 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00300)	OXYGEN DEMAND, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L CACO3) (00900)	
OCT 07...	0940	7.5	371	7.1	23.0	75	41	4.6	54	.6	81
DEC 16...	1300	140	201	7.0	6.0	280	33	11.9	96	3.1	47
MAR 05...	0815	1300	155	6.9	13.0	220	24	8.2	79	2.1	39
JUN 25...	0745	13	577	7.4	29.0	60	31	5.2	68	1.0	120
JUL 08...	1036	2.2	620	7.5	30.5	100	20	5.8	78	3.4	130
DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT 07...	25	17	9.2	34	2	7.9	56	49	41	.26	7.1
DEC 16...	22	11	4.5	15	1	6.8	25	27	21	.19	9.4
MAR 05...	13	9.0	3.9	12	.8	4.2	26	21	12	<.10	5.6
JUN 25...	13	25	13	57	2	7.4	100	69	64	.33	7.2
JUL 08...	3	28	14	66	3	7.3	130	67	71	.38	6.1
DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDE (MG/L) (00530)	RESIDUE VOLA-TILE, SUS-FILTER-ABLE (MG/L) (00535)	RESIDUE FIXED NON-FILTR-ABLE (MG/L) (00540)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)
OCT 07...	201	104	15	89	--	<.010	.057	.049	.39	.44	.023
DEC 16...	112	51	11	40	--	<.010	<.050	.033	.71	.75	.160
MAR 05...	84	15	3	12	--	<.010	.168	<.020	--	.79	.076
JUN 25...	307	76	10	66	.076	.012	.088	.097	.55	.64	<.010
JUL 08...	337	50	14	36	--	<.010	<.050	.032	.54	.57	<.010
DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIIUM, 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)
OCT 07...	.020	.06	7.6	--	--	--	--	--	--	--	--
DEC 16...	.137	.42	14	--	--	--	--	--	--	--	--
MAR 05...	.069	.21	14	<1	42	<1.0	<8.0	<14	<12	<10	160
JUN 25...	.018	.06	13	<1	90	<1.0	<8.0	<14	<12	<10	<10
JUL 08...	.033	.10	12	2	94	<1.0	<8.0	<14	<12	<10	<10

RED RIVER BASIN

07343850 WHITE OAK CREEK NEAR OMAHA, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	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)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
OCT 07...	--	--	--	--	--	--	--	--	--	--	--
DEC 16...	--	--	--	--	--	--	--	--	--	--	--
MAR 05...	<100	5	26	<.1	<60	<40	<1	<4.0	85	<10	<20
JUN 25...	<100	7	776	<.1	<60	<40	<1	<4.0	285	<10	<20
JUL 08...	<100	11	837	<.1	<60	<40	<1	<4.0	309	<10	<20

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 mi².

WATER-CONTENT RECORDS

PERIOD OF RECORD.--Jul 1953 to current year. Published as Texarkana Reservoir prior to Oct 1970 and as Lake Texarkana from Oct 1970 to Sep 1972.

REVISED RECORDS.--WSP 1561: 1957(M). WSP 1711: 1959(M).

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by U.S. Army Corps of Engineers). Jul 19 to Dec 31, 1953, nonrecording gage at site about 125 ft upstream at datum 200 ft higher.

REMARKS.--The lake is formed by a rolled earthfill dam 18,500 ft long, including a 200-foot uncontrolled spillway and a 1-mile long dike. Temporary impoundment of water began Jul 2, 1953, and deliberate impoundment began Jun 27, 1956. The dam was completed in Dec 1957. The flood-control outlet works consist of two 20.0-foot-diameter conduits controlled by four 10.0- by 20.0-foot electrically driven broome-type gates. Flow is affected at times by discharge from the flood-detention pools of 25 floodwater-retarding structures with a combined detention capacity of 13,450 acre-ft. These structures control runoff from 40.0 mi² in the Sulphur River and Langford Creek drainage basins. Outflow discharging over the spillway passes into an outlet channel and then to the Sulphur River. The lake was built for flood control and for conservation. An unknown amount of water is diverted for industrial and municipal uses. The capacity table is based on a 1948 survey. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	286.0
Crest of spillway.....	259.5
Top of conservation pool.....	220.0
Lowest gated outlet (invert).....	200.0

COOPERATION.--Record of contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,912,100 acre-ft, May 9, 1966 (elevation, 252.64 ft); minimum since first appreciable storage and after deliberate impoundment began, 137,500 acre-ft, Sep 5, 1958.

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 658,400 acre-ft, Jan 22-23 (elevation, 235.05 ft); minimum daily contents, 182,500 acre-ft, Dec 27 (elevation, 221.69 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	265500	204600	196500	261200	600900	450500	245400	217200	249600	229400	209600	197700
2	264100	201800	203300	269300	593000	439200	239900	220000	248500	228900	209100	197700
3	261200	196500	209600	273100	582900	428000	235000	221800	248200	228400	208800	196700
4	256900	193300	209600	273400	571100	418600	227800	222300	248500	229400	209600	196200
5	252400	195300	209300	272600	559400	411100	222900	223600	248700	228100	209600	195300
6	249300	193600	209300	285100	544400	402300	219200	223900	247900	227800	209100	194800
7	246500	193800	211300	300400	526600	400100	215900	224400	247400	227300	208300	194600
8	245400	195000	212800	311000	508300	396800	218400	222600	247600	226300	207500	192200
9	242900	195500	214600	315100	492400	385200	216100	225500	247100	225200	207300	189300
10	239900	195500	212600	325800	499500	373900	215100	222900	246500	224700	207000	188800
11	237500	193300	211300	358600	495300	361300	214100	222300	246000	223600	206100	187400
12	238000	192600	210600	413700	491200	350000	213600	221800	245400	225200	207000	193800
13	236700	195500	210300	471600	485800	337900	213300	221000	244900	224700	209100	199900
14	235000	195800	209800	521400	480100	325100	212600	220800	243800	224400	208500	204800
15	234000	195800	208300	560300	479300	310400	212600	220800	242700	223900	207800	208500
16	232900	196000	204100	591600	487100	301600	212100	220000	240700	222300	207500	212800
17	231600	196000	199900	615000	499500	292300	209800	219500	241000	221800	207500	216100
18	229700	195800	196500	632600	507000	283000	210600	219200	240200	221300	206800	220000
19	227600	194800	194600	642300	511700	278500	210600	218700	239400	220500	206100	224200
20	225500	194100	192200	647600	510800	266100	210100	218200	238800	219700	205100	228400
21	221800	193300	194800	650500	507000	257200	209800	217700	237200	218700	204800	232600
22	220000	192200	191200	658400	503200	251000	209600	217200	236400	218700	203800	235900
23	221300	191000	194100	658400	496600	250700	208500	216700	235300	217900	203600	237700
24	219500	190000	197000	654000	487100	257200	208000	216400	234500	216400	203100	239900
25	221000	189800	194100	651000	479300	262400	207500	215900	233400	216100	202600	241000
26	217900	188800	186200	651000	480500	265200	208800	217900	232400	215900	201800	241800
27	215600	188300	182500	640800	470800	266700	211100	219500	231800	214900	201400	242400
28	214400	190700	192200	633600	462000	263800	212600	247100	231300	214100	200600	242400
29	212800	192600	209100	625400	---	259200	213100	249000	231000	213300	199600	242400
30	210300	193600	230000	617300	---	264400	214600	249600	229700	212300	199200	242400
31	207300	---	247600	609300	---	258600	---	249600	---	210300	198400	---
MAX	265500	204600	247600	658400	600900	450500	245400	249600	249600	229400	209600	242400
MIN	207300	188300	182500	261200	462000	250700	207500	215900	229700	210300	198400	187400
(+)	222.71	222.17	224.25	234.03	230.61	224.63	222.99	224.32	223.59	222.83	222.36	224.08
(@)	-59700	-13700	+54000	+361700	-147300	-203400	-44000	+35000	-19900	-19400	-11900	+44000
CAL YR 1997	MAX 1029000	MIN 182500	(@) -211600									
WTR YR 1998	MAX 658400	MIN 182500	(@) -24600									

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

07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Mar 1967 to Sep 1984 and Feb 1992 to current year.

REVISED RECORDS.--WDR TX-93-1: Phytoplankton.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

331838094095901 - WRIGHT PATMAN LAKE AC

DATE	TIME	RESER- VOIR STORAGE (AC-FT) (00054)	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (PER- CENT SOLVED SATUR- ATION) (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SOLVED SATUR- ATION) (MG/L) (00301)	COLI- FORM, FECAL, UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI KF AGAR PER (COLS. 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)
MAR												
03...	0812	435000	1.00	149	7.6	11.5	.37	9.1	83	--	--	52
03...	0814	--	10.0	149	7.5	11.5	--	9.1	83	--	--	--
03...	0816	--	20.0	152	7.5	11.5	--	9.1	83	--	--	--
03...	0818	--	33.0	152	7.5	11.5	--	9.1	83	--	--	55
MAY												
27...	1053	221000	1.00	217	8.0	26.5	.64	5.9	75	K7	K20	71
27...	1057	--	10.0	218	7.9	26.5	--	5.4	68	--	--	--
27...	1102	--	20.0	218	7.9	26.5	--	5.2	66	--	--	--
27...	1107	--	25.0	218	7.7	26.0	--	4.7	59	--	--	72
AUG												
11...	0951	206000	1.00	212	7.4	28.5	.55	1.0	13	K12	K6	69
11...	0956	--	10.0	212	7.4	28.5	--	1.1	14	--	--	--
11...	1001	--	25.0	225	7.3	28.5	--	.0	0	--	--	72

331838094095901 - WRIGHT PATMAN LAKE AC

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
MAR												
03...	4	17	2.0	7.6	.5	2.6	48	15	6.7	<.10	6.0	87
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	6	18	2.1	8.3	.5	2.8	49	15	6.8	<.10	6.3	90
MAY												
27...	5	24	2.8	13	.7	2.9	66	19	11	.14	4.1	117
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	5	24	2.8	13	.7	2.4	67	19	11	.20	4.1	118
AUG												
11...	--	23	2.7	13	.7	3.5	73	9.0	12	.20	14	123
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	24	2.9	14	.7	3.6	80	8.7	13	.21	14	130

331838094095901 - WRIGHT PATMAN LAKE AC

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
MAR											
03...	--	<.010	.145	<.020	--	.41	.041	.034	.10	49	23
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	<.010	.147	<.020	--	.37	.029	.036	.11	67	5.6
MAY											
27...	--	.017	<.050	.222	.31	.53	.032	<.010	--	<10	<4.0
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	.044	.019	.063	.279	.24	.52	.026	<.010	--	<10	14
AUG											
11...	--	.014	<.050	.274	.35	.63	.127	.138	.42	<10	39
11...	--	.013	<.050	.287	.34	.63	.127	.127	.39	<10	125
11...	--	<.010	<.050	.638	.35	.99	.159	.163	.50	130	1200

07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

332142094115001 - WRIGHT PATMAN LAKE BC

DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD) (UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L) (00631)
MAR									
03...	0857	1.00	120	7.3	11.5	8.7	79	<.010	<.050
03...	0859	10.0	120	7.3	11.5	8.6	79	--	--
03...	0901	16.0	120	7.2	11.5	8.4	77	<.010	.087
MAY									
27...	1130	1.00	194	8.9	27.5	7.8	101	.015	<.050
27...	1133	9.00	195	8.6	27.5	6.7	86	.015	<.050
AUG									
11...	1125	1.00	203	9.3	31.0	7.3	99	<.010	<.050
11...	1132	7.00	203	9.3	30.5	7.2	97	<.010	<.050

332142094115001 - WRIGHT PATMAN LAKE BC

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L) (00607)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L) (00660)	IRON, DIS-SOLVED (AS FE) (01046)	MANGA-NESE, DIS-SOLVED (AS MN) (01056)
MAR								
03...	.024	.37	.39	<.010	.018	.06	110	<4.0
03...	--	--	--	--	--	--	--	--
03...	.021	.48	.50	.053	.041	.13	120	<4.0
MAY								
27...	.155	.44	.59	.040	<.010	--	17	4.1
27...	.180	.32	.50	.016	<.010	--	17	12
AUG								
11...	.094	.38	.48	.124	.133	.41	<10	<4.0
11...	.098	.43	.52	.135	.139	.43	<10	<4.0

331935094112901 - WRIGHT PATMAN LAKE 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, (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L) (00631)
MAR									
03...	0915	1.00	109	7.1	11.5	8.7	79	<.010	<.050
03...	0917	10.0	108	7.1	11.5	8.6	79	--	--
03...	0919	24.0	108	7.3	11.5	8.6	79	<.010	<.050
MAY									
27...	1159	1.00	197	8.2	27.0	5.7	73	.016	<.050
27...	1201	10.0	198	7.9	27.0	4.8	61	--	--
27...	1203	15.0	198	7.9	27.0	4.6	59	.013	<.050
AUG									
11...	1152	1.00	204	8.5	29.5	4.9	65	<.010	<.050
11...	1156	10.0	204	8.5	29.5	4.7	62	--	--
11...	1200	16.0	203	8.7	29.5	5.4	72	<.010	<.050

331935094112901 - WRIGHT PATMAN LAKE CC

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L) (00607)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L) (00660)	IRON, DIS-SOLVED (AS FE) (01046)	MANGA-NESE, DIS-SOLVED (AS MN) (01056)
MAR								
03...	.026	.37	.40	<.010	.014	.04	120	6.0
03...	--	--	--	--	--	--	--	--
03...	.036	.34	.38	<.010	.017	.05	120	7.6
MAY								
27...	.247	.35	.60	.024	<.010	--	12	6.7
27...	--	--	--	--	--	--	--	--
27...	.283	.40	.68	.019	.026	.08	14	17
AUG								
11...	.092	.31	.40	.123	.130	.40	<10	<4.0
11...	--	--	--	--	--	--	--	--
11...	.082	.41	.49	.126	.127	.39	<10	<4.0

RED RIVER BASIN

07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

331706094130501 - WRIGHT PATMAN LAKE 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 SATUR-ATION (PER-CENT) (00301)
MAR							
03...	0942	1.00	150	7.4	12.0	8.9	82
03...	0944	10.0	150	7.5	11.5	9.1	83
03...	0946	20.0	150	7.5	11.5	9.1	83
03...	0948	33.0	150	7.3	11.5	8.8	80
MAY							
27...	1236	1.00	216	8.7	27.0	8.8	112
27...	1239	10.0	219	8.4	26.5	7.8	98
27...	1241	24.0	219	8.2	26.5	6.8	86
AUG							
11...	1229	1.00	218	8.5	29.0	5.4	71
11...	1231	10.0	218	8.5	29.0	5.3	70
11...	1233	24.0	218	8.4	29.0	5.4	71

331519094141101 - WRIGHT PATMAN LAKE EC

DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED SATUR-ATION (PER-CENT) (00301)	COLI-FORM, FECAL, UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCHI, KF AGAR PER (COLS./100 ML) (31673)	HARD-NESS TOTAL AS CAC03 (00900)
MAR											
03...	1002	1.00	159	7.4	11.5	.20	9.3	85	--	--	58
03...	1004	10.0	169	7.4	11.5	--	9.0	82	--	--	--
03...	1006	24.0	160	7.5	11.5	--	9.2	84	--	--	58
MAY											
27...	1317	1.00	272	8.5	27.5	.40	9.2	118	K1	K1	87
27...	1323	11.0	272	7.9	26.5	--	6.8	86	--	--	85
AUG											
11...	1300	1.00	228	8.5	29.0	.40	5.7	75	K9	K2	74
11...	1306	14.0	230	8.0	29.0	--	4.2	55	--	--	75

331519094141101 - WRIGHT PATMAN LAKE EC

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CAC03 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
MAR											
03...	8	19	2.3	9.1	.5	2.8	50	17	7.4	<.10	6.1
03...	--	--	--	--	--	--	--	--	--	--	--
03...	7	19	2.3	9.1	.5	2.9	51	17	7.3	<.10	5.9
MAY											
27...	12	29	3.4	18	.9	4.0	75	29	17	.18	2.8
27...	11	29	3.4	18	.8	4.1	74	28	16	.17	3.0
AUG											
11...	--	25	3.0	15	.8	3.7	79	8.7	14	.23	12
11...	--	25	3.0	15	.8	3.6	79	8.8	14	.23	13

331519094141101 - WRIGHT PATMAN LAKE EC

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, NITRITE, DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3, DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA, DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC, DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC, DIS-SOLVED (MG/L AS N) (00623)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAR											
03...	94	<.010	.079	<.020	--	.43	.046	.035	.11	120	11
03...	--	--	--	--	--	--	--	--	--	--	--
03...	95	<.010	.135	.023	.38	.41	.035	.028	.09	96	58
MAY											
27...	148	.016	<.050	.129	.29	.42	<.010	<.010	--	<10	<4.0
27...	146	.015	<.050	.103	.29	.40	.037	.011	.03	<10	5.5
AUG											
11...	131	<.010	<.050	.087	.39	.47	.133	.143	.44	<10	6.5
11...	130	<.010	<.050	.088	.38	.47	.123	.132	.40	<10	67

07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

331533094210901 - WRIGHT PATMAN LAKE GC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL AS CACO3 (MG/L) (00900)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
MAR												
03...	1210	1.00	211	7.0	12.5	.31	7.2	67	--	--	72	21
03...	1212	10.0	210	7.0	12.0	--	7.4	68	--	--	--	--
03...	1214	23.0	210	7.0	12.0	--	7.4	68	--	--	69	11
MAY												
27...	1532	1.00	324	7.7	28.5	.31	6.7	87	30	42	100	17
27...	1539	10.0	323	7.5	27.0	--	5.0	63	--	--	--	--
27...	1545	15.0	321	7.5	27.0	--	5.0	63	--	--	100	17
AUG												
11...	1523	1.00	329	7.5	30.5	.40	4.7	63	1100	240	100	2
11...	1530	14.0	339	7.3	30.0	--	2.1	28	--	--	110	5

331533094210901 - WRIGHT PATMAN LAKE GC

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS FIX END CAC03 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
MAR											
03...	24	3.1	13	.7	2.8	51	25	12	<.10	5.8	117
03...	--	--	--	--	--	--	--	--	--	--	--
03...	23	2.9	13	.7	2.7	58	25	12	<.10	5.9	120
MAY											
27...	33	4.2	23	1	3.8	83	37	21	.20	2.5	176
27...	--	--	--	--	--	--	--	--	--	--	--
27...	33	4.2	22	1	3.8	83	36	21	.22	2.5	174
AUG											
11...	34	4.4	24	1	4.0	100	19	24	.27	6.5	176
11...	35	4.5	24	1	4.1	100	19	24	.27	6.5	178

331533094210901 - WRIGHT PATMAN LAKE GC

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (MG/L AS MN) (01056)
MAR											
03...	--	<.010	.155	<.020	--	.44	.031	.035	.11	100	22
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	<.010	.156	<.020	--	.44	.045	.035	.11	100	13
MAY											
27...	--	.016	<.050	.090	.34	.43	<.010	<.010	--	<10	30
27...	--	--	--	--	--	--	--	--	--	--	--
27...	.038	.015	.053	.093	.41	.50	.032	.017	.05	<10	59
AUG											
11...	--	<.010	<.050	.087	.42	.50	.022	.032	.10	<10	22
11...	--	<.010	<.050	.091	.37	.46	.035	.041	.13	<10	126

RED RIVER BASIN

07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

Wright Patman Lake Site AC (331838094095901)

Phytoplankton Analyses October 1997 to September 1998

Date	3-3-98
Time	812
<hr/>	
TOTAL CELLS/mL	4,889
NUMBER OF SPECIES	5
DEPTH COLLECTED (ft.)	0.6
<hr/>	

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	90
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	390
<i>Scenedesmus opoliensis</i>	30
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	4,199
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	180

Wright Patman Lake Site AC (331838094095901)

Phytoplankton Analyses October 1997 to September 1998

Date	5-27-98
Time	1053
<hr/>	
TOTAL CELLS/mL	21,803
NUMBER OF SPECIES	9
DEPTH COLLECTED (ft.)	0.50
<hr/>	

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	360
<i>Synedra ulna</i> var. <i>ulna</i>	360
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	60
<i>Pediastrum duplex</i>	60
CYANOPHYTA	
<i>Anabaena spiroides</i>	3,989
<i>Anabaena</i> sp.	6,538
<i>Aphanocapsa delicatissima</i>	8,397
<i>Merismopedia tenuissima</i>	1,919
EUGLENOPHYTA	
<i>TrachelomonMer</i>	120

07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

Wright Patman Lake Site AC (331838094095901)

Phytoplankton Analyses October 1997 to September 1998

Date	8-11-98
Time	957
TOTAL CELLS/mL	84,663
NUMBER OF SPECIES	17
DEPTH COLLECTED (ft.)	0.70

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	90
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	150
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	240
<i>Chlamydomonas</i> sp.	90
<i>Cosmarium</i> sp.	90
<i>Oocystis</i> sp.	30
<i>Scenedesmus acuminatus</i>	30
<i>Scenedesmus opoliensis</i>	150
<i>Tetrastrum punctatum</i>	30
CYANOPHYTA	
<i>Anabaena</i> sp.	1,320
<i>Aphanizomenon flos-aquae</i>	300
<i>Aphanocapsa delicatissima</i>	14,395
<i>Aphanocapsa elachista</i>	2,399
<i>Chroococcus limneticus</i>	720
<i>Merismopedia tenuissima</i>	27,351
<i>Oscillatoria</i> sp.	37,188
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	90

Wright Patman Lake Site GC (331533094210901)

Phytoplankton Analyses October 1997 to September 1998

Date	3-3-98
Time	1210
TOTAL CELLS/mL	14,965
NUMBER OF SPECIES	6
DEPTH COLLECTED (ft.)	0.5

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	30
Order Pennales	
<i>Amphora ovalis</i> var. <i>ovalis</i>	120
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	240
<i>Chlamydomonas</i> sp.	90
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	14,395
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	90

07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

Wright Patman Lake Site GC (331533094210901)

Phytoplankton Analyses October 1997 to September 1998

Date	5-27-98
Time	1532
<hr/>	
TOTAL CELLS/mL	33,650
NUMBER OF SPECIES	17
DEPTH COLLECTED (ft.)	0.50
<hr/>	

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	60
Order Pennales	
<i>Asterionella formosa</i> var. <i>formosa</i>	30
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	360
<i>Navicula</i> sp.	90
<i>Nitzschia palea</i> var. <i>palea</i>	30
<i>Pinnularia</i> sp.	30
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	240
<i>Chlamydomonas</i> sp.	1,110
<i>Crucigenia tetrapedia</i>	30
<i>Pediastrum duplex</i>	30
CYANOPHYTA	
<i>Anabaena spiroides</i>	1,020
<i>Aphanocapsa delicatissima</i>	18,594
<i>Aphanocapsa elachista</i>	1,200
<i>Chroococcus limneticus</i>	1,440
<i>Merismopedia tenuissima</i>	2,399
<i>Oscillatoria</i> sp.	4,798
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	2,189

07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

Wright Patman Lake Site GC (331533094210901)

Phytoplankton Analyses October 1997 to September 1998

Date	8-11-98
Time	1523
<hr/>	
TOTAL CELLS/mL	31,431
NUMBER OF SPECIES	15
DEPTH COLLECTED (ft.)	0.7
<hr/>	

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	270
<i>Navicula</i> sp.	270
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	360
<i>Chlamydomonas</i> sp.	270
<i>Cosmarium</i> sp.	60
<i>Crucigenia tetrapedia</i>	30
<i>Scenedesmus opoliensis</i>	120
<i>Tetrastrum punctatum</i>	30
CYANOPHYTA	
<i>Anabaena</i> sp.	630
<i>Aphanocapsa delicatissima</i>	8,997
<i>Chroococcus limneticus</i>	480
<i>Merismopedia tenuissima</i>	3,119
<i>Oscillatoria</i> sp.	15,595
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	810
PYRRHOPHYTA	
<i>Gymnodinium</i> sp.	390

LOCATION.--Lat 33°18'20", long 94°09'03", Bowie County, Hydrologic Unit 11140302, on downstream side of highway embankment near left end of northbound bridge on U.S. Hwy 59, 0.4 mi downstream from Texarkana dam, 1.4 mi upstream from Elliott Creek, 11.7 mi southwest of Texarkana, end at mi 44.1.

DRAINAGE AREA.--3,433 mi².

PERIOD OF RECORD.--Chemical and biochemical analyses: Jan 1983 to Sep 1985, Oct 1991 to current year. Water-elevation records.-- Oct 1985 to Sep 1995 (midnight elevations). Aug 1937 to Jul 1953 and Oct 1953 to Sep 1979 (daily gage heights): Jan to Dec 1933, Jan 1937 to Dec 1942, and Jan 1945 to Sep 1979 (discharge measurements): Jan to Dec 1939, Jan 1945 to Sep 1979 (daily discharges) published by U.S. Army Corps of Engineers: Oct 1979 to Sep 1985 (daily discharges).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	
MAR 03...	1250	10700	146	7.2	12.5	65	16	11.4	107	2.2	52	
MAY 27...	1230	12	225	7.7	26.0	26	2.0	7.3	90	2.1	77	
AUG 11...	1300	12	213	7.6	28.0	37	3.0	5.5	71	4.0	72	
DATE		HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L) (00925)	SODIUM, DIS-SOLVED (MG/L) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
MAR 03...	7	17	2.0	8.0	.5	2.8	45	14	6.9	<.10	5.3	
MAY 27...	6	26	3.0	13	.6	3.3	71	19	11	.14	4.4	
AUG 11...	--	24	2.8	14	.7	3.7	78	8.7	13	.18	12	
DATE		SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L) (00535)	RESIDUE FIXED NON FILTER-ABLE (MG/L) (00540)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L) (00607)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L) (00666)
MAR 03...	84	13	4	9	.126	.013	.139	.021	.41	.43	.060	
MAY 27...	124	9	1	8	.058	.023	.081	.356	.47	.82	.045	
AUG 11...	126	13	7	6	.047	.033	.080	.316	.42	.74	.138	
DATE		PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L) (00660)	CARBON, ORGANIC TOTAL (MG/L) (00680)	ARSENIC DIS-SOLVED (UG/L) (01000)	BARIIUM, DIS-SOLVED (UG/L) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L) (01010)	CADMIUM, DIS-SOLVED (UG/L) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L) (01030)	COBALT, DIS-SOLVED (UG/L) (01035)	COPPER, DIS-SOLVED (UG/L) (01040)	IRON, DIS-SOLVED (UG/L) (01046)
MAR 03...	.035	.11	17	<1	33	<1.0	<8.0	<14	<12	<10	<10	140
MAY 27...	.034	.10	8.6	1	38	<1.0	<8.0	<14	<12	<10	<10	10
AUG 11...	.148	.45	10	5	57	<1.0	<8.0	<14	<12	<10	<10	<10
DATE		LEAD, DIS-SOLVED (UG/L) (01049)	LITHIUM DIS-SOLVED (UG/L) (01130)	MANGA-NESE, DIS-SOLVED (UG/L) (01056)	MERCURY DIS-SOLVED (UG/L) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L) (01060)	NICKEL, DIS-SOLVED (UG/L) (01065)	SELE-NIUM, DIS-SOLVED (UG/L) (01145)	SILVER, DIS-SOLVED (UG/L) (01075)	STRON-TIUM, DIS-SOLVED (UG/L) (01080)	VANA-DIUM, DIS-SOLVED (UG/L) (01085)	ZINC, DIS-SOLVED (UG/L) (01090)
MAR 03...	<100	<4	4.6	<.1	<60	<40	<1	<4.0	146	<10	<10	<20
MAY 27...	<100	<4	4.7	<.1	<60	<40	<1	<4.0	227	<10	<10	<20
AUG 11...	<100	5	20	<.1	<60	<40	<1	<4.0	211	<10	<10	<20

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 mi².

PERIOD OF RECORD.--Dec 1977 to current year.

REVISED RECORDS.--WDR TX-89-1: 1983-88 (M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 343.90 ft above sea level. Satellite telemeter at station.

REMARKS.--Records poor. No known regulation or diversions. Several observations of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s:

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	11	16	13	14	16	21	6.6	2.2	.30	e.24	.15
2	1.8	11	14	13	14	15	16	5.7	1.0	.28	e.27	.15
3	2.9	11	26	14	13	14	15	6.3	.62	.31	e.27	.13
4	2.8	12	17	13	12	14	13	5.8	1.0	.37	e.28	.15
5	2.9	15	13	144	12	15	13	5.4	33	.39	e.28	.18
6	3.3	15	11	251	11	15	12	6.4	9.3	.36	e.29	.09
7	4.8	13	22	251	11	23	12	6.2	4.7	.34	e.30	.04
8	6.5	14	195	136	11	23	11	5.1	3.1	.29	e.33	.00
9	8.3	14	31	41	11	18	10	4.0	2.7	.27	e.34	.09
10	9.0	17	19	26	139	14	9.5	4.1	1.5	.26	e.36	.11
11	8.2	16	16	29	278	13	9.1	3.9	.84	.27	.38	.07
12	7.2	18	14	196	44	12	8.9	3.5	.66	.21	.42	.45
13	43	23	14	47	26	13	8.6	2.9	.49	.21	.61	2.9
14	7.6	17	13	27	21	15	8.1	3.0	.40	.15	.90	3.9
15	4.5	12	13	24	21	36	7.7	4.8	.34	.15	.86	8.2
16	5.4	11	12	20	23	95	7.7	4.3	.28	.22	.83	137
17	5.3	11	12	17	41	131	7.0	2.5	.27	.23	.73	33
18	5.3	11	11	16	29	35	6.6	1.7	.27	.24	.58	9.2
19	5.3	11	11	15	23	30	6.9	1.2	.28	.21	.48	6.8
20	6.3	10	12	15	19	25	6.7	.82	.29	.15	.43	6.3
21	7.2	10	146	15	17	21	8.7	.87	.28	.14	.37	5.7
22	8.6	9.8	35	37	22	20	8.3	.86	.28	.14	.35	5.1
23	15	9.2	60	24	22	18	6.8	.80	.28	.17	.33	4.3
24	49	9.1	233	18	17	17	6.4	.89	.28	.14	.34	4.8
25	12	9.1	34	16	16	16	5.9	1.5	.29	e.14	.35	4.5
26	9.1	10	25	25	108	15	5.5	2.4	.28	e.14	.33	5.0
27	7.8	9.9	26	23	34	16	16	34	.30	e.15	.29	5.6
28	7.5	46	20	18	20	19	12	20	.30	e.15	.28	6.1
29	8.3	231	17	16	---	16	9.2	8.4	.31	e.16	.26	6.3
30	9.3	25	15	14	---	14	7.5	5.6	.30	e.16	.16	6.0
31	11	---	13	14	---	41	---	3.6	---	e.19	.15	---
TOTAL	286.5	642.1	1116	1528	1029	785	296.1	163.14	66.14	6.89	12.39	262.31
MEAN	9.24	21.4	36.0	49.3	36.8	25.3	9.87	5.26	2.20	.22	.40	8.74
MAX	49	231	233	251	278	131	21	34	33	.39	.90	137
MIN	1.3	9.1	11	13	11	12	5.5	.80	.27	.14	.15	.00
AC-FT	568	1270	2210	3030	2040	1560	587	324	131	14	25	520

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1998, BY WATER YEAR (WY)

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
MEAN	13.5	22.5	30.8	21.6	28.3	27.3	20.8	24.2	14.8	8.11	3.78	4.19										
MAX	80.5	143	103	62.7	68.8	66.1	54.9	68.2	70.0	32.2	24.4	41.7										
(WY)	1992	1995	1983	1993	1997	1990	1991	1981	1981	1997	1997	1979										
MIN	.68	2.51	2.99	6.33	5.31	8.15	3.64	1.64	.26	.007	.003	.14										
(WY)	1979	1990	1979	1981	1996	1986	1978	1988	1984	1978	1985	1984										

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1978 - 1998

ANNUAL TOTAL	9312.05	6193.57																				
ANNUAL MEAN	25.5	17.0								18.7												
HIGHEST ANNUAL MEAN										35.6												1995
LOWEST ANNUAL MEAN										5.21												1996
HIGHEST DAILY MEAN	615	Feb 20					278	Feb 11		2800	Nov 5	1994										
LOWEST DAILY MEAN	.41	Sep 12					.00	Sep 8		.00	Jun 28	1978										
ANNUAL SEVEN-DAY MINIMUM	.46	Sep 11					.08	Sep 5		.00	Jun 28	1978										
INSTANTANEOUS PEAK FLOW							599	Feb 10		7520	Dec 2	1982										
INSTANTANEOUS PEAK STAGE							12.61	Feb 10		14.39	Dec 2	1982										
ANNUAL RUNOFF (AC-FT)	18470						12280			13560												
10 PERCENT EXCEEDS	41						29			30												
50 PERCENT EXCEEDS	11						8.6			7.1												
90 PERCENT EXCEEDS	.70						.27			.45												

e Estimated

RED RIVER BASIN

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 mi².

PERIOD OF RECORD.--Aug 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Apr 12, 1978, a nonrecording gage was located at same site and datum. Satellite telemeter at station.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam 10,800 ft long, including spillways. Deliberate impoundment began Aug 8, 1977, and dam was completed by Apr 1978. The spillway is an excavated channel cut through natural ground. The spillway is 4,500 ft wide, located to the left of the left end of the dam. The service spillway is 289.5 ft wide with 160 ft of net flow width controlled by four 40- by 22.5-foot tainter gates. The dam was built, and is owned, maintained, and operated by the Titus County Fresh Water Supply District No. 1 to provide water for municipal use. Flow from 75.0 mi² above this station is controlled by Lake Cypress Springs on Big Cypress Creek and 36.0 mi² is controlled by Montecello Reservoir on Blundell Creek, a tributary to Big Cypress Creek. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	349.0
Crest of uncontrolled spillway.....	341.3
Crest of gated spillway.....	316.5
Lowest gated outlet (invert).....	294.5

COOPERATION.--Capacity Table 1-C was provided by URS/Forest and Cotton, Inc., Consulting Engineers. A new capacity table, Table 2-C, provided by the U.S. Army Corps of Engineers was put into effect Oct 1, 1996.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 224,400 acre-ft, Nov 5, 1994 (elevation, 338.65 ft); minimum contents, 516 acre-ft, Aug 8-17, 1977 (elevation, 290.00 ft) using Table 1-C.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 217,200 acre-ft, Feb 10 (elevation, 337.91 ft); minimum contents, 180,500 acre-ft, Sep 11 (elevation, 333.87 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	203500	203800	204800	213400	214300	214900	214500	214200	208300	202100	191700	184200
2	203400	203800	205000	213700	214000	214900	215100	214200	207900	201800	191300	183900
3	203400	203400	205200	213700	214000	214800	214900	213900	207600	201600	190900	183600
4	203200	203200	205200	213500	214200	214800	214900	213700	208100	201600	190600	183200
5	203100	203100	205300	213400	214400	213300	214800	213600	208700	201200	190600	182800
6	203000	203100	205200	213900	214700	213400	215000	213400	208600	201000	190300	182600
7	203000	203100	206300	213300	214700	213900	215100	213400	208300	200600	190200	182100
8	203200	203000	207000	213800	214800	214200	215200	212900	208100	200300	190000	181800
9	203400	202900	207800	213400	215000	214400	215100	212900	208000	199900	189700	181300
10	203300	202800	207700	213800	216300	214400	215000	212600	207900	199500	189400	180700
11	203200	203000	207400	213900	216100	214500	214900	212300	207800	199200	189200	180700
12	203700	203400	207400	214200	216300	214600	214800	212000	207800	198800	189000	181900
13	204400	203400	207400	213400	216200	214400	214800	211700	207600	198500	188900	184200
14	204200	203400	207600	213900	215900	214900	214700	211600	207300	198100	188600	186900
15	204200	203300	207600	213700	215500	214000	214700	211500	207000	197900	188500	192100
16	204000	203100	207600	214200	216100	214200	214700	211200	206800	197600	188100	199000
17	203700	203000	207600	213700	216700	214600	214500	210900	206700	197300	187800	200200
18	203600	202800	207700	214200	216200	214400	214400	210600	206400	197100	187600	200200
19	203500	202700	207700	213700	216200	214800	214400	210300	206100	196800	187400	200200
20	203400	202400	208200	214100	216100	213600	214300	210200	205700	196300	187100	200000
21	203300	202300	209600	214200	215900	213800	214500	209900	205400	196000	186900	200000
22	203300	202200	210000	213700	215900	214000	214400	209600	205100	195500	186800	200200
23	204300	202100	213800	213800	215900	214200	214200	209400	204700	195200	186600	200000
24	204600	202200	213000	213900	215700	214500	214100	209200	204300	194900	186500	200000
25	204600	201900	213400	213800	215200	215000	213800	208900	204000	194400	186300	199800
26	200600	201900	213600	214200	214400	214800	214400	208600	203700	194100	186000	199700
27	200500	201900	213400	214100	214800	214800	214500	209400	203400	193600	185700	199700
28	200500	203900	213600	214100	214900	214600	214500	209200	203100	193300	185500	199500
29	202900	204600	213200	214000	---	214600	214300	208900	202800	192900	185000	199500
30	206300	204800	213200	214300	---	215000	214300	208900	202300	192400	184800	199400
31	207000	---	213300	213900	---	214300	---	208400	---	191900	184400	---
MAX	207000	204800	213800	214300	216700	215000	215200	214200	208700	202100	191700	200200
MIN	200500	201900	204800	213300	214000	213300	213800	208400	202300	191900	184400	180700
(+)	336.83	336.59	337.49	337.56	337.66	337.60	337.60	336.98	336.32	335.17	334.32	336.00
(@)	+3000	-2200	+8500	+600	+1000	-600	0	-5900	-6100	-10400	-7500	+15000
CAL YR 1997	MAX 216300	MIN 200500	(@) -300									
WTR YR 1998	MAX 216700	MIN 180700	(@) -4600									

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

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 mi².

PERIOD OF RECORD.--Apr 1943 to Dec 1962 (published as "Cypress Creek near Pittsburg"), Oct 1967 to Sep 1989. Oct 1989 to current year, (peak discharges greater than base discharge). Gage-height records collected at this site from Sep 1963 to Dec 1967, are published in reports by the U.S. Army Corps of Engineers.

Water-quality records.--Chemical analyses: Mar 1965 to Aug 1989. Chemical and biochemical analyses: Jan 1983 to Sep 1985.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 247.49 ft above sea level. Prior to Nov 12, 1954, water-stage recorder at site 1,900 ft downstream at present datum. Satellite telemeter at station.

REMARKS.--Records fair. Daily values and peak discharges less than 2,500 ft³/s are not published. Since Aug 1977, at least 10% of contributing drainage area has been regulated by Lake Bob Sandlin (station 07344489), capacity 251,000 acre-ft, 19 mi upstream. Additional regulation since Jul 1970 by Lake Cypress Springs (capacity unknown), and since Aug 1972 by Monticello Reservoir (capacity unknown), located on Blundell Creek. 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.

AVERAGE DISCHARGE.--22 years (water years 1944-62, 1968-70), prior to regulation by Lake Cypress Springs, 349 ft³/s (12.96 in/yr), 253,000 acre-ft/ yr; 19 years (water years 1971-89) regulated, 237 ft³/s (171,900 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge prior to regulation by Lake Cypress Springs, 58,500 ft³/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 ft³/s; no flow Aug 20 to Oct 3, 1954, Jul 19 to Nov 4, 1956; maximum discharge for regulated period, 50,400 ft³/s Mar 17, 1987 (gage height, 23.65 ft). Maximum stage since at least 1895, that of Mar 30, 1945.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Jan 1938 reached a stage of about 25 ft from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 7	0215	4,350	14.54	Mar 6	0215	4,390	14.56
Feb 11	1415	6,120	15.54	Mar 17	2315	7,660	16.34

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 mi².

PERIOD OF RECORD.--Aug 1957 to current year.

Water-quality records.--Chemical and biochemical analyses: Oct 1969 to Sep 1984.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Nov 12, 1957, non-recording gage at same site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam 10,600 ft long, including a 200-foot-wide concrete spillway. Impoundment of water began Aug 21, 1957, and the dam was completed Jun 25, 1958. Official operation began Dec 11, 1959. The flood-control outlet works consist of two 10.0-foot-diameter conduits that are controlled by two 8.0- by 12.5-foot electrically driven broome-type gates. The low-flow outlet works consist of a controlled 14-inch pipe. Flow over the spillway is discharged into a 2,000-foot-long rectified channel and then into Cypress Creek. The capacity table is based on a survey made in 1950. The lake was built for conservation, flood control, and water supply. During the current year, an unknown amount of water was diverted from the lake for municipal and industrial uses. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	277.0
Crest of spillway.....	249.5
Top of conservation pool.....	228.5
Crest of intake to wet well (14 in).....	202.5
Lowest gated outlet (invert).....	200.0

COOPERATION.--Record of contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 694,360 acre-ft, May 5, 1966 (elevation, 245.41 ft); minimum since Dec 1959, 210,100 acre-ft, Oct 6, 1984 (elevation, 225.98 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 351,600 acre-ft, Jan 16 (elevation, 233.22 ft); minimum daily contents, 211,900 acre-ft, Sep 10-11 (elevation, 226.09 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	264800	258000	260700	266000	303800	269600	262900	259400	252400	239200	224000	217100
2	264100	258000	262200	264300	299700	268700	263700	259400	251700	238700	223300	217200
3	263100	256700	264300	262900	295500	266400	264800	259500	251100	238500	222900	216000
4	262400	256000	262800	261400	290700	265200	264100	259000	251700	238500	224000	215700
5	261800	259500	262000	262900	286500	265600	263700	259200	252800	238000	225400	215000
6	261100	259000	260700	276200	281500	263700	263100	259500	251300	237400	225200	214700
7	260300	258000	261400	284900	276200	264500	262900	259900	250400	236900	224700	214200
8	260100	257700	261200	300800	271200	266900	263900	259000	250400	236500	224100	213600
9	259900	257700	261600	311900	268500	263300	262000	260700	250600	236000	223800	212800
10	259000	257800	259700	319900	279700	261400	260900	258800	250000	235500	223500	211900
11	257800	257300	258600	326700	278600	259900	259500	258000	250000	234900	223100	211900
12	258200	258000	257800	332900	280500	258400	258000	257800	249800	234200	223800	215000
13	259200	259000	256900	337900	287700	258000	258200	257500	249100	233800	223600	217200
14	258000	259400	256000	347000	289700	257800	257700	257300	248900	233100	223300	222200
15	257100	258800	255400	350300	290500	257500	257500	257300	248400	233000	222800	225900
16	256500	258200	255800	351600	291100	262400	257700	256900	247100	232800	222100	227300
17	255800	258000	256000	349400	290700	264500	256300	256500	246500	232100	222900	227600
18	254900	257800	256200	347000	290100	264800	256000	256300	246300	231400	222400	228000
19	254500	257700	256500	341900	288500	268100	255400	255800	245800	231000	221900	228400
20	254100	257700	256300	338200	284900	264100	256200	255600	245200	230500	221200	228500
21	253500	257700	259200	335500	281500	262900	256000	255200	244500	229900	221200	228700
22	252800	257100	259900	331900	279000	261600	255800	255000	244100	229400	220300	228900
23	256500	256700	262900	328200	275400	259900	255400	254700	243400	229100	220000	228400
24	257500	256500	263900	324100	271400	258400	255000	254300	242900	228400	219600	228400
25	259900	256300	265000	322200	268700	257100	254900	254100	242100	227800	219500	228000
26	259200	256500	267500	323100	272300	256000	256200	253900	241400	227300	219100	228000
27	257700	256300	270000	319900	271600	257100	257800	254100	241000	227100	218600	228200
28	257300	259900	274700	316900	269800	257300	257800	253700	240700	226400	218600	228000
29	257500	260700	272500	313800	---	257700	258200	253500	240300	225900	218400	227600
30	257700	261100	271200	310700	---	260500	258800	253400	240000	225400	217700	227300
31	257800	---	268500	307100	---	262900	---	253000	---	224800	217400	---
MAX	264800	261100	274700	351600	303800	269600	264800	260700	252800	239200	225400	228900
MIN	252800	256000	255400	261400	268500	256000	254900	253000	240000	224800	217400	211900
(+)	228.65	228.83	229.22	231.16	229.28	228.93	228.71	228.40	227.69	226.83	226.41	226.98
(@)	-8000	+3300	+7400	+38600	-37300	-6900	-4100	-5800	-13000	-15200	-7400	+9900
CAL YR 1997	MAX 463100	MIN 252800	(@) +7600									
WTR YR 1998	MAX 351600	MIN 211900	(@) -38500									

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

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 mi².

PERIOD OF RECORD.--Aug 1924 to Dec 1959 (published as "Cypress Creek near Jefferson"), Oct 1979 to current year. Records of stage and discharge for the period Oct 1959 to Sep 1979 published by the U.S. Army Corps of Engineers, New Orleans District.

GAGE.--Water-stage recorder. Datum of gage is 180.00 ft above sea level (U.S. Army Corps of Engineers benchmark). Prior to Nov 2, 1933, staff gage, and Nov 2, 1933 to Dec 8, 1955, water-stage recorder, at site about 950 ft upstream at datum 3.70 ft higher. After Dec 9, 1955, at site about 550 ft downstream or at present site at datum 180.00 ft. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since Aug 1957, flow completely regulated by Lake O' the Pines (station 07345900), 950 ft upstream. No known diversions.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--33 years (water years 1925-57), prior to completion of Ferrell's Bridge Dam, 660 ft³s (478,500 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION, (WATER YEARS, 1925-57).--Maximum discharge, 57,100 ft³s Apr 1, 1945 (gage height, 28.78. ft, site and datum then in use), from rating curve extended above 29,000 ft³s; no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	249	45	164	1720	2580	2480	696	38	35	13	27	20
2	249	46	296	1450	2570	2480	832	37	35	13	27	20
3	247	134	304	1080	2560	2110	583	36	36	13	27	20
4	247	215	302	1000	2550	1400	538	35	36	13	27	20
5	246	163	403	992	2550	1050	531	36	38	14	27	20
6	246	209	528	1210	2540	965	531	37	36	15	27	19
7	246	302	539	1180	2530	941	530	38	36	15	27	19
8	247	262	700	661	2520	940	538	35	36	16	26	19
9	248	215	e973	369	2260	939	536	34	36	16	26	19
10	247	217	e982	317	1750	929	528	37	36	16	26	18
11	247	216	e980	312	2130	923	522	39	36	17	25	19
12	247	208	800	278	2500	849	521	40	36	17	25	20
13	248	210	572	225	2520	605	430	41	36	18	24	22
14	245	209	534	447	2540	561	314	41	36	18	24	27
15	245	208	428	712	2150	556	307	43	36	19	24	30
16	246	206	229	1320	1680	583	311	44	35	16	23	29
17	244	204	92	1970	1630	787	311	45	32	16	23	20
18	243	202	100	2620	1610	1200	310	44	32	17	23	19
19	243	202	105	2670	1950	1810	308	36	33	18	23	19
20	159	202	105	2670	2450	2350	192	29	34	19	22	19
21	66	202	112	2670	2490	2020	62	30	36	20	22	19
22	71	202	109	2680	2490	1650	57	30	35	21	22	19
23	70	200	196	2660	2490	1620	53	30	34	22	22	16
24	62	200	423	2640	2480	1380	49	31	34	22	22	18
25	56	152	544	2630	2470	943	49	31	35	23	21	17
26	53	94	547	2650	2530	612	48	32	35	24	21	17
27	51	96	547	2630	2510	458	47	33	36	24	21	17
28	49	103	697	2620	2480	346	43	34	36	25	21	17
29	49	108	1260	2610	---	339	40	34	33	26	21	17
30	47	101	1660	2600	---	336	37	34	21	26	21	17
31	44	---	1710	2590	---	388	---	35	---	27	20	---
TOTAL	5457	5333	16941	52183	65510	34550	9854	1119	1041	579	737	592
MEAN	176	178	546	1683	2340	1115	328	36.1	34.7	18.7	23.8	19.7
MAX	249	302	1710	2680	2580	2480	832	45	38	27	27	30
MIN	44	45	92	225	1610	336	37	29	21	13	20	16
AC-FT	10820	10580	33600	103500	129900	68530	19550	2220	2060	1150	1460	1170

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 1998z, BY WATER YEAR (WY)

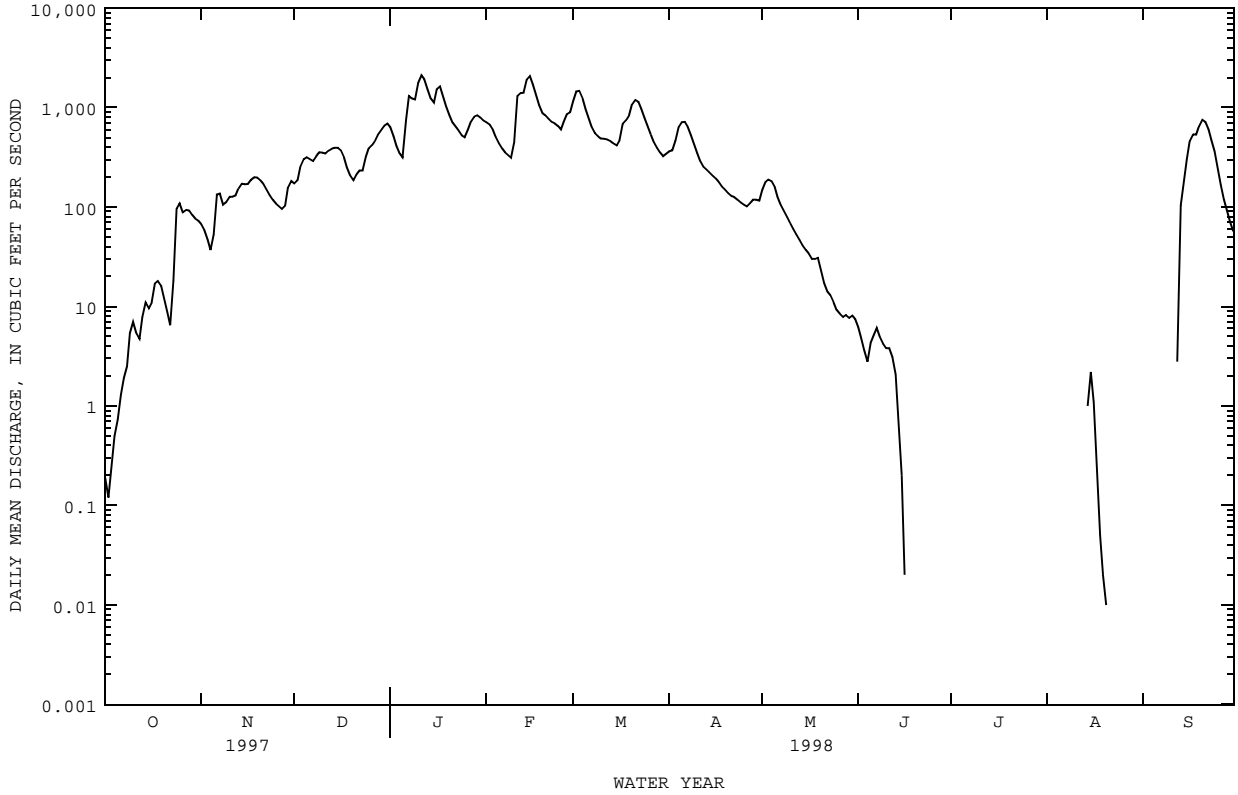
MEAN	227	448	691	921	1304	1280	1046	841	863	406	190	105
MAX	728	2690	1946	2685	2688	2645	2669	2979	3209	3057	2349	482
(WY)	1995	1958	1958	1993	1993	1988	1990	1958	1958	1958	1958	1958
MIN	3.35	4.82	4.13	4.16	40.6	37.2	47.7	32.4	32.5	18.7	16.2	8.70
(WY)	1981	1989	1982	1981	1996	1996	1996	1992	1987	1998	1982	1980

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1958 - 1998z	
ANNUAL TOTAL	347767		193896			
ANNUAL MEAN	953		531		692	
HIGHEST ANNUAL MEAN					1859	
LOWEST ANNUAL MEAN					47.9	
HIGHEST DAILY MEAN	2790		Mar 13		4500	
LOWEST DAILY MEAN	33		Aug 9		.00	
ANNUAL SEVEN-DAY MINIMUM	34		Aug 9		1.4	
INSTANTANEOUS PEAK FLOW			2710		3220	
INSTANTANEOUS PEAK STAGE			19.37		19.97	
ANNUAL RUNOFF (AC-FT)	689800		384600		501700	
10 PERCENT EXCEEDS	2580		2390		2530	
50 PERCENT EXCEEDS	496		105		185	
90 PERCENT EXCEEDS	36		19		22	

e Estimated
z Period of regulated streamflow.

07346045 BLACK CYPRESS BAYOU AT JEFFERSON, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1969 - 1998	
ANNUAL TOTAL	188737.19		109738.00			
ANNUAL MEAN	517		301		360	
HIGHEST ANNUAL MEAN					647 1991	
LOWEST ANNUAL MEAN					78.3 1971	
HIGHEST DAILY MEAN	8610	Apr 30	2100	Jan 11	10700	Dec 28 1987
LOWEST DAILY MEAN	.12	Sep 22	.00	Jun 17	.00	Aug 10 1969
ANNUAL SEVEN-DAY MINIMUM	.20	Sep 16	.00	Jun 17	.00	Aug 10 1969
INSTANTANEOUS PEAK FLOW			2140	Jan 11	11600	Dec 28 1987
INSTANTANEOUS PEAK STAGE			14.52	Jan 11	19.34	Dec 28 1987
ANNUAL RUNOFF (AC-FT)	374400		217700		260800	
ANNUAL RUNOFF (CFSM)	1.42		.82		.99	
ANNUAL RUNOFF (INCHES)	19.24		11.18		13.40	
10 PERCENT EXCEEDS	1340		837		882	
50 PERCENT EXCEEDS	287		118		166	
90 PERCENT EXCEEDS	4.0		.00		1.6	



07346050 LITTLE CYPRESS CREEK NEAR ORE CITY, TX

LOCATION.--Lat 32°40'21", long 94°45'03", Upshur County, Hydrologic Unit 11140307, on right bank at downstream side of bridge on U.S. Highway 259, 4 mi downstream from Clear Creek, 9 mi south of Ore City, and 12 mi north of Longview.

DRAINAGE AREA.--383 mi².

PERIOD OF RECORD.--Jan 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 232.67 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. Major beaver dam activity during the water year 400 ft downstream of gage. No known regulation or diversions. During the year, the city of Gilmer discharged a small amount of wastewater effluent into a tributary above this station. Several observations of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1902 occurred in Mar 1945; maximum stage since 1945, that of Apr 24, 1966. The flood in Apr 1958 reached a stage of 19.4 ft, or 1.3 ft lower than the flood of Mar 1945 at a point 6 mi upstream, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 27	1330	2,180	10.96	Feb 11	1730	2,280	11.05
Jan 9	0130	4,800	12.69	Feb 14	0615	2,290	11.06

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	59	245	809	600	1440	628	97	25	.08	.00	.00
2	30	57	240	616	515	1460	527	80	23	.05	.00	.00
3	28	56	335	440	424	1370	448	69	19	.02	.00	.00
4	27	53	409	284	336	1120	477	62	16	.01	.00	.00
5	26	55	379	207	282	855	465	58	22	.00	.00	.00
6	24	95	288	2240	248	654	365	60	34	.00	.00	.00
7	25	84	220	3380	217	491	241	57	34	.00	.00	.00
8	27	68	382	3690	191	393	176	54	45	.00	.00	.00
9	28	62	454	4380	179	342	164	52	36	.00	.00	.00
10	43	63	347	3040	664	311	137	45	25	.00	.00	.00
11	51	65	299	2210	1810	300	118	44	19	.00	.00	.00
12	73	68	312	2060	1840	289	101	40	16	.00	.00	.00
13	82	85	355	1770	1830	261	89	36	13	.00	.00	.00
14	96	109	376	1410	2240	225	83	34	9.5	.00	.00	.00
15	86	110	334	1250	1910	213	80	33	7.9	.00	.00	.02
16	78	111	251	1190	1500	332	78	31	7.0	.00	.00	16
17	61	109	155	1130	1190	874	75	30	5.3	.00	.00	165
18	52	95	107	1060	954	983	70	29	3.2	.00	.00	353
19	48	83	89	914	780	869	67	27	2.0	.00	.00	1160
20	47	77	82	754	695	1070	64	26	1.7	.00	.00	1290
21	47	75	137	618	600	1140	65	25	1.4	.00	.00	1380
22	48	72	244	584	552	1000	65	23	1.0	.00	.00	1080
23	54	70	264	581	597	802	65	21	.71	.00	.00	777
24	135	67	457	510	586	623	64	20	.46	.00	.00	521
25	198	66	663	499	524	458	62	22	.30	.00	.00	208
26	164	67	997	649	911	317	60	20	.35	.00	.00	49
27	149	66	2070	789	1650	233	62	23	.51	.00	.00	30
28	122	71	1960	742	1440	187	73	25	.33	.00	.00	24
29	90	202	1660	652	---	161	89	25	.21	.00	.00	19
30	72	287	1350	645	---	144	107	26	.13	.00	.00	16
31	64	---	1060	653	---	404	---	25	---	.00	.00	---
TOTAL	2107	2607	16521	39756	25265	19321	5165	1219	369.00	0.16	0.00	7088.02
MEAN	68.0	86.9	533	1282	902	623	172	39.3	12.3	.005	.000	236
MAX	198	287	2070	4380	2240	1460	628	97	45	.08	.00	1380
MIN	24	53	82	207	179	144	60	20	.13	.00	.00	.00
AC-FT	4180	5170	32770	78860	50110	38320	10240	2420	732	.3	.00	14060

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1998, BY WATER YEAR (WY)

	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
MEAN	55.4	185	378	379	499	563	563	454	200	70.0	25.7	60.8														
MAX	412	1508	1965	1282	1509	1478	3007	1834	905	426	392	614														
(WY)	1964	1975	1988	1998	1997	1987	1966	1968	1974	1992	1979	1974														
MIN	.000	1.10	3.70	25.6	42.0	40.9	54.3	23.9	2.09	.005	.000	.000														
(WY)	1964	1966	1990	1964	1996	1966	1971	1984	1971	1984	1984	1963														

SUMMARY STATISTICS

	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1963 - 1998
ANNUAL TOTAL	172291.3	119418.18	
ANNUAL MEAN	472	327	289
HIGHEST ANNUAL MEAN			599
LOWEST ANNUAL MEAN			35.7
HIGHEST DAILY MEAN	8340	4380	21000
LOWEST DAILY MEAN	7.6	.00	.00
ANNUAL SEVEN-DAY MINIMUM	9.8	.00	.00
INSTANTANEOUS PEAK FLOW		4800	23500
INSTANTANEOUS PEAK STAGE		12.69	20.20
ANNUAL RUNOFF (AC-FT)	341700	236900	209500
10 PERCENT EXCEEDS	1320	1060	774
50 PERCENT EXCEEDS	150	68	71
90 PERCENT EXCEEDS	29	.00	.24

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 mi².

PERIOD OF RECORD.--Feb 1959 to current year. Prior to Oct 1963, published as "Sabine River at Greenville".

REVISED RECORDS.--WSP 1732: Drainage area. WSP 2122: 1960, 1963-65.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 485.07 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair. No known regulation. The city of Greenville diverts water from city lakes upstream from gage and from Lake Tawakoni for municipal use. Wastewater effluent was returned to a tributary downstream from gage. Extreme low flows are largely sustained by return water from a water treatment plant upstream. Several observations of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1895, 22 ft in May 1935, from information by local resident and city engineer of Greenville. Flood of Jul 3, 1913, reached a stage of 20 ft, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 21	1115	7,800	17.35	Jan 7	1845	4,810	16.78
Dec 24	0915	3,360	16.36	Jan 12	0645	7,160	17.22

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.07	.74	10	11	24	15	1.1	.00	.00	.00	.00
2	.00	.06	1.8	10	10	15	5.6	.74	.00	.00	.00	.00
3	.00	.05	79	11	7.9	9.9	3.1	.61	.00	.00	.00	.00
4	e.00	.04	33	17	5.6	7.6	2.2	.29	.03	.00	.00	.00
5	e.00	.04	11	265	4.1	6.5	1.6	.17	.88	.02	.00	.00
6	e.01	.04	2.6	535	3.2	5.4	1.3	.16	.00	.00	.00	.00
7	.01	.04	22	3200	2.8	38	1.2	.12	.00	.00	.00	.00
8	1.2	.04	574	1560	2.0	182	1.1	.15	.00	.00	.00	.00
9	1.9	.09	48	314	1.7	32	.93	8.0	.00	.00	.00	.00
10	.14	.20	16	89	287	12	.76	8.8	10	.00	.00	.00
11	.05	.12	6.1	747	184	6.7	.61	1.6	33	.00	.00	.00
12	1.5	2.0	2.7	3780	30	4.5	.54	.46	3.2	.00	.00	.00
13	2.2	6.6	1.8	146	14	3.5	.49	.12	.40	.00	.00	.00
14	.09	12	1.4	77	7.8	32	.39	.04	.02	.00	.00	.00
15	.03	5.2	1.3	67	5.7	547	.53	.02	.00	.00	.00	.55
16	.02	1.3	1.2	43	4.5	852	.55	.00	.00	.00	.00	2.3
17	.00	.36	1.1	26	7.7	630	1.5	.00	.00	.00	.00	.00
18	.00	.26	1.1	18	12	102	2.2	.00	.00	.00	.00	.00
19	.00	.16	1.3	14	27	230	1.9	.00	.00	.00	.00	.00
20	.00	.14	904	11	29	92	1.7	.00	.00	.00	.00	.00
21	.00	.12	6260	9.1	13	29	16	.00	.00	.00	.00	.00
22	.00	.13	914	82	131	16	11	.00	.00	.00	.00	2.3
23	53	.14	351	56	52	11	2.5	.00	.00	.00	.00	2.7
24	155	.11	2090	24	21	8.5	1.0	.00	.00	.00	.00	.00
25	6.8	.10	147	14	13	6.8	.50	.00	.00	.00	.00	.00
26	1.1	.11	67	1010	1460	5.4	.94	.00	.00	.00	.00	.00
27	.26	.11	83	236	297	6.2	200	.89	.00	.00	.00	.00
28	.14	11	42	58	47	5.1	17	.10	.00	.00	.00	.00
29	.11	24	23	32	---	4.1	3.9	.00	.00	.00	.00	.00
30	.11	4.0	14	19	---	4.3	1.8	.00	.00	.00	.00	.00
31	.10	---	11	13	---	36	---	.00	---	.00	.00	---
TOTAL	223.77	68.63	11712.14	12493.1	2691.0	2964.5	297.84	23.37	47.53	0.02	0.00	7.85
MEAN	7.22	2.29	378	403	96.1	95.6	9.93	.75	1.58	.001	.000	.26
MAX	155	24	6260	3780	1460	852	200	8.8	33	.02	.00	2.7
MIN	.00	.04	.74	9.1	1.7	3.5	.39	.00	.00	.00	.00	.00
AC-FM	444	136	23230	24780	5340	5880	591	46	94	.04	.00	.16
CFSM	.09	.03	4.86	5.19	1.24	1.23	.13	.01	.02	.00	.00	.00
IN.	.11	.03	5.61	5.98	1.29	1.42	.14	.01	.02	.00	.00	.00

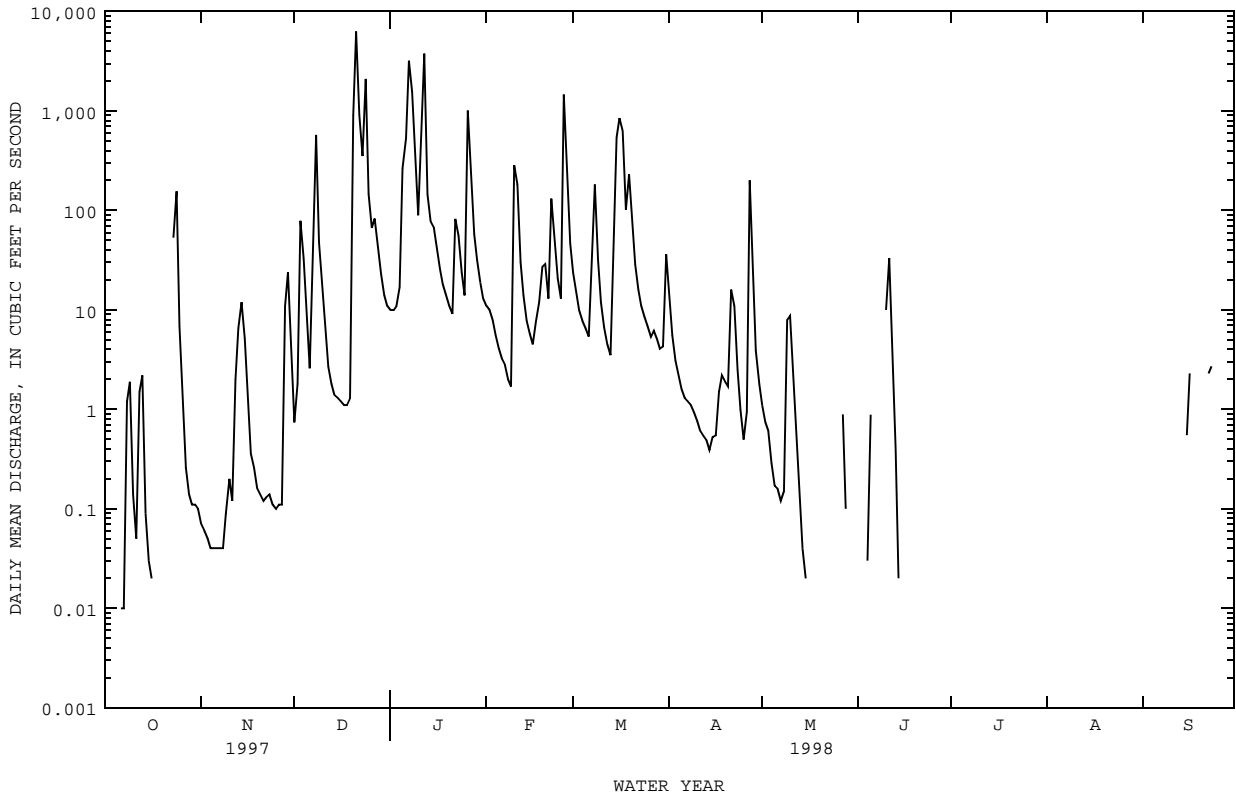
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1998, BY WATER YEAR (WY)

MEAN	55.4	58.1	98.2	63.8	89.8	95.2	97.8	138	61.7	22.9	5.78	28.8
MAX	354	433	573	403	444	390	431	540	353	264	95.2	258
(WY)	1972	1997	1972	1998	1997	1984	1966	1982	1981	1989	1977	1974
MIN	.001	.025	.11	.24	.22	.48	.85	.33	.032	.001	.000	.012
(WY)	1996	1996	1990	1986	1996	1996	1971	1988	1988	1998	1985	1983

08017200 COWLEECH FORK SABINE RIVER AT GREENVILLE, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1959 - 1998	
ANNUAL TOTAL	41825.35		30529.75		68.6	
ANNUAL MEAN	115		83.6		146	
HIGHEST ANNUAL MEAN					2.85	
LOWEST ANNUAL MEAN					1995	
HIGHEST DAILY MEAN	6260	Dec 21	6260	Dec 21	9730	May 13 1982
LOWEST DAILY MEAN	.00	Aug 26	.00	Oct 1	.00	Aug 4 1964
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 26	.00	May 16	.00	Aug 4 1972
INSTANTANEOUS PEAK FLOW			7800		15300	
INSTANTANEOUS PEAK STAGE			17.35		18.47	
ANNUAL RUNOFF (AC-FT)	82960		60560		49720	
ANNUAL RUNOFF (CFSM)	1.47		1.08		.88	
ANNUAL RUNOFF (INCHES)	20.02		14.62		12.00	
10 PERCENT EXCEEDS	131		71		56	
50 PERCENT EXCEEDS	1.4		.40		1.4	
90 PERCENT EXCEEDS	.00		.00		.02	

e Estimated



SABINE RIVER BASIN

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 mi².

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

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 461.40 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known regulation or diversions. Wastewater effluent was discharged by Royse City into the river above this station during the water year. Several observations of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1890, 21 ft Jul 29, 1902, from information by local resident. Flood of Apr 27, 1957, reached a stage of 17.76 ft, from floodmarks.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 21	0600	11,400	17.36	Feb 26	1130	3,170	16.24

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.64	5.5	5.4	6.9	32	15	.98	.04	.00	.00	.00
2	.00	.52	3.5	4.6	6.8	15	9.6	.55	.04	.00	.00	.00
3	.00	.68	75	4.8	6.4	10	7.1	.74	.02	.00	.00	.00
4	.00	.67	35	5.4	5.2	7.9	3.8	.70	.01	.00	.00	.00
5	.00	.43	12	31	4.6	7.1	2.5	.92	.02	.00	.00	.00
6	.00	.49	6.1	413	4.3	5.8	2.5	.42	.00	.00	.00	.00
7	.00	.49	17	1160	4.0	5.4	2.5	.16	.00	.00	.00	.00
8	.00	.53	682	986	3.8	16	2.4	.11	.00	.00	.00	.00
9	.00	.77	110	243	3.9	16	2.4	13	.00	.00	.00	.00
10	.00	2.2	32	71	640	9.0	2.7	15	.00	.00	.00	.00
11	.00	2.3	17	160	614	6.1	2.2	4.1	7.6	.00	.00	.00
12	.00	2.7	10	1610	74	4.7	1.0	1.6	7.7	.00	.00	.00
13	1.1	6.8	6.0	203	41	3.9	.45	.55	.97	.00	.00	.00
14	2.1	38	4.1	64	20	4.0	.24	.14	.16	.00	.00	.00
15	.43	15	3.1	55	15	210	.18	.08	.06	.00	.00	.00
16	.10	7.0	2.2	30	14	713	.41	.04	.02	.00	.00	.00
17	.09	3.9	2.0	18	31	858	.60	.03	.00	.00	.00	.00
18	.05	2.2	1.6	14	28	126	.45	.02	.00	.00	.00	.56
19	.11	1.3	23	10	29	94	.21	.01	.00	.00	.00	.19
20	.14	1.1	852	8.2	28	59	.12	.00	.00	.00	.00	.05
21	.11	.97	6580	7.4	18	28	.26	.00	.00	.00	.00	.02
22	.18	.71	631	19	153	18	.32	.00	.00	.00	.00	.01
23	24	.61	253	21	62	14	.94	.00	.00	.00	.00	.02
24	209	.60	1320	11	29	11	.67	.00	.00	.00	.00	.00
25	31	.71	208	8.0	19	9.4	.47	.00	.00	.00	.00	.00
26	9.8	1.5	68	86	1720	7.7	.81	.00	.00	.00	.00	.00
27	4.3	e2.0	69	64	417	7.1	6.0	.47	.00	.00	.00	.00
28	2.0	e28	29	22	60	6.6	3.4	11	.00	.00	.00	.00
29	1.0	e44	17	14	---	6.8	3.5	3.2	.00	.00	.00	.00
30	.78	e15	11	10	---	6.5	3.4	.58	.00	.00	.00	.00
31	.71	---	7.2	7.4	---	12	---	.09	---	.00	.00	---
TOTAL	287.00	181.82	11092.3	5366.2	4057.9	2330.0	76.13	54.49	16.64	0.00	0.00	0.85
MEAN	9.26	6.06	358	173	145	75.2	2.54	1.76	.55	.000	.000	.028
MAX	209	44	6580	1610	1720	858	15	15	7.7	.00	.00	.56
MIN	.00	.43	1.6	4.6	3.8	3.9	.12	.00	.00	.00	.00	.00
AC-FT	569	361	22000	10640	8050	4620	151	108	33	.00	.00	1.7
CFSM	.12	.08	4.55	2.20	1.84	.96	.03	.02	.01	.00	.00	.00
IN.	.14	.09	5.24	2.54	1.92	1.10	.04	.03	.01	.00	.00	.00

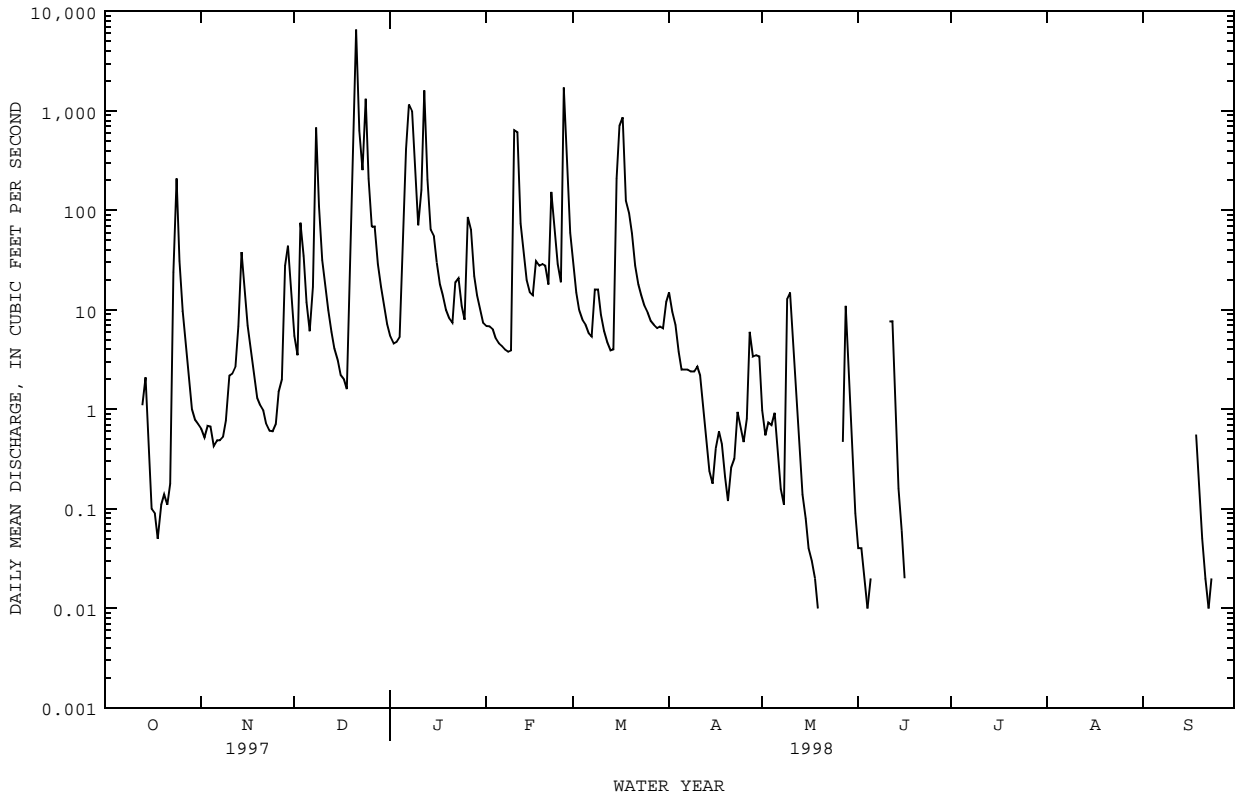
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1998, BY WATER YEAR (WY)

	100	64.2	102	63.2	118	107	127	145	88.4	28.5	5.60	25.4
MEAN	100	64.2	102	63.2	118	107	127	145	88.4	28.5	5.60	25.4
MAX	656	655	459	277	556	572	693	674	1128	490	96.8	353
(WY)	1982	1995	1972	1974	1983	1977	1966	1979	1981	1981	1974	1974
MIN	.000	.000	.000	.000	.000	.11	.062	.038	.000	.000	.000	.000
(WY)	1964	1964	1964	1976	1976	1972	1971	1988	1977	1964	1965	1963

08017300 SOUTH FORK SABINE RIVER NEAR QUINLAN, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1959 - 1998	
ANNUAL TOTAL	47616.90		23463.33		82.0	
ANNUAL MEAN	130		64.3		3.29	
HIGHEST ANNUAL MEAN					187	1995
LOWEST ANNUAL MEAN					3.29	1996
HIGHEST DAILY MEAN	6580	Dec 21	6580	Dec 21	13300	Jun 16 1981
LOWEST DAILY MEAN	.00	Aug 2	.00	Oct 1	.00	Mar 3 1959
ANNUAL SEVEN-DAY MINIMUM	.00	Sep 1	.00	Oct 1	.00	Apr 5 1959
INSTANTANEOUS PEAK FLOW			11400	Dec 21	23000	Jun 16 1981
INSTANTANEOUS PEAK STAGE			17.36	Dec 21	18.77	Apr 5 1986
ANNUAL RUNOFF (AC-FT)	94450		46540		59410	
ANNUAL RUNOFF (CFSM)	1.66		.82		1.04	
ANNUAL RUNOFF (INCHES)	22.51		11.09		14.16	
10 PERCENT EXCEEDS	168		59		57	
50 PERCENT EXCEEDS	2.0		.70		.40	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated



SABINE RIVER BASIN

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 mi².

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

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

REMARKS.--The lake is formed by a rolled earthfill dam 29,500 ft long, including a 480-foot uncontrolled concrete ogee spillway. Outlet works consist of two 4- by 6-foot sluice gates and two 20-inch steel pipes controlled by service valves. Closure of earthen dam began Jul 1, 1960, and deliberate impoundment of water began Oct 7, 1960. Capacity table is based on a 1984 survey. Diversions are made for municipal use by the city of Dallas and various other users in the Sabine River basin. The lake was built for water conservation. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	454.0
Design flood.....	446.2
Crest of spillway.....	437.5
Lowest intake to wet well (invert).....	416.5
Lowest gated outlet (invert).....	378.0

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,130,400 acre-ft, May 1, 1966 (elevation, 442.58 ft); minimum contents since lake first filled in May 1965, 786,900 acre-ft, Sep 11, 1998 (elevation, 433.17 ft) using Capacity Table 1-C.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,001,000 acre-ft, Jan 13 (elevation, 439.25 ft); minimum contents, 786,900 acre-ft, Sep 11 (elevation, 433.17 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	887700	871400	855800	960600	957600	970900	953200	929400	912500	879000	836000	801100
2	886300	869600	857900	959100	956200	967600	952100	930100	911100	876600	834600	799400
3	885300	867600	858600	958000	955100	963900	951100	929000	909300	876200	832900	798800
4	883500	865800	858200	958000	953600	961700	948900	927600	912500	876200	833300	797100
5	882800	866500	857200	962400	953200	961000	946700	927200	909700	875500	831900	795800
6	882100	864800	855400	972000	951400	958000	945600	926800	907200	874100	831300	794100
7	880400	862000	858600	986400	948900	959900	945300	926800	905800	872700	831300	793200
8	882100	861400	862400	996200	947800	959900	946000	926100	903700	871400	829900	792200
9	883900	861700	868300	998400	947100	955400	943500	926500	904400	870000	828500	789800
10	883100	861400	867200	993900	958800	952100	942000	925400	905400	868300	827500	787900
11	881800	860300	865200	991300	965400	951100	940600	924000	904400	866500	826900	787500
12	884900	861400	864100	996500	966100	949300	938000	922500	903300	864800	825800	788500
13	883100	862700	863100	999900	964300	948200	939500	921400	902200	863800	824500	788500
14	880700	863400	862400	996500	962100	951400	938800	920700	901500	862000	822500	788200
15	879700	862000	861400	988700	961000	956500	938000	921800	900500	861000	821400	788900
16	878600	860000	861400	985700	960200	969100	938000	921100	898400	860000	820100	792500
17	877200	858600	860000	979100	958400	978700	936600	920000	896600	859300	820100	795500
18	875200	858600	859300	976800	956900	978700	934800	918900	896200	857500	818700	798800
19	874500	857500	859300	970900	955800	980500	934100	917800	895200	856100	817400	800100
20	874100	857200	877600	968700	954700	975700	933700	917100	893400	854800	816000	799100
21	873800	856800	932600	969500	953600	971700	933400	916400	892300	853000	814700	798100
22	871700	856100	959500	966500	954300	968400	932300	914600	891300	851600	813300	798100
23	874800	855100	969800	964300	954300	965800	930800	913600	889200	850200	812300	796800
24	877200	854400	976500	961300	952900	963200	929000	913600	888400	848900	811400	795800
25	880000	853700	981600	958000	953600	960600	929000	912200	886700	847200	810000	794800
26	878600	854100	980500	960600	963200	958000	931900	911400	884600	845500	808700	793800
27	874800	852300	975000	963900	975700	958000	932300	917500	883900	843800	807700	793200
28	873100	857200	975700	963200	974300	957300	931900	917100	882400	842400	806400	792500
29	872400	858600	969500	962100	---	955400	930500	916400	881800	840700	804700	791500
30	871700	856800	966900	959900	---	958400	929700	915300	880700	838700	803100	790200
31	871700	---	963200	958400	---	954700	---	913900	---	837300	802400	---
MAX	887700	871400	981600	999900	975700	980500	953200	930100	912500	879000	836000	801100
MIN	871700	852300	855400	958000	947100	948200	929000	911400	880700	837300	802400	787500
(+)	435.68	435.25	438.24	438.11	438.54	438.01	437.32	436.88	435.94	434.68	433.64	433.27
(@)	-16700	-14900	+106400	-4800	+15900	-19600	-25000	-15800	-33200	-43400	-34900	-12200

CAL YR 1997 MAX 1026000 MIN 794800 (@) +167700
WTR YR 1998 MAX 999900 MIN 787500 (@) -98200

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

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 mi².

PERIOD OF RECORD.--Oct 1970 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 370.00 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in Oct 1970, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (see station 08017400) 750 ft upstream. Several observations of water temperature were obtained during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since construction of Iron Bridge Dam in 1960, about 21,000 ft³/s May 1, 1966, from theoretical rating curve of flow over dam 750 ft upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.9	9.6	23	893	650	1500	492	17	8.0	6.6	7.2	7.2
2	8.4	11	11	776	594	1330	430	12	7.5	6.8	6.5	6.4
3	8.1	9.3	9.7	695	566	1120	506	46	8.0	7.0	7.1	5.7
4	7.6	8.4	28	623	513	941	454	20	13	7.7	9.7	5.6
5	7.5	8.8	20	905	450	902	295	11	49	8.1	10	5.6
6	7.7	12	11	1200	542	819	248	8.5	49	7.7	11	5.8
7	7.9	8.6	8.3	2070	395	680	222	10	19	7.5	10	6.1
8	9.0	8.6	120	2920	300	1100	285	15	13	7.3	9.9	6.1
9	9.3	8.8	82	3320	271	1040	388	61	11	7.4	8.9	6.2
10	9.2	9.9	48	3230	459	640	196	113	9.2	7.7	8.3	6.0
11	9.2	8.9	30	2900	1110	451	117	24	8.9	8.1	8.2	6.5
12	11	8.4	20	2950	1120	395	72	12	8.9	8.5	8.1	7.6
13	20	8.4	14	3690	1070	315	60	8.1	8.5	8.9	8.1	7.7
14	9.0	8.5	11	3430	960	296	62	6.9	8.5	9.1	8.2	7.4
15	8.6	9.0	10	2950	856	518	54	6.5	11	9.5	8.0	15
16	8.7	8.5	9.5	2470	780	1330	206	6.2	13	9.3	7.7	350
17	8.8	8.6	9.6	2180	821	1200	169	6.2	13	9.4	7.3	135
18	8.8	9.0	10	1880	649	1490	109	6.1	13	9.2	7.4	26
19	8.7	9.2	10	1580	586	2060	29	6.0	14	8.9	7.3	14
20	8.6	9.4	16	1300	532	1950	57	6.3	13	8.9	7.4	10
21	9.2	9.7	588	1220	488	1500	208	6.6	10	8.9	7.2	8.7
22	8.7	9.8	493	1400	504	1270	171	6.5	5.0	8.7	7.1	8.2
23	9.2	9.9	933	1150	506	1130	54	5.7	3.7	8.3	6.7	8.1
24	10	9.9	1550	981	489	1020	16	6.0	3.6	8.0	6.6	8.4
25	15	10	1950	807	452	880	9.9	6.9	3.9	7.9	6.6	8.1
26	23	10	2090	903	740	738	13	7.2	4.3	7.9	6.8	7.7
27	14	10	1880	914	1220	674	71	41	4.8	7.7	6.7	7.2
28	8.4	14	1720	959	1620	640	141	53	5.3	7.8	6.9	7.4
29	8.6	122	1520	914	---	570	97	21	5.7	7.7	6.9	7.5
30	8.7	47	1210	816	---	522	38	13	6.1	7.6	7.1	7.6
31	8.7	---	1080	713	---	624	---	9.8	---	7.4	7.3	---
TOTAL	308.5	435.2	15515.1	52739	19243	29645	5269.9	578.5	350.9	251.5	242.2	718.8
MEAN	9.95	14.5	500	1701	687	956	176	18.7	11.7	8.11	7.81	24.0
MAX	23	122	2090	3690	1620	2060	506	113	49	9.5	11	350
MIN	7.5	8.4	8.3	623	271	296	9.9	5.7	3.6	6.6	6.5	5.6
AC-FT	612	863	30770	104600	38170	58800	10450	1150	696	499	480	1430

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1998, BY WATER YEAR (WY)

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
MEAN	200	386	499	352	523	709	715	919	587	179	35.2	50.4						
MAX	1726	2539	3377	1701	2482	1911	2090	3888	2825	1229	332	868						
(WY)	1974	1975	1992	1998	1975	1990	1986	1990	1989	1981	1979	1974						
MIN	.21	.76	.16	3.14	1.87	2.84	1.31	5.35	.81	.56	.12	.25						
(WY)	1991	1979	1991	1996	1976	1976	1971	1996	1972	1972	1986	1987						

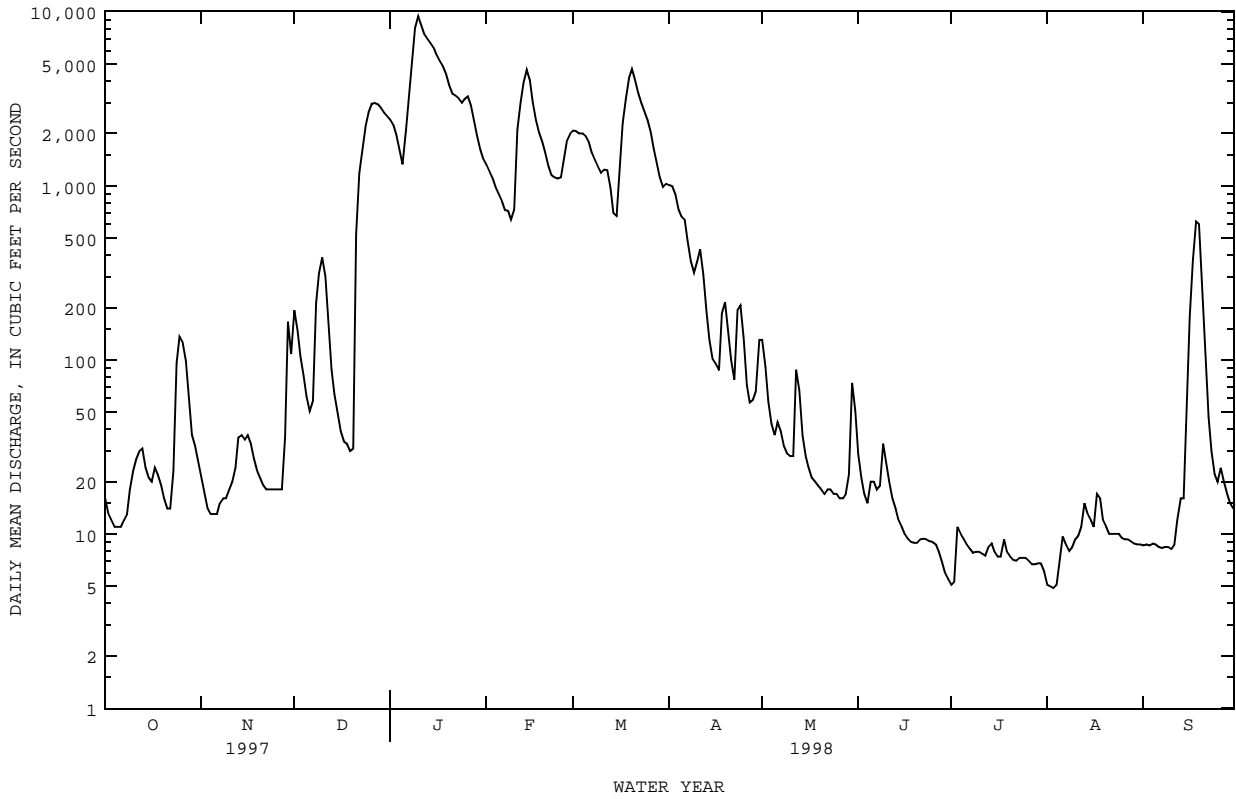
SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1971 - 1998

ANNUAL TOTAL	170777.12	125297.6	
ANNUAL MEAN	468	343	429
HIGHEST ANNUAL MEAN			1064
LOWEST ANNUAL MEAN			3.66
HIGHEST DAILY MEAN	5340	Apr 6	3690
LOWEST DAILY MEAN	.20	Jan 2	3.6
ANNUAL SEVEN-DAY MINIMUM	.22	Jan 1	4.4
INSTANTANEOUS PEAK FLOW			4370
INSTANTANEOUS PEAK STAGE			14.53
ANNUAL RUNOFF (AC-FT)	338700	248500	310600
10 PERCENT EXCEEDS	1730	1140	1340
50 PERCENT EXCEEDS	19	11	20
90 PERCENT EXCEEDS	2.6	6.8	.28

08018500 SABINE RIVER NEAR MINEOLA, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1968 - 1998z	
ANNUAL TOTAL	426059		280616.5		913	
ANNUAL MEAN	1167		769		1904	
HIGHEST ANNUAL MEAN					29.8	
LOWEST ANNUAL MEAN					1968	
HIGHEST DAILY MEAN	10200	Apr 29	9400	Jan 10	36200	Dec 11 1971
LOWEST DAILY MEAN	11	Oct 4	4.9	Aug 3	.00	Aug 13 1970
ANNUAL SEVEN-DAY MINIMUM	12	Oct 2	5.7	Jul 29	.00	Sep 15 1971
INSTANTANEOUS PEAK FLOW			9180	Jan 10	37700	Dec 11 1971
INSTANTANEOUS PEAK STAGE			17.74	Jan 10	21.53	Dec 11 1971
ANNUAL RUNOFF (AC-FT)	845100		556600		661300	
10 PERCENT EXCEEDS	4270		2730		2820	
50 PERCENT EXCEEDS	151		33		136	
90 PERCENT EXCEEDS	15		8.4		7.7	

e Estimated
z Period of regulated streamflow.



SABINE RIVER BASIN

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 mi².

PERIOD OF RECORD.--Oct 1979 to current year.
Water-quality records.--Chemical analyses: Oct 1980 to Sep 1984.

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

REMARKS.--Records good. The lake is formed by a rolled earthfill dam 12,660 ft long, including a 260-foot gated concrete spillway. The outlet works consist of two 5- by 8-foot low-flow sluice gates, five 40- by 20-foot tainter gates, and two 5- by 6-foot sluice gates that open into a wet well where there are two 36-inch and one 10-inch valve-controlled and metered-outlet pipes. Deliberate impoundment began Jun 29, 1979, and closure of the dam was completed in Jan 1980. The lake was built for water conservation and is owned by the Sabine River Authority. No known diversions were made from the lake this year. Flow is affected at times by discharge from the flood-detention pools of 21 floodwater-retarding structures with a combined detention capacity of 20,270 acre-ft. These structures control runoff 60 mi² above the lake. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	419.5
Top of tainter gates.....	405.0
Crest of gated spillway.....	385.0
Invert of upper sluice gate.....	383.0
Invert of lower sluice gate.....	360.5
Invert of sluice gate in two center pieces.....	360.0

COOPERATION.--Capacity table 1-A was provided by URS/Forest and Cotton, Inc., Consulting Engineers for the Sabine River Authority. Observed elevations for the period Oct 31, 1979, to Jan 31, 1980, were provided by the Sabine River Authority. A new capacity table, Table 2-C, provided by the Sabine River Authority was put into effect Oct 1, 1996.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 737,300 acre-ft, May 4, 1990 (elevation, 405.15 ft); minimum contents observed, 46,140 acre-ft, Dec 11-14, 1979 (elevation, 361.10 ft) using Table 1-C.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 690,700 acre-ft, Jan 8 (elevation, 403.53 ft); minimum contents, 602,800 acre-ft, Sep 11 (elevation, 400.25 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	650700	647000	645100	660800	661400	670600	666300	660300	653700	636900	624200	610000
2	650200	646200	645900	661400	660000	668500	666300	660500	653500	636900	623400	609700
3	649400	645400	646400	661600	659700	666000	666300	660500	652100	638500	621300	609200
4	649100	644600	645900	662200	659700	664400	665500	660300	652600	639000	621800	608200
5	648500	645400	645600	669800	659700	664100	664900	659700	653500	639000	621800	607700
6	648300	644000	644800	677800	659200	663300	664600	659700	651800	638500	621800	606600
7	647700	643000	646700	688200	658900	665200	664600	660300	651000	638200	621000	606400
8	649900	643000	648000	689600	658900	668200	665500	659500	650200	637400	621000	605600
9	651500	643200	649900	684800	658900	666000	664600	659700	650400	636600	620300	604300
10	651000	643200	649100	677200	673900	665200	664100	658600	649600	636100	620000	603300
11	650200	643000	648800	675300	679800	665700	663000	657800	649400	635600	620500	602800
12	651800	644000	648000	677200	675800	664400	662500	657800	648800	638700	620500	604300
13	650700	645400	647500	674500	670900	664900	663000	657000	648500	637700	619700	604800
14	649900	645400	647500	672300	666800	667400	663000	656500	647700	636900	619700	604800
15	649100	644600	647200	667100	664900	672500	662200	657000	647200	636100	619200	608200
16	648300	643800	647500	665500	663300	682300	662700	656500	646400	636100	619000	622100
17	647700	643000	647200	661400	661100	684500	661900	656200	645400	635300	618200	627400
18	647000	643000	646700	659700	660800	677800	661400	655600	645400	634800	618200	629200
19	646700	643000	647200	656500	661100	675500	661100	655400	644600	634000	617400	629700
20	646700	643000	652900	656500	661600	671200	661400	655400	644000	633700	616900	630000
21	646700	643000	663000	659700	661900	667900	661400	654800	643200	632400	615900	630000
22	645400	642500	666800	663000	662700	664900	661100	654500	643000	632100	615400	630000
23	649100	642200	669500	664100	664100	663000	660300	653700	642200	631300	615100	629700
24	649100	642200	673600	663800	665500	662500	659500	653700	641400	630500	614600	629200
25	651000	642400	672000	663800	666500	662500	659500	653200	640600	629200	614300	628900
26	649600	642400	670400	667400	667600	662200	659500	653200	639800	628900	613600	628400
27	647700	641900	666800	667100	669000	663300	661100	656200	639300	628100	613100	628400
28	647000	645600	666000	666300	670400	663800	661100	655900	638500	627400	612800	628100
29	647000	645900	662200	664900	---	664100	660500	655400	638200	626600	612000	627600
30	646200	645600	661400	663800	---	666500	660300	655100	637700	625200	611300	627400
31	647000	---	661100	662500	---	666300	---	654500	---	625000	610700	---
MAX	651800	647000	673600	689600	679800	684500	666300	660500	653700	639000	624200	630000
MIN	645400	641900	644800	656500	658900	662200	659500	653200	637700	625000	610700	602800
(+)	401.94	401.89	402.46	402.51	402.80	402.65	402.43	402.22	401.59	401.11	400.56	401.20
(@)	-4000	-1400	+15500	+1400	+7900	-4100	-6000	-5800	-16800	-12700	-14300	+16700
CAL YR 1997	MAX 694900	MIN 641900	(@) -7900									
WTR YR 1998	MAX 689600	MIN 602800	(@) -23600									

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

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 mi².

PERIOD OF RECORD.--Jun 1924 to Apr 1926, Feb 1939 to current year. Discharge from some high-water periods in 1925-26 published in WSP 1342. Monthly discharge only for some periods, published in WSP 1312. Prior to Oct 1961, published as Lake Fork Sabine River near Quitman.

Water-quality records.--Chemical analyses: Dec 1961 to Aug 1989. Specific Conductance: Nov 1967 to Sep 1989. Water Temperature: Dec 1967 to Sep 1989.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 317.42 ft above sea level. From Jun 27, 1924, to Apr 30, 1926, a nonrecording gage was located at site 1,000 ft downstream at same datum. Prior to Sep 5, 1978, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1980, at least 10% of contributing drainage area has been regulated by Lake Quitman (capacity, 7,440 acre-ft) on Dry Creek, a tributary above this station and below Lake Fork Reservoir. Construction of Lake Fork Dam and Reservoir (capacity, 675,800 acre-ft), located about 5 mi upstream from this station, began in 1975. Deliberate impoundment began Jun 29, 1979, and the dam was completed in Jan 1980. Lake Fork Reservoir controls runoff from 490 mi² 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 ft³/s (313,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1925, 1940-79).--Maximum discharge, 75,600 ft³/s Mar 30, 1945 (gage height, 29.85 ft, from floodmark), from rating curve extended above 49,000 ft³/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Jul 1895 reached a stage of about 25.9 ft, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	33	38	187	1050	1130	99	13	7.3	29	28	28
2	42	23	34	70	1050	1080	60	12	7.3	29	28	28
3	43	23	38	63	999	1050	49	12	23	31	28	28
4	44	25	44	61	356	1030	42	11	34	30	28	28
5	44	23	36	445	74	1020	36	12	39	29	29	28
6	45	23	33	1860	58	971	33	11	39	29	30	28
7	46	24	38	3030	53	375	31	11	38	29	29	28
8	44	23	185	5850	50	133	29	10	31	29	28	28
9	50	23	138	5790	49	107	26	10	29	29	28	27
10	51	24	57	5460	302	72	25	9.7	28	28	28	26
11	49	26	44	5020	1790	58	22	9.6	28	28	28	27
12	49	26	39	3280	3210	52	20	11	32	29	30	30
13	52	33	36	2890	3400	48	19	9.0	28	31	29	30
14	50	32	34	2730	3160	51	19	9.2	27	31	29	30
15	49	28	33	2640	2180	193	17	9.2	27	31	32	34
16	49	25	34	2550	1920	509	17	9.2	27	31	30	75
17	50	25	32	2100	1890	1860	16	9.0	29	31	29	126
18	49	27	32	1910	1840	3960	16	9.0	28	31	29	53
19	49	27	33	1850	991	3990	15	9.3	28	31	28	32
20	49	23	34	1470	260	3210	14	8.9	28	31	28	28
21	50	24	373	617	114	2130	17	8.3	28	31	28	26
22	49	25	551	181	105	1870	16	7.7	28	30	28	26
23	61	26	1200	153	131	1800	15	7.7	28	29	28	25
24	141	25	2160	124	105	1350	14	8.1	28	29	28	24
25	73	25	2520	101	88	440	13	8.1	29	29	28	24
26	54	24	2410	116	390	86	12	7.8	28	28	28	23
27	51	26	2360	654	1030	61	21	8.7	28	28	28	23
28	51	47	2310	996	1190	62	23	9.3	29	28	28	24
29	50	142	2080	1060	---	56	16	8.4	29	28	28	33
30	50	64	1760	1060	---	49	14	8.0	29	28	28	27
31	50	---	903	1060	---	104	---	7.5	---	28	28	---
TOTAL	1627	944	19619	55378	27835	28907	766	294.7	841.6	913	884	997
MEAN	52.5	31.5	633	1786	994	932	25.5	9.51	28.1	29.5	28.5	33.2
MAX	141	142	2520	5850	3400	3990	99	13	39	31	32	126
MIN	42	23	32	61	49	48	12	7.5	7.3	28	28	23
AC-FT	3230	1870	38910	109800	55210	57340	1520	585	1670	1810	1750	1980

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1998z, BY WATER YEAR (WY)

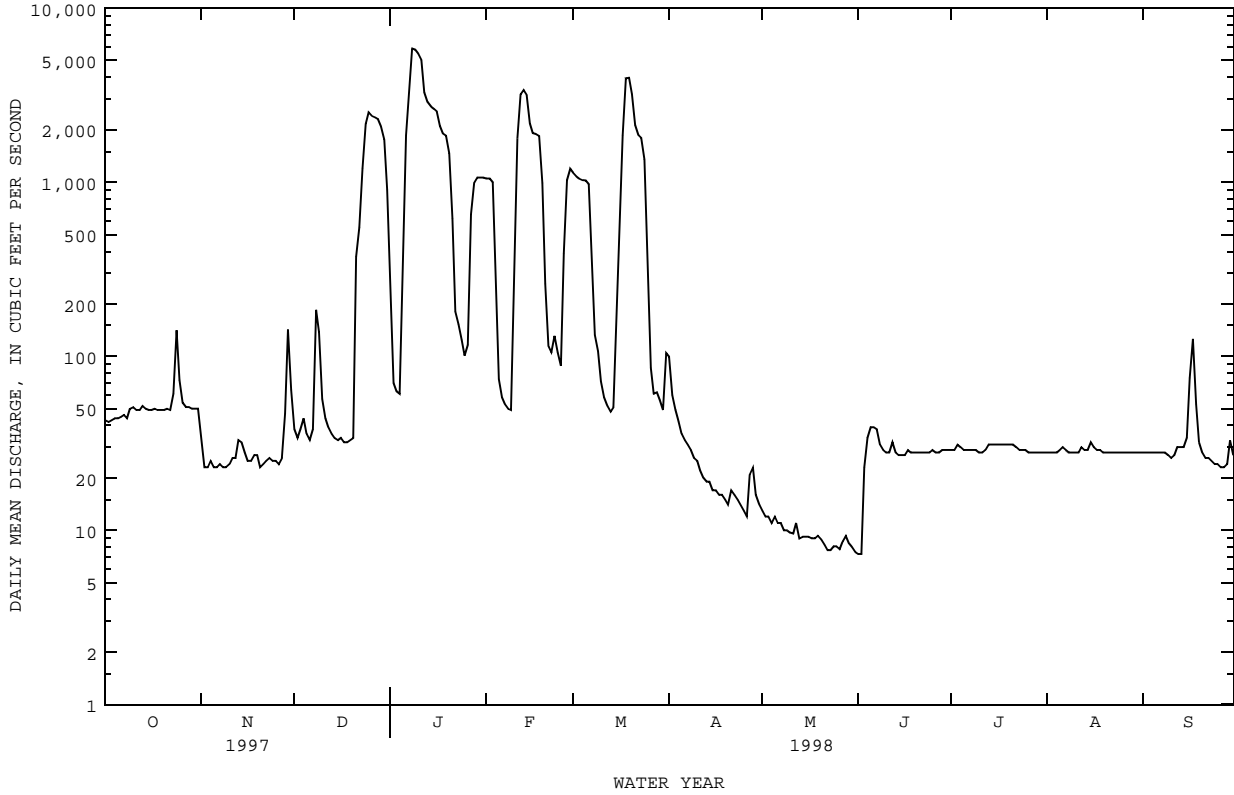
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MEAN	74.5	283	586	510	882	802	551	650	293	250	93.0	34.3							
MAX	603	1552	2853	1786	3160	2938	1991	2807	1280	1795	940	167							
(WY)	1994	1989	1992	1998	1997	1990	1990	1986	1994	1992	1992	1992							
MIN	1.23	2.92	9.31	4.43	14.1	25.3	4.29	9.51	8.51	1.43	.13	.76							
(WY)	1983	1981	1982	1981	1981	1996	1981	1998	1984	1985	1980	1982							

SABINE RIVER BASIN

08019000 LAKE FORK CREEK NEAR QUITMAN, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1980 - 1998z	
ANNUAL TOTAL	255880		139006.3		415	
ANNUAL MEAN	701		381		1006	
HIGHEST ANNUAL MEAN					43.2	
LOWEST ANNUAL MEAN					1992	
HIGHEST DAILY MEAN	12600	Feb 22	5850	Jan 8	23600	May 18 1989
LOWEST DAILY MEAN	23	Jan 5	7.3	Jun 1	.00	Aug 23 1980
ANNUAL SEVEN-DAY MINIMUM	23	Nov 2	8.1	May 21	.00	Aug 23 1980
INSTANTANEOUS PEAK FLOW			6120	Jan 8	24200	May 18 1989
INSTANTANEOUS PEAK STAGE			17.19	Jan 8	21.75	May 18 1989
ANNUAL RUNOFF (AC-FT)	507500		275700		300900	
10 PERCENT EXCEEDS	2540		1590		1200	
50 PERCENT EXCEEDS	58		31		39	
90 PERCENT EXCEEDS	33		14		4.4	

z Period of regulated streamflow.



SABINE RIVER MAIN STEM

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 mi².

PERIOD OF RECORD.--Oct 1997 to current year.

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

REMARKS.--No estimated daily discharges. Records good. Since October 1960, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400), capacity 936,200 acre-ft, Lake Fork Creek Reservoir (station 08018800), capacity 675,800 acre-ft, and by five tributary reservoirs with a total combined capacity of 42,370 acre-ft. There are many diversions above station for oil field operations and municipal supply. Several observations of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	165	440	4070	2650	2940	1580	235	123	49	42	44
2	5.0	153	380	4000	2380	3000	1470	257	98	48	41	44
3	4.9	132	364	3760	2160	3040	1300	228	71	48	41	44
4	4.9	111	364	3260	1990	3020	1130	201	55	50	41	43
5	4.8	98	344	2600	1820	2960	952	172	72	52	43	43
6	4.8	92	296	3420	1470	2890	837	152	260	58	48	44
7	37	97	268	4950	1060	2820	779	145	234	53	49	44
8	67	95	361	5320	896	2720	667	145	151	49	49	44
9	69	87	581	5390	849	2450	571	132	121	49	50	43
10	78	89	637	5890	1150	1970	508	139	112	48	48	42
11	134	96	601	7930	2510	1600	513	135	117	47	49	44
12	162	112	496	11200	3120	1460	546	128	108	48	55	56
13	165	147	370	12600	3220	1410	465	121	96	50	53	56
14	193	211	278	12200	3510	1280	365	155	83	47	52	60
15	198	229	230	10900	4110	1080	308	125	75	48	55	182
16	147	201	205	9540	4930	1270	263	103	67	49	61	628
17	121	169	185	8520	5620	2000	239	89	61	49	60	831
18	111	154	173	7860	5730	2570	225	82	58	49	56	682
19	108	140	164	7250	5410	3000	274	75	57	49	56	725
20	104	128	161	6770	4960	3510	336	69	57	49	59	677
21	97	122	295	6390	4470	4360	296	64	55	49	54	446
22	89	116	903	6150	3920	5310	253	62	54	49	51	273
23	108	111	1480	5820	3200	5920	226	60	53	48	49	181
24	299	108	2330	5330	2410	5920	271	57	54	47	48	133
25	467	108	2700	4740	1770	5580	314	55	56	45	47	108
26	421	110	2880	4170	2170	5150	266	54	53	44	47	93
27	350	108	3090	3760	2770	4620	223	57	53	44	47	84
28	276	144	3350	3500	2910	3890	214	60	53	44	46	85
29	228	339	3650	3340	---	3010	247	61	52	43	46	80
30	207	501	3900	3170	---	2090	221	64	50	42	45	73
31	181	---	4040	2930	---	1640	---	76	---	42	45	---
TOTAL	4446.4	4473	35516	186730	83165	94480	15859	3558	2609	1486	1533	5932
MEAN	143	149	1146	6024	2970	3048	529	115	87.0	47.9	49.5	198
MAX	467	501	4040	12600	5730	5920	1580	257	260	58	61	831
MIN	4.8	87	161	2600	849	1080	214	54	50	42	41	42
AC-FT	8820	8870	70450	370400	165000	187400	31460	7060	5170	2950	3040	11770

SUMMARY STATISTICS

FOR 1998 WATER YEAR

ANNUAL TOTAL	439787.4
ANNUAL MEAN	1205
HIGHEST ANNUAL MEAN	
LOWEST ANNUAL MEAN	
HIGHEST DAILY MEAN	12600 Jan 13
LOWEST DAILY MEAN	4.8 Oct 5
ANNUAL SEVEN-DAY MINIMUM	9.5 Oct 1
INSTANTANEOUS PEAK FLOW	12700 Jan 13
INSTANTANEOUS PEAK STAGE	28.63 Jan 13
ANNUAL RUNOFF (AC-FT)	872300
10 PERCENT EXCEEDS	4020
50 PERCENT EXCEEDS	165
90 PERCENT EXCEEDS	47

SABINE RIVER BASIN

08019500 BIG SANDY CREEK NEAR BIG SANDY, TX

LOCATION.--Lat 32°36'14", long 95°05'29", Upshur County, Hydrologic Unit 12010002, on downstream side of highway embankment near left end of bridge on State Highway 155, 0.5 mi upstream from St. Louis Southwestern Railway Lines bridge, 1.6 mi northeast of Big Sandy, and 6.5 mi upstream from mouth.

DRAINAGE AREA.--231 mi².

PERIOD OF RECORD.--Feb 1939 to current year.

Water-quality records.--Chemical analyses: Mar 1961 to Sep 1986. Chemical and biochemical analyses: Oct 1984 to Sep 1986.

REVISED RECORDS.--WSP 1732: 1941(M), 1945-46, 1956, drainage area. WSP 1922: 1944(M), 1945-46.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 278.38 ft above sea level. Prior to Oct 5, 1940, nonrecording gage, and Oct 5, 1940, to Nov 26, 1951, water-stage recorder at site 1.3 mi upstream at datum 3.00 ft higher. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1962, at least 10% of contributing drainage area has been regulated by Lake Winnsboro, about 27 miles upstream (capacity 8,100 acre-ft, drainage area 27.1 mi²) and by several other smaller lakes. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--24 years (water years 1939-62), 200 ft³/s (145,0 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1939-62).--Maximum discharge, 24,000 ft³/s Mar 31, 1945 (gage height, 24.10 ft, from floodmark), from rating curve extended above 91,000 ft³/s; minimum, 5.6 ft³/s Aug 16, 1939. Maximum stage since at least 1892, that of Apr 2, 1945.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	62	220	237	238	769	226	81	26	16	13	12
2	24	55	240	213	215	674	266	66	19	16	13	12
3	22	49	311	195	195	448	312	55	18	16	13	12
4	21	45	300	185	181	312	296	48	15	17	13	12
5	20	44	212	180	171	252	219	44	20	17	13	12
6	19	50	172	801	163	221	169	48	46	17	15	12
7	20	47	166	1220	154	215	143	52	80	16	19	13
8	23	45	240	1450	148	211	142	46	74	16	17	13
9	28	45	236	1900	142	216	139	41	53	16	14	13
10	41	50	254	1790	250	221	127	36	38	16	13	13
11	66	57	307	1420	704	222	107	34	30	16	13	13
12	84	69	355	1220	816	206	91	31	25	16	13	14
13	107	95	307	976	1270	185	79	28	22	15	17	27
14	110	114	204	871	1420	172	72	26	19	15	20	41
15	92	122	159	967	1020	187	69	25	17	15	21	71
16	97	123	139	923	711	236	65	25	16	15	21	364
17	97	116	128	701	518	366	61	26	15	15	23	367
18	66	100	121	516	412	501	58	25	13	15	20	208
19	45	83	117	398	360	723	55	23	13	15	18	151
20	37	74	110	321	341	923	52	21	12	15	17	129
21	33	69	188	273	333	773	55	20	12	14	15	130
22	31	67	204	334	325	559	60	20	13	14	13	106
23	39	66	272	357	329	406	58	20	13	14	12	68
24	198	63	935	304	295	306	54	20	13	14	12	50
25	222	62	1050	278	278	244	51	20	14	14	12	42
26	192	61	968	281	488	209	48	19	14	14	12	37
27	193	59	844	274	680	185	71	18	15	14	12	33
28	211	87	801	263	771	171	75	18	15	14	12	32
29	153	194	565	279	---	161	79	19	15	14	12	30
30	96	222	364	301	---	151	88	21	16	14	12	29
31	72	---	285	273	---	224	---	30	---	14	12	---
TOTAL	2484	2395	10774	19701	12928	10649	3387	1006	711	469	462	2066
MEAN	80.1	79.8	348	636	462	344	113	32.5	23.7	15.1	14.9	68.9
MAX	222	222	1050	1900	1420	923	312	81	80	17	23	367
MIN	19	44	110	180	142	151	48	18	12	14	12	12
AC-FT	4930	4750	21370	39080	25640	21120	6720	2000	1410	930	916	4100

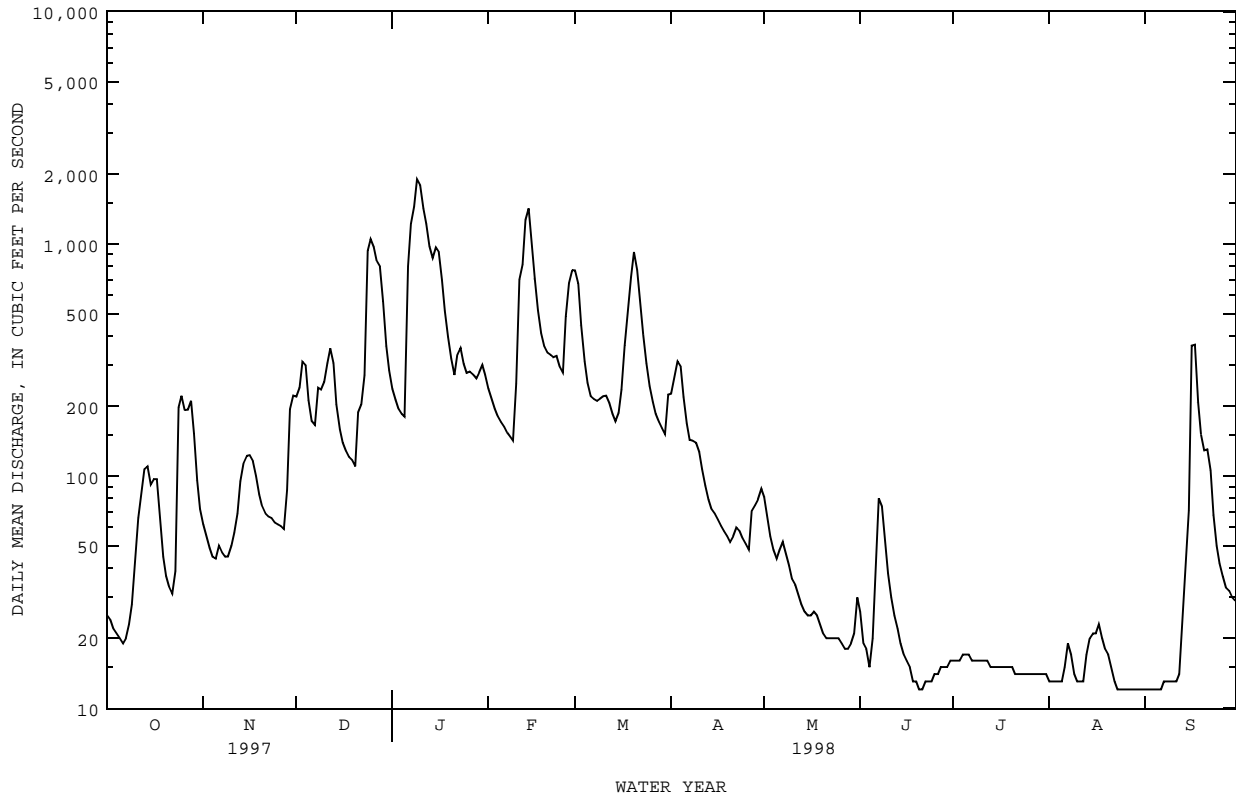
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1998z, BY WATER YEAR (WY)

	60.0	146	242	230	290	314	299	280	144	79.7	31.0	53.4
MEAN	60.0	146	242	230	290	314	299	280	144	79.7	31.0	53.4
MAX	469	884	884	798	856	694	1068	796	528	416	150	441
(WY)	1994	1975	1988	1993	1997	1969	1973	1968	1981	1994	1979	1974
MIN	13.2	20.0	27.2	38.4	43.7	47.5	52.3	32.5	9.61	6.99	4.65	9.02
(WY)	1979	1966	1966	1966	1996	1966	1981	1998	1984	1984	1984	1983

08019500 BIG SANDY CREEK NEAR BIG SANDY, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1963 - 1998z	
ANNUAL TOTAL	109315		67032		180	
ANNUAL MEAN	299		184		43.7	
HIGHEST ANNUAL MEAN					358 1975	
LOWEST ANNUAL MEAN					1964	
HIGHEST DAILY MEAN	3670	Apr 30	1900	Jan 9	6240	May 19 1989
LOWEST DAILY MEAN	16	Sep 13	12	Jun 20	3.5	Jul 24 1984
ANNUAL SEVEN-DAY MINIMUM	17	Sep 8	12	Aug 23	4.0	Aug 16 1984
INSTANTANEOUS PEAK FLOW			1950	Jan 9	6680	May 19 1989
INSTANTANEOUS PEAK STAGE			13.78	Jan 9	18.30	May 19 1989
ANNUAL RUNOFF (AC-FT)	216800		133000		130600	
10 PERCENT EXCEEDS	923		464		413	
50 PERCENT EXCEEDS	139		66		77	
90 PERCENT EXCEEDS	25		14		16	

z Period of regulated streamflow.



SABINE RIVER BASIN

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 mi².

PERIOD OF RECORD.--Oct 1932 to current year.

REVISED RECORDS.--WSP 1732: Drainage area. WRD TX-73-1: 1972.

GAGE.--Water-stage recorder. Datum of gage is 243.85 ft above sea level. Prior to Oct 13, 1933, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records good, except those for estimated daily discharges, which are fair. Since water year 1961, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400), capacity 936,200 acre-ft, Lake Fork Creek Reservoir (station 08018800), capacity 675,800 acre-ft, and by five tributary reservoirs with a total combined capacity of 42,370 acre-ft. There are many diversions above station for oil field operations and municipal supply. Several observations of water temperature were obtained during the year.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--28 years (water years 1933-60) prior to regulation by Lake Tawakoni, 2,012 ft³/s (1,458,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1933-60).--Maximum discharge, 138,000 ft³/s Apr 2, 1945 (gage height, 44.16 ft, from floodmark), from rating curve extended above 91,000 ft³/s; minimum, 5.6 ft³/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 ft³/s), from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	93	305	1000	4670	4520	4460	3410	416	66	e58	40	51
2	e98	262	869	4740	4090	4320	2760	404	88	e58	39	48
3	e100	229	844	4760	3640	4190	2300	418	77	e57	42	48
4	98	201	862	4690	3240	4060	1980	370	66	e58	43	48
5	89	185	816	4460	2890	3930	1740	327	130	e59	48	47
6	82	182	680	5740	2560	3800	1480	288	147	e60	54	46
7	81	172	588	7240	2120	3680	1300	266	197	e60	66	45
8	84	167	805	8080	1680	3610	1240	256	322	e58	76	45
9	88	165	1000	8630	1440	3490	1160	240	257	57	73	44
10	92	171	1120	8830	2040	3230	1010	216	189	54	66	44
11	110	174	1120	8710	4380	2780	892	204	153	52	62	47
12	174	217	1080	9030	5140	2330	856	195	140	50	58	70
13	342	e271	967	10800	5200	2070	844	182	129	50	82	106
14	403	e304	777	13000	5160	1950	739	168	114	56	77	492
15	393	e311	586	14300	5210	1890	616	184	98	54	73	620
16	350	e300	482	14400	5320	2010	544	171	88	55	74	4270
17	285	e281	429	14200	5510	2760	479	147	79	55	77	4410
18	238	e264	400	11800	5750	3290	431	131	71	53	83	3320
19	190	e251	372	11000	5990	3620	400	118	65	54	79	2020
20	161	245	363	10100	6130	3940	438	104	61	57	72	1370
21	148	235	639	9540	6130	4310	517	96	59	55	70	1110
22	137	212	1010	9230	6020	4720	493	87	57	54	69	856
23	205	196	1600	8760	5770	5130	441	82	55	50	63	630
24	683	185	2860	8280	5310	5510	392	79	54	49	59	483
25	944	178	3710	7770	4540	5800	412	75	e55	47	56	389
26	1040	174	4010	7260	4220	5970	450	71	e56	46	54	337
27	860	174	4150	6740	4470	6000	429	67	e57	44	53	304
28	678	240	4230	6250	4560	5880	426	66	e58	42	52	282
29	568	667	4350	5770	---	5550	416	62	e58	42	51	270
30	449	912	4470	5350	---	4930	438	59	e58	42	51	263
31	359	---	4580	4930	---	4170	---	59	---	41	55	---
TOTAL	9622	7830	50769	259060	123030	123380	29033	5608	3104	1627	1917	22115
MEAN	310	261	1638	8357	4394	3980	968	181	103	52.5	61.8	737
MAX	1040	912	4580	14400	6130	6000	3410	418	322	60	83	4410
MIN	81	165	363	4460	1440	1890	392	59	54	41	39	44
AC-FT	19090	15530	100700	513800	244000	244700	57590	11120	6160	3230	3800	43870

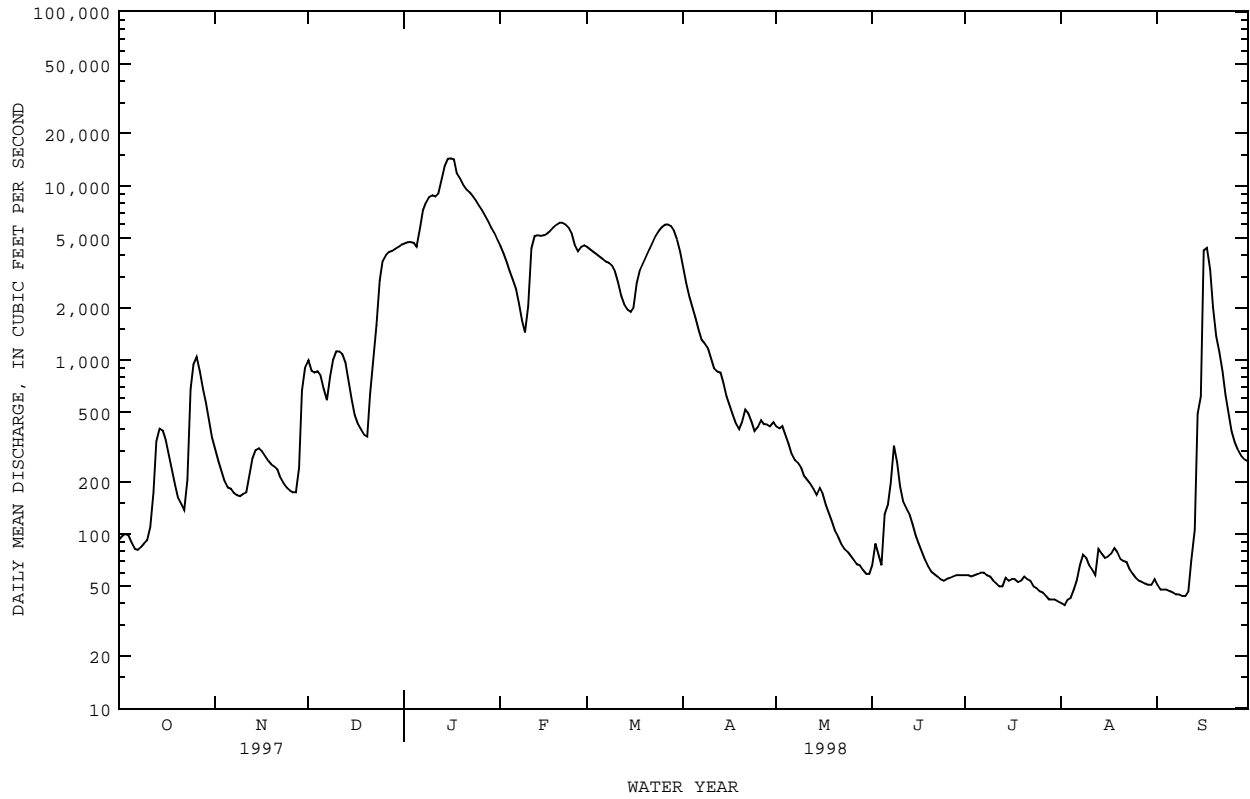
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1998z, BY WATER YEAR (WY)

	450	1270	2438	2160	2673	3430	2838	4024	1811	672	205	292
MEAN	450	1270	2438	2160	2673	3430	2838	4024	1811	672	205	292
MAX	3361	7839	10580	8357	9664	9717	9644	17100	6745	4261	1291	2566
(WY)	1974	1975	1972	1998	1975	1990	1996	1994	1994	1992	1974	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 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1961 - 1998z	
ANNUAL TOTAL	928049		637095		1852	
ANNUAL MEAN	2543		1745		3831	
HIGHEST ANNUAL MEAN					209	
LOWEST ANNUAL MEAN					1992	
HIGHEST DAILY MEAN	17000	Feb 27	14400	Jan 16	51000	May 22 1989
LOWEST DAILY MEAN	78	Sep 22	39	Aug 2	7.4	Jul 20 1971
ANNUAL SEVEN-DAY MINIMUM	88	Oct 4	41	Jul 28	9.5	Jul 16 1971
INSTANTANEOUS PEAK FLOW			14900		52300	
INSTANTANEOUS PEAK STAGE			33.64		38.98	
ANNUAL RUNOFF (AC-FT)	1841000		1264000		1342000	
10 PERCENT EXCEEDS	8680		5510		5410	
50 PERCENT EXCEEDS	912		327		533	
90 PERCENT EXCEEDS	114		54		58	

e Estimated
z Period of regulated streamflow.



SABINE RIVER BASIN

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 mi².

PERIOD OF RECORD.--Aug 1983 to current year (low flow).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 230.00 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good. Daily discharges below 500 ft³/s are published. Since installation of gage in Aug 1983, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400), capacity 936,200 acre-ft. Additional regulation by Lake Fork Reservoir (station 08018800), capacity 675,800 acre-ft, and by five tributary reservoirs with a combined capacity of 42,370 acre-ft. There are many diversions above station for municipal and industrial supply, and for oil field operations.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 31.64 ft May 10, 1990; minimum daily discharge, 0.50 ft³/s Sep 4, 1985.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	112	358	---	---	---	---	---	456	132	72	25	39
2	84	319	---	---	---	---	---	431	140	88	6.8	26
3	70	249	---	---	---	---	---	442	161	87	13	14
4	83	233	---	---	---	---	---	433	159	79	38	9.9
5	82	270	---	---	---	---	---	386	178	76	43	9.6
6	81	374	---	---	---	---	---	345	238	61	72	7.0
7	88	266	---	---	---	---	---	316	197	59	96	6.3
8	106	215	---	---	---	---	---	307	337	71	67	12
9	134	178	---	---	---	---	---	282	332	80	50	8.4
10	164	205	---	---	---	---	---	270	244	57	43	7.9
11	178	232	---	---	---	---	---	231	195	39	47	27
12	198	341	---	---	---	---	---	198	171	20	47	67
13	288	463	---	---	---	---	---	185	154	9.6	66	124
14	390	460	---	---	---	---	---	173	154	5.7	97	377
15	361	482	---	---	---	---	---	171	139	4.2	70	---
16	341	482	---	---	---	---	---	180	129	5.3	66	---
17	308	459	---	---	---	---	---	171	114	15	67	---
18	250	415	465	---	---	---	---	150	102	43	57	---
19	179	381	437	---	---	---	468	144	94	80	65	---
20	139	353	422	---	---	---	442	163	87	79	58	---
21	131	331	---	---	---	---	---	155	83	53	56	---
22	130	316	---	---	---	---	---	147	79	55	54	---
23	216	300	---	---	---	---	---	140	75	89	50	---
24	---	291	---	---	---	---	477	135	65	65	43	417
25	---	290	---	---	---	---	440	131	56	65	42	283
26	---	286	---	---	---	---	457	129	57	60	38	179
27	---	286	---	---	---	---	---	135	76	47	34	135
28	---	303	---	---	---	---	498	168	77	41	20	114
29	---	---	---	---	---	---	472	143	69	33	22	97
30	---	---	---	---	---	---	456	135	66	13	29	91
31	419	---	---	---	---	---	---	127	---	16	41	---
TOTAL	---	---	---	---	---	---	---	6979	4160	1567.8	1522.8	---
MEAN	---	---	---	---	---	---	---	225	139	50.6	49.1	---
MAX	---	---	---	---	---	---	---	456	337	89	97	---
MIN	---	---	---	---	---	---	---	127	56	4.2	6.8	---
AC-FT	---	---	---	---	---	---	---	13840	8250	3110	3020	---

08020900 SABINE RIVER BELOW LONGVIEW, TX

LOCATION.--Lat 32°25'00", long 94°42'33", Gregg County, Hydrologic Unit 12010002, on downstream side of Highway 149 bridge, 5 mi south of Longview, 14 mi northwest of Tatum.

DRAINAGE AREA.--3,155 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 230.00 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good. Since installation of gage in Oct 1995, at least 10% of contributing drainage area has been regulated by seven upstream reservoirs, with a combined capacity of 1,654,000 acre-ft. There are several diversions above this station for municipal, industrial and for oil field operations. Flow may also be slightly affected at times by discharge from one floodwater-retarding structure with a detention capacity of 3,570 acre-ft. This structure controls runoff from a 9.70 mi² area in the Mill Creek drainage basin.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	129	394	1090	4450	6930	6760	5890	547	168	66	23	48
2	126	351	1080	4570	6210	6070	5030	529	174	66	25	49
3	122	313	1280	4690	5540	5500	3790	529	190	66	25	46
4	121	282	1270	4780	4770	5030	2760	519	198	66	36	37
5	119	383	1090	4860	3980	4680	2210	499	348	66	57	38
6	114	518	963	5960	3350	4420	1870	466	456	66	88	30
7	107	371	850	8980	2870	4200	1580	429	335	66	90	27
8	139	294	1230	10700	2370	4060	1520	418	347	62	82	29
9	134	271	1320	11200	1930	3960	1550	406	413	60	72	27
10	140	302	1280	11100	2120	3790	1360	374	356	59	70	27
11	126	305	1280	10800	4760	3500	1160	350	292	52	61	33
12	128	345	1250	10800	5790	3050	1050	337	247	47	56	276
13	304	563	1180	10800	6120	2610	1010	327	214	48	95	427
14	402	633	1070	10800	6130	2340	966	308	197	43	160	422
15	375	569	910	10800	5990	2310	872	292	180	39	131	1110
16	351	554	747	11000	5870	2760	780	301	161	44	93	3430
17	315	536	641	11500	5850	4010	704	297	144	50	81	5230
18	276	495	584	11900	5870	4260	642	278	126	48	81	5600
19	244	450	548	12200	5940	4180	589	259	111	43	82	4740
20	212	417	516	12200	6090	4100	554	235	98	43	80	2810
21	197	389	982	12100	6250	4180	600	213	90	44	69	1480
22	207	369	1310	12300	6450	4370	660	200	85	45	65	1070
23	365	354	1410	12200	6750	4630	629	192	83	54	62	809
24	1930	336	2510	11900	6820	4920	589	188	82	50	56	604
25	1740	321	3250	11500	6610	5230	544	179	79	37	51	461
26	1390	317	3640	11000	6870	5530	543	172	68	32	45	367
27	1140	311	3930	10500	7410	5800	638	180	67	29	41	306
28	892	427	4100	9920	7320	6020	655	379	67	30	39	271
29	692	1110	4190	9300	---	6160	606	244	67	31	45	237
30	557	1100	4270	8580	---	6190	563	202	66	26	42	205
31	459	---	4350	7760	---	6190	---	180	---	24	43	---
TOTAL	13553	13380	54121	301150	152960	140810	41914	10029	5509	1502	2046	30246
MEAN	437	446	1746	9715	5463	4542	1397	324	184	48.5	66.0	1008
MAX	1930	1110	4350	12300	7410	6760	5890	547	456	66	160	5600
MIN	107	271	516	4450	1930	2310	543	172	66	24	23	27
AC-FT	26880	26540	107300	597300	303400	279300	83140	19890	10930	2980	4060	59990

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1998, BY WATER YEAR (WY)

	1996	1997	1998	1996	1997	1998	1996	1997	1998	1996	1997	1998
MEAN	320	423	1299	3839	3815	5641	2744	2197	600	435	271	518
MAX	437	672	1863	9715	5874	12120	6302	5846	1351	1041	491	1008
(WY)	1998	1997	1997	1998	1997	1997	1997	1997	1997	1997	1997	1998
MIN	149	151	287	340	236	260	533	324	184	48.5	66.0	126
(WY)	1996	1996	1996	1996	1996	1996	1996	1998	1998	1998	1998	1997

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1996 - 1998	
ANNUAL TOTAL	1128709		767220			
ANNUAL MEAN	3092		2102		1836	
HIGHEST ANNUAL MEAN					3115	
LOWEST ANNUAL MEAN					294	
HIGHEST DAILY MEAN	16600	Mar 2	12300	Jan 22	16600	Mar 2 1997
LOWEST DAILY MEAN	92	Aug 24	23	Aug 1	23	Aug 1 1998
ANNUAL SEVEN-DAY MINIMUM	98	Sep 16	26	Jul 28	26	Jul 28 1998
INSTANTANEOUS PEAK FLOW			12300	Jan 22	16600	Mar 2 1997
INSTANTANEOUS PEAK STAGE			29.02	Jan 22	32.40	Mar 2 1997
ANNUAL RUNOFF (AC-FT)	2239000		1522000		1330000	
10 PERCENT EXCEEDS	10900		6200		6240	
50 PERCENT EXCEEDS	1090		466		372	
90 PERCENT EXCEEDS	140		48		93	

SABINE RIVER BASIN

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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1938 to current year. Prior to Oct 1978, published as "near Tatum" (station 08022000).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 190.00 ft above sea level. Prior to Oct 1, 1978, at site 12.4 mi upstream at datum 14.18 ft higher. Prior to Sep 21, 1945, nonrecording gage. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1961, at least 10% of contributing drainage area has been regulated by eight major upstream reservoirs, with a combined capacity of 1,701,000 acre-ft. There are several diversions above this station and below Lake Tawakoni for municipal, industrial and oil field operations. Low flows are sustained by wastewater effluents that are returned to the river above the station. Flow may also be slightly affected at times by discharge from one floodwater-retarding structure with a detention capacity of 3,570 acre-ft. This structure controls runoff from a 9.70 mi² area 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 ft³/s (1,929,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD PRIOR TO REGULATION (WATER YEARS 1939-60).--Maximum discharge, 123,000 ft³/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 ft³/s on basis of partly estimated discharge measurement of 88,900 ft³/s; minimum observed, 2.4 ft³/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 stations near Tatum (08022000, discontinued) and at Logansport, La. (08022500).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	163	649	1720	5290	8860	10900	8040	668	187	65	23	41
2	143	518	1590	5260	8320	9660	7670	633	176	64	20	55
3	132	442	1760	5320	7680	8410	6350	622	186	54	20	56
4	138	385	2180	5420	6870	7320	4750	613	178	77	35	43
5	119	348	1950	5510	5900	6510	3570	587	212	87	36	34
6	112	604	1560	6260	4970	6140	2890	575	413	83	51	28
7	121	773	1340	9920	4230	5720	2430	542	505	73	182	26
8	133	549	1700	12700	3700	5540	2140	480	363	68	150	24
9	153	414	2390	13300	3140	5450	2250	467	330	72	108	31
10	150	384	2390	13200	3050	5340	2120	443	386	59	88	35
11	135	446	2010	12900	7020	4910	1760	398	340	52	69	32
12	134	468	1850	13000	9780	4380	1490	370	289	53	71	63
13	156	555	1690	13100	9500	3780	1360	363	242	64	70	287
14	336	919	1540	13000	8780	3310	1290	354	192	64	71	690
15	462	954	1350	12500	8230	3100	1210	322	164	60	122	1180
16	430	823	1130	12200	7780	3680	1080	299	162	45	123	2860
17	395	757	1000	11800	7710	6890	974	309	149	36	95	5370
18	340	708	904	11600	7830	8650	872	304	122	45	69	6360
19	301	640	756	11600	7650	7800	785	301	103	56	59	6240
20	274	574	726	11600	7530	6780	706	279	88	46	57	4980
21	243	534	1180	11800	7480	6180	676	243	77	52	63	2810
22	220	488	2240	12200	7590	5820	753	218	81	50	71	1650
23	259	450	2440	12700	8200	5730	813	203	82	43	57	1190
24	1740	416	3350	12900	8440	5890	752	211	75	46	49	884
25	3250	381	4780	12700	8420	6090	700	211	64	62	53	652
26	2440	375	5210	12400	9280	6370	651	194	57	53	58	485
27	1650	372	5160	12000	11400	6590	658	177	59	37	48	362
28	1390	375	5430	11500	11800	6760	759	219	68	32	36	291
29	1150	886	5440	10900	---	6930	800	374	70	41	30	269
30	951	1790	5310	10300	---	7030	738	295	60	43	27	241
31	786	---	5280	9540	---	7530	---	233	---	31	29	---
TOTAL	18406	17977	77356	334420	211140	195190	61037	11507	5480	1713	2040	37269
MEAN	594	599	2495	10790	7541	6296	2035	371	183	55.3	65.8	1242
MAX	3250	1790	5440	13300	11800	10900	8040	668	505	87	182	6360
MIN	112	348	726	5260	3050	3100	651	177	57	31	20	24
AC-FT	36510	35660	153400	663300	418800	387200	121100	22820	10870	3400	4050	73920

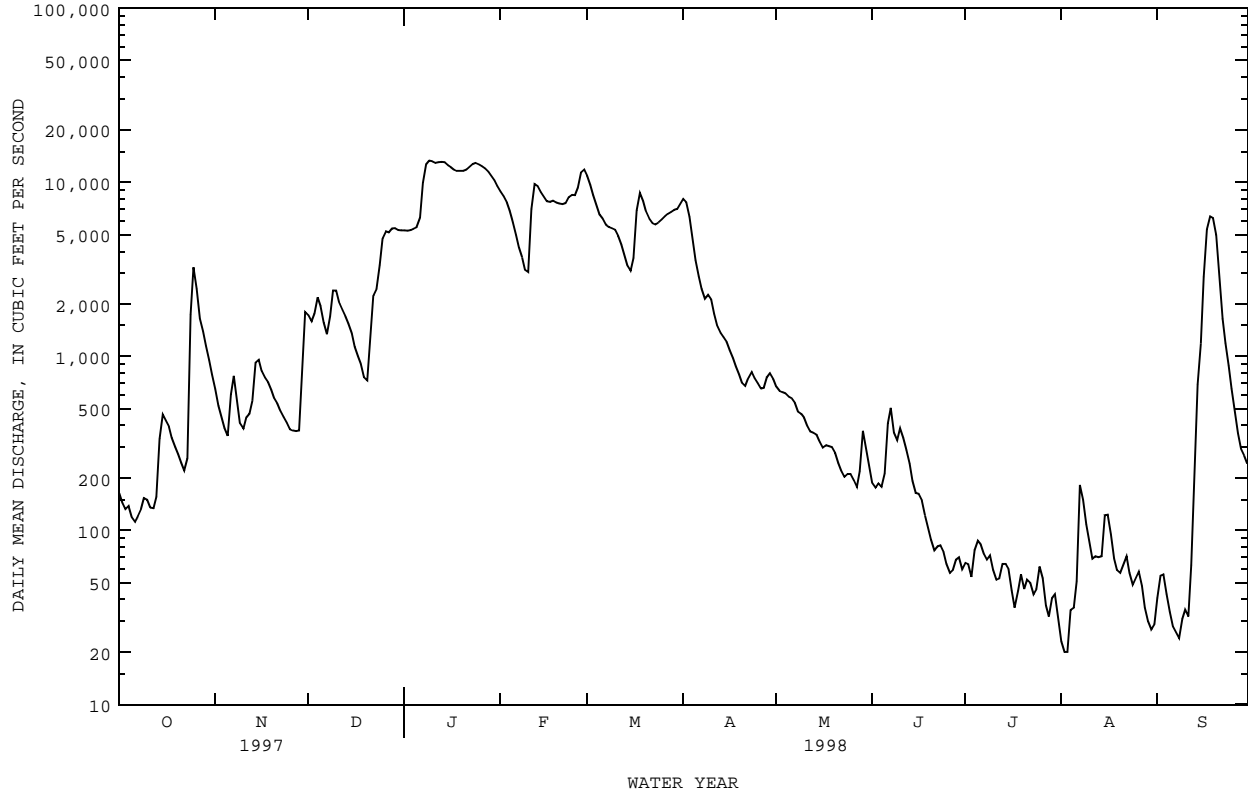
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1998z, BY WATER YEAR (WY)

	604	1612	3180	3313	4030	4574	3969	4805	2744	940	325	449
MEAN	604	1612	3180	3313	4030	4574	3969	4805	2744	940	325	449
MAX	4325	8221	9866	10960	11930	13180	11330	21010	11580	3834	1725	3434
(WY)	1974	1975	1976	1975	1975	1997	1990	1966	1989	1992	1979	1974
MIN	42.5	82.1	144	239	322	317	355	317	77.5	32.1	36.7	33.8
(WY)	1964	1964	1966	1964	1996	1996	1971	1972	1971	1964	1969	1985

08022040 SABINE RIVER NEAR BECKVILLE, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1961 - 1998z	
ANNUAL TOTAL	1434270		973535		2538	
ANNUAL MEAN	3930		2667		311	
HIGHEST ANNUAL MEAN					4857	
LOWEST ANNUAL MEAN					1992	
HIGHEST DAILY MEAN	17300	Mar 4	13300	Jan 9	48100	May 2 1966
LOWEST DAILY MEAN	108	Sep 16	20	Aug 2	2.4	Aug 11 1964
ANNUAL SEVEN-DAY MINIMUM	121	Sep 11	30	Jul 30	3.8	Aug 7 1964
INSTANTANEOUS PEAK FLOW			13300	Jan 9	49400	May 2 1966
INSTANTANEOUS PEAK STAGE			26.71	Jan 9	38.87	Mar 30 1989
ANNUAL RUNOFF (AC-FT)	2845000		1931000		1839000	
10 PERCENT EXCEEDS	11700		8430		7530	
50 PERCENT EXCEEDS	1720		633		862	
90 PERCENT EXCEEDS	178		53		88	

z Period of regulated streamflow.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Feb 1952 to current year. Chemical and biochemical analyses: Jan 1968 to current year.
Pesticide analyses: Mar 1968 to Jun 1981.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Feb 1952 to current year.
WATER TEMPERATURE: Feb 1952 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1989 to 1998. The standard error of estimate for dissolved solids is 26%, chloride is 6%, sulfate is 29% and for hardness is 19%. Regression equations developed for this station may be obtained from the U.S. Geological Survey District office upon request. Formerly published as 08022000 Sabine River near Tatum.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,040 microsiemens, Jan 13, 1966; minimum daily, 53 microsiemens, Mar 31, 1979, Mar 30, 1989.
WATER TEMPERATURE: Maximum daily, 38.0°C, Jul 8, 1969; minimum daily, 0.0°C, on several days during Dec 1983.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,540 microsiemens, Aug 13; minimum, 95 microsiemens, Jan 11.
WATER TEMPERATURE: Maximum, °C; minimum, °C.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD) UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L) AS CACO3 (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) AS CA (00904)	CALCIUM DIS-SOLVED (MG/L) AS CA (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L) AS MG (00925)
DEC 09...	0910	2390	302	7.1	16.5	52	32	15	3.7
MAR 19...	0837	7910	174	7.6	15.0	39	15	11	2.9
JUL 08...	1410	68	930	8.0	34.0	110	--	33	5.8
AUG 12...	1010	70	1230	8.0	25.0	99	--	29	6.3
28...	0710	40	737	7.5	30.0	75	--	21	5.2

DATE	SODIUM, DIS-SOLVED (MG/L) AS NA (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L) AS K (00935)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L) AS SO4 (00945)	CHLO-RIDE, DIS-SOLVED (MG/L) AS CL (00940)	FLUO-RIDE, DIS-SOLVED (MG/L) AS F (00950)	SILICA, DIS-SOLVED (MG/L) AS SIO2 (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
DEC 09...	30	2	4.3	20	31	48	<.10	14	159
MAR 19...	15	1	2.8	24	17	22	.13	9.8	95
JUL 08...	144	6	6.0	140	140	110	.34	4.9	525
AUG 12...	227	10	8.1	240	170	120	.44	3.9	713
28...	98	5	6.0	110	80	75	.31	6.9	358

SABINE RIVER BASIN

08022040 SABINE RIVER NEAR BECKVILLE, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1997 TO SEPTEMBER 1998

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. 1997	18406	313	172	8540	43	2130	32	1570	54
NOV. 1997	17977	326	179	8670	45	2190	32	1580	57
DEC. 1997	77356	222	121	25260	31	6580	21	4400	43
JAN. 1998	334420	139	75	68050	20	18170	13	11440	28
FEB. 1998	211140	170	92	52700	24	13960	16	8970	34
MAR. 1998	195190	188	102	53900	27	14220	18	9220	37
APR. 1998	61037	251	137	22570	35	5840	24	3960	47
MAY 1998	11507	431	237	7350	58	1810	44	1380	71
JUNE 1998	5480	479	263	3900	64	945	50	742	76
JULY 1998	1713	891	496	2300	110	493	110	494	93
AUG. 1998	2040	850	474	2610	100	562	100	560	90
SEPT 1998	37269	211	116	11640	29	2920	21	2130	37
TOTAL	973535.00	**	**	267500	**	69830	**	46450	**
WTD.AVG.	2670	187	102	**	27	**	18	**	36

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	586	286	260	167	181	156	207	348	507	683	842	796
2	541	284	254	168	190	155	208	361	415	676	804	817
3	548	296	250	171	197	161	204	346	532	665	718	797
4	607	313	252	176	201	186	217	354	532	671	718	742
5	600	353	232	180	205	195	246	351	545	1010	650	746
6	598	671	237	185	211	195	247	340	604	1010	638	736
7	589	588	237	145	218	192	267	355	564	976	929	755
8	603	235	249	110	220	189	270	361	439	953	881	759
9	619	335	298	101	228	191	271	370	288	911	838	768
10	630	343	274	98	234	194	253	388	363	885	951	720
11	709	368	250	95	192	198	273	404	446	907	994	720
12	694	383	226	100	137	207	252	410	380	888	1220	609
13	641	387	231	110	119	240	258	447	401	964	1540	1050
14	788	376	359	124	112	255	268	481	411	964	1070	981
15	642	297	256	123	127	248	278	487	425	954	730	367
16	335	264	298	128	149	222	289	475	506	923	775	262
17	354	259	395	130	157	195	308	475	509	893	773	149
18	349	250	383	131	163	162	314	471	531	866	850	102
19	331	221	339	129	159	165	318	502	548	859	891	99
20	321	246	340	132	157	182	317	493	542	874	878	133
21	326	271	318	137	162	208	317	495	533	870	919	184
22	365	311	302	141	164	199	321	503	527	845	832	208
23	404	348	251	147	171	186	333	504	509	860	648	248
24	446	345	214	152	187	206	326	510	508	907	625	763
25	190	346	188	154	187	195	325	531	513	966	620	353
26	212	340	205	159	185	194	345	566	539	957	612	311
27	199	339	159	159	166	185	367	592	565	946	627	345
28	244	353	154	164	157	179	397	567	596	952	671	344
29	227	357	154	171	---	181	376	552	635	945	677	362
30	226	230	162	181	---	187	342	624	664	931	736	416
31	257	---	169	182	---	191	---	645	---	896	773	---
MEAN	457	333	255	144	176	194	290	462	503	891	820	521
MAX	788	671	395	185	234	255	397	645	664	1010	1540	1050
MIN	190	221	154	95	112	155	204	340	288	665	612	99

SABINE RIVER BASIN

08022040 SABINE RIVER NEAR BECKVILLE, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25.0	17.0	14.0	7.0	10.0	11.0	19.0	20.0	30.0	30.0	29.0	28.0
2	23.0	16.0	13.0	8.0	12.0	11.0	19.0	20.0	27.0	30.0	30.0	27.0
3	23.0	15.0	13.0	9.0	10.0	11.0	19.0	22.0	27.0	30.0	33.0	27.0
4	23.0	13.0	11.0	10.0	10.0	12.0	18.0	26.0	27.0	29.0	28.0	28.0
5	24.0	15.0	9.0	12.0	10.0	13.0	19.0	22.0	29.0	30.0	27.0	28.0
6	24.0	13.0	8.0	11.0	9.0	13.0	19.0	23.0	25.0	30.0	27.0	29.0
7	24.0	12.0	8.0	13.0	9.0	13.0	18.0	23.0	27.0	30.0	30.0	32.0
8	24.0	13.0	10.0	11.0	10.0	12.0	19.0	23.0	27.0	30.0	26.0	28.0
9	25.0	13.0	11.0	11.0	10.0	11.0	18.0	24.0	25.0	30.0	31.0	27.0
10	24.0	13.0	10.0	11.0	12.0	9.0	17.0	23.0	27.0	31.0	28.0	28.0
11	24.0	11.0	8.0	11.0	10.0	10.0	17.0	25.0	28.0	34.0	29.0	25.0
12	25.0	12.0	8.0	12.0	11.0	9.0	18.0	23.0	27.0	34.0	29.0	24.0
13	22.0	11.0	7.0	12.0	11.0	10.0	19.0	24.0	28.0	32.0	28.0	25.0
14	19.0	11.0	7.0	11.0	12.0	11.0	20.0	25.0	32.0	32.0	27.0	26.0
15	19.0	10.0	8.0	10.0	11.0	11.0	22.0	25.0	30.0	29.0	26.0	25.0
16	18.0	10.0	8.0	10.0	11.0	12.0	22.0	25.0	30.0	29.0	27.0	25.0
17	19.0	9.0	7.0	10.0	11.0	12.0	19.0	25.0	30.0	29.0	29.0	25.0
18	17.0	9.0	7.0	10.0	10.0	13.0	19.0	26.0	29.0	29.0	29.0	24.0
19	20.0	9.0	11.0	10.0	11.0	15.0	20.0	25.0	30.0	33.0	29.0	24.0
20	18.0	10.0	11.0	10.0	12.0	12.0	20.0	25.0	29.0	33.0	29.0	25.0
21	19.0	13.0	10.0	10.0	11.0	12.0	19.0	25.0	31.0	30.0	28.0	27.0
22	18.0	11.0	10.0	10.0	11.0	13.0	17.0	26.0	31.0	30.0	28.0	26.0
23	17.0	14.0	10.0	9.0	12.0	14.0	17.0	26.0	30.0	30.0	32.0	26.0
24	18.0	10.0	10.0	9.0	12.0	14.0	18.0	28.0	29.0	30.0	32.0	26.0
25	20.0	11.0	9.0	10.0	13.0	15.0	20.0	27.0	30.0	30.0	31.0	26.0
26	17.0	14.0	9.0	9.0	13.0	16.0	20.0	26.0	30.0	31.0	32.0	26.0
27	16.0	15.0	8.0	9.0	13.0	17.0	22.0	27.0	29.0	30.0	33.0	30.0
28	15.0	16.0	8.0	9.0	12.0	17.0	19.0	26.0	32.0	30.0	34.0	30.0
29	15.0	16.0	8.0	10.0	---	24.0	18.0	27.0	31.0	30.0	30.0	26.0
30	15.0	14.0	9.0	10.0	---	19.0	18.0	28.0	33.0	30.0	32.0	29.0
31	17.0	---	7.0	10.0	---	18.0	---	29.0	---	29.0	30.0	---
MEAN	20.2	12.5	9.3	10.1	11.0	13.2	19.0	24.8	29.0	30.5	29.5	26.7
MAX	25.0	17.0	14.0	13.0	13.0	24.0	22.0	29.0	33.0	34.0	34.0	32.0
MIN	15.0	9.0	7.0	7.0	9.0	9.0	17.0	20.0	25.0	29.0	26.0	24.0

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 mi².

PERIOD OF RECORD.--Apr 1974 to current year.
Water-quality records.--Chemical analyses: Oct 1974 to Sep 1984.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to May 15, 1976, non-recording gage near left end of dam 1.9 mi downstream at same datum. Satellite telemeter at station.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam 8,675 ft long, including a 1,000-foot uncontrolled spillway. Deliberate impoundment began in Apr 1974. The uncontrolled spillway is an excavated channel cut through natural ground and located at the left end of the dam. The controlled spillway is a concrete ogee design with four 14.0- by 40.0-foot-wide tainter gates located near the left end of the dam. The low-flow outlet works consist of a 3.0- by 5.0-foot conduit with a sluice gate located in one of the gate piers. There is an 8-inch pipe with sluice gate. There are no known diversions. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	321.5
Crest of uncontrolled spillway.....	312.0
Top of gates.....	308.0
Top of conservation pool.....	306.0
Crest of gated spillway.....	294.0
Lowest gated outlet (invert).....	284.0

COOPERATION.--Capacity table provided by URS/Forrest and Cotton, Consulting Engineers for Texas Utilities Services, Inc.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 118,000 acre-ft, Mar 29, 1989 (elevation, 313.00 ft); minimum contents since first appreciable storage, 45,230 acre-ft, Sep 18, 1996 (elevation, 298.45 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 78,560 acre-ft, Jan 7 (elevation, 306.21 ft); minimum contents, 57,190 acre-ft, Sep 11 (elevation, 301.56 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67140	69270	70540	76300	76650	77400	77500	75110	71870	67370	62000	58950
2	67000	69130	70820	76350	76850	77500	77700	74970	71670	67190	61780	58780
3	66870	68940	71580	76450	77100	77450	77650	74870	71480	67050	61520	58660
4	66690	68890	71820	76550	77200	76800	77400	74820	71200	66910	61960	58530
5	66600	69270	71870	77000	77250	76900	76800	74720	71770	66730	61830	58320
6	66460	69360	71870	78310	77300	76950	76800	74670	71670	66550	62170	58190
7	66460	69410	72490	77200	77300	77150	76700	74480	71530	66410	62480	58030
8	66410	69360	73260	76550	77300	76200	76850	74380	71440	66230	62350	57860
9	66320	69500	73700	76350	77450	76250	76800	74180	71290	66010	62220	57480
10	66230	69500	73790	76700	77550	76300	76700	74040	71200	65830	62090	57230
11	66100	69550	73840	77750	77100	76300	76700	73940	71060	65650	61910	57780
12	66100	69730	73840	76900	76900	76400	76600	73790	70960	65460	61780	58400
13	66010	69970	73840	77250	77200	76550	76500	73600	70820	65330	61830	58910
14	65830	70020	73840	76450	77450	76650	76450	73500	70580	65150	61690	60440
15	65690	70060	73840	76900	76850	76900	76400	73410	70390	64970	61560	62040
16	65550	70020	73890	77150	77400	78360	76200	73310	70300	64880	61480	63940
17	65370	70020	73890	77200	76950	78000	76050	73210	70110	64700	61300	64610
18	65280	70060	73890	76950	76900	76800	76050	73070	69920	64560	61220	64740
19	65150	70060	73890	77100	77150	76650	75950	72920	69730	64340	61040	64790
20	65060	70060	74430	77150	77350	76800	75760	72730	69500	64200	60830	64790
21	64970	70020	75360	77150	76800	76950	75810	72630	69270	63980	60740	64740
22	64970	70020	75810	76950	77250	77050	75660	72440	69080	63800	60570	64650
23	67280	69920	76850	77150	76850	77100	75560	72200	68850	63580	60480	64520
24	68990	69920	77250	77400	77200	77200	75510	72060	68660	63450	60310	64430
25	69410	69920	76300	77550	77250	77250	75310	71910	68480	63360	60140	64340
26	69270	69880	76000	77350	78200	77350	75510	71770	68290	63180	60010	64160
27	69170	69920	76150	76950	77000	77300	75410	72390	68060	63010	59840	64070
28	69080	70350	76150	77150	77250	77100	75310	72390	67920	62870	59710	63890
29	69030	70540	76200	77150	---	77150	75210	72300	67740	62610	59500	63800
30	69030	70540	76200	77300	---	77150	75160	72200	67550	62390	59330	63710
31	69310	---	76250	77350	---	76900	---	72010	---	62170	59160	---
MAX	69410	70540	77250	78310	78200	78360	77700	75110	71870	67370	62480	64790
MIN	64970	68890	70540	76300	76650	76200	75160	71770	67550	62170	59160	57230
(+)	304.31	304.57	305.75	305.97	305.95	305.88	305.53	304.88	303.93	302.73	302.03	303.08
(@)	+2030	+1230	+5710	+1100	-100	-350	-1740	-3150	-4460	-5380	-3010	+4550
CAL YR 1997	MAX 78460	MIN 58950	(@) +17340									
WTR YR 1998	MAX 78360	MIN 57230	(@) -3570									

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

SABINE RIVER BASIN

08022500 SABINE RIVER AT LOGANSPORT, LA

LOCATION.--Lat 31°58'20", long 94°00'22", De Soto Parish, Louisiana-Shelby County, Texas State line at Logansport, Hydrologic Unit 12010004, on left bank just upstream from bridge on U.S. Highway 84, 3 mi upstream from Bayou Castor, 111 mi upstream from Toledo Bend Dam and at mile 267.1.

DRAINAGE AREA.--4,842 mi².

PERIOD OF RECORD.--Gage-height record Mar 1968 to current year. Daily discharge record Jul 1903 to Feb 1968.

REVISED RECORDS.--WSP 1312: 1903-6 (monthly and annual means). WSP 1732: 1929(M), 1933(M).

GAGE.--Water-stage recorder. Datum of gage is 147.72 ft above sea level. Jul 1, 1903, to Sep 30, 1956, nonrecording gage. Oct 1, 1956, to Jan 16, 1964, water-stage recorder 4,600 ft upstream. Jan 16, 1964, to Dec 10, 1968, water-stage recorder 4,700 ft upstream. All gages to present datum except prior to Dec 31, 1906 when datum was 2.00 ft lower. Satellite telemeter at station.

REMARKS.--Records good. Station discontinued as a daily streamflow station on Mar 1, 1968, due to backwater from storage in Toledo Bend Reservoir. Since water year 1960, at least 10% of contributing drainage area has been regulated by Lake Tawakoni and three additional upstream reservoirs. Flow may also be slightly affected at times by discharge from one floodwater-retarding structure with a detention capacity of 3,570 acre-ft. This structure controls runoff from a 9.70 mi² area 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 ft³/s (2,407,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1904-60).--Maximum discharge, 92,000 ft³/s Apr 8, 1945 (gage height, 44.07 ft, from floodmark); minimum, 16 ft³/s Sep 26-28, Oct 3, 4, 1939.

AVERAGE DISCHARGE FOR PERIOD AFTER REGULATION.--7 years (water years 1961-67), 2,252 ft³/s (1,632,00 acre-ft/yr).

EXTREMES FOR PERIOD AFTER REGULATION (WATER YEARS, 1961-67).--Maximum gage height, 34.78 ft Apr 16, 1991; minimum since initial filling of Toledo Bend Reservoir in Jun 1968, 16.85 ft Nov 9, 1987. Maximum discharge, 46,800 ft³/s May 6, 1966 (gage height, 38.46 ft); minimum, 25 ft³/s Aug 13, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1884 reached a stage of 39.4 ft, present site and datum.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 28.44 ft Jan 14 at 0600 hours; minimum, 16.04 ft at 1030 on Sep 10.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.56	21.32	21.08	22.92	27.16	27.53	24.71	22.88	22.11	20.79	18.40	16.67
2	21.55	21.36	21.10	22.77	27.16	27.57	24.76	22.96	22.26	20.59	18.59	16.61
3	21.53	21.21	21.02	22.59	26.96	27.46	24.62	22.86	22.25	20.78	18.39	16.59
4	21.48	21.32	21.21	22.48	26.65	27.13	24.55	22.88	22.18	20.74	18.02	16.47
5	21.52	20.91	21.11	22.49	26.34	26.57	24.32	23.03	21.78	20.63	17.99	16.44
6	21.60	20.67	21.12	24.88	26.00	26.02	24.15	22.94	21.96	20.49	18.09	16.61
7	21.47	20.77	21.40	26.92	25.63	25.83	23.58	22.72	22.01	20.57	18.03	16.72
8	21.48	20.75	21.40	27.01	25.27	25.58	23.18	22.84	22.21	20.48	18.07	16.35
9	21.44	20.75	21.61	27.36	25.08	25.54	23.14	22.63	22.11	20.35	17.99	16.15
10	21.43	20.41	21.33	27.58	25.12	25.40	23.06	22.77	22.15	20.13	17.87	16.15
11	21.53	20.52	21.29	27.83	25.44	25.24	23.11	22.76	21.92	20.11	17.77	16.38
12	21.80	20.52	21.13	28.16	25.86	25.12	23.39	22.75	21.83	20.18	17.89	17.01
13	21.32	20.41	21.18	28.42	26.19	24.94	22.95	22.68	21.93	20.10	17.77	17.94
14	21.37	20.38	21.17	28.33	26.54	24.72	22.91	22.84	21.63	19.91	17.57	18.14
15	21.28	20.50	21.10	28.13	26.66	24.80	23.00	22.60	21.58	19.81	17.61	18.03
16	21.19	20.50	21.01	27.97	26.74	25.11	22.45	22.51	21.84	19.71	17.78	18.33
17	21.13	20.52	20.89	27.69	26.63	25.61	22.67	22.56	21.77	19.70	17.55	18.79
18	21.18	20.51	20.84	27.37	26.41	25.95	22.82	22.50	21.69	19.66	17.44	19.22
19	21.18	20.60	20.78	27.12	26.09	25.90	22.89	22.50	21.55	19.65	17.37	19.43
20	21.10	20.63	21.13	26.90	25.97	26.11	22.81	22.55	21.58	19.73	17.32	19.42
21	20.86	20.57	22.08	26.69	25.84	26.09	22.76	22.54	21.63	19.53	17.21	18.96
22	21.02	20.60	22.57	26.68	26.09	25.85	22.84	22.67	21.53	19.58	17.37	18.20
23	22.01	20.59	23.36	26.82	26.21	25.62	22.85	22.47	21.40	19.37	17.34	17.89
24	22.50	20.64	24.03	26.86	26.27	25.36	23.12	22.55	21.38	19.15	17.23	17.79
25	22.51	20.74	24.12	27.01	26.32	25.19	23.12	22.32	21.36	19.28	17.22	17.71
26	22.12	20.57	23.86	26.88	26.85	25.21	23.15	22.27	21.39	19.27	17.12	17.66
27	21.97	20.77	23.81	26.84	27.28	25.06	22.70	22.23	21.36	18.99	17.07	17.54
28	21.76	20.85	23.65	26.79	27.38	24.94	22.67	22.17	21.42	18.96	17.00	17.49
29	21.62	20.80	23.49	26.63	---	24.93	22.79	22.10	21.08	18.79	16.96	17.40
30	21.54	20.91	23.25	26.51	---	24.95	22.92	22.10	20.90	18.67	17.29	17.32
31	21.37	---	22.99	26.41	---	24.65	---	22.10	---	18.43	16.92	---
MAX	22.51	21.36	24.12	28.42	27.38	27.57	24.76	23.03	22.26	20.79	18.59	19.43
MIN	20.86	20.38	20.78	22.48	25.08	24.65	22.45	22.10	20.90	18.43	16.92	16.15
CAL YR 1997	MAX 30.62	MIN 20.28										
WTR YR 1998	MAX 28.44	MIN 16.15										

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 mi².

PERIOD OF RECORD.--Oct 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Sabine River Authority). Prior to Jul 20, 1967, nonrecording gage at same site and datum. Jul 20, 1967, to Jun 30, 1973, recording gage at right end of spillway 1.6 mi north of present site and at same datum. Satellite telemeter at station.

REMARKS.--Records good. The reservoir is formed by a rolled earthfill dam. Closure of embankment completed and deliberate impoundment began Oct 3, 1966. The reservoir is operated for hydro-electric power generation and water conservation. Releases during high inflow periods are controlled by eleven 40 x 28-foot tainter gates. An 8.33 x 12-foot gated conduit through the dam is used for low-flow releases. Two additional 20-inch-diameter conduits, that bypass the larger conduit, may also be used for low-flow releases. Water for turbines is admitted through four 16.75 x 29-foot penstocks and controlled by vertically operated caterpillar-type gates. The capacity table is based on U.S. Geological Survey topographic maps. For statement regarding regulation by upstream reservoirs, see station 08020000. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	185.0
Design flood.....	175.3
Top of gates.....	173.0
Top of power drawdown storage.....	172.0
Top of power head storage.....	162.2
Crest of spillway (controlled).....	145.0
Lowest gated outlet (invert).....	100.0

COOPERATION.--Capacity table furnished by the Sabine River Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 4,840,000 acre-ft, May 18, 1989 (elevation, 173.95 ft); minimum since initial filling of reservoir in Jun 1968, 3,290,000 acre-ft, Nov 14, 15, 1987 and Oct 20, 1994 (elevation, 164.78 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,664,000 acre-ft, Jan 22 (elevation, 173.02 ft); minimum contents, 3,113,000 acre-ft, Sep 10 (elevation, 163.56 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4009000	3973000	3864000	4060000	4586000	4625000	4374000	4236000	4075000	3869000	3495000	3246000
2	4004000	3963000	3849000	4050000	4620000	4625000	4358000	4226000	4050000	3844000	3482000	3229000
3	3994000	3938000	3913000	4035000	4620000	4581000	4379000	4241000	4055000	3844000	3465000	3213000
4	3994000	3899000	3894000	4019000	4608000	4570000	4336000	4231000	4045000	3839000	3447000	3196000
5	3989000	3903000	3903000	4009000	4603000	4581000	4326000	4210000	4075000	3839000	3429000	3188000
6	3984000	3903000	3894000	4210000	4581000	4553000	4283000	4210000	4065000	3829000	3429000	3197000
7	3999000	3864000	3903000	4326000	4559000	4575000	4283000	4220000	4055000	3809000	3432000	3184000
8	3989000	3864000	3908000	4428000	4542000	4614000	4288000	4200000	4035000	3795000	3425000	3178000
9	3994000	3864000	3918000	4444000	4509000	4592000	4273000	4226000	4035000	3775000	3422000	3172000
10	3989000	3874000	3948000	4476000	4548000	4548000	4252000	4210000	4009000	3762000	3407000	3151000
11	3973000	3844000	3938000	4482000	4526000	4531000	4220000	4194000	4024000	3751000	3391000	3176000
12	3958000	3829000	3923000	4553000	4537000	4509000	4189000	4189000	4014000	3738000	3381000	3210000
13	4009000	3829000	3918000	4586000	4537000	4487000	4210000	4179000	4004000	3743000	3385000	3327000
14	3994000	3819000	3923000	4620000	4542000	4482000	4200000	4158000	4014000	3742000	3370000	3361000
15	3978000	3824000	3903000	4620000	4575000	4444000	4189000	4168000	4009000	3722000	3375000	3372000
16	3963000	3824000	3889000	4614000	4575000	4471000	4252000	4173000	3984000	3703000	3367000	3378000
17	3948000	3814000	3884000	4603000	4581000	4493000	4226000	4173000	3973000	3689000	3364000	3385000
18	3938000	3834000	3864000	4614000	4575000	4493000	4231000	4168000	3968000	3682000	3349000	3382000
19	3928000	3824000	3849000	4581000	4603000	4548000	4220000	4158000	3953000	3670000	3343000	3391000
20	3923000	3824000	3874000	4564000	4564000	4515000	4220000	4132000	3948000	3655000	3324000	3401000
21	3933000	3834000	3938000	4592000	4553000	4509000	4231000	4126000	3943000	3641000	3325000	3399000
22	3903000	3834000	3943000	4620000	4564000	4498000	4226000	4106000	3958000	3623000	3313000	3402000
23	3933000	3834000	4014000	4597000	4570000	4476000	4220000	4116000	3943000	3600000	3310000	3393000
24	3948000	3824000	4065000	4586000	4559000	4476000	4194000	4111000	3928000	3586000	3303000	3379000
25	4014000	3814000	4106000	4548000	4553000	4460000	4200000	4121000	3918000	3581000	3297000	3367000
26	4045000	3824000	4158000	4597000	4625000	4422000	4189000	4116000	3903000	3577000	3294000	3370000
27	4004000	3809000	4137000	4553000	4631000	4433000	4241000	4111000	3913000	3563000	3284000	3378000
28	3989000	3854000	4158000	4542000	4642000	4422000	4267000	4106000	3899000	3541000	3273000	3372000
29	3978000	3854000	4132000	4553000	---	4395000	4236000	4106000	3894000	3523000	3276000	3351000
30	3958000	3874000	4116000	4553000	---	4379000	4231000	4101000	3884000	3507000	3272000	3337000
31	3948000	---	4091000	4542000	---	4395000	---	4091000	---	3492000	3247000	---
MAX	4045000	3973000	4158000	4620000	4642000	4625000	4379000	4241000	4075000	3869000	3495000	3402000
MIN	3903000	3809000	3849000	4009000	4509000	4379000	4189000	4091000	3884000	3492000	3247000	3151000
(+)	168.97	168.52	169.81	172.36	172.90	171.55	170.62	169.81	168.58	166.12	164.49	165.10
(@)	-61000	-74000	+217000	+451000	+100000	-247000	-164000	-140000	-207000	-392000	-245000	+90000
CAL YR 1997	MAX 4743000	MIN 3806000	(@) +280000									
WTR YR 1998	MAX 4642000	MIN 3151000	(@) -672000									

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

SABINE RIVER BASIN

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 mi².

PERIOD OF RECORD.--Oct 1971 to current year.

Water-quality records.--Chemical and biochemical analyses: Oct 1967 to Sep 1986.

GAGE.--Water-stage recorders. Datum of gage is at sea level (levels by Sabine River Authority). Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. Daily discharges are a combination of releases from various outlets at the dam. Discharges for releases through the turbines are computed using scroll case differential relationships and operation logs. Tainter gate releases, low-flow sluiceway releases, bypass gate releases, and turbine leakages are based on discharge measurements and operation logs. Since installation of gage in 1972, at least 10% of contributing drainage area has been regulated by Toledo Bend Reservoir (station 08025350).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	836	204	1570	14500	14000	25000	14300	1290	2610	5960	204	4640
2	174	204	1420	15000	19400	24900	14200	144	2640	5800	1430	4600
3	1030	8390	5140	14900	24600	24900	14200	144	2490	204	6290	4710
4	204	8750	5390	14900	24700	24900	14200	2170	2520	204	6190	4640
5	204	8620	5150	14900	24700	21500	14200	2310	2300	204	6040	204
6	832	8760	204	14900	22200	19700	14200	2780	174	6040	6260	204
7	204	8570	204	15000	19800	19700	14200	2590	174	4050	5970	204
8	798	204	5440	15200	16700	19600	13500	2590	2470	6080	204	4690
9	187	204	5180	15200	14400	19600	10800	174	2420	6080	204	4650
10	1220	8500	5130	14800	14400	19700	10100	174	2370	6060	6040	4800
11	174	8500	5230	14600	14300	16300	6630	2610	2060	204	4240	4810
12	174	5070	8160	14700	11900	14300	6500	2570	3470	204	5510	204
13	4490	7240	204	17000	10900	14000	6060	2690	204	6050	4380	204
14	4730	7090	204	19900	13600	14000	3710	2540	204	6020	4270	4630
15	4560	204	9320	23100	13600	13900	3510	2200	3090	6000	204	3120
16	4660	204	7780	25100	13900	14200	174	174	3000	6080	204	4690
17	4340	193	7810	25200	17200	14300	174	174	3020	6000	4330	4720
18	204	174	7630	25100	18900	14400	174	2280	2970	204	4320	4600
19	204	174	7380	25300	18900	12700	174	2280	3030	204	4250	204
20	4730	174	204	23200	19300	14300	160	2340	204	6060	4350	204
21	4470	1460	204	19300	16700	14300	144	2340	204	6380	4300	4800
22	4740	174	10500	21600	16800	14300	144	2260	3110	6170	160	4640
23	4460	174	12500	25000	15800	14300	144	174	2950	6140	144	4700
24	4430	1510	7390	23500	13600	14300	144	174	3120	6080	2090	4500
25	204	1540	6780	24700	13400	14300	144	174	3110	204	2140	4700
26	204	1400	7540	21300	17500	14300	144	2320	3030	204	2220	204
27	4580	204	7120	19600	24800	14200	891	2300	204	6260	3100	409
28	8590	1410	7260	16400	24900	14200	174	2610	204	6180	3290	4760
29	8660	204	8990	14100	---	14200	174	2630	6010	6860	204	4670
30	8790	204	14900	14000	---	14200	955	204	5960	6600	204	4790
31	8900	---	14600	14000	---	14200	---	204	---	6200	6670	---
TOTAL	91983	89709	186534	576000	490900	518700	164224	49614	69322	134986	99412	98901
MEAN	2967	2990	6017	18580	17530	16730	5474	1600	2311	4354	3207	3297
MAX	8900	8760	14900	25300	24900	25000	14300	2780	6010	6860	6670	4810
MIN	174	174	204	14000	10900	12700	144	144	174	204	144	204
AC-FT	182400	177900	370000	1142000	973700	1029000	325700	98410	137500	267700	197200	196200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 1998, BY WATER YEAR (WY)

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
MEAN	1254	2231	5409	9113	9959	10750	8345	8002	6004	4680	3623	3000																
MAX	6809	13340	17720	27680	20510	28210	19270	22170	24960	18790	6732	7323																
(WY)	1992	1995	1975	1974	1975	1997	1991	1991	1989	1989	1976	1991																
MIN	59.0	50.7	74.5	90.0	339	231	247	311	508	493	470	424																
(WY)	1976	1976	1976	1978	1981	1972	1978	1984	1996	1996	1996	1983																

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1972 - 1998

ANNUAL TOTAL	3036528	2570285	
ANNUAL MEAN	8319	7042	6014
HIGHEST ANNUAL MEAN			10370
LOWEST ANNUAL MEAN			517
HIGHEST DAILY MEAN	50400	Mar 6	114000
LOWEST DAILY MEAN	144	Sep 24	30
ANNUAL SEVEN-DAY MINIMUM	204	Jan 1	34
ANNUAL RUNOFF (AC-FT)	6023000		4357000
10 PERCENT EXCEEDS	22200		14900
50 PERCENT EXCEEDS	5200		3850
90 PERCENT EXCEEDS	204		130

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 mi².

PERIOD OF RECORD.--Sep 1955 to current year. Published as "below Toledo Bend near Burkeville" for period 1955-75. Water-quality records.--Chemical and biochemical analyses: May 1968 to Sep 1986. Pesticide analyses: Oct 1972 to Sep 1981.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 60.59 ft above sea level. Prior to Aug 23, 1958, nonrecording gage at current site. Prior to Jan 1, 1989, at datum 10.00 ft higher. Telephone telemeter at station. Satellite telemeter at station.

REMARKS.--Records fair. Since water year 1960, at least 10% of contributing drainage area has been regulated by Lake Tawakoni and three additional upstream reservoirs. Since 1966, additional regulation by Toledo Bend Reservoir 16.8 mi. upstream.

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 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	521	3890	1080	13200	13300	24300	13200	e1500	1480	5620	2910	4570
2	687	575	1750	13500	15100	24000	13200	e1070	2320	5580	850	4180
3	675	4320	3550	13700	21800	23800	13200	e430	2370	2840	3810	4200
4	859	7690	5340	13600	23100	23700	13200	e1430	2300	472	5710	4200
5	382	7810	5360	13700	23300	22500	13200	2270	2260	386	5730	2510
6	550	7840	2920	14900	22700	19300	13200	1990	1140	3050	5810	364
7	719	7660	647	21600	19200	19000	13200	2460	337	3900	5510	299
8	621	3720	2630	22900	17300	19900	13200	2420	1370	5310	3270	1950
9	742	578	5070	20200	14000	19800	10300	1430	2250	5540	457	4130
10	675	4530	4740	15700	13700	19100	9750	456	2240	5560	3220	4270
11	803	7550	e4700	14100	14900	17300	8080	1390	2070	2820	4410	4510
12	327	5590	e7000	14400	13900	14100	6410	2370	2500	400	4180	3950
13	2300	6380	e3200	15100	10400	13500	6340	2420	1970	3070	5170	2990
14	3930	6330	e1800	18300	12600	13400	3760	2800	420	5460	4300	4280
15	3920	2650	e5000	20200	13100	13300	3510	2290	1560	5530	2560	4500
16	3980	587	8180	23300	13500	14100	2000	1000	2840	5550	450	3750
17	3990	503	7120	23600	15500	16800	652	426	2870	5550	1980	4460
18	2050	431	7840	23500	18200	15500	673	1630	2860	2840	4140	4440
19	482	445	6850	23400	18100	12900	735	2220	2870	415	4110	2660
20	2180	438	2410	23100	18000	13400	640	2250	1680	3060	4120	492
21	3800	917	3900	19600	17600	13400	539	2270	392	5560	4230	2060
22	4060	1060	8170	22300	15200	13300	483	2240	1590	5780	2540	4240
23	4380	410	14400	25800	17000	13300	455	1000	2880	5650	323	4200
24	4590	621	12100	24800	13900	13200	436	408	2920	5630	902	4190
25	2840	1570	9370	23700	13200	13200	427	381	3000	2840	1960	4150
26	688	1430	8420	22700	15200	13200	419	1620	2980	425	2030	2580
27	2050	1260	6960	19400	23100	13200	e470	2220	1710	3140	2480	470
28	6610	717	7040	17400	24700	13200	e1100	2440	414	5640	2900	2110
29	7720	2470	6640	14100	---	13200	e1000	2210	3090	5810	1740	4160
30	7920	1240	12900	13400	---	13200	e1200	1330	5540	6310	329	4210
31	7930	---	13300	13300	---	13200	---	449	---	6040	3300	---
TOTAL	82981	91212	190387	578500	471600	505300	164979	50820	64223	125778	95431	99075
MEAN	2677	3040	6142	18660	16840	16300	5499	1639	2141	4057	3078	3303
MAX	7930	7840	14400	25800	24700	24300	13200	2800	5540	6310	5810	4570
MIN	327	410	647	13200	10400	12900	419	381	337	386	323	299
AC-FT	164600	180900	377600	1147000	935400	1002000	327200	100800	127400	249500	189300	196500

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1998, BY WATER YEAR (WY)

MEAN	1206	1967	5566	8400	9115	10010	8086	8133	5492	3961	2842	2617
MAX	6846	12880	17990	28510	21470	27000	26530	32070	25310	23750	6662	7099
(WY)	1992	1995	1962	1974	1975	1997	1969	1966	1989	1989	1976	1991
MIN	82.5	86.2	247	484	266	485	231	471	400	166	91.7	77.6
(WY)	1968	1968	1968	1968	1968	1968	1971	1967	1970	1964	1967	1967

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1960 - 1998	
ANNUAL TOTAL	3016659		2520286			
ANNUAL MEAN	8265		6905		5602	
HIGHEST ANNUAL MEAN					11190	
LOWEST ANNUAL MEAN					548	
HIGHEST DAILY MEAN	41300		25800		111000	
LOWEST DAILY MEAN	275		299		38	
ANNUAL SEVEN-DAY MINIMUM	385		461		41	
INSTANTANEOUS PEAK FLOW			26100		116000	
INSTANTANEOUS PEAK STAGE			33.03		47.45	
ANNUAL RUNOFF (AC-FT)	5984000		4999000		4059000	
10 PERCENT EXCEEDS	22000		18000		15300	
50 PERCENT EXCEEDS	4740		4150		2620	
90 PERCENT EXCEEDS	621		499		262	

e Estimated

SABINE RIVER BASIN

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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1923 to current year. Monthly discharge only for some periods, published in WSP 1312. Gage-height records collected in this vicinity since 1913 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1342: 1953. WSP 1442: 1924, 1926-27(M), 1929(M), 1939. WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 33.42 ft above sea level. Prior to Jul 8, 1931, nonrecording gage at site 0.8 mi downstream at datum 13.00 ft higher. Jul 8, 1931, to Oct 15, 1958, nonrecording gage at present site at datum 13.00 ft higher. Oct 16, 1958, to Sep 30, 1975, water-stage recorder at present site at datum 13.00 ft higher. Oct 1, 1975, to Dec 31, 1988, at present site at datum 10.00 ft higher. Telephone telemeter at station. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1960, at least 10% of contributing drainage area has been regulated by Lake Tawakoni and three additional upstream reservoirs. Additional regulation since Oct 1966, by Toledo Bend Reservoir 58.8 mi upstream.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--36 years (water years 1924-59) prior to completion of Lake Tawakoni.

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1924-59).--Maximum discharge, 115,000 ft³/s May 19, 1953 (gage height, 38.70 ft, current datum); minimum, 160 ft³/s Sep 29, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1833, 43.5 ft Apr 23 or 24, 1913, from information by Gulf, Colorado, and Santa Fe Railway Co. and local residents. Flood in May 1884 reached a stage of 39 ft. Floods occurring about 1844 and 1860 were higher than flood in May 1884, from information by local residents. All flood data referenced to current datum.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	976	8980	3320	15900	16900	27200	15300	1720	822	6250	6750	4170
2	793	3870	3200	15800	16800	26600	15200	2050	1820	6420	2950	5130
3	963	1440	3660	16100	19700	25800	15100	1690	2850	6420	1350	4830
4	917	5920	7170	16200	23400	25300	15000	1050	2900	2970	4750	4850
5	1100	8720	8230	16600	24800	25000	14900	2170	2880	968	6440	4820
6	710	8910	7570	17900	25100	23500	14800	3070	2860	719	6600	2530
7	799	8990	4160	26100	24300	21600	14800	2950	1620	3830	6860	861
8	1010	8750	2420	31000	22100	22400	14800	3290	765	4640	6660	678
9	913	3780	5360	30300	19700	23200	13800	3240	1710	6050	3330	2600
10	1090	1520	7010	29000	17500	22600	11900	1930	2730	6390	1080	4610
11	976	6330	6540	26200	19000	21500	11300	975	2760	6410	4210	5170
12	1120	8810	6440	24300	20000	19000	9030	1970	2570	2910	5070	8720
13	847	7450	8070	24400	17300	16500	7980	3050	3240	881	5370	16000
14	3750	8300	3880	24100	15000	15800	7130	3160	2170	3960	5880	21800
15	5280	7650	1890	24300	16200	15500	5060	3460	815	6290	5390	17000
16	4920	3470	6750	25500	16700	15900	4750	3010	1950	6400	2870	12700
17	4800	1800	8910	26900	17900	22000	2530	1560	3330	6450	1300	11600
18	4670	1570	8640	26800	20000	22800	1540	877	3430	6440	3080	9680
19	2350	1570	8730	26400	21000	20400	1930	2040	3420	2930	4840	7570
20	1040	1740	7940	26200	20700	18000	2020	2830	3440	901	4870	4240
21	2870	1610	6150	25300	20500	17000	1620	2900	1960	3920	5010	2030
22	4370	1970	12300	26500	19300	16300	1350	2920	764	6380	5120	3840
23	4710	1970	16600	30100	19200	15800	1200	2870	1980	6590	2730	5460
24	5530	1360	21400	30300	19100	15600	1100	1520	3350	6520	965	5410
25	6080	1580	19700	29400	16900	15400	1030	810	3490	6490	1450	5270
26	3580	2360	16300	28200	16600	15300	980	711	3560	2930	2400	5210
27	1930	2320	14600	26300	21700	15200	933	1910	3570	915	2490	2900
28	3590	2000	12600	23500	25900	15200	1160	2770	1990	4050	3030	1240
29	7900	3140	10600	20900	---	15100	1540	3050	812	6350	3440	3220
30	8800	4450	11700	18200	---	15000	1380	2900	3880	6800	1970	4910
31	9040	---	15700	17300	---	15200	---	1740	---	7030	804	---
TOTAL	97424	132330	277540	746000	553300	601700	211163	70193	73438	146204	119059	189049
MEAN	3143	4411	8953	24060	19760	19410	7039	2264	2448	4716	3841	6302
MAX	9040	8990	21400	31000	25900	27200	15300	3460	3880	7030	6860	21800
MIN	710	1360	1890	15800	15000	15000	933	711	764	719	804	678
AC-FT	193200	262500	550500	1480000	1097000	1193000	418800	139200	145700	290000	236200	375000

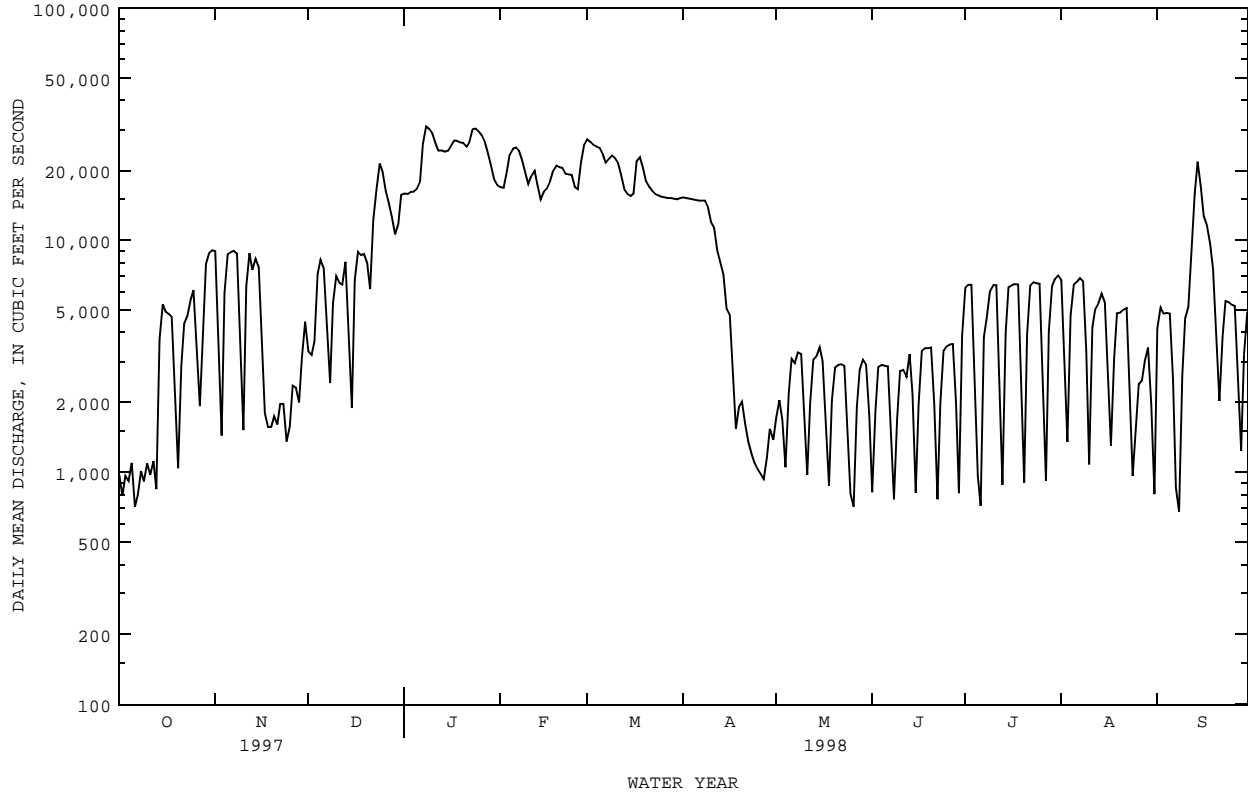
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1998z, BY WATER YEAR (WY)

MEAN	1702	2660	6795	10040	11020	11630	9582	9184	6379	4757	3337	3171
MAX	7315	13250	21420	30930	23200	30030	27370	31210	26340	31490	7288	8247
(WY)	1992	1995	1983	1974	1975	1997	1969	1966	1989	1989	1976	1991
MIN	188	217	822	1000	746	1288	634	1011	663	530	211	206
(WY)	1968	1968	1981	1981	1968	1981	1971	1996	1970	1964	1967	1967

08028500 SABINE RIVER NEAR BON WIER, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1960 - 1998z	
ANNUAL TOTAL	3625081		3217400		6669	
ANNUAL MEAN	9932		8815		12670	
HIGHEST ANNUAL MEAN					1172	
LOWEST ANNUAL MEAN					1975	
HIGHEST DAILY MEAN	47000	Mar 7	31000	Jan 8	98000	Jul 4 1989
LOWEST DAILY MEAN	658	Sep 29	678	Sep 8	134	Nov 9 1966
ANNUAL SEVEN-DAY MINIMUM	792	Sep 26	894	Oct 1	142	Nov 3 1966
INSTANTANEOUS PEAK FLOW			31300	Jan 8	98200	Jul 4 1989
INSTANTANEOUS PEAK STAGE			32.77	Jan 8	37.90	Jul 4 1989
ANNUAL RUNOFF (AC-FT)	7190000		6382000		4831000	
10 PERCENT EXCEEDS	26600		22500		17000	
50 PERCENT EXCEEDS	6060		5170		3500	
90 PERCENT EXCEEDS	1380		1100		685	

z Period of regulated streamflow.



SABINE RIVER BASIN

08028500 SABINE RIVER NEAR BON WEIR, TX

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Oct 1969 to current year. Chemical and biochemical analyses: Oct 1969 to May 1973.
Sediment analyses: Apr 1957 to Sep 1962.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Nov 1969 to Jun 1983.
WATER TEMPERATURE: Nov 1969 to Jun 1983.
COLOR: Nov 1969 to Jun 1983.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 407 microsiemens, Aug 31, 1978; minimum daily, 34 microsiemens, Feb 3, 1983.
WATER TEMPERATURE: Maximum daily, 33.0°C, Jul 17, 1978, and Jul 14, 26, 1980; minimum daily, 4.0°C, Feb 2, 1980.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	COLOR (PLAT- INUM- COBALT UNITS) (00080)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
NOV							
01...	1735	9160	157	23.0	50	15	15
06...	1120	9930	144	19.0	40	13	15
09...	1510	2860	169	18.0	50	18	15
16...	1325	3020	169	18.5	60	18	16
26...	1015	2080	169	20.0	70	18	16
30...	1055	4580	174	17.0	120	24	16
DEC							
08...	1630	2340	212	16.0	120	14	15
17...	1200	9920	148	13.0	50	31	20
21...	1025	4210	156	14.0	60	17	15
31...	1340	15900	141	12.0	50	13	14
JAN							
10...	1250	28900	82	8.0	100	6.4	7.4
13...	1500	24300	116	14.0	60	11	11
20...	1710	26100	137	13.0	40	13	14
28...	1100	23600	132	13.0	40	12	12
FEB							
01...	1550	16900	137	13.0	40	13	13
09...	1525	19200	135	14.0	30	13	13
19...	1500	21100	111	14.0	30	9.7	10
24...	1205	19200	122	13.0	40	11	12
MAR							
01...	1425	27400	128	14.0	30	14	12
JUN							
03...	1845	3340	127	30.0	50	15	13
09...	1350	2260	131	31.0	60	14	12
17...	1935	3910	126	30.0	60	15	13
23...	2000	3500	126	31.0	70	14	12
AUG							
03...	1925	1930	166	32.0	50	22	17
12...	1840	5600	136	32.0	50	16	14
21...	1945	5660	132	30.0	50	15	13
21...	1950	--	132	30.0	50	15	13

08029500 BIG COW CREEK NEAR NEWTON, TX

LOCATION.--Lat 30°49'08", long 93°47'07", Newton County, Hydrologic Unit 12010005, near center of span on downstream side of bridge on State Highway 87, 2.6 mi southwest of Newton, 5.0 mi downstream from Melhomes Creek, and 8.0 mi upstream from White Oak Creek.

DRAINAGE AREA.--128 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 134.69 ft above sea level. Prior to Dec 19, 1957, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known regulation or diversions.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1907, 27.5 ft in Apr 1922, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 21	1900	6,180	16.90	Jan 22	1900	3,200	15.86
Dec 24	1900	1,360	14.63	Feb 27	0900	1,250	14.42
Jan 7	1600	4,250	16.25	Sep 13	2400	7,620	17.31

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	61	129	113	150	201	143	71	e43	e33	25	48
2	41	51	89	108	175	154	105	64	e42	e33	24	57
3	40	45	325	106	178	131	94	61	e41	e32	24	37
4	39	43	529	112	161	121	92	59	e41	e32	24	31
5	38	43	179	260	139	119	83	57	e41	e32	24	28
6	38	46	104	433	131	117	79	56	56	e31	26	27
7	37	51	e150	2490	126	177	79	59	85	e31	55	26
8	37	47	289	1880	121	759	79	59	60	31	73	28
9	39	46	226	579	119	424	76	56	e49	29	63	29
10	47	49	129	279	170	190	70	53	e48	29	51	28
11	45	72	95	218	744	138	67	52	e45	28	38	64
12	44	78	80	438	395	120	66	50	e43	28	33	912
13	76	154	73	490	199	114	65	49	e42	27	41	3600
14	115	136	70	393	158	112	68	50	e41	32	43	4710
15	87	85	67	361	152	111	71	52	e41	32	57	1850
16	49	69	65	356	314	265	69	52	e40	34	44	939
17	44	66	63	232	449	943	65	51	e39	31	88	720
18	43	63	62	182	264	441	75	51	e39	29	45	341
19	42	129	61	162	179	198	130	48	e38	29	44	197
20	41	114	62	148	153	143	110	47	e38	30	40	152
21	39	78	2590	200	136	121	78	e47	e38	28	43	132
22	38	67	2510	1960	244	113	69	e46	e37	27	45	117
23	40	60	855	1740	374	107	66	e46	e36	28	44	105
24	485	56	1270	494	208	103	62	e46	e36	29	38	97
25	316	53	850	271	158	100	60	e45	e36	28	34	88
26	84	53	317	228	416	98	60	e45	e35	27	32	82
27	60	53	222	204	1060	96	62	e45	e35	26	30	79
28	52	66	184	181	428	95	97	e45	e35	26	29	76
29	48	694	153	168	---	95	103	e44	e34	26	28	71
30	48	367	135	161	---	91	77	e44	e34	25	27	67
31	53	---	122	154	---	121	---	e44	---	25	33	---
TOTAL	2247	2995	12055	15101	7501	6118	2420	1594	1268	908	1245	14738
MEAN	72.5	99.8	389	487	268	197	80.7	51.4	42.3	29.3	40.2	491
MAX	485	694	2590	2490	1060	943	143	71	85	34	88	4710
MIN	37	43	61	106	119	91	60	44	34	25	24	26
AC-FT	4460	5940	23910	29950	14880	12140	4800	3160	2520	1800	2470	29230

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1998, BY WATER YEAR (WY)

MEAN	67.5	102	162	190	215	171	164	152	109	69.9	55.8	72.3
MAX	278	440	489	645	743	345	533	817	414	426	221	491
(WY)	1995	1987	1983	1974	1984	1990	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 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1952 - 1998
ANNUAL TOTAL	59041	68190	
ANNUAL MEAN	162	187	127
HIGHEST ANNUAL MEAN			246
LOWEST ANNUAL MEAN			46.1
HIGHEST DAILY MEAN	2720	4710	9720
LOWEST DAILY MEAN	33	24	10
ANNUAL SEVEN-DAY MINIMUM	34	24	11
INSTANTANEOUS PEAK FLOW		7620	20200
INSTANTANEOUS PEAK STAGE		17.31	19.45
ANNUAL RUNOFF (AC-FT)	117100	135300	92210
10 PERCENT EXCEEDS	315	363	223
50 PERCENT EXCEEDS	72	66	63
90 PERCENT EXCEEDS	39	31	27

e Estimated

SABINE RIVER BASIN

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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1924 to current year.

REVISED RECORDS.--WSP 1282: 1941(M), 1942. WSP 1442: 1925-29, 1937-39, 1943. WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5.92 ft below sea level. Prior to Mar 1, 1941, nonrecording gage at Kansas City Southern Railway Co. bridge, 4.2 mi downstream and at datum 7.98 ft higher than current datum. Mar 1, 1941, to Dec 8, 1948, nonrecording gage at present site and at datum 10.00 ft higher than current datum. Dec 9, 1948, to Dec 31, 1989, recording gage at present site and at datum 10.00 ft higher than current datum. Telephone telemeter at station. Satellite telemeter at station.

REMARKS.--Records good. Since water year 1960, at least 10% of contributing drainage area has been regulated by Lake Tawakoni and three additional upstream reservoirs. Additional regulation since Oct 1966, by Toledo Bend Reservoir 116.3 mi upstream.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--35 years (water years 1925-59) prior to completion of Lake Tawakoni, 8,842 ft³/s (6,406,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1925-59).--Maximum discharge, 121,000 ft³/s May 22, 1953, (gage height, 29.98 ft, current datum); minimum, 270 ft³/s Sep 27-30, Oct 1-3, 17-20, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1835, 32.2 ft in May or Jun 1884 (adjusted to present site and datum on basis of slope of flood of Jun 8, 9, 1950); flood of Apr 26-29, 1913, reached a stage of 29.5 ft, present site and datum, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1020	7470	4280	14900	19800	19100	14800	2420	2880	2120	6450	2380
2	1170	8170	4670	14400	18200	21900	14700	2330	1900	4090	6830	2430
3	1140	8180	4150	14900	17300	24900	14700	2480	1510	5310	6600	4340
4	1180	5790	4220	16000	16700	25700	14500	2550	2330	5890	4370	5150
5	1130	4170	5370	17100	16500	25400	14400	2040	2900	5830	3510	5370
6	1310	5910	7040	18300	17200	24800	14300	1880	3140	3820	5080	5430
7	1220	7160	8120	22300	19000	25200	14200	2740	3160	1950	6340	5010
8	1050	7960	8330	27400	20600	25600	14000	3140	2860	2080	6870	3110
9	1190	8460	6400	34800	21400	23800	13800	3360	1970	3890	7020	1740
10	1190	8250	5100	43900	21300	22400	13700	3490	1570	4840	6780	1750
11	1300	5630	6240	44400	21400	22500	13500	3240	2400	5630	4710	3920
12	1260	4270	7070	42000	20300	22400	13100	2210	e3300	6120	3260	7210
13	1420	6050	7300	37000	19400	21500	12500	1740	e3350	5970	4510	13200
14	1380	7170	7490	34500	19400	20200	11700	2590	e3300	3840	5290	20500
15	2060	7650	7340	32600	19000	18600	10500	3150	e3400	2730	5920	31400
16	4090	7960	5050	31600	17900	18300	9200	3440	e2600	4440	6260	50500
17	5070	7420	4360	30000	17300	18700	7700	3460	e1800	5630	5880	48200
18	5250	4810	6420	28500	17300	18600	6310	2970	e2800	6220	3870	34700
19	5220	2660	7700	27700	17600	19800	4520	1920	e3500	6510	2790	26500
20	4440	1900	8610	27100	18100	22600	3500	1660	e3600	6250	4010	21000
21	2540	1840	9930	26500	18900	22600	3300	2480	e3700	4070	4930	17200
22	1990	1850	10400	28700	20000	20400	2970	2930	e3700	2830	5380	13500
23	3430	1770	11500	29700	20400	18500	2510	3070	e2800	4510	5630	9460
24	4340	2050	14300	32700	20400	17300	2140	3100	1560	5760	5300	7500
25	5030	1710	17200	39200	20000	16600	1910	2770	2660	6360	3320	7080
26	5790	1440	20900	40200	20200	15900	1760	1810	3340	6650	1940	6950
27	5990	1850	24700	35600	19500	15400	1670	1340	3620	6370	2420	6780
28	4220	2280	24300	31300	18700	15200	1600	1430	3760	4090	2850	6310
29	3080	2600	21500	28100	---	14900	1660	2330	3480	2850	3090	4230
30	4790	2750	18700	25100	---	14700	2240	2890	2210	4560	3520	3060
31	6500	---	16500	22200	---	14900	---	3080	---	5780	3590	---
TOTAL	90790	147180	315190	898700	533800	628400	257390	80040	85100	146990	148320	375910
MEAN	2929	4906	10170	28990	19060	20270	8580	2582	2837	4742	4785	12530
MAX	6500	8460	24700	44400	21400	25700	14800	3490	3760	6650	7020	50500
MIN	1020	1440	4150	14400	16500	14700	1600	1340	1510	1950	1940	1740
AC-FT	180100	291900	625200	1783000	1059000	1246000	510500	158800	168800	291600	294200	745600

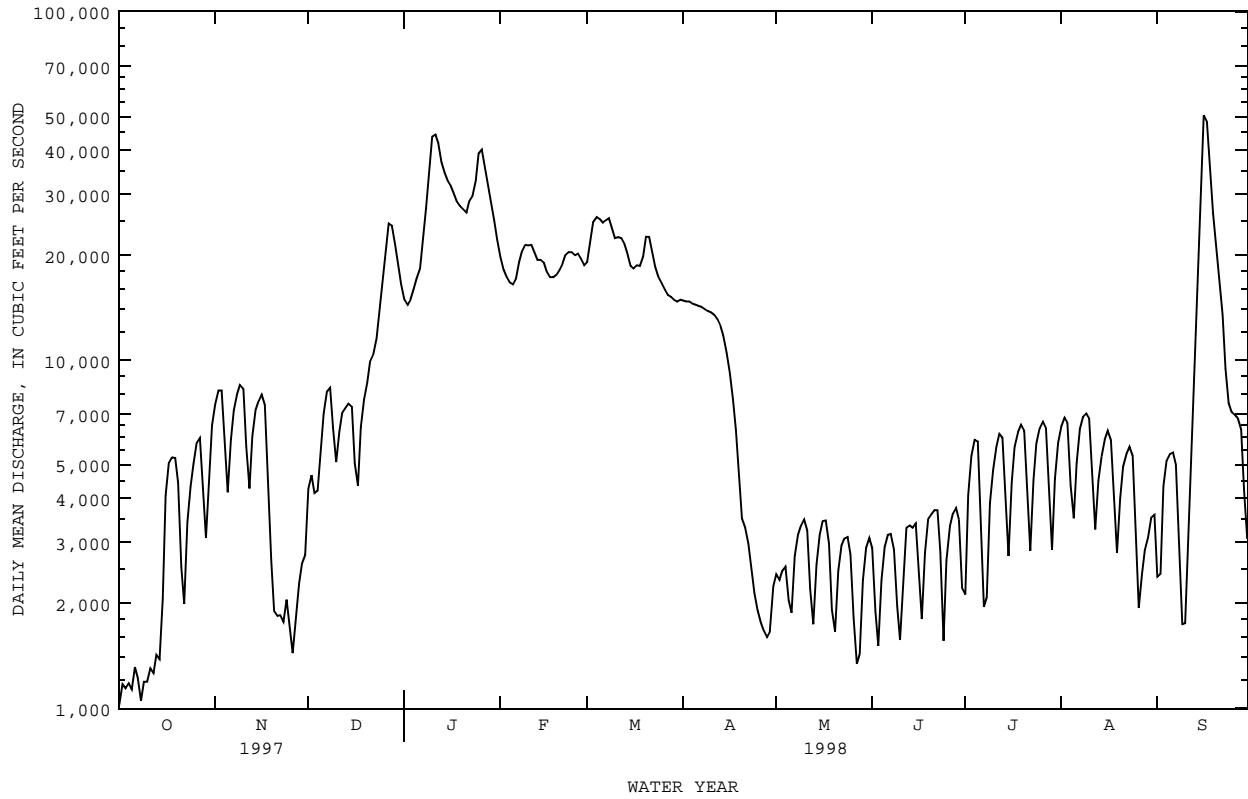
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1998z, BY WATER YEAR (WY)

MEAN	2396	3419	8262	12180	12850	13470	11320	10300	7766	5758	3910	3920
MAX	9591	14910	22070	35570	27990	35780	33240	32980	26240	42320	7982	12530
(WY)	1995	1995	1983	1961	1974	1997	1969	1966	1989	1989	1975	1998
MIN	292	327	1366	1422	1559	1695	1030	1395	1383	805	382	333
(WY)	1968	1968	1981	1981	1968	1996	1971	1996	1963	1967	1967	1967

08030500 SABINE RIVER NEAR RULIFF, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1960 - 1998z	
ANNUAL TOTAL	4047490		3707810		7940	
ANNUAL MEAN	11090		10160		14210	
HIGHEST ANNUAL MEAN					1975	
LOWEST ANNUAL MEAN					1959	
HIGHEST DAILY MEAN	47700	Mar 10	50500	Sep 16	108000	Jul 6 1989
LOWEST DAILY MEAN	1020	Oct 1	1020	Oct 1	278	Oct 28 1967
ANNUAL SEVEN-DAY MINIMUM	1130	Sep 29	1170	Oct 1	282	Oct 9 1967
INSTANTANEOUS PEAK FLOW			55000	Sep 16	109000	Jul 6 1989
INSTANTANEOUS PEAK STAGE			26.24	Sep 16	29.15	Jul 6 1989
ANNUAL RUNOFF (AC-FT)	8028000		7354000		5752000	
10 PERCENT EXCEEDS	28500		24000		18700	
50 PERCENT EXCEEDS	6780		5830		4650	
90 PERCENT EXCEEDS	2020		1890		1150	

e Estimated
z Period of regulated streamflow.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Sep 1945 to Sep 1946, Oct 1947 to current year. Chemical and biochemical analyses: Feb 1968 to current year. Pesticide analyses: Jan 1968 to May 1982. Radiochemical analyses: Oct 1969 to Sep 1995. Sediment analyses: Oct 1974 to Sep 1995.

PERIOD OF DAILY RECORD.--
 SPECIFIC CONDUCTANCE: Sep 1945 to Sep 1946, Oct 1947 to current year.
 WATER TEMPERATURE: Oct 1947 to current year.
 COLOR: Nov 1969 to Dec 1975.

INSTRUMENTATION.--From Oct 31, 1992 to current year, a water-quality monitor continuously recorded specific conductance and water temperature at this station.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1989 to 1998. The standard error of estimate for dissolved solids is 5%, chloride is 12%, sulfate is 13% and for hardness is 8%. Regression equation developed for this station may be obtained from the U.S. Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
 SPECIFIC CONDUCTANCE: Maximum daily, 779 microsiemens, Aug 31, 1966; minimum daily, 27 microsiemens, Feb 16, 1984.
 WATER TEMPERATURE: Maximum daily, 36.0°C, Aug 14, 1962; minimum daily, 1.0°C, Jan 28, 1948.

EXTREMES FOR CURRENT YEAR.--
 SPECIFIC CONDUCTANCE: Maximum, 464 microsiemens, Jul 23; minimum, 78 microsiemens, Jan 11.
 WATER TEMPERATURE: Maximum, 33.1°C, Aug 28; minimum, 9.4°C, Dec 16.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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 SATUR-ATION (MG/L) (00301)	HARD-NESS TOTAL (MG/L) (00900)	HARD-NESS NONCARB FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L) (00925)	SODIUM, DIS-SOLVED (MG/L) (00930)
FEB 04...	1145	17800	124	6.9	13.0	9.0	86	30	8	7.5	2.7	11
MAR 26...	0950	17000	118	6.6	16.5	8.5	86	26	8	6.5	2.3	11
APR 21...	0955	3320	140	6.6	19.0	7.2	77	29	4	7.4	2.5	14
JUN 10...	0955	1420	124	6.9	28.5	6.8	87	26	4	6.5	2.3	12
JUL 23...	0925	4440	130	6.9	31.5	6.6	89	29	8	7.1	2.7	13
AUG 18...	1005	4080	138	6.5	30.0	6.2	82	--	--	--	--	--

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L) AS K (00935)	ALKA-LINITY WAT DIS FIX END CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L) AS SO4 (00945)	CHLO-RIDE, DIS-SOLVED (MG/L) AS CL (00940)	FLUO-RIDE, DIS-SOLVED (MG/L) AS F (00950)	SILICA, DIS-SOLVED (MG/L) AS SIO2 (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L) AS N (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L) AS N (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L) AS N (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L) AS N (00608)
FEB 04...	.9	2.5	22	12	14	<.10	5.3	69	--	<.010	.102	.022
MAR 26...	1	2.7	18	14	13	<.10	5.0	66	.067	.012	.079	<.020
APR 21...	1	2.7	25	15	14	<.10	11	82	--	<.010	.107	.153
JUN 10...	1	2.7	22	14	13	<.10	8.1	73	--	<.010	.066	.031
JUL 23...	1	3.4	21	15	15	<.10	9.3	78	--	<.010	.076	.023
AUG 18...	--	3.2	18	16	15	<.10	--	--	--	.013	<.050	.085

08030500 SABINE RIVER NEAR RULIFF, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTH, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTH, DIS- SOLVED (MG/L AS P04) (00660)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)
FEB 04...	.30	.33	<.010	.019	.06	--	--	--	--	--	--	--
MAR 26...	--	.32	.016	.019	.06	<1	47	<1.0	<8.0	<14	<12	<10
APR 21...	.25	.40	<.010	.011	.03	--	--	--	--	--	--	--
JUN 10...	.32	.35	<.010	<.010	--	--	--	--	--	--	--	--
JUL 23...	.27	.29	.060	<.010	--	<1	48	<1.0	<8.0	<14	<12	<10
AUG 18...	.23	.32	.017	.023	.07	<1	47	--	<1.0	<1.0	--	2.0

DATE	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)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
FEB 04...	--	--	--	--	--	--	--	--	--	--	--	--
MAR 26...	96	<100	<4	25	<.1	<60	<40	<1	<4.0	83	<10	22
APR 21...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 10...	--	--	--	--	--	--	--	--	--	--	--	--
JUL 23...	61	<100	5	5.6	<.1	<60	<40	<1	<4.0	93	<10	<20
AUG 18...	64	<1.0	--	22	<.1	--	--	<1	<1.0	--	--	<20

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1997 TO SEPTEMBER 1998

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. 1997	90790	157	90	22080	18	4460	19	4550	30
NOV. 1997	147180	136	80	31620	16	6410	16	6330	28
DEC. 1997	315190	118	70	59390	14	12060	14	11670	25
JAN. 1998	898700	104	62	151300	13	30780	12	29020	24
FEB. 1998	533800	121	72	103700	15	21060	14	20310	26
MAR. 1998	628400	116	69	117400	14	23860	13	22850	26
APR. 1998	257390	130	77	53220	16	10790	15	10570	27
MAY 1998	80040	139	81	17560	16	3560	16	3530	28
JUNE 1998	85100	147	85	19600	17	3970	17	3980	29
JULY 1998	146990	185	101	39960	20	7990	23	9010	26
AUG. 1998	148320	147	85	34040	17	6890	17	6920	29
SEPT 1998	375910	142	82	83030	17	16770	17	17140	27
TOTAL	3707810.00	**	**	732900	**	148600	**	145900	**
WTD.AVG.	10160	125	73	**	15	**	15	**	26

SABINE RIVER BASIN

08030500 SABINE RIVER NEAR RULIFF, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	151	134	140	165	154	160	127	104	116	116	107	112
2	162	151	156	164	152	159	107	98	102	122	116	119
3	165	162	163	160	152	157	104	99	101	126	122	124
4	162	154	157	159	135	142	119	104	109	126	125	125
5	159	148	154	154	139	143	166	118	148	126	124	125
6	167	154	162	144	128	133	154	138	146	126	124	125
7	165	146	152	132	128	130	162	139	152	124	108	116
8	149	145	148	132	128	130	159	144	148	108	93	102
9	145	142	143	133	128	131	152	143	147	93	85	89
10	143	140	141	133	130	132	208	152	178	85	80	82
11	147	139	145	134	131	133	207	146	167	80	78	78
12	139	136	137	135	128	132	178	162	169	85	80	83
13	143	137	140	128	123	126	175	160	165	88	85	86
14	154	137	141	124	122	123	168	145	154	91	88	89
15	161	137	148	122	120	121	160	134	143	99	89	91
16	165	137	150	127	119	123	143	140	141	97	91	94
17	176	152	160	127	124	125	154	140	144	104	97	100
18	186	164	171	127	124	125	144	136	137	108	104	106
19	200	165	175	133	126	129	149	136	138	115	108	112
20	179	157	164	148	133	140	139	135	137	119	115	117
21	160	157	159	161	148	154	139	133	136	124	118	120
22	164	158	160	162	141	155	133	130	132	129	121	124
23	204	146	168	142	138	140	132	93	108	142	125	131
24	157	145	150	169	138	150	99	86	90	132	119	128
25	155	143	148	176	147	168	99	96	98	125	104	118
26	153	134	140	148	130	135	99	96	98	116	89	95
27	144	129	136	144	130	134	96	93	94	97	91	94
28	159	144	150	157	133	147	94	91	93	107	97	102
29	198	159	174	134	127	131	96	91	94	113	107	109
30	233	158	184	130	120	126	99	94	97	115	111	112
31	169	157	163	---	---	---	108	99	103	118	115	117
MONTH	233	129	154	176	119	138	208	86	129	142	78	107
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	122	118	120	---	---	e117	123	122	123	151	145	150
2	124	121	122	---	---	e115	125	122	123	164	124	132
3	125	122	124	116	114	115	126	124	125	177	140	159
4	124	124	124	119	115	117	126	125	125	163	121	136
5	---	---	e124	121	119	120	127	125	125	123	121	122
6	---	---	e120	122	119	120	128	125	126	128	121	124
7	---	---	e120	122	119	121	126	124	125	149	128	138
8	---	---	e119	119	117	118	125	124	125	141	125	130
9	---	---	e118	121	119	120	125	124	125	133	123	128
10	---	---	e119	121	118	120	125	124	124	131	124	127
11	---	---	e122	121	117	118	125	122	123	133	124	128
12	---	---	e122	119	117	117	123	122	123	129	122	126
13	---	---	e122	120	118	118	123	122	123	142	128	135
14	---	---	e121	120	118	119	125	123	125	154	140	145
15	---	---	e121	121	118	120	130	124	127	150	127	132
16	---	---	e125	135	121	127	141	127	134	138	129	133
17	---	---	e124	132	127	129	150	141	146	137	131	134
18	---	---	e124	128	117	124	167	149	164	151	132	139
19	---	---	e122	118	100	110	179	166	168	147	137	141
20	---	---	e122	118	90	100	185	169	173	160	145	152
21	---	---	e120	96	93	95	187	174	178	187	158	171
22	---	---	e120	98	94	96	182	169	176	172	141	147
23	---	---	e121	101	98	100	169	133	141	153	140	146
24	---	---	e120	118	100	110	136	133	134	151	140	146
25	---	---	e120	121	116	119	140	135	137	146	138	142
26	---	---	e123	122	120	121	145	139	142	145	137	139
27	---	---	e123	122	121	121	149	144	146	152	141	146
28	---	---	e121	123	121	122	157	148	152	157	151	156
29	---	---	---	123	122	122	158	156	157	177	154	166
30	---	---	---	123	122	123	157	148	153	166	130	139
31	---	---	---	123	122	123	---	---	---	137	127	132
MONTH	---	---	122	---	---	117	187	122	139	187	121	140

08030500 SABINE RIVER NEAR RULIFF, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	139	127	133	160	136	138	136	117	131	349	337	343
2	139	131	135	184	132	149	140	127	131	372	345	352
3	145	135	139	138	125	131	134	127	130	387	332	347
4	165	145	157	141	129	133	137	134	135	346	329	336
5	158	140	144	141	128	134	144	137	140	343	328	334
6	144	136	140	147	138	141	139	126	131	340	150	246
7	142	134	139	141	138	139	142	130	135	150	140	144
8	145	139	142	164	139	143	144	134	138	144	141	142
9	144	142	143	182	123	142	147	136	141	143	140	142
10	150	143	146	141	125	134	154	145	149	148	141	143
11	164	149	153	139	127	132	162	154	158	184	125	149
12	165	164	165	144	129	134	181	160	164	138	120	124
13	---	---	e165	137	128	132	202	153	165	---	---	e124
14	---	---	e160	143	137	140	158	141	147	---	---	e126
15	---	---	e161	146	141	142	149	133	140	---	---	e128
16	---	---	e152	159	131	142	146	136	139	---	---	e125
17	---	---	e150	164	146	155	150	140	144	---	---	e125
18	---	---	e153	169	161	164	151	149	150	---	---	e129
19	---	---	e150	171	165	167	162	144	152	---	---	e127
20	---	---	e151	172	165	166	163	134	146	---	---	e125
21	---	---	e148	170	168	169	146	137	140	---	---	e123
22	---	---	e144	---	---	e180	148	133	142	---	---	e124
23	146	138	141	464	373	411	150	143	146	144	120	123
24	156	146	148	380	361	373	155	149	152	173	137	150
25	174	143	159	397	365	370	156	151	154	155	142	148
26	151	138	144	366	250	316	163	155	158	163	147	153
27	143	134	139	389	219	269	210	162	180	168	154	159
28	142	129	138	322	126	199	212	169	183	162	146	153
29	136	128	132	135	126	128	174	151	163	146	142	144
30	137	131	134	147	115	124	158	147	151	172	146	156
31	---	---	---	124	115	118	340	163	215	---	---	---
MONTH	---	---	147	---	---	178	340	117	150	---	---	175

e Estimated

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	28.1	26.1	27.1	20.3	19.4	19.9	17.1	16.3	16.7	10.4	10.0	10.2
2	27.9	26.6	27.3	20.1	19.6	19.9	16.3	15.6	15.9	11.3	10.4	10.9
3	27.5	26.2	26.9	19.6	17.9	18.7	15.8	15.4	15.6	12.4	11.3	11.9
4	26.9	25.7	26.3	17.9	17.1	17.4	15.5	14.9	15.3	12.9	12.4	12.7
5	27.0	25.7	26.3	17.6	17.1	17.3	14.9	14.2	14.5	13.4	12.9	13.1
6	27.1	25.9	26.5	18.1	17.4	17.8	14.2	13.1	13.5	13.8	13.4	13.6
7	26.4	25.7	26.1	17.8	17.4	17.6	13.1	12.2	12.5	14.4	13.8	14.1
8	26.3	25.5	25.9	17.4	16.9	17.1	12.2	11.7	11.9	14.0	12.8	13.4
9	26.0	25.6	25.8	16.9	16.5	16.7	12.6	11.8	12.1	12.8	12.0	12.3
10	26.0	25.5	25.7	16.8	15.7	16.2	13.5	12.6	13.1	12.5	11.8	12.1
11	26.1	25.4	25.7	15.7	15.3	15.5	13.2	12.5	12.7	12.6	12.1	12.3
12	26.3	25.4	25.8	16.3	15.5	16.0	12.6	11.4	12.1	13.3	12.6	13.0
13	26.0	24.6	25.5	16.5	16.2	16.4	11.4	10.5	10.9	13.9	13.3	13.6
14	24.6	22.8	23.7	16.3	16.0	16.2	10.9	10.2	10.6	14.2	13.9	14.1
15	22.8	21.0	21.8	16.0	15.1	15.6	10.9	10.0	10.5	14.2	13.0	13.8
16	21.0	20.4	20.5	15.1	14.2	14.6	10.0	9.4	9.8	13.0	12.3	12.6
17	20.6	20.2	20.4	14.2	12.5	13.3	11.1	9.9	10.5	12.5	12.0	12.3
18	20.6	20.3	20.5	12.5	12.0	12.1	12.0	10.9	11.7	12.8	12.2	12.5
19	20.9	20.5	20.7	12.7	12.0	12.3	12.5	11.8	12.1	12.8	12.3	12.6
20	21.4	20.8	21.0	13.7	12.7	13.2	12.6	12.3	12.4	12.5	12.0	12.2
21	21.6	20.5	21.0	14.4	13.6	14.1	13.3	12.6	13.0	12.9	12.2	12.4
22	21.5	21.1	21.4	14.6	14.1	14.3	13.6	13.0	13.3	13.1	12.8	13.0
23	21.2	20.8	21.0	14.8	14.1	14.4	13.9	13.6	13.8	12.8	12.4	12.6
24	21.7	20.8	21.2	15.0	14.2	14.6	13.8	13.3	13.6	12.4	11.9	12.2
25	22.3	21.6	21.9	15.2	14.5	14.8	13.3	12.8	13.0	12.3	11.8	12.1
26	22.4	21.0	21.7	15.7	15.0	15.3	12.8	12.0	12.5	12.4	11.9	12.2
27	21.0	19.2	20.3	16.5	15.6	16.1	12.0	11.2	11.5	12.3	11.9	12.1
28	19.2	17.5	18.2	17.1	16.3	16.7	11.2	10.5	10.7	12.2	11.6	11.9
29	17.5	16.7	17.1	17.9	17.1	17.4	10.5	9.9	10.2	12.5	11.8	12.2
30	18.2	16.4	17.1	17.6	17.1	17.4	10.0	9.6	9.8	13.0	12.4	12.7
31	19.4	18.2	18.9	---	---	---	10.3	9.8	10.0	13.6	13.0	13.2
MONTH	28.1	16.4	22.9	20.3	12.0	16.0	17.1	9.4	12.4	14.4	10.0	12.6

SABINE RIVER BASIN

08030500 SABINE RIVER NEAR RULIFF, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	13.6	13.3	13.5	13.9	13.3	13.6	18.7	17.9	18.3	22.7	21.1	21.8
2	13.5	13.0	13.3	13.5	12.9	13.2	17.9	17.4	17.6	23.7	22.2	22.8
3	13.2	12.7	12.9	13.5	12.7	13.2	18.2	17.3	17.7	24.6	23.2	23.8
4	13.0	12.6	12.7	13.8	13.2	13.5	18.3	17.8	18.0	25.3	23.8	24.5
5	---	---	---	15.0	13.8	14.3	18.1	17.4	17.7	25.7	24.8	25.2
6	11.8	11.4	11.5	15.4	15.0	15.2	18.1	17.6	17.9	25.4	25.1	25.3
7	11.5	11.1	11.3	15.8	15.4	15.6	18.8	17.9	18.3	26.0	24.8	25.3
8	11.4	11.0	11.2	15.7	14.5	15.3	19.8	18.7	19.2	26.4	25.5	25.9
9	12.3	11.4	11.8	14.5	13.5	13.8	19.6	19.1	19.3	26.7	25.8	26.2
10	13.0	12.3	12.7	13.5	12.8	13.1	19.2	18.7	19.0	26.6	25.6	26.1
11	13.1	12.5	12.8	12.9	12.3	12.7	19.4	18.6	19.0	26.7	25.5	26.1
12	13.1	12.5	12.8	12.6	12.1	12.4	19.3	18.8	19.1	26.9	25.7	26.2
13	13.4	12.8	13.1	12.4	12.1	12.3	19.2	19.0	19.1	26.4	25.9	26.2
14	13.3	13.1	13.2	13.0	12.4	12.7	19.7	19.2	19.4	26.1	25.6	25.9
15	13.2	12.5	12.9	13.9	13.0	13.4	20.4	19.7	20.1	26.0	25.3	25.6
16	12.5	12.1	12.3	14.2	13.9	14.1	21.2	20.4	20.7	26.4	25.5	25.9
17	12.1	11.7	11.9	15.1	14.0	14.6	21.1	20.4	20.8	27.0	25.9	26.3
18	12.1	11.5	11.8	16.4	15.1	15.8	20.4	19.0	19.7	27.3	26.0	26.6
19	12.7	12.0	12.3	17.5	16.4	16.9	19.3	18.4	18.8	27.7	26.4	27.0
20	13.3	12.5	12.9	17.0	15.8	16.3	19.5	18.2	18.8	28.1	26.7	27.3
21	13.5	12.9	13.2	15.8	15.0	15.3	20.0	19.0	19.4	28.2	26.9	27.5
22	13.5	13.2	13.5	15.3	14.6	15.0	20.1	18.9	19.5	27.7	27.2	27.4
23	13.3	12.8	13.1	15.4	14.7	15.1	20.3	19.0	19.6	27.5	26.9	27.2
24	13.6	12.9	13.3	16.0	15.2	15.6	20.7	19.4	20.0	27.4	26.9	27.1
25	14.5	13.6	13.9	16.5	15.8	16.2	21.0	20.0	20.4	27.7	26.9	27.2
26	15.3	14.5	14.9	17.3	16.4	16.8	20.7	20.3	20.5	28.3	27.1	27.6
27	15.1	14.7	14.9	17.7	17.2	17.5	21.5	20.5	20.9	29.1	27.6	28.3
28	14.7	13.9	14.3	18.1	17.5	17.8	22.8	21.1	21.9	30.0	27.9	28.9
29	---	---	---	18.8	17.9	18.4	22.3	21.1	21.7	30.6	29.0	29.7
30	---	---	---	19.5	18.7	19.1	21.8	20.6	21.2	30.4	29.6	30.0
31	---	---	---	19.3	18.7	19.1	---	---	---	30.5	29.4	29.9
MONTH	---	---	---	19.5	12.1	15.1	22.8	17.3	19.5	30.6	21.1	26.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	30.8	29.6	30.2	31.4	29.5	30.4	31.2	30.4	30.9	30.8	29.8	30.3
2	31.3	29.8	30.4	30.9	29.8	30.4	31.5	30.7	31.1	30.8	29.5	30.1
3	31.3	30.1	30.7	29.8	29.6	29.7	31.4	30.6	31.1	30.5	29.7	30.2
4	30.9	30.1	30.6	29.9	29.5	29.7	31.1	30.1	30.6	30.9	30.2	30.4
5	30.5	29.5	30.1	30.1	29.7	29.9	32.4	30.8	31.4	30.7	30.1	30.3
6	29.5	28.1	28.9	31.0	29.6	30.2	31.5	30.4	30.8	30.3	29.8	30.1
7	28.1	27.2	27.6	32.2	30.5	31.3	30.4	29.2	29.7	30.2	29.1	29.8
8	27.5	26.6	27.1	32.7	31.3	32.0	29.5	28.9	29.3	29.4	28.5	29.0
9	28.4	26.9	27.6	32.3	31.0	31.6	30.0	29.0	29.5	29.8	28.7	29.2
10	30.1	28.0	28.9	32.0	31.1	31.4	30.2	29.5	29.9	29.2	26.8	28.4
11	30.5	29.1	29.7	31.6	30.9	31.2	30.7	29.5	30.1	28.0	26.4	27.3
12	29.9	29.9	29.9	31.5	30.9	31.2	32.7	30.5	31.5	26.4	26.0	26.1
13	---	---	---	31.3	30.7	31.1	32.2	31.1	31.6	26.0	25.5	25.8
14	---	---	---	30.7	29.9	30.4	31.1	29.6	30.5	25.5	25.2	25.4
15	---	---	---	30.6	29.5	30.0	29.7	28.8	29.1	25.2	25.0	25.1
16	---	---	---	30.1	29.5	29.8	29.3	28.8	29.0	25.2	24.9	25.0
17	---	---	---	31.1	30.1	30.6	29.7	29.0	29.3	25.6	24.9	25.2
18	---	---	---	31.1	30.5	30.8	29.6	28.7	29.1	25.9	25.2	25.6
19	---	---	---	31.2	30.6	31.0	30.4	29.2	29.8	26.4	25.7	26.0
20	---	---	---	31.2	30.5	31.0	30.9	29.8	30.2	26.7	26.1	26.4
21	---	---	---	30.6	30.0	30.3	30.4	29.8	30.1	27.2	26.6	26.9
22	---	---	---	31.5	30.2	30.8	29.9	29.1	29.6	27.9	27.1	27.5
23	31.5	30.6	30.9	31.6	30.9	31.3	29.6	29.0	29.2	28.8	27.7	28.1
24	32.1	30.6	31.3	31.2	30.4	30.8	30.1	29.2	29.6	29.2	28.8	29.0
25	31.9	30.7	31.3	31.1	30.5	30.8	30.4	28.9	29.6	29.0	28.6	28.8
26	31.2	29.5	30.2	31.1	30.4	30.7	31.7	30.2	30.8	28.8	28.5	28.6
27	29.5	29.2	29.3	30.6	30.1	30.4	32.6	31.0	31.8	28.9	28.5	28.7
28	29.2	28.6	28.8	30.6	29.8	30.2	33.1	31.7	32.4	29.1	28.4	28.8
29	29.1	28.3	28.7	32.0	30.3	31.0	32.9	31.8	32.3	28.9	27.9	28.4
30	30.1	28.7	29.3	31.4	30.6	31.1	32.5	31.5	32.0	29.6	28.3	28.9
31	---	---	---	31.3	30.6	31.0	31.5	30.5	31.1	---	---	---
MONTH	---	---	---	32.7	29.5	30.7	33.1	28.7	30.4	30.9	24.9	28.0

NECHES RIVER BASIN

08032000 NECHES RIVER NEAR NECHES, TX

LOCATION.--Lat 31°53'32", long 95°25'50", Anderson-Cherokee County line, Hydrologic Unit 12020001, on left bank just downstream from bridge on U.S. Highway 79, 1.0 mi downstream from Missouri Pacific Railroad Co. bridge, 1.4 mi downstream from Walnut Creek, 4.4 mi northeast of Neches and at mile 333.2.

DRAINAGE AREA.--1,145 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Feb 1939 to current year.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 264.06 ft above sea level. Prior to Oct 27, 1945, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1962, at least 10% of the contributing drainage area has been regulated by Lake Palestine 11 mi upstream and by Lake Athens 50 mi upstream (combined capacity 454,600 acre-ft). No known diversions.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--22 years (water years 1940-61), 804 ft³/s (502,500 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1940-61).--Maximum discharge, 45,500 ft³/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 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	94	130	390	1230	1290	2110	1190	279	101	70	50	46
2	92	124	325	1090	1210	2100	1230	261	98	69	50	46
3	90	114	336	980	1160	2080	1220	240	96	69	50	45
4	88	108	373	905	1100	2040	1170	250	95	72	50	46
5	87	108	308	902	1040	1920	1130	208	98	71	50	45
6	87	108	267	1060	953	1770	1050	189	136	69	52	45
7	87	108	254	2030	888	1680	940	201	132	68	56	46
8	89	106	410	10400	806	1540	865	210	103	66	54	46
9	91	107	442	15500	732	1420	903	205	100	65	52	46
10	92	152	362	14700	747	1360	925	207	98	64	51	45
11	94	198	325	12800	1200	1220	863	217	95	63	51	48
12	93	191	296	11000	1600	1060	752	159	92	62	50	64
13	129	251	265	8980	2000	935	600	142	89	61	50	72
14	186	281	227	7560	2170	830	554	138	87	61	51	65
15	145	241	211	6390	2230	860	545	139	85	60	51	140
16	123	222	204	5400	2280	1000	512	139	85	59	51	386
17	111	197	200	4410	2280	1240	549	139	83	60	51	265
18	103	174	196	3650	2200	1570	527	134	80	74	52	178
19	97	162	192	3130	2110	1890	464	129	80	70	51	198
20	93	156	193	2760	1990	2090	407	126	79	59	50	166
21	90	153	362	2430	1870	2310	394	124	77	57	50	134
22	91	149	482	2190	1820	2390	437	122	76	57	49	110
23	98	144	472	2120	1790	2270	406	120	75	56	48	95
24	358	142	735	2130	1740	2100	332	118	74	55	48	85
25	352	141	960	2080	1680	1930	263	118	74	55	48	81
26	256	139	1180	1990	1810	1760	217	116	73	53	48	77
27	226	142	1380	1860	1940	1570	250	114	73	53	48	73
28	194	177	1500	1790	2050	1390	343	111	73	52	48	70
29	163	443	1500	1660	---	1280	353	109	72	52	47	67
30	146	443	1460	1520	---	1180	322	106	71	51	46	65
31	137	---	1350	1400	---	1140	---	103	---	50	46	---
TOTAL	4182	5311	17157	136047	44686	50035	19713	4973	2650	1903	1549	2895
MEAN	135	177	553	4389	1596	1614	657	160	88.3	61.4	50.0	96.5
MAX	358	443	1500	15500	2280	2390	1230	279	136	74	56	386
MIN	87	106	192	902	732	830	217	103	71	50	46	45
AC-FT	8290	10530	34030	269800	88630	99240	39100	9860	5260	3770	3070	5740

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1998z, BY WATER YEAR (WY)

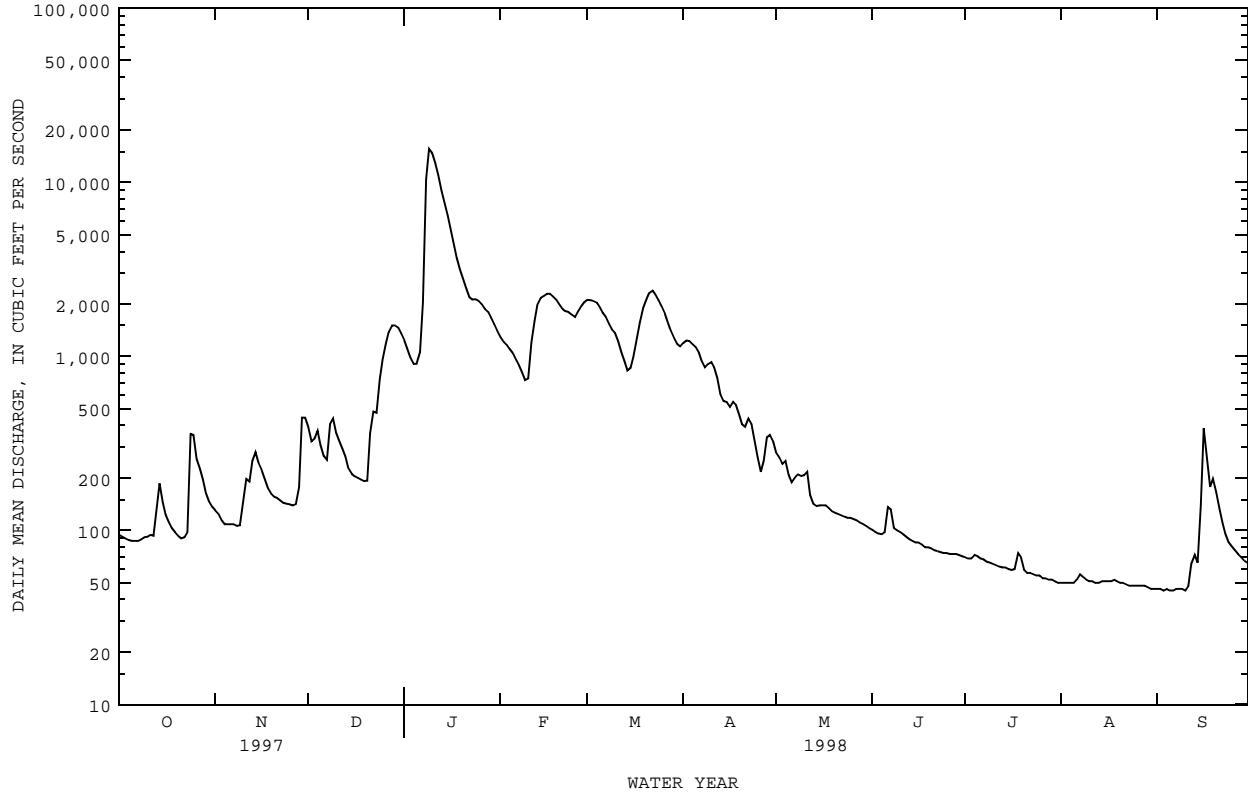
MEAN	222	407	768	896	1078	1277	1231	1268	773	211	119	196
MAX	2064	2559	3344	4389	3097	2879	4162	5289	4129	1076	617	1313
(WY)	1974	1975	1992	1998	1992	1987	1966	1968	1973	1976	1979	1973
MIN	12.8	16.0	82.1	102	181	92.0	60.1	43.3	23.7	12.5	9.70	8.37
(WY)	1964	1964	1990	1981	1981	1972	1972	1972	1971	1964	1964	1964

NECHES RIVER BASIN

08032000 NECHES RIVER NEAR NECHES, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1962 - 1998z	
ANNUAL TOTAL	295015		291101		702	
ANNUAL MEAN	808		798		1358	
HIGHEST ANNUAL MEAN					106	
LOWEST ANNUAL MEAN					1995	
HIGHEST DAILY MEAN	6060	Feb 28	15500	Jan 9	26200	May 13 1968
LOWEST DAILY MEAN	87	Sep 17	45	Sep 3	3.3	Nov 1 1963
ANNUAL SEVEN-DAY MINIMUM	87	Sep 16	46	Aug 31	3.4	Oct 29 1963
INSTANTANEOUS PEAK FLOW			15900	Jan 9	26900	May 13 1968
INSTANTANEOUS PEAK STAGE			18.07	Jan 9	19.46	May 13 1968
ANNUAL RUNOFF (AC-FT)	585200		577400		508300	
10 PERCENT EXCEEDS	2140		1990		1740	
50 PERCENT EXCEEDS	307		174		256	
90 PERCENT EXCEEDS	94		51		55	

z Period of regulated streamflow.



NECHES RIVER BASIN

08032000 NECHES RIVER NEAR NECHES, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Dec 1969 to current year. Biochemical analyses: Oct 1974 to current year.

PERIOD OF DAILY RECORD.--
 SPECIFIC CONDUCTANCE: Dec 1969 to Sep 1991.
 WATER TEMPERATURES: Dec 1983 to Sep 1991.

INSTRUMENTATION.--Specific conductance was recorded from Dec 1969 to Sep 1991. Water temperature was recorded continuously from Dec 1983 to Sep 1991.

EXTREMES FOR PERIOD OF DAILY RECORD.--
 SPECIFIC CONDUCTANCE (1974-88): Maximum, 1,190 microsiemens, Aug 29, 1976; minimum 65 microsiemens, Jun 1, 1990.
 WATER TEMPERATURE: Maximum, 36.0°C, Jul 16, 1985; minimum, 0.0°C, Dec 24, 25, 1989.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, (PERCENT SATURATION) (00301)	OXYGEN BIO-CHEMICAL, 5 DAY (MG/L) (00310)	HARDNESS TOTAL AS CAC03 (MG/L) (00900)	HARDNESS NONCARBONIC AS CAC03 (MG/L) (00904)
MAR 11...	0825	1260	146	6.7	10.5	10.4	92	1.5	34	13
APR 24...	0905	338	158	6.5	18.5	7.0	75	1.4	37	15
JUN 30...	0750	71	166	6.9	29.0	6.2	82	1.5	40	19
JUL 21...	1515	57	168	7.0	34.0	7.8	111	2.1	41	20
AUG 19...	1230	51	175	7.0	30.0	6.2	81	1.5	42	11
SEP 03...	1225	46	178	7.2	28.0	7.0	89	1.1	43	12

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNESIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKALINITY, WAT DIS-FIX END FIELD CAC03 (MG/L) (39036)	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)
MAR 11...	8.3	3.1	12	.9	3.5	21	17	17	.13	10
APR 24...	9.1	3.6	13	.9	3.6	22	19	19	<.10	7.2
JUN 30...	10	3.5	13	.9	4.2	21	23	17	.11	7.0
JUL 21...	10	3.7	13	.9	4.7	21	22	17	.14	9.4
AUG 19...	11	3.8	14	.9	4.8	31	20	19	.14	11
SEP 03...	11	3.8	14	.9	4.9	31	20	18	.13	11

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L) (70301)	NITROGEN, NITRATE DIS-SOLVED (MG/L) (00618)	NITROGEN, NITRITE DIS-SOLVED (MG/L) (00613)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L) (00631)	NITROGEN, AMMONIA DIS-SOLVED (MG/L) (00608)	NITROGEN, ORGANIC DIS-SOLVED (MG/L) (00607)	NITROGEN, AMMONIA + ORGANIC DIS-SOLVED (MG/L) (00623)	PHOSPHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
MAR 11...	85	--	<.010	.096	.032	.50	.53	.032	.011	.03
APR 24...	88	--	<.010	.062	.042	.32	.36	<.010	.011	.03
JUN 30...	91	--	<.010	<.050	.039	.34	.38	<.010	<.010	--
JUL 21...	96	--	<.010	.638	.021	.32	.35	<.010	<.010	--
AUG 19...	102	.122	.014	.136	.106	.29	.40	.010	.012	.04
SEP 03...	103	--	<.010	.190	<.020	--	.39	.025	.012	.04

NECHES RIVER BASIN

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 mi².

PERIOD OF RECORD.--Oct 1923 to Sep 1925, Mar 1939 to Sep 1985. Monthly discharge only for some periods, published in WSP 1312. Oct 1985 to Sep 1989 (annual maximum), Oct 1989 to present (peaks above base discharge).
Water-quality records.--Chemical and biochemical analyses: Oct 1969 to Sep 1981.

REVISED RECORDS.--WSP 1242: 1950. WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 136.46 ft above sea level. Prior to Jul 10, 1925, nonrecording gage at site 630 ft upstream; Jul 10 to Aug 31, 1925, and Mar 30, 1939, to Sep 24, 1943, nonrecording gage at site 500 ft upstream; Sep 25, 1943, to Aug 16, 1973, nonrecording gage at site 70 ft upstream; all at present datum. Satellite telemeter at station.

REMARKS.--Records good. Since water year 1962, at least 10% of contributing drainage area has been regulated by Lake Palestine 140 mi upstream and by Lake Athens 180 mi upstream (combined capacity 454,600 acre-ft).

AVERAGE DISCHARGE.--24 years (water years 1923-25, 1939-61) unregulated, 1,807 ft³/s (1,309,000 acre-ft/yr); 24 years (water years 1962-85) regulated, 1,353 ft³/s (980,200 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,900 ft³/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 ft³/s) from rating curve extended above 40,000 ft³/s; flood in 1900 reached a stage of 19.9 ft (discharge, about 80,000 ft³/s), from information by local residents.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 7	1900	15,900	15.63	Jan 17	0300	12,600	15.13
Jan 13	0100	9,860	14.59	Feb 27	1400	9,440	14.49

08033500 NECHES RIVER NEAR ROCKLAND, TX
(Hydrologic index station)

LOCATION.--Lat 31°01'29", long 94°23'55", Tyler County, Hydrologic Unit 12020003, on downstream side of bridge at U.S. Highway 69, 2,200 ft upstream from abandoned ferry crossing, 0.8 mi upstream from Texas and New Orleans Railway Co. bridge, 1.2 mi north of Rockland, 3.2 mi downstream from Billiams Creek and 32.4 mi upstream from Angelina River.

DRAINAGE AREA.--3,636 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jul 1903 to current year.

REVISED RECORDS.--WSP 878: 1926-27. WSP 1342: 1922(M), 1935. WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 88.41 ft above sea level. Prior to May 23, 1973, nonrecording gage located 2,200 ft downstream at datum 3.00 ft higher. May 23, 1973, to Sep 30, 1975, recording gage at present site at datum 3.00 ft higher. Satellite telemeter at station.

REMARKS.--Records good. Since water year 1962, at least 10% of contributing drainage area has been regulated by Lake Palestine and by Lake Athens. Between Oct and Sep of the current year, the Upper Neches Municipal Water Authority diverted 3,580 acre-ft from the Neches River at a diversion point about 10 mi downstream from station Neches River near Neches. This water is used for municipal and industrial purposes in the Palestine area.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--58 years (water years 1904-61), 2,362 ft³/s (1,711,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1904-61).--Maximum discharge, 49,800 ft³/s May 6, 1944 (gage height, 35.04 ft), present site; minimum observed during period of daily records, 1.6 ft³/s Sep 28-30, and Oct 1, 2, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Historical flood information begins with flood in May 1884, which reached a stage of 38.0 ft, present site, from information by local resident (discharge, about 62,000 ft³/s).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	645	826	2280	3000	5960	15000	3030	1640	232	120	88	105
2	543	680	2120	2690	5530	14600	2930	1320	226	111	88	101
3	438	558	2580	2440	5440	13400	2950	983	222	111	82	98
4	322	473	3320	2310	5390	12100	2950	814	214	110	77	93
5	268	450	3480	2460	5110	10800	2940	743	210	108	78	89
6	246	484	3070	7520	4730	9760	2930	697	222	107	142	91
7	245	656	2860	15400	4310	8840	2920	648	215	105	318	89
8	239	746	2670	18700	3910	8430	2860	605	199	105	261	87
9	242	738	2580	21000	3580	7580	2770	567	193	104	184	84
10	233	686	2510	21700	3410	6880	2670	537	208	103	253	86
11	225	657	2290	20800	3770	6210	2530	515	232	102	280	128
12	223	762	2110	19500	3870	5530	2360	484	247	101	261	532
13	261	885	1940	18800	4210	4940	2200	456	243	101	221	378
14	322	948	1770	18100	4720	4510	2050	435	237	100	228	963
15	365	1020	1610	17400	5320	4230	1940	417	229	99	218	2620
16	350	1070	1460	16400	5830	4210	1810	406	217	98	182	1750
17	307	1030	1310	15200	6490	5030	1680	395	201	98	229	1240
18	306	1050	1160	14600	6470	5610	1600	383	188	97	161	1180
19	344	1060	1020	14700	6200	5930	1590	366	179	96	136	988
20	354	991	946	14900	5890	5980	1540	343	169	95	136	867
21	337	917	4380	14600	5540	5820	1420	325	161	94	158	756
22	311	831	5420	15900	6140	5510	1250	312	154	93	182	620
23	294	742	6210	16700	6640	5180	1110	303	152	94	203	527
24	314	649	7520	16800	6690	4900	1030	293	144	94	192	518
25	307	588	7270	15800	6670	4580	995	284	135	e93	171	449
26	335	536	7700	14200	8570	4160	932	274	138	e92	153	405
27	432	526	7320	12300	11100	3780	892	264	137	e91	141	361
28	567	550	6040	10600	13800	3480	884	254	127	e90	134	319
29	720	1500	4650	9180	---	3250	1160	248	122	e89	126	285
30	844	2210	3810	7840	---	3090	1590	244	126	87	114	256
31	887	---	3330	6740	---	3130	---	238	---	87	109	---
TOTAL	11826	24819	106736	408280	165290	206450	59513	15793	5679	3075	5306	16065
MEAN	381	827	3443	13170	5903	6660	1984	509	189	99.2	171	536
MAX	887	2210	7700	21700	13800	15000	3030	1640	247	120	318	2620
MIN	223	450	946	2310	3410	3090	884	238	122	87	77	84
AC-FT	23460	49230	211700	809800	327900	409500	118000	31330	11260	6100	10520	31860

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1998z, BY WATER YEAR (WY)

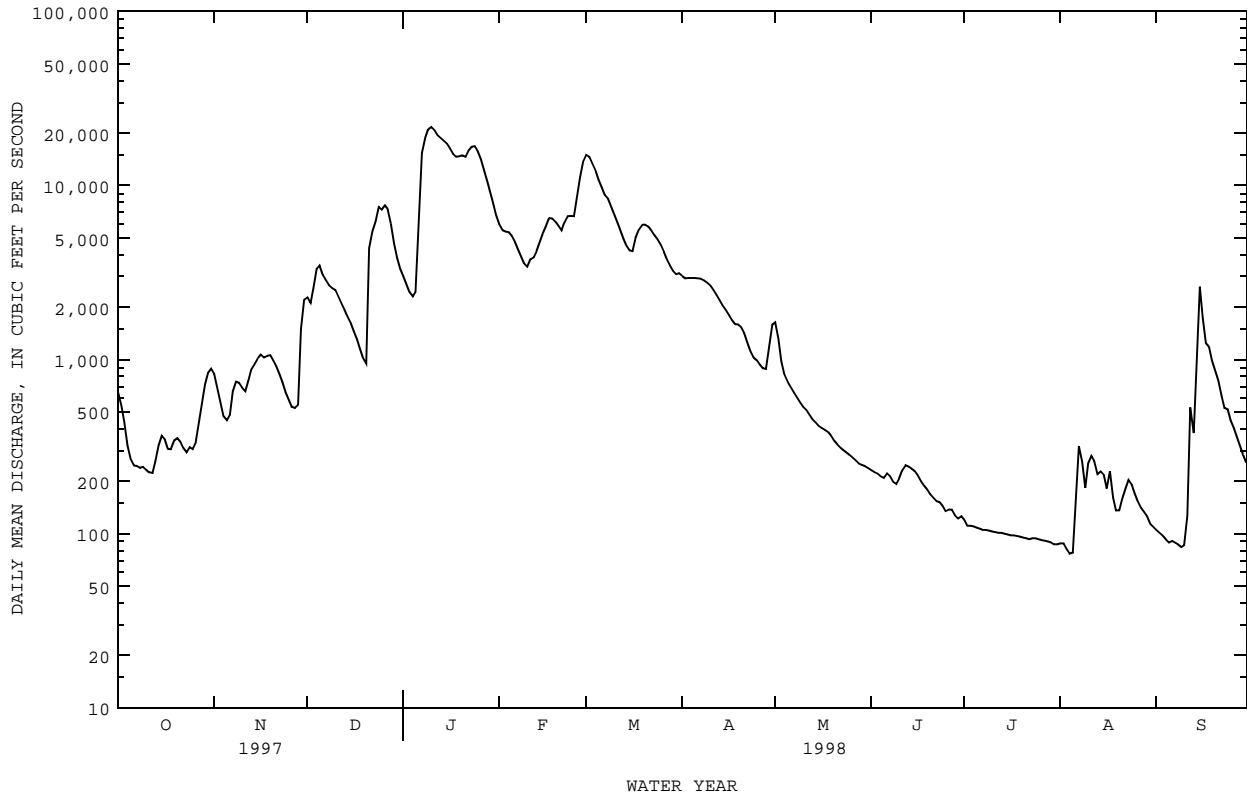
MEAN	799	1115	2445	3734	3860	4100	3732	3878	2602	1135	400	476
MAX	10620	6142	8982	13170	13930	13750	11990	12730	10360	11260	2673	3042
(WY)	1995	1974	1995	1998	1992	1992	1979	1969	1990	1989	1991	1979
MIN	36.6	65.8	213	263	368	395	282	307	102	42.9	34.2	43.1
(WY)	1964	1965	1981	1981	1971	1996	1971	1996	1971	1971	1964	1964

NECHES RIVER BASIN

08033500 NECHES RIVER NEAR ROCKLAND, TX--Continued
(Hydrologic index station)

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1962 - 1998z	
ANNUAL TOTAL	1237011		1028832			
ANNUAL MEAN	3389		2819		2349	
HIGHEST ANNUAL MEAN					5328	
LOWEST ANNUAL MEAN					352	
HIGHEST DAILY MEAN	14200	Mar 16	21700	Jan 10	41600	Jul 2 1989
LOWEST DAILY MEAN	141	Sep 22	77	Aug 4	18	Aug 30 1970
ANNUAL SEVEN-DAY MINIMUM	153	Sep 17	84	Jul 30	23	Jul 21 1971
INSTANTANEOUS PEAK FLOW			21800	Jan 10	42300	Oct 20 1994
INSTANTANEOUS PEAK STAGE			27.17	Jan 10	33.29	Oct 20 1994
ANNUAL RUNOFF (AC-FT)	2454000		2041000		1702000	
10 PERCENT EXCEEDS	11200		7630		6200	
50 PERCENT EXCEEDS	2210		738		902	
90 PERCENT EXCEEDS	245		104		109	

e Estimated
z Period of regulated streamflow.



08033500 NECHES RIVER NEAR ROCKLAND, TX--Continued
(Hydrologic index station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Apr 1941 to Sep 1942, Sep 1945 to Sep 1947. Chemical and biochemical analyses: Dec 1967 to current year. Sediment analyses: 1961 to 1963.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Apr 1941 to Sep 1942, and Sep 1945 to Sep 1947.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, BIO-CHEMICAL, 5 DAY (MG/L) (00310)	HARDNESS TOTAL (MG/L) (00900)	HARDNESS NONCARBONATE (MG/L) (00904)	
FEB 19...	1135	6200	162	5.9	12.5	8.8	83	1.4	35	19
MAR 26...	1250	4160	172	6.5	19.5	7.8	84	1.0	38	19
APR 28...	1708	867	205	7.3	21.5	8.0	91	1.8	43	17
JUN 29...	1250	126	258	7.2	31.5	6.0	82	.9	44	5
JUL 22...	0934	94	242	6.8	29.0	6.6	86	1.0	39	6
AUG 19...	0905	139	260	7.0	29.0	6.2	81	1.5	31	4

DATE	CALCIUM DIS-SOLVED (MG/L) AS CA (00915)	MAGNESIUM, DIS-SOLVED (MG/L) AS MG (00925)	SODIUM, DIS-SOLVED (MG/L) AS NA (00930)	SODIUM AD-SORPTION RATIO (00931)	POTASSIUM, DIS-SOLVED (MG/L) AS K (00935)	ALKALINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	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)
FEB 19...	8.8	3.2	15	1	2.8	16	28	18	<.10	12
MAR 26...	9.2	3.6	16	1	3.0	19	25	21	<.10	6.9
APR 28...	11	4.0	20	1	3.1	26	24	25	.14	14
JUN 29...	11	4.2	31	2	3.7	39	25	35	.15	13
JUL 22...	9.0	4.1	28	2	4.7	33	22	34	.17	12
AUG 19...	7.6	2.8	35	3	4.6	27	29	34	.14	11

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L) (70301)	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, ORGANIC DIS-SOLVED (MG/L) AS N (00607)	NITROGEN, AMMONIA + ORGANIC DIS-SOLVED (MG/L) AS N (00623)	PHOSPHORUS, PHOSPHORUS DIS-SOLVED (MG/L) AS P (00666)	PHOSPHORUS, ORTHO, DIS-SOLVED (MG/L) AS P (00671)	PHOSPHATE, ORTHO, DIS-SOLVED (MG/L) AS PO4 (00660)
FEB 19...	98	--	<.010	.148	<.020	--	.46	<.010	.016	.05
MAR 26...	96	--	.012	<.050	.021	.45	.47	.023	.025	.08
APR 28...	118	.309	.010	.319	.044	.30	.35	<.010	<.010	--
JUN 29...	145	--	<.010	<.050	.049	.23	.28	<.010	<.010	--
JUL 22...	135	--	<.010	.057	.052	.33	.38	<.010	<.010	--
AUG 19...	141	.126	.015	.141	.092	.31	.41	.023	.017	.05

NECHES RIVER BASIN

08033500 NECHES RIVER NEAR ROCKLAND, TX--Continued
(Hydrologic index station)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)
FEB 19...	<1	48	<1.0	<8.0	<14	<12	<10	270	<100	10
MAR 26...	--	--	--	--	--	--	--	--	--	--
APR 28...	--	--	--	--	--	--	--	--	--	--
JUN 29...	--	--	--	--	--	--	--	--	--	--
JUL 22...	--	--	--	--	--	--	--	--	--	--
AUG 19...	1	51	<1.0	<8.0	<14	<12	<10	26	<100	8

DATE	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)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
FEB 19...	59	<.1	<60	<40	<1	<4.0	93	<10	<20
MAR 26...	--	--	--	--	--	--	--	--	--
APR 28...	--	--	--	--	--	--	--	--	--
JUN 29...	--	--	--	--	--	--	--	--	--
JUL 22...	--	--	--	--	--	--	--	--	--
AUG 19...	21	<.1	<60	<40	<1	<4.0	89	<10	<20

08036500 ANGELINA RIVER NEAR ALTO, TX

LOCATION.--Lat 31°40'10", long 94°57'24", Nacogdoches-Cherokee County line, Hydrologic Unit 12020004, near center of rectified channel on downstream side of bridge on State Highway 21, 0.4 mi upstream from Allen Creek, 1.5 mi upstream from Bingham Creek, 7.5 mi east of Alto, and 149.3 mi upstream from mouth.

DRAINAGE AREA.--1,276 mi².

PERIOD OF RECORD.--May to Aug 1940 (discharge measurements only), Sep 1940 to Mar 1949 (fragmentary for 1941-42, 1944-49), Feb 1959 to current year.
Water-quality records.--Chemical analyses: Nov 1961 to Sep 1963.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 204.30 ft above sea level. May 9, 1940, to Mar 31, 1949, nonrecording gage on bridge at natural channel 1,400 ft to right at same datum. Feb 18 to Sep 15, 1959, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--Records good. Since installation of gage in water year 1959, at least 10% of contributing drainage area has been regulated by Striker Creek Reservoir. 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 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	152	1100	569	1810	1210	4750	1240	386	87	12	.00	3.3
2	129	911	703	1620	1190	5490	1390	343	75	15	.00	5.3
3	116	697	866	1350	1160	5200	1590	306	67	16	.00	12
4	108	514	957	1060	1180	4600	1750	276	61	19	12	10
5	102	345	997	885	1230	3990	1820	257	67	16	34	6.6
6	96	262	1070	1500	1240	3520	1750	242	73	14	26	4.8
7	94	241	1150	2960	1190	3120	1540	227	69	15	21	5.2
8	93	237	1280	2680	1060	2840	1310	217	92	17	48	2.9
9	98	272	1250	3770	909	2510	1130	210	122	17	67	1.5
10	101	283	1210	6150	1110	2170	943	199	120	14	82	.07
11	106	302	1250	7550	1980	1880	775	183	112	11	97	2.4
12	114	346	1330	7380	1810	1670	769	172	94	e9.0	108	11
13	120	481	1360	6580	2260	1470	749	159	76	e7.0	100	22
14	127	574	1300	5900	3050	1290	635	148	64	4.7	90	86
15	148	602	1110	5230	3470	1220	545	142	56	5.0	87	230
16	201	626	839	4630	3530	1450	492	139	49	4.6	89	388
17	210	596	619	4070	3410	1920	451	140	41	4.5	92	474
18	187	517	508	3690	3190	2020	420	138	36	4.1	87	594
19	176	471	473	3270	2940	2320	417	132	33	5.3	64	717
20	156	430	511	2920	2640	2700	464	128	30	8.1	39	876
21	130	381	679	2600	2320	3050	493	121	27	7.3	43	997
22	117	350	825	2320	2230	3200	477	113	24	5.6	45	881
23	123	327	994	2060	2150	3190	389	106	22	4.6	36	505
24	416	310	1280	1830	1990	3060	339	101	20	3.3	27	245
25	531	298	1490	1680	2020	2830	322	98	19	2.3	19	155
26	1040	288	1690	1570	2800	2520	310	95	18	1.6	13	122
27	1330	315	1870	1460	3240	2090	310	95	16	1.3	8.5	102
28	1470	351	2020	1350	3680	1640	323	90	15	.78	5.3	90
29	1510	420	2090	1280	---	1290	352	86	13	.27	3.2	81
30	1430	476	2070	1250	---	1080	422	83	12	.00	2.4	73
31	1270	---	1960	1220	---	1170	---	91	---	.00	2.7	---
TOTAL	12001	13323	36320	93625	60189	81250	23917	5223	1610	245.35	1348.10	6703.07
MEAN	387	444	1172	3020	2150	2621	797	168	53.7	7.91	43.5	223
MAX	1510	1100	2090	7550	3680	5490	1820	386	122	19	108	997
MIN	93	237	473	885	909	1080	310	83	12	.00	.00	.07
AC-FT	23800	26430	72040	185700	119400	161200	47440	10360	3190	487	2670	13300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1998, BY WATER YEAR (WY)

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990			
MEAN	282	496	1166	1410	1618	1645	1474	1362	811	274	157	193																							
MAX	2350	2081	4836	4874	4643	4622	4301	4484	4316	1718	1129	950																							
(WY)	1974	1986	1961	1991	1983	1969	1969	1966	1993	1976	1997	1973																							
MIN	5.56	18.0	67.8	150	158	183	172	119	34.2	7.91	22.4	16.2																							
(WY)	1968	1968	1965	1981	1967	1967	1972	1972	1971	1998	1972	1972																							

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1959 - 1998
ANNUAL TOTAL	498159	335754.52	
ANNUAL MEAN	1365	920	901
HIGHEST ANNUAL MEAN			1917
LOWEST ANNUAL MEAN			154
HIGHEST DAILY MEAN	7850	Feb 25	7550 Jan 11
LOWEST DAILY MEAN	63	Aug 6	.00 Jul 30
ANNUAL SEVEN-DAY MINIMUM	73	Jul 31	.15 Jul 28
INSTANTANEOUS PEAK FLOW			7740 Jan 11
INSTANTANEOUS PEAK STAGE			18.31 Jan 11
ANNUAL RUNOFF (AC-FT)	988100	666000	652600
10 PERCENT EXCEEDS	3680	2690	2310
50 PERCENT EXCEEDS	626	343	332
90 PERCENT EXCEEDS	115	8.8	49

e Estimated

NECHES RIVER BASIN

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 mi².

PERIOD OF RECORD.--Mar 1977 to current year.

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

REMARKS.--Records good. The lake is formed by a rolled earthfill dam. Deliberate impoundment began Jul 14, 1976. Water is used for industrial and municipal supply by the city of Nacogdoches. The spillway is an uncontrolled 500-foot-wide cut through natural ground located near the right end of dam. There is an uncontrolled drop inlet with a 20.5-foot-diameter top opening that is connected to an 8 x 7-foot conduit that extends through the dam. A separate multi-gated inlet tower is connected to a valve by a 30-inch conduit through the dam. The valve box directs water to a purification plant. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	303.0
Top of design flood.....	298.5
Crest of spillway.....	286.0
Crest of drop inlet (top of conservation pool).....	279.0
Lowest gated outlet (invert of 30 in. conduit).....	238.25

COOPERATION.--The capacity table, furnished by the Texas Water Development Board, dated Jun 16, 1994, is from a Mar 1994 survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 54,640 acre-ft, Oct 17, 1994 (elevation, 284.18 ft); minimum since first appreciable storage, 20,540 acre-ft, Nov 26, 1977 (elevation, 266.62 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 45,920 acre-ft, Jan 7-8 (elevation, 281.82 ft); minimum contents, 32,300 acre-ft, Sep 10 (elevation, 275.43 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37860	38500	38880	39370	39930	41440	39590	38520	37450	35730	33590	32810
2	37770	38480	38900	39290	40220	40980	39540	38480	37370	35670	33550	32750
3	37670	38410	39030	39200	40150	40680	39460	38500	37270	35690	33530	32690
4	37600	38390	39090	39200	40020	40410	39370	38480	37210	35630	33470	32660
5	37580	38410	39070	39240	39910	40150	39240	38460	37290	35590	33450	32580
6	37540	38370	39030	41840	39740	40040	39180	38430	37190	35520	33490	32540
7	37540	38330	39160	45920	39650	40000	39070	38410	37160	35420	33630	32510
8	37560	38330	39240	44350	39610	40040	39090	38410	37120	35320	33590	32470
9	37560	38350	39290	43030	39480	39980	38990	38390	37080	35280	33550	32370
10	37560	38430	39240	42160	40980	39890	38900	38310	37020	35160	33510	32340
11	37560	38460	39220	41950	42670	39720	38880	38240	37000	35120	33450	32710
12	37540	38520	39160	42920	41950	39670	38820	38220	36940	35080	33430	32840
13	37670	38650	39120	42300	41390	39630	38820	38200	36840	35020	33390	32900
14	37580	38670	39050	41610	40960	39610	38750	38160	36800	35020	33330	33160
15	37520	38710	38970	41240	40680	39610	38750	38160	36780	34930	33280	33430
16	37450	38690	38990	40870	40480	40000	38750	38140	36670	34910	33260	33670
17	37410	38650	38940	40570	40300	40350	38730	38110	36610	34850	33240	33690
18	37310	38690	38900	40330	40130	40280	38710	38050	36530	34790	33180	33690
19	37290	38670	38820	40170	40000	40130	38670	38050	36450	34570	33160	33650
20	37250	38690	39140	40040	39910	40040	38650	38010	36370	34510	33090	33630
21	37310	38650	39590	39960	39870	39890	38630	37990	36320	34450	33090	33610
22	37270	38630	39690	39890	40570	39760	38580	37900	36240	34360	33010	33690
23	37920	38600	39800	39800	40740	39630	38500	37880	36220	34280	33050	33650
24	38650	38630	40150	39740	40570	39520	38480	37840	36120	34260	32990	33590
25	38710	38580	40110	39670	40370	39480	38500	37820	36100	34120	32940	33550
26	38710	38580	39960	39590	43150	39390	38480	37770	36020	34040	32920	33430
27	38630	38580	39850	39500	42920	39390	38650	37730	35960	33980	32840	33430
28	38560	38750	39690	39460	42090	39370	38670	37670	35870	33940	32790	33370
29	38560	38860	39650	39430	---	39290	38600	37670	35870	33860	32920	33310
30	38480	38880	39560	39390	---	39260	38520	37580	35750	33740	32860	33280
31	38480	---	39410	39330	---	39650	---	37520	---	33700	32880	---
MAX	38710	38880	40150	45920	43150	41440	39590	38520	37450	35730	33630	33690
MIN	37250	38330	38820	39200	39480	39260	38480	37520	35750	33700	32790	32340
(+)	278.51	278.70	278.95	278.91	280.17	279.06	278.53	278.06	277.20	276.17	275.74	275.95
(@)	+620	+400	+530	-80	+2760	-2440	-1130	-1000	-1770	-2050	-820	+400
CAL YR 1997	MAX 47620	MIN 37250	(@) +570									
WTR YR 1998	MAX 45920	MIN 32340	(@) -4580									

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

08037000 ANGELINA RIVER NEAR LUFKIN, TX

LOCATION.--Lat 31°27'26", long 94°43'34", Angelina-Nacogdoches County line, Hydrologic Unit 12020004, near right bank on downstream side of bridge on U.S. Highway 59, 100 ft upstream from Procella Creek, 1.5 mi downstream from Bayou Loco, 1.5 mi upstream from Southern Pacific Transportation Co. (formerly Southern Pacific Lines) bridge, 8 mi north of Lufkin and 109.5 mi upstream from mouth.

DRAINAGE AREA.--1,600 mi².

PERIOD OF RECORD.--Chemical and biochemical analyses: Oct 1954 to Sep 1978, Jan 1994 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct 1954 to Sep 1978.

WATER TEMPERATURES: Oct 1954 to Sep 1978.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,090 microsiemens, Nov 10, 11, 1963; minimum 38 microsiemens, Sep 21, 1958, May 2, 1962.

WATER TEMPERATURE: Maximum, 32.0°C, on several days during Jul 1966; minimum, 0.0°C, Jan 11, 12, 1962, Jan 19, 1977.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	COLOR (PLATINUM-COBALT UNITS) (00080)	TURBIDITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, BIO-CHEMICAL, 5 DAY SATURATION (MG/L) (00310)	HARDNESS TOTAL (MG/L AS CaCO3) (00900)	
FEB 18...	1335	2420	123	5.4	11.5	170	29	8.8	81	1.2	27
MAR 31...	1400	1500	162	6.4	21.5	100	12	5.5	63	2.2	40
APR 28...	1425	809	168	7.1	18.5	130	34	6.4	69	3.1	39
JUN 29...	1545	40	198	7.0	31.0	260	35	6.5	87	.7	36
JUL 21...	1132	29	197	7.1	30.5	--	--	6.0	80	1.4	33
SEP 02...	1100	27	261	6.6	29.5	140	25	6.6	87	.8	38

DATE	HARDNESS NONCARBONIC DIS-SOLVED AS CaCO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS Ca) (00915)	MAGNESIUM DIS-SOLVED (MG/L AS Mg) (00925)	SODIUM, DIS-SOLVED (MG/L AS Na) (00930)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM DIS-SOLVED (MG/L AS K) (00935)	ALKALINITY WATER DIS-SOLVED FIELD (MG/L AS CaCO3) (39036)	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)
FEB 18...	14	5.5	3.2	9.9	.8	2.8	13	21	13	<.10	10
MAR 31...	15	8.4	4.6	13	.9	3.0	25	22	16	<.10	10
APR 28...	14	8.6	4.2	14	1	2.8	25	22	15	.13	14
JUN 29...	--	7.5	4.1	23	2	3.7	41	20	19	.21	17
JUL 21...	--	6.6	4.1	25	2	3.8	40	19	20	.17	14
SEP 02...	4	8.0	4.4	32	2	4.6	34	35	31	.15	13

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	RESIDUE VOLATILE, SUSPENDED (MG/L) (00535)	RESIDUE FIXED NON-FILTERABLE (MG/L) (00540)	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, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC DIS-SOLVED (MG/L AS N) (00623)	PHOSPHORUS, DIS-SOLVED (MG/L AS P) (00666)
FEB 18...	75	8	10	.00	--	<.010	.154	<.020	--	.35	.013
MAR 31...	93	4	4	.00	.067	.013	.080	.030	.51	.54	<.010
APR 28...	99	41	8	33	.351	.018	.369	.123	.32	.45	<.010
JUN 29...	120	25	4	21	--	<.010	.355	.044	.26	.31	<.010
JUL 21...	118	--	--	--	--	<.010	.185	.030	.31	.34	.029
SEP 02...	150	32	20	12	--	<.010	.144	.028	.31	.34	<.050

NECHES RIVER BASIN

08037000 ANGELINA RIVER NEAR LUFKIN, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
FEB 18...	.019	.06	9.7	<1	41	<1.0	<8.0	<14	<12	<10	330
MAR 31...	.019	.06	9.6	--	--	--	--	--	--	--	--
APR 28...	.013	.04	8.1	1	44	<1.0	<8.0	<14	<12	<10	130
JUN 29...	.015	.05	7.2	--	--	--	--	--	--	--	--
JUL 21...	.024	.07	7.6	--	--	--	--	--	--	--	--
SEP 02...	.011	.03	7.7	1	50	<1.0	<8.0	<14	<12	<10	33

DATE	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)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
FEB 18...	<100	8	44	<.1	<60	<40	<1	<4.0	79	<10	<20
MAR 31...	--	--	--	--	--	--	--	--	--	--	--
APR 28...	<100	10	263	<.1	<60	<40	<1	<4.0	106	<10	<20
JUN 29...	--	--	--	--	--	--	--	--	--	--	--
JUL 21...	--	--	--	--	--	--	--	--	--	--	--
SEP 02...	<100	9	91	<.1	<60	<40	<1	<4.0	136	<10	<20

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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jan 1924 to Sep 1925, Jul 1939 to Nov 1954, and Oct 1955 to Sep 30, 1985. Monthly discharge only for some periods, published in WSP 1312 and 1732. Oct 1985 to Sep 1989 (annual maximum). Oct 1989 to current year (peak discharges greater than base discharge).

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 169.58 ft above sea level. Jan 24, 1924, to Aug 29, 1925, and Sep 6, 1957, to Oct 27, 1958, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records good. Flow is affected at times by discharge from the flood-detention pools of twelve floodwater-retarding structures with a combined detention capacity of 15,870 acre-ft. These structures control runoff from 46.7 mi² above this station.

AVERAGE DISCHARGE.--45 years (water years 1940-54, 1956-1985), 479 ft³/s (12.93 in/yr), 347,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,900 ft³/s Nov 24, 1940 (gage height, 25.97 ft); minimum, 0.8 ft³/s Aug 26, 27, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1865, 29.9 ft Jun 29, 1902, from information by local residents. Flood in Jul 1933 reached a stage of 25.2 ft from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 26	0400	3,030	17.20	Feb 28	2300	2,980	17.16
Jan 8	0600	11,900	20.75				

NECHES RIVER BASIN

08038000 ATTOYAC BAYOU NEAR CHIRENO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Jan 1994 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	
FEB 18...	1535	1800	118	5.8	13.5	150	34	9.8	94	1.1	33
MAR 31...	0920	375	147	6.8	20.0	110	19	7.2	80	1.5	40
APR 29...	0933	770	116	6.9	17.5	140	45	6.8	71	2.5	33
JUN 29...	1425	48	105	6.9	29.0	140	20	6.0	78	.5	29
JUL 22...	0745	28	102	6.8	28.0	140	21	6.8	87	1.1	27
SEP 03...	0930	84	95	6.6	26.0	140	27	6.5	80	.8	23

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END CACO3 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
FEB 18...	17	6.3	4.1	7.9	.6	2.1	16	21	8.3	<.10	11
MAR 31...	18	7.8	4.9	11	.8	1.8	22	23	11	.13	14
APR 29...	18	6.6	3.9	6.6	.5	2.2	15	21	7.1	<.10	11
JUN 29...	--	5.9	3.4	8.4	.7	1.9	29	<.10	11	<.10	15
JUL 22...	--	5.5	3.3	8.3	.7	2.3	28	5.3	8.2	<.10	14
SEP 03...	3	4.7	2.7	6.6	.6	2.7	20	6.6	8.1	<.10	14

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDE (MG/L) (00530)	RESIDUE VOLA-TILE, SUS-PENDE (MG/L) (00535)	RESIDUE FIXED NON-FILTER-ABLE (MG/L) (00540)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)
FEB 18...	73	44	14	30	.250	.011	.261	<.020	--	.35	.028
MAR 31...	89	32	10	22	.432	.018	.450	.025	.20	.23	<.010
APR 29...	71	79	14	65	.521	.016	.537	.197	.27	.47	<.010
JUN 29...	--	8	2	6	--	<.010	.684	.045	.18	.23	.011
JUL 22...	67	14	7	7	--	<.010	.717	.026	.23	.25	.052
SEP 03...	61	32	14	18	.637	.010	.647	.030	.20	.23	<.010

NECHES RIVER BASIN

08038000 ATTOYAC BAYOU NEAR CHIRENO, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIIUM, 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)
FEB 18...	.025	.08	8.8	<1	44	<1.0	<8.0	<14	<12	<10	250
MAR 31...	.019	.06	6.2	--	--	--	--	--	--	--	--
APR 29...	<.010	--	10	<1	48	<1.0	<8.0	<14	<12	<10	180
JUN 29...	.010	.03	5.2	--	--	--	--	--	--	--	--
JUL 22...	.011	.03	5.3	--	--	--	--	--	--	--	--
SEP 03...	.010	.03	5.9	<1	38	<1.0	<8.0	<14	<12	<10	27

DATE	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)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
FEB 18...	<100	6	43	<.1	<60	<40	<1	<4.0	86	<10	<20
MAR 31...	--	--	--	--	--	--	--	--	--	--	--
APR 29...	<100	6	71	<.1	<60	<40	<1	<4.0	90	<10	<20
JUN 29...	--	--	--	--	--	--	--	--	--	--	--
JUL 22...	--	--	--	--	--	--	--	--	--	--	--
SEP 03...	<100	4	68	<.1	<60	<40	<1	<4.0	64	<10	<20

NECHES RIVER BASIN

08039100 AYISH BAYOU NEAR SAN AUGUSTINE, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 31°23'46", Long 94°09'03", San Augustine County, Hydrologic Unit 12020005, near center of span on downstream side of bridge on State Highway 103, 3.0 mi upstream from Turkey Creek and 9.5 mi south of San Augustine.

DRAINAGE AREA.--89.0 mi².

PERIOD OF RECORD.--Feb 1959 to Sep 1985 (daily mean discharge), Oct 1985 to Sep 1989 (annual maximum), Oct 1989 to current year (peak discharges greater than base discharge).

REVISED RECORDS.--WSP 1922: 1959(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 190.22 ft above sea level. Prior to Jun 2, 1959, nonrecording gage at same site and datum. Satellite telemeter at station.

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

AVERAGE DISCHARGE.--26 years (water years 1960-85), 83.7 ft³/s, 12.77 in/yr, 60,640 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,200 ft³/s Sep 14, 1978 (gage height, 18.02 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since Oct 1957, 15,900 ft³/s on Sep 21 or 22, 1958 (gage height, 17.5 ft, from floodmarks).

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 21	1900	3,420	13.37	Jan 7	0400	6,580	14.70
Dec 24	1100	3,920	13.56	Feb 27	0200	1,910	12.63

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 mi².

WATER-CONTENT RECORDS

PERIOD OF RECORD.--Jan 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by U.S. Army Corps of Engineers). Prior to Apr 20, 1965, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--The reservoir is formed by a rolled earthfill dam 19,430 ft long, including spillway and dikes. The dam was completed and deliberate impoundment began Mar 29, 1965. The spillway is an uncontrolled broad-crested weir 2,200 ft wide, on right bank 7,000 ft to right of outlet works and is designed to discharge 125,300 ft³/s at maximum flood design. The flood-control outlet works consists of two 10.0 x 20.0-foot rectangular concrete-lined conduits controlled by two 10.0 x 20.0-foot tractor-type service gates and one 10.0 x 20.0-foot tractor-type emergency gate. Water for turbines is admitted through four 18.0 x 26.0-foot penstocks and controlled by two wheeled-leaf-type headgates. The reservoir is operated for flood control and power generation. The area-capacity tables are based on topographic maps prepared by the U.S. Army Corps of Engineers and detailed sedimentation ranges established in 1961 and dated Feb 1965. For statement regarding regulation by Natural Resource Conservation Service flood-water-retarding structures, see station 08038000. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	190.0
Design flood.....	183.0
Crest of spillway.....	176.0
Top of flood-control pool.....	173.0
Top of conservation pool (power pool).....	164.0
Top of power head and sediment pool.....	149.0
Lowest gated outlet (invert).....	105.0

COOPERATION.--Record of contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 3,881,000 acre-ft, Feb 7, 1974 (elevation, 172.17 ft); minimum since conservation storage was reached in 1968, 1,585,000 acre-ft, Aug 10, 1996 (elevation, 150.74 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 3,709,000 acre-ft, Jan 26 (elevation, 170.92 ft); minimum daily contents, 2,046,000 acre-ft, Sep 10 (elevation, 156.15 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2701000	2617000	2626000	2914000	3636000	3495000	3140000	2908000	2723000	2529000	2285000	2114000
2	2694000	2614000	2633000	2918000	3626000	3505000	3121000	2905000	2712000	2518000	2276000	2106000
3	2688000	2607000	2658000	2921000	3602000	3508000	3108000	2908000	2705000	2516000	2268000	2098000
4	2682000	2602000	2662000	2928000	3578000	3516000	3080000	2899000	2698000	2509000	2262000	2089000
5	2678000	2613000	2668000	2943000	3566000	3516000	3062000	2895000	2716000	2501000	2258000	2082000
6	2671000	2612000	2669000	3093000	3556000	3514000	3044000	2891000	2702000	2493000	2250000	2078000
7	2666000	2603000	2673000	3220000	3544000	3526000	3031000	2891000	2690000	2485000	2255000	2069000
8	2665000	2602000	2683000	3279000	3532000	3561000	3026000	2881000	2682000	2476000	2249000	2064000
9	2671000	2600000	2694000	3313000	3504000	3535000	3004000	2889000	2677000	2467000	2242000	2056000
10	2666000	2605000	2704000	3342000	3513000	3508000	2987000	2876000	2668000	2459000	2236000	2046000
11	2655000	2598000	2703000	3371000	3495000	3490000	2966000	2867000	2664000	2450000	2229000	2063000
12	2656000	2602000	2706000	3419000	3490000	3470000	2947000	2861000	2658000	2441000	2223000	2074000
13	2670000	2603000	2705000	3447000	3469000	3452000	2947000	2855000	2651000	2436000	2225000	2093000
14	2659000	2603000	2706000	3492000	3456000	3433000	2943000	2847000	2646000	2430000	2219000	2106000
15	2653000	2603000	2706000	3525000	3460000	3401000	2940000	2846000	2641000	2422000	2213000	2128000
16	2645000	2597000	2709000	3553000	3455000	3419000	2949000	2840000	2629000	2414000	2207000	2133000
17	2639000	2596000	2711000	3573000	3448000	3424000	2938000	2833000	2620000	2409000	2205000	2138000
18	2632000	2599000	2710000	3591000	3439000	3410000	2944000	2828000	2615000	2401000	2200000	2138000
19	2628000	2596000	2710000	3590000	3434000	3416000	2937000	2820000	2607000	2396000	2196000	2138000
20	2624000	2596000	2732000	3595000	3418000	3383000	2937000	2812000	2600000	2388000	2189000	2140000
21	2623000	2599000	2773000	3624000	3405000	3363000	2935000	2805000	2592000	2380000	2183000	2140000
22	2613000	2599000	2792000	3662000	3406000	3344000	2930000	2797000	2588000	2373000	2177000	2141000
23	2611000	2598000	2836000	3674000	3404000	3324000	2923000	2791000	2585000	2364000	2171000	2142000
24	2613000	2596000	2864000	3682000	3397000	3304000	2914000	2783000	2577000	2354000	2164000	2142000
25	2625000	2595000	2884000	3690000	3395000	3281000	2911000	2778000	2571000	2345000	2157000	2136000
26	2625000	2596000	2906000	3709000	3450000	3251000	2910000	2772000	2566000	2336000	2151000	2133000
27	2613000	2592000	2900000	3697000	3473000	3238000	2919000	2766000	2554000	2329000	2145000	2131000
28	2613000	2615000	2911000	3682000	3487000	3215000	2920000	2759000	2547000	2319000	2137000	2128000
29	2612000	2623000	2907000	3667000	---	3189000	2914000	2752000	2542000	2310000	2131000	2120000
30	2612000	2627000	2912000	3652000	---	3173000	2910000	2743000	2536000	2301000	2125000	2114000
31	2614000	---	2912000	3640000	---	3162000	---	2732000	---	2297000	2120000	---
MAX	2701000	2627000	2912000	3709000	3636000	3561000	3140000	2908000	2723000	2529000	2285000	2142000
MIN	2611000	2592000	2626000	2914000	3395000	3162000	2910000	2732000	2536000	2297000	2120000	2046000
(+)	161.84	161.96	164.52	170.40	169.24	166.64	164.50	162.92	161.11	158.77	156.95	156.88
(@)	-91000	+13000	+285000	+728000	-153000	-325000	-252000	-178000	-196000	-239000	-177000	-6000
CAL YR 1997	MAX 3414000	MIN 1969000	(@) +950000									
WTR YR 1998	MAX 3709000	MIN 2046000	(@) -591000									

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

NECHES RIVER BASIN

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Oct 1964 to Sep 1984, Sep 1993 to current year. Biochemical analyses: Nov 1967 to Sep 1984, Sep 1993 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

310816094041401 - SAM RAYBURN RESERVOIR SITE AC

DATE	TIME	RESER- VOIR STORAGE (AC-FT) (00054)	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARDS UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00301)
FEB									
19...	1500	3440000	1.00	130	7.1	13.0	1.40	9.9	95
19...	1502	--	10.0	130	7.0	12.5	--	9.8	93
19...	1504	--	20.0	130	7.0	12.5	--	9.8	93
19...	1506	--	30.0	130	6.9	12.5	--	9.8	93
19...	1508	--	40.0	130	6.9	12.5	--	9.8	93
19...	1510	--	50.0	130	6.8	12.5	--	9.8	93
19...	1512	--	63.0	130	6.8	12.5	--	9.8	93
APR									
29...	1415	2920000	1.00	130	7.1	20.0	1.90	8.3	91
29...	1417	--	10.0	130	7.1	19.5	--	8.2	89
29...	1419	--	20.0	130	7.1	19.5	--	8.2	89
29...	1421	--	30.0	130	7.0	19.5	--	8.0	87
29...	1423	--	40.0	135	6.6	18.5	--	6.9	74
29...	1425	--	52.0	135	6.6	18.5	--	6.9	74
SEP									
02...	1545	2110000	1.00	145	7.5	30.0	1.90	6.7	89
02...	1547	--	10.0	145	7.5	30.0	--	6.6	88
02...	1549	--	20.0	145	7.4	30.0	--	6.3	84
02...	1551	--	30.0	145	7.2	29.0	--	2.0	26
02...	1553	--	45.0	170	7.1	25.0	--	1.9	23

310437094065501 - SAM RAYBURN RESERVOIR SITE CC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARDS UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00301)	COLI- FORM, FECAL, UM-MF (COLS./ PER 100 ML) (31625)	STREP- TOCOC- CI, FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)
FEB											
19...	0850	1.00	140	6.9	12.5	1.70	10.0	95	K1	K3	29
19...	0852	10.0	140	6.8	12.0	--	10.0	94	--	--	--
19...	0854	20.0	140	6.8	12.0	--	10.0	94	--	--	--
19...	0856	30.0	140	6.8	12.0	--	10.0	94	--	--	--
19...	0858	40.0	140	6.8	12.0	--	10.0	94	--	--	--
19...	0900	50.0	140	6.8	12.0	--	10.0	94	--	--	--
19...	0902	60.0	140	6.8	12.0	--	10.0	94	--	--	--
19...	0904	70.0	140	6.7	12.0	--	10.0	94	--	--	--
19...	0906	80.0	140	6.7	12.0	--	9.9	93	--	--	29
APR											
29...	0900	1.00	135	7.3	20.0	1.80	8.6	95	K2	K1	26
29...	0902	10.0	135	7.3	20.0	--	8.6	95	--	--	--
29...	0904	20.0	135	7.2	19.5	--	8.5	93	--	--	--
29...	0906	30.0	135	7.2	19.5	--	8.5	93	--	--	--
29...	0908	40.0	135	7.1	19.5	--	8.4	92	--	--	--
29...	0910	50.0	135	6.6	18.0	--	6.9	73	--	--	--
29...	0912	60.0	140	6.6	17.0	--	6.9	72	--	--	--
29...	0914	70.0	140	6.5	16.5	--	5.4	55	--	--	--
29...	0916	80.0	140	6.4	15.5	--	4.8	48	--	--	--
29...	0918	85.0	145	6.4	15.5	--	4.8	48	--	--	29
SEP											
02...	1245	1.00	145	7.5	30.5	2.00	6.7	90	K1	K1	30
02...	1247	10.0	145	7.4	30.0	--	6.6	88	--	--	--
02...	1249	20.0	150	7.2	29.5	--	6.2	82	--	--	--
02...	1251	30.0	150	7.1	29.0	--	5.8	76	--	--	--
02...	1253	40.0	165	6.9	26.5	--	2.3	29	--	--	--
02...	1255	50.0	165	6.9	21.0	--	2.3	26	--	--	--
02...	1257	60.0	170	6.9	20.5	--	2.2	25	--	--	--
02...	1259	74.0	170	7.0	20.0	--	2.2	24	--	--	33

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

310437094065501 - SAM RAYBURN RESERVOIR SITE CC

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS- SOLVED (MG/L) AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L) AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L) AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L) AS K) (00935)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L) AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L) AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L) AS F) (00950)	SILICA, DIS- SOLVED (MG/L) AS SIO2) (00955)
FEB											
19...	7	6.8	3.0	14	1	2.6	22	16	15	<.10	5.4
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	6	6.9	2.9	14	1	2.6	23	16	15	<.10	5.6
APR											
29...	5	6.3	2.6	13	1	2.7	21	17	14	<.10	6.3
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	6	7.0	2.8	14	1	2.6	23	16	14	.10	9.1
SEP											
02...	9	6.8	3.1	14	1	3.0	21	17	18	<.10	8.2
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	8.0	3.1	14	1	3.1	40	11	16	<.10	13

310437094065501 - SAM RAYBURN RESERVOIR SITE CC

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L) AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L) AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L) AS N) (00608)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L) AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L) AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L) AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L) AS P) (00671)	PHOS- PHATE, DIS- SOLVED (MG/L) AS PO4) (00660)	IRON, DIS- SOLVED (UG/L) AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L) AS MN) (01056)
FEB											
19...	76	<.010	<.050	<.020	--	.25	<.010	<.010	--	24	<4.0
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	<.010	<.050	<.020	--	.24	<.010	<.010	--	17	4.7
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	77	<.010	<.050	<.020	--	.25	<.010	<.010	--	26	15
APR											
29...	75	<.010	.095	.028	1.6	1.6	.022	<.010	--	140	19
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	<.010	.075	.032	.21	.24	<.010	<.010	--	140	41
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	<.010	.164	.033	.27	.30	<.010	<.010	--	70	195
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	80	<.010	.092	.078	.23	.31	<.010	<.010	--	100	533
SEP											
02...	83	<.010	<.050	<.020	--	.22	<.010	<.010	--	<10	77
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	<.010	<.050	.254	.23	.49	.029	.025	.08	51	321
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	<.010	<.050	<.020	--	.24	.033	<.010	--	1200	2920
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
02...	98	<.010	<.050	.613	.25	.87	.151	.151	.46	3000	2690

NECHES RIVER BASIN

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

310802094112201 - SAM RAYBURN RESERVOIR SITE FC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)
FEB								
19...	0935	1.00	145	7.1	12.5	1.60	10.1	96
19...	0937	10.0	145	7.0	12.5	--	10.0	95
19...	0939	20.0	145	7.0	12.5	--	10.0	95
19...	0941	30.0	145	7.0	12.5	--	10.0	95
19...	0943	40.0	145	6.9	12.5	--	10.0	95
19...	0945	50.0	145	6.9	12.5	--	10.0	95
19...	0947	63.0	145	6.8	12.5	--	10.0	95
APR								
29...	0955	1.00	140	7.2	19.5	1.50	8.5	93
29...	0957	10.0	140	7.2	19.0	--	8.5	92
29...	0959	20.0	140	7.1	19.0	--	8.5	92
29...	1001	30.0	140	7.1	19.0	--	8.4	91
29...	1003	40.0	140	7.0	19.0	--	8.3	90
29...	1005	50.0	140	6.6	17.5	--	6.3	66
29...	1007	60.0	140	6.6	17.5	--	6.3	66
29...	1009	72.0	140	6.6	17.5	--	6.3	66
SEP								
02...	1345	1.00	150	7.6	30.0	1.50	6.9	92
02...	1347	10.0	150	7.4	30.0	--	6.7	89
02...	1349	20.0	150	7.1	30.0	--	6.1	81
02...	1351	30.0	150	6.6	29.0	--	3.3	43
02...	1353	40.0	170	6.8	25.0	--	2.2	27
02...	1355	50.0	170	7.0	21.5	--	2.2	25
02...	1357	60.0	170	7.0	21.0	--	2.2	25
02...	1359	68.0	170	7.0	20.5	--	2.2	25

311039094141201 - SAM RAYBURN RESERVOIR SITE GC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)
FEB								
19...	1000	1.00	145	6.9	12.5	1.20	9.9	94
19...	1002	10.0	145	6.9	12.5	--	9.8	93
19...	1004	20.0	145	6.9	12.5	--	9.8	93
19...	1006	30.0	145	6.9	12.5	--	9.8	93
19...	1008	40.0	145	6.8	12.5	--	9.8	93
19...	1010	50.0	145	6.8	12.5	--	9.8	93
19...	1012	60.0	145	6.8	12.5	--	9.8	93
19...	1014	71.0	145	6.8	12.5	--	9.8	93
APR								
29...	1000	1.00	140	7.2	19.5	1.40	8.5	93
29...	1002	10.0	140	7.1	19.5	--	8.4	92
29...	1004	20.0	140	7.0	19.0	--	8.4	91
29...	1006	30.0	140	6.9	19.0	--	8.0	87
29...	1008	40.0	140	6.8	19.0	--	7.9	85
29...	1010	50.0	140	6.5	18.5	--	6.0	64
29...	1012	60.0	140	6.5	18.0	--	5.6	59
29...	1014	68.0	140	6.4	18.0	--	5.6	59
SEP								
02...	1422	1.00	150	7.7	30.5	1.80	6.9	92
02...	1424	10.0	150	7.5	30.0	--	6.8	90
02...	1426	20.0	150	7.3	30.0	--	6.2	82
02...	1428	30.0	150	7.2	29.0	--	5.5	72
02...	1430	40.0	175	7.0	25.0	--	2.0	24
02...	1432	54.0	175	7.0	21.5	--	2.0	23

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

311828094191801 - SAM RAYBURN RESERVOIR SITE IC

DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS-SOLVED (PER-CENT) (MG/L) (00300)	OXYGEN, SATUR-ATION (MG/L) (00301)	COLI-FORM, FECAL, UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI, KF AGAR PER (COLS./100 ML) (31673)	HARD-NESS TOTAL AS CACO3) (MG/L) (00900)
FEB											
19...	1030	1.00	135	6.9	13.0	.72	9.6	92	K1	K4	25
19...	1032	10.0	140	6.7	12.5	--	9.4	89	--	--	--
19...	1034	20.0	140	6.7	12.5	--	9.3	88	--	--	--
19...	1036	30.0	140	6.7	12.5	--	9.3	88	--	--	--
19...	1038	40.0	140	6.7	12.5	--	9.3	88	--	--	--
19...	1040	50.0	140	6.6	12.5	--	9.3	88	--	--	--
19...	1042	62.0	140	6.6	12.5	--	9.3	88	--	--	26
APR											
29...	1102	1.00	140	6.9	20.0	--	8.1	89	K1	K1	29
29...	1104	10.0	140	6.9	19.5	--	8.1	88	--	--	--
29...	1106	20.0	140	6.9	19.5	--	8.0	87	--	--	--
29...	1108	30.0	140	6.7	19.5	--	7.4	81	--	--	--
29...	1110	40.0	140	6.6	19.5	--	7.3	80	--	--	--
29...	1112	50.0	140	6.5	19.0	--	6.6	71	--	--	--
29...	1114	60.0	140	6.5	18.5	--	6.0	64	--	--	29
SEP											
03...	1105	1.00	160	8.0	30.5	1.40	6.9	93	K1	K1	32
03...	1107	10.0	160	7.1	30.0	--	5.7	76	--	--	--
03...	1109	20.0	160	7.0	30.0	--	5.6	75	--	--	--
03...	1111	23.0	160	7.0	30.0	--	5.4	72	--	--	--
03...	1113	30.0	160	6.7	29.0	--	3.6	47	--	--	--
03...	1115	40.0	200	7.0	24.0	--	1.9	23	--	--	--
03...	1117	46.0	205	7.0	22.5	--	1.9	22	--	--	41

311828094191801 - SAM RAYBURN RESERVOIR SITE IC

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
FEB											
19...	4	5.7	2.7	14	1	2.8	21	19	14	<.10	9.8
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	7	5.8	2.7	15	1	2.8	19	19	15	<.10	10
APR											
29...	10	6.4	3.1	13	1	2.7	19	20	14	<.10	8.7
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	9	6.5	3.0	13	1	2.7	20	20	14	<.10	9.5
SEP											
03...	6	7.3	3.5	16	1	3.2	26	17	16	<.10	9.7
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	9.8	4.0	13	.9	3.4	60	5.3	19	<.10	14

NECHES RIVER BASIN

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

311828094191801 - SAM RAYBURN RESERVOIR SITE IC

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L) (00608)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L) (00607)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L) AS PO4 (00660)	IRON, DIS- SOLVED (UG/L) AS FE (01046)	MANGA- NESE, DIS- SOLVED (UG/L) AS MN (01056)
FEB											
19...	82	<.010	.165	<.020	--	.32	.010	.011	.03	430	5.3
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	<.010	.167	.025	.24	.26	<.010	<.010	--	230	5.7
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	82	<.010	.172	.020	.25	.27	<.010	<.010	--	140	<4.0
APR											
29...	80	<.010	.087	.033	.29	.32	<.010	<.010	--	250	11
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	<.010	.123	.035	.28	.31	<.010	<.010	--	250	19
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	<.010	.092	.040	.27	.31	<.010	<.010	--	200	46
29...	--	--	--	--	--	--	--	--	--	--	--
29...	82	<.010	.063	.089	.22	.31	<.010	<.010	--	170	119
SEP											
03...	89	<.010	<.050	<.020	--	.24	.016	<.010	--	<10	63
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	<.010	<.050	.020	.25	.27	.017	.013	.04	54	208
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	<.010	<.050	.088	.27	.36	.022	<.010	--	1900	1490
03...	--	--	--	--	--	--	--	--	--	--	--
03...	120	<.010	<.050	2.13	.28	2.4	.201	.201	.62	7700	4030

311804094234901 - SAM RAYBURN RESERVOIR SITE JC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (PER- CENT UM-MF (COLS./ 100 ML) (00300)	OXYGEN, DIS- SOLVED (PER- CENT UM-MF (COLS./ 100 ML) (00301)	OXYGEN, DIS- SOLVED (PER- CENT UM-MF (COLS./ 100 ML) (00300)	OXYGEN, DIS- SOLVED (PER- CENT UM-MF (COLS./ 100 ML) (00301)	OXYGEN, DIS- SOLVED (PER- CENT UM-MF (COLS./ 100 ML) (00300)	OXYGEN, DIS- SOLVED (PER- CENT UM-MF (COLS./ 100 ML) (00301)
FEB												
19...	1205	1.00	130	6.6	12.5	.42	9.2	87				
19...	1207	10.0	130	6.5	12.5	--	9.2	87				
19...	1209	20.0	130	6.5	12.5	--	9.2	87				
19...	1211	30.0	130	6.5	12.5	--	9.2	87				
19...	1213	40.0	130	6.5	12.5	--	9.2	87				
19...	1215	50.0	130	6.4	12.5	--	9.1	86				
APR												
29...	1300	1.00	165	7.0	20.5	.82	8.1	90				
29...	1302	10.0	160	6.8	20.5	--	7.6	84				
29...	1304	20.0	160	6.7	20.0	--	7.4	81				
29...	1306	30.0	160	6.7	20.0	--	7.2	79				
29...	1308	40.0	160	6.7	20.0	--	7.2	79				
SEP												
03...	1025	1.00	185	7.4	30.0	1.20	5.8	78				
03...	1027	10.0	185	7.1	30.0	--	5.2	70				
03...	1029	20.0	190	6.9	30.0	--	3.9	52				
03...	1031	32.0	195	6.8	30.0	--	2.5	33				

312216094280601 - SAM RAYBURN RESERVOIR SITE KC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (PER- CENT UM-MF (COLS./ 100 ML) (00300)	OXYGEN, DIS- SOLVED (PER- CENT UM-MF (COLS./ 100 ML) (00301)	OXYGEN, DIS- SOLVED (PER- CENT UM-MF (COLS./ 100 ML) (00300)	OXYGEN, DIS- SOLVED (PER- CENT UM-MF (COLS./ 100 ML) (00301)	COLI- FORM, FECAL, 0.7 KF AGAR UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOC- CI, FECAL, KF AGAR PER (COLS./ 100 ML) (31673)	HARD- NESS TOTAL AS (MG/L CACO3) (00900)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
FEB														
19...	1300	1.00	195	6.6	14.0	.40	8.8	86	K6	K15	36	17		
19...	1302	10.0	195	6.6	13.5	--	8.8	85	--	--	--	--		
19...	1304	20.0	195	6.5	12.5	--	8.6	81	--	--	--	--		
19...	1306	31.0	195	6.5	12.5	--	8.6	81	--	--	--	37	16	
APR														
29...	1130	1.00	130	6.9	18.5	1.00	4.5	48	27	35	35	7		
29...	1132	11.0	130	6.9	18.5	--	4.1	44	--	--	35	5		
SEP														
02...	1420	1.00	720	7.9	30.0	.40	6.9	92	K10	K4	51	--		
02...	1422	6.00	750	7.7	30.0	--	5.8	77	--	--	51	--		

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

312216094280601 - SAM RAYBURN RESERVOIR SITE KC

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS STO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
FEB											
19...	7.8	4.1	20	1	2.8	19	29	23	<.10	13	112
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	7.9	4.1	20	1	2.8	21	28	23	<.10	13	113
APR											
29...	7.2	4.2	9.6	.7	1.9	28	15	10	.10	11	78
29...	7.3	4.1	9.7	.7	1.9	30	15	11	<.10	10	79
SEP											
02...	12	5.2	125	8	5.5	92	49	130	.20	15	397
02...	12	5.1	121	7	5.5	98	50	120	.17	15	393

312216094280601 - SAM RAYBURN RESERVOIR SITE KC

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- SOLVED (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
FEB											
19...	--	<.010	.114	.042	.25	.29	<.010	<.010	--	220	125
19...	--	<.010	.117	.050	.26	.31	<.010	<.010	--	230	127
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	<.010	.114	.045	.26	.31	<.010	<.010	--	230	127
APR											
29...	.283	.010	.293	.080	.21	.29	<.010	<.010	--	120	133
29...	.260	.011	.271	.123	.19	.32	.091	<.010	--	360	134
SEP											
02...	--	.016	<.050	.027	.53	.56	.070	.047	.14	1800	286
02...	--	.016	<.050	.040	.56	.60	.049	.026	.08	300	278

311000094010301 - SAM RAYBURN RESERVOIR SITE LC

DATE	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00300)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (MG/L) (00301)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)
FEB									
19...	1545	1.00	120	6.8	13.0	1.20	9.8	94	<.010
19...	1547	10.0	125	6.8	12.5	--	9.8	93	--
19...	1549	20.0	125	6.6	12.5	--	9.7	92	--
19...	1551	30.0	125	6.7	12.5	--	9.8	93	<.010
APR									
29...	1505	1.00	130	7.2	21.0	1.60	8.4	94	<.010
29...	1507	10.0	130	7.1	20.5	--	8.1	90	--
29...	1509	20.0	130	6.9	20.0	--	7.7	85	--
29...	1511	27.0	130	6.9	20.0	--	7.6	84	<.010
SEP									
02...	1715	1.00	145	7.2	30.0	1.20	6.2	83	<.010
02...	1717	10.0	145	7.1	30.0	--	5.8	77	--
02...	1719	17.0	145	7.0	29.0	--	3.8	50	--
02...	1721	18.0	150	6.6	29.0	--	2.8	37	<.010

NECHES RIVER BASIN

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

31100094010301 - SAM RAYBURN RESERVOIR SITE LC

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
FEB									
19...	<.050	<.020	--	.26	<.010	<.010	--	110	5.9
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	<.050	.025	.26	.28	<.010	<.010	--	64	9.5
APR									
29...	.052	.026	.23	.26	<.010	<.010	--	130	<4.0
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	<.050	.036	.23	.26	<.010	<.010	--	120	5.0
SEP									
02...	<.050	<.020	--	.25	.029	.016	.05	<10	120
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	<.050	<.020	--	.33	.010	<.010	--	14	365

311137094051401 - SAM RAYBURN RESERVOIR SITE MC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED SATUR- ATION (00301)	NITRO- GEN, DIS- SOLVED NITRITE (PER- CENT AS N) (00613)
FEB									
19...	1520	1.00	115	6.9	12.5	1.20	9.6	91	<.010
19...	1522	10.0	115	6.9	12.5	--	9.5	90	--
19...	1524	20.0	110	6.8	12.5	--	9.4	89	--
19...	1526	30.0	110	6.7	12.5	--	9.4	89	--
19...	1528	44.0	110	6.7	12.5	--	9.4	89	<.010
APR									
29...	1440	1.00	130	7.2	21.0	1.56	8.2	92	<.010
29...	1442	10.0	130	7.0	20.0	--	8.1	89	--
29...	1444	20.0	130	7.0	19.5	--	8.1	88	--
29...	1446	34.0	130	6.9	19.5	--	7.9	86	<.010
SEP									
02...	1615	1.00	150	7.3	30.5	1.50	6.4	85	<.010
02...	1617	10.0	150	7.2	30.5	--	6.0	80	--
02...	1619	20.0	150	6.9	29.0	--	2.0	26	--
02...	1621	30.0	155	6.7	28.5	--	1.9	24	--
02...	1623	39.0	195	7.1	26.0	--	1.9	23	<.010

311137094051401 - SAM RAYBURN RESERVOIR SITE MC

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
FEB									
19...	.067	.025	.30	.33	<.010	<.010	--	94	8.5
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	.056	.031	.25	.28	<.010	<.010	--	99	45
APR									
29...	.066	.032	.26	.29	<.010	<.010	--	170	<4.0
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	.153	.039	.30	.34	<.010	<.010	--	150	<4.0
SEP									
02...	<.050	<.020	--	.24	<.010	<.010	--	25	217
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	<.050	1.19	.29	1.5	.073	.077	.24	3500	4280

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

311817094190701 - SAM RAYBURN RESERVOIR SITE NC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00300)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	
FEB									
19...	1110	1.00	105	6.6	13.5	.50	9.2	89	<.010
19...	1112	10.0	105	6.5	12.5	--	9.0	85	--
19...	1114	20.0	105	6.5	12.5	--	9.0	85	--
19...	1116	30.0	105	6.4	12.5	--	9.0	85	--
19...	1118	37.0	105	6.4	12.5	--	9.0	85	<.010
APR									
29...	1205	1.00	130	7.0	21.0	1.00	8.1	91	<.010
29...	1207	10.0	135	6.7	20.5	--	7.5	83	--
29...	1209	20.0	135	6.7	20.5	--	7.5	83	--
29...	1211	32.0	135	6.7	20.0	--	7.6	84	<.010
SEP									
03...	0940	1.00	155	7.1	30.0	.80	5.8	78	<.010
03...	0942	10.0	155	6.9	30.0	--	5.3	71	--
03...	0944	24.0	160	6.6	29.5	--	3.5	46	<.010

311817094190701 - SAM RAYBURN RESERVOIR SITE NC

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
FEB									
19...	.155	.055	.24	.29	<.010	.010	.03	220	63
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	.156	.064	.28	.34	<.010	.011	.03	280	48
APR									
29...	<.050	.036	.24	.27	<.010	.011	.03	500	8.3
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	.160	.041	.26	.30	<.010	<.010	--	430	18
SEP									
03...	<.050	<.020	--	.30	.011	<.010	--	21	69
03...	--	--	--	--	--	--	--	--	--
03...	<.050	.067	.28	.35	.021	<.010	--	150	242

NECHES RIVER BASIN

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

Sam Rayburn Reservoir Site CC (310437094065501)

Phytoplankton Analyses October 1997 to September 1998

Date	2-19-98
Time	850
TOTAL CELLS/mL	7,019
NUMBER OF SPECIES	10
DEPTH COLLECTED (ft.)	1.0

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Melosira varians</i>	60
Order Penales	
<i>Fragilaria crotonensis</i> var <i>crotonensis</i>	135
<i>Synedra ulna</i> var <i>ulna</i>	15
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	30
<i>Chlamydomonas</i> sp.	690
<i>Mougeotia</i> sp.	1,080
<i>Selenastrum Westii</i>	60
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	4,199
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	60
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	690

Sam Rayburn Reservoir Site IC (311828094191801)

Phytoplankton Analyses October 1997 to September 1998

Date	2-19-98
Time	1030
TOTAL CELLS/mL	7,828
NUMBER OF SPECIES	7
DEPTH COLLECTED (ft.)	1.0

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Penales	
<i>Synedra ulna</i> var <i>ulna</i>	30
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	210
<i>Chlamydomonas</i> sp.	1,410
<i>Mougeotia</i> sp.	660
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	2,999
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	540
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	1,979

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

Sam Rayburn Reservoir Site KC (312216094280601)

Phytoplankton Analyses October 1997 to September 1998

Date	2-19-98
Time	1300
TOTAL CELLS/mL	5,009
NUMBER OF SPECIES	6
DEPTH COLLECTED (ft.)	1.0

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Penales	
<i>Synedra ulna</i> var <i>ulna</i>	60
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	120
<i>Chlamydomonas</i> sp.	690
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	3,299
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	510
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	240

Sam Rayburn Reservoir Site CC (310437094065501)

Phytoplankton Analyses October 1997 to September 1998

Date	4-29-98
Time	900
TOTAL CELLS/mL	22,554
NUMBER OF SPECIES	17
DEPTH COLLECTED (ft.)	2.95

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	118
<i>Melosira varians</i>	392
Order Penales	
<i>Fragilaria crotonensis</i> var <i>crotonensis</i>	557
<i>Pinnularia acuminatus</i> var. <i>acuminatus</i>	56
<i>Pinnularia brevicostata</i> var <i>brevicostata</i>	56
<i>Synedra ulna</i> var <i>ulna</i>	111
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	480
<i>Chlamydomonas</i> sp.	480
<i>Mougeotia</i> sp.	420
<i>Scenedesmus opoliensis</i>	60
CYANOPHYTA	
<i>Anabaena spiroides</i>	2,069
<i>Anabaena</i> sp.	990
<i>Aphanizomenon flos-aquae</i>	1,380
<i>Aphanocapsa elachista</i>	14,395
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	30
PYRRHOPHYTA	
<i>Glenodinium</i> sp.	30
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	930

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

Sam Rayburn Reservoir Site IC (311828094191801)

Phytoplankton Analyses October 1997 to September 1998

Date	4-29-98
Time	1102
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TOTAL CELLS/mL	13,885
NUMBER OF SPECIES	17
DEPTH COLLECTED (ft.)	1.97
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Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	40
<i>Melosira varians</i>	791
<i>Stephanodiscua astraea</i>	40
Order Penales	
<i>Asterionella formosa</i> var. <i>formosa</i>	13
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	213
<i>Nitzschia palea</i> var. <i>palea</i>	93
<i>Pinnularia brevicostata</i> var. <i>brevicosatata</i>	27
<i>Synedra ulna</i> var. <i>ulna</i>	133
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	240
<i>Chlamydomonas</i> sp.	180
CYANOPHYTA	
<i>Anabaena spiroides</i>	1,709
<i>Aphanizomenon flos-aquae</i>	360
<i>Aphanocapsa elachista</i>	7,797
<i>Aphanothece nidulans</i>	450
<i>Oscillatoria</i> sp.	1,649
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	120
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	30

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

Sam Rayburn Reservoir Site KC (312216094280601)

Phytoplankton Analyses October 1997 to September 1998

Date	4-29-98
Time	1130
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TOTAL CELLS/mL	7,409
NUMBER OF SPECIES	12
DEPTH COLLECTED (ft.)	1.64

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Penales	
<i>Amphora ovalis</i> var. <i>ovalis</i>	10
<i>Cymbella inelegans</i> var. <i>inelegans</i>	10
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	10
<i>Nitzschia palea</i> var. <i>palea</i>	29
<i>Pinnularia brevicostata</i> var. <i>brevicostata</i>	57
<i>Synedra ulna</i> var. <i>ulna</i>	95
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	120
<i>Chlamydomonas</i> sp.	120
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	5,998
<i>Oscillatoria</i> sp.	600
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	180
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	180

Sam Rayburn Reservoir Site CC (310437094065501)

Phytoplankton Analyses October 1997 to September 1998

Date	9-2-98
Time	1245
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TOTAL CELLS/mL	38,238
NUMBER OF SPECIES	10
DEPTH COLLECTED (ft.)	3.26

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	150
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	600
<i>Chlamydomonas</i> sp.	30
<i>Cosmarium</i> sp.	30
<i>Crucigenia tetrapedia</i>	120
<i>Staurastrum</i> sp.	30
CYANOPHYTA	
<i>Aphanizomenon flos-aquae</i>	600
<i>Aphanocapsa delicatissima</i>	19,194
<i>Oscillatoria</i> sp.	17,394
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	90

NECHES RIVER BASIN

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

Sam Rayburn Reservoir Site IC (311828094191801)

Phytoplankton Analyses October 1997 to September 1998

Date	9-3-98
Time	1105

TOTAL CELLS/mL	58,692
NUMBER OF SPECIES	17
DEPTH COLLECTED (ft.)	2.30

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Pennales	
<i>Fragilaria crotonensis</i> var <i>crotonensis</i>	240
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	1,200
<i>Chlamydomonas</i> sp.	150
<i>Cosmarium</i> sp.	30
<i>Crucigenia tetrapedia</i>	60
<i>Oocystis</i> sp.	30
<i>Scenedesmus opoliensis</i>	60
<i>Staurastrum</i> sp.	30
CYANOPHYTA	
<i>Anabaena spiroides</i>	390
<i>Aphanizomenon flos-aquae</i>	1,200
<i>Aphanocapsa delicatissima</i>	36,588
<i>Aphanocapsa elachista</i>	600
<i>Chroococcus limneticus</i>	1,919
<i>Merismopedia tenuissima</i>	960
<i>Oscillatoria</i> sp.	14,995
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	210
PYRRHOPHYTA	
<i>Glenodinium</i> sp.	30

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

Sam Rayburn Reservoir Site KC (312216094280601)

Phytoplankton Analyses October 1997 to September 1998

Date	9-2-98
Time	1425
<hr/>	
TOTAL CELLS/mL	26,273
NUMBER OF SPECIES	14
DEPTH COLLECTED (ft.)	0.66
<hr/>	

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Melosira varians</i>	90
Order Pennales	
<i>Fragilaria crotonensis</i> var <i>crotonensis</i>	360
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	720
<i>Chlamydomonas</i> sp.	600
<i>Crucigenia tetrapedia</i>	750
<i>Scenedesmus opoliensis</i>	210
<i>Tetrastrum punctatum</i>	90
CYANOPHYTA	
<i>Aphanizomenon flos-aquae</i>	900
<i>Aphanocapsa delicatissima</i>	11,996
<i>Merismopedia tenuissima</i>	2,159
<i>Oscillatoria</i> sp.	7,198
EUGLENOPHYTA	
<i>Phacus</i> sp.	60
<i>Trachelomonas</i> sp.	1,140

08039500 ANGELINA RIVER AT STATE HIGHWAY 63 NEAR EBENEZER, TX

LOCATION.--Lat 31°00'54", long 94°09'07", Jasper County, Hydrologic Unit 1202005, at bridge on State Highway 63, 1.7 miles south of Ebenezer, 0.25 mile east of the abandoned town of Horger, 7 miles upstream from Indian Creek and 20 miles upstream from mouth.

DRAINAGE AREA.--3,435 mi².

PERIOD OF RECORD.--Chemical and biochemical analyses: Jan 1994 to current year; previously published as "Angelina River at Highway 63 near Horger, TX".

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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 (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, (PER-CENT SATUR-ATION) (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	
FEB 19...	0930	11000	141	6.2	12.0	24	3.3	9.1	85	1.0	29
APR 29...	0728	--	134	7.0	19.0	45	3.3	7.3	78	1.2	28
SEP 02...	1745	7740	146	7.0	29.5	27	2.4	6.8	90	1.1	31

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
FEB 19...	7	6.6	3.0	13	1	2.7	22	16	15	<.10	5.5
APR 29...	8	6.5	2.9	13	1	2.7	20	17	15	<.10	6.2
SEP 02...	8	7.0	3.2	13	1	3.0	23	17	15	<.10	8.3

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDE (MG/L) (00530)	RESIDUE VOLA-TILE, SUS-PENDE (MG/L) (00535)	RESIDUE FIXED NON FILTER-ABLE (MG/L) (00540)	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-SOLVED (MG/L AS N) (00623)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
FEB 19...	76	1	5	.00	<.010	.150	.028	.23	.26	<.010	.020
APR 29...	75	2	3	.00	<.010	<.050	.033	.25	.28	<.010	<.010
SEP 02...	81	8	6	2	<.010	<.050	.037	.24	.27	.041	<.010

DATE	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIIUM, 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)
FEB 19...	.06	6.7	<1	36	<1.0	<8.0	<14	<12	<10	21	<100
APR 29...	--	7.2	<1	38	<1.0	<8.0	<14	<12	<10	110	<100
SEP 02...	--	6.7	2	38	<1.0	<8.0	<14	<12	<10	120	<100

DATE	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)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
FEB 19...	5	<4.0	<.1	<60	<40	<1	<4.0	83	<10	<20
APR 29...	6	<4.0	<.1	<60	<40	<1	<4.0	77	<10	<20
SEP 02...	6	335	<.1	<60	<40	<1	<4.0	83	<10	<20

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 mi².

PERIOD OF RECORD.--Apr 1951 to current year. Prior to Oct 1967, published as Dam B Reservoir at Town Bluff.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Oct 25, 1954, at site 490 ft upstream at same datum. Satellite telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam with concrete spillway sections. The total length of dam is 6,698 ft, including a concrete spillway and non-overflow section. Deliberate impoundment of water began Apr 16, 1951, and the dam was completed in Jun 1951. The uncontrolled spillway is 6,100 ft long. A 326-foot-long gated service spillway with six 40.0- by 35.0-foot tainter gates is located near right end of dam. The capacity of the spillways at maximum flood design is 218,300 ft³/s. The capacity table is based on a survey made in 1945. Water is used for industrial, municipal and irrigation supplies. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam (nonoverflow).....	95.0
Design flood.....	93.0
Crest of uncontrolled spillway (top of tainter gates).....	85.0
Top of conservation pool.....	83.0
Bottom of tainter gates (sill).....	50.0

COOPERATION.--Record of contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 128,400 acre-ft, May 22, 1953 (elevation, 85.21 ft); no storage Sep 18 to Oct 13, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 100,300 acre-ft, Dec 21 (elevation, 83.94 ft); minimum daily contents, 68,800 acre-ft, Mar 9 (elevation, 80.92 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87710	83000	90210	91140	83380	82880	78020	84760	82010	77780	82760	88100
2	87450	82880	88890	90340	77540	83250	77070	84890	82140	77900	84380	88100
3	86680	82630	87060	86550	75430	78970	77070	83130	82510	79090	84890	87970
4	85780	81770	82010	83880	77070	74270	76010	82630	82760	80060	84760	87840
5	84890	81640	82260	86290	78850	77540	74970	82880	86290	80300	84130	87710
6	84130	80660	84260	96880	79450	82380	76600	82510	86680	80660	85140	87710
7	85020	79330	86160	93430	79570	84890	79810	82010	86420	80300	85910	87840
8	84760	78730	87710	85400	75080	81280	80660	80790	86040	80790	86040	88100
9	85020	79450	88490	82510	74500	68800	80060	80420	85910	81150	85520	87970
10	85020	81640	88360	82510	78250	70110	81280	81400	85140	81280	85020	88360
11	84760	82260	88360	85780	75310	75780	82260	80790	85020	81400	84130	92210
12	85140	83500	87580	88890	74620	78250	82510	80540	84640	81640	84760	92750
13	88490	85020	85650	86160	76130	77780	80540	80300	84010	84010	85650	93700
14	89150	86290	84130	84260	78850	75890	80660	80540	83630	84510	85780	94520
15	88360	86930	83500	82510	80180	73360	82380	81640	83380	85270	85020	93300
16	87710	87710	83750	83250	76710	79690	83750	81770	83000	85780	87320	91540
17	86420	88490	84130	79330	76830	84380	81890	81770	82380	85520	88230	89940
18	84890	90600	85520	78490	77300	79810	80790	81520	82260	83750	86810	89540
19	83500	91670	86550	77900	77070	79330	80660	80420	81770	82010	86290	89540
20	82140	91670	91410	78970	74730	78020	81640	79690	81520	80300	84890	89280
21	81030	90210	100300	85780	73820	77780	82260	79450	81280	79210	84890	88760
22	80790	89680	88620	93160	78370	77900	82140	79210	81150	79090	86040	87970
23	83880	88890	82140	91000	84640	77070	82380	79090	81280	79330	86550	85400
24	85520	87970	84130	87190	84130	76710	82260	78850	81400	79810	86680	82380
25	85650	86680	81640	82880	79330	76830	82380	78850	81640	80300	86930	83130
26	83380	86040	79210	82010	84760	76480	82380	78850	81520	80910	86930	84640
27	81520	84380	86680	78850	87580	79940	83500	78730	80910	81400	87060	84890
28	80660	87190	86040	79690	84510	82260	83630	78250	80060	81890	86810	84260
29	82260	88760	79810	86810	---	82140	81890	78020	78970	82380	86680	82880
30	82140	89680	82010	91270	---	82630	83000	80790	78250	82880	88230	81640
31	82380	---	87320	88760	---	82140	---	80660	---	81400	88100	---
MAX	89150	91670	100300	96880	87580	84890	83750	84890	86680	85780	88230	94520
MIN	80660	78730	79210	77900	73820	68800	74970	78020	78250	77780	82760	81640
(+)	82.08	82.65	82.47	82.57	82.25	82.07	82.13	81.95	81.74	82.01	82.53	82.03
(@)	-5590	+7300	-2360	+1440	-4250	-2370	+860	-2340	-2410	+3150	+6700	-6460
CAL YR 1997	MAX 100700	MIN 71330	(@) +2560									
WTR YR 1998	MAX 100300	MIN 68800	(@) -6330									

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

NECHES RIVER BASIN

08040600 NECHES RIVER NEAR TOWN BLUFF, TX

LOCATION.--Lat 30°47'27", long 94°09'03", Jasper-Tyler County line, Hydrologic Unit 12020003, on left bank 1.8 mi downstream from Town Bluff Dam, 2.0 mi northeast of Town Bluff, 1.0 mi upstream from Walnut Run, 6.5 mi downstream from Wolf Creek and at mile 114.9.

DRAINAGE AREA.--7,574 mi².

PERIOD OF RECORD.--Mar 1951 to current year. Prior to Oct 27, 1989, published as "Neches River at Town Bluff".

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Dec 4, 1954 to Oct 27, 1989, water-stage recorder at site 1.5 mi upstream at same datum. Prior to May 21, 1953, water-stage recorder, and May 21, 1953, to Dec 3, 1954, nonrecording gage at former site at same datum. Satellite telemeter at station.

REMARKS.--Records good. Since installation of gage in water year 1951, at least 10% of contributing drainage area has been regulated by B. A. Steinhagen Lake (station 08040000) 1.8 mi upstream and by Sam Rayburn Reservoir (station 08039300) 37.9 mi upstream. There are some diversions upstream from station. Prior to Oct 1989, published as "Neches River at Town Bluff, Tx." (station 08040500).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1884 reached a stage about 86.8 ft (discharge, about 120,000 ft³/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 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3100	2790	3300	3910	18700	18400	18700	3530	3470	3240	3240	3110
2	3040	2750	3230	5070	18600	18300	17900	3490	3320	3230	3120	3090
3	3070	2770	4640	6390	18400	18300	16700	3510	3330	3240	3180	3060
4	3100	2780	6590	6430	18300	18000	15800	3400	3330	3070	3200	3090
5	3100	2790	4770	5580	18600	17700	15300	3410	3130	3260	3250	3080
6	2960	2770	3040	8630	18700	18500	14500	3470	3240	3260	3450	3150
7	3040	2770	3010	23400	16500	18900	12300	3540	3220	3260	3530	3110
8	3050	2770	3150	25000	14000	19300	12300	3540	3350	3160	3530	3080
9	3070	2770	3190	21900	12900	18900	12300	3510	3120	3230	3480	3080
10	3070	2730	3330	20000	14400	18400	11800	3520	3300	3250	3440	3210
11	3070	2770	3790	19800	17300	18400	11400	3520	3240	3250	3250	3470
12	3080	2760	3820	20400	17500	18500	11400	3520	3250	3240	3240	3400
13	3080	2730	3860	22600	17400	18800	10500	3510	3330	3120	3250	3630
14	3090	2610	3850	22200	17700	18800	6750	3520	3260	3210	3250	4520
15	3100	2910	3520	21300	17700	18800	4520	3410	3240	3240	3250	6500
16	3100	2660	3060	19700	17900	19000	4310	3600	3150	3110	3190	6640
17	3000	2440	2990	18800	17900	19800	5130	3570	3230	3060	3100	4560
18	3000	2330	2910	18800	17800	19000	5190	3660	3200	3060	3100	2850
19	3020	2310	2540	18700	17700	18600	4730	3660	3180	3060	3110	2020
20	3020	2640	2490	18700	17800	18500	4010	3570	3180	2970	3090	1760
21	2990	3140	8700	18800	17900	18400	3980	3630	3110	3090	3060	1720
22	3000	2400	15800	20600	18000	18300	3980	3640	3100	3120	2950	1700
23	2850	2340	13700	20400	18300	18300	3820	3590	3030	3200	3070	2150
24	3130	2350	11500	19100	18300	18500	3580	3650	2920	3200	3100	2420
25	3170	2320	11100	18600	18300	18500	3660	3610	2910	3240	3090	2400
26	3080	2310	10300	18500	18600	18500	3610	3600	2910	3200	3080	2390
27	3040	2310	8390	18500	19300	18500	3550	3600	3580	3220	3030	2820
28	2950	2270	10200	18400	18700	18100	3490	3600	3500	3210	3130	3130
29	2830	3110	12300	18500	---	18300	3500	3620	3540	3190	3130	3160
30	2890	3440	8090	18700	---	18300	3540	3660	3390	3190	2880	3190
31	2860	---	4110	18800	---	18600	---	3610	---	3210	2900	---
TOTAL	93950	79840	185270	536210	493200	575200	252250	110270	97060	98590	98670	95490
MEAN	3031	2661	5976	17300	17610	18550	8408	3557	3235	3180	3183	3183
MAX	3170	3440	15800	25000	19300	19800	18700	3660	3580	3260	3530	6640
MIN	2830	2270	2490	3910	12900	17700	3490	3400	2910	2970	2880	1700
AC-FT	186300	158400	367500	1064000	978300	1141000	500300	218700	192500	195600	195700	189400

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1998, BY WATER YEAR (WY)

MEAN	2247	2637	4346	6303	7454	8510	7885	9131	5792	3794	2491	2228
MAX	13040	18490	18170	25690	20800	26430	20220	48140	17000	22870	8252	6652
(WY)	1995	1958	1961	1961	1974	1992	1969	1953	1979	1989	1979	1973
MIN	88.1	32.0	18.6	120	252	1178	1231	1003	856	756	288	124
(WY)	1955	1957	1957	1957	1981	1971	1981	1971	1956	1964	1951	1956

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1951 - 1998	
ANNUAL TOTAL	2633420		2716000			
ANNUAL MEAN	7215		7441		5263	
HIGHEST ANNUAL MEAN					12010	
LOWEST ANNUAL MEAN					961	
HIGHEST DAILY MEAN	19500		25000		90100	
LOWEST DAILY MEAN	1330		1700		.00	
ANNUAL SEVEN-DAY MINIMUM	1740		2020		.00	
INSTANTANEOUS PEAK FLOW			26200		90900	
INSTANTANEOUS PEAK STAGE			71.46		82.85	
ANNUAL RUNOFF (AC-FT)	5223000		5387000		3813000	
10 PERCENT EXCEEDS	16900		18600		14900	
50 PERCENT EXCEEDS	3710		3440		2920	
90 PERCENT EXCEEDS	2750		2810		501	

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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jul 1904 to Dec 1906, Apr 1921 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 718: 1929. WSP 1342: 1905-07, 1924. WSP 1732: Drainage area at former site.

GAGE.--Water-stage recorder. Datum of gage is 8.25 ft above sea level. Jul 1, 1904, to Dec 31, 1906, nonrecording gage on Gulf, Colorado, and Santa Fe Railway Co. bridge at site 1.2 mi downstream at datum 5.50 ft lower; Apr 1, 1921, to Dec 7, 1948, nonrecording gages at site 1.2 mi downstream at present datum; Dec 8, 1948, to Nov 8, 1963, water-stage recorder at site 1.2 mi downstream at present datum. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since water year 1951, at least 10% of contributing drainage area has been regulated by B. A. Steinhagen Lake 58.1 mi upstream. Additional regulation by Sam Rayburn Reservoir 95.7 mi upstream. There are some diversions upstream for municipal use.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--31 years (water years 1905-06, 1922-50) 7,089 ft³/s (5,136,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1905-06, 1922-50).--Maximum discharge, 92,100 ft³/s May 11, 1944 (gage height, 23.58 ft, from floodmark), at site then in use; minimum daily, 148 ft³/s Sep 10, 1925.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1884 reached a stage of 26.2 ft, at former site (discharge, about 125,000 ft³/s), and flood in Aug 1915 reached a stage of 24.5 ft, at former site (discharge, about 102,000 ft³/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 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3300	2990	3660	8590	20100	20900	19300	3980	3780	3490	3160	2700
2	3300	2900	3590	5810	20200	20600	19300	3970	3660	3310	3200	2940
3	3260	2830	3590	5320	20200	20200	19500	3950	3480	3230	3160	2980
4	3250	2820	4330	6230	20100	19900	19100	3930	3400	3260	3120	2950
5	3300	2860	5910	6980	19900	19700	18200	3870	3400	3120	3160	2950
6	3310	2880	5920	7540	19800	19500	17200	3810	3390	3190	3300	2960
7	3260	2850	4360	9060	19800	19400	16400	3820	3200	3240	3580	3000
8	3220	2840	3470	12600	19800	19600	15400	3890	3210	3240	3610	3020
9	3280	2830	3400	19300	18800	19800	14100	3910	3240	3180	3570	2960
10	3280	2850	3450	25600	17000	20200	13300	3880	3190	3180	3540	2950
11	3290	2810	3500	26400	16100	20200	13000	3860	3250	3210	3470	3210
12	3290	2850	3870	25800	16300	19900	12600	3850	3280	3210	3310	3740
13	3330	2880	4010	24200	17800	19700	12200	3840	3270	3210	3220	3970
14	3380	2850	4060	24200	18800	19700	12000	3840	3310	3180	3250	4520
15	3350	2690	4050	24500	19200	19900	10600	3820	3310	3120	3350	5340
16	3320	2960	3850	24700	19500	20500	7760	3740	3290	e3170	3320	6590
17	3300	2830	3360	24300	19900	21200	5740	3800	3220	e3190	3230	7500
18	3230	2540	3160	23000	20000	21400	5670	3840	3220	e3150	3100	6950
19	3170	2410	3040	21600	19900	21600	5920	3880	3230	e3110	3020	5060
20	3190	2360	2760	20800	19700	21100	5750	3890	3180	e3100	3020	3040
21	3180	2540	3320	20500	19500	20400	5120	3840	3180	e3090	3010	2140
22	3150	3130	6120	21100	19900	20000	4720	3810	3120	e3050	3010	1850
23	3160	2660	9780	23000	20000	19700	4570	3830	3090	e3080	2940	1760
24	3130	2400	14100	24600	19900	19500	4430	3810	3040	3100	2920	1890
25	3200	2360	16400	24200	19900	19400	4170	3820	2930	3150	2980	2300
26	3410	2340	15500	23100	20300	19400	4120	3810	2860	3180	3000	2330
27	3280	2320	14000	21700	20400	19400	4090	3790	2820	3180	2990	2320
28	3200	2350	12200	20800	20600	19500	4040	3760	3320	3160	2950	2530
29	3100	2450	10700	20400	---	19500	4000	3740	3540	3180	2970	2960
30	2970	3000	11100	20100	---	19300	3990	3780	3540	3150	3010	3050
31	2960	---	11600	20100	---	19300	---	3790	---	3150	2900	---
TOTAL	100350	81380	202160	586130	543400	620400	306290	119150	97950	98560	98370	102460
MEAN	3237	2713	6521	18910	19410	20010	10210	3844	3265	3179	3173	3415
MAX	3410	3130	16400	26400	20600	21600	19500	3980	3780	3490	3610	7500
MIN	2960	2320	2760	5320	16100	19300	3990	3740	2820	3050	2900	1760
AC-FT	199000	161400	401000	1163000	1078000	1231000	607500	236300	194300	195500	195100	203200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1998z, BY WATER YEAR (WY)

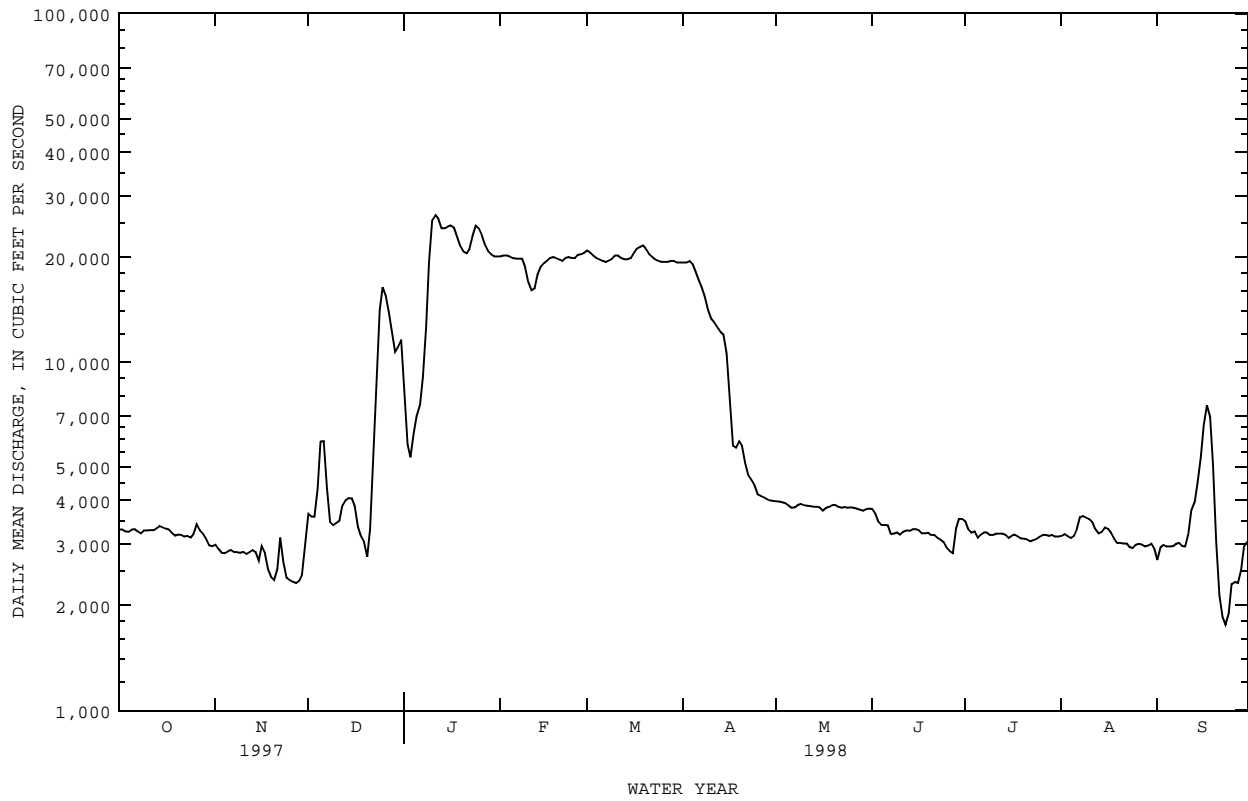
MEAN	2452	2787	4765	7033	8179	9298	8746	9720	6529	4349	2742	2397
MAX	15780	16580	18680	31060	22720	28790	21440	46790	19920	25680	9644	7090
(WY)	1995	1958	1961	1961	1995	1992	1995	1953	1991	1989	1979	1979
MIN	169	110	143	159	394	1352	1432	1220	1112	863	358	194
(WY)	1955	1957	1957	1957	1957	1971	1981	1981	1963	1955	1951	1956

NECHES RIVER BASIN

08041000 NECHES RIVER AT EVADALE, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1951 - 1998z	
ANNUAL TOTAL	2955660		2956600		5738	
ANNUAL MEAN	8098		8100		13480	
HIGHEST ANNUAL MEAN					1128 1995	
LOWEST ANNUAL MEAN					80000 May 24 1953	
HIGHEST DAILY MEAN	22400	Mar 15	26400	Jan 11	63	Nov 26 1956
LOWEST DAILY MEAN	1260	Jan 10	1760	Sep 23	66	Nov 23 1956
ANNUAL SEVEN-DAY MINIMUM	1570	Jan 6	2080	Sep 21	47900	Jul 6 1989
INSTANTANEOUS PEAK FLOW			26900 Jan 11		20.79	Jul 6 1989
INSTANTANEOUS PEAK STAGE			17.76 Jan 11			
ANNUAL RUNOFF (AC-FT)	5863000		5864000		4157000	
10 PERCENT EXCEEDS	19000		20100		16200	
50 PERCENT EXCEEDS	4190		3590		3150	
90 PERCENT EXCEEDS	2840		2880		660	

e Estimated
z Period of regulated streamflow.



08041000 NECHES RIVER AT EVADALE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Sep 1939 to current year. Pesticide analyses: Feb 1968 to Jul 1981. Sediment analyses: Oct 1960 to Aug 1994.

PERIOD OF DAILY RECORD.--
 SPECIFIC CONDUCTANCE: Oct 1947 to September 1997.
 WATER TEMPERATURE: Oct 1947 to September 1997.

INSTRUMENTATION.--From Oct 1954 to Sep 1963, water temperature was continuously recorded at this station.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed for previous years using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the U.S. Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
 SPECIFIC CONDUCTANCE: Maximum daily, 670 microsiemens, Mar 21, 25, 31, 1994; minimum daily, 23 microsiemens, Sep 19, 1963.
 WATER TEMPERATURE (1947-85, 1987 to current year): Maximum daily, 36.0°C, many days in Aug 1997; minimum daily, 3.0°C, Jan 30, 31, 1948, Jan 31, 1949, and Jan 24, 1963.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED SATURATION (00301)	HARD-NESS TOTAL (MG/L) (00900)	HARD-NESS NONCARB DISSOLVED (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L) (00915)
FEB 04...	1025	20200	145	6.8	13.0	9.0	86	30	13	7.2
APR 21...	1105	5130	152	6.7	19.5	6.8	73	33	11	8.1
JUN 10...	1125	3180	142	6.9	28.5	6.9	89	29	8	7.1

DATE	MAGNESIUM, DIS-SOLVED (MG/L) (00925)	SODIUM, DIS-SOLVED (MG/L) (00930)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DIS-SOLVED (MG/L) (00935)	ALKALINITY WAT DIS-FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L) (00945)	CHLORIDE, DIS-SOLVED (MG/L) (00940)	FLUORIDE, DIS-SOLVED (MG/L) (00950)	SILICA, DIS-SOLVED (MG/L) (00955)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L) (70301)
FEB 04...	2.9	14	1	2.9	17	19	18	<.10	9.6	83
APR 21...	3.2	14	1	3.0	22	17	18	<.10	7.2	84
JUN 10...	2.8	15	1	2.6	21	17	16	<.10	8.5	81

NECHES RIVER BASIN

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 mi².

PERIOD OF RECORD.--May 1924 to Nov 1929 (discharge measurements only), Apr 1939 to current year.
Water-quality records.--Chemical analysis: Nov 1967 to Sep 1985. Water temperature: Nov 1967 to Sep 1970.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 25.12 ft above sea level. Prior to Apr 30, 1939, nonrecording gage at site 1.6 mi downstream at different datum. Apr 30, 1939, to Sep 30, 1966, water-stage recorder at site 2,000 ft downstream at present datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation. There are small diversions above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1884, about 34 ft in Aug 1915 at site 2,000 ft downstream at present datum; stage was determined on basis of information by engineers of Gulf, Colorado, and Santa Fe Railway Co. for site 1.6 mi downstream.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 24	0700	9,680	18.23	Jan 23	2100	9,660	18.22
Jan 9	1900	17,200	20.78	Mar 2	0400	5,700	16.15

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

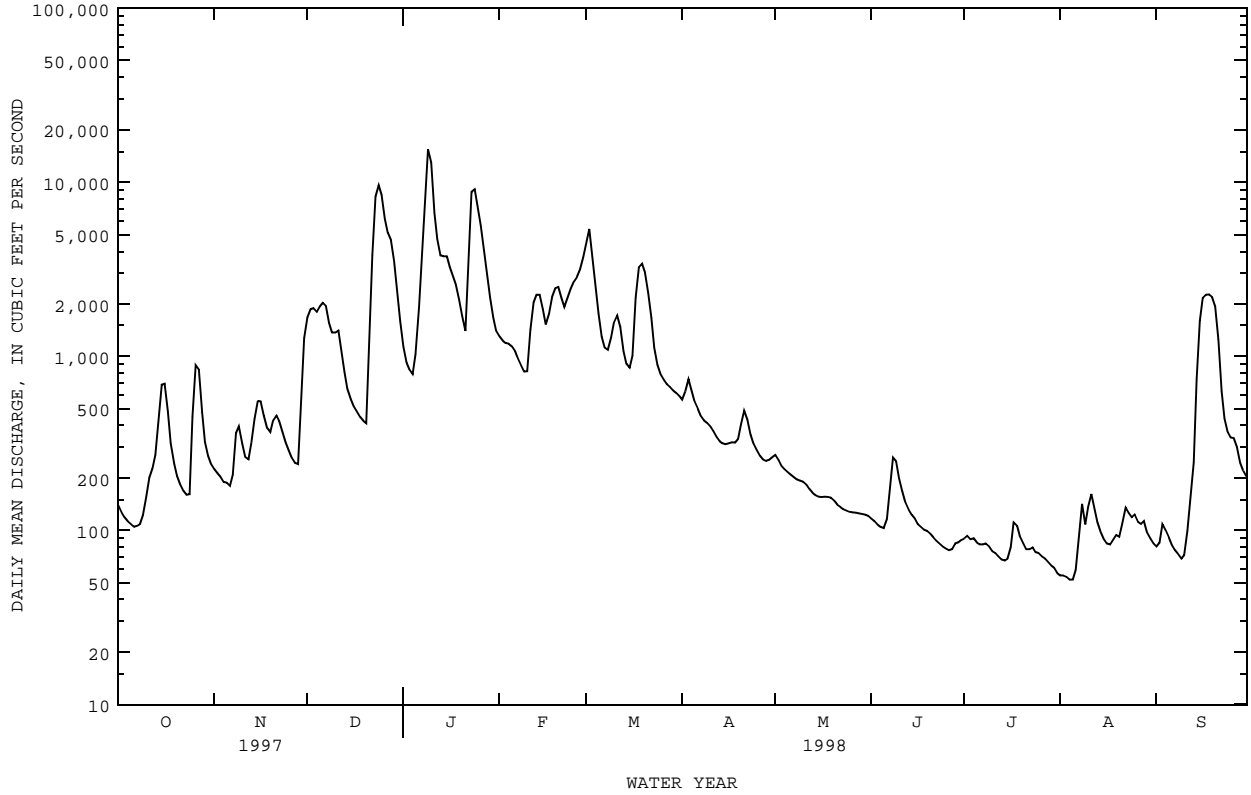
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	139	224	1670	1140	1300	4410	562	272	117	90	55	81
2	127	212	1860	921	1230	5390	629	254	113	93	55	85
3	119	202	1890	835	1190	4000	737	235	108	89	54	108
4	113	189	1800	788	1180	2630	633	224	105	90	52	100
5	109	188	1930	1030	1140	1760	549	216	103	85	52	91
6	105	180	2030	1910	1070	1290	500	210	116	83	59	82
7	106	209	1950	3720	967	1120	456	203	175	83	89	77
8	109	362	1550	8540	880	1090	430	196	262	84	142	73
9	122	395	1370	15500	815	1280	415	193	249	81	108	69
10	154	313	1370	13000	819	1570	396	190	199	76	137	72
11	200	263	1410	6700	1420	1720	373	183	168	74	162	99
12	227	256	1100	4710	2040	1470	346	173	144	71	136	154
13	272	319	812	3790	2260	1070	326	165	131	68	111	246
14	436	438	650	3740	2260	905	316	159	123	67	98	737
15	687	554	565	3750	1860	858	313	156	117	69	89	1600
16	695	550	514	3260	1520	1010	317	155	109	80	84	2160
17	484	455	478	2880	1750	2180	320	156	105	111	83	2260
18	317	388	449	2580	2200	3250	318	155	101	106	89	2270
19	241	367	427	2130	2460	3410	336	154	99	92	94	2190
20	204	430	414	1700	2510	3030	405	148	96	84	92	1930
21	182	458	1030	1400	2160	2330	488	140	91	78	108	1250
22	169	424	3780	2960	1920	1670	433	136	87	78	135	633
23	160	368	8270	8840	2160	1120	355	132	84	80	126	440
24	161	321	9590	9100	2450	891	314	130	81	75	119	366
25	451	287	8470	7290	2700	787	289	128	79	74	123	342
26	888	262	6190	5620	2850	732	268	127	77	71	112	338
27	835	244	5150	4130	3160	691	256	126	78	69	109	300
28	482	240	4670	2940	3700	666	250	125	84	66	113	244
29	322	528	3530	2180	---	639	254	124	85	63	97	221
30	267	1270	2390	1670	---	618	264	123	88	61	90	204
31	240	---	1600	1400	---	592	---	121	---	57	84	---
TOTAL	9123	10896	78909	130154	51971	54179	11848	5209	3574	2448	3057	18822
MEAN	294	363	2545	4199	1856	1748	395	168	119	79.0	98.6	627
MAX	888	1270	9590	15500	3700	5390	737	272	262	111	162	2270
MIN	105	180	414	788	815	592	250	121	77	57	52	69
AC-FT	18100	21610	156500	258200	103100	107500	23500	10330	7090	4860	6060	37330
CFSM	.34	.42	2.96	4.88	2.16	2.03	.46	.20	.14	.09	.11	.73
IN.	.39	.47	3.41	5.63	2.25	2.34	.51	.23	.15	.11	.13	.81

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1998, BY WATER YEAR (WY)

	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MEAN	391	702	1081	1522	1464	1228	1162	1159	862	482	255	324																																																															
MAX	4743	6430	5835	5693	4420	3311	6733	6932	6668	4963	1580	2111																																																															
(WY)	1995	1941	1941	1974	1966	1992	1979	1953	1950	1989	1975	1961																																																															
MIN	22.8	34.9	115	113	169	206	104	89.5	69.5	31.1	28.8	26.5																																																															
(WY)	1968	1968	1955	1957	1968	1940	1971	1963	1956	1971	1956	1956																																																															

08041500 VILLAGE CREEK NEAR KOUNTZE, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1924 - 1998	
ANNUAL TOTAL	432441		380190		885	
ANNUAL MEAN	1185		1042		2248	
HIGHEST ANNUAL MEAN					190	
LOWEST ANNUAL MEAN					1950	
HIGHEST DAILY MEAN	9590	Dec 24	15500	Jan 9	62200	Nov 26 1940
LOWEST DAILY MEAN	89	Sep 22	52	Aug 4	16	Oct 1 1956
ANNUAL SEVEN-DAY MINIMUM	98	Sep 17	55	Jul 31	18	Sep 28 1956
INSTANTANEOUS PEAK FLOW			17200	Jan 9	67200	Nov 26 1940
INSTANTANEOUS PEAK STAGE			20.78	Jan 9	27.60	Nov 26 1940
ANNUAL RUNOFF (AC-FT)	857700		754100		641400	
ANNUAL RUNOFF (CFSM)	1.38		1.21		1.03	
ANNUAL RUNOFF (INCHES)	18.71		16.45		13.99	
10 PERCENT EXCEEDS	3190		2660		2150	
50 PERCENT EXCEEDS	557		314		329	
90 PERCENT EXCEEDS	147		83		81	



NECHES RIVER BASIN

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 mi².

PERIOD OF RECORD.--Oct 1967 to current year.

Water-quality records.--Chemical analyses: Feb 1968 to Jun 1989. Specific conductance: Feb 1968 to Sep 1989. Water temperature: Feb 1968 to Sep 1989.

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

REMARKS.--No estimated daily discharges. Records fair. No known regulation. Low flow for period Mar through Sep is affected by small diversions and return flow from irrigated fields.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 10	0630	5,710	28.67	Sep 16	2130	5,930	28.78

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	15	89	1040	579	1170	32	19	24	59	20	8.7
2	6.4	15	114	674	414	1100	42	18	23	47	17	8.5
3	5.9	16	169	297	306	1010	49	15	21	43	16	7.5
4	5.7	17	197	153	246	912	48	18	22	42	21	6.7
5	5.6	19	196	264	210	793	49	13	23	37	17	6.0
6	5.5	20	208	911	186	571	46	17	27	37	56	6.2
7	7.1	19	193	3100	165	326	37	22	26	34	83	6.5
8	11	18	198	4520	139	191	41	21	25	32	99	6.2
9	12	17	186	5270	115	133	41	34	28	29	81	6.4
10	10	18	170	5610	150	101	34	28	35	34	62	8.7
11	11	18	154	4980	474	79	34	27	31	34	50	896
12	19	22	140	4350	613	66	33	28	25	38	36	2210
13	26	23	126	3970	685	60	26	35	22	39	22	2540
14	31	21	101	4070	703	53	18	30	23	53	19	3080
15	33	19	76	3810	726	46	18	25	25	64	47	3840
16	32	18	58	3330	815	202	25	33	30	64	89	5570
17	41	22	46	2780	1000	706	41	33	28	66	77	5750
18	40	27	38	2300	1070	984	45	23	25	60	44	5190
19	29	31	33	1950	1070	1210	51	21	23	55	59	4660
20	20	30	29	1650	988	1240	65	25	23	49	85	3940
21	18	26	243	1320	874	1100	51	21	24	52	74	3230
22	16	22	458	1490	1040	878	30	21	22	61	99	2630
23	12	19	698	1530	1170	576	22	19	20	47	98	2190
24	14	18	1020	1610	1210	256	21	19	20	41	100	1860
25	15	18	1410	1610	1220	124	21	19	18	36	63	1530
26	16	18	1920	1510	1200	84	29	19	17	29	37	1130
27	15	18	2030	1390	1200	63	28	17	15	24	22	668
28	15	23	1920	1270	1190	51	18	21	20	24	15	284
29	15	52	1720	1130	---	43	17	21	34	25	12	121
30	15	44	1500	938	---	36	19	22	54	24	9.6	71
31	15	---	1290	774	---	32	---	22	---	22	9.0	---
TOTAL	524.2	663	16730	69601	19758	14196	1031	706	753	1301	1538.6	51461.4
MEAN	16.9	22.1	540	2245	706	458	34.4	22.8	25.1	42.0	49.6	1715
MAX	41	52	2030	5610	1220	1240	65	35	54	66	100	5750
MIN	5.5	15	29	153	115	32	17	13	15	22	9.0	6.0
AC-FT	1040	1320	33180	138100	39190	28160	2040	1400	1490	2580	3050	102100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1998, BY WATER YEAR (WY)

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998			
MEAN	474	357	560	744	639	599	595	520	623	382	179	254																						
MAX	8080	2095	2159	2245	1850	1838	4972	3589	2795	3291	1660	1715																						
(WY)	1995	1987	1987	1998	1992	1993	1979	1989	1981	1989	1983	1998																						
MIN	2.90	2.48	12.4	4.75	13.5	14.7	21.4	22.8	25.1	33.4	12.3	10.1																						
(WY)	1970	1989	1990	1971	1989	1996	1987	1998	1998	1980	1977	1984																						

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1968 - 1998

ANNUAL TOTAL	142856.6	178263.2	
ANNUAL MEAN	391	488	493
HIGHEST ANNUAL MEAN			1167
LOWEST ANNUAL MEAN			133
HIGHEST DAILY MEAN	3380	Mar 19	5750
LOWEST DAILY MEAN	5.5	Oct 6	5.5
ANNUAL SEVEN-DAY MINIMUM	6.2	Oct 1	6.2
INSTANTANEOUS PEAK FLOW			5930
INSTANTANEOUS PEAK STAGE			28.78
ANNUAL RUNOFF (AC-FT)	283400	353600	357300
10 PERCENT EXCEEDS	1530	1500	1370
50 PERCENT EXCEEDS	60	41	84
90 PERCENT EXCEEDS	15	15	10

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 mi².

PERIOD OF RECORD.--Apr 1954 to Sep 1984 (daily mean and peak discharge for storms of 1.0 inch or more runoff, except for period Sep 10-22, 1961). Oct 1984 to current year (gage heights only).

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4.63 ft below sea level, originally determined by several comparisons of water surface with auxiliary water-stage recorder 7.2 mi downstream during times of no flow and ideal weather conditions. Prior to Oct 1984, auxiliary water-stage recorder 7.2 mi downstream.

REMARKS.--Records good. Prior to Oct 1984, records were computed using fall as a factor. Low flow is regulated by drainage from rice fields and operation of saltwater gates and barge locks. An unknown amount of water is diverted above and below gage for irrigation of rice fields.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,590 ft³/s Sep 22, 1963, and Apr 23, 1979; maximum gage height, 11.78 ft Sep 20, 1963 (backwater from Hillebrandt Bayou); minimum discharge not determined (affected by tides and pumping); minimum gage height, 2.31 ft Jul 17, 1954. Maximum stage since at least 1941, that of Sep 20, 1963, and Apr 23, 1979. Flood of Sep 13, 1961 (Hurricane Carla), reached a stage of 11.51 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1941 reached a stage of 11.3 ft, from information by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 10.40 ft, Sep 15; minimum gage height, 4.02 ft, Nov 3.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.45	5.55	5.51	5.56	6.33	6.19	6.39	6.08	5.78	6.26	5.60	6.02
2	5.18	5.40	5.60	5.65	6.39	5.80	6.39	6.08	5.71	6.11	5.58	6.08
3	5.29	4.83	5.89	5.77	6.27	5.56	6.38	5.96	5.72	6.20	5.76	6.11
4	5.39	4.38	5.75	6.18	5.90	5.76	6.18	5.86	5.81	6.29	5.95	6.14
5	5.48	4.66	5.60	6.42	5.94	5.96	5.78	5.87	5.89	6.26	5.89	6.18
6	5.56	4.75	5.44	7.44	5.97	5.98	5.97	5.95	5.94	5.87	6.02	6.21
7	5.75	4.57	5.83	7.83	5.34	6.86	6.09	6.01	5.94	5.70	6.14	6.29
8	5.95	4.66	6.25	7.50	5.33	6.89	6.14	6.01	6.07	5.72	6.14	6.30
9	6.05	4.81	6.27	7.17	5.53	5.36	6.06	6.10	6.13	5.69	6.00	6.39
10	6.13	4.95	6.06	6.67	6.12	5.15	5.51	6.08	6.15	5.63	5.99	6.98
11	6.17	5.04	5.49	6.43	6.18	5.48	5.64	5.98	6.13	5.55	5.94	9.38
12	6.21	5.39	5.40	6.22	5.70	5.69	5.84	6.02	6.12	5.50	5.90	9.75
13	6.36	5.47	5.39	6.66	5.85	5.81	5.96	6.07	6.06	5.54	5.82	9.91
14	6.11	5.51	5.36	7.03	5.89	5.87	6.02	6.14	5.97	5.60	5.95	10.11
15	5.73	5.08	5.34	7.00	6.28	6.10	6.09	6.14	5.94	5.60	6.31	10.40
16	5.80	5.12	5.36	6.39	6.87	7.07	6.17	6.13	5.88	5.63	6.19	10.32
17	5.78	5.20	5.38	6.01	6.93	7.13	6.17	6.05	5.91	5.67	6.00	10.05
18	5.51	5.47	5.39	5.85	6.36	7.01	6.03	5.93	5.97	5.85	6.11	9.76
19	5.54	5.57	5.41	5.86	6.24	6.93	6.06	5.89	5.98	5.88	6.15	9.48
20	5.55	5.57	5.61	5.87	6.08	6.55	5.94	5.90	5.95	5.88	6.28	9.12
21	5.49	5.69	6.46	6.71	5.89	5.58	5.94	5.92	5.91	5.92	6.61	8.41
22	5.15	5.66	6.10	8.69	6.69	5.70	5.70	5.93	5.85	5.95	6.90	7.64
23	5.16	5.53	6.69	8.66	6.54	5.76	5.39	5.93	5.77	5.93	6.90	7.02
24	5.33	5.64	6.71	8.31	6.25	5.80	5.39	5.95	5.71	5.92	6.84	6.66
25	5.47	5.68	6.30	7.87	6.00	5.82	5.54	5.95	5.76	5.90	6.63	6.76
26	5.57	5.73	6.14	7.45	6.52	5.88	5.65	5.89	5.91	5.87	6.45	7.02
27	5.37	5.76	5.79	6.85	6.57	6.08	5.83	5.89	6.25	5.74	6.24	6.76
28	5.28	5.81	5.81	6.28	6.39	6.14	5.86	5.90	6.63	5.70	5.94	6.59
29	5.40	5.85	5.78	6.28	---	6.21	6.01	5.90	6.68	5.65	5.76	6.57
30	5.52	5.60	5.44	6.16	---	6.27	6.07	5.90	6.65	5.63	5.87	6.08
31	5.55	---	5.53	6.06	---	6.38	---	5.87	---	5.62	5.88	---
MAX	6.36	5.85	6.71	8.69	6.93	7.13	6.39	6.14	6.68	6.29	6.90	10.40

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 mi².

PERIOD OF RECORD.--Apr 1954 to Sep 1984 (daily mean and peak discharge for storms of 1.0 inch or more runoff, except for the period Sep 11-18, 1961). Oct 1984 to current year (gage heights only).

GAGE.--Water-stage recorder. Datum of gage is 4.63 ft below sea level, originally determined by comparisons of water surface with Taylor Bayou near LaBelle, an auxiliary gage 5.6 mi downstream, during times of no flow and calm wind conditions. Prior to Aug 28, 1963, auxiliary water-stage recorder on Taylor Bayou, 1.2 mi downstream from Hillebrandt Bayou, nonrecording gages on Taylor Bayou 2.3 and 5.2 mi downstream from Hillebrandt Bayou; Aug 28, 1963, to Sep 30, 1984, auxiliary water-stage recorder 3.0 mi downstream. Gage was destroyed on Aug 24, 1991 and re-installed on Mar 4, 1992.

REMARKS.--Records poor. Prior to Oct 1984, records were computed using fall as a factor. Low flow regulated by drainage from rice fields and operation of saltwater gates and barge locks. An unknown amount of water is diverted above and below gage for rice irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft³/s Sep 18, 1963; maximum gage height, 12.34 ft Sep 19, 1963; minimum discharge not determined (affected by tides and pumping); minimum gage height, 2.33 ft Jul 17, 1954. Maximum stage since at least 1941, 12.34 ft Sep 19, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 9.56 ft, Sep 12; minimum gage height, 4.41 ft, Nov 3-4.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.60	---	---	---	---	---	6.41	6.05	5.95	6.33	---	6.10
2	5.31	---	---	---	---	---	6.41	6.05	5.81	6.17	---	6.19
3	5.42	4.95	---	---	---	---	6.41	6.03	5.81	6.25	5.93	6.24
4	5.51	4.48	---	---	5.99	5.84	6.37	5.98	5.87	6.31	6.07	6.29
5	5.61	4.67	---	---	5.96	6.02	5.80	5.94	5.90	6.31	6.06	6.32
6	5.68	4.78	---	---	5.97	6.04	5.96	5.97	5.90	5.93	6.11	6.34
7	5.85	4.69	---	---	---	6.91	6.09	6.01	5.92	---	6.30	6.41
8	6.06	4.78	---	---	---	6.92	6.15	6.01	6.07	---	6.31	6.45
9	6.16	4.86	---	---	5.65	5.47	6.15	6.10	6.15	---	6.27	6.53
10	6.25	5.02	---	---	6.06	5.25	---	6.10	6.17	5.83	6.27	7.05
11	6.31	5.11	---	---	6.15	5.57	---	6.10	6.22	5.82	---	9.37
12	6.31	5.42	---	---	5.68	5.78	5.82	6.09	6.22	5.74	---	9.56
13	6.39	5.52	---	---	5.80	5.89	5.96	6.10	6.20	5.67	---	9.42
14	6.32	5.55	---	---	5.86	5.97	6.01	6.16	6.15	5.73	6.32	9.38
15	5.78	---	---	---	6.24	6.13	6.09	6.19	6.08	5.68	6.51	9.38
16	5.85	---	---	---	6.63	6.99	6.17	6.19	6.08	5.72	6.38	9.32
17	5.85	---	---	---	6.64	6.99	6.17	6.17	6.03	5.75	6.12	8.64
18	5.60	5.48	---	---	6.06	---	6.09	6.13	6.05	5.85	6.27	8.37
19	---	---	---	---	6.05	6.98	5.99	6.11	6.06	5.88	6.34	8.11
20	5.63	---	---	---	6.00	6.84	5.98	---	6.05	5.95	6.46	8.00
21	5.60	---	---	---	5.63	5.76	5.98	---	6.01	5.96	6.62	7.61
22	5.27	---	---	---	6.30	5.82	5.86	---	5.98	5.98	6.86	7.41
23	5.30	---	---	---	6.08	5.86	5.56	---	5.97	5.98	6.87	6.90
24	5.36	---	---	---	6.00	5.92	---	---	5.94	5.99	6.87	6.71
25	5.55	---	---	---	5.79	5.93	---	---	5.91	5.99	6.83	6.92
26	---	---	---	---	6.25	5.99	---	---	5.92	5.99	6.64	7.11
27	5.48	---	---	---	6.29	6.10	5.79	---	6.25	5.96	6.45	6.90
28	5.38	---	---	---	6.19	6.15	5.84	---	6.58	5.93	6.07	6.71
29	5.44	---	---	---	---	6.25	5.96	---	6.58	---	5.90	6.72
30	5.53	---	---	---	---	6.32	6.04	---	6.58	---	5.95	6.24
31	---	---	---	---	---	6.41	---	5.96	---	---	5.96	---
MAX	---	---	---	---	---	---	---	---	6.58	---	---	9.56

08042800 WEST FORK TRINITY RIVER NEAR JACKSBORO, TX

LOCATION.--Lat 33°17'30", long 98°04'49", Jack County, Hydrologic Unit 12030101, on upstream side of bridge on State Highway 59, 4 mi downstream from Big Cleveland Creek, 7 mi upstream from Carroll Creek, 7 mi northeast of Jacksboro and at mile 660.

DRAINAGE AREA.--683 mi².

PERIOD OF RECORD.--Mar 1956 to current year.

Water-quality records.--Sediment records: Oct 1976 to Sep 1978.

GAGE.--Water-stage recorder. Datum of gage is 869.28 ft above sea level, from Texas Department of Transportation Sep 20, 1960, to May 30, 1961, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. At end of year, flow from 70.9 mi² upstream from this station was partly controlled by 21 floodwater-retarding structures with a combined detention capacity of 19,780 acre-ft. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Jun 1941 reached a stage of 30 ft, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 17	1015	2,940	20.55	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	3.0	2.3	3.7	20	4.3	.00	.00	.00	.00
2	.00	.00	.00	2.6	2.0	3.0	17	2.8	.00	.00	.00	.00
3	.00	.00	.00	2.1	3.5	3.6	11	2.6	.00	.00	.00	.00
4	.00	.00	.00	2.0	3.9	3.8	7.2	2.9	.00	.00	.00	.00
5	.00	.00	.00	1.7	11	3.3	5.4	3.2	.00	.00	.00	.00
6	.00	.00	.00	2.0	23	2.2	4.5	3.8	.00	.00	.00	.00
7	.00	.00	.28	3.8	20	41	3.9	4.4	.00	.00	.00	.00
8	.00	.00	.20	7.1	11	223	3.3	5.9	.00	.00	.00	.00
9	.00	.00	.87	37	7.2	343	2.8	3.3	.00	.00	.00	.00
10	.00	.00	.76	21	5.4	274	2.3	.57	.00	.00	.00	.00
11	.00	.00	.25	8.8	4.2	121	1.8	3.1	.30	.00	.00	.00
12	.00	.00	.05	9.1	3.6	63	1.7	2.0	.00	.00	.00	.00
13	.00	.00	.02	7.4	3.3	33	1.4	1.5	.00	.00	.00	.00
14	.00	.00	.02	6.1	2.8	20	1.2	1.2	.00	.00	.00	.00
15	.00	.00	.14	4.7	2.4	18	.97	.93	.00	.00	.00	.00
16	.00	.00	.01	3.8	2.6	1160	2.7	.42	.00	.00	.00	.00
17	.00	.00	.23	3.0	3.1	2660	2.3	.08	.00	.00	.00	.00
18	.00	.00	.07	2.5	5.1	2250	2.4	.00	.00	.00	.00	.00
19	.00	.00	.01	2.3	11	1570	1.6	.00	.00	.00	.00	.00
20	.00	.00	2.0	1.9	15	1080	1.3	.00	.00	.00	.00	.00
21	.00	.00	69	4.8	17	652	1.3	.00	.00	.00	.00	.00
22	.00	.00	144	108	20	167	1.4	.00	.00	.00	.00	.00
23	.00	.00	114	199	18	127	1.5	.00	.00	.00	.00	.00
24	.00	.00	92	52	15	93	2.0	.00	.00	.00	.00	.00
25	.00	.00	124	22	9.1	65	2.9	.00	.00	.00	.00	.00
26	.00	.00	89	11	6.1	53	4.3	.00	.00	.00	.00	.00
27	.00	.00	35	7.5	4.3	47	7.8	.00	.00	.00	.00	.00
28	.00	.00	14	5.3	3.3	43	13	.00	.00	.00	.00	.00
29	.00	.00	8.1	3.7	---	39	16	.00	.00	.00	.00	.00
30	.00	.00	5.0	2.7	---	27	7.2	.00	.00	.00	.00	.00
31	.00	---	4.0	2.6	---	20	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	703.01	550.5	235.2	11208.6	152.17	43.00	0.30	0.00	0.00	0.00
MEAN	.000	.000	22.7	17.8	8.40	362	5.07	1.39	.010	.000	.000	.000
MAX	.00	.00	144	199	23	2660	20	5.9	.30	.00	.00	.00
MIN	.00	.00	.00	1.7	2.0	2.2	.97	.00	.00	.00	.00	.00
AC-FT	.00	.00	1390	1090	467	22230	302	85	.6	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1998, BY WATER YEAR (WY)

MEAN	121	56.9	53.4	34.7	67.2	97.5	196	391	207	32.8	18.8	61.1
MAX	2363	498	1025	369	1049	697	3186	3127	1689	251	134	416
(WY)	1982	1958	1992	1985	1997	1990	1957	1989	1989	1975	1989	1962
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1978	1978	1959	1959	1959	1956	1956	1984	1984	1963	1972	1956

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1956 - 1998	
ANNUAL TOTAL	46540.70		12892.78			
ANNUAL MEAN	128		35.3			
HIGHEST ANNUAL MEAN					113	
LOWEST ANNUAL MEAN					564	1957
HIGHEST DAILY MEAN	5730	Feb 21	2660	Mar 17	.072	1984
LOWEST DAILY MEAN	.00	Aug 26	.00	Oct 1	.00	Mar 1 1956
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 26	.00	Oct 1	.00	Mar 1 1956
INSTANTANEOUS PEAK FLOW			2940	Mar 17	35100	Apr 27 1957
INSTANTANEOUS PEAK STAGE			20.55	Mar 17	32.10	Apr 27 1957
ANNUAL RUNOFF (AC-FT)	92310		25570		81910	
10 PERCENT EXCEEDS	234		20		135	
50 PERCENT EXCEEDS	1.6		.00		.80	
90 PERCENT EXCEEDS	.00		.00		.00	

08043000 BRIDGEPORT RESERVOIR ABOVE BRIDGEPORT, TX

LOCATION.--Lat 33°13'22", long 97°49'54", Wise County, Hydrologic Unit 12030101, in brick valve house on upstream side and near left end of Bridgeport Dam on West Fork Trinity River, 4.6 mi west of Bridgeport, 13 mi upstream from Big Sandy Creek and at mile 626.

DRAINAGE AREA.--1,111 mi².

PERIOD OF RECORD.--Apr 1932 to current year. Prior to Oct 1950, end-of-month values only.
Water-quality records.--Chemical analyses: Oct 1969 to Sep 1984.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Jan 12, 1988, nonrecording gages at various sites in vicinity of present gage at present datum. Satellite telemeter at station.

REMARKS.--Records good. The reservoir is formed by a rolled earthfill dam 2,040 ft long. The dam was completed in Dec 1931 and storage began Apr 1, 1932. The original dam was 1,900 ft long, but was lengthened to the present length (2,040 ft) in 1971-72. The original service spillway was eliminated during construction (1971-72), and a new spillway with approach and discharge channels was built through natural ground 2,800 ft from the left end of dam. The new spillway is 90 ft wide and has eight vertical lift gates that are 11.25 x 22-ft. The controlled outlet works consist of a 48-inch diameter and an 18-inch diameter pipe encased in a concrete conduit extending through the dam. In addition, a controlled 60-inch diameter steel pipe extends through the service spillway wall to the spillway discharge basin. For elevations of outlet works, see table below. Capacity tables are based on surveys made in 1956 and 1968. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	874.0
Crest of spillway.....	866.0
Top of gates.....	842.0
Top of conservation pool.....	836.0
Sill of gates.....	820.0
Lowest value outlet (invert).....	751.4

COOPERATION.--Capacity table No. 5-C was provided by Tarrant Regional Water District. The table was put into use Oct 1, 1988.

EXTREMES FOR PERIOD OF RECORD.--Prior to Jan 12, 1988, once-daily reading of nonrecording gage at 0700 hours; maximum contents observed, 491,700 acre-ft, May 5, 1990 (elevation, 844.36 ft); minimum contents observed since first appreciable storage in 1935, 7,170 acre-ft, Oct 12-16, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 400,100 acre-ft, Mar 18-19 (elevation, 837.92 ft); minimum contents, 298,700 acre-ft, Sep 30 (elevation, 829.70 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	343500	337800	332500	335700	344300	350000	374500	372600	369800	359700	328900	310000
2	343000	337500	333100	336200	344400	349900	374700	372500	369800	359200	328100	309800
3	342300	336900	332700	336500	344400	349600	374400	372400	369700	357600	327200	309200
4	341900	336900	332500	337200	344300	349400	374200	372100	370200	356100	326500	308600
5	341400	336800	332300	337500	345100	349600	374200	372100	369700	355200	326400	308000
6	341100	336500	332100	338200	345100	349400	372900	372000	369000	353900	325300	307900
7	340800	336300	332500	339000	345200	355800	374200	371900	368800	353000	324700	307500
8	340500	336200	332600	339500	345200	358600	374000	373000	368000	352100	323800	307000
9	340200	336200	332300	339600	345400	360200	373900	373800	368300	351100	322900	306300
10	339700	335900	331900	339700	345400	361200	373800	373500	368300	350100	322100	305600
11	339100	335700	331800	339700	345200	361600	373500	373100	369700	349100	321300	305000
12	340200	336100	331500	339700	345600	361800	373300	373300	369600	348200	320600	304300
13	339600	336300	331500	339700	345700	362200	373600	373100	369000	347300	319900	304400
14	339400	336000	331400	339700	345600	362500	373400	372900	369200	346300	319300	303800
15	339100	335900	331400	339600	345700	364000	373500	373000	368900	345500	318500	303400
16	338900	335600	331400	339700	346200	392300	373300	372800	368500	344600	317500	303400
17	338800	335500	331300	339600	346300	397300	373300	372600	367900	343500	316800	303200
18	338400	335400	331200	339600	346500	400100	373100	372500	367400	342500	316400	303000
19	338400	335300	331200	339500	346600	397700	373000	372200	366800	341700	315900	302700
20	338200	335300	333500	339600	346600	392100	373600	372100	366000	340700	315200	302400
21	338200	334900	334200	341200	348000	385300	373400	372000	365500	339600	314500	301900
22	338000	334500	334400	342500	349000	378300	373300	372000	364600	338500	314200	302000
23	339600	334200	334900	343300	349300	376100	373100	371700	363700	337500	313700	301700
24	339500	333900	336000	343400	348800	375200	372800	371600	362700	336500	313300	301300
25	339400	333600	336200	343800	349600	374500	372800	371300	361800	335600	312700	301000
26	338500	333600	336600	343800	350500	373100	373500	371300	361200	334500	312100	300400
27	338200	333200	336300	343800	350500	374400	373300	371500	360800	333800	311900	300100
28	338000	333500	336300	343900	350300	374200	372900	371500	360500	332700	311500	299700
29	337900	333100	336300	343800	---	374000	372800	371300	360100	331800	311200	299200
30	338000	332700	336300	343800	---	374800	372800	371000	360100	330700	310700	298700
31	337900	---	336200	344300	---	374400	---	370800	---	329700	310400	---
MAX	343500	337800	336600	344300	350500	400100	374700	373800	370200	359700	328900	310000
MIN	337900	332700	331200	335700	344300	349400	372800	370800	360100	329700	310400	298700
(+)	833.05	832.62	832.91	833.57	834.06	835.97	835.84	835.69	834.84	832.37	830.72	829.70
(@)	-6100	-5200	+3500	+8100	+6000	+24100	-1600	-2000	-10700	-30400	-19300	-11700
CAL YR 1997	MAX 401300	MIN 325800	(@)	+7200								
WTR YR 1998	MAX 400100	MIN 298700	(@)	-45300								

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

08043950 BIG SANDY CREEK NEAR CHICO, TX

LOCATION.--Lat 33°16'27", long 97°40'42", Wise County, Hydrologic Unit 12030101, at left downstream side of bridge on Farm Road 1810, 4.5 mi upstream from Greathouse Branch, 6.0 mi east of Chico, and 6.5 mi upstream from mouth.

DRAINAGE AREA.--312 mi².

PERIOD OF RECORD.--Oct 1936 to current year. Prior to 1996 water year, published as "near Bridgeport" (station 08044000).
Water-quality records.--Chemical and biochemical analyses: Apr 1993 to Sep 1995; sediment analyses: Apr 1993 to Sep 1995.

REVISED RECORDS.--WSP 1148: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage has not been determined. Prior to May 24, 1996 at datum of 724.44 ft, prior to Oct 1, 1984, at datum 3.00 ft higher. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good except those for daily discharges below 1 ft³/s, which are fair. Since May 1, 1956, runoff from 100 mi² above this station is affected at times by storage in Lake Amon G. Carter, 30 mi upstream, with a capacity of 15,240 acre-ft at elevation 920.0 ft (spillway crest). During the year, the city of Bowie diverted water from Lake Amon G. Carter for municipal use and discharged wastewater effluent into tributaries to Big Sandy Creek upstream from this station. Flow was also affected at times by discharge from the flood-detention pools of 19 floodwater-retarding structures with a combined capacity of 11,430 acre-ft. These structures control runoff from a 46.0 mi² area upstream from this station and below Lake Amon G. Carter.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--20 years (water years 1936-55), 85.6 ft³/s (62,030 acre-ft/yr) at site and datum then in use.

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1936-55).--Maximum discharge, 53,000 ft³/s Jun 10, 1941 (gage height, 15.69 ft) at site and datum then in use; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stages since at least 1887 occurred in 1908 and 1915 and reached about the same stage as that of Jun 10, 1941, at site and datum then in use.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.18	.08	1.1	8.4	52	29	139	28	3.0	16	.26	.08
2	.17	.05	1.9	9.8	39	28	122	25	2.4	27	.17	.08
3	.16	.07	3.3	8.5	29	26	112	22	2.1	41	.21	.04
4	.14	.12	1.1	57	25	26	103	20	3.1	58	.33	.05
5	.14	.13	.72	27	29	25	97	19	3.4	70	.31	.04
6	.15	.10	.70	37	39	24	93	17	3.8	67	.22	.03
7	.21	.13	1.3	104	34	394	86	16	3.3	51	.20	.04
8	.22	.14	5.7	285	28	568	81	16	3.3	26	.19	.04
9	.38	.17	6.9	146	25	224	75	30	3.0	13	.42	.04
10	.21	.17	4.0	62	24	131	71	28	2.5	7.1	.90	.03
11	.24	.14	2.1	39	22	101	66	20	26	4.1	2.0	.04
12	.47	.24	1.5	30	21	88	64	16	24	2.4	2.8	.06
13	.27	.33	1.3	24	23	83	59	13	9.6	.48	.25	.06
14	.15	.39	1.2	21	24	80	56	13	5.6	.47	.17	.06
15	.14	.27	1.1	20	23	88	53	12	3.5	.55	.20	.06
16	.14	.19	1.1	20	25	1370	65	10	3.0	.47	.24	.07
17	.15	.19	1.1	17	30	1870	55	9.8	2.9	.31	.17	.07
18	.15	.21	.86	16	31	1260	47	9.5	2.4	.33	.16	.06
19	.15	.22	.49	15	29	744	43	8.6	2.4	.27	.15	.05
20	.14	.27	17	15	27	571	40	8.1	2.7	.54	.14	.05
21	.18	.74	230	28	33	475	45	7.5	2.4	.37	.14	.04
22	.18	1.1	135	437	179	394	41	7.4	1.5	.72	.12	.04
23	.59	2.2	58	197	97	330	35	7.3	1.2	.51	.10	.02
24	5.2	2.3	142	77	59	286	32	7.1	1.0	.90	.09	.04
25	1.3	2.3	74	47	46	251	28	6.7	.88	.34	.08	.03
26	.22	2.6	31	37	40	220	37	6.2	.74	.39	.07	.03
27	.14	1.9	20	32	36	200	96	6.4	.73	.25	.05	.03
28	.13	1.9	16	29	32	182	51	6.4	.65	.41	.10	.03
29	.13	2.3	13	25	---	166	37	5.6	1.3	.24	.13	.03
30	.15	1.3	11	24	---	157	31	4.8	6.6	.38	.08	.03
31	.13	---	9.2	28	---	160	---	3.8	---	.19	.09	---
TOTAL	12.31	22.25	793.67	1922.7	1101	10551	1960	410.2	129.00	390.72	10.54	1.37
MEAN	.40	.74	25.6	62.0	39.3	340	65.3	13.2	4.30	12.6	.34	.046
MAX	5.2	2.6	230	437	179	1870	139	30	26	70	2.8	.08
MIN	.13	.05	.49	8.4	21	24	28	3.8	.65	.19	.05	.02
AC-FT	24	44	1570	3810	2180	20930	3890	814	256	775	21	2.7

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1998z, BY WATER YEAR (WY)

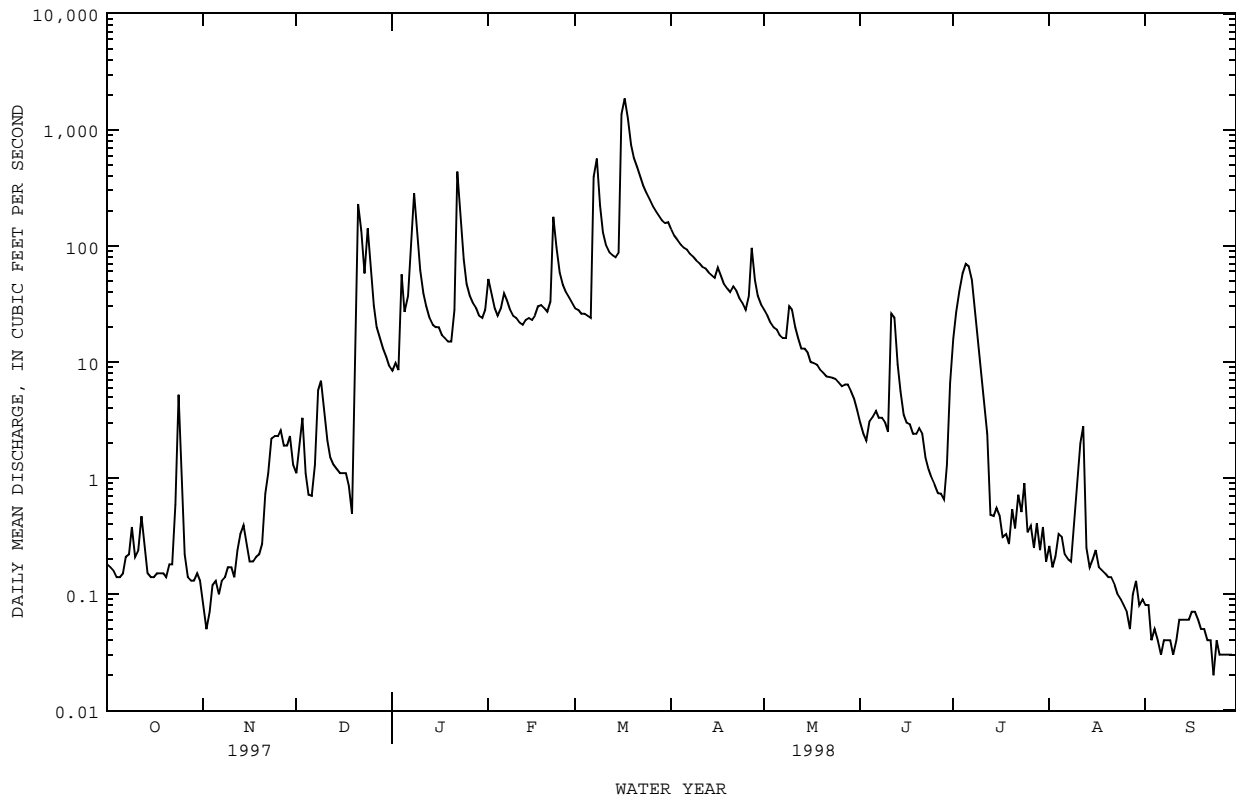
MEAN	106	42.1	42.0	30.2	46.9	89.5	106	229	139	20.1	11.3	29.0
MAX	1829	298	743	257	272	570	1175	1284	1250	181	230	491
(WY)	1982	1965	1992	1992	1997	1977	1957	1990	1989	1973	1973	1962
MIN	.000	.000	.000	.000	.72	.000	.000	.002	.000	.000	.000	.000
(WY)	1959	1956	1956	1956	1959	1956	1956	1980	1956	1964	1957	1956

TRINITY RIVER BASIN

08043950 BIG SANDY CREEK NEAR CHICO, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1956 - 1998z	
ANNUAL TOTAL	23964.79		17304.76		74.5	
ANNUAL MEAN	65.7		47.4		2.12	
HIGHEST ANNUAL MEAN					317	1982
LOWEST ANNUAL MEAN					2.12	1956
HIGHEST DAILY MEAN	1700	Feb 21	1870	Mar 17	23800	Oct 13 1981
LOWEST DAILY MEAN	.05	Nov 2	.02	Sep 23	.00	Oct 1 1955
ANNUAL SEVEN-DAY MINIMUM	.10	Oct 31	.03	Sep 23	.00	Oct 5 1955
INSTANTANEOUS PEAK FLOW			1980	Mar 17	g45000	Oct 13 1981
INSTANTANEOUS PEAK STAGE			13.39	Mar 17	g14.78	Oct 13 1981
ANNUAL RUNOFF (AC-FT)	47530		34320		53970	
10 PERCENT EXCEEDS	141		96		96	
50 PERCENT EXCEEDS	9.1		3.8		6.9	
90 PERCENT EXCEEDS	.21		.08		.00	

z Period of regulated streamflow.
g At site and datum then in use.



08044500 WEST FORK TRINITY RIVER NEAR BOYD, TX

LOCATION.--Lat 33°05'07", long 97°33'30", Wise County, Hydrologic Unit 12030101, on right bank on downstream side of highway embankment, 10 ft right of right abutment of bridge on Farm Road 730, 0.6 mi northeast of Boyd, 3.5 mi downstream from Boggy Creek and at mile 602.

DRAINAGE AREA.--1,725 mi².

PERIOD OF RECORD.--Jan 1947 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 660.57 ft above sea level. Prior to Dec 14, 1954, water-stage recorder at site 2.2 mi downstream at datum 5.48 ft lower. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in Jan 1947, at least 10% of contributing drainage area has been regulated by Bridgeport Reservoir (station 08043000) 25 mi upstream and by Lake Carter. In addition, flow from a 91.2 mi² area above station is affected at times by discharge from the flood-detention pools of 36 floodwater-retarding structures with a total combined detention capacity of 24,450 acre-ft in the Big Sandy and Salt Creek drainage basins. Several observations of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1880, about 25 ft in May 1908, present site and datum, from information by local residents, who also reported a flood of about the same gage height between 1870-80. A flood in Apr 1942 reached a stage of 20.6 ft, present site and datum, from information by Texas Department of Transportation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	124	13	124	26	83	51	466	71	22	13	245	57
2	122	13	128	25	80	47	472	65	20	13	240	64
3	120	12	142	26	58	45	314	61	22	40	236	65
4	120	12	88	168	46	43	217	57	21	399	236	65
5	120	12	70	243	45	44	196	54	19	445	239	65
6	120	12	64	78	92	42	183	51	24	464	241	65
7	155	12	31	271	72	69	177	48	21	449	239	65
8	200	12	27	537	53	607	163	46	19	307	237	64
9	172	13	33	559	46	716	151	307	18	268	236	97
10	136	14	24	320	43	439	140	239	17	265	234	135
11	130	14	21	119	40	203	135	94	23	262	233	138
12	142	16	18	73	38	125	129	66	49	261	233	143
13	124	19	16	62	39	106	116	55	39	261	233	145
14	36	23	16	52	41	100	106	46	25	259	235	150
15	20	21	15	47	40	105	100	44	19	258	235	142
16	17	18	15	42	40	1990	95	41	17	256	233	108
17	17	18	14	40	45	5400	106	39	15	255	230	65
18	17	17	14	36	52	5030	93	37	19	255	209	46
19	16	17	14	34	47	5580	85	36	148	254	152	45
20	16	17	36	33	43	5150	82	35	160	253	148	44
21	16	19	569	34	70	5170	94	35	161	252	146	43
22	16	111	591	280	799	5670	104	33	162	251	146	43
23	33	122	281	526	755	5900	90	31	220	250	145	43
24	96	121	275	305	341	4830	77	30	268	249	145	42
25	48	123	221	107	131	2120	71	30	271	248	144	42
26	22	125	92	62	85	1110	69	29	273	246	143	72
27	16	124	54	51	68	815	192	30	189	244	111	115
28	15	126	42	46	57	617	173	29	32	243	64	116
29	14	127	38	43	---	518	93	29	18	242	63	116
30	14	124	32	40	---	459	78	26	14	241	64	116
31	13	---	28	40	---	452	---	24	---	241	63	---
TOTAL	2227	1427	3133	4325	3349	53553	4567	1818	2325	7944	5758	2516
MEAN	71.8	47.6	101	140	120	1728	152	58.6	77.5	256	186	83.9
MAX	200	127	591	559	799	5900	472	307	273	464	245	150
MIN	13	12	14	25	38	42	69	24	14	13	63	42
AC-FT	4420	2830	6210	8580	6640	106200	9060	3610	4610	15760	11420	4990

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 1998, BY WATER YEAR (WY)

	307	193	184	109	146	233	273	729	480	205	224	182
MEAN	307	193	184	109	146	233	273	729	480	205	224	182
MAX	4063	1248	3073	929	2003	1728	4339	5908	5439	1330	1157	1643
(WY)	1982	1982	1992	1992	1997	1998	1990	1990	1989	1950	1950	1962
MIN	2.96	4.81	2.21	.75	.10	.26	.59	25.2	2.76	7.11	.025	.23
(WY)	1957	1984	1953	1956	1953	1955	1955	1959	1953	1979	1980	1956

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1947 - 1998

ANNUAL TOTAL	158546	92942										
ANNUAL MEAN	434	255										
HIGHEST ANNUAL MEAN										273		
LOWEST ANNUAL MEAN										1094		1982
HIGHEST DAILY MEAN	6270	Feb 21				5900	Mar 23		38800		Oct 14	1981
LOWEST DAILY MEAN	12	Nov 3				12	Nov 3		.00		Aug 6	1948
ANNUAL SEVEN-DAY MINIMUM	12	Nov 2				12	Nov 2		.00		Sep 25	1952
INSTANTANEOUS PEAK FLOW						6200	Mar 23		60400		Oct 14	1981
INSTANTANEOUS PEAK STAGE						18.28	Mar 23		25.87		Oct 14	1981
ANNUAL RUNOFF (AC-FT)	314500	184400							197900			
10 PERCENT EXCEEDS	999	307							502			
50 PERCENT EXCEEDS	125	78							69			
90 PERCENT EXCEEDS	18	17							4.0			

TRINITY RIVER BASIN

08044800 WALNUT CREEK AT RENO, TX

LOCATION.--Lat 32°56'44", long 97°34'58", Parker County, Hydrologic Unit 12030101, on left bank at abandoned bridge abutment, 100 ft upstream from bridge on FM 1542, 3,500 ft upstream from Cottonwood Branch and 2.4 mi west of intersection of FM 1542 and FM 730 in Center Point.

DRAINAGE AREA.--75.6 mi².

PERIOD OF RECORD.--Apr 1992 to Sep 1995 (annual maximum). Oct 1995 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 681.11 ft above sea level. Prior to Dec 11, 1995, at site 100 ft downstream on FM 1542 bridge. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. No known regulation or diversions.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 16	0815	7,020	15.47	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	3.4	4.5	5.6	26	11	17	6.0	4.3	2.2	.90	.85
2	2.3	3.1	9.0	5.9	11	10	15	5.7	3.9	2.0	.92	.81
3	2.2	2.9	23	6.1	9.6	11	14	5.4	3.6	1.8	.91	.76
4	2.2	3.4	6.0	19	9.3	12	13	5.2	3.4	1.8	.90	.74
5	2.1	3.7	4.7	19	15	12	14	5.4	3.6	1.9	1.2	.73
6	2.1	3.4	4.4	46	18	12	14	5.4	3.7	1.9	1.4	.73
7	2.6	3.4	7.9	112	11	62	14	5.1	3.8	1.8	1.2	.78
8	3.4	3.6	25	68	10	55	12	5.2	3.9	1.7	1.0	.80
9	3.9	3.9	7.1	26	9.9	33	11	17	3.8	1.7	.96	.77
10	3.1	4.0	4.8	16	9.7	17	11	6.9	3.8	1.6	.93	.77
11	3.1	4.0	4.4	13	9.1	15	10	6.0	15	1.4	.91	.81
12	5.5	5.0	4.4	13	9.4	14	10	6.0	6.6	1.3	.94	1.0
13	3.8	11	4.5	11	14	14	10	6.2	4.0	1.1	1.3	1.1
14	3.1	6.2	4.8	9.9	11	15	9.0	6.8	3.4	1.1	1.2	1.2
15	3.0	4.3	4.8	9.6	10	25	8.9	7.3	3.0	1.2	1.1	1.1
16	2.9	4.0	4.8	9.5	11	2350	8.6	6.6	2.8	1.0	1.0	2.3
17	2.8	4.1	4.7	8.9	15	126	8.1	6.9	3.2	1.1	.95	3.2
18	3.0	4.3	4.7	8.7	11	64	7.9	8.0	3.4	1.0	.96	2.6
19	3.1	4.3	4.7	8.4	11	47	8.1	7.4	3.3	1.0	.99	1.8
20	3.0	4.4	92	9.1	11	39	8.4	7.4	3.1	.99	1.0	1.3
21	3.2	4.4	211	8.9	99	35	13	8.0	2.8	1.1	.99	1.1
22	3.5	4.3	21	9.4	290	32	8.7	8.2	2.7	1.1	1.0	.94
23	85	4.3	13	9.1	40	30	7.8	7.7	2.5	1.1	1.1	.92
24	22	4.3	30	9.2	24	28	7.0	7.7	2.4	1.0	1.1	.94
25	5.3	4.4	9.5	9.3	19	25	6.4	7.7	2.3	1.0	.97	.92
26	3.6	4.4	7.8	9.6	17	24	6.3	7.7	2.3	.95	.92	.92
27	3.5	4.5	7.2	9.2	13	24	6.8	18	2.3	.98	.88	.96
28	3.7	4.6	6.8	9.3	11	22	6.6	8.6	2.2	.97	.85	.97
29	3.8	4.5	6.1	8.7	---	21	6.2	6.2	2.2	.96	.86	.95
30	3.9	4.3	6.0	8.7	---	21	6.0	4.9	2.1	.92	.81	.93
31	3.6	---	5.8	12	---	26	---	4.4	---	.90	.81	---
TOTAL	201.0	130.4	554.4	528.1	755.0	3232	298.8	225.0	109.4	40.57	30.96	33.70
MEAN	6.48	4.35	17.9	17.0	27.0	104	9.96	7.26	3.65	1.31	1.00	1.12
MAX	85	11	211	112	290	2350	17	18	15	2.2	1.4	3.2
MIN	2.1	2.9	4.4	5.6	9.1	10	6.0	4.4	2.1	.90	.81	.73
AC-FT	399	259	1100	1050	1500	6410	593	446	217	80	61	67

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1998, BY WATER YEAR (WY)

	1996	1997	1998	1996	1997	1998	1996	1997	1998	1996	1997	1998
MEAN	4.39	41.8	10.6	9.66	68.5	62.2	34.5	33.6	16.9	7.03	8.87	3.13
MAX	6.48	120	17.9	17.0	178	104	82.1	92.2	45.4	19.1	14.6	4.52
(WY)	1998	1997	1998	1998	1997	1998	1997	1997	1997	1997	1997	1996
MIN	.36	.53	2.92	3.86	2.59	6.95	9.96	1.43	1.56	.65	1.00	1.12
(WY)	1996	1996	1996	1996	1996	1996	1998	1996	1996	1996	1998	1998

SUMMARY STATISTICS

	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1996 - 1998
ANNUAL TOTAL	16314.1	6139.33	
ANNUAL MEAN	44.7	16.8	24.8
HIGHEST ANNUAL MEAN			53.7
LOWEST ANNUAL MEAN			3.98
HIGHEST DAILY MEAN	1410	Feb 20	2350
LOWEST DAILY MEAN	2.1	Oct 5	.73
ANNUAL SEVEN-DAY MINIMUM	2.3	Oct 1	.76
INSTANTANEOUS PEAK FLOW			7020
INSTANTANEOUS PEAK STAGE			15.47
ANNUAL RUNOFF (AC-FT)	32360	12180	17970
10 PERCENT EXCEEDS	84	21	34
50 PERCENT EXCEEDS	8.6	4.7	4.3
90 PERCENT EXCEEDS	3.3	.96	.59

08045000 EAGLE MOUNTAIN RESERVOIR ABOVE FORT WORTH, TX

LOCATION.--Lat 32°52'39", long 97°28'29", Tarrant County, Hydrologic Unit 12030101, at right end of main section of Eagle Mountain Dam on West Fork Trinity River, 11.8 mi northwest of Fort Worth and at mile 583.3.

DRAINAGE AREA.--1,970 mi².

PERIOD OF RECORD.--Feb 1934 to current year. Prior to Oct 1950, end-of-month values only.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Oct 16, 1988, nonrecording gages at several sites within 1.0 mi of present site at present datum. Satellite telemeter at station.

REMARKS.--Records good. The reservoir is formed by two sections of rolled earthfill and a concrete spillway separated by high natural ground. Total length of the dam including spillway is 4,800 ft. The dam was completed Oct 24, 1932, and storage began Feb 24, 1934. The spillway is a 1,300-foot-wide cut through natural ground located between the two sections of earthfill that make up the dam. The original service spillway, located in the section to the right of the main dam, contains a concrete spillway with four 25-foot bays, three are equipped with vertical lift gates and the fourth is left open. In 1971, a side-channel spillway was constructed. The newest spillway is located 300 ft to the left of the original service spillway and has six 11.25 x 22-foot-wide roller lift gates. The main section of the dam contains the outlet works that consist of two concrete conduits with two 48-inch diameter valves in each conduit. The reservoir is used for flood control and for part of the municipal water supply for the city of Fort Worth. For statement regarding regulation by Natural Resource Conservation Service floodwater-retarding structures and other storage above the reservoir, see REMARKS for West Fork Trinity River near Boyd (station 08044500). Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	682.0
Crest of spillway.....	676.0
Top of gates (new side-channel spillway).....	659.0
Crest of (old service) spillway (top of conservation pool).....	649.1
Crest of spillway (new side-channel spillway).....	637.0
Lowest gated outlet (invert).....	599.9

COOPERATION.--Capacity table, No. 4-C, furnished by Tarrant Regional Water District, was put into use Oct 1, 1988.

EXTREMES FOR PERIOD OF RECORD.--Prior to Oct 16, 1987, once-daily reading of nonrecording gage at 0700 hours, maximum contents observed, 333,500 acre-ft, Apr 26, 1942 (elevation, 659.9 ft); minimum contents observed since first appreciable storage in 1935, 57,690 acre-ft, Nov 19, 20, 1956 (elevation, 629.3 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 191,000 acre-ft, Mar 16 (elevation, 650.45 ft); minimum contents, 146,600 acre-ft, Sep 30 (elevation, 645.30 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	161500	162500	158100	169300	179100	178400	179600	178700	175300	163100	155100	153900
2	161200	162300	159000	169600	178900	178400	179700	178800	174900	162300	155000	153600
3	161100	161900	159200	170000	178700	178400	179400	178500	174300	161200	154800	153200
4	160900	161400	159500	171800	178400	178600	178900	178100	173800	161200	154700	152700
5	160500	161300	159500	173000	178500	179000	178400	178300	173600	161400	155000	151900
6	160500	160800	159400	174900	178400	179100	178700	178300	173100	161600	155000	151400
7	160500	160400	160000	176200	178400	179500	178900	178200	172600	161800	154800	150900
8	160700	159900	160100	177800	178600	178800	178800	178900	172200	161900	154800	150400
9	161600	159900	160500	178900	178700	178300	178400	179200	172000	161700	154800	149700
10	161700	159200	160200	178900	179300	177900	178300	179600	171900	161600	154800	149200
11	162200	158900	160100	178700	178900	178200	178000	179200	171700	161200	154800	148800
12	163400	159000	159900	178400	178900	178200	177700	179100	171500	161200	154800	148500
13	163100	159100	160000	178000	178800	178600	178500	178800	171000	160800	155200	148400
14	163000	159100	159900	178600	178700	179100	178500	178600	170900	160500	155500	148300
15	162900	158600	159700	178200	178700	180100	178600	178600	170300	160300	155700	148300
16	162800	158300	159900	178500	178800	188400	178900	178400	169600	160100	155800	149500
17	162600	158000	159700	178400	178600	184400	178900	178200	168900	159800	155800	149500
18	162400	157800	159600	178800	178600	183500	178900	178100	168700	159500	155900	149400
19	162300	157600	159500	178600	178500	182400	178900	178000	168300	159200	155900	149100
20	162200	157600	162100	178900	178500	180800	179500	177800	167800	158900	155900	148800
21	162000	157400	164600	179000	180400	180200	179300	177600	167800	158500	155800	148500
22	161500	157300	165900	178800	179800	180600	179300	177100	167400	158200	155700	148400
23	163500	157300	167600	179000	178900	181500	179100	177200	166700	157800	155600	148100
24	163700	157300	168100	179100	178100	181900	178400	176900	166200	157400	155500	147700
25	163700	157400	168700	179100	179800	180300	178500	176900	166200	157100	155500	147300
26	163300	157600	169300	178700	178800	179600	178900	176800	166000	156800	155300	147100
27	163000	157800	169200	178300	178200	179900	178900	177300	165600	156500	155200	147000
28	162800	158100	169500	178400	178300	178900	178900	176900	165100	156100	155000	147000
29	162700	158300	169400	178500	---	178700	178900	176600	164500	155800	154700	146900
30	162900	158100	169600	178700	---	179600	178800	176100	163800	155500	154400	146600
31	162800	---	169500	179000	---	179600	---	175900	---	155200	154200	---
MAX	163700	162500	169600	179100	180400	188400	179700	179600	175300	163100	155900	153900
MIN	160500	157300	158100	169300	178100	177900	177700	175900	163800	155200	154200	146600
(+)	647.30	646.74	648.09	649.17	649.09	649.23	649.14	648.82	647.42	646.39	646.26	645.30
(@)	+1100	-4700	+11400	+9500	-700	+1300	-800	-2900	-12100	-8600	-1000	-7600
CAL YR 1997	MAX 195300	MIN 157300	(@) -9400									
WTR YR 1998	MAX 188400	MIN 146600	(@) -15100									

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

TRINITY RIVER BASIN

08045400 LAKE WORTH ABOVE FORT WORTH, TX

LOCATION.--Lat 32°47'21", long 97°24'58", Tarrant County, Hydrologic Unit 12030102, on top of Lake Worth Dam on West Fork Trinity River, 240 ft to right of right end of uncontrolled concrete spillway, 2.9 mi upstream from Farmer's Branch, 3.3 mi upstream from bridge on State Highway 183 crossing West Fork Trinity River, 5.3 mi northwest of Tarrant County Courthouse in Fort Worth and at river mile 572.0.

DRAINAGE AREA.--2,064 mi².

PERIOD OF RECORD.--Oct 1981 to current year.

Water-quality records.--Chemical analyses: Jan 1970 to Sep 1984.

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

REMARKS.--Record good. The lake is formed by a rolled earthfill dam 3,200 ft long, with an uncontrolled concrete spillway 700 ft long near the center of the dam. Deliberate impoundment began in Jun 1914 and the dam was completed in Oct 1914. There is a 48-inch diameter pipe controlled by a 36-inch valve, which may be used to make small releases through the dam. The dam is owned by the city of Fort Worth. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	606.3
Crest of concrete spillway.....	594.0
Lowest gated outlet (invert).....	584.25

COOPERATION.--Capacity Table 1-C was provided by Tarrant Regional Water District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 56,040 acre-ft, May 3, 1990 (elevation, 598.70 ft); minimum contents, 24,730 acre-ft Sep 9-10, 1985 (elevation, 589.95 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 44,680 acre-ft, Mar 17 (elevation, 596.04 ft); minimum contents, 30,330 acre-ft, Sep 5-6 (elevation, 591.93 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33890	33560	34200	36060	37070	37390	37860	36560	33830	33660	34030	30670
2	33790	33310	34640	35990	37210	37180	37930	36600	33690	33660	34030	30540
3	33720	33220	34540	36020	37430	37000	37750	36600	33630	33660	33930	30450
4	33660	33060	34400	36900	37470	37040	37720	36430	33830	33790	34130	30390
5	33660	32930	34230	37040	37470	37000	37610	36330	33720	33960	34200	30360
6	33760	32840	34100	37470	37290	37070	37290	36190	33690	33930	34200	30360
7	33860	32900	34600	37650	37140	37540	37040	35990	33660	33830	34260	30420
8	34100	32990	34540	37470	37000	38510	37140	36560	33630	33690	34230	30420
9	34940	33340	34430	37430	36970	38730	37180	36700	33630	33630	34160	30390
10	34770	33340	34330	37830	37040	38510	37110	36600	33790	33530	34130	30420
11	34840	33470	34200	38010	36800	37900	36900	36390	33960	33410	34100	30670
12	35280	33760	34100	38110	37000	37540	36730	36430	33990	33410	33960	31040
13	34910	33890	33990	37860	37070	37290	36630	36460	33930	33370	34030	31290
14	34740	33930	33890	37500	37140	37250	36460	36460	33960	33340	33930	31420
15	34570	33860	33760	37140	37210	37680	36390	36260	33860	33410	33760	31420
16	34370	33830	33720	37040	37390	44520	36360	36060	33720	33470	33630	31510
17	34200	33860	33660	36870	37210	43750	36230	35820	33630	33560	33470	31540
18	33960	33890	33660	36900	37320	43330	36160	35620	33600	33660	33370	31480
19	33830	33860	33790	36730	37290	43210	36060	35380	33440	33660	33340	31450
20	33790	33960	35480	36800	37210	43060	36260	35110	33310	33690	33120	31360
21	33890	33890	36120	36930	37930	42790	36190	34870	33250	33720	32870	31260
22	33830	33860	36160	37110	39370	42520	36290	34600	33250	33790	32740	31260
23	35010	33830	36770	37390	39630	42520	36330	34400	33340	33790	32550	31170
24	34840	33830	36700	37500	38830	42520	36290	34130	33470	33860	32330	31110
25	34670	33930	36770	37680	39340	42100	36330	33960	33560	34030	32140	30950
26	34470	33930	36830	37650	39190	40490	36560	33760	33600	34200	31860	30950
27	34260	33960	36600	37570	38580	39730	36600	34130	33600	34300	31640	30890
28	34130	34160	36560	37360	37790	39410	36600	34130	33560	34260	31450	30790
29	33990	34200	36330	37110	---	38580	36560	34100	33630	34200	31330	30700
30	33930	34200	36260	36970	---	38370	36630	34030	33660	34100	31070	30670
31	33790	---	36120	37040	---	37970	---	34030	---	34060	30850	---
MAX	35280	34200	36830	38110	39630	44520	37930	36700	33990	34300	34260	31540
MIN	33660	32840	33660	35990	36800	37000	36060	33760	33250	33340	30850	30360
(+)	593.03	593.15	593.72	593.99	594.20	594.25	593.87	593.10	592.99	593.11	592.10	592.04
(@)	-100	+410	+1920	+920	+750	+180	-1340	-2600	-370	+400	-3210	-180
CAL YR 1997	MAX 46930	MIN 31730	(@) -310									
WTR YR 1998	MAX 44520	MIN 30360	(@) -3220									

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

08045850 CLEAR FORK TRINITY RIVER NEAR WEATHERFORD, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 32°44'25", long 97°39'06", Parker County, Hydrologic Unit 12030102, near left end of bridge on weigh station exit road associated with Interstate Highway 20, 150 ft downstream from Squaw Creek, 2.8 mi downstream from Lake Weatherford Dam on the Clear Fork Trinity River, 3.8 mi upstream from South Fork Trinity River and 8.5 mi east of county courthouse in Weatherford.

DRAINAGE AREA.--121 mi².

PERIOD OF RECORD.--May 1980 to Sep 1985. Oct 1985 to current year (peaks above base discharge).
Water-quality records.--Chemical and biochemical analyses: Oct 1980 to Sep 1982.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 810.00 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair. Flow regulated by Lake Weatherford, 2.8 mi upstream.

AVERAGE DISCHARGE FOR PERIOD.--5 years (water years 1981-85), 23.0 ft³/s (16,660 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,810 ft³/s Apr 27, 1990 (gage height, 22.07 ft); minimum, no flow Sep 12-15, 1984.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 190 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct 23	1100	454	11.10	Feb 25	2100	506	11.30
Feb 22	1115	344	10.64	Mar 16	0600	936	12.72

TRINITY RIVER BASIN

08046500 BENBROOK LAKE NEAR BENBROOK, TX

LOCATION.--Lat 32°39'02", long 97°26'54", Tarrant County, Hydrologic Unit 12030102, in intake structure of Benbrook Dam on Clear Fork Trinity River, 2.5 mi south of Benbrook, 3.5 mi upstream from Marys Creek and 14.6 mi upstream from mouth.

DRAINAGE AREA.--429 mi².

PERIOD OF RECORD.--Sep 1952 to current year. Prior to Oct 1970, published as "Benbrook Reservoir".

REVISED RECORDS.--WSP 1922: Drainage area.

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

REMARKS.--The lake is formed by a rolled earthfill dam 9,130 ft long, including a 500-foot uncontrolled off-channel concrete-gravity spillway with a 100-foot notch in center of ogee weir section. The outlet works consist of a 13.0-foot-diameter concrete conduit controlled by two 6.5 x 13.0-foot broome-type gates and two 30-inch steel pipes controlled by slide gates. Deliberate impoundment began Sep 29, 1952. From Aug 1950 to Sep 28, 1952, the lake was operated as a detention basin only. The capacity table is based on a survey made in 1945. The lake was built for flood control, navigation and low-flow regulation. Inflow is affected at times by the discharge from flood-detention pools of 12 floodwater-retarding structures with a combined detention capacity of 11,170 acre-ft. These structures control runoff from 37.6 mi². Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	747.0
Crest of spillway.....	724.0
Crest of notch in spillway.....	710.0
Top of conservation storage.....	694.0
Crest of intake to wet wells (inverts).....	656.0
Lowest gated outlet (invert).....	622.0

COOPERATION.--Record of contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 212,200 acre-ft, May 3, 1990 (elevation, 717.54 ft); minimum since lake first filled in 1957, 61,450 acre-ft, Oct 10, 1984 (elevation, 686.16 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 137,400 acre-ft, Mar 21 (elevation, 705.01 ft); minimum daily contents, 68,910 acre-ft, Sep 30 (elevation, 688.51 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	83020	84670	84630	89190	89570	98730	101000	88810	89340	86710	80100	73150
2	82950	84630	84860	89160	89570	97470	95830	88850	89190	86600	79850	72840
3	82880	84560	85000	89270	89310	96230	91410	88850	89080	86490	79600	72500
4	82730	84490	85080	90070	89080	94990	89500	88890	88970	86410	79390	72200
5	82700	84410	85080	91480	88740	93660	89080	88890	88810	86340	79140	71800
6	82620	84340	85080	93110	88700	92450	88810	88930	88660	86230	79000	71460
7	82730	84340	85450	96150	88850	91640	88810	88890	88550	86110	78820	71200
8	83060	84300	85850	98000	88970	90910	88780	89000	88510	85970	78580	70830
9	83420	84300	86080	98370	88890	89800	88700	89080	88400	85820	78300	70460
10	83460	84270	86080	97960	88660	89080	88660	89270	88470	85630	78010	70070
11	83640	84270	86080	98160	88590	88470	88700	89420	88700	85410	77800	69770
12	83970	84340	86080	98000	88740	88470	88780	89420	88740	85150	77590	69670
13	84010	84490	86110	97470	88890	88630	88660	89420	88780	84930	77560	69700
14	83970	84490	86110	96790	88970	88970	88740	89380	88660	84740	77380	69600
15	83970	84490	86190	96110	89000	90220	88740	89340	88550	84490	77170	69600
16	83940	84490	86230	95310	89120	124700	88660	89270	88510	84270	76960	69700
17	83900	84490	86260	94520	89080	131600	88590	89230	88470	84050	76750	69700
18	83860	84490	86260	93620	88850	134700	88550	89160	88320	83830	76750	69670
19	83790	84490	86300	92760	88630	136600	88510	89120	88290	83570	76750	69600
20	83750	84490	88740	91870	88470	137300	88590	89120	88290	83310	76750	69570
21	83750	84490	91250	90950	89990	137400	88510	89080	87980	83060	76750	69500
22	83750	84490	91250	90110	94170	136900	88510	89080	87870	82840	76200	69400
23	84410	84490	91410	89720	94950	136400	88470	88970	87610	82590	75990	69370
24	84860	84410	91370	89570	94910	135100	88510	88970	87530	82300	75750	69310
25	84930	84410	91250	89500	96830	133500	88510	88970	87380	82040	75400	69210
26	84820	84450	91250	89340	101000	130900	88550	89040	87310	81790	75090	69140
27	84780	84490	91180	89190	100800	126600	88660	89420	87200	81540	74780	69080
28	84740	84630	90990	89040	99840	121500	88700	89570	87120	81290	74410	69010
29	84740	84630	90530	88850	---	116300	88740	89570	86970	81000	74170	68980
30	84710	84630	89800	88780	---	111300	88810	89500	86860	80640	73830	68910
31	84710	---	89420	89160	---	106200	---	89420	---	80390	73490	---
MAX	84930	84670	91410	98370	101000	137400	101000	89570	89340	86710	80100	73150
MIN	82620	84270	84630	88780	88470	88470	88470	88810	86860	80390	73490	68910
(+)	693.05	693.03	694.31	694.24	696.96	698.45	694.15	694.31	693.63	691.86	689.88	688.51
(@)	+1650	-80	+4790	-260	+10680	+6360	-17390	+610	-2560	-6470	-6900	-4580
CAL YR 1997	MAX 165800	MIN 82620	(@) +450									
WTR YR 1998	MAX 137400	MIN 68910	(@) -14150									

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

TRINITY RIVER BASIN

08047500 CLEAR FORK TRINITY RIVER AT FORT WORTH, TX

LOCATION.--Lat 32°43'56", long 97°21'31", Tarrant County, Hydrologic Unit 12030102, at Fort Worth pumping station on left bank, 240 ft upstream from the Texas and Pacific Railway Co. bridge in Fort Worth, 830 ft upstream from East West Expressway bridge, 2.5 mi upstream from mouth, 5 mi downstream from Marys Creek and 10 mi downstream from Benbrook Dam.

DRAINAGE AREA.--518 mi².

PERIOD OF RECORD.--Mar 1924 to current year.

REVISED RECORDS.--WSP 1392: 1924-25, 1927. WSP 1922: Drainage area.

GAGE.--Water-stage recorder, crest-stage gage and concrete control. Datum of gage is 532.91 ft above sea level. Prior to Apr 3, 1970, various nonrecording and recording gages were located within 650 ft of present site at different datums. Satellite telemeter at station.

REMARKS.--Records good. Since Sep 1952, at least 10% of contributing drainage area has been regulated by Benbrook Lake (station 08046500) 10 mi upstream. The city of Fort Worth diverted water from pool at gage during the current year. The Benbrook Water and Sewage Authority diverted water from the river upstream from station during the current year for municipal use. Several observations of water temperature were made during the current year.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--28 years (water years 1925-52) prior to regulation by Benbrook Lake, 112 ft³/s (81,140 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1925-52).--Maximum discharge, 107,000 ft³/s May 17, 1949 (gage height, 28.20 ft, present datum), from rating curve extended above 16,000 ft³/s on basis of contracted-opening measurement of 107,000 ft³/s; no flow at times. Maximum stage since at least 1900, that of May 17, 1949, at present datum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr 25, 1922, reached a stage of 27.5 ft, present datum (discharge, 74,300 ft³/s, by slope-area measurement of peak flow); data furnished by Fort Worth city engineer.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	11	13	191	79	924	3030	33	23	2.2	20	2.7
2	3.8	10	116	152	132	912	3000	36	20	3.1	19	1.5
3	4.4	10	49	92	240	905	2560	34	19	3.3	27	.76
4	4.2	9.9	27	391	237	905	1320	32	19	3.1	28	1.0
5	4.0	20	21	520	238	899	339	32	21	10	29	2.3
6	3.3	20	19	369	171	931	282	31	24	8.6	37	1.8
7	26	11	279	671	59	1010	150	33	23	5.9	33	1.1
8	36	11	87	255	57	992	145	54	22	4.8	31	1.0
9	137	12	35	389	117	916	138	153	20	6.3	30	.60
10	38	16	31	721	216	661	131	35	14	8.8	29	.50
11	34	14	27	830	185	453	96	33	72	36	27	1.0
12	132	53	26	720	56	272	96	31	18	39	29	14
13	63	50	25	697	65	111	94	37	11	34	42	21
14	19	24	25	685	83	161	91	37	7.0	18	32	13
15	14	24	23	670	82	300	92	38	5.5	17	32	8.7
16	10	17	19	661	85	5610	90	38	5.3	18	32	12
17	9.2	15	20	648	125	314	89	38	5.4	19	30	33
18	9.8	14	22	644	e130	165	89	37	4.6	20	24	17
19	9.3	14	20	629	e120	197	88	20	3.4	19	16	12
20	8.5	16	948	628	e110	388	132	13	2.8	17	5.5	11
21	9.1	14	677	636	463	593	121	11	2.3	16	3.6	9.4
22	14	13	244	629	695	814	78	11	2.5	18	2.7	7.5
23	345	12	748	404	352	805	76	9.6	2.2	18	3.3	44
24	52	12	465	199	532	1000	66	12	2.0	19	3.8	14
25	26	12	233	199	1040	1250	35	15	2.7	18	2.6	9.3
26	17	12	262	200	1180	1660	54	29	3.0	18	2.6	9.0
27	14	12	228	195	800	2660	74	156	3.1	15	1.8	7.3
28	14	28	218	193	952	3140	37	23	3.1	16	1.2	9.8
29	14	20	288	193	---	3110	35	16	2.3	27	1.9	10
30	12	13	409	168	---	3130	34	23	2.2	28	3.8	7.0
31	11	---	294	101	---	3080	---	26	---	21	4.3	---
TOTAL	1096.3	519.9	5898	13680	8601	38268	12662	1126.6	365.4	507.1	584.1	283.26
MEAN	35.4	17.3	190	441	307	1234	422	36.3	12.2	16.4	18.8	9.44
MAX	345	53	948	830	1180	5610	3030	156	72	39	42	44
MIN	2.7	9.9	13	92	56	111	34	9.6	2.0	2.2	1.2	.50
AC-FT	2170	1030	11700	27130	17060	75900	25120	2230	725	1010	1160	562

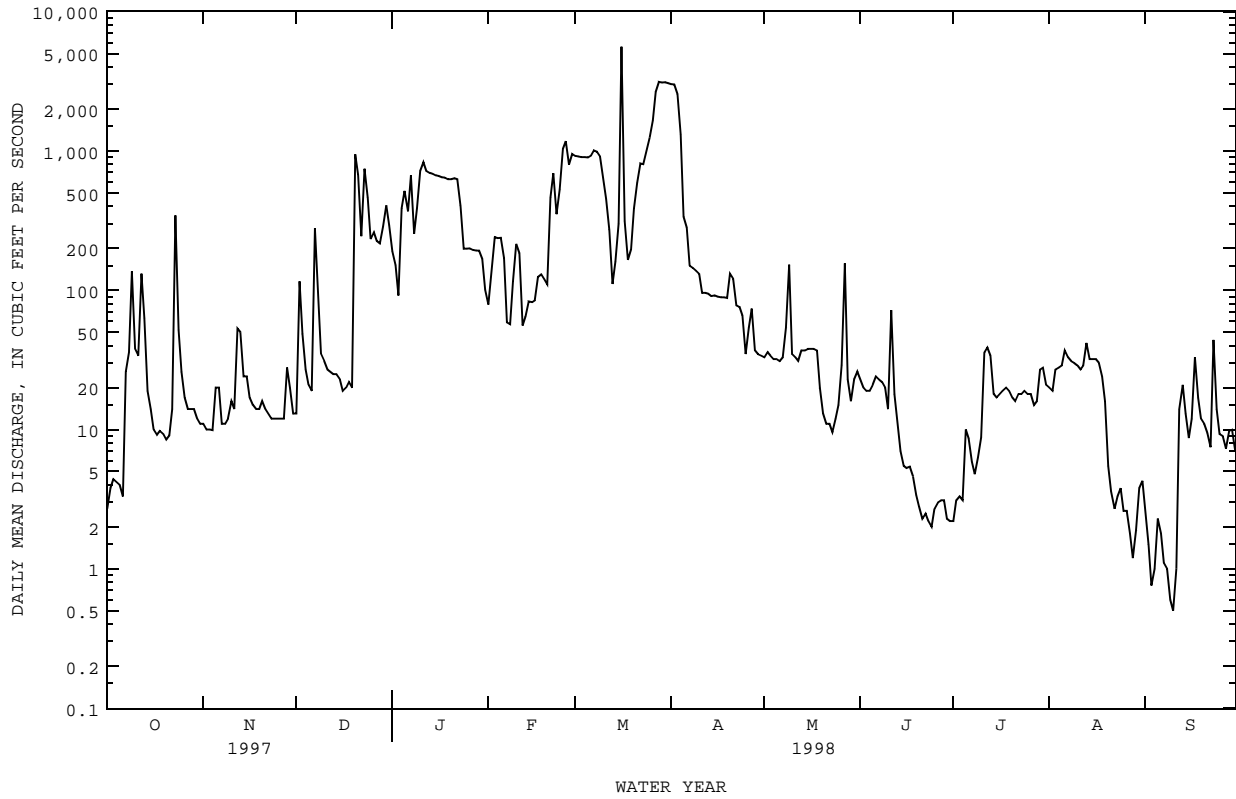
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 1998z, BY WATER YEAR (WY)

MEAN	58.2	113	90.5	116	137	242	178	323	265	76.2	32.7	32.1
MAX	353	1555	1118	2198	1019	1838	1013	3020	2219	1300	247	245
(WY)	1994	1992	1992	1992	1992	1997	1977	1990	1989	1989	1979	1962
MIN	.000	.84	1.68	2.28	2.84	.91	3.12	3.41	.27	.75	.54	.28
(WY)	1953	1955	1979	1957	1953	1956	1954	1959	1953	1954	1954	1954

08047500 CLEAR FORK TRINITY RIVER AT FORT WORTH, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1953 - 1998z	
ANNUAL TOTAL	132692.0		83591.66		139	
ANNUAL MEAN	364		229		4.55	
HIGHEST ANNUAL MEAN					660	1992
LOWEST ANNUAL MEAN					11000	Mar 11 1990
HIGHEST DAILY MEAN	5370	Feb 19	5610	Mar 16	.00	Oct 1 1952
LOWEST DAILY MEAN	2.1	Sep 30	.50	Sep 10	.00	Oct 1 1952
ANNUAL SEVEN-DAY MINIMUM	3.5	Sep 30	1.2	Sep 4	.00	May 2 1990
INSTANTANEOUS PEAK FLOW			16800	Mar 16	20900	May 2 1990
INSTANTANEOUS PEAK STAGE			15.70	Mar 16	16.80	May 2 1990
ANNUAL RUNOFF (AC-FT)	263200		165800		100300	
10 PERCENT EXCEEDS	1210		680		305	
50 PERCENT EXCEEDS	68		29		16	
90 PERCENT EXCEEDS	11		3.5		.93	

e Estimated
z Period of regulated streamflow.



TRINITY RIVER BASIN

08048000 WEST FORK TRINITY RIVER AT FORT WORTH, TX

LOCATION.--Lat 32°45'39", long 97°19'56", Tarrant County, Hydrologic Unit 12030102, on left bank 125 ft upstream from Texas Electric Service Co. concrete dam, 980 ft downstream from centerline of Paddock Viaduct (North Main Street) at Fort Worth, 2,600 ft downstream from Clear Fork Trinity River and at mile 556.8.

DRAINAGE AREA.--2,615 mi².

PERIOD OF RECORD.--Oct 1920 to current year. Gage-height records collected in this vicinity since 1910 are contained in reports of the National Weather Service.
Water-quality records.--Chemical and biochemical analyses: Oct 1967 to Sep 1976.

REVISED RECORDS.--WSP 1392: 1925. WSP 1922: Drainage area.

GAGE.--Water-stage recorder and concrete dam control with angle-iron-crested notch for flow below 50 ft³/s. Datum of gage is 519.24 ft above sea level. Prior to Aug 22, 1954, at site 1,200 ft upstream at same datum. Aug 22, 1954, to Oct 15, 1955, at site 2,000 ft upstream at same datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in Oct 1920, at least 10% of contributing drainage area has been regulated by Lake Worth (station 08045400) on the West Fork Trinity River and by Benbrook Lake (station 08046500) on the Clear Fork Trinity River. At times, flow is sustained by releases from the flood-detention pool of Benbrook Lake. The city of Fort Worth diverts water from river upstream from station and from Cedar Creek Reservoir (station 08063010) for municipal and industrial uses and returns wastewater effluent to river downstream from station 08048543. There are many small diversions upstream from station. Maximum stage since at least 1866, that of May 17, 1949. Maximum stages have been affected by levee construction, levee breaks and channel rectification.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	29	22	322	209	1330	3540	52	34	3.0	22	14
2	9.1	28	275	283	264	1190	3460	60	29	2.5	24	8.6
3	8.0	26	133	189	507	1100	3120	54	28	3.1	26	5.8
4	11	26	42	739	551	1070	1910	49	27	6.6	34	4.1
5	11	28	40	963	554	1080	865	46	29	17	37	3.4
6	12	55	37	722	474	1110	696	43	32	21	44	4.3
7	56	34	579	1330	228	1260	408	44	33	24	66	5.0
8	78	30	211	773	181	1500	397	69	32	18	43	4.5
9	427	30	66	667	211	1760	392	586	31	15	40	3.4
10	98	37	47	1120	377	1620	377	75	28	16	38	2.4
11	63	42	42	1380	360	1170	255	48	170	38	36	2.1
12	378	150	39	1330	146	725	197	42	33	67	44	14
13	187	135	37	1300	175	353	187	50	20	58	114	37
14	35	42	37	1110	213	353	169	53	16	33	64	40
15	26	39	39	973	225	630	161	56	12	27	53	27
16	21	32	36	902	259	11600	160	57	10	27	48	25
17	18	26	34	846	368	7360	155	58	8.2	25	44	92
18	17	24	38	850	478	6080	156	57	7.5	25	33	52
19	17	23	44	815	497	5930	154	35	7.5	25	35	29
20	16	25	1670	794	435	5840	259	24	7.0	22	23	25
21	17	29	1260	825	828	5920	289	23	5.9	19	14	21
22	23	27	366	848	1810	5690	156	22	4.7	19	13	18
23	741	25	1110	686	1910	5540	151	19	3.9	24	13	101
24	133	25	749	516	1940	5780	141	19	3.3	37	13	45
25	47	25	407	563	2110	5990	64	22	2.7	33	12	25
26	34	25	482	643	2940	5350	111	43	3.2	32	9.3	18
27	27	27	404	593	1930	4930	233	352	4.2	20	7.4	17
28	28	67	409	526	1640	4840	87	41	5.4	16	5.4	15
29	33	41	446	436	---	4360	70	30	5.3	22	8.3	16
30	34	26	590	353	---	3970	58	30	3.8	29	32	15
31	32	---	469	256	---	3770	---	36	---	25	22	---
TOTAL	2648.1	1178	10160	23653	21820	109201	18378	2195	636.6	749.2	1017.4	689.6
MEAN	85.4	39.3	328	763	779	3523	613	70.8	21.2	24.2	32.8	23.0
MAX	741	150	1670	1380	2940	11600	3540	586	170	67	114	101
MIN	8.0	23	22	189	146	353	58	19	2.7	2.5	5.4	2.1
AC-FT	5250	2340	20150	46920	43280	216600	36450	4350	1260	1490	2020	1370

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 1998, BY WATER YEAR (WY)

MEAN	295	291	275	251	390	524	617	1161	792	248	118	154
MAX	4548	3855	6071	3521	4130	3523	5595	12430	10240	3030	1447	2482
(WY)	1982	1982	1992	1992	1997	1998	1942	1990	1989	1941	1950	1962
MIN	.12	3.64	5.02	6.08	5.57	4.72	7.71	15.2	5.73	1.33	.000	.000
(WY)	1940	1956	1935	1930	1940	1940	1930	1959	1954	1956	1956	1930

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1921 - 1998
ANNUAL TOTAL	407826.3	192325.9	
ANNUAL MEAN	1117	527	426
HIGHEST ANNUAL MEAN			1823
LOWEST ANNUAL MEAN			15.6
HIGHEST DAILY MEAN	13600	11600	47300
LOWEST DAILY MEAN	8.0	2.1	.00
ANNUAL SEVEN-DAY MINIMUM	11	3.6	.00
INSTANTANEOUS PEAK FLOW		21400	85000
INSTANTANEOUS PEAK STAGE		7.34	25.91
ANNUAL RUNOFF (AC-FT)	808900	381500	308800
10 PERCENT EXCEEDS	3640	1280	1090
50 PERCENT EXCEEDS	163	44	40
90 PERCENT EXCEEDS	21	11	6.0

08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX

LOCATION.--Lat 32°45'06", long 97°17'21", Tarrant County, Hydrologic Unit 12030102, on downstream side of bridge on Beach Street, 1,700 ft downstream from Sycamore Creek, 0.9 mi downstream from Riverside Drive bridge, 2.6 mi east of the Tarrant County Courthouse and at mile 549.6.

DRAINAGE AREA.--2,685 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is 478.70 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair. Since installation of gage in Oct 1976, at least 10% of contributing drainage area has been regulated by Lake Worth (station 08045400) on the West Fork Trinity River and by Benbrook Lake (station 08046500) on the Clear Fork Trinity River. At times, flow is sustained by releases from the flood-detention pool of Benbrook Lake. There are many diversions upstream from this station for municipal, industrial and other uses.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1866 probably occurred in May 1949 (stage and discharge unknown). Maximum stages have been affected by levee construction, levee breaks, and channel rectification.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	23	35	296	254	1250	3630	57	31	8.0	12	6.3
2	11	19	176	287	224	1120	3520	54	27	3.5	12	5.0
3	8.5	18	218	201	427	1030	3250	60	21	1.1	13	2.8
4	7.7	18	144	695	475	1000	2060	54	20	1.1	20	1.1
5	8.7	21	123	1250	474	995	771	51	23	7.8	28	.80
6	9.8	36	101	870	450	1050	653	45	25	23	34	.73
7	52	35	493	1750	244	1250	372	45	27	34	62	.72
8	122	25	663	933	201	1400	341	58	26	32	50	.76
9	327	26	131	627	179	1600	343	756	25	23	40	1.0
10	184	36	81	1050	336	1520	335	131	26	19	39	.82
11	73	39	59	1520	352	1120	250	71	225	25	45	.77
12	422	164	50	1290	214	742	185	55	88	81	64	21
13	402	224	45	1220	188	360	164	52	29	86	154	44
14	65	130	40	1050	201	347	160	61	15	64	138	45
15	41	78	37	905	222	793	148	63	10	41	55	32
16	27	57	29	814	243	14300	147	62	9.1	35	45	21
17	21	46	21	757	318	8090	140	61	6.2	38	40	144
18	19	38	27	746	436	6420	138	61	5.5	29	31	100
19	17	33	31	728	478	6020	137	49	4.4	30	30	36
20	17	31	1690	701	411	5880	223	26	3.4	27	35	19
21	25	34	2840	718	776	5950	395	19	2.8	23	10	14
22	37	35	339	760	2430	5730	153	21	4.8	20	5.0	9.9
23	1060	30	1120	642	1760	5600	138	17	3.0	22	3.4	37
24	237	28	858	450	1880	5730	132	16	4.0	37	6.5	91
25	90	28	388	485	1960	6040	81	17	3.3	37	3.8	28
26	53	29	462	550	3890	5430	75	35	2.1	48	3.0	13
27	37	28	380	512	1920	5060	290	506	2.0	33	2.7	8.4
28	29	68	366	467	1590	4950	91	105	7.7	21	1.6	7.7
29	26	88	378	401	---	4480	75	44	11	19	1.3	6.4
30	28	54	509	343	---	4090	62	24	10	23	2.9	6.1
31	26	---	438	303	---	3950	---	27	---	17	9.8	---
TOTAL	3497.7	1519	12272	23321	22533	113297	18459	2703	697.3	908.5	997.0	704.30
MEAN	113	50.6	396	752	805	3655	615	87.2	23.2	29.3	32.2	23.5
MAX	1060	224	2840	1750	3890	14300	3630	756	225	86	154	144
MIN	7.7	18	21	201	179	347	62	16	2.0	1.1	1.3	.72
AC-FT	6940	3010	24340	46260	44690	224700	36610	5360	1380	1800	1980	1400

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 1998, BY WATER YEAR (WY)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
MEAN	443	496	494	351	595	971	719	1778	1284	239	106	89.5
MAX	4881	3878	6459	4067	4288	3655	5668	12540	9448	1654	557	216
(WY)	1982	1982	1992	1992	1997	1998	1990	1990	1989	1982	1995	1980
MIN	9.82	23.8	13.7	30.2	33.5	43.9	35.3	20.2	22.4	5.67	9.21	9.27
(WY)	1978	1980	1978	1978	1996	1986	1983	1996	1978	1978	1985	1984

SUMMARY STATISTICS

	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1977 - 1998	
ANNUAL TOTAL	436635.9		200908.80			
ANNUAL MEAN	1196		550		630	
HIGHEST ANNUAL MEAN					2071	
LOWEST ANNUAL MEAN					40.1	
HIGHEST DAILY MEAN	14600	Feb 20	14300	Mar 16	35200	May 3 1990
LOWEST DAILY MEAN	7.2	Sep 10	.72	Sep 7	.72	Sep 7 1998
ANNUAL SEVEN-DAY MINIMUM	12	Sep 30	.80	Sep 5	.80	Sep 5 1998
INSTANTANEOUS PEAK FLOW			26800		46600	
INSTANTANEOUS PEAK STAGE			32.71		38.02	
ANNUAL RUNOFF (AC-FT)	866100		398500		456800	
10 PERCENT EXCEEDS	3710		1250		1690	
50 PERCENT EXCEEDS	169		57		53	
90 PERCENT EXCEEDS	22		7.2		15	

TRINITY RIVER BASIN

08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued
(National Water-Quality Assessment Program)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Oct 1976 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct 1976 to current year.
PH: Oct 1976 to current year.
WATER TEMPERATURE: Oct 1976 to current year.
DISSOLVED OXYGEN: Oct 1976 to current year.

INSTRUMENTATION.--Since Oct 1976, a four-parameter water-quality monitor continuously records water temperature, dissolved oxygen, pH, and specific conductance at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument, pump, or power failure. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed for previous years using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the U.S. Geological Survey District office upon request. Dissolved oxygen values bypassing saturation can be attributed to algae blooms in close proximity to the well intake. NAWQA program data are included in this record.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 2,000 microsiemens, Nov 6, 1978; minimum, 90 microsiemens, Sep 10, 1992.
PH: Maximum, 9.8 units, Aug 8, Sep 2, 1980; minimum, 6.6 units, Aug 15, 1987.
WATER TEMPERATURE: Maximum, 38.5°C, Aug 21, 1993; minimum, 0.0°C, Jan 31, Feb 1, 2, 1985.
DISSOLVED OXYGEN: Maximum, 22.1 mg/L, Oct 4, 1983; minimum, 0.0 mg/L, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 931 microsiemens, Jan 31; minimum, 109 microsiemens, Oct 23.
PH: Maximum, 8.8 units, Apr 19-20; minimum, 7.0 units, Feb 21, Jun 14, 30, Jul 1, Sep 6-9.
WATER TEMPERATURE: Maximum, 36.7°C, Jun 27; minimum, 4.6°C, Dec 13.
DISSOLVED OXYGEN: Maximum, 12.8 mg/L, Dec 29-30; minimum, 2.0 mg/L, Oct 19.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	e460	422	405	416	529	496	512	399	389	393
2	---	---	e490	430	413	421	537	221	441	422	399	413
3	---	---	e509	438	426	433	474	351	431	437	421	431
4	528	509	518	450	436	443	474	446	456	452	358	420
5	542	521	532	471	450	461	471	448	458	396	291	332
6	554	534	547	481	459	471	494	471	483	323	246	295
7	581	368	513	470	424	449	496	154	398	366	304	328
8	525	408	455	442	422	430	384	318	345	386	331	361
9	461	380	443	463	441	448	373	357	362	442	386	415
10	485	448	476	495	458	475	377	368	372	465	402	420
11	495	356	472	506	479	493	373	362	367	413	339	394
12	471	220	388	483	300	400	374	365	368	402	365	388
13	312	236	292	425	349	398	386	372	377	406	401	403
14	337	294	314	433	410	419	403	384	392	405	402	403
15	355	337	345	441	423	432	436	402	422	406	403	404
16	404	355	372	443	424	436	489	436	456	406	399	402
17	403	367	386	457	443	451	490	465	480	403	398	400
18	390	364	373	460	451	455	490	475	483	401	396	398
19	374	359	369	471	459	465	484	479	482	400	394	397
20	390	374	381	486	471	482	---	---	e220	396	393	395
21	414	379	392	484	477	481	---	---	e270	398	395	397
22	404	376	391	484	478	482	---	---	e290	408	393	400
23	487	109	332	491	474	483	358	273	312	411	397	401
24	294	266	279	488	478	483	347	275	313	463	411	438
25	320	293	306	493	483	487	379	347	360	468	437	446
26	---	---	e330	499	485	493	399	378	386	437	429	433
27	---	---	e360	505	497	500	403	387	394	433	422	428
28	396	372	382	506	439	478	410	401	405	427	420	424
29	410	394	401	513	475	486	408	397	403	429	422	425
30	411	401	407	496	478	487	405	384	396	429	423	426
31	417	397	406	---	---	---	389	381	383	931	391	448
MONTH	---	---	407	513	300	458	---	---	394	931	246	402

TRINITY RIVER BASIN

08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued
(National Water-Quality Assessment Program)

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	438	425	431	414	410	411	370	365	367	522	514	517
2	462	430	449	412	404	407	370	366	368	525	519	521
3	480	445	466	406	400	403	---	---	e370	519	507	511
4	445	437	440	405	400	402	---	---	e400	529	507	512
5	444	426	435	407	401	404	---	---	e410	549	529	539
6	432	424	427	414	399	406	---	---	e430	553	541	547
7	446	432	441	409	384	403	454	441	448	559	546	553
8	461	446	455	423	397	410	470	448	460	572	171	554
9	468	451	462	422	404	412	476	468	472	469	171	425
10	496	458	480	419	412	415	480	471	475	471	458	463
11	485	425	441	426	418	422	491	471	476	481	462	471
12	457	426	437	434	424	427	494	475	487	481	462	472
13	456	444	448	450	434	444	486	475	482	475	452	463
14	450	441	446	481	418	459	505	481	491	464	450	457
15	482	443	469	446	292	417	508	486	492	465	451	457
16	496	480	490	329	185	214	497	486	491	462	448	455
17	487	479	482	272	261	265	501	487	497	487	458	466
18	487	454	473	405	271	356	508	486	500	504	482	489
19	465	434	442	406	381	395	499	486	494	510	499	502
20	444	437	441	425	405	416	499	387	480	517	510	515
21	457	248	424	424	404	414	443	391	423	527	517	523
22	363	234	288	424	410	418	479	443	467	547	527	538
23	424	363	411	427	413	420	478	448	458	542	519	531
24	438	424	431	431	413	422	480	470	474	530	516	526
25	440	325	423	425	398	416	---	---	e490	533	516	526
26	412	280	354	424	401	414	---	---	e290	551	512	528
27	423	411	417	404	383	395	457	332	434	515	221	402
28	414	410	412	391	376	383	484	442	464	466	425	455
29	---	---	---	385	369	377	506	484	496	473	463	468
30	---	---	---	378	361	370	521	506	515	480	453	470
31	---	---	---	378	358	368	---	---	---	479	458	470
MONTH	496	234	436	481	185	396	---	---	453	572	171	494
DAY	JUNE			JULY			AUGUST			SEPTEMBER		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	466	443	459	624	560	e470	515	505	510	559	530	547
2	472	445	461	---	---	e490	517	505	512	530	496	508
3	479	451	466	---	---	e515	514	495	507	513	485	502
4	476	437	459	---	---	e530	513	497	505	526	499	512
5	479	449	457	---	---	e530	506	480	490	539	509	528
6	474	452	459	767	667	e540	505	482	489	558	514	541
7	489	463	478	678	528	e545	510	468	485	569	527	556
8	474	459	464	550	533	542	493	439	454	581	533	564
9	470	458	465	553	534	545	470	432	450	594	539	576
10	490	465	474	554	521	539	450	427	441	589	542	572
11	502	203	409	569	538	554	459	439	450	605	574	591
12	470	447	458	565	517	538	456	399	422	660	478	559
13	451	425	442	517	507	510	462	310	395	579	448	484
14	460	444	453	525	506	514	403	321	361	662	561	597
15	481	459	468	549	525	535	430	349	402	575	536	557
16	499	444	478	556	548	552	430	416	422	551	532	542
17	519	498	506	569	551	559	419	404	411	537	194	433
18	529	515	523	593	568	584	425	411	418	491	381	476
19	536	510	527	593	549	570	445	423	433	497	484	491
20	533	489	513	560	546	554	452	411	428	503	461	486
21	517	390	493	571	552	562	474	448	463	487	454	474
22	569	390	523	562	547	556	491	454	472	487	461	478
23	574	293	534	579	546	563	503	463	486	504	372	466
24	561	484	524	564	550	557	534	491	509	473	431	457
25	540	483	508	559	533	548	511	470	496	484	473	478
26	---	---	e480	547	513	532	521	483	505	495	482	487
27	---	---	e460	523	504	514	536	490	519	502	485	496
28	574	273	438	556	502	523	544	501	528	504	490	499
29	606	562	e440	526	514	518	555	517	541	515	492	502
30	618	574	e445	539	516	527	574	528	558	521	501	511
31	---	---	---	520	496	507	574	555	564	---	---	---
MONTH	---	---	475	---	---	536	574	310	472	662	194	516

e Estimated

TRINITY RIVER BASIN

08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued
(National Water-Quality Assessment Program)

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	8.4	7.7	8.0	8.1	7.9	8.0	8.2	8.1	8.1
2	---	---	---	8.3	7.7	7.9	8.0	7.7	7.9	8.1	8.1	8.1
3	---	---	---	8.2	7.7	7.9	7.8	7.6	7.7	8.1	7.9	8.0
4	7.6	7.2	7.4	8.1	7.7	7.9	7.6	7.6	7.6	8.0	7.9	7.9
5	7.6	7.2	7.4	8.1	7.7	7.9	7.6	7.5	7.6	7.9	7.8	7.8
6	7.8	7.2	7.5	7.9	7.6	7.7	7.7	7.5	7.7	7.9	7.7	7.8
7	7.8	7.4	7.5	7.9	7.7	7.8	8.0	7.6	7.7	8.0	7.8	7.9
8	7.8	7.3	7.5	7.9	7.6	7.7	8.0	7.6	7.7	8.0	7.9	8.0
9	8.0	7.3	7.7	7.8	7.6	7.6	---	---	---	8.1	7.9	8.0
10	7.9	7.5	7.7	7.8	7.6	7.7	---	---	---	8.1	8.0	8.1
11	7.8	7.4	7.7	7.8	7.6	7.7	---	---	---	8.1	7.9	8.0
12	7.7	7.5	7.6	7.8	7.7	7.7	---	---	---	8.0	7.9	8.0
13	7.6	7.4	7.5	7.8	7.7	7.7	---	---	---	8.2	8.0	8.1
14	7.5	7.4	7.4	7.9	7.7	7.8	---	---	---	8.3	8.2	8.2
15	7.7	7.4	7.5	8.0	7.9	7.9	---	---	---	8.3	8.2	8.3
16	7.9	7.5	7.7	8.0	7.9	8.0	---	---	---	8.3	8.2	8.3
17	8.2	7.6	7.8	8.0	7.9	7.9	---	---	---	8.3	8.3	8.3
18	8.2	7.6	7.8	7.9	7.8	7.9	---	---	---	8.3	8.2	8.3
19	8.1	7.5	7.8	8.0	7.8	7.9	---	---	---	8.3	8.3	8.3
20	7.7	7.4	7.6	8.0	7.8	7.9	---	---	---	8.3	8.3	8.3
21	7.8	7.5	7.6	8.0	7.8	7.9	---	---	---	8.3	8.3	8.3
22	8.1	7.6	7.8	8.0	7.8	7.9	---	---	---	8.4	8.3	8.3
23	8.4	7.6	7.7	7.9	7.8	7.8	8.3	8.0	8.1	8.4	8.3	8.3
24	7.7	7.6	7.6	8.0	7.8	7.9	8.2	8.1	8.1	8.4	8.3	8.3
25	7.6	7.5	7.6	8.1	7.8	7.9	8.2	8.2	8.2	8.4	8.2	8.3
26	---	---	---	8.1	7.7	7.9	8.2	8.1	8.2	8.5	8.3	8.4
27	---	---	---	8.1	7.7	7.8	8.2	8.1	8.2	8.5	8.3	8.4
28	8.3	7.9	8.1	7.8	7.7	7.8	8.3	8.2	8.2	8.5	8.3	8.4
29	8.2	7.8	8.0	8.1	7.7	7.9	8.3	8.2	8.2	8.5	8.2	8.4
30	8.4	7.9	8.1	8.1	7.9	8.0	8.3	8.2	8.2	8.4	8.3	8.3
31	8.4	7.9	8.1	---	---	---	8.2	8.2	8.2	8.3	7.6	8.1
MONTH	---	---	---	8.4	7.6	7.8	---	---	---	8.5	7.6	8.2
DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	8.3	8.0	8.1	8.0	7.9	7.9	---	---	---	8.3	7.9	8.1
2	8.3	8.1	8.2	8.0	7.9	7.9	---	---	---	8.1	7.8	7.9
3	8.4	8.1	8.2	7.9	7.9	7.9	---	---	---	7.9	7.7	7.8
4	8.3	8.2	8.2	7.9	7.8	7.9	---	---	---	7.8	7.7	7.7
5	8.3	8.1	8.2	7.9	7.9	7.9	---	---	---	7.9	7.7	7.8
6	8.4	8.2	8.3	7.9	7.8	7.8	---	---	---	7.8	7.6	7.7
7	8.3	8.1	8.2	7.9	7.7	7.8	8.4	8.0	8.1	7.8	7.5	7.7
8	8.2	8.0	8.1	7.8	7.7	7.7	8.4	8.1	8.2	7.9	7.5	7.7
9	8.2	7.9	8.0	8.0	7.8	7.9	8.5	8.1	8.3	7.9	7.5	7.6
10	8.2	8.0	8.1	8.0	8.0	8.0	8.6	8.2	8.4	7.9	7.5	7.7
11	8.2	7.6	8.1	8.1	7.9	8.0	8.6	8.2	8.4	8.0	7.6	7.8
12	8.1	7.8	7.9	8.1	7.9	8.0	8.7	8.3	8.5	8.4	7.8	8.0
13	8.0	7.7	7.8	8.1	7.9	8.0	8.7	8.4	8.5	8.2	7.7	7.9
14	8.0	7.6	7.8	8.1	7.9	8.0	8.6	8.3	8.5	8.1	7.8	7.9
15	7.9	7.5	7.6	8.1	7.9	8.0	8.7	8.4	8.5	8.3	7.6	8.0
16	7.7	7.3	7.4	8.0	7.8	7.9	8.6	8.3	8.5	8.2	7.9	8.0
17	7.6	7.3	7.4	8.0	7.9	8.0	8.7	8.4	8.5	8.2	7.8	8.0
18	7.5	7.3	7.3	8.3	8.0	8.2	8.7	8.5	8.6	8.1	7.8	7.9
19	7.4	7.2	7.3	---	---	---	8.8	8.5	8.6	8.0	7.8	7.9
20	7.5	7.2	7.3	---	---	---	8.8	8.5	8.6	8.0	7.7	7.8
21	7.3	7.0	7.1	---	---	---	8.6	8.2	8.4	7.8	7.6	7.7
22	7.6	7.2	7.4	---	---	---	8.3	8.1	8.2	7.9	7.5	7.7
23	7.7	7.5	7.6	---	---	---	8.2	7.8	8.0	7.9	7.6	7.7
24	7.8	7.6	7.7	---	---	---	8.1	7.8	8.0	8.1	7.6	7.7
25	7.9	7.8	7.9	---	---	---	8.1	7.8	7.9	8.0	7.6	7.7
26	7.9	7.6	7.7	---	---	---	8.0	7.7	7.9	8.1	7.6	7.8
27	7.9	7.8	7.9	---	---	---	7.8	7.6	7.7	7.9	7.6	7.8
28	7.9	7.9	7.9	---	---	---	7.7	7.5	7.6	8.1	7.7	7.9
29	---	---	---	---	---	---	7.7	7.5	7.6	8.3	7.7	7.9
30	---	---	---	---	---	---	8.2	7.4	7.8	8.2	7.7	7.9
31	---	---	---	---	---	---	---	---	---	8.2	7.6	7.9
MONTH	8.4	7.0	7.8	---	---	---	---	---	---	8.4	7.5	7.8

TRINITY RIVER BASIN

08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued
(National Water-Quality Assessment Program)

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	JUNE			JULY			AUGUST			SEPTEMBER		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	8.2	7.7	7.9	7.7	7.0	7.3	7.9	7.5	7.7	8.0	7.4	7.6
2	8.0	7.5	7.7	---	---	---	8.0	7.5	7.7	8.1	7.3	7.6
3	7.8	7.4	7.6	---	---	---	8.2	7.5	7.7	8.0	7.2	7.5
4	7.9	7.4	7.6	---	---	---	7.9	7.4	7.7	7.9	7.1	7.4
5	7.7	7.3	7.5	8.5	7.6	8.0	7.7	7.5	7.6	8.0	7.2	7.4
6	8.1	7.4	7.8	8.2	7.7	7.9	7.8	7.5	7.6	7.9	7.0	7.3
7	7.9	7.4	7.7	8.2	7.7	7.8	7.9	7.5	7.6	7.8	7.0	7.3
8	7.9	7.4	7.6	8.2	7.5	7.8	8.1	7.4	7.7	7.8	7.0	7.3
9	7.9	7.4	7.6	8.1	7.4	7.7	8.0	7.4	7.7	8.4	7.0	7.6
10	7.8	7.3	7.5	8.0	7.4	7.7	8.1	7.4	7.7	8.4	7.7	8.0
11	8.0	7.3	7.6	8.0	7.5	7.7	7.8	7.5	7.6	8.3	7.8	8.0
12	8.1	7.5	7.8	8.1	7.6	7.8	7.6	7.3	7.4	8.0	7.7	7.8
13	7.7	7.1	7.4	8.1	7.7	7.9	7.6	7.3	7.4	7.9	7.7	7.8
14	7.7	7.0	7.3	8.0	7.6	7.8	7.5	7.3	7.4	8.1	7.7	7.9
15	7.8	7.1	7.5	8.0	7.6	7.8	7.6	7.3	7.4	8.1	7.8	7.9
16	---	---	---	8.1	7.6	7.8	7.6	7.4	7.5	8.1	7.7	7.9
17	7.8	7.3	7.5	8.0	7.6	7.7	7.6	7.4	7.5	8.1	7.7	7.8
18	7.7	7.4	7.5	7.8	7.5	7.7	7.6	7.3	7.4	8.2	7.6	7.9
19	7.8	7.2	7.5	8.1	7.6	7.8	7.3	7.2	7.3	8.2	7.7	7.9
20	7.9	7.3	7.6	8.1	7.6	7.8	7.3	7.2	7.2	8.3	7.6	7.9
21	7.8	7.2	7.5	8.1	7.6	7.8	7.3	7.2	7.2	8.3	7.6	7.9
22	7.8	7.2	7.4	8.0	7.6	7.8	7.8	7.2	7.5	8.2	7.6	7.8
23	8.1	7.2	7.6	8.0	7.6	7.7	8.2	7.4	7.8	8.0	7.6	7.7
24	8.0	7.2	7.5	8.1	7.5	7.8	8.0	7.4	7.7	8.3	7.6	7.9
25	8.0	7.1	7.5	8.0	7.6	7.8	8.3	7.7	7.9	8.3	7.7	8.0
26	8.1	7.1	7.5	8.1	7.6	7.8	8.3	7.6	7.8	8.2	7.7	8.0
27	8.0	7.2	7.5	8.0	7.6	7.8	8.2	7.4	7.8	8.3	7.7	7.9
28	7.8	7.1	7.4	8.0	7.4	7.7	8.2	7.4	7.7	8.1	7.6	7.9
29	7.7	7.1	7.4	8.0	7.4	7.7	8.1	7.3	7.6	8.1	7.6	7.8
30	7.5	7.0	7.3	8.0	7.5	7.7	8.1	7.3	7.7	8.2	7.6	7.8
31	---	---	---	8.1	7.5	7.8	8.0	7.4	7.7	---	---	---
MONTH	---	---	---	---	---	---	8.3	7.2	7.6	8.4	7.0	7.8

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	21.0	17.5	19.2	12.4	11.8	12.1	9.2	7.0	8.0
2	---	---	---	18.6	15.4	17.0	12.5	11.6	12.0	11.6	9.2	10.2
3	---	---	---	17.0	13.5	15.0	13.0	11.6	12.4	13.5	11.6	12.4
4	29.3	22.5	25.2	18.0	12.7	15.2	13.1	11.0	11.9	15.1	13.2	13.8
5	28.8	22.1	24.8	19.6	16.2	17.6	11.8	10.2	11.0	14.2	13.7	14.0
6	27.6	23.4	25.0	17.0	14.1	15.7	10.8	9.7	10.2	14.3	13.0	13.9
7	25.2	23.9	24.3	15.6	12.7	13.9	10.0	8.0	9.1	13.0	9.5	11.2
8	25.8	23.4	24.5	16.4	12.7	14.3	11.0	9.2	9.9	9.5	8.2	8.9
9	26.4	24.7	25.3	14.7	14.0	14.3	11.6	10.1	10.8	9.3	7.9	8.4
10	26.6	24.6	25.5	14.0	10.7	12.5	10.5	8.4	9.6	8.8	8.2	8.6
11	26.3	23.9	24.8	11.7	9.3	10.4	8.4	6.7	7.7	9.1	8.7	8.9
12	24.3	23.0	23.8	11.8	10.6	11.2	6.8	5.6	6.4	10.8	9.1	9.8
13	23.1	21.0	21.9	11.9	11.2	11.6	6.7	4.6	5.7	10.1	8.8	9.3
14	21.4	18.6	19.9	11.9	10.3	11.5	8.3	5.9	7.0	8.8	8.3	8.7
15	21.4	17.0	20.1	10.3	8.6	9.3	9.9	7.1	8.3	9.5	7.8	8.5
16	23.2	19.1	20.8	10.1	7.9	8.9	11.6	8.3	9.4	9.6	8.5	8.9
17	23.3	18.9	20.6	9.0	7.9	8.4	11.3	8.0	9.3	10.1	8.4	9.0
18	22.6	18.2	20.0	10.2	8.3	9.0	11.8	7.9	9.6	10.7	8.8	9.5
19	23.5	18.4	20.6	12.3	8.4	10.0	12.5	8.8	10.6	9.5	8.4	8.9
20	23.4	18.8	20.9	13.3	10.4	11.6	---	---	---	10.1	8.4	9.2
21	21.1	17.1	19.4	14.3	11.5	12.5	---	---	---	10.2	9.2	9.8
22	18.6	16.5	17.2	14.1	11.3	12.2	---	---	---	9.4	8.4	8.9
23	18.7	13.8	17.4	14.6	10.8	12.4	9.6	8.8	9.1	9.5	8.0	8.6
24	19.3	17.2	18.3	14.4	11.5	12.7	9.7	8.5	8.9	10.5	7.5	8.7
25	20.7	18.2	19.5	15.3	12.6	14.0	9.9	8.1	8.9	9.2	8.2	8.6
26	---	---	---	18.0	14.9	16.1	9.3	7.8	8.3	10.8	8.7	9.6
27	---	---	---	18.2	16.2	17.1	8.7	6.7	7.6	11.4	8.8	9.9
28	16.8	12.6	14.4	17.5	16.4	17.1	8.0	6.6	7.3	11.7	9.3	10.3
29	17.9	14.4	15.8	16.4	13.6	15.0	8.4	6.1	7.1	12.3	9.7	10.8
30	20.8	16.6	18.5	13.6	12.3	12.8	9.7	6.8	8.1	12.3	9.8	10.9
31	22.7	18.9	20.4	---	---	---	9.6	7.3	8.4	12.6	11.0	11.6
MONTH	---	---	---	21.0	7.9	13.3	---	---	---	15.1	7.0	9.9

TRINITY RIVER BASIN

08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued
(National Water-Quality Assessment Program)

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	13.5	10.8	11.9	12.4	10.8	11.7	17.0	14.9	15.9	24.7	21.9	23.3
2	13.7	10.8	12.1	12.2	10.7	11.5	17.3	15.3	16.2	26.0	23.3	24.6
3	13.7	11.1	12.1	12.4	10.6	11.4	---	---	---	25.3	23.5	24.5
4	12.1	9.6	10.7	14.0	11.5	12.6	---	---	---	25.0	22.8	24.0
5	10.7	9.5	10.0	14.5	13.0	13.7	---	---	---	26.6	23.6	25.0
6	10.5	8.0	9.2	13.0	11.2	11.8	---	---	---	27.9	25.2	26.4
7	11.6	7.6	9.4	12.1	11.3	11.7	21.0	17.0	18.5	29.0	25.4	27.0
8	12.4	8.8	10.4	12.0	9.8	10.9	21.1	17.7	19.1	27.4	21.9	26.2
9	13.7	9.3	11.4	10.7	8.9	9.8	21.1	17.4	18.9	26.1	21.9	24.5
10	13.6	11.0	11.8	10.7	9.0	9.8	22.3	17.5	19.5	26.0	22.3	24.4
11	12.6	7.8	11.2	11.5	9.1	10.2	21.8	17.4	19.5	27.3	25.2	26.1
12	11.8	10.1	10.5	10.6	8.9	9.5	20.9	17.5	19.2	27.8	24.5	25.9
13	12.4	10.0	11.1	10.0	9.0	9.5	23.4	18.5	20.7	26.5	25.1	25.6
14	12.4	11.0	11.8	11.5	9.4	10.1	24.1	19.6	21.8	25.9	24.7	25.2
15	12.9	11.3	12.1	13.5	11.1	12.0	24.3	20.7	22.5	26.3	25.0	25.6
16	12.7	11.4	11.7	13.5	12.0	13.0	24.1	20.8	22.1	27.3	24.1	25.8
17	12.4	11.1	11.7	12.0	11.2	11.4	22.2	18.1	19.1	28.3	26.5	27.3
18	13.3	10.7	11.9	13.0	11.1	11.9	22.2	17.6	19.6	28.6	25.9	27.1
19	12.0	11.0	11.4	12.6	11.4	12.1	22.6	18.0	20.3	28.4	25.8	26.9
20	13.4	10.3	11.7	11.7	10.8	11.2	22.3	17.5	19.9	29.0	25.1	26.8
21	12.1	10.7	11.0	11.7	10.8	11.2	21.4	17.3	19.0	29.5	25.3	27.0
22	11.0	10.5	10.8	11.9	10.8	11.4	22.3	17.1	19.6	28.7	25.2	26.8
23	12.4	10.6	11.4	12.8	11.0	12.0	23.6	17.9	20.7	28.2	24.8	26.2
24	12.7	11.2	12.1	13.7	12.2	12.9	23.3	19.4	21.4	27.2	24.9	25.9
25	14.2	12.5	13.4	14.6	12.7	13.7	---	---	---	27.4	24.5	25.9
26	13.9	13.1	13.6	15.7	14.1	14.8	---	---	---	28.7	24.3	26.6
27	13.3	12.1	12.7	15.6	14.4	15.0	20.5	18.8	19.7	27.7	23.4	26.2
28	13.0	11.7	12.3	16.4	14.2	15.3	20.0	17.9	19.0	30.0	26.4	28.1
29	---	---	---	16.6	15.2	15.8	20.7	17.9	19.4	32.5	28.2	30.0
30	---	---	---	17.2	15.7	16.2	22.7	19.8	21.2	33.1	28.0	30.3
31	---	---	---	16.7	15.2	15.9	---	---	---	31.8	27.7	29.6
MONTH	14.2	7.6	11.5	17.2	8.9	12.3	---	---	---	33.1	21.9	26.3

DAY	JUNE			JULY			AUGUST			SEPTEMBER		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	32.8	28.1	30.2	36.1	28.0	31.6	32.3	26.8	29.3	33.7	27.6	29.9
2	31.5	27.1	29.1	---	---	---	33.3	27.4	30.1	34.6	27.6	30.4
3	31.9	26.7	29.1	---	---	---	34.9	28.6	31.0	35.8	27.4	30.9
4	31.6	27.4	29.2	---	---	---	32.0	29.1	30.2	35.6	27.3	30.9
5	28.5	24.2	26.4	---	---	---	29.9	28.1	29.1	34.3	26.6	29.8
6	25.8	21.9	23.9	34.1	28.6	31.0	29.6	27.4	28.1	35.3	25.7	29.3
7	26.9	23.1	24.5	34.3	28.8	31.1	30.8	27.3	28.8	35.2	25.7	29.3
8	28.2	23.8	25.6	33.6	29.3	31.3	32.1	28.4	30.1	34.9	25.3	29.5
9	30.6	25.3	27.7	34.4	29.2	31.6	32.3	28.7	30.4	33.2	25.1	28.3
10	28.5	26.3	27.5	34.7	29.1	31.6	32.3	28.3	30.2	29.5	21.4	24.9
11	28.6	24.3	26.5	34.1	28.7	31.3	32.7	29.1	30.4	25.1	22.8	23.5
12	30.7	26.7	28.7	32.6	29.5	31.2	30.8	28.6	29.6	24.0	22.8	23.4
13	33.0	28.7	30.5	33.0	30.6	31.9	29.8	25.8	28.7	25.2	23.5	24.3
14	32.4	28.0	29.9	34.3	31.7	32.8	29.9	26.8	28.3	27.4	24.6	25.9
15	31.5	26.6	28.8	34.3	30.7	32.5	32.0	27.6	29.6	29.0	26.6	27.3
16	33.1	25.3	28.7	34.3	30.5	32.2	32.4	29.5	30.8	27.4	25.9	26.7
17	32.2	26.4	28.7	34.0	29.9	31.6	32.3	29.4	30.6	27.4	25.4	26.0
18	32.9	26.5	29.0	33.9	29.3	31.4	31.5	28.8	30.1	28.7	26.1	27.2
19	35.0	27.1	30.5	34.2	29.7	31.7	32.3	28.5	30.2	31.1	27.1	28.8
20	34.4	27.0	30.4	33.9	29.4	31.4	31.7	29.3	30.4	32.6	27.1	29.4
21	34.9	26.4	30.2	34.2	29.1	31.2	32.9	28.2	30.1	32.7	27.5	29.6
22	35.2	26.8	30.5	34.4	28.7	31.1	33.4	27.7	29.9	33.5	27.9	30.0
23	35.1	26.6	30.2	33.9	28.8	31.0	32.7	26.9	29.5	29.0	26.7	27.5
24	34.8	26.2	29.9	32.9	28.5	30.6	33.7	27.3	29.7	29.8	26.6	28.0
25	35.0	26.1	30.0	33.6	29.0	31.0	34.8	27.9	30.8	30.9	27.4	28.7
26	36.3	26.5	30.6	32.5	28.8	30.5	34.8	28.1	30.7	29.7	26.6	27.9
27	36.7	26.9	30.9	32.8	28.2	30.2	35.5	27.8	30.9	31.4	26.6	28.3
28	35.5	27.2	30.5	33.4	27.8	30.3	35.4	27.4	30.7	32.2	27.1	29.1
29	35.2	27.7	30.7	33.6	27.7	30.3	34.8	28.5	30.6	33.4	27.2	29.6
30	35.4	27.5	31.0	31.2	27.6	29.2	34.3	25.8	29.3	32.8	26.7	29.3
31	---	---	---	31.1	26.9	28.9	32.4	28.5	30.0	---	---	---
MONTH	36.7	21.9	29.0	---	---	---	35.5	25.8	29.9	35.8	21.4	28.1

TRINITY RIVER BASIN

08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued
(National Water-Quality Assessment Program)

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	12.4	6.8	9.4	9.3	6.8	8.2	12.3	10.9	11.7
2	---	---	---	11.8	5.6	8.8	8.8	6.1	7.9	11.7	9.8	11.3
3	---	---	---	11.0	5.6	8.6	7.8	5.7	7.1	11.4	9.7	10.5
4	---	---	---	12.2	4.7	9.2	7.1	5.6	6.4	10.6	8.0	10.1
5	---	---	---	11.2	6.2	8.7	6.9	4.9	5.9	10.8	9.1	10.1
6	---	---	---	9.7	5.5	7.9	7.6	5.3	6.5	10.3	8.9	9.4
7	8.2	3.8	5.9	9.3	6.8	8.2	9.8	5.4	7.5	11.5	10.3	11.0
8	7.0	4.1	5.5	9.3	3.7	6.9	10.2	6.9	8.7	11.9	11.3	11.6
9	8.2	3.5	6.1	8.6	4.1	6.1	7.6	5.5	7.0	11.9	10.6	11.3
10	7.8	5.6	6.7	9.2	4.9	7.3	7.5	5.3	6.6	12.2	11.4	11.9
11	7.2	5.7	6.5	10.1	5.7	8.6	8.0	5.1	7.0	12.3	11.7	12.0
12	6.5	5.6	6.0	10.2	7.6	9.3	8.6	5.5	7.2	12.1	11.5	11.9
13	6.2	4.5	5.5	10.1	7.5	9.5	8.7	5.8	7.5	12.7	11.2	11.7
14	5.0	3.7	4.5	9.9	8.6	9.5	8.9	5.3	7.9	11.9	11.2	11.6
15	8.2	3.4	5.2	12.2	8.6	10.9	8.7	5.5	7.6	12.0	10.8	11.6
16	7.7	5.4	6.6	12.1	10.7	11.6	8.3	4.5	7.2	11.8	10.7	11.3
17	9.5	5.6	7.6	11.7	10.8	11.3	8.0	4.3	6.8	11.8	10.6	11.2
18	8.5	3.6	6.4	11.3	9.8	10.7	8.5	4.3	6.9	11.3	10.1	10.8
19	7.4	2.0	5.7	11.9	9.7	11.1	8.1	4.9	6.6	11.6	10.0	10.8
20	---	---	---	11.6	9.2	10.6	---	---	---	11.0	9.5	10.6
21	7.9	5.2	6.6	11.4	7.1	10.2	---	---	---	10.8	8.3	10.2
22	8.1	5.5	6.7	11.2	9.0	10.0	---	---	---	11.2	9.4	10.6
23	8.5	5.8	7.4	11.5	9.1	10.1	12.7	11.5	12.3	11.1	10.0	10.7
24	7.9	5.5	7.1	11.8	9.1	10.1	12.5	9.9	12.1	11.2	8.6	10.4
25	6.6	5.2	6.2	11.0	8.2	9.4	12.0	9.9	11.5	10.7	8.8	10.0
26	---	---	---	9.7	6.9	7.9	12.5	9.8	11.9	10.9	7.7	10.1
27	---	---	---	10.0	6.5	7.8	12.7	10.7	12.0	11.0	7.9	9.8
28	10.4	6.5	9.0	6.8	5.5	6.1	12.7	11.1	12.0	10.5	8.2	9.5
29	10.6	6.9	8.9	8.3	5.9	7.3	12.8	11.4	12.2	10.3	7.8	9.1
30	12.1	7.0	9.7	9.7	7.4	8.5	12.8	11.9	12.4	10.6	7.6	9.3
31	12.3	7.3	9.8	---	---	---	12.6	8.7	12.1	9.4	6.8	8.1
MONTH	---	---	---	12.4	3.7	9.1	---	---	---	12.7	6.8	10.7
DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	8.6	5.7	7.8	10.3	9.3	9.7	9.3	8.5	8.9	8.9	2.5	7.0
2	9.8	6.7	8.0	10.3	9.1	9.7	9.1	8.3	8.7	8.5	4.4	6.9
3	9.5	7.4	8.3	9.7	8.8	9.2	9.7	8.3	8.8	7.2	4.8	6.0
4	9.2	7.6	8.4	9.3	8.0	8.8	10.8	8.9	9.8	5.8	4.0	4.8
5	8.9	7.4	8.2	9.2	7.6	8.3	10.9	7.7	9.1	5.4	3.1	4.2
6	9.7	7.5	8.7	8.9	7.4	8.0	9.1	7.5	8.6	6.4	2.3	4.1
7	9.0	5.9	7.9	8.8	7.2	8.3	9.2	6.6	8.2	6.9	2.5	4.4
8	8.3	4.0	6.4	9.1	8.1	8.7	9.8	6.6	8.4	7.5	2.4	5.0
9	6.6	4.4	5.2	9.6	8.9	9.2	10.4	7.2	8.7	7.5	6.1	6.5
10	6.9	5.1	6.3	10.4	9.1	9.7	10.7	7.2	8.9	8.0	5.4	6.6
11	10.6	6.1	8.0	10.8	9.5	10.1	10.1	7.4	8.5	8.8	6.3	7.5
12	9.3	5.8	7.5	11.7	8.5	10.2	9.5	6.7	8.3	11.8	6.4	8.8
13	9.9	6.0	7.8	11.4	9.6	10.4	10.3	6.6	8.4	9.6	7.0	8.5
14	10.1	5.7	7.8	11.2	9.5	10.3	9.3	6.4	7.7	8.9	6.4	7.6
15	9.1	5.3	7.4	10.5	8.9	10.1	9.2	5.5	7.4	---	---	---
16	8.8	5.4	6.6	9.8	8.6	9.1	8.5	5.3	6.9	---	---	---
17	7.9	5.2	6.5	9.2	9.0	9.1	9.9	5.5	7.7	8.2	5.7	6.9
18	8.4	6.0	7.1	10.7	9.2	10.2	12.1	5.6	9.0	7.9	4.8	6.2
19	8.1	6.5	7.3	10.6	10.2	10.4	11.9	8.0	10.0	7.1	4.1	5.4
20	9.4	7.0	8.2	11.1	10.6	10.9	11.9	4.3	9.4	---	---	---
21	9.8	5.8	7.3	11.1	10.8	11.0	9.4	7.4	8.5	---	---	---
22	10.6	9.5	9.9	11.2	10.7	11.0	10.7	7.3	8.8	---	---	---
23	10.1	9.5	9.9	11.0	10.4	10.8	11.4	7.1	9.1	---	---	---
24	10.3	9.4	9.9	10.8	10.1	10.5	10.8	7.1	9.0	---	---	---
25	10.3	6.8	9.7	10.4	9.8	10.1	---	---	---	---	---	---
26	9.9	8.4	9.4	10.0	9.4	9.8	---	---	---	---	---	---
27	10.0	9.4	9.7	9.7	9.3	9.5	10.4	8.0	9.5	---	---	---
28	10.0	9.3	9.6	9.7	9.2	9.5	10.4	7.2	8.7	---	---	---
29	---	---	---	9.4	9.1	9.3	9.6	6.5	8.0	---	---	---
30	---	---	---	9.1	8.5	9.0	8.3	4.7	6.9	---	---	---
31	---	---	---	9.1	8.6	8.9	---	---	---	---	---	---
MONTH	10.6	4.0	8.0	11.7	7.2	9.7	---	---	---	---	---	---

08048970 VILLAGE CREEK AT EVERMAN, TX

LOCATION.--Lat 32°36'12", long 97°15'53", Tarrant County, Hydrologic Unit 12030102, at center of channel on downstream side of bridge on Rendon Road (Tarrant County Road 1015), 1.4 mi downstream from Deer Creek and 1.8 mi southeast of Everman High School.

DRAINAGE AREA.--84.5 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 589.93 ft above sea level (Tarrant County Public Works Department reference mark). Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good except those less than 10 ft³/s, which are poor. Peak discharge from rating extended above 7,700 ft³/s on basis of area-velocity study. No flow at times. No known regulation or diversion.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since about 1930, 27.37 ft date uncertain, but may be same date, Mar 27, 1977, as date of maximum stage at discontinued downstream station, Village Creek at Kennedale (08048980). Flood of May 18, 1989, may have equalled, or slightly exceeded, the indicated known maximum stage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	2.8	5.2	4.5	20	17	18	6.7	.06	.00	.00	.00
2	.00	2.7	14	4.4	6.6	12	15	6.8	.06	.00	.00	.00
3	.00	2.8	21	4.6	6.0	11	13	6.8	.05	.00	.00	.00
4	.00	3.1	5.9	5.0	5.6	10	12	6.6	.04	.00	.00	.00
5	.00	3.1	4.8	93	5.4	9.8	12	6.3	.53	.00	.00	.00
6	.00	3.1	4.3	283	5.3	11	11	6.5	.32	.00	.00	.00
7	.00	3.0	56	459	5.3	26	11	6.0	.08	.00	.00	.00
8	.00	2.8	63	159	5.2	31	11	6.0	.06	.00	.00	.00
9	3.6	2.8	8.5	57	5.1	13	10	5.9	.08	.00	.00	.00
10	4.8	3.1	6.2	13	5.7	10	10	5.5	.10	.00	.00	.00
11	4.2	3.1	5.4	131	5.9	9.2	9.8	5.2	3.4	.00	.00	.00
12	12	8.1	5.2	279	5.4	8.5	9.5	5.0	.63	.00	.00	.00
13	61	12	4.9	47	6.2	8.5	9.3	4.8	.11	.00	.00	.00
14	5.9	6.3	4.8	11	5.7	8.7	9.2	4.5	.06	.00	.00	.00
15	4.0	4.9	4.8	10	5.7	80	8.7	4.1	.04	.00	.00	.00
16	3.2	4.6	4.6	8.0	5.8	4020	8.4	3.6	.03	.00	.00	.00
17	2.4	4.4	4.4	7.0	7.5	156	8.2	2.6	.03	.00	.00	.00
18	1.8	4.2	4.2	6.6	6.3	79	8.3	.98	.03	.00	.00	.06
19	1.1	4.2	4.1	6.4	7.6	82	8.1	.95	.03	.00	.00	.12
20	.80	4.2	3.8	6.3	6.6	60	8.1	1.5	.02	.00	.00	.05
21	1.7	4.1	66	6.1	49	50	13	1.3	.02	.00	.00	.02
22	3.6	4.4	39	6.3	363	40	8.1	1.7	.02	.00	.00	.01
23	72	4.8	48	5.9	47	39	7.6	1.4	.01	.00	.00	.01
24	26	4.8	110	5.7	14	34	7.3	1.2	.01	.00	.00	.01
25	6.3	4.8	22	5.9	268	29	7.2	.96	.01	.00	.00	.01
26	4.6	4.8	8.3	5.7	1850	24	7.0	1.3	.00	.00	.00	.00
27	3.9	4.9	7.8	5.6	81	23	7.0	30	.00	.00	.00	.01
28	3.5	5.0	6.2	5.3	37	21	6.8	2.2	.00	.00	.00	.01
29	2.9	5.2	5.5	5.3	---	19	6.8	.27	.00	.00	.00	.01
30	3.1	5.2	5.0	5.2	---	18	6.8	.14	.00	.00	.00	.00
31	3.2	---	4.7	9.1	---	41	---	.08	---	.00	.00	---
TOTAL	235.60	133.3	557.6	1660.9	2841.9	5000.7	288.2	136.88	5.83	0.00	0.00	0.32
MEAN	7.60	4.44	18.0	53.6	101	161	9.61	4.42	.19	.000	.000	.011
MAX	72	12	110	459	1850	4020	18	30	3.4	.00	.00	.12
MIN	.00	2.7	3.8	4.4	5.1	8.5	6.8	.08	.00	.00	.00	.00
AC-FT	467	264	1110	3290	5640	9920	572	272	12	.00	.00	.6

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1998, BY WATER YEAR (WY)

	1990	1991	1992	1993	1994	1995	1996	1997	1998
MEAN	40.6	17.3	54.0	27.8	70.3	62.8	65.8	82.8	30.2
MAX	240	52.1	367	117	165	161	233	339	141
(WY)	1992	1995	1992	1992	1997	1998	1990	1990	1993
MIN	.68	.50	.72	.83	1.32	1.13	2.70	.59	.19
(WY)	1990	1996	1991	1996	1996	1996	1996	1996	1998

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1990 - 1998

ANNUAL TOTAL	12482.18	10861.23	
ANNUAL MEAN	34.2	29.8	38.6
HIGHEST ANNUAL MEAN			92.6
LOWEST ANNUAL MEAN			1.37
HIGHEST DAILY MEAN	1910	Apr 4	5990
LOWEST DAILY MEAN	.00	Sep 9	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Sep 9	.00
INSTANTANEOUS PEAK FLOW			9670
INSTANTANEOUS PEAK STAGE			21.47
ANNUAL RUNOFF (AC-FT)	24760	21540	27960
10 PERCENT EXCEEDS	61	29	50
50 PERCENT EXCEEDS	4.8	4.4	4.1
90 PERCENT EXCEEDS	.03	.00	.02

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Oct 1989 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct 1989 to Sep 1990.

PH: Oct 1989 to Sep 1990.

WATER TEMPERATURE: Oct 1989 to Sep 1990.

DISSOLVED OXYGEN: Oct 1989 to Sep 1990.

INSTRUMENTATION.--From Oct 1989 to Sep 1990, a four-parameter water-quality monitor continuously recorded specific conductance, pH, water temperature, and dissolved oxygen at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,000 microsiemens, on several days during Jan and May 1990; minimum, 129 microsiemens, May 3, 1990.

PH: Maximum, 9.1 units, Jan 13, 1990; minimum, 7.0 units, Nov 22, 1989.

WATER TEMPERATURE: Maximum, 34.5°C, Jul 11, 1990; minimum, 0.5°C, Dec 22, 1989.

DISSOLVED OXYGEN: Maximum, 20.8 mg/L, Feb 25, 1990; minimum, 2.4 mg/L, Nov 8, 1989.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, DIS-SOLVED BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL AS CAC03 (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CAC03 (MG/L) (00904)	
DEC 08...	1211	56	321	7.8	9.0	10.8	96	5.2	100	16
JAN 27...	1341	5.6	775	8.5	9.0	15.8	138	1.4	260	58
APR 01...	1125	19	735	8.1	17.0	10.8	114	3.1	240	41
MAY 15...	1110	4.1	719	7.8	25.0	6.5	80	.5	220	28
JUN 10...	1134	.10	635	8.3	28.0	13.4	175	1.7	170	21
SEP 21...	0938	.02	699	7.8	26.0	5.0	63	5.8	200	37

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
DEC 08...	35	4.4	34	1	6.4	88	37	37	.28	7.6
JAN 27...	85	11	61	2	4.3	200	100	59	.36	2.2
APR 01...	77	12	54	2	3.8	200	100	49	.34	3.8
MAY 15...	67	14	74	2	2.5	200	110	58	.36	5.6
JUN 10...	51	11	65	2	4.7	150	87	57	.45	5.8
SEP 21...	61	10	65	2	6.9	160	120	57	.48	18

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AMONIA + ORGANIC DIS-SOLVED (MG/L AS N) (00623)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
DEC 08...	219	1.01	.047	1.06	.098	.82	.92	.304	.301	.92
JAN 27...	448	.544	.013	.557	.020	.41	.43	.012	.016	.05
APR 01...	424	.438	.016	.454	.066	.55	.61	.014	<.010	--
MAY 15...	447	--	<.010	<.050	.060	.37	.43	<.010	.020	.06
JUN 10...	372	--	.015	<.050	.061	.37	.43	<.010	.013	.04
SEP 21...	430	--	<.010	.117	.049	.87	.92	.033	.029	.09

TRINITY RIVER BASIN

08049200 LAKE ARLINGTON AT ARLINGTON, TX

LOCATION.--Lat 32°42'58", long 97°11'32", Tarrant County, Hydrologic Unit 12030102, in pumphouse at right end of Arlington Dam on Village Creek near western boundary of Arlington, 1.5 mi upstream from the Texas and Pacific Railway Co. bridge and 7 mi upstream from mouth.

DRAINAGE AREA.--143 mi².

WATER-CONTENT RECORDS

PERIOD OF RECORD.--Mar 1957 to current year.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Sep 9, 1957, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam 6,482 ft long. The service spillway is a 10-foot diameter uncontrolled circular drop inlet. The spillway is an 882-foot-wide cut through natural ground near the right end of dam. The dam was completed and storage began Mar 31, 1957. Capacities are based on a 1994 survey. The dam was built by the city of Arlington to impound water for municipal and industrial uses. Water is diverted from Cedar Creek Reservoir (station 08063010) into Lake Arlington. Water is pumped from the lake to a generating plant of Texas Electric Service Company. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	572.0
Crest of Spillway.....	559.7
Crest of drop inlet (top of conservation pool).....	550.0
Lowest gated outlet (invert).....	505.0

COOPERATION.--Capacity Table No. 2 provided by the city of Arlington. A capacity table, Table No. 3, was provided by the Texas Water Development Board and put into effect Oct 1995.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 72,500 acre-ft, May 17, 1989 (elevation, 562.42 ft); minimum contents since lake first filled in Apr 1957, 16,210 acre-ft, Aug 5, 11-12, 1998 (elevation, 536.51 ft); minimum elevation since lake first filled in Apr 1957, 534.27 ft, Oct 17, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 48,380 acre-ft, Mar 16 (elevation, 555.39 ft); minimum contents, 16,210 acre-ft, Aug 5, 11-12 (elevation, 536.51 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20060	21770	25550	36290	38400	39130	38810	35870	33550	28260	17140	17770
2	19980	21810	25930	36330	38380	39050	38800	35700	33350	27890	16840	17840
3	19710	21920	26120	36440	38310	38980	38670	35490	33100	27610	16450	17770
4	19420	22200	26120	37110	38270	38950	38670	35290	33010	27410	16320	17720
5	19150	22400	26120	38400	38250	38910	38530	35190	32970	27480	16320	17600
6	18930	22510	26250	39050	38190	38890	38440	35090	33040	27240	16390	17490
7	19040	22530	26970	39570	38150	38920	38290	34890	32930	26950	16490	17400
8	19170	22640	27410	39220	38060	38920	38170	34890	32930	26630	16450	17360
9	19190	22670	27440	39100	37960	38910	38060	35020	32770	26270	16360	17350
10	19240	22740	27510	39020	37930	38890	37940	35000	32680	26080	16280	17360
11	19390	22850	27580	39340	37890	38860	37740	34950	33080	26080	16210	17570
12	19960	23170	27630	39220	37850	38860	37600	34800	33120	25100	16260	17990
13	20300	23410	27660	39120	37830	38840	37430	34670	33130	24780	16510	18210
14	20350	23490	27720	39030	37760	38870	37220	34650	33020	24360	16970	18280
15	20490	23630	27750	38970	37660	39020	37090	34630	32810	24020	17230	18470
16	20620	23770	27730	38920	37640	47580	36900	34510	32720	23670	17370	18560
17	20620	23860	27770	38870	37580	42620	36770	34340	32440	23350	17430	18830
18	20760	23950	27840	38840	37600	40500	36610	34190	32300	23020	17440	18970
19	20860	24100	27890	38820	37700	39460	36430	34030	32060	22740	17560	19080
20	20800	24180	30710	38810	37700	39150	36350	33850	31810	22280	17650	19110
21	20740	24330	32640	38800	38340	39040	36310	33660	31440	21920	17720	19100
22	20810	24450	32620	38780	39020	38970	36270	33590	31190	21460	17780	19010
23	21770	24570	32770	38760	39010	38910	36270	33460	30870	21100	17840	18960
24	21820	24690	35660	38690	38980	38870	36200	33370	30530	20650	17850	19040
25	21640	24810	35760	38590	39200	38860	36080	33260	30190	20200	17890	19030
26	21460	24910	35990	38510	41860	38860	36060	33190	29860	19890	17960	18980
27	21380	25090	36060	38480	40140	38840	36080	33960	29560	19530	17960	18960
28	21440	25240	36160	38400	39250	38830	36080	34100	29160	19050	17910	18890
29	21540	25340	36140	38340	---	38810	36060	34010	28840	18660	17910	18960
30	21610	25450	36140	38290	---	38820	35970	33830	28570	18100	17880	19170
31	21690	---	36200	38340	---	38830	---	33720	---	17650	17790	---
MIN	18930	21770	25550	36290	37580	38810	35970	33190	28570	17650	16210	17350
(+)	540.36	542.62	548.63	549.76	550.98	550.06	548.51	547.30	544.44	537.61	537.71	538.69
(@)	+1410	+3760	+10750	+2140	+910	-420	-2860	-2250	-5150	-10920	+140	+1380
CAL YR 1997	MAX 43950	MIN 18930	(@) +2980									
WTR YR 1998	MAX 47580	MIN 16210	(@) -1110									

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

08049200 LAKE ARLINGTON AT ARLINGTON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Jan 1964 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

324304097113601 - LAKE ARLINGTON SITE AC

DATE	TIME	RESER- VOIR STORAGE (AC-FT) (00054)	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00301)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
JAN											
23...	1048	38800	1.00	297	7.9	10.5	.50	9.7	87	100	7
23...	1051	--	10.0	298	7.9	10.0	--	9.5	84	--	--
23...	1054	--	20.0	297	7.8	10.0	--	9.5	84	--	--
23...	1057	--	30.0	298	7.8	10.0	--	9.5	84	--	--
23...	1100	--	44.0	297	7.8	10.0	--	9.6	--	100	7
APR											
30...	1145	36000	1.00	314	8.3	23.5	.64	8.5	103	120	12
30...	1148	--	10.0	315	8.2	22.0	--	8.0	94	--	--
30...	1151	--	20.0	315	8.1	21.5	--	7.6	88	--	--
30...	1155	--	30.0	316	8.1	21.5	--	7.0	81	--	--
30...	1200	--	40.0	318	7.8	21.5	--	6.4	74	120	15
JUL											
14...	1000	24600	1.00	310	8.6	35.5	1.01	6.5	97	110	10
14...	1006	--	10.0	309	8.6	34.5	--	6.2	91	--	--
14...	1012	--	20.0	312	7.5	32.0	--	.0	0	--	--
14...	1017	--	33.0	362	7.1	27.0	--	.2	3	130	--

324304097113601 - LAKE ARLINGTON 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)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
JAN											
23...	35	3.8	16	.7	4.4	95	25	13	.22	4.6	161
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	35	3.8	16	.7	4.4	95	25	13	.22	4.6	161
APR											
30...	41	4.2	17	.7	4.2	110	29	14	.22	4.0	180
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	42	4.2	17	.7	4.3	110	28	14	.22	4.7	182
JUL											
14...	35	4.9	19	.8	4.9	97	29	15	.25	3.3	170
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	43	5.1	18	.7	4.9	140	12	15	.23	9.7	198

324304097113601 - LAKE ARLINGTON SITE AC

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN, MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
JAN											
23...	.350	.030	.380	.140	.34	.49	.047	.040	.12	<10	<4.0
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	.363	.029	.392	.139	.31	.45	.031	.037	.11	<10	<4.0
APR											
30...	.291	.030	.321	.063	.24	.30	.017	.021	.06	<10	<4.0
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	.266	.035	.301	.155	.22	.37	.027	.031	.10	<10	49
JUL											
14...	--	.011	<.050	.045	.34	.38	.066	.024	.07	<10	<4.0
14...	--	.010	<.050	.043	.32	.36	<.010	.020	.06	<10	<4.0
14...	--	.011	<.050	.058	.36	.42	<.010	.022	.07	18	134
14...	--	.010	<.050	2.22	.45	2.7	.530	.542	1.7	550	2320

TRINITY RIVER BASIN

08049200 LAKE ARLINGTON AT ARLINGTON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

324320097121101 - LAKE ARLINGTON SITE AL

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)
JAN							
23...	1122	1.00	298	7.9	10.5	9.7	87
23...	1125	10.0	298	7.9	10.0	9.5	84
23...	1128	20.0	297	7.9	10.0	9.5	84
23...	1131	30.0	297	7.9	10.0	9.4	84
APR							
30...	1210	1.00	316	8.3	23.5	8.7	105
30...	1213	10.0	316	8.2	22.0	8.4	98
30...	1216	20.0	316	8.1	21.5	8.1	94
30...	1219	30.0	317	8.1	21.5	8.2	95
JUL							
14...	1023	1.00	309	8.6	35.5	6.3	94
14...	1025	10.0	310	8.4	35.0	5.8	86
14...	1028	23.0	316	7.5	32.5	.3	4

324253097121801 - LAKE ARLINGTON SITE BC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)
JAN								
23...	1148	1.00	299	7.9	10.5	--	9.8	88
23...	1151	10.0	299	7.9	10.5	--	9.8	88
23...	1154	20.0	300	7.9	10.0	--	9.7	86
23...	1157	30.0	299	7.9	10.0	--	9.6	85
23...	1200	38.0	299	7.9	10.0	--	9.6	85
APR								
30...	1230	1.00	317	8.3	23.0	.64	9.1	109
30...	1233	10.0	316	8.1	21.5	--	7.8	91
30...	1235	20.0	316	8.1	21.5	--	7.0	81
30...	1240	30.0	320	7.9	21.5	--	5.8	67
30...	1243	40.0	330	7.7	21.5	--	5.6	65
JUL								
14...	1036	1.00	309	8.6	36.5	.82	6.6	100
14...	1039	10.0	310	8.5	35.0	--	6.3	93
14...	1042	20.0	311	7.4	31.5	--	.4	6
14...	1045	30.0	347	7.2	29.0	--	.3	4

324301097123301 - LAKE ARLINGTON SITE BL

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)
JAN							
23...	1207	1.00	299	7.9	10.0	9.7	86
23...	1210	10.0	299	7.9	10.0	9.6	85
23...	1213	24.0	298	7.9	10.0	9.6	85
APR							
30...	1252	1.00	317	8.3	23.0	8.3	99
30...	1255	10.0	317	8.1	21.5	7.7	89
30...	1300	20.0	317	8.0	21.5	7.3	85
30...	1303	31.0	318	7.9	21.5	7.0	81
JUL							
14...	1051	1.00	309	8.6	36.5	6.7	101
14...	1054	10.0	309	8.4	34.5	5.9	86
14...	1056	24.0	332	7.4	30.5	.2	3

TRINITY RIVER BASIN

08049200 LAKE ARLINGTON AT ARLINGTON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

324257097130301 - LAKE ARLINGTON SITE CC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (PER- CENT) SATUR- ATION (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT) SATUR- ATION (MG/L) (00301)
JAN								
23...	1224	1.00	300	7.9	13.0	--	9.9	94
23...	1227	10.0	300	7.9	11.5	--	9.9	91
23...	1230	20.0	298	7.9	11.0	--	9.8	89
APR								
30...	1312	1.00	319	8.2	27.0	.54	8.0	103
30...	1315	10.0	320	8.2	27.0	--	8.1	104
30...	1318	20.0	320	8.2	26.5	--	8.0	102
JUL								
14...	1108	1.00	308	8.5	42.5	.94	6.0	100
14...	1110	10.0	309	8.5	42.0	--	6.0	99
14...	1113	16.0	309	8.5	41.5	--	6.0	98

324228097130301 - LAKE ARLINGTON 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)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (PER- CENT) SATUR- ATION (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT) SATUR- ATION (MG/L) (00301)
JAN								
23...	1235	1.00	302	7.9	11.0	.43	9.8	89
23...	1238	10.0	302	7.9	10.5	--	9.8	88
23...	1241	19.0	301	7.9	10.5	--	9.7	87
APR								
30...	1326	1.00	318	8.1	24.0	.55	7.7	94
30...	1329	10.0	317	8.1	22.0	--	7.5	88
30...	1332	20.0	317	8.0	22.0	--	7.5	88
JUL								
14...	1125	1.00	309	8.5	39.5	.91	6.2	98
14...	1128	13.0	310	7.9	34.0	--	4.0	58

324143097132201 - LAKE ARLINGTON SITE EC

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 (PER- CENT) SATUR- ATION (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT) SATUR- ATION (MG/L) (00301)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
JAN											
23...	1251	1.00	302	8.0	10.5	10.2	92	110	9	36	4.0
23...	1254	10.0	306	7.9	9.5	10.0	88	--	--	--	--
23...	1257	23.0	307	7.9	9.5	9.9	87	110	9	37	4.1
APR											
30...	1345	1.00	316	8.6	22.5	9.8	116	120	8	40	4.1
30...	1351	10.0	317	8.4	22.0	8.9	104	--	--	--	--
30...	1356	23.0	329	8.2	21.0	8.3	95	130	15	44	4.5
JUL											
14...	1144	1.00	309	8.6	35.0	7.0	103	110	15	35	4.9
14...	1148	10.0	305	8.4	34.5	6.3	92	--	--	--	--
14...	1153	16.0	302	8.3	34.0	5.8	84	100	14	34	4.6

TRINITY RIVER BASIN

08049200 LAKE ARLINGTON AT ARLINGTON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

324143097132201 - LAKE ARLINGTON SITE EC

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS FIX END CAC03 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (70301)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)
JAN										
23...	15	.7	4.4	97	27	13	.23	4.6	165	.374
23...	--	--	--	--	--	--	--	--	--	--
23...	16	.7	4.5	99	26	13	.22	4.9	167	.390
APR										
30...	17	.7	4.1	110	30	14	.24	3.7	178	.250
30...	--	--	--	--	--	--	--	--	--	--
30...	18	.7	4.3	110	31	14	.23	2.9	188	.233
JUL										
14...	19	.8	4.9	92	29	16	.25	3.5	167	--
14...	--	--	--	--	--	--	--	--	--	--
14...	18	.8	4.9	90	28	15	.25	3.8	162	--

324143097132201 - LAKE ARLINGTON SITE EC

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
JAN										
23...	.026	.400	.108	.35	.46	.025	.039	.12	<10	<4.0
23...	--	--	--	--	--	--	--	--	--	--
23...	.028	.418	.097	.31	.40	.024	.046	.14	<10	<4.0
APR										
30...	.030	.280	.044	.22	.27	<.010	.011	.03	<10	<4.0
30...	--	--	--	--	--	--	--	--	--	--
30...	.025	.258	.057	.21	.27	<.010	.019	.06	11	<4.0
JUL										
14...	<.010	<.050	.040	.32	.36	.032	.023	.07	<10	<4.0
14...	.010	<.050	.040	.31	.35	.015	<.010	--	<10	<4.0
14...	.011	<.050	.046	.33	.38	<.010	.019	.06	<10	<4.0

324133097130601 - LAKE ARLINGTON SITE EL

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, SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)
JAN							
23...	1307	1.00	303	8.0	10.0	10.4	92
23...	1310	12.0	303	7.9	10.0	10.1	90
APR							
30...	1403	1.00	315	8.7	23.0	10.9	130
30...	1406	10.0	318	8.4	22.0	9.2	108
30...	1409	17.0	322	8.3	21.5	9.4	109
JUL							
14...	1201	1.00	309	8.6	35.5	7.0	104
14...	1203	11.0	308	8.6	35.0	7.1	105

324041097134601 - LAKE ARLINGTON SITE FC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
JAN											
23...	1323	1.00	334	8.0	10.0	10.4	92	110	9	38	4.3
23...	1326	10.0	350	7.9	9.5	10.1	90	--	--	--	--
23...	1331	15.0	340	7.8	9.0	9.4	83	120	13	41	4.5
APR											
30...	1431	1.00	314	8.7	22.0	10.3	121	120	8	40	4.1
30...	1437	14.0	329	8.1	20.5	8.9	101	120	7	41	4.2

08049200 LAKE ARLINGTON AT ARLINGTON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

324041097134601 - LAKE ARLINGTON SITE FC

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)
JAN										
23...	17	.7	4.6	110	28	14	.22	5.0	176	.413
23...	--	--	--	--	--	--	--	--	--	--
23...	19	.7	4.3	110	31	15	.22	5.5	188	.454
APR										
30...	17	.7	4.2	110	30	14	.23	3.4	178	.206
30...	17	.7	4.1	110	31	15	.24	3.7	186	.237

324041097134601 - LAKE ARLINGTON SITE FC

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- SOLVED (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
JAN										
23...	.026	.439	.083	.32	.40	.024	.041	.13	<10	7.5
23...	--	--	--	--	--	--	--	--	--	--
23...	.028	.482	.089	.31	.39	.028	.026	.08	<10	30
APR										
30...	.026	.232	.040	.21	.25	<.010	<.010	--	<10	<4.0
30...	.029	.266	.085	.22	.31	<.010	.020	.06	<10	15

08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX

LOCATION.--Lat 32°45'46", long 96°59'42", Dallas County, Hydrologic Unit 12030102, on left bank at upstream side of bridge on Belt Line Road, 1.3 mi northeast of Grand Prairie, 3.7 mi upstream from Mountain Creek, and at mile 514.6.

DRAINAGE AREA.--3,065 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Apr 1925 to current year.

REVISED RECORDS.--WSP 628: 1925. WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 405.42 ft above sea level. Prior to Dec 6, 1933, nonrecording gage at bridge on old channel 2,500 ft southeast of present site at datum 7.56 ft higher. Dec 6, 1933, to May 24, 1956, water-stage recorder at site 440 ft downstream from site of nonrecording gage at datum 7.56 ft higher than present datum. May 25, 1956, to Apr 18, 1957, nonrecording gage at site 1.5 mi downstream at different datum. Apr 19 to Aug 13, 1957, nonrecording gage on bridge at present site and at datum 5.00 ft higher than present datum. Aug 14, 1957, to Sep 30, 1982, water-stage recorder at present site and at datum 5.00 ft higher than present datum. Satellite telemeter at station.

REMARKS.--Records fair. Since installation of gage in Apr 1925, at least 10% of contributing drainage area has been regulated by three upstream reservoirs with a combined capacity of 248,600 acre-ft, of which 76,550 acre-ft is for flood control. The city of Fort Worth discharges wastewater effluent into the river upstream from this station. There are many diversions upstream from station for municipal, industrial, and other uses. The river channel at this station was relocated and rectified in 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, 30.6 ft in May 1908 (former site and datum), from information by local resident. Flood in Apr 1922, reached a stage of 29.0 ft (former site and datum), from flood-marks.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	198	163	215	765	851	2380	3870	310	229	163	168	186
2	186	167	404	682	534	1970	3680	291	230	161	165	192
3	186	165	1180	599	607	1790	3590	289	227	152	165	191
4	177	154	464	1290	821	1610	3050	288	220	154	170	186
5	170	158	340	5720	839	1520	1660	284	345	163	175	166
6	171	157	294	2560	847	1530	1240	280	271	167	288	166
7	417	165	878	4160	691	1840	979	268	221	172	549	154
8	734	166	2510	3400	491	2330	786	256	215	176	579	176
9	827	166	826	2000	443	2240	768	1740	218	180	474	174
10	800	171	417	1790	501	2260	733	620	360	178	431	145
11	439	176	338	3010	731	1900	695	371	828	170	418	106
12	1480	504	305	3480	610	1470	568	302	614	160	565	223
13	2190	806	280	2350	490	963	491	276	302	225	514	329
14	577	549	282	1880	442	780	482	267	234	238	1140	327
15	301	326	279	1790	465	1920	458	279	204	217	670	281
16	251	259	266	1590	500	8840	444	267	196	191	470	270
17	233	228	256	1430	616	16300	420	265	188	197	470	276
18	199	204	243	1340	725	12600	405	269	182	192	436	303
19	195	190	234	1320	1020	7700	411	264	175	177	420	265
20	195	184	2170	1250	821	6470	469	247	163	165	423	192
21	202	187	6500	1220	846	6040	1260	234	162	153	438	219
22	267	179	2650	1310	5010	5850	610	225	161	171	376	210
23	2420	186	1890	1210	2650	5570	442	216	168	167	369	237
24	2150	186	2900	909	2540	5340	419	213	165	164	363	440
25	e448	182	1290	856	2540	5700	384	205	161	174	284	306
26	e304	180	1070	916	6600	5460	332	251	161	182	370	222
27	237	186	1120	909	4220	5100	742	1820	159	184	313	206
28	193	189	878	863	3120	4950	524	790	157	176	220	198
29	181	269	843	815	---	4710	358	355	157	160	203	194
30	181	245	924	730	---	4290	332	266	165	158	189	191
31	180	---	987	650	---	4490	---	230	---	160	191	---
TOTAL	16689	7047	33233	52794	40571	135913	30602	12238	7238	5447	12006	6731
MEAN	538	235	1072	1703	1449	4384	1020	395	241	176	387	224
MAX	2420	806	6500	5720	6600	16300	3870	1820	828	238	1140	440
MIN	170	154	215	599	442	780	332	205	157	152	165	106
AC-FT	33100	13980	65920	104700	80470	269600	60700	24270	14360	10800	23810	13350

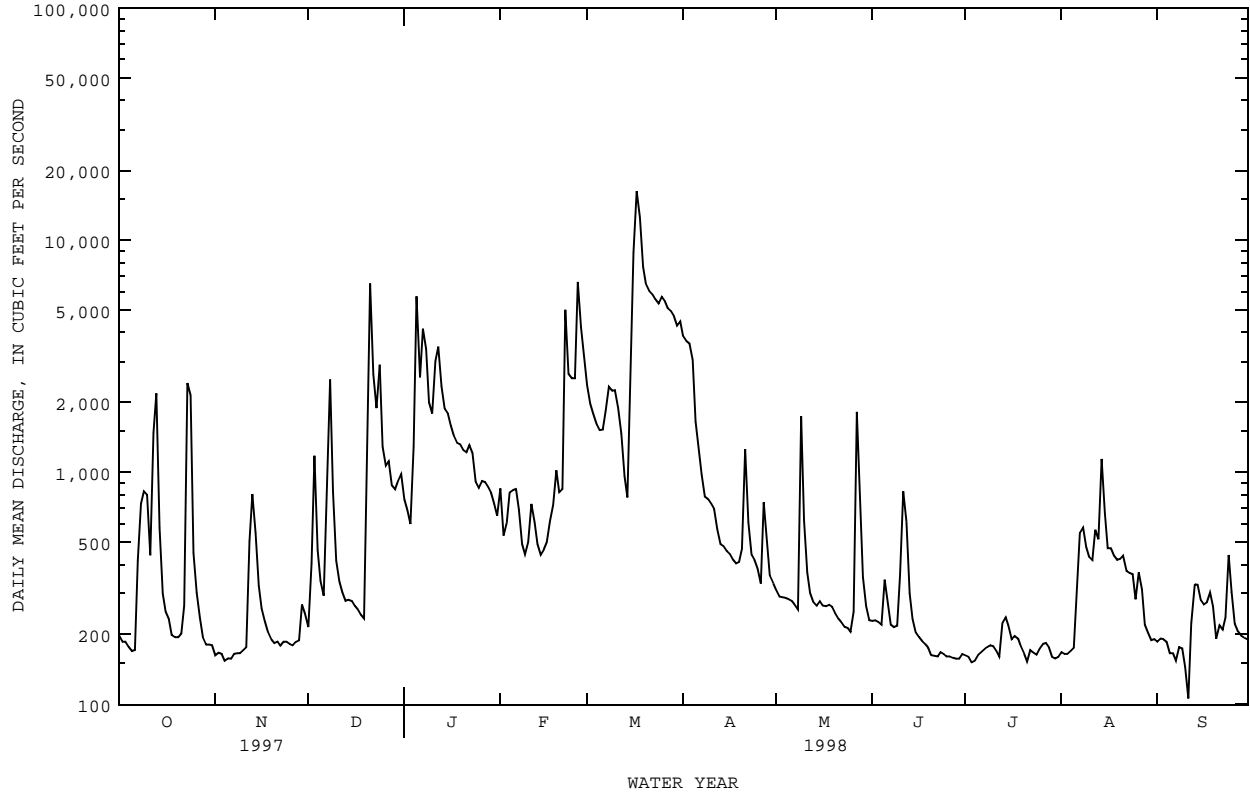
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1998, BY WATER YEAR (WY)

	505	455	486	454	670	813	853	1636	1093	394	247	327
MEAN	505	455	486	454	670	813	853	1636	1093	394	247	327
MAX	5779	4472	8319	4504	4740	4521	7245	14030	11990	3475	1478	3094
(WY)	1982	1982	1992	1992	1997	1945	1942	1990	1989	1941	1950	1962
MIN	13.6	18.9	25.0	21.7	26.8	22.5	42.6	48.5	17.0	21.1	12.1	15.6
(WY)	1940	1940	1940	1930	1930	1940	1936	1937	1925	1939	1925	1931

08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1925 - 1998	
ANNUAL TOTAL	543760		360509		664	
ANNUAL MEAN	1490		988		2629	
HIGHEST ANNUAL MEAN					79.3	
LOWEST ANNUAL MEAN					1992	
HIGHEST DAILY MEAN	16700	Feb 21	16300	Mar 17	48900	May 3 1990
LOWEST DAILY MEAN	140	Sep 11	106	Sep 11	4.5	Sep 7 1925
ANNUAL SEVEN-DAY MINIMUM	154	Aug 27	155	Sep 5	7.3	Jun 17 1925
INSTANTANEOUS PEAK FLOW			18700	Mar 17	64400	May 3 1990
INSTANTANEOUS PEAK STAGE			28.89	Mar 17	33.88	May 3 1990
ANNUAL RUNOFF (AC-FT)	1079000		715100		481000	
10 PERCENT EXCEEDS	4050		2520		1570	
50 PERCENT EXCEEDS	463		338		177	
90 PERCENT EXCEEDS	171		166		47	

e Estimated



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Jan 1964 to current year. Chemical and biochemical analyses: Jan 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct 1966 to Sep 1992, Aug 1993 to current year.

PH: Oct 1976 to Sep 1992, Aug 1993 to current year.

WATER TEMPERATURE: Oct 1966 to Sep 1992, Aug 1993 to current year.

DISSOLVED OXYGEN: Oct 1976 to Sep 1992, Aug 1993 to current year.

INSTRUMENTATION.--Since Nov 1976, a four-parameter water-quality monitor records water temperature, dissolved oxygen, pH, and specific conductance continuously at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument, probe, or probeline. Where maximum or minimum specific conductance values are not shown, mean value is estimated. 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 with the exception of the 1993 water year. New regression equations were developed based on data from water years 1989 to 1998. The standard error of estimate for dissolved solids is 4%, chloride is 13%, sulfate is 15% and for hardness is 9%. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,320 microsiemens, Dec 12, 1978; minimum, 108 microsiemens, May 1, 1986.

PH: Maximum, 8.6 units, on several days during period of record; minimum, 6.6 units, Jan 6, 1979.

WATER TEMPERATURE: Maximum, 35.0°C, Aug 8, 1982; minimum, 3.0°C, Jan 9, 1973.

DISSOLVED OXYGEN: Maximum, 14.8 mg/L, Dec 14, 16, 1983; minimum, 0.0 mg/L, on several days during period of record.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 904 microsiemens, Jun 27; minimum, 139 microsiemens, Oct 10.

PH: Maximum, 8.2 units, Oct 10, Apr 30, May 1-3, 5, 31, Jun 1-10, 14, Jul 9-11, 22, 31, Aug 1-2; minimum, 6.8 units, Mar 16.

WATER TEMPERATURE: Maximum, 33.5°C, Jul 12, 14; minimum, 7.4°C, Jan 11.

DISSOLVED OXYGEN: Maximum, 11.0 mg/L, Jan 27; minimum, 0.4 mg/L, May 9.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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 DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	
OCT 06...	1129	592	876	7.9	26.0	8.3	103	2.1	170	7
JAN 27...	1101	860	562	7.9	11.0	11.2	103	1.6	190	50
APR 01...	1357	3330	426	7.4	18.0	9.1	97	2.0	160	15
MAY 14...	1420	226	756	7.9	26.0	9.7	121	5.3	190	11
JUN 10...	0926	285	744	8.0	27.0	7.1	90	2.4	180	29
SEP 09...	1015	146	745	7.9	29.0	6.1	80	3.4	160	51

DATE	CALCIUM DIS-SOLVED (MG/L) AS CA (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L) AS MG (00925)	SODIUM, DIS-SOLVED (MG/L) AS NA (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L) AS K (00935)	ALKA-LINITY WAT DIS FIX END FIELD (MG/L) CACO3 (39036)	SULFATE DIS-SOLVED (MG/L) AS SO4 (00945)	CHLO-RIDE, DIS-SOLVED (MG/L) AS CL (00940)	FLUO-RIDE, DIS-SOLVED (MG/L) AS F (00950)	SILICA, DIS-SOLVED (MG/L) AS SIO2 (00955)
OCT 06...	53	8.8	101	3	13	160	74	110	1.1	12
JAN 27...	65	8.1	38	1	5.4	150	56	38	.50	7.4
APR 01...	53	6.1	21	.7	3.8	140	30	22	.28	7.4
MAY 14...	62	8.0	80	3	10	180	77	75	.82	7.8
JUN 10...	59	7.8	78	3	11	150	65	71	.79	6.8
SEP 09...	48	9.2	83	3	13	110	62	87	1.0	11

08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	SOLIDS, SUM OF CONSTITUENTS, 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- SOLVED (MG/L) AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L) AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L) AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L) AS PO4) (00660)
OCT 06...	502	7.28	.033	7.31	.053	1.4	1.4	.948	.916	2.8
JAN 27...	325	4.29	.013	4.31	.050	.53	.58	.247	.276	.85
APR 01...	234	.738	.012	.750	.086	.55	.64	.116	.088	.27
MAY 14...	455	5.45	.025	5.48	.047	1.2	1.3	.967	.885	2.7
JUN 10...	440	10.9	.048	10.9	.073	1.0	1.1	1.13	1.13	3.5
SEP 09...	445	13.7	.112	13.8	.323	1.3	1.6	1.33	1.24	3.8

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1997 TO SEPTEMBER 1998

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. 1997	16689	510	289	13010	43	1920	47	2110	160
NOV. 1997	7047	696	398	7570	69	1310	65	1240	180
DEC. 1997	33233	427	240	21560	32	2870	39	3480	140
JAN. 1998	52794	445	250	35660	33	4660	40	5750	150
FEB. 1998	40571	474	267	29250	37	4050	43	4730	160
MAR. 1998	135913	414	232	85230	29	10620	37	13720	150
APR. 1998	30602	538	304	25150	45	3730	49	4080	170
MAY 1998	12238	650	370	12240	62	2040	61	2000	180
JUNE 1998	7238	734	420	8220	75	1470	69	1350	190
JULY 1998	5447	809	466	6850	88	1300	77	1130	190
AUG. 1998	12006	772	443	14370	82	2650	73	2360	190
SEPT 1998	6731	753	432	7840	78	1410	71	1290	190
TOTAL	360509	**	**	266900	**	38030	**	43250	**
WTD.AVG.	988	486	274	**	39	**	44	**	160

TRINITY RIVER BASIN

08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	809	682	776	775	750	761	709	676	697	561	503	527
2	860	804	834	792	758	774	725	434	658	577	538	560
3	873	843	857	809	777	794	662	450	514	590	539	565
4	854	808	831	808	763	775	522	473	491	619	205	560
5	852	820	838	779	736	753	624	522	573	374	195	297
6	895	841	873	829	779	802	683	624	657	402	321	370
7	894	543	784	832	795	811	707	298	601	373	314	339
8	677	398	527	849	819	833	475	278	345	409	341	376
9	565	346	491	847	798	810	509	367	417	454	407	434
10	581	139	456	813	799	808	611	509	555	493	454	479
11	557	454	507	812	761	783	665	611	634	510	279	431
12	588	258	478	761	515	656	705	665	687	408	353	382
13	356	307	336	719	513	569	717	692	708	447	408	434
14	441	328	371	522	466	490	755	717	743	466	447	458
15	563	441	500	560	507	524	761	692	734	481	465	475
16	680	563	638	651	560	613	717	681	704	501	475	491
17	736	674	718	702	649	681	749	681	712	507	486	500
18	768	721	744	688	649	676	763	710	732	526	489	509
19	787	764	771	730	659	695	778	754	763	528	486	504
20	790	759	776	761	720	742	788	229	511	526	488	512
21	759	695	729	773	744	752	264	205	225	518	499	509
22	745	705	718	795	772	785	403	237	330	528	498	513
23	760	172	536	792	768	778	450	349	403	532	503	520
24	359	250	303	797	777	788	372	348	360	565	505	533
25	506	359	443	780	758	770	454	372	425	591	543	570
26	614	493	552	781	736	754	500	452	483	597	548	575
27	636	592	617	812	771	786	510	486	498	576	546	563
28	664	599	651	833	775	798	540	500	525	597	562	583
29	715	638	680	794	735	775	564	520	546	603	565	588
30	754	709	737	735	676	698	579	520	552	618	576	600
31	779	736	752	---	---	---	542	513	530	657	596	619
MONTH	895	139	639	849	466	734	788	205	558	657	195	496
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	729	639	670	---	---	e457	426	413	420	763	740	750
2	673	611	646	---	---	e479	424	414	420	779	748	761
3	673	634	657	---	---	e487	424	413	420	785	753	770
4	661	581	605	506	485	497	442	423	433	807	761	788
5	609	588	597	510	489	501	508	438	479	761	730	747
6	606	576	593	511	495	502	555	501	541	755	729	741
7	612	571	590	518	487	502	604	543	575	778	746	765
8	688	609	641	500	461	475	654	593	627	783	747	770
9	711	642	676	473	451	466	651	620	640	747	356	530
10	730	660	700	474	454	467	654	614	637	522	408	470
11	737	635	668	497	463	484	670	628	652	617	522	561
12	670	617	646	527	494	512	688	637	659	646	617	631
13	691	631	659	593	519	555	699	667	685	712	640	688
14	715	686	703	636	576	605	709	668	685	764	711	742
15	716	672	697	611	428	543	726	699	713	774	741	759
16	709	634	668	428	204	262	742	717	730	785	742	766
17	689	636	664	342	216	287	754	719	737	784	766	775
18	688	618	664	388	342	367	746	727	735	794	760	776
19	631	579	614	419	388	404	756	727	744	765	732	751
20	598	574	589	---	---	e430	757	647	731	755	724	737
21	597	564	583	---	---	e442	731	553	648	811	747	772
22	581	303	391	---	---	e448	623	540	573	836	802	815
23	451	348	382	---	---	e453	683	623	653	867	830	840
24	475	451	463	467	458	464	719	662	689	883	839	857
25	487	242	459	467	455	460	730	696	715	886	850	869
26	390	279	316	465	459	461	735	694	721	886	814	844
27	421	318	382	464	443	452	771	595	734	815	319	552
28	---	---	e434	452	428	439	616	553	584	505	390	436
29	---	---	---	435	419	429	705	616	645	630	505	564
30	---	---	---	462	418	427	760	705	736	701	630	679
31	---	---	---	452	426	437	---	---	---	758	693	728
MONTH	---	---	584	---	---	458	771	413	632	886	319	717

08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	788	746	767	844	794	811	858	830	847	897	814	852
2	799	769	785	867	838	852	866	834	852	814	750	772
3	777	741	755	876	848	861	901	846	873	787	758	767
4	810	771	785	886	822	867	883	814	851	817	787	805
5	806	713	773	848	802	827	826	782	805	831	795	813
6	824	652	751	873	807	846	839	802	820	812	795	802
7	773	677	724	---	---	e806	897	798	850	820	795	809
8	801	755	777	---	---	e793	872	728	809	804	745	768
9	798	756	770	818	798	806	819	732	776	745	724	732
10	761	418	676	888	799	830	815	732	786	742	729	736
11	688	458	609	896	841	870	791	763	775	804	740	769
12	587	496	521	896	837	862	806	742	775	814	666	770
13	596	528	552	860	757	836	817	705	753	774	709	742
14	701	596	673	845	752	789	792	625	719	762	696	738
15	758	691	731	761	749	754	625	538	554	707	653	686
16	772	740	756	780	744	757	676	563	631	724	653	685
17	821	751	775	795	773	780	773	676	750	841	692	764
18	866	821	838	801	754	775	755	720	741	819	765	793
19	874	854	866	822	758	788	785	712	741	765	670	704
20	872	813	834	822	755	795	784	758	771	764	720	752
21	865	806	831	813	756	790	808	759	779	770	696	740
22	880	853	864	782	750	765	821	782	796	776	737	761
23	854	799	826	818	770	794	843	805	817	781	717	742
24	820	769	788	860	818	841	857	843	851	816	624	734
25	878	797	831	850	810	833	849	814	832	685	633	662
26	897	864	880	850	806	830	834	796	808	749	673	706
27	904	861	880	854	795	824	839	819	826	791	728	756
28	888	847	866	827	748	777	855	837	843	851	789	820
29	895	866	877	766	725	746	864	832	846	841	802	814
30	896	821	850	805	753	788	864	842	853	807	769	780
31	---	---	---	865	805	839	890	859	874	---	---	---
MONTH	904	418	774	---	---	811	901	538	794	897	624	759

e Estimated

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	7.8	7.6	7.7	7.9	7.8	7.8	7.7	7.5	7.5	7.8	7.6	7.7
2	7.7	7.6	7.6	7.9	7.8	7.8	7.6	7.1	7.4	7.7	7.6	7.7
3	7.8	7.5	7.7	7.9	7.8	7.8	7.1	6.9	7.0	7.7	7.6	7.7
4	8.0	7.8	7.9	7.9	7.8	7.8	7.0	7.0	7.0	7.7	7.4	7.6
5	7.9	7.7	7.8	7.9	7.7	7.8	7.1	7.0	7.1	7.7	7.2	7.4
6	7.9	7.7	7.8	7.8	7.7	7.7	7.3	7.1	7.2	7.3	7.2	7.3
7	7.8	7.7	7.8	7.8	7.7	7.7	7.4	7.1	7.2	7.6	7.1	7.4
8	7.7	7.5	7.6	7.8	7.7	7.7	7.4	7.1	7.3	7.6	7.5	7.5
9	7.7	7.6	7.6	7.8	7.7	7.7	7.2	7.1	7.2	7.5	7.5	7.5
10	8.2	7.6	7.7	7.7	7.6	7.7	7.2	7.2	7.2	7.7	7.5	7.6
11	7.7	7.6	7.6	7.7	7.6	7.7	7.2	7.1	7.2	7.7	7.5	7.6
12	7.8	7.6	7.6	7.8	7.5	7.7	7.2	7.1	7.2	7.6	7.5	7.6
13	7.8	7.6	7.7	7.7	7.5	7.7	7.2	7.2	7.2	7.8	7.5	7.7
14	7.7	7.6	7.7	7.7	7.6	7.7	7.3	7.2	7.2	7.8	7.7	7.7
15	7.7	7.6	7.7	7.8	7.7	7.7	7.3	7.1	7.2	7.8	7.7	7.7
16	7.7	7.6	7.6	7.8	7.7	7.7	7.2	7.1	7.1	7.8	7.7	7.7
17	7.7	7.6	7.7	7.8	7.6	7.7	7.2	7.1	7.1	7.8	7.7	7.7
18	7.7	7.6	7.7	7.7	7.6	7.6	7.2	7.2	7.2	7.8	7.6	7.7
19	7.8	7.6	7.7	7.7	7.7	7.7	7.3	7.2	7.2	7.8	7.7	7.7
20	7.8	7.7	7.7	7.8	7.7	7.8	7.6	7.2	7.3	7.8	7.6	7.7
21	7.7	7.6	7.7	7.9	7.8	7.8	7.8	7.4	7.5	7.8	7.7	7.7
22	7.7	7.6	7.6	7.8	7.8	7.8	7.8	7.4	7.6	7.8	7.7	7.7
23	8.0	7.4	7.6	7.8	7.7	7.8	7.7	7.6	7.6	7.8	7.7	7.7
24	7.6	7.4	7.5	7.7	7.7	7.7	7.7	7.6	7.7	7.8	7.7	7.7
25	7.5	7.5	7.5	7.7	7.6	7.7	7.8	7.6	7.6	7.8	7.6	7.7
26	7.7	7.5	7.6	7.7	7.6	7.6	7.8	7.6	7.7	7.8	7.6	7.7
27	7.8	7.5	7.7	7.7	7.6	7.6	7.8	7.6	7.7	8.0	7.7	7.8
28	7.8	7.7	7.7	7.6	7.5	7.6	7.8	7.6	7.7	7.8	7.7	7.8
29	7.8	7.7	7.8	7.7	7.5	7.6	7.7	7.6	7.7	7.8	7.7	7.7
30	7.9	7.7	7.8	7.7	7.5	7.6	7.8	7.6	7.7	7.7	7.6	7.7
31	7.9	7.8	7.8	---	---	---	7.8	7.7	7.7	7.7	7.6	7.7
MONTH	8.2	7.4	7.7	7.9	7.5	7.7	7.8	6.9	7.4	8.0	7.1	7.6

TRINITY RIVER BASIN

08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	7.7	7.5	7.6	---	---	---	7.4	7.3	7.4	8.2	7.9	8.0
2	7.6	7.3	7.4	---	---	---	7.4	7.4	7.4	8.2	7.9	8.0
3	7.5	7.4	7.4	---	---	---	7.5	7.4	7.4	8.2	7.8	8.0
4	7.6	7.4	7.6	---	---	---	7.5	7.4	7.4	8.1	7.8	7.9
5	7.7	7.5	7.6	---	---	---	7.4	7.2	7.3	8.2	7.8	8.0
6	7.6	7.5	7.5	---	---	---	7.3	7.2	7.2	8.1	7.8	7.9
7	7.6	7.5	7.5	---	---	---	7.3	7.2	7.2	8.1	7.7	7.9
8	7.5	7.4	7.5	---	---	---	7.2	7.1	7.2	8.0	7.8	7.8
9	7.5	7.2	7.4	---	---	---	7.3	7.1	7.2	7.8	7.2	7.4
10	7.3	7.1	7.2	---	---	---	7.4	7.2	7.3	7.4	7.3	7.4
11	7.5	7.2	7.4	---	---	---	7.4	7.2	7.3	7.5	7.3	7.4
12	7.7	7.5	7.6	---	---	---	7.4	7.3	7.3	7.8	7.4	7.6
13	7.6	7.5	7.6	7.2	7.0	7.1	7.5	7.3	7.4	7.8	7.5	7.7
14	7.6	7.4	7.5	7.1	7.0	7.1	7.6	7.3	7.4	7.9	7.6	7.7
15	7.5	7.4	7.5	7.1	6.9	7.0	7.5	7.3	7.4	8.0	7.7	7.8
16	7.6	7.4	7.5	7.2	6.8	7.0	7.6	7.3	7.4	8.1	7.7	7.8
17	7.6	7.5	7.5	7.3	7.0	7.1	7.5	7.4	7.4	8.1	7.7	7.9
18	7.6	7.4	7.5	7.2	7.1	7.1	7.5	7.4	7.4	8.1	7.7	7.8
19	7.7	7.6	7.6	7.3	7.1	7.2	7.5	7.3	7.4	7.9	7.7	7.8
20	7.7	7.5	7.6	---	---	---	7.6	7.3	7.4	7.9	7.6	7.8
21	7.7	7.6	7.6	---	---	---	7.4	7.1	7.2	8.1	7.6	7.8
22	7.8	7.4	7.6	---	---	---	7.3	7.1	7.2	7.9	7.6	7.8
23	7.9	7.6	7.7	---	---	---	7.6	7.3	7.4	7.7	7.5	7.6
24	8.0	7.8	7.9	7.5	7.4	7.4	7.7	7.4	7.5	7.6	7.5	7.6
25	8.1	7.7	8.0	7.5	7.4	7.5	8.0	7.5	7.7	7.7	7.5	7.6
26	8.1	7.7	7.9	7.5	7.4	7.4	7.8	7.6	7.7	7.7	7.5	7.6
27	7.9	7.6	7.8	7.5	7.4	7.4	7.7	7.5	7.5	7.6	7.2	7.4
28	8.0	7.8	7.9	7.5	7.4	7.4	7.7	7.6	7.6	7.5	7.3	7.4
29	---	---	---	7.5	7.4	7.4	7.9	7.5	7.7	7.8	7.5	7.7
30	---	---	---	7.4	7.4	7.4	8.2	7.7	7.9	8.0	7.6	7.8
31	---	---	---	7.4	7.2	7.3	---	---	---	8.2	7.8	8.0
MONTH	8.1	7.1	7.6	---	---	---	8.2	7.1	7.4	8.2	7.2	7.7
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	8.2	7.9	8.1	7.6	7.3	7.4	8.2	7.7	7.9	8.0	7.7	7.9
2	8.2	7.9	8.1	7.8	7.3	7.5	8.2	7.7	7.9	8.1	7.7	7.9
3	8.2	7.9	8.0	7.9	7.5	7.7	8.1	7.7	7.8	8.1	7.8	7.9
4	8.2	7.8	8.0	7.9	7.6	7.7	7.9	7.6	7.7	8.0	7.7	7.9
5	8.2	7.8	7.9	7.7	7.5	7.6	7.7	7.6	7.6	8.0	7.7	7.8
6	8.2	7.8	7.9	---	---	---	7.7	7.5	7.6	8.1	7.7	7.9
7	8.2	8.0	8.1	---	---	---	7.8	7.5	7.6	8.0	7.8	7.9
8	8.2	7.9	8.0	---	---	---	7.6	7.5	7.5	7.9	7.6	7.8
9	8.2	7.9	8.1	8.2	7.7	7.9	7.8	7.6	7.7	8.0	7.6	7.8
10	8.2	7.9	8.1	8.2	7.7	7.9	7.9	7.7	7.8	7.9	7.6	7.7
11	8.0	7.7	7.8	8.2	7.8	7.9	7.9	7.7	7.8	7.7	7.6	7.7
12	7.8	7.2	7.7	8.0	7.6	7.8	7.8	7.6	7.7	7.7	7.6	7.6
13	7.9	7.5	7.7	8.1	7.7	7.8	8.0	7.7	7.8	7.6	7.5	7.6
14	8.2	7.6	7.8	8.1	7.7	7.8	7.9	7.6	7.7	7.6	7.5	7.5
15	8.1	7.7	7.9	8.0	7.7	7.8	7.7	7.6	7.6	7.6	7.5	7.5
16	7.9	7.6	7.7	7.9	7.7	7.8	7.7	7.6	7.7	7.7	7.6	7.6
17	7.7	7.5	7.6	7.8	7.6	7.7	7.8	7.7	7.8	7.8	7.6	7.7
18	7.6	7.5	7.5	7.8	7.6	7.7	7.9	7.7	7.8	7.8	7.6	7.7
19	7.6	7.4	7.5	7.8	7.6	7.7	8.0	7.8	7.9	8.1	7.6	7.8
20	7.7	7.4	7.5	7.6	7.2	7.3	8.1	7.8	7.9	7.9	7.7	7.8
21	7.7	7.3	7.5	7.6	7.1	7.4	8.0	7.8	7.9	7.8	7.6	7.7
22	7.6	7.3	7.4	8.2	7.3	7.7	8.0	7.8	7.9	7.8	7.6	7.7
23	7.5	7.3	7.4	8.0	7.5	7.8	8.0	7.8	7.9	7.8	7.6	7.7
24	7.5	7.2	7.4	8.0	7.6	7.8	8.0	7.8	7.9	7.7	7.5	7.6
25	7.7	7.3	7.5	7.9	7.5	7.7	7.9	7.7	7.8	7.8	7.6	7.7
26	7.6	7.3	7.5	8.0	7.5	7.7	7.9	7.7	7.8	7.8	7.6	7.7
27	7.6	7.3	7.4	8.0	7.5	7.7	7.9	7.7	7.8	7.7	7.6	7.6
28	7.7	7.3	7.5	8.0	7.5	7.7	7.9	7.7	7.8	7.7	7.6	7.6
29	7.7	7.4	7.5	8.1	7.5	7.7	7.9	7.7	7.8	7.8	7.6	7.6
30	7.7	7.4	7.5	8.0	7.5	7.7	7.9	7.7	7.8	7.7	7.5	7.6
31	---	---	---	8.2	7.5	7.8	8.0	7.7	7.8	---	---	---
MONTH	8.2	7.2	7.7	---	---	---	8.2	7.5	7.8	8.1	7.5	7.7

TRINITY RIVER BASIN

08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	27.6	26.2	27.0	22.0	20.6	21.5	16.2	15.6	16.0	10.9	9.5	10.1
2	28.7	26.4	27.5	20.7	19.4	20.2	15.8	13.1	15.2	13.0	10.9	11.9
3	28.6	26.8	27.6	19.5	18.4	19.0	16.2	12.7	14.0	14.2	12.3	13.2
4	28.2	26.2	27.1	19.4	17.7	18.6	13.7	12.2	13.0	16.2	14.2	15.0
5	27.6	25.9	26.7	21.0	19.3	20.1	13.3	12.2	12.8	15.2	14.2	14.6
6	27.9	26.2	26.9	20.1	18.4	19.3	13.0	12.5	12.8	14.7	13.8	14.4
7	27.1	25.5	26.4	18.7	17.4	18.1	13.1	8.6	11.9	13.8	10.8	12.4
8	26.1	25.1	25.6	18.5	17.3	17.9	11.0	9.1	9.7	10.8	9.7	10.1
9	26.1	25.3	25.7	18.0	17.7	17.8	12.1	10.5	11.2	10.3	9.6	9.9
10	26.3	24.4	25.6	17.7	16.2	17.1	12.6	11.5	12.1	10.5	9.6	10.1
11	25.8	24.9	25.5	17.0	15.4	16.3	12.2	11.6	11.9	10.0	7.4	9.3
12	25.3	23.6	24.8	16.5	13.3	15.4	11.8	11.1	11.6	10.7	8.6	9.8
13	23.6	22.1	22.9	16.9	13.6	14.4	11.9	10.7	11.2	11.0	10.1	10.7
14	22.6	21.2	21.9	13.9	13.4	13.6	12.4	11.0	11.6	10.1	9.5	9.8
15	22.2	20.8	21.6	13.6	12.5	13.1	13.1	11.7	12.3	9.9	9.3	9.5
16	22.9	21.0	21.9	13.7	12.6	13.1	13.8	12.3	13.0	10.5	9.3	9.7
17	23.1	21.7	22.4	13.4	12.9	13.1	13.9	12.6	13.2	10.8	9.7	10.2
18	23.1	21.8	22.3	14.8	12.9	14.0	13.7	12.5	13.1	11.3	9.7	10.6
19	23.5	21.7	22.5	15.7	13.9	14.8	15.0	13.2	14.1	10.9	10.0	10.5
20	24.2	22.3	23.2	15.8	15.0	15.4	15.4	10.7	13.3	11.0	9.9	10.4
21	23.5	21.3	22.5	17.1	15.4	16.2	10.8	10.0	10.2	11.4	10.4	10.9
22	21.5	20.8	21.1	17.0	15.7	16.3	10.8	9.9	10.3	11.2	9.9	10.7
23	20.8	15.8	19.0	16.8	15.5	16.1	11.1	9.8	10.6	10.2	9.3	9.8
24	19.0	16.7	17.9	16.8	15.8	16.3	9.9	9.3	9.4	10.7	9.1	9.9
25	21.1	18.6	19.8	17.8	16.1	17.0	10.7	9.4	10.2	10.7	9.8	10.3
26	19.9	17.9	18.6	19.3	17.7	18.5	10.5	9.8	10.3	11.6	10.4	11.1
27	18.5	17.3	17.8	19.8	18.9	19.4	9.8	9.0	9.5	12.0	10.5	11.2
28	18.8	17.4	17.9	19.8	19.0	19.5	10.0	8.8	9.4	12.5	11.1	11.7
29	19.9	17.9	19.0	19.0	17.5	18.5	10.3	8.5	9.4	13.3	11.9	12.6
30	21.3	19.4	20.5	17.5	16.0	16.6	10.9	8.7	9.6	13.5	12.0	12.7
31	22.7	21.0	21.8	---	---	---	10.3	9.0	9.7	13.7	12.5	13.2
MONTH	28.7	15.8	22.9	22.0	12.5	16.9	16.2	8.5	11.7	16.2	7.4	11.2
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	14.5	13.0	13.9	---	---	---	17.5	17.0	17.2	23.7	20.8	22.1
2	15.0	13.2	14.1	---	---	---	17.9	17.1	17.6	24.7	22.0	23.2
3	14.8	13.2	14.2	---	---	---	18.2	17.3	17.8	25.1	22.7	23.9
4	14.4	12.5	13.3	14.0	12.5	13.1	18.1	16.8	17.5	24.8	22.3	23.5
5	13.0	11.5	12.5	15.7	13.5	14.8	18.9	16.7	17.7	25.2	23.1	24.0
6	12.0	11.1	11.5	14.8	13.0	14.2	19.3	17.9	18.6	26.7	24.0	25.1
7	11.9	10.4	11.0	13.1	12.4	12.6	20.2	18.1	19.1	27.6	24.9	26.1
8	13.5	10.4	11.9	12.7	11.2	12.1	21.0	19.3	20.0	26.8	25.1	26.1
9	14.2	12.2	13.2	11.2	10.2	10.6	21.0	18.8	19.8	25.4	23.4	24.1
10	14.5	13.8	14.2	10.8	10.1	10.4	21.1	18.7	19.8	25.9	23.3	24.4
11	14.1	12.8	13.5	11.5	10.2	10.7	21.5	18.9	20.1	26.4	23.8	25.1
12	13.5	12.2	12.7	12.0	10.5	11.1	21.4	19.1	20.2	26.8	24.2	25.5
13	13.8	11.9	12.9	11.9	10.4	11.1	22.3	19.9	21.0	26.2	25.0	25.6
14	14.4	13.3	13.9	12.8	11.8	12.3	23.4	21.1	22.1	25.7	24.8	25.2
15	14.3	13.7	14.0	13.7	12.4	12.9	23.5	21.7	22.5	26.4	24.7	25.4
16	14.0	13.3	13.7	14.3	13.7	14.0	23.5	21.7	22.6	27.0	24.1	25.5
17	14.1	12.9	13.5	13.9	12.7	13.2	22.2	20.3	21.0	27.1	25.4	26.2
18	14.3	12.3	13.4	13.6	12.5	12.9	21.5	19.2	20.3	27.6	25.4	26.4
19	13.6	12.3	13.1	13.9	12.8	13.5	22.0	19.6	20.8	27.3	25.5	26.4
20	13.9	12.1	13.0	---	---	---	21.4	19.6	20.6	27.4	25.6	26.4
21	13.4	12.5	13.0	---	---	---	20.0	18.5	19.3	27.5	25.9	26.6
22	12.5	10.8	11.2	---	---	---	20.8	18.2	19.4	27.6	25.8	26.6
23	12.1	11.0	11.6	13.4	12.6	13.0	21.9	18.9	20.3	27.0	25.7	26.3
24	13.4	12.1	12.7	14.4	13.2	13.9	22.8	20.2	21.4	26.5	26.0	26.2
25	14.8	13.4	14.0	15.2	14.2	14.7	23.2	20.6	21.8	26.8	25.3	26.0
26	14.6	13.9	14.3	16.2	15.0	15.8	22.3	21.7	22.0	27.8	25.6	26.6
27	13.9	13.4	13.6	16.7	16.2	16.5	21.8	20.5	21.1	27.1	23.7	25.1
28	---	---	---	16.8	16.3	16.6	20.8	19.5	20.1	27.6	24.3	25.7
29	---	---	---	17.4	16.8	17.3	21.1	18.8	19.9	29.4	26.2	27.7
30	---	---	---	17.8	17.3	17.6	22.1	19.4	20.7	30.1	27.4	28.7
31	---	---	---	18.1	17.2	17.7	---	---	---	30.4	28.1	29.1
MONTH	---	---	---	---	---	---	23.5	16.7	20.1	30.4	20.8	25.6

TRINITY RIVER BASIN

08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN												
													JUNE			JULY			AUGUST			SEPTEMBER		
1	30.5	28.3	29.3	33.0	30.1	31.4	32.4	29.8	31.1	31.7	29.4	30.5												
2	30.1	27.7	28.8	32.6	30.6	31.6	32.7	30.0	31.3	31.6	29.2	30.4												
3	30.1	27.8	28.9	32.5	30.2	31.3	33.0	30.6	31.8	31.8	29.5	30.6												
4	29.8	28.2	28.9	31.1	29.8	30.4	31.8	30.7	31.2	32.1	29.5	30.7												
5	28.9	25.9	27.3	31.5	29.1	30.2	31.0	29.6	30.1	31.7	29.6	30.6												
6	26.7	24.0	25.4	32.4	29.3	30.8	29.6	28.8	29.2	31.8	29.3	30.4												
7	26.4	24.5	25.4	32.9	30.1	31.5	30.9	28.4	29.5	31.5	29.1	30.3												
8	26.8	24.8	25.6	32.8	30.5	31.6	31.3	29.0	30.1	31.5	29.1	30.3												
9	28.5	25.7	26.8	32.8	30.6	31.6	31.8	29.7	30.6	31.2	29.2	30.2												
10	28.2	26.5	27.3	33.3	30.8	32.0	32.6	30.0	31.0	29.6	27.5	28.5												
11	27.7	25.3	26.6	33.3	30.8	32.0	32.2	30.5	31.2	28.1	26.2	27.1												
12	29.7	26.4	27.9	33.5	30.8	32.1	31.7	30.6	31.1	26.2	25.4	25.7												
13	30.6	28.2	29.3	33.4	31.5	32.3	31.2	29.8	30.4	26.6	25.6	26.1												
14	31.3	28.7	29.8	33.5	31.2	32.2	30.5	29.3	30.0	28.6	26.6	27.5												
15	30.8	28.7	29.7	33.3	30.8	32.0	30.0	28.1	29.1	28.9	27.9	28.2												
16	30.4	28.0	29.1	33.2	31.2	32.1	30.9	28.6	29.6	28.0	27.4	27.8												
17	29.7	28.3	28.9	32.9	31.1	31.9	31.7	29.8	30.6	28.2	27.2	27.6												
18	29.8	28.0	28.9	32.9	30.5	31.5	31.1	30.1	30.6	29.3	27.3	28.2												
19	31.3	28.4	29.7	32.9	30.9	31.8	31.7	29.9	30.7	29.3	27.4	28.4												
20	31.6	28.9	30.2	32.9	30.8	31.8	31.8	30.0	30.7	30.3	28.2	29.1												
21	31.6	28.8	30.1	33.1	30.5	31.6	31.4	29.9	30.6	30.6	28.9	29.6												
22	32.0	29.0	30.4	32.7	30.4	31.6	31.4	29.9	30.5	30.8	29.2	29.9												
23	31.7	29.1	30.4	32.9	30.2	31.6	31.4	29.7	30.6	30.2	28.9	29.4												
24	31.6	28.9	30.1	33.0	30.4	31.7	31.7	29.7	30.6	29.4	28.3	28.9												
25	31.6	28.8	30.1	33.1	30.6	31.8	32.1	29.9	30.9	29.5	27.9	28.7												
26	32.3	29.3	30.6	33.0	30.5	31.7	32.2	30.2	31.1	29.2	28.0	28.6												
27	32.6	29.7	31.0	32.9	30.4	31.7	32.5	30.2	31.3	30.0	28.2	28.9												
28	32.6	30.0	31.3	33.0	30.6	31.7	32.5	30.3	31.3	30.4	28.6	29.5												
29	32.3	30.0	31.1	32.6	30.2	31.4	32.7	30.6	31.5	30.4	28.4	29.4												
30	32.4	29.6	31.0	32.2	30.0	31.1	32.1	29.7	30.9	30.2	28.5	29.4												
31	---	---	---	32.0	29.5	30.8	32.0	29.9	30.9	---	---	---												
MONTH	32.6	24.0	29.0	33.5	29.1	31.6	33.0	28.1	30.6	32.1	25.4	29.0												

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN												
													OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	6.3	5.8	6.0	6.2	5.6	5.8	6.3	5.7	6.1	6.6	6.1	6.3												
2	6.7	6.3	6.4	6.1	5.6	5.8	6.3	4.8	5.9	6.7	5.7	6.3												
3	7.5	5.8	6.5	6.4	5.7	6.0	7.3	4.5	5.7	6.9	6.1	6.5												
4	8.0	6.6	7.3	6.2	5.6	5.9	7.5	7.1	7.2	7.1	6.1	6.4												
5	8.0	7.0	7.6	5.7	5.1	5.4	8.0	7.4	7.6	7.4	6.1	6.8												
6	7.9	6.8	7.5	5.6	4.9	5.2	8.7	7.7	8.1	6.8	6.2	6.5												
7	7.7	6.7	7.3	5.8	5.0	5.3	8.8	8.2	8.4	7.1	6.1	6.6												
8	7.3	5.9	6.6	6.0	5.3	5.5	9.1	8.6	8.8	7.4	6.4	6.7												
9	6.8	4.8	5.9	5.6	5.0	5.4	8.8	8.1	8.5	---	---	---												
10	6.3	5.9	6.2	5.4	4.9	5.2	8.1	7.9	8.0	---	---	---												
11	7.8	6.1	7.1	5.8	5.2	5.5	8.3	7.4	8.0	---	---	---												
12	---	---	---	5.7	5.1	5.5	8.4	8.1	8.3	---	---	---												
13	---	---	---	6.0	5.2	5.6	8.5	8.2	8.4	---	---	---												
14	---	---	---	5.9	5.5	5.7	8.5	8.1	8.4	---	---	---												
15	---	---	---	6.2	5.7	6.0	8.3	8.1	8.2	---	---	---												
16	6.5	6.0	6.2	6.4	5.9	6.1	8.1	7.7	7.9	8.6	8.3	8.4												
17	6.8	6.0	6.4	6.3	6.0	6.2	7.9	7.5	7.7	8.6	8.2	8.3												
18	6.6	5.8	6.2	6.3	5.9	6.1	7.7	7.4	7.6	8.5	8.2	8.3												
19	6.5	5.9	6.1	6.4	6.0	6.2	7.7	7.1	7.4	8.5	8.0	8.2												
20	6.4	5.6	5.9	6.5	6.0	6.2	7.3	5.9	6.6	8.5	8.2	8.3												
21	6.2	5.7	5.9	6.6	6.0	6.3	6.9	5.9	6.5	8.5	8.0	8.2												
22	6.7	5.8	6.2	6.8	6.1	6.4	6.7	5.9	6.4	8.4	8.0	8.2												
23	---	---	---	7.2	6.2	6.6	6.6	6.1	6.3	8.7	8.2	8.4												
24	---	---	---	7.2	6.5	6.7	7.0	6.1	6.6	8.6	7.9	8.2												
25	---	---	---	7.0	6.1	6.6	7.0	6.2	6.6	8.2	7.9	8.0												
26	---	---	---	6.5	5.7	6.0	6.5	6.2	6.4	8.2	7.8	8.0												
27	---	---	---	5.8	4.9	5.5	6.4	6.1	6.3	11.0	8.1	10.1												
28	7.1	5.5	6.4	5.0	4.4	4.7	6.5	5.9	6.3	10.6	10.0	10.3												
29	7.1	6.6	6.9	5.9	4.7	5.2	6.5	6.1	6.3	10.4	9.5	9.9												
30	6.7	6.3	6.5	6.4	4.5	5.4	6.5	6.1	6.3	10.0	9.2	9.6												
31	6.5	5.8	6.2	---	---	---	6.6	5.9	6.3	9.7	8.6	9.3												
MONTH	---	---	---	7.2	4.4	5.8	9.1	4.5	7.2	---	---	---												

TRINITY RIVER BASIN

08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	9.4	8.5	8.9	---	---	---	9.3	8.8	9.0	6.1	5.6	5.8
2	8.8	8.0	8.3	---	---	---	9.3	8.9	9.0	5.8	5.4	5.6
3	9.0	8.4	8.7	---	---	---	9.1	8.7	8.9	6.0	5.5	5.8
4	9.6	9.0	9.3	7.9	7.4	7.6	9.1	8.6	8.9	5.8	4.9	5.7
5	9.9	8.7	9.4	7.6	7.3	7.4	9.0	7.9	8.4	6.0	5.6	5.8
6	10.3	9.4	9.9	7.3	7.1	7.2	8.2	7.8	8.0	6.1	5.9	6.0
7	10.4	10.0	10.2	7.2	7.0	7.1	8.1	7.9	8.0	6.3	6.1	6.2
8	10.2	9.4	9.8	7.3	6.9	7.1	8.3	7.9	8.1	7.5	6.2	6.8
9	9.7	9.1	9.4	7.3	6.9	7.1	8.5	7.9	8.1	7.5	4	3.8
10	9.2	8.5	8.8	7.9	7.0	7.2	9.6	8.1	8.6	5.8	1.9	4.4
11	8.8	8.5	8.7	7.6	6.6	7.2	9.0	8.5	8.7	6.5	5.8	6.1
12	9.5	8.4	8.7	9.9	7.3	8.6	8.8	7.4	7.8	---	---	---
13	9.4	9.0	9.2	9.9	8.8	9.7	7.7	7.1	7.3	---	---	---
14	9.0	8.5	8.7	9.9	9.5	9.7	7.3	6.7	6.8	---	---	---
15	8.7	8.0	8.2	9.8	9.5	9.7	6.7	6.2	6.4	---	---	---
16	8.3	8.0	8.1	9.6	9.2	9.4	6.3	5.8	6.0	---	---	---
17	8.5	8.0	8.2	10.1	9.4	9.8	6.5	6.1	6.3	---	---	---
18	8.6	8.0	8.2	10.3	10.0	10.1	6.5	6.2	6.4	---	---	---
19	8.8	8.4	8.5	10.3	9.9	10.1	6.8	6.2	6.4	---	---	---
20	8.5	8.0	8.2	10.2	10.0	10.1	6.7	5.0	5.8	---	---	---
21	8.6	8.2	8.4	10.3	10.2	10.2	6.7	5.2	5.8	---	---	---
22	8.9	8.1	8.6	10.4	10.2	10.3	5.7	5.3	5.5	---	---	---
23	9.0	8.3	8.7	10.3	10.1	10.2	6.2	5.4	5.8	---	---	---
24	9.0	8.3	8.6	10.4	10.1	10.2	6.1	5.9	6.0	---	---	---
25	8.5	7.8	8.2	10.3	10.0	10.2	6.2	5.6	5.9	---	---	---
26	8.4	7.2	7.6	10.2	10.0	10.1	6.9	1.7	4.4	---	---	---
27	8.0	7.5	7.8	10.2	9.5	9.8	6.7	5.5	5.9	---	---	---
28	---	---	---	9.9	9.5	9.7	6.0	5.6	5.7	---	---	---
29	---	---	---	9.9	9.3	9.5	6.1	5.2	5.5	---	---	---
30	---	---	---	9.5	9.0	9.2	6.1	5.6	5.7	---	---	---
31	---	---	---	9.1	8.9	9.0	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	9.6	1.7	7.0	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	---	---	---	---	6.4	6.0	6.2	5.4	4.6	5.2
2	---	---	---	---	---	---	6.6	6.1	6.3	5.4	5.0	5.2
3	---	---	---	---	---	---	6.5	6.2	6.4	5.5	5.0	5.3
4	---	---	---	---	---	---	6.4	6.1	6.2	5.5	5.0	5.3
5	---	---	---	---	---	---	6.3	5.9	6.1	---	---	---
6	---	---	---	---	---	---	5.9	5.5	5.7	---	---	---
7	---	---	---	---	---	---	5.9	5.5	5.7	---	---	---
8	---	---	---	---	---	---	5.7	5.4	5.5	---	---	---
9	---	---	---	8.1	7.8	8.0	5.8	5.4	5.6	---	---	---
10	---	---	---	8.1	7.6	7.9	5.7	5.4	5.5	---	---	---
11	6.5	6.3	6.4	8.1	7.7	7.9	5.6	5.3	5.4	---	---	---
12	6.4	6.2	6.3	8.0	5.2	7.5	5.6	5.3	5.4	---	---	---
13	6.5	6.3	e7.9	8.0	5.2	7.7	5.6	5.2	5.4	---	---	---
14	6.5	6.3	e9.4	7.8	7.3	7.7	5.5	5.1	5.3	---	---	---
15	6.6	6.3	e9.6	7.5	7.1	7.3	---	---	---	---	---	---
16	6.6	6.3	e8.8	---	---	---	---	---	---	---	---	---
17	6.6	6.3	e8.2	---	---	---	---	---	---	---	---	---
18	6.6	6.3	e7.9	---	---	---	---	---	---	6.9	5.8	6.2
19	6.6	6.2	e7.6	---	---	---	5.4	5.1	5.2	7.9	5.5	6.5
20	6.5	6.2	e8.1	---	---	---	5.3	5.0	5.2	7.1	5.2	6.0
21	6.5	6.2	e6.7	---	---	---	5.6	5.0	5.3	7.1	5.1	5.9
22	6.6	6.2	e5.2	---	---	---	5.4	4.9	5.2	6.6	5.2	5.9
23	6.5	6.2	e6.2	---	---	---	5.3	4.8	5.1	6.4	4.9	5.6
24	6.9	6.2	e7.4	---	---	---	5.5	5.0	5.3	5.7	2.9	4.3
25	6.5	6.2	6.4	---	---	---	5.3	5.0	5.1	4.3	3.1	3.8
26	---	---	---	---	---	---	5.5	5.0	5.3	4.8	3.6	4.1
27	---	---	---	6.2	6.0	6.1	5.4	5.0	5.2	4.9	3.8	4.3
28	---	---	---	6.3	6.0	6.1	5.4	5.0	5.2	5.0	3.8	4.3
29	---	---	---	6.3	6.0	6.1	5.5	5.0	5.3	5.1	3.9	4.4
30	---	---	---	6.3	6.0	6.2	5.5	5.0	5.2	4.5	3.6	4.0
31	---	---	---	6.5	6.1	6.3	5.5	5.0	5.2	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

e Estimated

TRINITY RIVER BASIN

08049580 MOUNTAIN CREEK NEAR VENUS, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 32°29'27", long 97°07'22", Johnson County, Hydrologic Unit 12030102, on right bank on downstream side of highway embankment near right end of bridge on Farm Road 157, 3.0 mi upstream from Grassy Creek, 3.2 mi upstream from Reece Branch, and 3.9 mi north of Venus.

DRAINAGE AREA.--25.5 mi².

PERIOD OF RECORD.--Nov 1985 to Sep 1987. Oct 1987 to current year (peaks above base discharge).
Water-quality records.--Chemical analyses: Dec 1985 to Sep 1993.

GAGE.--Water-stage recorder. Datum of gage is 580.49 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good. Daily values and peak discharges less than 580 ft³/s are not published. No known regulation or diversions.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 580 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 21	0045	5,780	13.19	Feb 26	0345	1,790	9.62
Jan 6	0445	823	8.08	Mar 16	0945	3,290	11.41
Jan 6	2300	816	8.06	Mar 19	0545	628	7.54

LOCATION.--Lat 32°38'36", long 97°00'03", Dallas County, Hydrologic Unit 12030102, in control room of outlet works tower located 285 ft upstream from centerline of Joe Pool Dam on Mountain Creek, 0.7 mi downstream from Walnut Creek, 0.7 mi upstream from bridge over Mountain Creek on Camp Wisdom Road, 1.0 mi downstream from John Penn Branch, 5.5 mi west of water towers in downtown Duncanville, 7.1 mi upstream from Mountain Creek Dam on Mountain Creek, and 11.2 mi upstream from mouth.

DRAINAGE AREA.--232 mi².

WATER-CONTENT RECORDS

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

Water-quality records.--Chemical and biochemical analyses: Jan 1986 to Sep 1993.

GAGE.--Water-stage recorder. Datum of gage is sea level (U.S. Army Corps of Engineers benchmark).

REMARKS.--The lake is formed by a rolled earthfill dam 22,360 ft long, including a 50-foot uncontrolled broad-crested concrete spillway. Impoundment of water began Jan 7, 1986, after closure of the dam was completed in Dec 1985. The flood-control outlet works consist of a 10.5-foot-diameter conduit that is controlled by two 4.75- by 10.5-foot slide gates. Above an elevation of 541 ft, water will flow over a 50-foot-long uncontrolled broad-crested concrete spillway located 0.5 mi to left of the outlet works tower. The low-flow outlet works consist of four 3- by 5-foot slide gates having invert elevations at 486.0, 495.0, 504.0, and 513.0 ft that open to a wet-well. Discharge from the wet-well to the 10.5-foot-diameter conduit is controlled by a 2- by 4-foot gate with invert at elevation 483.0 ft. A low-flow bypass system consisting of a turbine pump and 10-inch-diameter piping is also available for use if needed. The capacity table was provided by the U.S. Army Corps of Engineers. The lake was built for water supply, conservation, and flood control. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	564.5
Crest of spillway.....	541.0
Top of conservation pool.....	522.0
Lowest gated outlet.....	466.0

COOPERATION.--Record of contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 274,600 acre-ft, May 20, 1990 (elevation, 533.21 ft); minimum since initial filling began, 1,595 acre-ft, Jan 24, 1986 (elevation, 467.65 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 202,100 acre-ft, Dec 23 (elevation, 525.22 ft); minimum daily contents, 152,800 acre-ft, Sep 29-30 (elevation, 518.59 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	164900	165900	164600	180800	177600	185900	178100	175300	170800	165800	159400	155200
2	164800	165700	165000	180200	177600	184500	177300	175100	170500	165600	159200	155100
3	164600	165500	165000	180000	177700	183000	177000	175000	170300	165500	159000	155000
4	164400	165500	164900	180500	177800	181700	177000	174900	170200	165500	158900	154800
5	164300	165200	164800	182900	177800	180200	177000	174900	170000	165500	158800	154500
6	164200	165100	164700	188800	177900	179200	177000	174800	169700	165200	158600	154300
7	164500	165000	165700	193800	177900	178800	176900	174800	169500	165000	158600	154100
8	165000	164900	166100	194800	177900	177900	176800	174900	169300	164800	158400	154000
9	165200	164900	166200	195300	177900	177300	176700	174800	169200	164600	158200	153600
10	165200	164700	166000	194800	177900	177200	176600	174700	169400	164400	157900	153300
11	165400	164700	165900	194500	177600	177000	176500	174600	169600	164200	157800	153200
12	166100	165000	165800	193900	177500	177000	176400	174400	169500	164000	157700	153600
13	166100	165200	165700	192500	177500	177000	176300	174300	169400	163800	157700	153600
14	166000	165100	165700	190400	177500	177300	176300	174300	169200	163700	158000	153600
15	165800	165000	165700	188300	177600	178000	176300	174100	168900	163500	157800	153400
16	165700	165000	165600	186300	177600	192200	176100	174000	168800	163200	157700	154000
17	165600	164800	165500	184600	177600	193500	175900	173900	168600	163000	157500	154000
18	165500	164800	165500	182700	177800	194200	175900	173800	168400	162900	157400	153900
19	165200	164700	165500	181000	177900	196000	175800	173600	168200	162600	157300	153800
20	165200	164700	182800	179500	177900	196200	175900	173400	168000	162400	157100	153600
21	165200	164600	198900	178500	178600	196600	176200	173300	167800	162200	157000	153600
22	165100	164500	199300	177300	180400	196900	176100	173300	167600	162000	156800	153400
23	166800	164500	202100	176700	180500	196100	176000	173000	167300	161700	156700	153400
24	167000	164400	201400	176800	180500	195200	175900	172900	167100	161500	156500	153400
25	166900	164400	198200	177000	182000	194400	175700	172800	166900	161200	156300	153200
26	166500	164400	195300	177000	188800	193700	175700	173000	166800	160900	156100	153000
27	166400	164500	192100	177000	188600	191100	175700	173400	166500	160700	156100	153000
28	166300	164800	188800	177200	187200	188300	175600	172700	166300	160400	155900	153000
29	166200	164700	186100	177200	---	185500	175400	172000	166300	160100	155800	152800
30	166200	164600	183800	177300	---	182900	175300	171300	165700	159800	155600	152800
31	166000	---	182100	177500	---	180100	---	170900	---	159500	155400	---
MAX	167000	165900	202100	195300	188800	196900	178100	175300	170800	165800	159400	155200
MIN	164200	164400	164600	176700	177500	177000	175300	170900	165700	159500	155400	152800
(+)	520.51	520.32	522.68	522.08	523.35	522.42	521.78	521.19	520.47	519.57	518.96	518.59
(@)	+1000	-1400	+17500	-4600	+9700	-7100	-4800	-4400	-5200	-6200	-4100	-2600
CAL YR 1997	MAX 215700	MIN 164200	(@) +14700									
WTR YR 1998	MAX 202100	MIN 152800	(@) -12200									

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

08050050 MOUNTAIN CREEK LAKE NEAR GRAND PRAIRIE, TX

LOCATION.--Lat 32°43'55", long 96°56'35", Dallas County, Hydrologic Unit 12030102, at right end of spillway in Mountain Creek Dam on Mountain Creek, 2.5 mi upstream from Texas and Pacific Railway Co. bridge, and 3.7 mi southeast of Grand Prairie.

DRAINAGE AREA.--295 mi².

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

Water-quality records.--Chemical analyses: Oct 1969 to Sep 1985.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Oct 21, 1960, non-recording gage at powerplant at same datum. Satellite telemeter at station.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam 5,800 ft long, including a controlled spillway with six 34 by 27 foot tainter gates. The dam was completed in Dec 1936 and deliberate impoundment began on Mar 24, 1937. The lake was built and is operated by Dallas Power and Light Co. to supply cooling water for their generating plant. The capacity table is based on a survey made in 1963. For statement regarding regulation by Joe Pool Dam see station 08049900. Data regarding the dam is given in the following table:

	Elevation (feet)
Top of dam.....	467.0
Top of gates.....	458.0
Top of dry weather conservation pool.....	457.0
Top of wet weather conservation pool.....	456.0
Crest of spillway (sill of tainter gates).....	431.0

COOPERATION.--The capacity table was provided by the Dallas Power and Light Co.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 28,430 acre-ft, Mar 13, 1995 (elevation 458.82 ft); minimum contents, 14,120 acre-ft Oct 18, 1972 (elevation, 453.25 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 26,610 acre-ft, Dec 21 (elevation, 458.27 ft); minimum contents, 16,580 acre-ft, Sep 11 (elevation, 454.41 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19740	21910	22140	21110	20750	21630	23620	22960	24340	22010	19190	17450
2	19710	21860	22500	21160	20780	22380	23300	22900	24140	21940	19150	17380
3	19640	21780	22690	21650	20750	23730	23390	22840	24020	21830	19030	17360
4	19570	21810	22660	21830	20750	24880	23440	22790	23880	21830	18960	17290
5	19550	21700	22630	21580	20750	23420	23440	22760	23760	21830	18910	17160
6	19500	21650	22630	21860	20750	22960	23730	22740	23700	21760	18860	17090
7	19570	21630	23500	21160	20780	22400	23440	22660	23560	21680	18860	17020
8	19950	21600	23010	21340	20750	23160	23390	22810	23620	21580	18810	16960
9	20070	21580	22980	21630	20930	23700	23360	23040	23440	21500	18740	16820
10	20090	21520	22960	22500	21190	23930	23360	22960	23730	21400	18650	16740
11	20170	21520	22930	23210	21450	23910	23360	22900	23990	21290	18550	16650
12	20600	21860	22930	20960	21730	24020	23420	22810	23910	21190	18480	16850
13	20800	22120	22930	22270	21960	21960	23270	22740	23880	21090	18530	16960
14	20830	22090	22930	22220	22010	21650	23300	22740	23760	21010	18620	16980
15	20800	22120	22960	21650	22010	21830	23270	22660	23650	20910	18580	16980
16	20800	22120	22900	23700	22090	21680	23130	22630	23560	20850	18550	17270
17	20750	22120	22930	23620	22140	21760	23010	22560	23440	20720	18460	17360
18	20700	22090	22930	22450	22270	21960	23010	22500	23330	20650	18390	17360
19	20670	22120	22930	21450	22380	22610	23070	22430	23240	20570	18340	17360
20	20650	22090	26250	21160	22430	22710	23190	22350	23100	20410	18250	17340
21	20650	22090	23010	22400	22930	22790	23330	22300	22960	20340	18170	17270
22	20650	22070	21520	23820	24080	23100	23300	22320	22870	20240	18130	17200
23	21990	22070	21910	24830	22840	23390	23270	22120	22760	20140	18080	17270
24	22200	22040	21680	23960	21160	22430	23300	22120	22630	20050	17980	17270
25	22140	22120	22220	22040	22710	22170	23190	22040	22500	19900	17940	17200
26	22040	22040	22300	20600	22430	22900	23160	22070	22430	19810	17870	17160
27	22010	22070	24420	20650	22870	22710	23100	23270	22350	19690	17800	17110
28	21990	22220	23210	20650	23070	23390	23070	23790	22320	19620	17710	17090
29	21960	22200	21810	20650	---	23070	23010	24250	22200	19500	17650	17050
30	22040	22140	21810	20650	---	23530	22980	24340	22120	19380	17620	17000
31	21990	---	21420	20750	---	23880	---	24310	---	19260	17510	---
MAX	22200	22220	26250	24830	24080	24880	23730	24340	24340	22010	19190	17450
MIN	19500	21520	21420	20600	20750	21630	22980	22040	22120	19260	17510	16650
(+)	456.67	456.73	456.45	456.19	457.08	457.36	457.05	457.51	456.72	455.58	454.83	454.60
(@)	+2200	+150	-720	-670	+2320	+810	-900	+1330	-2190	-2860	-1750	-510
CAL YR 1997	MAX 26250	MIN 19500	(@) -1620									
WTR YR 1998	MAX 26250	MIN 16650	(@) -2790									

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

TRINITY RIVER BASIN

08050100 MOUNTAIN CREEK AT GRAND PRAIRIE, TX

LOCATION.--Lat 32°44'51", long 96°55'32", Dallas County, Hydrologic Unit 12030102, on roadway embankment at upstream right end of downstream bridge on Jefferson Street, 1,000 ft upstream from bridge on U.S. Highway 80, 1.2 mi upstream from Texas and Pacific Railroad Co. bridge, 1.5 mi downstream from Mountain Creek Lake Dam, and 4.4 mi east of Grand Prairie.

DRAINAGE AREA.--298 mi².

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 404.31 ft above sea level. Prior to Dec 19, 1984, at datum 3.0 ft higher. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since installation of gage in Oct 1960, at least 10% of contributing drainage area has been regulated by Mountain Creek Lake (station 08050050), 1.5 mi upstream. No known diversions. Several observations of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	2.0	2.3	626	2.6	1090	929	4.4	6.0	1.9	1.0	1.2
2	2.0	2.3	6.4	403	2.5	279	502	4.0	14	1.8	1.1	1.3
3	2.0	2.4	7.7	6.3	2.8	6.3	4.7	4.1	9.3	1.8	1.1	1.3
4	2.0	3.9	4.0	193	2.9	67	4.4	4.0	5.2	2.0	1.3	1.2
5	2.2	3.4	3.9	1940	2.9	973	5.5	4.3	5.1	2.4	1.5	1.2
6	2.1	3.9	3.9	560	2.6	697	5.4	4.2	4.4	2.0	1.6	1.1
7	2.3	4.4	25	817	2.5	634	6.8	3.6	4.0	1.8	1.7	1.2
8	3.8	3.8	416	201	2.0	11	3.4	3.6	9.8	1.7	1.6	1.2
9	2.6	3.5	6.0	12	2.1	7.5	3.3	16	6.3	1.6	1.4	1.1
10	2.3	4.1	4.2	7.2	2.6	7.5	3.0	4.1	5.2	1.7	1.3	1.3
11	2.0	4.1	3.6	460	2.3	7.1	2.9	3.7	11	1.6	1.2	1.8
12	3.3	7.0	3.1	1680	2.1	7.3	7.3	3.8	5.3	1.6	1.4	2.7
13	6.9	6.4	3.0	40	2.7	718	6.7	3.4	3.9	1.6	1.5	2.5
14	3.2	4.0	2.7	816	2.2	262	3.4	3.3	5.9	1.6	1.9	2.0
15	3.0	4.3	2.2	1280	1.9	45	3.9	3.3	2.9	1.6	1.4	1.6
16	2.9	4.4	2.2	8.4	2.3	2930	3.6	3.2	2.8	1.6	1.2	2.9
17	2.4	4.1	2.1	713	2.6	e2490	3.6	3.1	3.7	1.8	1.2	2.7
18	2.3	3.1	2.0	1150	2.7	e835	3.7	3.0	5.4	2.0	1.2	2.6
19	2.2	3.0	2.1	1140	4.6	e295	3.6	3.1	3.6	1.9	1.2	1.6
20	2.0	2.7	1270	681	2.4	89	4.7	3.0	3.9	1.8	1.2	1.4
21	2.2	2.2	6250	80	11	69	8.5	2.9	3.4	1.8	1.1	1.4
22	2.5	2.5	1340	6.7	73	72	14	2.5	2.7	1.8	1.1	1.4
23	21	2.6	399	6.3	488	207	5.1	2.6	2.5	1.8	1.1	1.6
24	5.5	2.2	561	277	800	815	5.7	2.3	2.4	1.6	1.1	2.1
25	2.5	2.1	988	647	54	613	8.6	2.3	2.4	1.5	.96	2.0
26	3.2	2.0	1430	495	2810	136	4.7	2.4	2.2	1.4	.93	1.4
27	3.2	2.0	372	5.8	552	712	4.5	11	2.1	1.2	.90	1.4
28	2.9	11	1750	2.9	387	768	4.6	3.8	2.1	1.1	.98	1.5
29	2.6	3.2	1730	2.6	---	1210	4.8	3.9	2.0	.97	1.0	1.5
30	2.4	2.5	913	2.7	---	959	4.8	149	2.1	1.0	1.1	1.5
31	2.2	---	861	2.7	---	994	---	127	---	1.1	1.2	---
TOTAL	103.6	109.1	18366.4	14262.6	5226.3	18005.7	1576.2	394.9	141.6	51.07	38.47	49.7
MEAN	3.34	3.64	592	460	187	581	52.5	12.7	4.72	1.65	1.24	1.66
MAX	21	11	6250	1940	2810	2930	929	149	14	2.4	1.9	2.9
MIN	1.9	2.0	2.0	2.6	1.9	6.3	2.9	2.3	2.0	.97	.90	1.1
AC-FT	205	216	36430	28290	10370	35710	3130	783	281	101	76	99

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1998, BY WATER YEAR (WY)

	74.2	69.1	92.6	105	152	215	220	300	138	32.6	9.29	19.6
MEAN	74.2	69.1	92.6	105	152	215	220	300	138	32.6	9.29	19.6
MAX	785	1286	1102	1483	714	1104	1170	1941	1028	511	88.6	188
(WY)	1974	1992	1972	1992	1975	1977	1966	1969	1990	1989	1962	1973
MIN	.22	.30	.26	.11	.17	.30	.91	.68	.50	.21	.16	.36
(WY)	1989	1964	1976	1976	1964	1976	1987	1984	1971	1972	1972	1972

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1961 - 1998

ANNUAL TOTAL	87002.50	58325.64	
ANNUAL MEAN	238	160	119
HIGHEST ANNUAL MEAN			506
LOWEST ANNUAL MEAN			4.39
HIGHEST DAILY MEAN	6250	Dec 21	24700
LOWEST DAILY MEAN	.54	Jan 1	.00
ANNUAL SEVEN-DAY MINIMUM	.87	Jan 19	.02
INSTANTANEOUS PEAK FLOW			9470
INSTANTANEOUS PEAK STAGE			21.22
ANNUAL RUNOFF (AC-FT)	172600	115700	86060
10 PERCENT EXCEEDS	921	629	63
50 PERCENT EXCEEDS	4.3	3.1	1.2
90 PERCENT EXCEEDS	2.0	1.3	.32

e Estimated

08050400 ELM FORK TRINITY RIVER AT GAINESVILLE, TX

LOCATION.--Lat 33°37'27", long 97°09'22", Cooke County, Hydrologic Unit 12030103, on downstream right bank at end of the bridge on Farm Road 51, 31 ft downstream from the centerline of the road, 0.6 mi west of Cooke County courthouse in Gainesville, 1.0 mi upstream from Interstate Highway 35, and 1.2 mi downstream from Dozier Creek.

DRAINAGE AREA.--174 mi².

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 700.00 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions. Several observations of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Oct 1981 reached a peak stage of 28.1 ft, from information furnished by an employee of the Gainesville Department of Public Works.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,100 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 16	0930	10,900	18.45	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	1.5	2.6	20	122	65	145	14	3.0	1.1	.29	.13
2	1.2	1.6	5.9	17	105	57	114	12	2.5	.87	.28	.25
3	1.0	1.5	3.5	16	89	51	98	11	2.3	.79	.28	.21
4	.90	1.5	3.2	156	76	49	86	11	8.2	.83	.30	.17
5	.92	1.7	3.8	250	73	48	77	10	5.0	.94	.40	.16
6	.94	1.9	3.5	178	80	47	72	10	4.0	.77	.61	.15
7	1.0	1.9	9.1	285	72	1510	69	7.6	3.9	.85	.32	.21
8	1.5	1.9	8.4	1010	65	983	63	6.9	3.8	.64	.25	.22
9	.93	2.1	5.8	490	59	473	57	10	6.1	.66	.23	.25
10	.97	1.9	4.7	272	55	257	52	9.9	7.2	.62	.19	.24
11	.94	1.9	3.9	193	48	188	49	7.4	43	.60	.22	.31
12	2.4	2.7	3.3	157	42	148	47	6.1	48	.60	.28	.56
13	1.4	2.7	3.0	125	45	130	44	5.4	29	.62	.26	.81
14	1.2	2.1	3.0	97	50	113	41	5.1	15	.64	.21	.83
15	1.2	2.0	3.0	86	50	235	39	5.0	9.0	.58	.33	.90
16	1.2	2.1	3.0	78	54	4750	43	4.4	5.0	.59	.18	1.4
17	1.2	2.4	3.0	69	112	1490	35	4.1	4.3	.70	.16	.85
18	1.2	2.4	3.0	59	115	942	33	3.9	3.5	.66	.12	.91
19	1.3	2.4	3.0	51	94	714	31	3.7	8.2	.92	.11	.79
20	1.2	2.4	43	46	99	516	31	3.5	6.5	.72	.07	.92
21	1.3	2.5	438	57	123	424	32	3.3	3.8	.58	.04	.70
22	1.3	2.5	69	1010	481	337	29	3.0	2.9	.42	.03	.78
23	5.8	2.5	181	332	215	285	25	2.9	2.2	.41	.03	.84
24	2.0	2.5	382	204	154	255	23	2.6	2.1	.38	.04	.76
25	1.5	2.4	133	158	128	237	20	2.5	1.9	.35	.05	1.2
26	1.4	2.6	94	588	108	222	24	3.0	1.7	.35	.05	1.1
27	1.5	2.8	84	318	87	208	41	3.2	1.5	.33	.05	.83
28	1.5	3.3	64	198	75	169	28	3.2	1.4	.37	.09	1.1
29	1.5	2.7	48	144	---	148	20	3.1	1.2	.38	.27	1.2
30	1.5	2.6	35	116	---	142	16	3.1	.99	.35	.35	.86
31	1.5	---	25	108	---	198	---	2.8	---	.35	.19	---
TOTAL	44.70	67.0	1674.7	6888	2876	15391	1484	183.7	237.19	18.97	6.28	19.64
MEAN	1.44	2.23	54.0	222	103	496	49.5	5.93	7.91	.61	.20	.65
MAX	5.8	3.3	438	1010	481	4750	145	14	48	1.1	.61	1.4
MIN	.90	1.5	2.6	16	42	47	16	2.5	.99	.33	.03	.13
AC-FT	89	133	3320	13660	5700	30530	2940	364	470	38	12	39

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1998, BY WATER YEAR (WY)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MEAN	65.3	73.2	149	89.4	167	202	172	340	158	17.8	4.57	38.3	
MAX	310	353	743	316	647	565	1063	1359	659	91.1	13.2	123	
(WY)	1994	1995	1992	1992	1997	1990	1990	1990	1989	1987	1996	1996	
MIN	.72	2.23	2.61	5.72	3.80	6.54	6.25	5.31	2.61	.61	.025	.65	
(WY)	1989	1998	1991	1986	1996	1986	1991	1996	1996	1998	1988	1998	

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1986 - 1998

ANNUAL TOTAL	50132.91	28891.18		
ANNUAL MEAN	137	79.2		
HIGHEST ANNUAL MEAN			123	
LOWEST ANNUAL MEAN			277	1990
HIGHEST DAILY MEAN	7620	Feb 20	24.9	1996
LOWEST DAILY MEAN	.90	Oct 4	12500	May 2 1990
ANNUAL SEVEN-DAY MINIMUM	1.0	Oct 4	.03	Aug 22 1988
INSTANTANEOUS PEAK FLOW			.04	Aug 21 1988
INSTANTANEOUS PEAK STAGE			10900	Mar 16 1989
ANNUAL RUNOFF (AC-FT)	99440	57310	18.45	Mar 16 1989
10 PERCENT EXCEEDS	316	179	24000	May 16 1989
50 PERCENT EXCEEDS	19	3.3	25.33	May 16 1989
90 PERCENT EXCEEDS	1.3	.31	1.3	

TRINITY RIVER BASIN

08050410 ELM FORK TRINITY RIVER NEAR GAINESVILLE, TX

LOCATION.--Lat 33°34'56", long 97°07'49", Cooke County, Hydrologic Unit 12030103, on Farm Road 2071 bridge, over center of channel at downstream side of bridge, 1.0 mi downstream from Atchison, Topeka, and Santa Fe Railroad Co. bridge, and 3.0 mi south of Cooke County Courthouse in Gainesville.

DRAINAGE AREA.--1.79 mi².

PERIOD OF RECORD.--Chemical and biochemical analyses: Oct 1988 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DEMAND, BIO-CHEM-ICAL, 5 DAY SATUR-ATION (MG/L) (00310)	OXYGEN, DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
DEC 10...	1045	4.7	720	8.2	9.0	50	6.5	8.0	71	1.8	140
JAN 29...	1400	128	494	8.2	10.0	130	22	11.0	100	1.2	200
APR 15...	1145	39	694	8.0	21.0	14	4.0	8.8	102	1.0	240
MAY 19...	1445	3.7	785	8.1	25.0	18	5.5	9.4	116	1.9	200
JUN 19...	1315	8.2	800	8.1	27.0	25	5.5	7.2	93	1.3	120
JUL 30...	1215	.35	1110	8.4	29.0	55	22	6.2	83	1.8	71

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS ST02) (00955)
DEC 10...	--	47	4.5	99	4	5.5	240	49	39	.56	9.8
JAN 29...	30	72	3.7	26	.8	2.8	170	37	26	.28	9.3
APR 15...	7	86	5.8	56	2	2.7	230	50	45	.42	4.4
MAY 19...	--	70	5.5	92	3	4.1	250	57	49	.41	11
JUN 19...	--	42	3.8	124	5	5.3	240	50	60	.93	12
JUL 30...	--	24	2.7	222	11	8.5	320	61	69	1.2	10

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDE (MG/L) (00530)	RESIDUE VOLA-TILE, SUS-PENDE (MG/L) (00535)	RESIDUE FIXED NON FILTER-ABLE (MG/L) (00540)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)
DEC 10...	428	8	7	1	5.78	.025	5.80	<.020	--	.54	.935
JAN 29...	284	14	3	11	1.76	.018	1.78	.055	.38	.44	.065
APR 15...	404	9	9	.00	2.82	.024	2.84	.040	.25	.29	.292
MAY 19...	464	42	4	38	4.84	.025	4.86	.029	.50	.53	.870
JUN 19...	475	29	11	18	6.71	.029	6.74	.025	.69	.72	1.36
JUL 30...	657	35	8	27	12.8	.093	12.9	.054	.99	1.0	3.17

08050410 ELM FORK TRINITY RIVER NEAR GAINESVILLE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
DEC 10...	.939	2.9	6.5	--	--	--	--	--	--	--	--
JAN 29...	.065	.20	6.2	1	64	<1.0	<8.0	<14	<12	<10	12
APR 15...	.283	.87	4.6	--	--	--	--	--	--	--	--
MAY 19...	.745	2.3	9.9	1	77	<1.0	<8.0	<14	<12	<10	<10
JUN 19...	1.38	4.2	7.3	--	--	--	--	--	--	--	--
JUL 30...	3.13	9.6	9.3	3	30	<1.0	<8.0	<14	<12	<10	<10

DATE	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)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
DEC 10...	--	--	--	--	--	--	--	--	--	--	--
JAN 29...	<100	6	6.3	<.1	<60	<40	<1	<4.0	289	<10	<20
APR 15...	--	--	--	--	--	--	--	--	--	--	--
MAY 19...	<100	11	<4.0	<.1	<60	<40	<1	<4.0	408	<10	<20
JUN 19...	--	--	--	--	--	--	--	--	--	--	--
JUL 30...	<100	18	<4.0	.1	<60	<40	<1	<4.0	184	<10	<20

TRINITY RIVER BASIN

08050800 TIMBER CREEK NEAR COLLINSVILLE, TX

LOCATION.--Lat 33°33'16", long 96°56'49", Cooke County, Hydrologic Unit 12030103, on left bank 13 ft to the left of bridge on Farm Road 902 and 19 ft downstream from the centerline of the road, 2.1 mi west of Collinsville, and 3.0 mi upstream from mouth.

DRAINAGE AREA.--38.8 mi².

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

Water-quality records.--Chemical and biochemical analyses: Apr 1993 to Sep 1993.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 640.00 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions. Several observations of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Oct 1981 reached a peak stage of 15.0 ft, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 16	1400	2,240	13.07	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.02	7.9	3.0	7.0	2.4	.00	.00	.00	.00
2	.00	.00	.00	.03	6.5	2.5	4.4	1.9	.00	.00	.00	.00
3	.00	.00	.00	.05	5.1	2.7	3.0	1.3	.00	.00	.00	.00
4	.00	.00	.00	130	3.8	2.5	2.3	1.1	.00	.00	.00	.00
5	.00	.00	.00	131	4.4	2.3	2.2	1.4	14	.00	.00	.00
6	.00	.00	.00	69	5.3	2.2	2.2	1.5	1.7	.00	.00	.00
7	.00	.00	.00	131	4.1	546	1.9	1.7	.04	.00	.00	.00
8	.00	.00	.00	183	3.5	471	1.0	1.0	.00	.00	.00	.00
9	.00	.00	.00	73	3.3	91	.64	2.5	.00	.00	.00	.00
10	.00	.00	.00	26	3.1	38	.50	2.9	.00	.00	.00	.00
11	.00	.00	.00	15	2.6	23	.33	.76	5.8	.00	.00	.00
12	.00	.00	.00	11	2.5	17	.52	.64	6.9	.00	.00	.00
13	.00	.00	.00	7.2	2.7	14	.34	.55	1.5	.00	.00	.00
14	.00	.00	.00	4.8	2.9	14	.30	.49	.02	.00	.00	.00
15	.00	.00	.00	4.4	3.1	50	.76	.68	.00	.00	.00	.00
16	.00	.00	.00	4.0	3.9	1220	2.2	.73	.00	.00	.00	.00
17	.00	.00	.00	3.6	6.2	586	2.6	.72	.00	.00	.00	.00
18	.00	.00	.00	3.4	7.2	62	1.9	.12	.00	.00	.00	.00
19	.00	.00	.00	3.1	6.5	38	1.6	.30	.00	.00	.00	.00
20	.00	.00	19	3.1	7.2	25	1.8	.10	.00	.00	.00	.00
21	.00	.00	214	67	16	18	2.3	.07	.00	.00	.00	.00
22	.00	.00	30	277	281	15	2.9	.04	.00	.00	.00	.00
23	.00	.00	13	36	36	12	2.5	.00	.00	.00	.00	.00
24	.00	.00	62	19	21	9.9	2.2	.00	.00	.00	.00	.00
25	.00	.00	13	15	14	7.9	2.5	.03	.00	.00	.00	.00
26	.00	.00	3.9	549	11	6.6	5.6	.00	.00	.00	.00	.00
27	.00	.00	2.4	55	7.0	6.7	46	.00	.00	.00	.00	.00
28	.00	.00	1.3	25	4.4	6.0	11	.00	.00	.00	.00	.00
29	.00	.00	.70	14	---	5.2	6.0	.14	.00	.00	.00	.00
30	.00	.00	.32	9.8	---	5.4	3.3	.00	.00	.00	.00	.00
31	.00	---	.14	8.3	---	11	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	359.76	1877.80	482.2	3313.9	121.79	23.07	29.96	0.00	0.00	0.00
MEAN	.000	.000	11.6	60.6	17.2	107	4.06	.74	1.00	.000	.000	.000
MAX	.00	.00	214	549	281	1220	46	2.9	14	.00	.00	.00
MIN	.00	.00	.00	.02	2.5	2.2	.30	.00	.00	.00	.00	.00
AC-FT	.00	.00	714	3720	956	6570	242	46	59	.00	.00	.00
CFSM	.00	.00	.30	1.56	.44	2.76	.10	.02	.03	.00	.00	.00
IN.	.00	.00	.34	1.80	.46	3.18	.12	.02	.03	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1998, BY WATER YEAR (WY)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MEAN	26.5	17.5	46.5	21.9	34.3	40.9	48.2	67.2	34.1	27.1	1.26	7.32	
MAX	135	66.3	326	73.1	95.3	107	259	168	193	293	6.76	32.0	
(WY)	1992	1997	1992	1992	1993	1998	1990	1989	1994	1996	1996	1992	
MIN	.000	.000	.070	.60	.35	2.72	1.82	.059	.000	.000	.000	.000	
(WY)	1988	1990	1996	1986	1996	1986	1987	1996	1996	1988	1986	1995	

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1986 - 1998

ANNUAL TOTAL	5502.83	6208.48	
ANNUAL MEAN	15.1	17.0	31.1
HIGHEST ANNUAL MEAN			72.7
LOWEST ANNUAL MEAN			2.47
HIGHEST DAILY MEAN	559	Apr 5	1220
LOWEST DAILY MEAN	.00	Jul 19	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 19	.00
INSTANTANEOUS PEAK FLOW			2240
INSTANTANEOUS PEAK STAGE			13.07
ANNUAL RUNOFF (AC-FT)	10910	12310	22510
ANNUAL RUNOFF (CFSM)	.39	.44	.80
ANNUAL RUNOFF (INCHES)	5.28	5.95	10.88
10 PERCENT EXCEEDS	24	15	29
50 PERCENT EXCEEDS	1.8	.00	2.0
90 PERCENT EXCEEDS	.00	.00	.00

08050840 RANGE CREEK NEAR COLLINSVILLE, TX

LOCATION.--Lat 33°31'34", long 96°48'25", Delta County, Hydrologic Unit 12030103, on downstream left bank at bridge on Farm Road 902, 1.8 mi upstream from Case Creek, 2.5 mi downstream from Little Elm Creek, 6.5 mi east southeast from the Post Office in Collinsville.

DRAINAGE AREA.--29.2 mi².

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

Water-quality records.--Chemical and biochemical analyses: Oct 1992 to Sep 1995.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 621.8 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversion.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.67	2.6	1.9	1.5	.00	.00	.00	.00	.00
2	.00	.00	7.4	.63	2.3	1.4	.90	.00	.00	.00	.00	.00
3	.00	.00	52	.70	1.9	1.2	.58	.00	.00	.00	.00	.00
4	.00	.00	2.9	816	1.5	1.1	.42	.00	.00	.00	.00	.00
5	.00	.00	.77	571	1.3	1.2	.31	.00	.00	.00	.00	.00
6	.00	.00	.45	51	1.2	1.1	.22	.00	.00	.00	.00	.00
7	.00	.00	4.7	588	1.2	275	.18	.00	.00	.00	.00	.00
8	.00	.00	69	451	1.0	240	.16	.00	.00	.00	.00	.00
9	.00	.00	5.7	90	.97	68	.08	.00	.00	.00	.00	.00
10	.00	.00	1.6	12	.95	7.5	.04	.00	.00	.00	.00	.00
11	.00	.00	.75	5.2	.93	3.6	.02	.00	.00	.00	.00	.00
12	2.4	.00	.45	6.6	.85	2.4	.02	.00	.00	.00	.00	.00
13	35	.00	.26	3.5	.80	2.0	.01	.00	.00	.00	.00	.00
14	.45	.00	.16	2.0	.86	2.4	.01	.00	.00	.00	.00	.00
15	.03	.00	.12	1.8	.97	354	.00	.00	.00	.00	.00	.00
16	.02	.00	.10	1.3	.94	1260	.01	.00	.00	.00	.00	.00
17	.00	.00	.06	1.0	2.5	230	.01	.00	.00	.00	.00	.00
18	.00	.00	.04	.84	2.8	29	.00	.00	.00	.00	.00	.00
19	.00	.00	.03	.72	4.1	22	.00	.00	.00	.00	.00	.00
20	.00	.00	147	.66	3.4	6.9	.00	.00	.00	.00	.00	.00
21	.00	.00	1060	.77	56	3.7	.00	.00	.00	.00	.00	.00
22	.00	.00	37	8.0	539	2.8	.00	.00	.00	.00	.00	.00
23	.81	.00	227	3.0	24	2.2	.00	.00	.00	.00	.00	.00
24	16	.00	400	1.2	6.3	1.8	.00	.00	.00	.00	.00	.00
25	.94	.00	13	1.4	3.8	1.6	.00	.00	.00	.00	.00	.00
26	.10	.00	5.3	680	25	2.0	.00	.00	.00	.00	.00	.00
27	.07	.00	5.5	41	6.2	1.2	.00	.00	.00	.00	.00	.00
28	.02	.01	2.4	9.1	2.9	1.1	.00	.00	.00	.00	.00	.00
29	.01	.03	1.5	4.6	---	1.1	.00	.00	.00	.00	.00	.00
30	.00	.01	1.1	3.2	---	.90	.00	.00	.00	.00	.00	.00
31	.00	---	.85	2.6	---	1.5	---	.00	---	.00	.00	---
TOTAL	55.85	0.05	2047.14	3359.49	696.27	2530.60	4.47	0.00	0.00	0.00	0.00	0.00
MEAN	1.80	.002	66.0	108	24.9	81.6	.15	.000	.000	.000	.000	.000
MAX	.35	.03	1060	816	539	1260	1.5	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.63	.80	.90	.00	.00	.00	.00	.00	.00
AC-FT	111	.1	4060	6660	1380	5020	8.9	.00	.00	.00	.00	.00
CFSM	.06	.00	2.26	3.71	.85	2.80	.01	.00	.00	.00	.00	.00
IN.	.07	.00	2.61	4.28	.89	3.22	.01	.00	.00	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1998, BY WATER YEAR (WY)

	1993	1994	1995	1996	1997	1998
MEAN	26.1	54.3	30.4	21.4	32.5	36.6
MAX	107	204	66.0	108	116	81.6
(WY)	1994	1997	1998	1998	1997	1998
MIN	.000	.000	5.92	.61	.000	4.01
(WY)	1993	1996	1996	1997	1996	1994

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1993 - 1998

ANNUAL TOTAL	9252.58	8693.87		
ANNUAL MEAN	25.3	23.8	22.5	
HIGHEST ANNUAL MEAN			38.3	1997
LOWEST ANNUAL MEAN			1.88	1996
HIGHEST DAILY MEAN	1320	Feb 20	1260	Mar 16
LOWEST DAILY MEAN	.00	Jul 1	.00	Oct 1
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 1	.00	Oct 1
INSTANTANEOUS PEAK FLOW			2550	Mar 16
INSTANTANEOUS PEAK STAGE			19.40	Mar 16
ANNUAL RUNOFF (AC-FT)	18350	17240	16320	
ANNUAL RUNOFF (CFSM)	.87	.82	.77	
ANNUAL RUNOFF (INCHES)	11.79	11.08	10.48	
10 PERCENT EXCEEDS	36	6.7	13	
50 PERCENT EXCEEDS	.17	.00	.05	
90 PERCENT EXCEEDS	.00	.00	.00	

TRINITY RIVER BASIN

08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX

LOCATION.--Lat 32°21'19", long 97°02'59", Denton County, Hydrologic Unit 12030103, in control room of outlet works tower located 336 ft upstream from centerline of Ray Roberts Dam (and Farm Road 455 which is located on top of dam) on Elm Fork Trinity River, 3.7 mi upstream from Bray Branch, 5.7 mi southwest of Pilot Point, and at river mile 60.0.

DRAINAGE AREA.--692 mi².

WATER-CONTENT RECORDS

PERIOD OF RECORD.--Jul 1987 to current year.

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

REMARKS.--Lake is formed by a rolled earthfill dam 15,250 ft long. There is an uncontrolled, broad-crested spillway excavated in natural ground about 5,000 ft right of right end of dam. A reinforced concrete tower houses the flood-control and low-flow gates and operating equipment. Construction started Sep 16, 1980, and closure was made in May 1986. The dam was built and is owned by the U.S. Army Corps of Engineers. Deliberate impoundment started Jun 30, 1987. The lake was built for water supply, flood control, and recreation purposes. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation
	(feet)
Top of dam.....	665.0
Spillway crest (uncontrolled).....	645.5
Top of flood-control pool.....	640.5
Top of conservation pool.....	632.5
Invert, lowest gated outlet.....	551.0

COOPERATION.--Record of contents provided by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,219,000 acre-ft, May 3, 1990 (elevation, 644.48 ft); minimum since initial filling began, 990 acre-ft, Jul 1, 1987 (elevation, 551.00 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 877,600 acre-ft, Mar 22 (elevation, 635.05 ft); minimum daily contents, 724,100 acre-ft, Sep 30 (elevation, 629.82 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	751400	748300	741900	772300	803600	817200	844800	799500	787200	777100	753300	736900
2	750800	747700	744100	772300	803300	816600	841400	798900	786600	776600	753000	736400
3	750200	746600	744100	774500	803000	815400	839000	798000	786100	775400	752500	735600
4	750000	746300	743800	789200	802700	814500	835300	797100	786900	774800	751900	735000
5	749100	746100	743300	797700	802700	813900	832300	796500	786100	774300	751400	734500
6	748800	745500	743000	802700	802100	812700	828000	795900	785200	773400	750800	733400
7	749400	745000	744100	809500	801800	823200	826500	795600	783700	772800	750200	733100
8	750200	744700	745000	819600	801800	829500	824400	795900	783200	772300	749700	732500
9	753000	745000	744700	822900	801200	828300	822300	795600	783500	771700	748800	732300
10	752800	744100	744100	823200	801200	823800	820500	795400	784300	770800	748600	731200
11	752200	744100	743800	822900	800600	820500	817800	794500	786300	770000	747700	731200
12	755600	745000	743300	822900	800600	814500	815400	794200	786300	769400	748000	729800
13	754700	745500	743000	821400	800600	810700	814500	793900	785500	768800	747500	729500
14	754400	745000	743000	820800	800600	809500	812500	793600	785500	768000	747200	729500
15	753900	744400	742500	819600	801200	812200	811600	793300	784600	767400	746600	729500
16	753300	743600	742500	817800	801800	859000	810100	793000	783700	766900	746100	729800
17	753000	743000	742200	816300	802100	870900	808000	792700	782900	765700	745500	729300
18	752200	743000	742200	814500	802400	874400	805300	792100	783200	765200	745200	729000
19	751900	742700	742200	812700	802400	876300	803900	791600	784300	764600	744700	728700
20	751400	742700	749700	811300	802100	877300	804500	791000	783700	764000	744100	728200
21	751600	742500	761800	811000	807700	877300	803600	790700	783200	762900	743300	727900
22	751100	742200	764300	812700	816600	877600	802700	790700	782900	762000	742700	727600
23	753300	741900	767400	811300	817800	875700	802100	789800	782000	761200	742200	726800
24	753000	741600	772300	809500	817500	871200	800300	789200	781100	760100	741600	726300
25	752500	741400	772800	808300	818400	867500	800000	789000	780600	759200	741100	725700
26	751400	741900	773400	813300	819000	863400	801800	789000	780000	758700	740500	725700
27	750200	741400	772800	811600	818700	860600	801800	790400	779400	757800	740000	725400
28	749700	742700	773100	808600	817800	856200	801200	789800	778600	756700	739100	724900
29	749100	742500	772800	804500	---	852200	800300	789500	778000	755800	738600	724600
30	749100	742200	772800	802700	---	850600	799700	788700	777400	754700	738000	724100
31	749400	---	772500	803300	---	847900	---	788400	---	753900	737500	---
MAX	755600	748300	773400	823200	819000	877600	844800	799500	787200	777100	753300	736900
MIN	748800	741400	741900	772300	800600	809500	799700	788400	777400	753900	737500	724100
(+)	630.74	630.48	631.56	632.62	633.11	634.10	632.49	632.11	631.73	630.90	630.31	629.82
(@)	-1700	-7200	+30300	+30800	+14500	+30100	-48200	-11300	-11000	-23500	-16400	-13400
CAL YR 1997	MAX 928500	MIN 741400	(@) -27800									
WTR YR 1998	MAX 877600	MIN 724100	(@) -27000									

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

TRINITY RIVER BASIN

08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Feb 1989 to Sep 1998 (discontinued).

REVISED RECORDS.--TX-93-1 Phytoplankton.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

332138097024101 - RAY ROBERTS LAKE SITE AC

DATE	TIME	RESER- VOIR STORAGE (AC-FT) (00054)	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00301)	COLI- FORM, FECAL, UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI KF AGAR PER (COLS./ 100 ML) (31673)	HARD- NESS TOTAL AS CACO3) (00900)
JAN												
29...	0947	808000	1.00	280	8.0	7.8	1.50	10.6	89	K1	K4	100
29...	0949	--	10.0	280	8.0	8.0	--	10.6	90	--	--	--
29...	0951	--	20.0	280	8.0	8.0	--	10.6	90	--	--	--
29...	0953	--	30.0	280	8.0	8.0	--	10.6	90	--	--	--
29...	0955	--	40.0	280	8.0	8.0	--	10.6	90	--	--	--
29...	0957	--	50.0	280	8.0	8.0	--	10.6	90	--	--	--
29...	0959	--	60.0	280	8.0	8.0	--	10.5	89	--	--	--
29...	1001	--	70.0	280	8.0	7.9	--	10.4	88	--	--	--
29...	1003	--	77.0	280	8.0	8.0	--	10.3	87	--	--	100
MAY												
19...	1435	792000	1.00	286	8.7	23.0	1.71	9.4	112	K1	K1	100
19...	1438	--	10.0	286	8.6	22.5	--	8.6	102	--	--	--
19...	1442	--	20.0	288	8.4	21.5	--	7.6	88	--	--	--
19...	1445	--	30.0	290	7.9	21.0	--	5.7	66	--	--	--
19...	1448	--	40.0	290	7.7	19.5	--	4.3	48	--	--	--
19...	1451	--	50.0	293	7.6	18.5	--	3.5	38	--	--	--
19...	1453	--	60.0	294	7.5	18.0	--	3.3	36	--	--	--
19...	1456	--	70.0	295	7.5	18.0	--	2.9	31	--	--	--
19...	1501	--	76.0	297	7.5	18.0	--	2.8	30	--	--	110
JUL												
30...	1338	755000	1.00	294	8.2	30.0	1.37	5.9	80	K1	K1	100
30...	1342	--	10.0	293	8.1	30.0	--	5.7	77	--	--	--
30...	1347	--	20.0	297	7.6	29.0	--	2.2	29	--	--	--
30...	1352	--	30.0	305	7.4	26.0	--	1.5	19	--	--	--
30...	1357	--	40.0	306	7.3	25.0	--	2.3	29	--	--	--
30...	1401	--	50.0	313	7.2	22.0	--	1.5	18	--	--	--
30...	1405	--	60.0	318	7.2	20.5	--	.1	1	--	--	--
30...	1410	--	74.0	323	7.2	20.0	--	.1	1	--	--	120

332138097024101 - RAY ROBERTS LAKE SITE AC

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS- SOLVED (MG/L) AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L) AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L) AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L) AS K) (00935)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L) AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L) AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L) AS F) (00950)	SILICA, DIS- SOLVED (MG/L) AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
JAN												
29...	3	35	3.9	16	.7	4.3	100	17	17	.24	2.4	158
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	34	3.9	16	.7	4.2	100	17	17	.24	2.4	157
MAY												
19...	--	34	3.6	15	.7	4.3	100	16	16	.20	.80	152
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	1	36	3.7	15	.7	4.2	110	16	16	.21	2.0	159
JUL												
30...	2	34	3.9	17	.7	4.3	100	15	17	.20	1.3	153
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	41	4.0	16	.6	4.2	120	12	16	.19	4.0	172

TRINITY RIVER BASIN

08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

332138097024101 - RAY ROBERTS LAKE SITE AC

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
JAN											
29...	.266	.025	.291	.034	.34	.37	<.010	.020	.06	<10	25
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	.270	.022	.292	.049	.36	.41	<.010	.018	.06	25	195
MAY											
19...	.183	.014	.197	.038	.36	.40	<.010	<.010	--	<10	4.9
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	<.010	.481	.058	.35	.41	<.010	<.010	--	<10	115
JUL											
30...	--	<.010	<.050	<.020	--	.35	<.010	<.010	--	<10	<4.0
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	<.010	<.050	.318	.30	.62	<.010	.027	.08	380	902
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	<.010	<.050	.524	.31	.84	.044	.072	.22	490	1220

332200097010001 - RAY ROBERTS LAKE SITE AL

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 (PER- CENT SATUR- ATION) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)
JAN							
29...	1017	1.00	280	8.0	8.0	10.6	90
29...	1019	10.0	280	8.0	8.0	10.6	90
29...	1021	20.0	280	8.0	8.0	10.6	90
29...	1023	30.0	280	8.0	8.0	10.6	90
29...	1025	40.0	280	8.0	8.0	10.5	89
29...	1027	50.0	280	8.0	8.0	10.4	88
29...	1029	60.0	280	8.0	8.0	10.4	88
29...	1031	66.0	280	8.0	8.0	10.3	87
MAY							
19...	1509	1.00	285	8.8	23.0	9.9	118
19...	1511	10.0	286	8.7	22.5	9.3	110
19...	1513	20.0	287	8.4	22.0	7.9	93
19...	1516	30.0	290	7.9	21.0	5.6	64
19...	1519	40.0	289	7.6	19.0	4.5	50
19...	1523	50.0	292	7.6	18.5	4.0	44
19...	1525	62.0	296	7.5	18.0	2.8	30
JUL							
30...	1423	1.00	294	8.2	30.0	6.1	83
30...	1427	10.0	294	8.2	30.0	6.0	81
30...	1430	20.0	294	8.1	30.0	5.6	76
30...	1433	30.0	303	7.4	28.0	1.8	24
30...	1437	40.0	306	7.3	25.0	.1	1
30...	1440	50.0	310	7.3	22.5	.2	2
30...	1443	64.0	317	7.2	21.0	.6	7

TRINITY RIVER BASIN

08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

332301097050601 - RAY ROBERTS LAKE SITE BC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED SATUR- ATION (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)
JAN							
29...	1312	1.00	277	8.1	8.5	10.7	92
29...	1314	10.0	278	8.1	8.5	10.6	91
29...	1316	20.0	280	8.1	8.0	10.6	90
29...	1318	30.0	280	8.1	8.0	10.5	89
29...	1320	40.0	282	8.1	8.0	10.5	89
29...	1322	50.0	282	8.0	8.0	10.4	88
29...	1324	60.0	282	8.0	8.0	10.3	87
29...	1326	70.0	284	7.9	8.0	10.0	85
29...	1328	74.0	284	7.9	8.0	9.8	83
MAY							
19...	1118	1.00	287	8.7	23.5	9.2	111
19...	1120	10.0	287	8.7	23.5	9.1	110
19...	1123	20.0	287	8.6	23.0	8.6	103
19...	1126	30.0	291	7.7	20.5	4.7	53
19...	1128	40.0	294	7.5	19.0	3.2	35
19...	1131	50.0	296	7.4	18.5	2.5	27
19...	1133	60.0	296	7.4	18.5	2.4	26
19...	1135	70.0	297	7.4	18.0	2.2	24
19...	1138	75.0	299	7.4	18.0	2.0	22
JUL							
30...	0905	1.00	288	8.1	29.5	5.8	78
30...	0907	10.0	281	8.1	29.5	5.1	69
30...	0910	20.0	283	7.9	29.0	5.0	67
30...	0912	30.0	287	7.6	28.5	3.3	44
30...	0915	40.0	296	7.4	27.0	.1	1
30...	0917	50.0	305	7.2	22.5	.1	1
30...	0919	60.0	312	7.1	20.5	.1	1
30...	0921	74.0	313	7.2	20.0	.2	2

332353097020101 - RAY ROBERTS LAKE 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 SATUR- ATION (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)
JAN							
29...	1035	1.00	269	8.1	8.0	10.5	89
29...	1037	10.0	270	8.1	8.0	10.5	89
29...	1039	20.0	273	8.1	8.0	10.5	89
29...	1041	30.0	274	8.1	8.0	10.5	89
29...	1043	40.0	276	8.1	8.0	10.5	89
29...	1045	50.0	280	8.0	8.0	10.4	88
29...	1047	60.0	282	8.0	8.0	10.4	88
29...	1049	71.0	280	8.0	8.0	10.3	87
MAY							
19...	1159	1.00	281	8.8	24.0	8.2	100
19...	1202	10.0	281	8.8	23.0	9.6	115
19...	1204	20.0	283	8.6	22.5	8.9	105
19...	1207	30.0	286	8.0	21.5	5.9	68
19...	1209	40.0	277	7.5	19.5	3.4	38
19...	1211	50.0	284	7.4	18.5	2.7	30
19...	1213	60.0	291	7.4	18.0	2.7	29
19...	1216	70.0	292	7.4	18.0	2.5	27
19...	1218	82.0	296	7.5	18.0	2.0	22
JUL							
30...	1118	1.00	290	8.1	30.0	6.0	81
30...	1120	10.0	290	8.1	30.0	6.0	81
30...	1123	20.0	290	8.1	29.5	5.8	78
30...	1125	30.0	292	8.0	29.0	5.7	76
30...	1128	40.0	305	7.3	26.0	.1	1
30...	1130	50.0	306	7.3	24.5	.1	1
30...	1133	60.0	319	7.2	20.5	.1	1
30...	1136	70.0	320	7.2	20.0	.2	2
30...	1139	79.0	320	7.4	20.0	.3	3

TRINITY RIVER BASIN

08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

332459097063001 - RAY ROBERTS LAKE SITE DC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (PER- CENT SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00301)	COLI- FORM, FECAL, UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR PER (COLS. 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
JAN												
29...	1347	1.00	280	8.1	9.0	.60	10.4	90	40	79	100	2
29...	1349	10.0	284	8.1	8.5	--	10.6	91	--	--	--	--
29...	1351	20.0	281	8.0	8.0	--	10.1	86	--	--	--	--
29...	1353	30.0	297	8.0	8.0	--	9.9	84	--	--	--	--
29...	1355	40.0	300	7.9	8.0	--	9.5	80	--	--	--	--
29...	1357	52.0	302	7.8	8.0	--	9.3	79	--	--	110	--
MAY												
19...	1547	1.00	286	8.9	25.5	1.10	10.6	133	K1	K1	100	--
19...	1551	10.0	288	8.8	24.5	--	9.8	120	--	--	--	--
19...	1554	20.0	290	8.6	24.0	--	8.5	103	--	--	--	--
19...	1557	30.0	294	8.3	23.0	--	5.8	69	--	--	--	--
19...	1602	40.0	301	7.5	20.0	--	1.9	21	--	--	--	--
19...	1606	54.0	302	7.5	19.5	--	1.4	16	--	--	110	--
JUL												
30...	1517	1.00	289	8.4	31.0	.90	6.4	88	K1	K1	98	8
30...	1524	10.0	289	8.3	31.0	--	6.7	92	--	--	--	--
30...	1530	20.0	289	8.3	30.5	--	6.5	89	--	--	--	--
30...	1537	30.0	289	8.2	30.0	--	6.3	85	--	--	--	--
30...	1543	40.0	324	7.3	27.0	--	.1	1	--	--	--	--
30...	1550	52.0	337	7.2	25.0	--	.1	1	--	--	120	--

332459097063001 - RAY ROBERTS LAKE SITE DC

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
JAN											
29...	36	3.8	17	.7	4.3	100	17	16	.23	3.2	160
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	37	3.7	18	.7	4.2	110	19	18	.23	4.6	177
MAY											
19...	34	3.6	16	.7	4.2	100	16	16	.22	.67	153
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	37	3.6	16	.7	4.2	110	16	16	.22	2.2	161
JUL											
30...	33	3.9	17	.7	4.6	90	16	17	.22	1.8	147
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	41	4.2	16	.6	3.0	130	9.5	16	.19	4.4	179

08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

332459097063001 - RAY ROBERTS LAKE SITE DC

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
JAN											
29...	.223	.012	.235	.029	.41	.44	<.010	.013	.04	<10	5.9
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	.680	.022	.702	.160	.43	.58	.013	.013	.04	<10	28
MAY											
19...	.108	.015	.123	.043	.29	.34	<.010	.015	.05	<10	<4.0
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	<.010	.407	.099	.39	.49	<.010	.013	.04	<10	50
JUL											
30...	--	<.010	<.050	<.020	--	.32	<.010	<.010	--	<10	20
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	<.010	<.050	<.020	--	.32	<.010	.010	.03	<10	67
30...	--	--	<.050	.025	.33	.35	<.010	<.010	--	180	850
30...	--	<.010	<.050	.875	.39	1.3	.081	.112	.34	1800	1540

332509096595301 - RAY ROBERTS LAKE SITE EC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL AS CACO3 (MG/L) (00900)	HARD- NESS NONCARB FLD. AS CACO3 (MG/L) (00904)
JAN												
29...	1112	1.00	262	8.1	8.0	1.30	10.6	90	--	--	100	--
29...	1114	10.0	267	8.1	8.0	--	10.8	91	--	--	--	--
29...	1116	20.0	267	8.1	8.0	--	10.8	91	--	--	--	--
29...	1118	30.0	267	8.1	8.0	--	10.8	91	--	--	--	--
29...	1120	40.0	269	8.1	8.0	--	10.7	91	--	--	--	--
29...	1122	50.0	271	8.0	8.0	--	10.6	90	--	--	--	--
29...	1124	60.0	271	8.0	8.0	--	10.5	89	--	--	--	--
29...	1126	67.0	271	8.0	8.0	--	10.4	88	--	--	100	5
MAY												
19...	1348	1.00	279	8.9	25.0	1.31	10.4	129	K1	K8	93	--
19...	1352	10.0	279	8.9	24.5	--	10.3	127	--	--	--	--
19...	1356	20.0	280	8.7	23.5	--	9.1	110	--	--	--	--
19...	1401	30.0	273	7.6	21.5	--	4.0	46	--	--	--	--
19...	1403	40.0	262	7.3	19.5	--	.9	10	--	--	--	--
19...	1406	50.0	259	7.2	18.5	--	.0	0	--	--	--	--
19...	1409	60.0	269	7.2	18.5	--	.1	1	--	--	--	--
19...	1412	66.0	268	7.2	18.5	--	.6	7	--	--	95	8
JUL												
30...	1249	1.00	286	8.4	30.5	1.34	7.2	99	K5	K1	99	1
30...	1252	10.0	286	8.4	30.5	--	6.9	94	--	--	--	--
30...	1256	20.0	287	8.4	30.0	--	6.9	94	--	--	--	--
30...	1300	30.0	286	8.3	29.5	--	6.5	87	--	--	--	--
30...	1303	40.0	288	8.1	29.5	--	5.9	79	--	--	--	--
30...	1307	50.0	327	7.1	22.0	--	.1	1	--	--	--	--
30...	1312	64.0	328	7.2	21.0	--	.2	2	--	--	120	--

TRINITY RIVER BASIN

08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

332509096595301 - RAY ROBERTS LAKE SITE EC

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS STO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
JAN											
29...	33	3.9	16	.7	4.3	100	16	17	.23	2.2	155
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	35	4.1	16	.7	4.2	99	17	16	.23	2.1	156
MAY											
19...	31	3.5	14	.6	4.1	98	16	16	.22	.61	146
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	32	3.4	15	.7	4.2	87	16	15	.23	3.0	142
JUL											
30...	33	4.0	17	.7	4.1	98	15	17	.19	1.2	150
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	40	4.1	16	.6	4.3	130	9.5	16	.19	4.9	175

332509096595301 - RAY ROBERTS LAKE SITE EC

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- SOLVED (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
JAN											
29...	.226	.013	.239	.020	.38	.40	<.010	.017	.05	<10	8.7
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	.232	.012	.244	.039	.35	.39	<.010	.014	.04	<10	21
MAY											
19...	.115	.013	.128	.039	.34	.38	<.010	.011	.03	49	635
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	.309	.017	.326	.121	.39	.51	<.010	.015	.05	<10	6.6
JUL											
30...	--	<.010	<.050	<.020	--	.33	<.010	<.010	--	<10	13
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	<.010	<.050	.429	.31	.74	E.020	.049	.15	390	654
30...	--	<.010	<.050	.441	.71	1.1	<.010	.013	.04	1300	1240
30...	--	<.010	<.050	.860	.27	1.1	.066	.108	.33	1300	1300

TRINITY RIVER BASIN

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08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

332758097063301 - RAY ROBERTS LAKE SITE FC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED SATUR- ATION) (00301)
JAN							
29...	1428	1.00	310	8.0	9.0	10.1	88
29...	1430	10.0	308	7.9	8.5	10.1	87
29...	1432	20.0	309	7.9	8.0	9.9	84
29...	1434	30.0	313	7.8	8.0	9.4	80
MAY							
19...	1619	1.00	296	8.8	25.5	10.4	130
19...	1622	10.0	297	8.7	25.5	10.0	125
19...	1625	20.0	313	8.2	24.5	6.4	79
19...	1627	34.0	334	7.5	23.5	.4	5
JUL							
30...	0953	1.00	291	8.3	30.5	6.5	89
30...	0956	10.0	290	8.3	30.5	6.4	88
30...	1000	20.0	289	8.2	30.5	5.8	79
30...	1003	32.0	299	7.6	30.0	3.3	45

332642096561201 - RAY ROBERTS LAKE SITE GC

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 SATUR- ATION) (00301)
JAN							
29...	1212	1.00	182	7.6	8.5	9.4	81
29...	1214	10.0	184	7.6	8.5	9.2	79
29...	1216	20.0	187	7.6	8.0	9.1	77
29...	1218	30.0	185	7.6	8.5	9.0	77
29...	1220	35.0	180	7.6	8.5	9.0	77
MAY							
19...	1313	1.00	244	8.7	25.5	9.1	114
19...	1316	10.0	254	8.5	24.5	8.2	101
19...	1319	20.0	264	8.1	23.0	6.6	79
19...	1321	34.0	215	7.2	19.5	.2	2
JUL							
30...	1210	1.00	279	8.3	31.0	6.3	87
30...	1213	10.0	278	8.2	30.5	6.0	82
30...	1216	20.0	279	7.6	30.0	3.8	52
30...	1220	32.0	300	7.1	29.0	.2	3

TRINITY RIVER BASIN

08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX--Continued

Ray Roberts Lake Site AC (332138097024101)

Phytoplankton Analyses October 1997 to September 1998

Date	1-29-98
Time	947

TOTAL CELLS/mL	3,959
NUMBER OF SPECIES	8
DEPTH COLLECTED (ft.)	2.5

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	30
Order Pennales	
<i>Navicula</i> sp.	60
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	360
<i>Chlamydomonas</i> sp.	210
<i>Pediastrum duplex</i>	30
CYANOPHYTA	
<i>Aphanizomenon flos-aquae</i>	180
<i>Aphanocapsa delicatissima</i>	2,999
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	90

Ray Roberts Lake Site AC (332138097024101)

Phytoplankton Analyses October 1997 to September 1998

Date	5-19-98
Time	1435

TOTAL CELLS/mL	45,285
NUMBER OF SPECIES	8
DEPTH COLLECTED (ft.)	2.8

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Stephanodiscus astraea</i>	60
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	180
<i>Chlamydomonas</i> sp.	330
<i>Scenedesmus opoliensis</i>	120
CYANOPHYTA	
<i>Anabaena spiroides</i>	6,628
<i>Aphanizomenon flos-aquae</i>	5,878
<i>Aphanocapsa delicatissima</i>	31,789
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	300

08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX--Continued

Ray Roberts Lake Site AC (332138097024101)

Phytoplankton Analyses October 1997 to September 1998

Date	7-30-98
Time	1338
<hr/>	
TOTAL CELLS/mL	20,963
NUMBER OF SPECIES	11
DEPTH COLLECTED (ft.)	2.2

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Melosira varians</i>	60
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	80
<i>Navicula</i> sp.	20
<i>Nitzschia palea</i> var. <i>palea</i>	20
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	120
<i>Scenedesmus opoliensis</i>	60
<i>Staurastrum</i> sp.	30
CYANOPHYTA	
<i>Aphanizomenon flos-aquae</i>	7,887
<i>Aphanocapsa delicatissima</i>	8,997
<i>Oscillatoria</i> sp.	3,599
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	90

Ray Roberts Lake Site DC (332459097063001)

Phytoplankton Analyses October 1997 to September 1998

Date	1-29-98
Time	1347
<hr/>	
TOTAL CELLS/mL	3,778
NUMBER OF SPECIES	13
DEPTH COLLECTED (ft.)	1.0

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	67
<i>Stephanodiscus astraea</i>	22
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	24
<i>Navicula</i> sp.	24
<i>Pinnularia</i> sp.	12
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	450
<i>Chlamydomonas</i> sp.	300
<i>Oocystis</i> sp.	30
<i>Scenedesmus opoliensis</i>	30
<i>Tetrastrum punctatum</i>	30
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	2,699
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	60
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	30

TRINITY RIVER BASIN

08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX--Continued

Ray Roberts Lake Site DC (332459097063001)

Phytoplankton Analyses October 1997 to September 1998

Date	5-19-98
Time	1547
TOTAL CELLS/mL	60,460
NUMBER OF SPECIES	11
DEPTH COLLECTED (ft.)	1.8

Organisms	Cells/mL
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	390
<i>Chlamydomonas</i> sp.	270
<i>Scenedesmus acuminatus</i>	30
<i>Scenedesmus opoliensis</i>	240
<i>Tetrastrum punctatum</i>	30
CYANOPHYTA	
<i>Anabaena spiroides</i>	3,059
<i>Aphanizomenon flos-aquae</i>	13,885
<i>Aphanocapsa delicatissima</i>	37,787
<i>Merismopedia tenuissima</i>	3,359
<i>Oscillatoria</i> sp.	1,200
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	210

Ray Roberts Lake Site DC (332459097063001)

Phytoplankton Analyses October 1997 to September 1998

Date	7-30-98
Time	1517
TOTAL CELLS/mL	38,478
NUMBER OF SPECIES	17
DEPTH COLLECTED (ft.)	1.5

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Melosira varians</i>	150
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	214
<i>Synedra ulna</i> var. <i>ulna</i>	86
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	180
<i>Cosmarium</i> sp.	120
<i>Oocystis</i> sp.	60
<i>Pediastrum duplex</i>	60
<i>Scenedesmus opoliensis</i>	120
<i>Scenedesmus quadricauda</i>	30
<i>Staurastrum</i> sp.	60
CYANOPHYTA	
<i>Anabaena spiroides</i>	480
<i>Aphanocapsa delicatissima</i>	13,795
<i>Aphanocapsa elachista</i>	600
<i>Chroococcus limneticus</i>	240
<i>Merismopedia tenuissima</i>	6,478
<i>Oscillatoria</i> sp.	15,595
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	210

08051500 CLEAR CREEK NEAR SANGER, TX

LOCATION.--Lat 33°20'10", long 97°10'45", Denton County, Hydrologic Unit 12030103, at the downstream side near right end of bridge on county road, 1,350 ft downstream from Duck Creek, 1.1 mi upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, and 1.8 mi south of Sanger.

DRAINAGE AREA.--295 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Mar 1949 to current year.

REVISED RECORDS.--WSP 1512: 1950, 1955. WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 582.23 ft above sea level. Prior to Apr 18, 1975, water-stage recorder at datum 5.00 ft higher. Apr 18, 1975, to Jun 9, 1988, at site 950 ft upstream at same 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 affected at times by discharge from the flood-detention pools of 51 floodwater-retarding structures with a combined detention capacity of 38,850 acre-ft. These structures control runoff from 149 mi² in the Clear Creek watershed. There are no known diversions above station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--31 years (water years 1950-80), 74.3 ft³/s (53,830 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1950-80).--Maximum discharge, 18,200 ft³/s Sep 13, 1950 (gage height, 29.80 ft) at site and datum then in use; no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1880, 36.5 ft in May 1908, from information by Gulf, Colorado, and Santa Fe Railway Co. Flood in May 1935 reached a stage of 34.0 ft, from information by Texas Department of Transportation. Both peaks now referenced to present site and datum.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	4.2	12	13	72	96	161	93	45	1.1	.00	.00
2	.03	4.1	16	12	72	87	141	89	43	1.1	.00	.00
3	.02	3.8	14	12	62	82	126	85	40	1.1	.00	.00
4	.02	4.0	16	74	55	82	114	80	39	.88	.00	.00
5	.02	4.6	12	126	53	168	105	78	41	.75	.00	.00
6	.02	5.2	9.5	77	59	241	102	76	45	.53	.00	.00
7	.03	6.0	12	224	59	635	98	73	45	.21	.00	.00
8	.10	5.9	12	786	54	1170	91	72	41	.12	.00	.00
9	.07	6.2	18	427	52	730	81	90	41	.23	.00	.00
10	.06	10	13	186	50	431	75	89	42	.08	.00	.00
11	1.4	8.8	9.9	111	47	305	71	76	55	.03	.00	.00
12	4.0	8.3	8.4	86	43	253	68	70	99	.02	.00	.00
13	5.3	11	7.9	69	46	226	66	67	63	.02	.00	.00
14	5.4	10	7.5	57	49	214	62	65	41	.01	.00	.00
15	3.4	9.5	8.4	53	49	243	58	65	30	.01	.00	.00
16	2.1	8.0	8.1	50	51	4130	63	61	23	.01	.00	.00
17	2.8	7.7	8.1	47	71	2430	62	59	19	.00	.00	.00
18	2.5	7.5	8.0	44	90	1350	53	58	15	.00	.00	.00
19	2.4	7.5	8.0	41	238	1070	49	57	15	.00	.00	.00
20	2.5	7.6	140	40	119	910	47	55	66	.00	.00	.00
21	3.0	8.3	549	46	207	642	56	53	29	.00	.00	.00
22	3.6	8.5	138	534	1170	391	55	53	14	.00	.00	.00
23	8.3	8.3	129	397	518	296	45	53	8.0	.00	.00	.00
24	9.5	8.5	318	188	251	248	42	53	5.4	.00	.00	.00
25	10	9.4	124	130	180	218	67	53	4.0	.00	.00	.00
26	5.1	9.3	51	113	149	198	95	52	3.3	.00	.00	.00
27	3.4	10	39	130	125	186	131	59	2.6	.00	.00	.00
28	3.0	14	31	98	109	183	131	61	2.1	.00	.00	.00
29	2.9	12	24	81	---	165	109	59	1.8	.03	.00	.00
30	3.4	11	19	69	---	156	98	52	1.4	.20	.00	.00
31	3.8	---	15	66	---	175	---	48	---	.01	.00	---
TOTAL	88.21	239.2	1785.8	4387	4100	17711	2522	2054	919.6	6.44	0.00	0.00
MEAN	2.85	7.97	57.6	142	146	571	84.1	66.3	30.7	.21	.000	.000
MAX	10	14	549	786	1170	4130	161	93	99	1.1	.00	.00
MIN	.02	3.8	7.5	12	43	82	42	48	1.4	.00	.00	.00
AC-FT	175	474	3540	8700	8130	35130	5000	4070	1820	13	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1998z, BY WATER YEAR (WY)

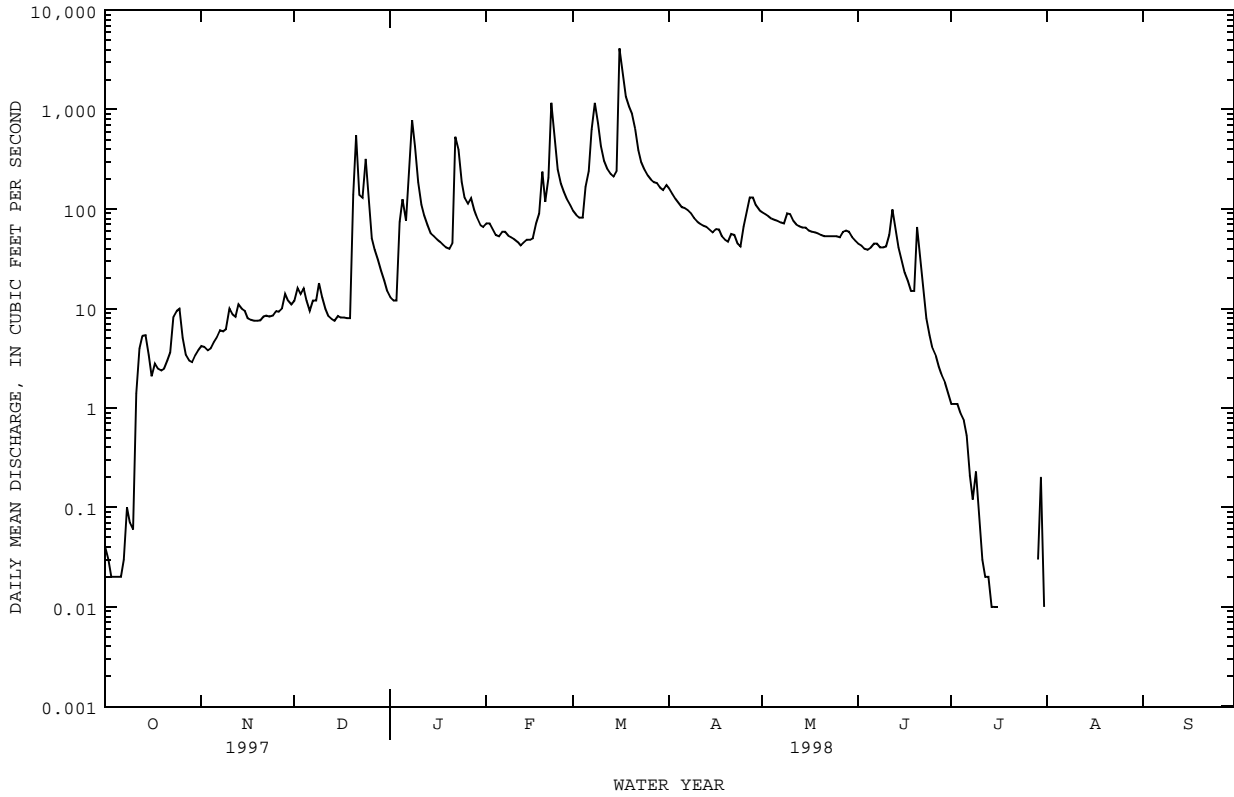
MEAN	219	96.8	144	86.9	187	229	210	395	252	33.8	9.79	30.8
MAX	2739	526	1157	421	893	719	1811	1764	1307	174	68.5	155
(WY)	1982	1995	1992	1992	1997	1990	1990	1990	1989	1982	1995	1986
MIN	.70	1.09	5.83	6.62	9.22	19.1	27.7	8.51	3.12	.16	.000	.000
(WY)	1989	1981	1984	1981	1981	1996	1981	1996	1996	1984	1988	1983

TRINITY RIVER BASIN

08051500 CLEAR CREEK NEAR SANGER, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1981 - 1998z	
ANNUAL TOTAL	54189.74		33813.25		158	
ANNUAL MEAN	148		92.6		476	1982
HIGHEST ANNUAL MEAN					12.4	1996
LOWEST ANNUAL MEAN					39700	Oct 13 1981
HIGHEST DAILY MEAN	8540	Feb 20	4130	Mar 16	.00	Oct 12 1980
LOWEST DAILY MEAN	.02	Oct 3	.00	Jul 17	.00	Aug 2 1981
ANNUAL SEVEN-DAY MINIMUM	.03	Oct 1	.00	Jul 17	.00	Oct 13 1981
INSTANTANEOUS PEAK FLOW			6040	Mar 16	104000	Oct 13 1981
INSTANTANEOUS PEAK STAGE			20.47	Mar 16	35.70	Oct 13 1981
ANNUAL RUNOFF (AC-FT)	107500		67070		114200	
10 PERCENT EXCEEDS	312		184		279	
50 PERCENT EXCEEDS	20		15		28	
90 PERCENT EXCEEDS	.86		.00		.79	

z Period of regulated streamflow.



08051500 CLEAR CREEK NEAR SANGER, TX--Continued
(National Water-Quality Assessment Program)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Apr 1959, Jan 1966, Oct 1984 to Sep 1996 and May 1997 to Sep 1997. Pesticide analyses: May 1997 to Sep 1997. Sediment analyses: Feb 1966 to May 1977.

REMARKS.--Water-quality data for chemical, biochemical, and pesticides were not available for WY98 at time of publication. These data will be in the USGS-NWIS water-quality database by May 1999 and will be published in WY99 annual data report.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct 1969 to Aug 1977.

WATER TEMPERATURE: May 1968 to Aug 1977.

SUSPENDED SEDIMENT DISCHARGE: May 1968 to Aug 1977.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,920 microsiemens, Oct 12, 1976; minimum daily, 182 microsiemens, Jul 29, 1973.

WATER TEMPERATURE: Maximum daily, 39.0°C, Jun 8, 1969; minimum daily, 0.0°C, Jan 9, 1970.

SEDIMENT CONCENTRATION: Maximum daily mean, 7,370 mg/L, May 12, 1972; minimum, no flow on many days.

SEDIMENT LOADS: Maximum daily, 79,000 tons May 7, 1969; minimum daily, 0 tons on many days.

TRINITY RIVER BASIN

08052700 LITTLE ELM CREEK NEAR AUBREY, TX

LOCATION.--Lat 33°17'00", long 96°53'33", Denton County, Hydrologic Unit 12030103, on left bank at downstream side of bridge on Farm Road 1385, 1.5 mi upstream from Mustang Creek, 5.5 mi east of Aubrey, and 18 mi upstream from Lewisville Dam on the Elm Fork Trinity River.

DRAINAGE AREA.--75.5 mi².

PERIOD OF RECORD.--Jun 1956 to Sep 1976, Oct 1979 to current year.

REVISED RECORDS.--WRD TX-70-1: 1969.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 534.76 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. There are several small diversions above station for irrigation. Since water year 1965, at least 10% of contributing drainage area has been affected at times by discharge from the flood-detention pools of 17 floodwater-retarding structures with a combined detention capacity of 10,460 acre-ft. These structures control runoff from 36.4 mi² above this station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--10 years (water years 1956-65) 40.6 ft³/s (29,420 ac-ft/yr).

EXTREMES FOR PERIOD OF RECORD PRIOR TO REGULATION (WATER YEARS 1956-65).--Maximum discharge, 7,830 ft³/s Apr 26, 1957 (gage height, 17.34 ft). No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since about 1900, 18.2 ft in May 1941, from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	4.1	7.8	18	11	150	.19	.00	.00	.00	.00	.00
2	.00	3.2	14	10	8.1	85	.00	.00	.00	.00	.00	.00
3	.00	2.6	156	7.3	5.0	46	.00	.00	.00	.00	.00	.00
4	.00	1.9	68	190	3.2	17	.01	.00	.00	.00	.00	.00
5	.00	1.8	39	1750	2.3	7.6	.58	.00	.00	.00	.00	.00
6	.00	1.4	25	517	2.4	4.2	.54	.00	.00	.00	.00	.00
7	.00	1.5	37	785	1.7	257	1.6	.00	.00	.00	.00	.00
8	.00	1.8	284	938	1.1	431	.76	.01	.00	.00	.00	.00
9	87	2.0	88	488	1.5	266	.10	2.8	.00	.00	.00	.00
10	227	2.2	38	345	2.0	106	.01	.74	.00	.00	.00	.00
11	22	2.5	19	220	2.3	54	.02	.02	.00	.00	.00	.00
12	9.6	3.8	10	179	2.4	27	.38	.00	.00	.00	.00	.00
13	298	5.2	4.8	135	3.3	11	.02	.00	.00	.00	.00	.00
14	74	6.3	2.9	97	3.6	6.3	.00	.00	.00	.00	.00	.00
15	43	5.4	1.9	64	3.6	378	.00	.00	.00	.00	.00	.00
16	23	4.0	1.3	31	3.9	1780	.17	.00	.00	.00	.00	.00
17	11	3.4	.89	16	19	1080	.94	.00	.00	.00	.00	.00
18	5.4	3.7	.65	8.8	20	449	1.0	.00	.00	.00	.00	.00
19	4.9	4.3	1.5	5.2	31	379	.47	.00	.00	.00	.00	.00
20	3.7	4.4	308	3.3	21	327	.30	.00	.00	.00	.00	.00
21	3.2	4.5	2290	2.6	28	198	.46	.00	.00	.00	.00	.00
22	2.6	4.6	698	4.5	922	129	.09	.00	.00	.00	.00	.00
23	57	4.2	552	4.9	368	73	.01	.00	.00	.00	.00	.00
24	136	4.2	1090	2.9	174	39	.00	.00	.00	.00	.00	.00
25	52	4.4	432	2.0	257	18	.00	.00	.00	.00	.00	.00
26	33	5.6	351	305	1470	7.5	.00	.00	.00	.00	.00	.00
27	22	4.4	243	164	425	3.5	1.2	.00	.00	.00	.00	.00
28	14	5.9	184	81	216	1.7	.97	.00	.00	.00	.00	.00
29	9.5	13	139	48	---	.56	.47	.00	.00	.00	.00	.00
30	6.7	10	96	25	---	.18	.31	.00	.00	.00	.00	.00
31	4.8	---	41	13	---	.36	---	.00	---	.00	.00	---
TOTAL	1149.40	126.3	7223.74	6460.5	4008.4	6331.90	10.60	3.57	0.00	0.00	0.00	0.00
MEAN	37.1	4.21	233	208	143	204	.35	.12	.000	.000	.000	.000
MAX	298	13	2290	1750	1470	1780	1.6	2.8	.00	.00	.00	.00
MIN	.00	1.4	.65	2.0	1.1	.18	.00	.00	.00	.00	.00	.00
AC-FT	2280	251	14330	12810	7950	12560	21	7.1	.00	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1998hz, BY WATER YEAR (WY)

MEAN	75.1	65.8	61.7	28.0	73.4	63.5	57.3	120	59.5	23.7	3.06	22.8
MAX	641	530	398	208	315	251	281	897	286	540	28.5	148
(WY)	1982	1997	1992	1998	1986	1990	1966	1982	1989	1994	1966	1973
MIN	.000	.000	.000	.009	.066	.052	.12	.000	.000	.000	.000	.000
(WY)	1976	1976	1976	1976	1976	1980	1971	1988	1972	1966	1967	1969

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

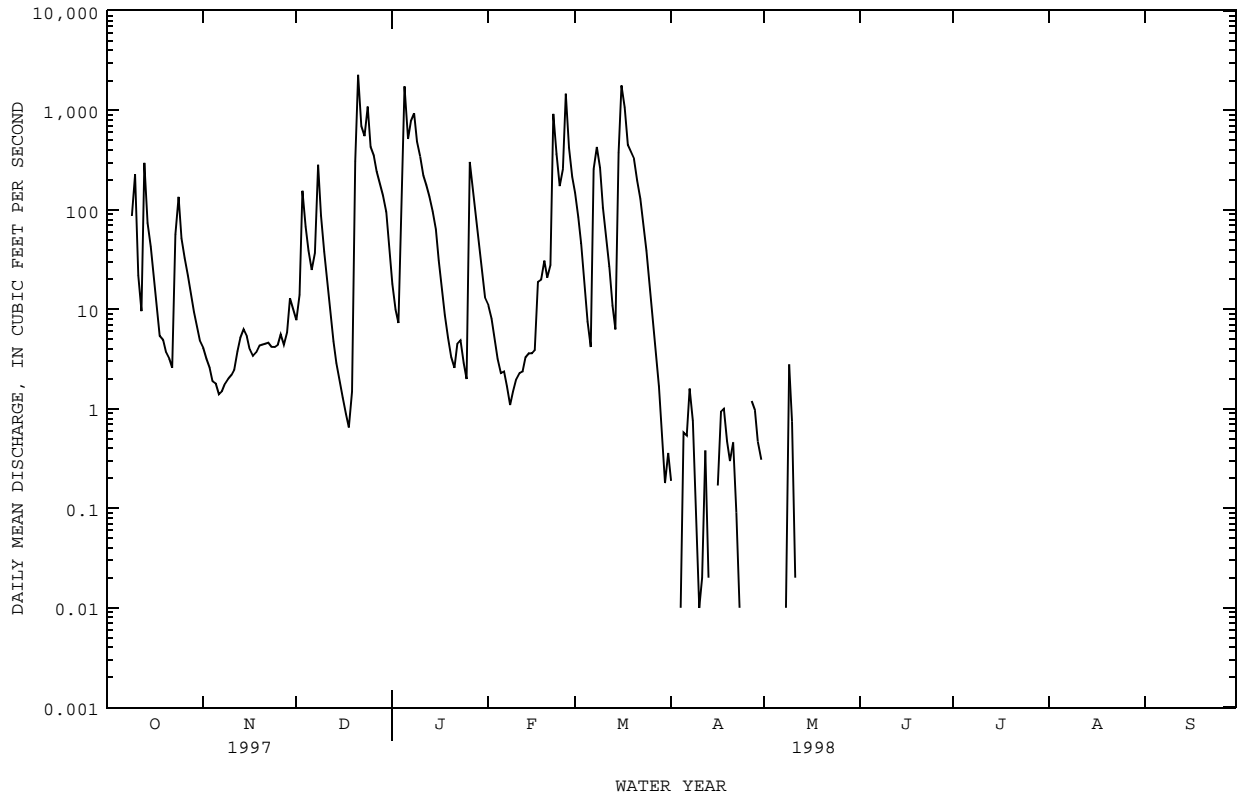
FOR 1998 WATER YEAR

WATER YEARS 1966 - 1998hz

ANNUAL TOTAL	25458.90	25314.41										
ANNUAL MEAN	69.8	69.4								54.4		
HIGHEST ANNUAL MEAN										178		1982
LOWEST ANNUAL MEAN										3.89		1971
HIGHEST DAILY MEAN	2290	Dec 21	2290	Dec 21						11600	Jul 11	1994
LOWEST DAILY MEAN	.00	Jun 7	.00	Oct 1						.00	Oct 13	1965
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 7	.00	Oct 1						.00	Oct 13	1965
INSTANTANEOUS PEAK FLOW							3290	Dec 21		36200	Jul 11	1994
INSTANTANEOUS PEAK STAGE							16.36	Dec 21		18.27	Jul 11	1994
ANNUAL RUNOFF (AC-FT)	50500		50210							39410		
10 PERCENT EXCEEDS	210		186							103		
50 PERCENT EXCEEDS	2.5		.47							1.0		
90 PERCENT EXCEEDS	.00		.00							.00		

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

08052700 LITTLE ELM CREEK NEAR AUBREY, TX--Continued



TRINITY RIVER BASIN

08052800 LEWISVILLE LAKE NEAR LEWISVILLE, TX

LOCATION.--Lat 33°04'09", long 96°57'51", Denton County, Hydrologic Unit 12030103, in intake structure of Lewisville Dam on Elm Fork Trinity River, 2 mi upstream from bridge on State Highway 121, 2.4 mi northeast of Lewisville, 12 mi upstream from Denton Creek, and 30.0 mi upstream from mouth.

DRAINAGE AREA.--1,660 mi².

PERIOD OF RECORD.--Nov 1954 to current year. Prior to Oct 1970, published as Garza-Little Elm Reservoir near Lewisville.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to May 17, 1955, nonrecording gage at site 4,000 ft upstream at same datum. Satellite telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 32,888 ft long, including a 560-ft uncontrolled off-channel concrete-gravity spillway with ogee weir section. Deliberate impoundment began Nov 1, 1954, and the dam was completed in Aug 1955. The controlled low-flow outlet works consist of a 16.0-ft-diameter conduit that is controlled by three 6.5- by 13.0-ft broome-type gates and two 60-in steel pipes with service valves. The lake was built for flood control and water conservation. The city of Dallas obtains most of its municipal water supply from this lake. The capacity table is based on a survey made in 1965. Inflow is affected at times by discharge from the flood-detention pools of 118 floodwater-retarding structures with a combined detention capacity of 81,670 acre-ft. These structures control runoff from 298 mi in the Elm Fork Trinity River, Clear, Little Elm, and Hickory Creeks watersheds. An unknown amount of water was diverted for municipal and industrial uses. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	560.0
Crest of spillway.....	532.0
Top of conservation pool.....	522.0
Lowest intakes to wet wells (invert).....	481.0
Invert of three broome-type gates.....	448.0

COOPERATION.--Records furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,181,000 acre-ft, May 4, 1990 (elevation, 536.73 ft); minimum since initial filling in 1957, 184,700 acre-ft, Sep 28, 1980 (elevation, 498.65 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 750,500 acre-ft, Mar 19 (elevation, 525.55 ft); minimum daily contents, 451,800 acre-ft, Sep 30 (elevation, 514.75 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	556800	549500	535400	603500	646000	674900	708400	646300	629500	589600	532300	485400
2	555200	548500	538000	603200	644500	667900	704100	646300	628000	587400	530600	483900
3	554200	547200	539000	603800	643400	661300	700300	645400	626600	585400	528800	482200
4	553200	545900	538500	619600	642200	658000	696000	644800	627500	584300	527500	480500
5	551900	546200	537700	642500	642800	656200	691700	645100	626300	582900	527000	478400
6	550800	545400	536900	650200	642200	652600	687100	645700	624000	581200	525200	476900
7	550300	544100	540000	661000	641900	654400	683700	645100	621600	579600	523700	475700
8	551600	543300	542300	672800	641900	658000	678500	646900	620200	577900	522000	474300
9	552600	543300	543100	677000	641900	658300	672800	648700	619900	576300	520400	472400
10	552400	542600	542600	675500	643100	656800	667300	647200	620800	574100	518900	470500
11	551300	541800	541800	671200	642200	656500	660400	645400	621600	571900	517200	469800
12	555500	542800	541300	668200	642800	653800	654100	645100	620500	570300	515700	468600
13	556500	543100	540800	663700	642800	652000	651700	643900	619000	568400	514200	468100
14	555700	542800	540500	660400	642800	650800	648100	643100	618400	566500	512900	467400
15	555000	541800	539500	655600	642500	654700	648100	643100	617000	564900	511400	467000
16	554200	540800	539800	652900	643700	715300	647500	641900	614700	563300	509900	467900
17	553200	539800	539200	650500	643700	740200	646600	640700	612400	561200	508400	467000
18	551900	539800	538700	648700	644500	747600	646000	639800	611800	559400	507200	465800
19	551600	539200	538700	646300	645400	750500	646000	638600	609500	557600	505900	464800
20	551100	539500	551900	647200	645700	746000	647800	637700	607500	556000	504200	463700
21	551100	539500	577700	649300	652600	741200	647200	636900	606400	553900	502500	462500
22	549500	539500	583200	649300	670900	735100	646300	635400	604900	551900	500700	461800
23	554400	539000	590200	649900	673100	730100	645400	634800	602900	550000	499300	460200
24	554700	538700	599500	649300	669100	727500	642800	633600	600900	548200	497800	459000
25	555200	538200	601800	649000	677900	724400	642800	633300	599500	546200	496300	457400
26	553900	538000	603800	649300	690800	721200	646600	633000	597500	544100	494600	456200
27	552100	536900	603200	648700	688000	721500	647500	634800	595800	542300	493100	455300
28	551100	538000	604900	648100	681600	719000	646900	633900	594100	540300	491700	454400
29	550300	537400	604100	647200	---	716200	646600	633300	592400	538200	490200	453200
30	550000	536400	604400	647200	---	716500	646300	632100	591300	535900	488300	451800
31	550000	---	603800	646600	---	712500	---	631300	---	534400	486800	---
MAX	556800	549500	604900	677000	690800	750500	708400	648700	629500	589600	532300	485400
MIN	549500	536400	535400	603200	641900	650800	642800	631300	591300	534400	486800	451800
(+)	518.75	518.22	520.72	522.19	523.35	524.35	522.18	521.67	520.28	518.14	516.23	514.75
(@)	-7600	-13600	+67400	+42800	+35000	+30900	-66200	-15000	-40000	-56900	-47600	-35000
CAL YR 1997	MAX 806600	MIN 535400	(@) -36900									
WTR YR 1998	MAX 750500	MIN 451800	(@) -105800									

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

08053000 ELM FORK TRINITY RIVER NEAR LEWISVILLE, TX

LOCATION.--Lat 33°02'44", long 96°57'39", Denton County, Hydrologic Unit 12030103, on left bank at downstream edge of highway right-of-way, 90 ft to left of left end of bridge on State Highway 121, 1.8 mi east of Lewisville, 1.9 mi downstream from Lewisville Lake, 8.3 mi upstream from Denton Creek, and 28.2 mi upstream from mouth.

DRAINAGE AREA.--1,673 mi².

PERIOD OF RECORD.--Mar 1949 to current year.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 432.39 ft above sea level (U.S. Army Corps of Engineers benchmark). Prior to Jan 6, 1950, nonrecording gage 0.6 mi upstream at datum 3.26 ft lower. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since Nov 1954, at least 10% of contributing drainage area has been regulated by Lewisville Lake (station 08052800) 1.9 mi upstream since Nov 1954. Most of low flow is used by the city of Dallas for municipal supply (see station 08055500).

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--5 years (water years 1950-54) prior to regulation, 402 ft³/s (291,200 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1950-54).--Maximum discharge, 21,700 ft³/s Sep 15, 1950 (gage height, 30.75 ft); no flow Jun 14, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1907, 33.8 ft in 1908, present site and datum, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

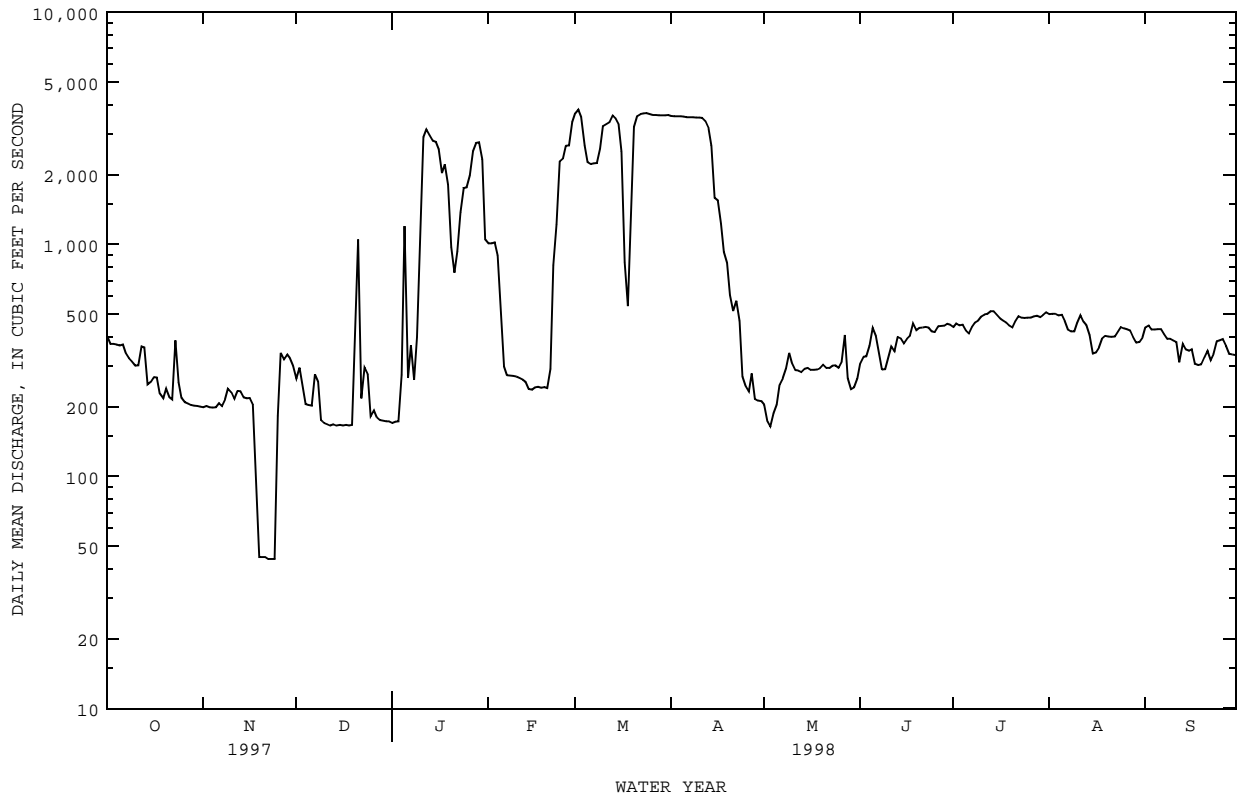
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	402	199	264	170	1010	3660	3580	204	308	441	501	440
2	372	201	295	172	1010	3810	3570	173	328	457	503	448
3	372	199	250	173	1020	3540	3570	164	329	449	503	430
4	370	198	205	274	899	2670	3560	187	365	451	494	430
5	367	199	203	1200	508	2260	3550	204	437	425	497	432
6	370	207	202	266	298	2220	3530	249	403	414	468	432
7	340	201	276	368	273	2230	3530	265	346	443	429	412
8	323	215	256	261	272	2240	3530	292	289	462	422	392
9	313	239	175	398	271	2590	3520	341	290	470	422	392
10	300	230	170	1370	269	3240	3520	307	323	490	460	386
11	301	216	168	2900	266	3300	3510	287	363	499	494	380
12	364	234	166	3130	262	3370	3400	286	346	502	465	311
13	360	233	168	2960	256	3600	3170	282	399	516	449	372
14	250	219	166	2800	238	3500	2660	291	395	515	406	353
15	256	217	167	2770	237	3290	1590	294	375	499	339	348
16	268	218	166	2570	242	2510	1550	288	391	482	342	354
17	267	204	167	2030	244	836	1230	288	404	471	360	306
18	228	100	166	2210	241	542	927	289	457	461	393	302
19	217	45	167	1810	243	1410	834	293	428	448	403	304
20	239	45	429	976	240	3210	606	303	437	439	401	326
21	220	45	1050	758	291	3580	518	294	438	467	399	348
22	215	44	217	935	813	3640	572	294	441	492	401	318
23	386	44	295	1380	1220	3660	468	300	438	484	419	338
24	254	44	276	1750	2280	3680	269	301	422	482	441	382
25	218	182	182	1760	2340	3640	245	295	419	484	435	386
26	209	341	193	1980	2660	3610	232	313	444	484	431	390
27	206	320	180	2520	2670	3610	278	407	445	490	426	366
28	203	336	175	2740	3370	3600	216	265	446	493	399	338
29	202	323	174	2760	---	3600	212	238	455	486	378	336
30	201	299	173	2330	---	3600	211	243	451	495	379	334
31	200	---	173	1050	---	3610	---	264	---	511	397	---
TOTAL	8793	5797	7314	48771	23943	93858	58158	8501	11812	14702	13256	11086
MEAN	284	193	236	1573	855	3028	1939	274	394	474	428	370
MAX	402	341	1050	3130	3370	3810	3580	407	457	516	503	448
MIN	200	44	166	170	237	542	211	164	289	414	339	302
AC-FT	17440	11500	14510	96740	47490	186200	115400	16860	23430	29160	26290	21990

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1998z, BY WATER YEAR (WY)

	1955	1959	1968	1973	1981	1985	1989	1993	1998	1998z	1982	1986	1990
MEAN	419	659	678	539	641	905	792	1359	1398	846	483	336	
MAX	3628	6300	4681	5267	4611	4218	3555	8391	5222	4479	4101	2480	
(WY)	1982	1982	1982	1992	1992	1997	1995	1990	1957	1989	1982	1962	
MIN	23.1	37.3	35.0	15.2	23.6	37.7	14.0	84.4	109	157	54.7	65.0	
(WY)	1959	1955	1955	1955	1955	1955	1989	1981	1955	1961	1963	1958	

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	FOR WATER YEARS 1955 - 1998z
ANNUAL TOTAL	462079	305991	
ANNUAL MEAN	1266	838	755
HIGHEST ANNUAL MEAN			3062
LOWEST ANNUAL MEAN			94.2
HIGHEST DAILY MEAN	5400	Mar 8	19000
LOWEST DAILY MEAN	44	Nov 22	.00
ANNUAL SEVEN-DAY MINIMUM	52	Nov 18	.29
INSTANTANEOUS PEAK FLOW		3850	19600
INSTANTANEOUS PEAK STAGE		19.19	30.15
ANNUAL RUNOFF (AC-FT)	916500	606900	546800
10 PERCENT EXCEEDS	3840	3030	3160
50 PERCENT EXCEEDS	368	386	216
90 PERCENT EXCEEDS	199	200	77

z Period of regulated streamflow.

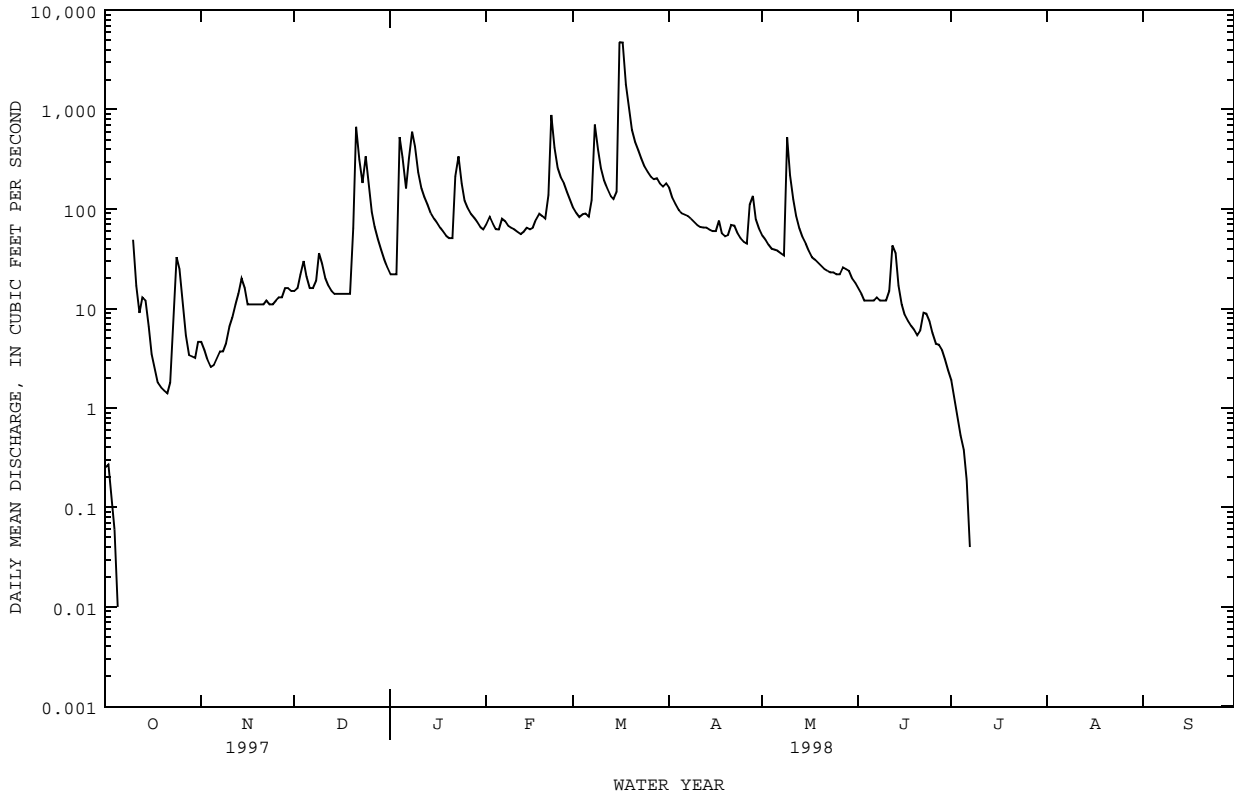


TRINITY RIVER BASIN

08053500 DENTON CREEK NEAR JUSTIN, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1965 - 1998z	
ANNUAL TOTAL	77104.72		34732.98		128	
ANNUAL MEAN	211		95.2		577	1982
HIGHEST ANNUAL MEAN					4.93	1980
LOWEST ANNUAL MEAN					18600	Oct 14 1981
HIGHEST DAILY MEAN	8600	Feb 20	4760	Mar 16	.00	Aug 6 1965
LOWEST DAILY MEAN	.00	Oct 6	.00	Oct 6	.00	Sep 6 1965
ANNUAL SEVEN-DAY MINIMUM	.03	Oct 3	.00	Jul 8	.00	Oct 13 1981
INSTANTANEOUS PEAK FLOW			6660	Mar 16	34700	Oct 13 1981
INSTANTANEOUS PEAK STAGE			14.98	Mar 16	18.68	Oct 13 1981
ANNUAL RUNOFF (AC-FT)	152900		68890		93080	
10 PERCENT EXCEEDS	423		183		199	
50 PERCENT EXCEEDS	38		16		19	
90 PERCENT EXCEEDS	2.7		.00		.00	

z Period of regulated streamflow.



TRINITY RIVER BASIN

08053500 DENTON CREEK NEAR JUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Oct 1980 to Sep 1982. Chemical and biochemical analyses: Oct 1997 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	
OCT 02...	0930	.14	670	7.8	22.0	--	--	4.4	51	.6	250
DEC 16...	1130	14	787	8.2	5.5	9	2.6	11.0	89	.3	310
FEB 27...	1045	150	600	8.3	13.0	19	16	9.6	93	1.3	260
APR 13...	1530	65	759	8.2	20.0	14	2.6	11.3	128	.5	310
MAY 07...	1000	38	807	8.0	22.5	13	7.1	6.8	81	1.4	310
JUN 17...	1330	7.6	648	8.1	27.0	22	10	7.2	93	1.1	240

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT 02...	45	72	17	40	1	4.7	200	76	35	.33	15
DEC 16...	57	92	20	39	1	2.5	260	91	44	.31	12
FEB 27...	40	87	10	26	.7	2.7	220	49	30	.27	8.4
APR 13...	83	92	20	42	1	2.1	230	87	55	.29	8.9
MAY 07...	92	86	23	47	1	2.4	220	100	62	.30	10
JUN 17...	43	63	19	39	1	3.9	200	66	46	.30	14

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L) (00535)	RESIDUE FIXED NON-FILTER-ABLE (MG/L) (00540)	NITRO-GEN, 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-SOLVED (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
OCT 02...	381	--	--	--	--	--	--	--	--	--	--
DEC 16...	457	11	7	4	<.010	.087	<.020	--	.16	<.010	.017
FEB 27...	349	30	9	21	<.010	.167	.032	.17	.20	<.010	.020
APR 13...	443	3	4	.00	<.010	<.050	.037	.14	.18	<.010	.015
MAY 07...	468	24	7	17	<.010	.061	.038	.20	.24	<.010	<.010
JUN 17...	368	17	4	13	<.010	<.050	.022	.26	.28	<.010	.016

08054500 GRAPEVINE LAKE NEAR GRAPEVINE, TX

LOCATION.--Lat 32°58'21", long 97°03'22", Tarrant County, Hydrologic Unit 12030104, in intake structure of Grapevine Dam on Denton Creek, 2.7 mi northeast of Grapevine, 4.3 mi upstream from bridge on State Highway 121, and 11.7 mi upstream from mouth.

DRAINAGE AREA.--695 mi².

WATER-CONTENT RECORDS

PERIOD OF RECORD.--Jul 1952 to current year. Prior to Oct 1970, published as Grapevine Reservoir.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to May 16, 1953, nonrecording gage at site 1,000 ft upstream at present datum. Satellite telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 12,850 ft long, including a 500-foot uncontrolled off-channel concrete-gravity spillway with an ogee weir section. The dam was completed in Jun 1952, and deliberate impoundment began Jul 3, 1952. The controlled outlet works consist of a 13.0-ft-diameter concrete conduit that is controlled by two 6.5- by 13.0-ft broome-type gates and two 30-in steel pipes with service valves. The capacity table, used since Apr 1972, is based on a survey made in Oct 1966. The lake was built for flood control, navigation, and water conservation. The city of Dallas uses part of this water for their municipal supply. An unknown amount of water is diverted for industrial and municipal uses. Inflow is affected at times by discharge from the flood-detention pools of 87 floodwater-retarding structures with a combined detention capacity of 57,850 acre-ft. These structures control runoff from 217 mi in the Denton Creek watershed. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	588.0
Crest of spillway.....	560.0
Top of conservation pool.....	535.0
Lowest intake to wet wells (invert).....	500.5
Invert of two broome-type gates.....	475.0

COOPERATION.--Record of contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 471,200 acre-ft, Nov 1, 1981 (elevation, 563.29 ft); minimum since lake first filled in 1957, 94,480 acre-ft, Feb 26, 1979 (elevation, 520.67 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 239,300 acre-ft, Mar 19 (elevation, 542.33 ft); minimum daily contents, 148,600 acre-ft, Sep 30 (elevation, 530.29 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	162600	160700	153400	174300	182900	196200	224200	183400	179900	172000	161600	154500
2	162300	160400	154000	174400	183000	194800	222600	183200	179500	171600	161300	154300
3	162000	160100	154300	174500	183100	193300	220900	183000	179100	171200	161100	154000
4	161700	159900	154200	178400	183100	192000	219100	182700	179900	170800	160900	153700
5	161500	159800	154000	182900	183300	190800	217300	182600	179900	170500	161100	153400
6	161300	159500	153900	185000	183200	189500	215500	182400	179500	170100	160900	153100
7	161500	159200	154900	189200	183000	189500	213800	182300	178900	169700	160700	152900
8	161500	159000	155400	192900	182800	190200	212100	182200	178800	169400	160400	152700
9	161400	159000	155500	194900	182600	189400	210100	183000	178500	169100	160200	152300
10	161200	158700	155500	195000	182700	187800	208300	183300	178700	168800	159900	151900
11	161100	158500	155300	194000	182300	186200	206600	183200	178900	168400	159700	151800
12	162200	158700	155200	193000	182100	184700	204200	183200	178700	168200	159400	151600
13	162100	158800	155100	191700	182100	183700	202400	182900	178500	167900	159200	151600
14	161800	158700	155000	190600	182200	183500	200700	182800	178300	167700	159100	151500
15	161600	158500	154900	189100	182300	184600	198500	182700	177900	167300	158700	151400
16	161400	158300	154800	187800	182600	216400	195900	182400	177500	167000	158500	151400
17	161200	158100	154700	186300	182800	230900	193600	182300	177100	166700	158300	151200
18	160900	157700	154600	185100	183000	236700	191300	182100	176800	166500	158100	151100
19	160700	157100	154600	183800	183200	239300	189200	181800	176600	166100	157900	150900
20	160600	156600	158600	183500	183300	239000	187800	181700	176100	165700	157500	150700
21	160500	156100	167600	183500	185100	238400	186000	181500	175700	165500	157300	150500
22	160200	155500	169100	183200	192600	237500	184800	181300	175300	165100	157100	150300
23	162100	154900	170600	183400	193400	236500	183900	181100	175000	164800	156800	150100
24	162400	154300	172600	183200	192600	235200	183500	181000	174600	164400	156500	149900
25	162300	153800	173300	182900	194700	233900	183300	180800	174200	164100	156300	149500
26	161900	153600	173900	182500	199700	232400	183700	180900	173800	163700	156100	149400
27	161500	153500	174000	182200	198800	231300	183800	181300	173400	163400	155800	149200
28	161300	153800	174300	182300	197500	229800	183800	181000	173100	163100	155500	149100
29	161100	153700	174300	182400	---	228400	183700	180800	172800	162700	155300	148800
30	161100	153500	174300	182400	---	227300	183600	180500	172300	162300	155000	148600
31	161000	---	174300	182700	---	225800	---	180200	---	162000	154700	---
MAX	162600	160700	174300	195000	199700	239300	224200	183400	179900	172000	161600	154500
MIN	160200	153500	153400	174300	182100	183500	183300	180200	172300	162000	154700	148600
(+)	532.15	531.03	534.05	535.21	537.20	540.74	535.34	534.87	533.77	532.30	531.21	530.28
(@)	-1600	-7500	+20800	+8400	+14800	+28300	-42200	-3400	-7900	-10300	-7300	-6100
CAL YR 1997	MAX 283000	MIN 153400	(@) -8000									
WTR YR 1998	MAX 239300	MIN 148600	(@) -14000									

(+) Elevation, in feet, at end of month.

(@) Change in contents, in acre-feet.

TRINITY RIVER BASIN

08054500 GRAPEVINE LAKE NEAR GRAPEVINE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Oct 1969 to Aug 1986, Oct 1997 to Sep 1998.

REVISED RECORDS.--WDR TX-93-1: Phytoplankton.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

325822097030401 - GRAPEVINE LAKE SITE AC

DATE	TIME	RESER- VOIR STORAGE (AC-FT) (00054)	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00301)	COLI- FORM, FECAL, UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR PER (COLS. 100 ML) (31673)	HARD- NESS TOTAL AS CACO3 (MG/L) (00900)
FEB												
27...	0945	200000	1.00	330	8.1	11.0	1.07	9.7	88	K4	30	120
27...	0947	--	10.0	330	8.1	11.0	--	9.6	87	--	--	--
27...	0949	--	20.0	330	8.1	11.0	--	9.6	87	--	--	--
27...	0951	--	30.0	330	8.0	11.0	--	9.8	89	--	--	--
27...	0953	--	40.0	331	8.0	11.0	--	9.8	89	--	--	--
27...	0955	--	50.0	331	8.0	11.1	--	9.8	89	--	--	--
27...	0957	--	58.0	331	8.0	11.0	--	9.7	88	--	--	130
MAY												
07...	1239	183000	1.00	342	8.7	23.5	1.25	10.7	130	K1	K1	140
07...	1242	--	10.0	342	8.7	22.0	--	10.4	123	--	--	--
07...	1246	--	20.0	343	8.5	21.5	--	9.3	109	--	--	--
07...	1249	--	30.0	345	8.2	20.5	--	7.8	89	--	--	--
07...	1253	--	40.0	345	8.1	19.5	--	6.8	76	--	--	--
07...	1258	--	53.0	349	7.8	19.0	--	4.8	53	--	--	140
AUG												
04...	1112	161000	1.00	324	8.3	30.0	1.04	7.7	104	K10	K4	110
04...	1119	--	10.0	326	8.0	29.5	--	5.7	77	--	--	--
04...	1125	--	20.0	340	7.5	29.0	--	3.6	48	--	--	--
04...	1133	--	30.0	348	7.3	28.5	--	.1	1	--	--	--
04...	1140	--	40.0	365	7.2	27.0	--	.1	1	--	--	--
04...	1146	--	50.0	378	7.1	26.0	--	.1	1	--	--	130

325822097030401 - GRAPEVINE LAKE SITE AC

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS- SOLVED (MG/L) AS CA (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L) AS MG (00925)	SODIUM, DIS- SOLVED (MG/L) AS NA (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L) AS K (00935)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L) AS SO4 (00945)	CHLO- RIDE, DIS- SOLVED (MG/L) AS CL (00940)	FLUO- RIDE, DIS- SOLVED (MG/L) AS F (00950)	SILICA, DIS- SOLVED (MG/L) AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
FEB												
27...	8	41	5.2	17	.7	3.9	120	27	16	.18	6.7	190
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	10	42	5.3	18	.7	3.9	120	27	16	.19	6.7	192
MAY												
07...	14	47	5.4	16	.6	3.7	130	27	15	.25	1.1	193
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	13	48	5.3	16	.6	3.8	130	26	16	.25	3.4	197
AUG												
04...	8	33	5.8	19	.8	3.8	100	28	18	.24	2.0	170
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	44	5.8	18	.7	3.8	150	16	16	.24	6.7	200

08054500 GRAPEVINE LAKE NEAR GRAPEVINE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

325822097030401 - GRAPEVINE LAKE SITE AC

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
FEB											
27...	.477	.031	.508	.048	.22	.27	<.010	.021	.06	<10	<4.0
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	.484	.031	.515	.049	.25	.30	<.010	.018	.06	<10	<4.0
MAY											
07...	.210	.015	.225	.031	.26	.29	<.010	<.010	--	<10	<4.0
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	.313	.042	.355	.111	.34	.45	.013	.013	.04	<10	24
AUG											
04...	--	<.010	<.050	<.020	--	.28	<.010	<.010	--	<10	4.4
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	<.010	<.050	.097	.29	.39	<.010	<.010	--	44	252
04...	--	<.010	<.050	.122	.26	.38	<.010	<.010	--	15	330
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	530	1370

325751097033001 - GRAPEVINE LAKE SITE AR

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	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 (PER- CENT SATUR- ATION) (00300)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)
FEB									
27...	1013	1.00	331	8.1	11.0	9.8	89		
27...	1015	10.0	331	8.1	11.0	9.8	89		
27...	1017	20.0	331	8.1	11.0	9.8	89		
27...	1019	30.0	331	8.1	11.0	10.0	91		
27...	1021	40.0	331	8.1	11.0	10.0	91		
27...	1023	48.0	331	8.1	11.0	10.0	91		
AUG									
04...	1203	1.00	327	8.1	29.5	7.2	97		
04...	1206	10.0	336	7.6	29.0	3.9	52		
04...	1209	20.0	338	7.6	29.0	4.1	55		
04...	1212	30.0	345	7.4	28.5	3.0	40		
04...	1215	40.0	357	7.3	27.5	1.4	18		
04...	1218	51.0	371	7.2	26.0	.2	3		

325930097053801 - GRAPEVINE LAKE SITE BC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN, DIS- SOLVED (PER- CENT UM-MF (COLS./ 100 ML) (31625)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31673)	STREP- TOCOC- CI FECAL, KF AGAR (COLS. PER 100 ML) (00900)	HARD- NESS TOTAL AS CACO3 (MG/L) (00904)	HARD- NESS NONCARB DISSOLV AS CACO3 (MG/L)
FEB													
27...	1039	1.00	334	8.2	11.5	.60	10.0	92	28	44	130	11	
27...	1041	10.0	334	8.1	11.5	--	9.5	87	--	--	--	--	
27...	1043	20.0	333	8.1	11.5	--	9.5	87	--	--	--	--	
27...	1045	30.0	333	8.1	11.5	--	9.6	88	--	--	--	--	
27...	1047	40.0	333	8.1	11.5	--	9.7	89	--	--	--	--	
27...	1049	51.0	333	8.1	11.5	--	9.6	88	--	--	--	--	
MAY													
07...	1318	1.00	338	8.8	24.0	1.04	11.6	142	K1	K1	140	14	
07...	1321	10.0	341	8.6	22.5	--	9.8	117	--	--	--	--	
07...	1324	20.0	343	8.3	20.5	--	8.0	92	--	--	--	--	
07...	1327	30.0	344	8.2	20.0	--	7.4	84	--	--	--	--	
07...	1331	40.0	354	7.9	19.0	--	5.2	58	--	--	--	--	
07...	1334	49.0	355	7.9	19.0	--	4.9	54	--	--	140	14	
AUG													
04...	1243	1.00	319	8.2	30.0	1.13	7.4	100	K1	K1	100	6	
04...	1249	10.0	319	8.2	30.0	--	7.2	98	--	--	--	--	
04...	1256	20.0	333	7.6	29.5	--	3.3	44	--	--	--	--	
04...	1303	30.0	347	7.3	28.0	--	.1	1	--	--	--	--	
04...	1309	41.0	363	7.2	28.0	--	.1	1	--	--	130	--	

TRINITY RIVER BASIN

08054500 GRAPEVINE LAKE NEAR GRAPEVINE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

325930097053801 - GRAPEVINE LAKE SITE BC

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS FIX END CAC03 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS STO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
FEB											
27...	43	5.3	18	.7	3.8	120	27	16	.19	6.8	193
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	120	--	--	--	--	--
MAY											
07...	47	5.4	16	.6	3.6	130	27	16	.26	.90	193
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	49	5.6	16	.6	3.6	130	27	18	.26	2.8	202
AUG											
04...	32	5.8	19	.8	3.9	98	28	18	.24	2.1	168
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	41	5.8	18	.7	3.8	140	20	17	.27	4.7	195

325930097053801 - GRAPEVINE LAKE SITE BC

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- SOLVED (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (MG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
FEB											
27...	.461	.026	.487	.060	.21	.27	<.010	.019	.06	<10	8.6
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
MAY											
07...	.162	.014	.176	.035	.28	.31	<.010	<.010	--	<10	<4.0
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	.274	.027	.301	.139	.29	.43	<.010	<.010	--	<10	15
AUG											
04...	--	<.010	<.050	<.020	--	.31	<.010	<.010	--	<10	20
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	<.010	<.050	<.020	--	.30	.023	<.010	--	<10	5.5
04...	--	<.010	<.050	.043	.28	.33	<.010	.010	.03	<10	35
04...	--	<.010	<.050	.525	.27	.79	.046	.079	.24	370	762

325933097081401 - GRAPEVINE LAKE 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, SOLVED (MG/L) (00300)	NITRO- GEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)
FEB									
27...	1108	1.00	342	8.1	13.0	9.5	90	--	
27...	1110	10.0	342	8.1	12.0	9.3	87	--	
27...	1112	20.0	341	8.1	12.0	9.2	86	--	
27...	1114	31.0	341	8.1	12.0	9.3	87	--	
MAY									
07...	1403	1.00	365	8.7	25.5	10.7	135	--	
07...	1407	10.0	364	8.7	24.5	10.6	131	--	
07...	1410	20.0	365	7.9	20.5	4.7	54	--	
07...	1412	26.0	367	7.9	20.0	4.4	50	--	
AUG									
04...	1330	1.00	310	8.5	31.5	8.3	116	.010	
04...	1335	11.0	313	8.3	31.0	7.8	108	<.010	

TRINITY RIVER BASIN

08054500 GRAPEVINE LAKE NEAR GRAPEVINE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

325933097081401 - GRAPEVINE LAKE SITE CC

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
FEB								
27...	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--
MAY								
07...	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--
AUG								
04...	<.050	<.020	.27	<.010	<.010	--	<10	<4.0
04...	<.050	<.020	.29	<.010	.011	.03	<10	6.1

330106097094601 - GRAPEVINE LAKE SITE DC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	PH WATER WHOLE FIELD (STAND- ARD WATER UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (MG/L) (00301)	OXYGEN, DIS- SOLVED (MG/L) (00301)	NITRO- GEN, DIS- SOLVED (MG/L AS N) (00613)
FEB								
27...	1128	1.00	353	8.1	13.5	9.0	87	--
27...	1130	10.0	362	8.1	13.0	9.0	86	--
27...	1132	15.0	371	8.1	13.0	8.7	83	--
MAY								
07...	1426	1.00	378	8.6	25.5	9.9	125	--
07...	1429	10.0	369	8.5	24.0	9.0	110	--
07...	1433	15.0	358	8.1	21.5	5.8	68	--
AUG								
04...	1356	1.00	307	8.4	31.5	8.4	117	<.010
04...	1401	9.00	310	7.9	30.5	5.7	78	<.010

330106097094601 - GRAPEVINE LAKE SITE DC

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
FEB								
27...	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--
MAY								
07...	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--
AUG								
04...	<.050	<.020	.32	<.010	.015	.05	<10	<4.0
04...	<.050	<.020	.36	<.010	.017	.05	<10	<4.0

330207097103701 - GRAPEVINE LAKE SITE EC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	PH WATER WHOLE FIELD (STAND- ARD WATER UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (MG/L) (00301)	OXYGEN, DIS- SOLVED (MG/L) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOC- CI, FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL AS CACO3 (MG/L) (00900)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
FEB												
27...	1152	1.00	218	7.9	14.5	--	7.7	76	3500	11000	87	2
27...	1154	13.0	222	7.9	14.0	--	7.5	73	--	--	89	2
MAY												
07...	1451	1.00	385	8.5	26.5	.37	9.6	123	K1	K1	150	18
07...	1456	13.0	356	8.1	21.0	--	5.7	66	--	--	150	15
AUG												
04...	1419	1.00	309	8.3	31.5	.30	7.6	105	K9	K4	95	11
04...	1425	7.00	310	8.0	31.0	--	6.3	86	--	--	95	6

TRINITY RIVER BASIN

08054500 GRAPEVINE LAKE NEAR GRAPEVINE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

330207097103701 - GRAPEVINE LAKE SITE EC

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS FIX END CAC03 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
FEB											
27...	31	2.4	8.8	.4	3.2	85	13	6.7	.13	8.4	127
27...	31	2.5	9.5	.4	3.3	87	14	7.2	.12	8.1	131
MAY											
07...	50	6.7	19	.7	3.6	130	33	21	.25	1.2	216
07...	49	5.7	16	.6	3.6	130	27	17	.25	1.7	200
AUG											
04...	29	5.7	20	.9	4.0	84	29	19	.25	4.8	162
04...	29	5.7	20	.9	4.0	89	29	19	.25	4.8	164

330207097103701 - GRAPEVINE LAKE SITE EC

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- SOLVED (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
FEB											
27...	.491	.029	.520	.096	.37	.47	.045	.050	.15	14	<4.0
27...	.506	.031	.537	.108	.34	.45	.042	.046	.14	17	<4.0
MAY											
07...	--	<.010	.057	.031	.25	.28	<.010	<.010	--	<10	5.5
07...	.213	.010	.223	.075	.28	.36	<.010	<.010	--	<10	39
AUG											
04...	--	<.010	<.050	<.020	--	.30	<.010	<.010	--	<10	<4.0
04...	--	<.010	<.050	<.020	--	.35	<.010	<.010	--	<10	<4.0

08054500 GRAPEVINE LAKE NEAR GRAPEVINE, TX--Continued

Grapevine Lake Site AC (325822097030401)

Phytoplankton Analyses October 1997 to September 1998

Date	2-27-98
Time	945
<hr/>	
TOTAL CELLS/mL	8,248
NUMBER OF SPECIES	7
DEPTH COLLECTED (ft.)	1.8
<hr/>	

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	60
<i>Navicula</i> sp.	30
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	150
<i>Chlamydomonas</i> sp.	600
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	7,198
<i>Aphanocapsa elachista</i>	600
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	90

Grapevine Lake Site AC (325822097030401)

Phytoplankton Analyses October 1997 to September 1998

Date	5-7-98
Time	1239
<hr/>	
TOTAL CELLS/mL	86,972
NUMBER OF SPECIES	10
DEPTH COLLECTED (ft.)	2.05
<hr/>	

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	702
<i>Stephanodiscus astraea</i>	78
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	60
CYANOPHYTA	
<i>Anabaena spiroides</i>	300
<i>Aphanocapsa delicatissima</i>	15,595
<i>Aphanocapsa elachista</i>	2,399
<i>Chroococcus limneticus</i>	480
<i>Merismopedia tenuissima</i>	1,200
<i>Oscillatoria</i> sp.	65,978
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	180

TRINITY RIVER BASIN

08054500 GRAPEVINE LAKE NEAR GRAPEVINE, TX--Continued

Grapevine Lake Site AC (325822097030401)

Phytoplankton Analyses October 1997 to September 1998

Date	8-4-98
Time	1112
TOTAL CELLS/mL	20,334
NUMBER OF SPECIES	14
DEPTH COLLECTED (ft.)	1.7

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	504
<i>Stephanodiscus astraea</i>	126
Order Pennales	
<i>Asterionella formosa</i> var. <i>formosa</i>	30
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	180
<i>Chlamydomonas</i> sp.	150
<i>Coelastrum microporum</i>	30
<i>Crucigenia tetrapedia</i>	30
<i>Scenedesmus opoliensis</i>	180
<i>Tetrastrum punctatum</i>	90
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	15,595
<i>Aphanocapsa elachista</i>	1,799
<i>Chroococcus limneticus</i>	240
<i>Merismopedia tenuissima</i>	1,200
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	180

Grapevine Lake Site EC (330207097103701)

Phytoplankton Analyses October 1997 to September 1998

Date	2-27-98
Time	1152
TOTAL CELLS/mL	4,889
NUMBER OF SPECIES	6
DEPTH COLLECTED (ft.)	N/A

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	90
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	120
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	270
<i>Chlamydomonas</i> sp.	120
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	4,199
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	90

08054500 GRAPEVINE LAKE NEAR GRAPEVINE, TX--Continued

Grapevine Lake Site EC (330207097103701)

Phytoplankton Analyses October 1997 to September 1998

Date	5-7-98
Time	1451
<hr/>	
TOTAL CELLS/mL	47,564
NUMBER OF SPECIES	8
DEPTH COLLECTED (ft.)	0.6

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	270
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	330
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	300
<i>Chlamydomonas</i> sp.	270
<i>Scenedesmus opoliensis</i>	90
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	44,385
<i>Merismopedia tenuissima</i>	1,679
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	240

Grapevine Lake Site EC (330207097103701)

Phytoplankton Analyses October 1997 to September 1998

Date	8-4-98
Time	1419
<hr/>	
TOTAL CELLS/mL	61,181
NUMBER OF SPECIES	11
DEPTH COLLECTED (ft.)	1.7

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	30
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	127
<i>Navicula</i> sp.	12
<i>Synedra ulna</i> var. <i>ulna</i>	12
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	240
<i>Cosmarium</i> sp.	90
<i>Crucigenia tetrapedia</i>	30
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	17,394
<i>Merismopedia tenuissima</i>	14,155
<i>Oscillatoria</i> sp.	28,191
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	900

TRINITY RIVER BASIN

08055000 DENTON CREEK NEAR GRAPEVINE, TX

LOCATION.--Lat 32°59'13", long 97°00'45", Denton County, Hydrologic Unit 12030104, over center of channel at downstream side of bridge on State Highway 121, 1.3 mi downstream from Bakers Branch, 4.1 mi downstream from Grapevine Dam, 5.0 mi northeast of Grapevine and 6.1 mi upstream from mouth.

DRAINAGE AREA.--705 mi².

PERIOD OF RECORD.--Chemical and biochemical analyses: Oct 1997 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00300)	OXYGEN DEMAND, BIO-NESS (CHEM-ICAL, 5 DAY) (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)		
FEB 27...	1600	827	344	8.3	12.0	16	4.3	11.3	107	.6	130	
MAY 07...	1515	119	351	8.2	21.0	16	5.3	9.6	110	.7	140	
AUG 04...	1145	48	329	7.7	29.0	25	.86	3.6	47	1.4	120	
DATE	TIME	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
FEB 27...	19	43	5.3	17	.7	3.9	110	27	16	.20	6.4	
MAY 07...	17	47	5.3	16	.6	3.7	120	26	15	.25	2.0	
AUG 04...	16	38	5.9	18	.7	3.8	110	25	18	.26	2.7	
DATE	TIME	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDE (MG/L) (00530)	RESIDUE VOLA-TILE, SUS-FILTER-ABLE (MG/L) (00535)	RESIDUE FIXED NON-FILTER-ABLE (MG/L) (00540)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)
FEB 27...	188	4	5	.00	.501	.027	.528	.042	.22	.26	<.010	
MAY 07...	190	10	4	6	.302	.023	.325	.049	.30	.35	<.010	
AUG 04...	175	3	7	.00	--	.010	<.050	.101	.28	.38	<.010	
DATE	TIME	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
FEB 27...	.023	.07	4.6	1	53	<1.0	<8.0	<14	<12	<10	<10	
MAY 07...	<.010	--	5.1	1	55	<1.0	<8.0	<14	<12	<10	<10	
AUG 04...	<.010	--	5.1	3	50	<1.0	<8.0	<14	<12	<10	41	
DATE	TIME	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)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
FEB 27...	<100	6	<4.0	<.1	<60	<40	<1	<4.0	279	<10	<20	
MAY 07...	<100	<4	<4.0	<.1	<60	<40	<1	<4.0	287	<10	<20	
AUG 04...	<100	<6	227	<.1	<60	<40	<1	<4.0	303	<10	<20	

08055500 ELM FORK TRINITY RIVER NEAR CARROLLTON, TX

LOCATION.--Lat 32°57'57", long 96°56'39", Dallas County, Hydrologic Unit 12030103, near left bank at downstream side of bridge on Sandy Lake Road, 40 ft upstream from Carrollton Dam, 0.3 mi downstream from Denton Creek, 1.0 mi upstream from St. Louis Southwestern Railway Lines bridge, 2.3 mi northwest of Carrollton, and 18.2 mi upstream from mouth.

DRAINAGE AREA.--2,459 mi²

PERIOD OF RECORD.--Jan 1907 to current year. Monthly discharge only for some periods, published in WSP 1312. Prior to Nov 1923, published as "near Dallas".

REVISED RECORDS.--WSP 788: 1924. WSP 1148: Drainage area at former site. WSP 1632: 1908(M). WSP 1922: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 431.40 ft above sea level. Prior to Nov 1923, nonrecording gage at site 15.5 mi downstream at different datum. Nov 1, 1923 to Nov 13, 1934, nonrecording gage, and Nov 14, 1934 to Jul 6, 1938, water-stage recorder at present site and datum. Jul 7, 1938 to Apr 14, 1939, nonrecording gage at site 9.3 mi downstream at datum 22.94 ft lower. Apr 15, 1939 to Sep 30, 1955, water-stage recorder at site 8.5 mi downstream at datum 22.94 ft lower. Oct 1, 1955 to Sep 30, 1987, water-stage recorder at present site and at datum 2.00 ft higher. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since Nov 1954, at least 10% of contributing drainage area has been regulated by Lewisville Lake (station 08052800). Additional regulation by Grapevine Lake (station 08054500) since Jul 1952. The city of Dallas diverts water from the pool at gage and from the river 14 mi downstream for municipal use. A wastewater treatment plant returns water to the river below the station. Dallas Power and Light Co. diverts water from the pool at gage into North Lake for cooling water at their electric generating plant. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--47 years (water years 1908-54), 818 ft³/s (592,600 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1908-54).--Maximum gage height, about 19 ft May 25, 1908, present site and datum, from information by local resident; estimated discharge, 145,000 ft³/s, at site 8.5 mi downstream, from information by U.S. Army Corps of Engineers; maximum gage height subsequent to 1908, 16.5 ft Apr 26, 1942, present site and datum, from observation by National Weather Service; discharge at site 8.5 mi downstream, 90,700 ft³/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1866 reached about the same stage as flood of May 25, 1908.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	195	53	105	78	931	4960	5380	95	173	200	210	213
2	155	38	280	69	900	5130	5380	66	181	238	199	197
3	148	24	395	84	917	5070	5380	52	182	257	214	201
4	131	3.0	93	982	829	4170	5390	50	253	269	216	204
5	158	4.0	72	4560	508	3450	5360	89	608	250	242	210
6	168	40	96	788	218	3340	5360	96	260	198	282	185
7	208	70	595	1280	301	3430	5340	137	232	220	183	190
8	371	65	884	655	308	3410	5330	179	169	238	176	180
9	173	122	269	346	276	3510	5330	367	161	229	153	194
10	122	138	221	1170	234	4520	5290	211	276	233	158	170
11	104	74	211	4000	213	4660	5290	152	625	232	237	205
12	548	164	210	4620	187	4730	5230	139	259	236	199	192
13	936	177	206	4470	271	4760	4890	119	227	223	217	235
14	97	111	204	4280	132	4500	4450	164	231	236	180	130
15	75	99	204	4210	104	4330	3060	146	192	218	108	110
16	103	92	208	4080	149	6540	2910	128	222	188	101	246
17	92	74	205	3320	196	2060	2570	131	229	204	191	86
18	101	15	204	3430	170	578	2060	122	261	206	192	81
19	45	66	216	3070	231	1410	1930	105	246	183	175	115
20	78	65	1590	1550	170	4660	1460	111	233	151	197	80
21	37	65	4160	973	349	5300	1450	96	247	208	139	128
22	40	54	426	1130	2240	5440	1320	109	253	206	158	84
23	1210	86	741	1690	1330	5460	889	112	263	200	180	83
24	423	98	696	2200	3290	5470	205	111	258	201	202	163
25	103	138	175	2240	3600	5440	188	88	207	198	182	227
26	44	263	201	2380	5160	5390	125	161	254	193	158	180
27	40	145	127	2960	3950	5410	388	602	246	197	202	177
28	30	214	113	2980	4590	5390	147	184	243	199	166	128
29	24	172	96	3010	---	5390	127	97	258	190	126	149
30	18	159	61	2820	---	5370	101	101	255	196	127	113
31	32	---	46	1090	---	5480	---	110	---	204	153	---
TOTAL	6009	2888.0	13310	70515	31754	138758	92330	4430	7704	6601	5623	4856
MEAN	194	96.3	429	2275	1134	4476	3078	143	257	213	181	162
MAX	1210	263	4160	4620	5160	6540	5390	602	625	269	282	246
MIN	18	3.0	46	69	104	578	101	50	161	151	101	80
AC-FT	11920	5730	26400	139900	62980	275200	183100	8790	15280	13090	11150	9630

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1998z, BY WATER YEAR (WY)

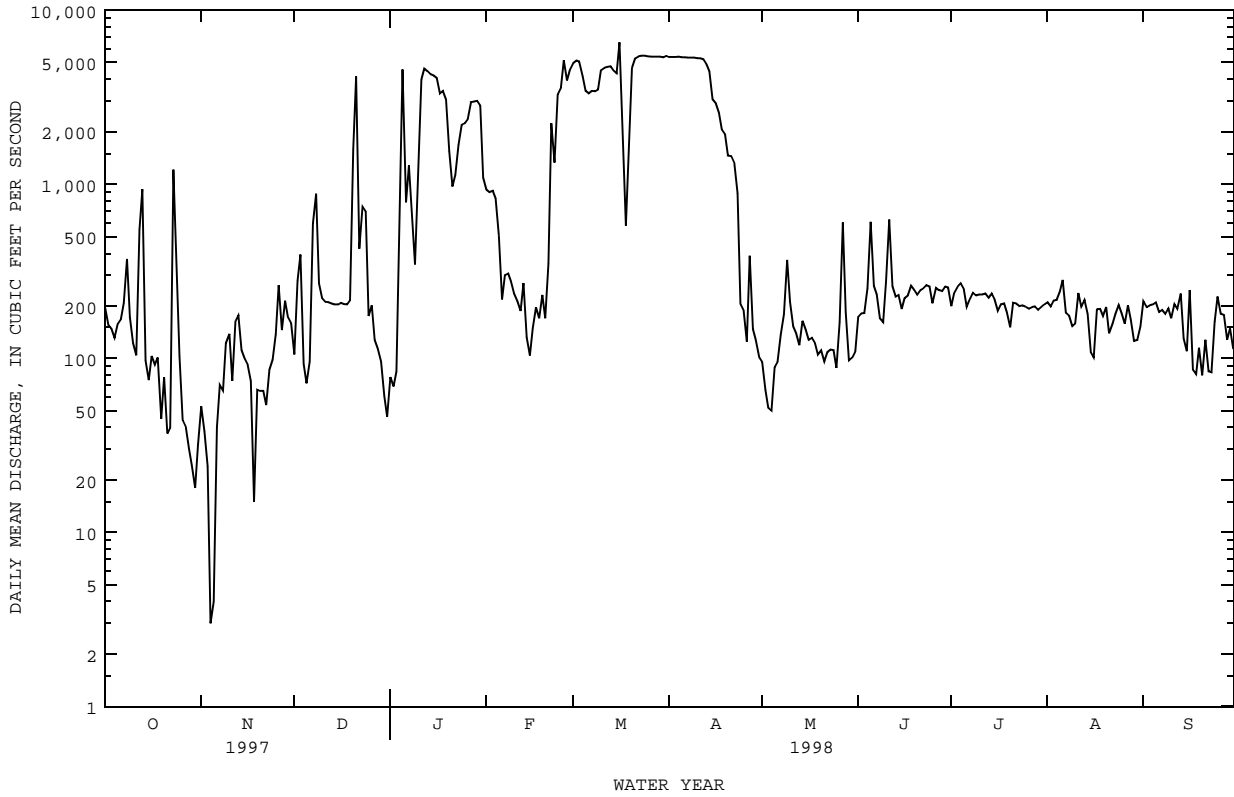
MEAN	429	766	852	650	774	1099	1043	1609	1687	959	535	297
MAX	3554	8830	6785	6614	5868	5655	4782	10920	6757	6224	6003	3406
(WY)	1982	1982	1982	1992	1992	1997	1995	1990	1990	1989	1982	1962
MIN	27.8	4.21	.78	.80	2.06	3.30	43.5	38.4	80.0	94.9	58.2	14.8
(WY)	1981	1957	1978	1957	1957	1957	1955	1980	1959	1979	1979	1985

TRINITY RIVER BASIN

08055500 ELM FORK TRINITY RIVER NEAR CARROLLTON, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1955 - 1998z	
ANNUAL TOTAL	592261.0		384778.0		892	
ANNUAL MEAN	1623		1054		4289	
HIGHEST ANNUAL MEAN					76.0	
LOWEST ANNUAL MEAN					1982	
HIGHEST DAILY MEAN	6820	Mar 12	6540	Mar 16	25300	May 5 1990
LOWEST DAILY MEAN	3.0	Nov 4	3.0	Nov 4	.00	Dec 2 1954
ANNUAL SEVEN-DAY MINIMUM	25	Oct 30	25	Oct 30	.00	Jan 7 1959
INSTANTANEOUS PEAK FLOW			8640	Jan 5	33000	Sep 21 1964
INSTANTANEOUS PEAK STAGE			8.92	Jan 5	13.48	May 5 1990
ANNUAL RUNOFF (AC-FT)	1175000		763200		646300	
10 PERCENT EXCEEDS	4810		4540		3930	
50 PERCENT EXCEEDS	220		206		149	
90 PERCENT EXCEEDS	86		82		36	

z Period of regulated streamflow.



TRINITY RIVER BASIN

08057000 TRINITY RIVER AT DALLAS, TX

LOCATION.--Lat 32°46'29", long 96°49'18", Dallas County, Hydrologic Unit 12030105, on right bank (levee) 90 ft downstream from Commerce Street viaduct in Dallas, 5.2 mi downstream from confluence of West and Elm Forks, and at mile 500.3.

DRAINAGE AREA.--6,106 mi².

PERIOD OF RECORD.--Oct 1898 to Dec 1899 (gage heights only published in WSP 28 and 37), Jul 1903 to current year. Daily discharges are not available for all periods prior to 1931.

REVISED RECORDS.--WSP 850: 1903-06 (monthly and annual means). WSP 1732: 1937(M). WSP 1922: Drainage area. WRD TX-73-1: 1972.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 368.02 ft above sea level. Oct 1, 1898, to Dec 31, 1899, nonrecording gage at site 2 mi upstream at different datum. Jul 1, 1903, to Jul 20, 1930, non-recording gage at present site and datum. Jul 21, 1930, to Sep 30, 1932, nonrecording gage at site 6 mi downstream at datum 3.08 ft lower. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since Jun 1914, flow is regulated by storage in seven major upstream reservoirs, with a combined capacity of 1,703,000 acre-ft of which 846,200 acre-ft is for flood control. The city of Dallas diverts water for municipal use from the Elm Fork, Lake Ray Hubbard (on the East Fork), and from Lake Tawakoni (on the Sabine River), and purchases water from North Texas Municipal Water District (from the East Fork). Wastewater effluent from the City of Dallas is returned to the river downstream from this station. The Trinity River Authority and the City of Fort Worth discharge wastewater effluent into the river upstream from this station. There are many other diversions upstream from this station for municipal, industrial and other uses. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1903-30).--Maximum discharge, 184,000 ft³/s May 25, 1908 (gage height, 52.6 ft), from rating curve extended above 109,000 ft³/s. Maximum stage since at least 1840, that of May 25, 1908.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1866 reached about the same stage as that of May 25, 1908.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	396	382	427	1700	1770	7950	10500	534	435	418	362	346
2	406	383	590	1310	1450	6890	9500	503	440	388	365	349
3	360	374	2370	850	1380	5760	8030	518	439	404	368	355
4	338	359	860	1230	1550	5340	7270	495	439	426	378	362
5	332	353	514	14000	1470	5390	6100	481	1300	480	388	362
6	342	343	428	14100	1210	5000	5080	479	860	432	417	350
7	438	367	1100	9970	1060	5180	4810	469	567	404	447	339
8	1530	352	5250	8290	939	5110	4590	475	489	418	490	345
9	1420	356	2140	4520	887	4810	4500	2270	460	422	420	344
10	1160	378	682	2560	906	4950	4440	1460	708	418	402	340
11	556	372	539	5020	1010	5130	4400	685	1940	405	413	344
12	1230	894	488	10800	907	4920	4330	554	1490	397	465	427
13	5180	1230	462	7990	921	5080	4190	504	657	420	497	550
14	1750	897	455	6450	860	5020	3940	478	535	441	621	624
15	487	523	438	6880	762	5780	3450	519	482	435	612	505
16	397	445	426	5170	803	13900	2690	490	446	410	416	705
17	375	398	418	4760	1000	26900	2570	479	461	401	400	531
18	373	364	395	5030	1030	22600	2210	493	462	406	392	509
19	374	351	394	5030	1460	15300	2040	483	485	396	383	444
20	386	347	3520	4320	1180	11400	1890	456	462	381	381	398
21	403	349	21900	2680	1130	11300	2740	451	447	331	391	381
22	433	332	15900	2070	6600	11500	2020	439	447	377	373	380
23	2800	342	6510	2220	6240	11400	1490	430	438	373	371	370
24	6600	342	7140	2610	5330	11700	1070	428	465	369	372	471
25	1630	331	3810	3420	5330	12000	730	423	438	365	367	429
26	561	377	3330	3500	14600	11400	673	459	418	373	364	395
27	450	429	1830	2970	15000	11300	1100	3070	425	381	361	396
28	415	1040	2710	3100	9070	11200	1020	2180	434	374	363	390
29	394	628	2750	3040	---	11300	646	689	430	366	345	367
30	391	462	2130	2980	---	10900	570	616	435	366	345	355
31	383	---	1950	2430	---	11200	---	549	---	358	348	---
TOTAL	32290	14100	91856	151000	85855	297610	108589	22559	17934	12335	12617	12463
MEAN	1042	470	2963	4871	3066	9600	3620	728	598	398	407	415
MAX	6600	1230	21900	14100	15000	26900	10500	3070	1940	480	621	705
MIN	332	331	394	850	762	4810	570	423	418	331	345	339
AC-FT	64050	27970	182200	299500	170300	590300	215400	44750	35570	24470	25030	24720

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1998z, BY WATER YEAR (WY)

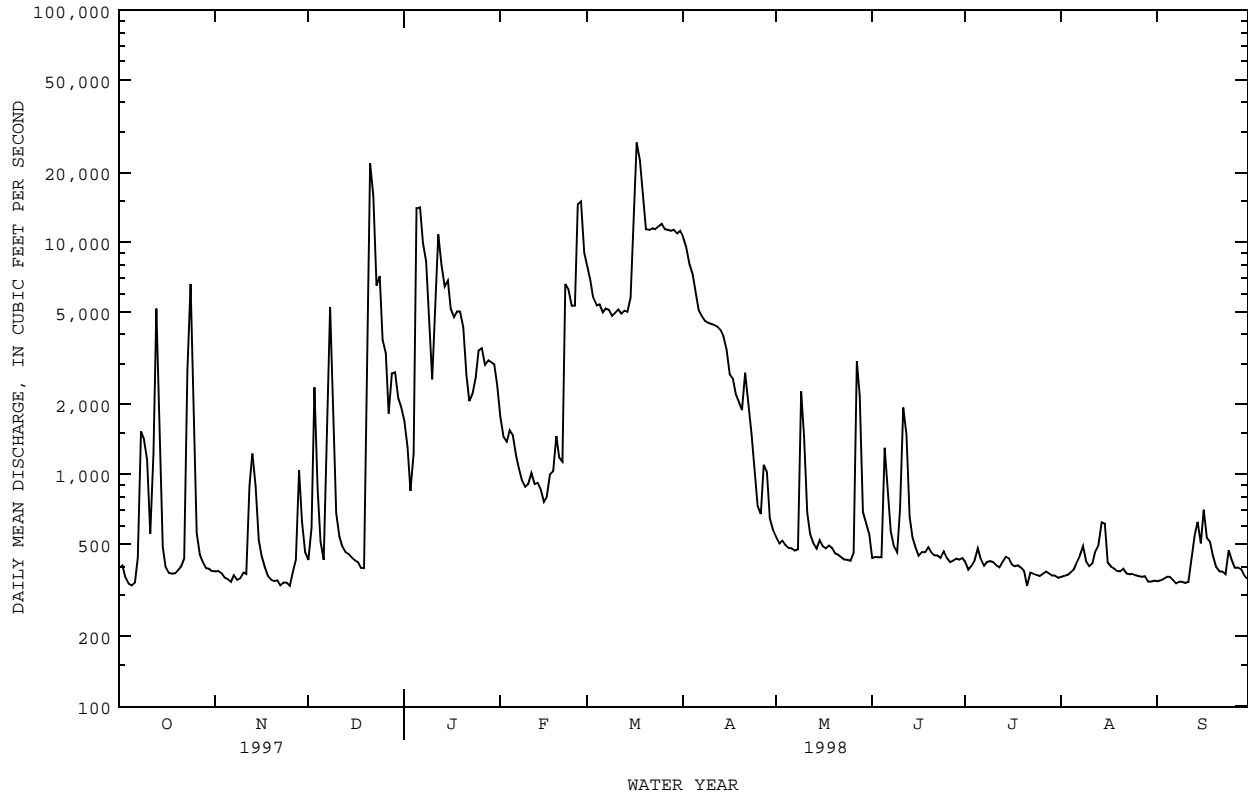
MEAN	1195	1328	1473	1361	2034	2330	2554	3948	3064	1263	712	798
MAX	10050	14150	12860	13350	10410	14910	27050	28050	17390	8629	6075	7107
(WY)	1982	1982	1992	1992	1992	1945	1942	1990	1941	1989	1982	1962
MIN	68.2	58.2	53.0	62.4	76.9	68.2	91.5	213	68.0	51.9	50.2	52.4
(WY)	1935	1956	1939	1940	1940	1956	1955	1937	1953	1956	1956	1956

TRINITY RIVER BASIN

08057000 TRINITY RIVER AT DALLAS, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1931 - 1998z	
ANNUAL TOTAL	1476076		859208		1836	
ANNUAL MEAN	4044		2354		7154	
HIGHEST ANNUAL MEAN					115	
LOWEST ANNUAL MEAN					1982	
HIGHEST DAILY MEAN	25200	Feb 13	26900	Mar 17	103000	Apr 26 1942
LOWEST DAILY MEAN	331	Nov 25	331	Nov 25	10	Oct 1 1953
ANNUAL SEVEN-DAY MINIMUM	342	Nov 19	342	Nov 19	26	Apr 12 1935
INSTANTANEOUS PEAK FLOW			28100	Mar 17	111000	Apr 26 1942
INSTANTANEOUS PEAK STAGE			37.89	Mar 17	47.10	May 3 1990
ANNUAL RUNOFF (AC-FT)	2928000		1704000		1330000	
10 PERCENT EXCEEDS	11700		6600		5270	
50 PERCENT EXCEEDS	1160		518		410	
90 PERCENT EXCEEDS	383		364		109	

z Period of regulated streamflow.



08057055 TRINITY RIVER AT CEDAR CREST BOULEVARD, DALLAS, TX

LOCATION.--Lat 32°45'04", long 96°47'07", Dallas County, Hydrologic Unit 12030105, on right bank at abandoned bridge abutment, 0.2 mi upstream from Cedar Crest Blvd. Bridge, 1.8 mi southeast of Dallas City Hall, 2.1 mi downstream from Coombs Creek, and 2.7 mi downstream from Commerce Street Bridge (station 08057000).

PERIOD OF RECORD.--Chemical and biochemical analyses: Feb 1984 to Sep 1993.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Feb 1984 to current year.
 PH: Feb 1984 to current year.
 WATER TEMPERATURES: Feb 1984 to current year.
 DISSOLVED OXYGEN: Feb 1984 to current year.

INSTRUMENTATION.--Since Feb 1984, a four-parameter water-quality monitor records temperature, DO, pH, and specific conductance continuously at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed for previous years using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the U.S. Geological Survey District office upon request. Discharge records are available for gaging station 08057000, 2.7 mi upstream. There is no appreciable inflow between the two stations.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,030 microsiemens, Feb 12, 1988; minimum, 93 microsiemens, Oct 20, 1984.
 PH: Maximum, 8.7 units, Mar 13, 1995; minimum, 6.8 units, Sep 6, 1988, Mar 17-18, 1998.
 WATER TEMPERATURE: Maximum, 33.5°C, Aug 12, 1987; minimum, 5.0°C, Feb 7, 8, 1989.
 DISSOLVED OXYGEN: Maximum, 13.7 mg/L, Feb 8, 1989; minimum, 0.0 mg/L, Jul 21, 1985.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 869 microsiemens, Sep 2; minimum, 224 microsiemens, Oct 23.
 PH: Maximum, 8.3 units, Jun 2, Jul 28; minimum, 6.8 units, Mar 17-18.
 WATER TEMPERATURE: Maximum, 32.8°C, Jul 14; minimum, 8.6°C, Dec 30, Jan 11.
 DISSOLVED OXYGEN: Maximum, 12.6 mg/L, Jan 15; minimum, 4.3 mg/L, Apr 27-28, May 7, 30.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	770	714	731	753	735	743	710	681	696	---	---	521
2	725	696	707	757	738	750	743	541	681	---	---	551
3	784	700	751	752	726	739	603	501	546	659	535	619
4	824	784	811	772	736	746	605	524	551	651	269	576
5	833	805	818	796	759	779	662	605	639	563	266	305
6	825	783	794	793	766	779	761	662	708	---	---	305
7	786	626	741	791	775	784	822	443	698	---	---	e360
8	785	378	594	813	744	780	520	396	451	---	---	e400
9	550	378	450	823	785	810	529	419	478	---	---	e455
10	572	320	460	800	746	780	---	---	591	519	480	503
11	594	561	577	760	723	742	---	---	678	518	307	443
12	632	402	556	757	507	611	---	---	e726	387	330	376
13	411	279	340	597	503	546	---	---	e755	399	380	388
14	430	357	389	525	509	515	---	---	781	423	397	408
15	557	430	502	593	508	551	---	---	800	427	413	419
16	660	557	621	624	591	611	---	---	816	423	416	419
17	728	660	696	696	618	668	---	---	817	443	416	426
18	758	726	745	756	684	718	---	---	824	438	432	434
19	770	726	748	749	720	736	---	---	837	434	429	431
20	763	725	748	766	731	747	857	313	554	476	431	448
21	726	711	718	793	766	781	---	---	351	523	472	487
22	724	684	700	819	793	805	---	---	e338	517	505	512
23	697	224	490	819	802	810	---	---	e340	519	484	497
24	374	299	324	808	790	796	---	---	e347	484	443	463
25	459	344	402	818	790	799	---	---	e385	456	443	450
26	556	459	529	816	758	803	---	---	e460	464	447	456
27	626	556	602	758	672	694	---	---	e511	458	428	443
28	659	626	644	717	342	538	---	---	e435	433	426	429
29	683	647	671	659	489	600	---	---	500	436	426	429
30	715	677	694	707	659	686	602	490	523	434	422	429
31	739	713	723	---	---	---	531	510	521	507	426	458
MONTH	833	224	622	823	342	715	---	---	592	---	---	446

TRINITY RIVER BASIN

08057055 TRINITY RIVER AT CEDAR CREST BOULEVARD, DALLAS, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	583	507	560	406	398	402	407	394	400	811	748	785
2	583	530	551	405	396	399	395	386	393	814	738	798
3	554	535	542	401	394	398	394	385	389	813	737	786
4	572	520	542	415	395	405	396	388	392	821	791	807
5	564	528	542	433	414	422	395	387	391	831	802	817
6	601	546	571	440	425	429	398	390	394	820	803	810
7	629	581	599	448	429	436	402	394	398	833	802	818
8	613	589	603	444	428	437	408	395	400	854	822	837
9	660	589	636	434	421	428	405	394	400	828	824	818
10	685	616	645	430	413	419	402	389	397	558	477	517
11	704	658	684	414	410	412	401	387	395	635	555	607
12	667	631	659	414	407	411	397	382	391	702	634	667
13	679	639	665	433	406	413	397	382	391	725	702	713
14	680	635	658	425	400	412	403	395	399	789	714	764
15	733	680	714	461	413	434	439	396	418	771	743	751
16	739	671	719	444	277	354	445	438	441	786	746	764
17	677	641	663	319	275	288	448	438	441	818	783	801
18	686	617	664	386	319	355	459	440	453	794	774	779
19	644	597	622	419	386	399	470	455	461	787	759	775
20	621	600	614	434	419	427	483	441	472	798	770	783
21	636	472	611	427	418	423	546	441	522	799	787	793
22	525	344	411	420	415	419	535	462	479	827	791	803
23	428	357	391	424	415	420	503	468	484	849	825	834
24	457	414	443	434	423	427	598	502	539	858	830	844
25	434	360	423	434	426	430	678	598	649	834	823	830
26	370	278	332	426	414	421	704	678	693	854	823	834
27	379	318	345	420	411	416	718	591	663	852	403	546
28	413	373	391	413	402	409	650	571	609	539	435	453
29	---	---	---	405	399	403	671	578	632	595	466	539
30	---	---	---	400	397	399	748	671	713	678	585	629
31	---	---	---	415	396	408	---	---	---	749	586	652
MONTH	739	278	564	461	275	408	748	382	473	858	403	734
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	781	655	734	766	747	753	833	817	825	852	831	838
2	793	763	776	795	759	769	832	823	828	869	851	861
3	808	778	792	802	792	797	839	817	826	851	803	823
4	799	760	772	793	710	771	838	810	824	818	782	802
5	774	483	610	730	694	721	829	809	821	799	776	789
6	634	497	564	758	676	700	809	732	775	811	787	800
7	676	629	660	819	758	788	746	720	729	814	790	800
8	713	628	664	815	771	794	843	746	815	818	794	802
9	759	713	738	783	753	769	834	781	809	818	795	807
10	760	410	679	798	775	788	797	754	778	824	790	806
11	604	430	497	796	776	786	793	390	730	822	800	817
12	530	476	503	813	796	809	783	736	752	800	728	768
13	569	512	553	812	795	806	754	432	699	766	655	720
14	618	569	600	811	771	791	737	694	720	738	467	638
15	679	591	640	807	717	758	757	583	671	723	632	697
16	734	670	696	747	710	724	626	580	608	695	330	539
17	734	706	717	779	746	760	703	606	655	665	586	619
18	720	694	707	794	761	780	771	698	734	810	665	749
19	743	704	722	783	757	770	768	735	746	795	771	786
20	738	704	722	778	754	767	767	721	740	771	725	744
21	742	730	735	787	755	773	792	767	780	778	743	760
22	733	707	717	807	765	794	792	780	787	793	747	768
23	774	711	736	798	764	778	819	790	803	810	744	776
24	773	718	737	788	773	779	809	797	803	810	752	785
25	744	696	717	843	786	816	842	797	812	813	717	782
26	793	743	772	829	806	817	860	831	848	761	714	734
27	803	776	789	835	799	817	836	817	827	746	711	728
28	784	771	776	824	810	816	840	809	828	745	728	735
29	772	752	766	834	809	822	830	809	819	801	745	766
30	752	740	746	811	788	798	854	829	840	810	778	795
31	---	---	---	833	797	811	847	827	832	---	---	---
MONTH	808	410	695	843	676	781	860	390	776	869	330	761

e Estimated

TRINITY RIVER BASIN

08057055 TRINITY RIVER AT CEDAR CREST BOULEVARD, DALLAS, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.6	7.4	7.5	7.5	7.3	7.4	7.3	7.1	7.2	7.9	7.9	7.9
2	7.5	7.3	7.4	7.5	7.4	7.4	7.2	7.0	7.1	7.9	7.8	7.9
3	7.5	7.3	7.4	7.4	7.4	7.4	7.1	6.9	7.0	7.9	7.8	7.8
4	7.6	7.3	7.5	7.5	7.4	7.4	7.0	7.0	7.0	7.8	7.6	7.7
5	7.6	7.5	7.5	7.5	7.4	7.4	7.0	7.0	7.0	7.9	7.6	7.8
6	7.6	7.5	7.5	7.5	7.4	7.4	7.0	7.0	7.0	---	---	---
7	7.7	7.3	7.4	7.4	7.4	7.4	7.1	6.9	7.0	---	---	---
8	7.5	7.2	7.3	7.5	7.4	7.4	7.2	7.1	7.1	---	---	---
9	7.3	7.3	7.3	7.4	7.3	7.4	7.2	7.2	7.2	---	---	---
10	7.4	7.2	7.3	7.3	7.3	7.3	---	---	---	---	---	---
11	7.3	7.1	7.2	7.4	7.3	7.3	---	---	---	---	---	---
12	7.4	7.2	7.3	7.4	7.3	7.3	---	---	---	---	---	---
13	7.4	7.3	7.3	7.4	7.3	7.3	---	---	---	---	---	---
14	7.3	7.3	7.3	7.4	7.3	7.3	---	---	---	---	---	---
15	7.3	7.3	7.3	7.4	7.3	7.3	---	---	---	---	---	---
16	7.4	7.3	7.3	7.3	7.2	7.3	---	---	---	---	---	---
17	7.4	7.4	7.4	7.4	7.2	7.3	---	---	---	---	---	---
18	7.4	7.4	7.4	7.3	7.3	7.3	---	---	---	---	---	---
19	7.5	7.4	7.5	7.4	7.3	7.3	---	---	---	---	---	---
20	7.5	7.4	7.5	7.3	7.3	7.3	---	---	---	---	---	---
21	7.5	7.4	7.4	7.3	7.3	7.3	---	---	---	---	---	---
22	7.4	7.3	7.4	7.3	7.2	7.2	---	---	---	---	---	---
23	7.6	7.3	7.5	7.2	7.1	7.2	---	---	---	---	---	---
24	7.5	7.3	7.4	7.2	7.1	7.1	---	---	---	---	---	---
25	7.4	7.3	7.3	7.1	7.0	7.1	---	---	---	---	---	---
26	7.3	7.2	7.3	7.1	7.0	7.1	---	---	---	---	---	---
27	7.3	7.2	7.2	7.1	7.0	7.0	---	---	---	---	---	---
28	7.3	7.2	7.3	7.4	7.0	7.1	---	---	---	---	---	---
29	7.3	7.2	7.3	7.3	7.0	7.2	---	---	---	---	---	---
30	7.3	7.2	7.3	7.3	7.2	7.3	7.9	7.8	7.9	---	---	---
31	7.4	7.3	7.3	---	---	---	7.9	7.8	7.9	---	---	---
MONTH	7.7	7.1	7.4	7.5	7.0	7.3	---	---	---	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	7.7	7.5	7.6	7.9	7.6	7.8	7.6	7.4	7.5
2	---	---	---	7.7	7.5	7.6	8.0	7.8	7.9	7.7	7.1	7.5
3	---	---	---	7.7	7.6	7.7	---	---	---	7.6	7.1	7.4
4	---	---	---	7.8	7.6	7.7	---	---	---	7.7	7.5	7.6
5	---	---	---	7.8	7.6	7.7	---	---	---	7.7	7.5	7.6
6	---	---	---	7.8	7.7	7.7	---	---	---	7.7	7.5	7.6
7	7.6	7.5	7.5	7.7	7.6	7.7	---	---	---	7.6	7.4	7.5
8	7.6	7.5	7.5	7.7	7.5	7.6	7.9	7.7	7.8	7.6	7.4	7.5
9	7.6	7.5	7.5	7.7	7.4	7.6	8.0	7.8	7.9	7.6	7.0	7.1
10	7.5	7.4	7.4	7.6	7.5	7.6	8.0	7.9	7.9	7.1	7.1	7.1
11	7.5	7.4	7.4	7.6	7.5	7.6	8.0	7.9	7.9	7.2	7.1	7.1
12	7.5	7.5	7.5	7.6	7.5	7.6	8.0	7.9	7.9	7.5	7.2	7.4
13	7.5	7.5	7.5	7.6	7.5	7.6	7.9	7.8	7.9	7.6	7.4	7.5
14	7.5	7.5	7.5	7.6	7.4	7.5	7.9	7.8	7.9	7.7	7.6	7.6
15	7.5	7.4	7.5	7.5	7.4	7.4	7.9	7.8	7.8	7.8	7.6	7.7
16	7.4	7.4	7.4	7.5	7.0	7.3	7.9	7.8	7.8	7.8	7.6	7.7
17	7.5	7.4	7.5	7.2	6.8	7.0	---	---	---	7.9	7.7	7.8
18	7.5	7.5	7.5	7.4	6.8	7.1	7.6	7.5	7.5	7.9	7.7	7.8
19	7.6	7.5	7.5	7.4	7.2	7.3	7.6	7.5	7.5	8.0	7.7	7.8
20	7.6	7.5	7.6	7.5	7.2	7.4	7.6	7.5	7.6	7.9	7.6	7.8
21	7.6	7.5	7.5	7.5	7.2	7.4	7.6	7.4	7.5	7.8	7.6	7.7
22	7.6	7.1	7.4	7.5	7.2	7.4	7.6	7.5	7.5	7.7	7.5	7.6
23	7.6	7.5	7.5	7.6	7.3	7.4	7.9	7.6	7.7	7.7	7.4	7.6
24	7.8	7.6	7.7	7.6	7.3	7.5	7.9	7.8	7.8	7.6	7.5	7.5
25	7.8	7.4	7.7	7.8	7.4	7.5	7.8	7.7	7.8	7.5	7.4	7.5
26	7.6	7.3	7.4	7.9	7.4	7.6	7.8	7.7	7.8	7.5	7.4	7.5
27	7.3	7.2	7.3	8.0	7.7	7.8	7.8	7.6	7.7	7.5	7.3	7.3
28	7.7	7.2	7.5	7.9	7.7	7.8	7.7	7.6	7.7	7.8	7.3	7.5
29	---	---	---	7.9	7.7	7.8	7.6	7.4	7.5	8.0	7.8	7.9
30	---	---	---	7.9	7.8	7.8	7.5	7.4	7.4	8.2	8.0	8.1
31	---	---	---	7.9	7.7	7.8	---	---	---	8.2	7.6	7.8
MONTH	---	---	---	8.0	6.8	7.6	---	---	---	8.2	7.0	7.6

TRINITY RIVER BASIN

08057055 TRINITY RIVER AT CEDAR CREST BOULEVARD, DALLAS, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	8.1	7.8	7.9	7.8	7.5	7.7	8.1	7.6	7.8	8.0	7.7	7.8
2	8.3	8.0	8.1	8.0	7.4	7.7	7.8	7.5	7.7	8.1	7.8	7.9
3	8.1	7.8	8.0	8.0	7.6	7.8	7.7	7.4	7.6	8.0	7.8	7.9
4	8.0	7.8	7.9	7.8	7.5	7.7	7.6	7.4	7.5	8.1	7.8	7.9
5	7.9	7.6	7.8	7.7	7.5	7.6	7.5	7.4	7.4	8.2	7.9	8.0
6	7.8	7.6	7.7	7.8	7.6	7.7	7.4	7.3	7.4	8.1	7.8	8.0
7	8.1	7.8	7.9	7.8	7.6	7.7	7.4	7.3	7.3	8.1	7.9	8.0
8	8.2	7.9	8.0	7.9	7.6	7.7	7.4	7.3	7.4	8.1	7.9	8.0
9	7.9	7.8	7.9	---	---	---	7.4	7.2	7.3	8.2	7.9	8.0
10	8.0	7.7	7.9	---	---	---	7.6	7.3	7.4	8.2	7.9	8.1
11	8.0	7.8	7.9	---	---	---	7.6	7.4	7.5	8.1	7.9	8.0
12	8.0	7.9	7.9	---	---	---	7.5	7.3	7.4	8.0	7.8	7.9
13	8.1	8.0	8.0	---	---	---	7.5	7.3	7.4	7.9	7.8	7.8
14	8.2	8.1	8.1	---	---	---	7.6	7.4	7.5	7.9	7.8	7.9
15	8.2	7.8	8.1	---	---	---	7.5	7.3	7.4	7.9	7.9	7.9
16	8.1	7.9	8.0	---	---	---	7.4	7.3	7.3	8.2	7.9	8.0
17	7.9	7.8	7.8	7.5	7.3	7.4	7.4	7.3	7.4	8.0	7.4	7.7
18	7.8	7.6	7.7	7.7	7.4	7.5	7.5	7.3	7.4	7.7	7.5	7.6
19	7.7	7.5	7.6	7.6	7.4	7.5	7.6	7.4	7.5	7.7	7.5	7.6
20	7.6	7.5	7.6	7.8	7.4	7.5	7.8	7.5	7.6	7.7	7.5	7.6
21	7.6	7.5	7.5	8.1	7.3	7.5	7.9	7.5	7.7	7.8	7.6	7.7
22	7.5	7.4	7.4	8.0	7.3	7.6	7.8	7.7	7.7	7.7	7.3	7.5
23	7.4	7.3	7.4	8.0	7.6	7.7	7.9	7.6	7.7	8.1	7.3	7.7
24	7.3	7.2	7.3	7.7	7.5	7.6	8.0	7.7	7.8	8.0	7.9	7.9
25	7.6	7.1	7.3	7.9	7.5	7.7	8.0	7.7	7.8	8.0	7.9	7.9
26	7.7	7.3	7.5	8.0	7.6	7.8	8.0	7.6	7.8	8.0	7.9	7.9
27	7.7	7.5	7.6	8.2	7.6	7.8	8.0	7.7	7.8	8.0	7.9	7.9
28	7.7	7.5	7.6	8.3	7.7	7.9	8.0	7.7	7.8	7.9	7.6	7.8
29	7.7	7.5	7.6	8.2	7.6	7.9	8.0	7.7	7.8	7.6	7.4	7.5
30	7.8	7.5	7.6	8.2	7.6	7.8	8.0	7.7	7.8	7.7	7.3	7.5
31	---	---	---	8.0	7.5	7.7	8.0	7.7	7.8	---	---	---
MONTH	8.3	7.1	7.8	---	---	---	8.1	7.2	7.6	8.2	7.3	7.8

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	27.5	26.6	27.0	22.0	20.3	21.4	16.4	16.1	16.2	10.8	9.5	9.9
2	27.8	26.8	27.2	20.5	19.1	20.0	16.5	14.9	15.9	12.0	10.8	11.5
3	27.9	26.7	27.2	19.8	18.6	19.1	15.0	13.2	14.1	15.1	12.0	14.1
4	27.5	26.2	26.8	19.7	18.2	18.9	13.7	12.5	13.1	16.6	14.8	16.0
5	27.3	26.0	26.6	21.1	19.3	20.3	13.8	13.1	13.5	15.4	14.7	14.9
6	27.6	26.5	26.9	20.1	18.4	19.2	13.8	13.0	13.4	---	---	---
7	27.0	25.3	26.4	19.0	17.9	18.4	14.3	10.1	12.9	---	---	---
8	26.1	25.1	25.5	18.8	17.5	18.1	11.1	9.6	10.2	---	---	---
9	25.7	25.0	25.3	18.4	17.7	18.1	12.1	10.3	11.1	---	---	---
10	26.0	25.0	25.4	17.9	16.4	17.4	---	---	---	10.9	10.5	10.7
11	26.0	25.2	25.6	16.8	15.7	16.3	---	---	---	10.5	8.6	9.7
12	25.2	23.6	24.9	16.3	14.0	15.2	---	---	---	10.3	8.9	9.7
13	23.9	22.2	22.8	15.1	14.0	14.3	---	---	---	10.2	9.9	10.0
14	22.2	21.1	21.7	14.0	13.4	13.8	---	---	---	9.9	9.2	9.6
15	22.6	21.1	21.8	13.9	13.1	13.5	---	---	---	9.3	8.9	9.1
16	23.3	21.7	22.3	14.3	13.1	13.6	---	---	---	9.6	9.0	9.3
17	23.1	22.1	22.6	14.3	13.3	13.8	---	---	---	9.9	9.2	9.6
18	23.2	22.0	22.5	15.3	13.8	14.6	---	---	---	10.3	9.5	9.9
19	23.5	21.7	22.5	16.2	14.2	15.1	---	---	---	10.0	9.6	9.8
20	24.4	22.4	23.2	16.5	15.6	16.0	15.4	11.4	14.1	10.6	9.6	10.0
21	23.1	21.4	22.5	17.5	16.3	16.8	---	---	---	11.0	10.4	10.7
22	21.4	20.6	21.0	17.4	16.4	16.8	---	---	---	11.0	10.6	10.9
23	20.8	15.8	18.7	17.6	16.1	16.8	---	---	---	10.8	9.8	10.2
24	18.3	17.0	17.5	17.3	16.4	16.9	---	---	---	10.0	9.0	9.6
25	19.9	18.3	19.0	18.1	16.8	17.5	---	---	---	9.9	9.5	9.7
26	19.4	17.4	18.2	19.8	18.1	18.9	---	---	---	10.3	9.9	10.0
27	18.7	17.3	17.9	18.8	17.6	18.2	---	---	---	10.2	9.7	10.0
28	18.9	17.8	18.2	18.8	15.4	18.0	---	---	---	10.6	9.8	10.2
29	19.6	18.1	18.9	17.2	16.4	16.8	---	---	---	10.8	10.1	10.4
30	21.1	19.5	20.3	16.6	16.1	16.3	10.7	8.6	9.4	10.8	10.1	10.5
31	22.4	21.0	21.6	---	---	---	10.3	9.5	9.9	11.7	10.6	11.0
MONTH	27.9	15.8	22.8	22.0	13.1	17.0	---	---	---	---	---	---

TRINITY RIVER BASIN

08057055 TRINITY RIVER AT CEDAR CREST BOULEVARD, DALLAS, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	13.2	11.7	12.6	12.5	11.9	12.2	17.4	16.4	16.9	23.9	21.5	22.5
2	13.1	12.5	12.8	12.1	11.5	11.7	17.5	16.5	16.9	24.6	22.7	23.5
3	13.1	12.2	12.6	11.9	11.1	11.6	17.4	16.3	16.9	24.9	23.3	24.0
4	12.7	12.2	12.4	12.6	11.4	12.0	17.1	16.1	16.6	24.8	23.2	23.9
5	12.4	11.8	12.1	13.6	12.6	13.1	16.8	16.0	16.5	25.0	23.9	24.3
6	12.1	11.1	11.5	13.4	12.5	13.0	17.1	16.5	16.8	26.7	24.3	25.4
7	12.1	11.0	11.6	12.5	12.1	12.3	17.3	16.7	17.0	27.3	25.6	26.3
8	12.5	11.5	12.0	12.1	11.0	11.7	17.7	16.9	17.2	26.5	25.4	26.0
9	13.8	12.2	12.9	11.0	10.2	10.6	17.6	16.8	17.2	25.4	22.6	24.3
10	13.9	13.2	13.7	10.7	9.8	10.3	18.0	17.1	17.5	24.8	22.6	23.8
11	14.0	12.6	13.4	10.8	9.9	10.4	18.2	17.5	17.8	25.7	23.6	24.7
12	14.0	12.9	13.4	10.6	9.8	10.3	17.9	17.3	17.6	26.3	24.5	25.3
13	13.8	12.9	13.3	10.4	10.1	10.3	18.4	17.3	17.8	25.8	25.2	25.5
14	14.1	13.2	13.7	10.8	10.3	10.5	19.4	18.0	18.6	25.7	25.0	25.3
15	14.5	14.1	14.4	12.0	10.8	11.5	20.0	18.9	19.4	26.5	25.2	25.7
16	14.4	13.7	14.1	13.9	11.9	13.2	20.0	19.2	19.6	26.8	24.9	25.8
17	13.8	13.5	13.6	13.7	13.0	13.3	19.2	18.2	18.6	27.0	25.9	26.4
18	14.3	13.0	13.7	13.9	12.6	13.3	19.2	17.9	18.5	27.4	25.9	26.5
19	14.2	13.1	13.5	13.8	12.9	13.6	19.8	18.4	19.1	27.2	26.0	26.6
20	14.5	12.4	13.3	12.9	11.8	12.3	20.0	18.8	19.3	27.2	25.8	26.5
21	14.5	12.6	13.6	12.3	11.4	11.8	19.6	18.5	19.0	27.7	26.3	26.9
22	12.9	11.0	11.6	12.6	11.7	12.1	19.8	18.4	19.1	27.5	26.3	26.8
23	12.5	11.0	11.6	13.3	12.1	12.7	20.6	18.7	19.6	26.8	25.9	26.3
24	13.0	11.9	12.4	14.3	12.9	13.6	21.5	19.4	20.4	26.3	25.9	26.0
25	13.6	12.4	12.9	15.2	13.9	14.5	22.3	20.5	21.4	26.7	25.4	26.0
26	14.5	13.4	14.0	15.5	14.3	14.9	22.1	21.2	21.7	27.8	25.9	26.7
27	13.8	13.1	13.4	16.3	15.3	15.8	21.2	20.8	21.0	27.2	23.4	25.2
28	13.1	12.4	12.7	16.7	15.5	16.1	20.8	19.9	20.2	27.5	24.8	25.9
29	---	---	---	17.3	16.3	16.8	20.9	19.3	20.0	28.8	26.6	27.7
30	---	---	---	17.4	16.7	17.0	22.4	20.2	21.1	30.0	28.1	28.9
31	---	---	---	17.6	16.7	17.1	---	---	---	30.6	28.6	29.4
MONTH	14.5	11.0	13.0	17.6	9.8	12.9	22.4	16.0	18.6	30.6	21.5	25.7
DAY	JUNE			JULY			AUGUST			SEPTEMBER		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	30.4	28.9	29.6	31.8	30.3	31.0	31.8	29.8	30.7	31.4	29.8	30.5
2	30.0	28.4	29.1	32.1	30.4	31.2	32.1	30.2	31.1	31.5	29.6	30.5
3	30.0	28.2	29.0	31.7	30.0	30.7	32.2	30.8	31.4	31.7	29.9	30.7
4	29.7	28.7	29.1	30.8	29.6	30.1	31.2	30.0	30.7	31.8	30.0	30.8
5	28.7	25.9	27.5	30.3	29.4	29.8	30.1	29.4	29.8	31.3	30.0	30.6
6	26.1	24.5	25.4	31.3	29.8	30.5	29.4	28.8	29.0	31.2	29.3	30.2
7	26.1	24.8	25.6	31.7	30.0	30.8	30.2	28.4	29.2	31.4	29.6	30.3
8	26.6	25.2	25.8	31.9	30.3	31.0	30.7	28.9	29.7	31.3	29.6	30.3
9	28.4	26.2	27.1	32.3	30.6	31.4	31.4	29.7	30.4	30.6	28.9	29.9
10	28.3	26.4	27.5	32.5	30.8	31.5	31.6	29.8	30.6	28.9	27.5	28.1
11	27.2	25.9	26.7	32.4	30.7	31.4	31.3	29.3	30.6	27.5	26.2	26.9
12	29.0	26.4	27.4	32.5	30.6	31.5	31.4	30.0	30.7	26.2	25.7	25.8
13	29.9	28.0	28.9	32.3	31.1	31.6	30.8	27.9	29.9	26.4	25.7	26.1
14	30.0	28.7	29.4	32.8	31.2	31.9	30.4	29.6	30.0	27.5	26.0	26.6
15	29.5	28.5	29.1	32.7	30.9	31.7	31.0	29.1	29.9	28.0	27.5	27.7
16	29.7	28.0	28.8	32.3	30.8	31.6	30.8	29.1	29.9	27.7	25.0	26.6
17	29.1	28.3	28.7	31.7	30.6	31.2	31.1	29.7	30.3	27.6	26.7	27.1
18	29.4	28.2	28.7	32.0	30.3	31.0	30.8	29.9	30.3	28.8	27.3	27.9
19	30.3	28.7	29.4	32.0	30.5	31.2	31.2	29.8	30.4	29.9	28.1	28.8
20	30.4	29.0	29.6	32.1	30.3	31.1	31.4	29.9	30.6	30.0	28.6	29.2
21	30.4	28.9	29.5	32.3	30.2	31.1	31.0	29.7	30.3	30.6	29.1	29.7
22	30.7	29.3	29.8	32.2	30.1	31.0	30.9	29.7	30.2	30.9	29.4	30.0
23	30.7	29.5	30.0	31.9	30.3	31.0	31.3	29.9	30.4	30.3	29.4	29.8
24	30.4	29.3	29.7	32.1	30.1	31.0	31.6	30.1	30.7	29.9	28.9	29.3
25	30.6	29.1	29.8	32.2	30.3	31.1	32.0	30.2	30.9	29.9	28.8	29.3
26	31.3	29.4	30.2	32.0	30.3	31.0	32.0	30.5	31.1	29.2	28.4	28.8
27	31.5	29.7	30.5	32.0	30.2	31.0	32.0	30.5	31.2	29.9	28.4	29.1
28	31.7	30.0	30.8	32.2	30.5	31.2	32.0	30.5	31.2	30.5	28.7	29.5
29	31.3	30.1	30.5	32.2	30.3	31.1	32.2	30.7	31.2	30.5	28.9	29.6
30	31.3	29.7	30.4	31.7	30.1	30.8	31.5	30.1	30.7	30.3	28.9	29.5
31	---	---	---	31.5	29.6	30.5	31.5	30.1	30.7	---	---	---
MONTH	31.7	24.5	28.8	32.8	29.4	31.1	32.2	27.9	30.4	31.8	25.0	29.0

TRINITY RIVER BASIN

08057200 WHITE ROCK CREEK AT GREENVILLE AVENUE, DALLAS, TX

LOCATION.--Lat 32°53'21", long 96°45'23", Dallas County, Hydrologic Unit 12030105, on left bank 20 ft upstream from bridge on Greenville Avenue in Dallas, 1.1 mi downstream from Texas and New Orleans Railroad Co. bridge, 1.2 mi downstream from Cottonwood Creek, 2.9 mi upstream from White Rock Lake, and 8.2 mi northeast of Dallas County Courthouse.

DRAINAGE AREA.--66.4 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Aug 1961 to Sep 1980, Apr 1984 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is sea level. Prior to Oct 24, 1961, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation. Low flow is affected by diversions from small dams upstream from station. Several observations of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,900 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct 23	1315	10,900	486.34	Jan 5	0230	22,100	488.68
Nov 28	0915	5,180	484.10	Jan 11	1630	3,880	483.25
Dec 7	1915	3,560	483.00	Feb 25	2300	20,700	488.45
Dec 20	2200	20,100	488.34	Mar 16	0945	4,950	483.97
Dec 23	1200	4,220	483.49	May 27	0445	5,700	484.38

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	25	34	50	65	87	64	26	17	5.9	5.0	5.7
2	24	22	343	50	47	76	53	24	12	6.2	5.4	5.0
3	21	19	209	48	44	69	48	23	9.8	5.5	4.5	5.2
4	20	21	72	2170	41	67	44	21	166	44	14	5.2
5	16	21	52	5120	43	63	45	21	239	63	18	4.0
6	15	21	43	467	43	65	48	19	42	28	12	5.1
7	32	18	769	713	40	160	45	17	30	16	8.4	5.1
8	174	20	232	431	39	111	92	18	26	7.6	8.5	6.6
9	52	30	84	213	36	69	41	368	19	6.3	7.5	5.5
10	36	33	63	153	64	55	35	43	432	5.7	9.6	4.4
11	33	27	51	782	45	50	31	31	206	5.1	23	7.4
12	266	163	44	265	52	47	20	23	53	4.7	9.6	63
13	220	81	40	173	86	46	27	20	31	4.6	7.6	87
14	41	39	39	148	52	133	27	21	24	5.2	7.3	143
15	32	33	36	132	41	406	31	21	18	4.6	9.7	146
16	30	30	35	121	77	1760	63	18	13	6.7	15	357
17	31	31	31	108	84	441	38	16	12	5.4	13	71
18	28	29	30	103	112	172	33	16	11	4.2	17	45
19	26	27	29	92	123	399	32	13	10	5.1	15	35
20	22	26	4570	95	58	119	143	8.8	8.2	6.1	11	29
21	46	25	2170	98	211	97	409	9.4	6.7	4.7	9.6	25
22	37	26	159	84	468	87	44	8.9	5.8	8.1	11	19
23	2040	25	1250	71	94	79	34	9.8	6.7	4.8	10	17
24	139	21	290	67	72	72	29	11	7.1	3.6	6.9	18
25	66	21	118	65	1650	66	25	10	6.0	3.2	9.6	16
26	42	23	161	109	1870	60	41	13	5.4	3.3	7.7	13
27	35	24	98	61	144	97	152	759	5.6	4.2	6.5	16
28	32	647	79	52	103	64	40	58	5.8	4.8	4.6	14
29	30	72	68	48	---	53	31	35	5.6	4.2	4.3	12
30	29	39	61	46	---	154	28	26	6.0	4.7	4.3	11
31	26	---	56	79	---	149	---	20	---	4.0	4.5	---
MEAN	118	54.6	365	394	207	173	59.8	55.7	48.0	9.34	9.68	39.9
MAX	2040	647	4570	5120	1870	1760	409	759	432	63	23	357
MIN	15	18	29	46	36	46	20	8.8	5.4	3.2	4.3	4.0

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1998h, BY WATER YEAR (WY)

MEAN	86.2	59.0	84.9	54.1	86.9	107	124	153	85.6	37.7	25.7	59.1
MAX (WY)	450	362	627	394	330	480	690	460	800	252	108	624
MIN (WY)	.83	2.96	4.35	5.85	6.19	12.0	16.6	15.8	7.25	.78	1.26	.92
	1964	1964	1964	1976	1967	1971	1971	1972	1980	1964	1963	1963

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1961 - 1998h

ANNUAL MEAN	113	128	81.2
HIGHEST ANNUAL MEAN			196
LOWEST ANNUAL MEAN			20.8
HIGHEST DAILY MEAN	4570	Dec 20	5120
LOWEST DAILY MEAN	8.7	Aug 6	3.2
ANNUAL SEVEN-DAY MINIMUM	10	Jul 25	4.0
INSTANTANEOUS PEAK FLOW			22100
INSTANTANEOUS PEAK STAGE			488.68
10 PERCENT EXCEEDS	180		173
50 PERCENT EXCEEDS	46		32
90 PERCENT EXCEEDS	13		5.6

h See PERIOD OF RECORD paragraph.

08057200 WHITE ROCK CREEK AT GREENVILLE AVENUE, DALLAS, TX--Continued
(National Water-Quality Assessment Program)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1997 to current year. Pesticide analyses: May 1997 to current year.

REMARKS.--Water-quality data for chemical, biochemical, and pesticides were not available for WY98 at time of publication. These data will be in the USGS-NWIS water-quality database by May 1999 and will be published in WY99 annual data report.

TRINITY RIVER BASIN

08057410 TRINITY RIVER BELOW DALLAS, TX

LOCATION.--Lat 32°42'26", long 96°44'08", Dallas County, Hydrologic Unit 12030105, on right bank at downstream side of bridge on South Loop Highway 12, 1.0 mi downstream from White Rock Creek, 1.5 mi upstream from Fivemile Creek, 6.4 mi southeast of Dallas County Courthouse in Dallas, and at mile 491.8.

DRAINAGE AREA.--6,278 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Nov 1956 to current year.

REVISED RECORDS.--WDR TX-94-1: 1989.

GAGE.--Water-stage recorder. Datum of gage is 365.89 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good. Since installation of gage in Nov 1956, at least 10% of contributing drainage area has been regulated by eight upstream reservoirs with a combined capacity of 1,714,400 acre-ft, of which 846,200 acre-ft is for flood control. Several cities within the Dallas-Fort Worth metroplex divert water for municipal use and return it to the river as wastewater effluents above this station. Low flows are sustained by wastewater effluents.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 25, 1908, reached a stage of 41.1 ft, from information by U.S. Army Corps of Engineers, and is the highest since that date. Floods in 1866 and 1908 reached about the same stage at Dallas.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	579	637	891	2180	2150	10000	10100	789	635	543	339	345
2	626	633	866	1720	1870	8040	9850	714	626	473	332	324
3	518	596	2950	1320	1720	6410	8790	789	612	489	342	366
4	450	562	1870	1630	1890	5720	7720	704	614	508	368	376
5	443	542	1080	9920	1840	5560	6990	676	1490	661	386	357
6	465	529	894	17300	1590	5370	5940	701	1460	566	423	334
7	603	559	1250	14700	1380	5300	5380	714	910	501	499	326
8	1640	545	5570	12200	1220	5450	4840	677	780	510	584	333
9	2040	529	3730	7250	1170	5130	4650	2380	694	511	450	341
10	1730	602	1400	3640	1210	5080	4560	2260	902	523	416	297
11	1100	612	1070	4310	1350	5310	4500	1120	2410	477	464	392
12	1370	1290	958	9860	1220	5150	4400	915	2310	487	554	500
13	5050	1900	883	9910	1260	5130	4280	810	1190	508	689	825
14	3050	1640	852	7500	1190	5310	4020	724	876	551	757	972
15	1040	1080	800	7180	1060	5820	3660	801	753	560	887	854
16	737	885	785	6000	1070	9580	2960	740	644	494	462	1250
17	633	761	770	5060	1360	21400	2800	688	650	473	416	927
18	604	667	713	5290	1360	24500	2520	732	662	470	405	757
19	587	611	686	5300	1920	19900	2300	679	688	453	387	622
20	612	583	3180	4810	1720	15200	2190	651	651	443	377	469
21	666	583	18200	3240	1440	13000	2960	615	599	350	357	447
22	748	545	22400	2510	5400	12200	2600	588	600	422	402	471
23	2450	551	13000	2550	7330	11800	1890	560	592	420	312	483
24	7180	555	10400	2810	5680	11600	1470	543	625	405	408	575
25	3370	535	6200	3560	5630	11700	1020	545	598	391	356	524
26	1150	588	4020	3750	11000	11700	967	638	528	395	388	493
27	885	768	2600	3310	16600	11100	1300	2890	532	409	344	472
28	741	1540	2990	3340	13500	10800	1510	3140	549	392	365	469
29	672	1760	3140	3300	---	10700	995	1250	557	311	341	426
30	672	1120	2670	3250	---	10700	867	953	564	372	328	406
31	648	---	2330	2860	---	9470	---	884	---	342	355	---
TOTAL	43059	24308	119148	171560	96130	304130	118029	30870	25301	14410	13493	15733
MEAN	1389	810	3843	5534	3433	9811	3934	996	843	465	435	524
MAX	7180	1900	22400	17300	16600	24500	10100	3140	2410	661	887	1250
MIN	443	529	686	1320	1060	5080	867	543	528	311	312	297
AC-FT	85410	48210	236300	340300	190700	603200	234100	61230	50180	28580	26760	31210

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1998, BY WATER YEAR (WY)

MEAN	1717	1972	2034	1704	2227	2883	2876	4957	3803	1715	1064	1071
MAX	10220	14350	14010	15370	11750	11010	10010	29980	17720	9145	5963	7521
(WY)	1982	1982	1992	1992	1992	1997	1990	1990	1989	1989	1982	1962
MIN	268	231	228	178	265	316	373	432	317	330	228	259
(WY)	1964	1957	1957	1957	1957	1959	1959	1961	1960	1964	1959	1959

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1957 - 1998

ANNUAL TOTAL	1557666	976171	
ANNUAL MEAN	4268	2674	2336
HIGHEST ANNUAL MEAN			7319
LOWEST ANNUAL MEAN			383
HIGHEST DAILY MEAN	22600	Feb 21	24500
LOWEST DAILY MEAN	443	Oct 5	297
ANNUAL SEVEN-DAY MINIMUM	526	Sep 30	338
INSTANTANEOUS PEAK FLOW			25600
INSTANTANEOUS PEAK STAGE			27.82
ANNUAL RUNOFF (AC-FT)	3090000	1936000	1693000
10 PERCENT EXCEEDS	12300	7400	6430
50 PERCENT EXCEEDS	1640	884	725
90 PERCENT EXCEEDS	607	405	350

08057410 TRINITY RIVER BELOW DALLAS, TX--Continued
(National Water-Quality Assessment Program)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Oct 1967 to current year. Pesticide analyses: Oct 1970 to Jul 1981, Oct 1994 to current year. Sediment analyses: Apr 1972 to Apr 1975.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct 1967 to Sep 1992, Apr 1993 to current year.
 PH: Jan 1977 to Sep 1992, Apr 1993 to current year.
 WATER TEMPERATURE: Oct 1967 to Sep 1992, Apr 1993 to current year.
 DISSOLVED OXYGEN: Jan 1977 to Sep 1992, Apr 1993 to current year.

INSTRUMENTATION.--A four-parameter water-quality monitor continuously records specific conductance, pH, water temperature, and dissolved oxygen at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument and pump, plugged intake, and pump failures. 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 with the exception of the 1993 water year. New regression equations were developed based on data from water years 1989 to 1998. The standard error of estimate for dissolved solids is 5%, chloride is 11%, sulfate is 12% and for hardness is 9%. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request. National water-quality assessment program data are included in this record.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,130 microsiemens, Dec 17, 1977; minimum, 112 microsiemens, Oct 20, 1984.
 PH: Maximum, 8.8 units, Jan 23, 1980; minimum, 6.5 units, Jan 1, 2, 4, and 5, 1997.
 WATER TEMPERATURES: Maximum, 35.0°C, Aug 20, 25, 28, 31, 1972; minimum, 1.0°C, Jan 29, 1968.
 DISSOLVED OXYGEN: Maximum, 12.8 mg/L, Mar 19, 1990; minimum, 0.0 mg/L, on many days during spring and summer of 1977-1981.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 898 microsiemens, Oct 5; minimum, 177 microsiemens, Dec 21-22.
 PH: Maximum, 8.5 units, Aug 21; minimum, 6.6 units, Apr 7, 23-24, Sep 7.
 WATER TEMPERATURE: Maximum, 32.5°C, Jul 14, 16; minimum, 8.4°C, Dec 29.
 DISSOLVED OXYGEN: Maximum, 11.3 mg/L, Jan 15, 24-25; minimum, 1.8 mg/L, Nov 28.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	HARD- NESS TOTAL (MG/L CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
NOV										
13...	0945	140	47	4.8	37	1	6.7	63	36	.58
DEC										
10...	0940	150	52	4.4	32	1	6.8	66	28	.51
JAN										
14...	0940	150	51	4.7	24	.8	4.6	45	21	.32
FEB										
12...	1000	190	64	7.4	52	2	8.1	85	50	.75
MAR										
12...	0740	140	49	5.4	28	1	4.8	43	24	.33
APR										
13...	1000	140	48	4.7	26	.9	4.9	42	21	.30
MAY										
14...	0730	180	60	6.4	61	2	10	90	59	1.0
JUN										
08...	0930	160	54	5.9	58	2	8.3	77	51	.89
JUL										
13...	1015	160	52	6.9	83	3	12	84	79	1.2
AUG										
12...	0800	150	50	6.3	81	3	12	91	78	1.0
SEP										
09...	0950	140	46	6.4	79	3	11	81	73	1.3

TRINITY RIVER BASIN

08057410 TRINITY RIVER BELOW DALLAS, TX--Continued
(National Water-Quality Assessment Program)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	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)	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)	NITRO- GEN, TOTAL (MG/L AS N) (00605)
NOV 13...	5.4	308	289	4.75	.019	4.77	.059	5.8	.96
DEC 10...	5.2	294	284	2.63	.016	2.64	.583	4.2	.98
JAN 14...	5.9	244	239	1.32	.020	1.34	.027	1.9	.54
FEB 12...	6.6	411	390	5.04	.020	5.06	.119	6.0	.86
MAR 12...	5.4	262	242	1.65	.010	1.66	.031	2.3	.58
APR 13...	5.1	245	232	1.83	.011	1.84	.046	2.4	.50
MAY 14...	6.4	420	409	8.56	.046	8.60	.084	10	1.6
JUN 08...	3.9	369	361	5.98	.052	6.03	.082	7.2	1.1
JUL 13...	7.4	470	445	9.42	.037	9.45	.092	11	1.2
AUG 12...	8.4	455	440	8.53	.070	8.60	.380	10	1.3
SEP 09...	8.9	449	428	11.1	.092	11.2	.765	13	1.2

DATE	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
NOV 13...	.55	.61	1.0	.783	.697	.693	2.1	18	13
DEC 10...	.47	1.1	1.6	.606	.447	.421	1.3	20	11
JAN 14...	.37	.39	.56	.176	.127	.147	.45	<10	4.9
FEB 12...	.57	.69	.98	1.01	.891	.930	2.9	22	28
MAR 12...	.41	.44	.61	.275	.225	.208	.64	<10	<4.0
APR 13...	.36	.40	.54	.347	.281	.254	.78	<10	<4.0
MAY 14...	.99	1.1	1.6	1.99	1.91	1.78	5.4	74	15
JUN 08...	.67	.75	1.2	1.33	1.22	1.14	3.5	19	8.3
JUL 13...	.78	.88	1.3	2.12	1.84	1.60	4.9	18	11
AUG 12...	.93	1.3	1.7	2.01	1.78	1.74	5.3	33	10
SEP 09...	1.0	1.8	2.0	2.52	2.39	2.42	7.4	28	23

TRINITY RIVER BASIN

08057410 TRINITY RIVER BELOW DALLAS, TX--Continued
(National Water-Quality Assessment Program)

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1997 TO SEPTEMBER 1998

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. 1997	43059	537	308	35790	44	5160	62	7200	150
NOV. 1997	24308	619	355	23280	54	3570	73	4760	160
DEC. 1997	119148	373	214	68870	23	7250	40	12900	130
JAN. 1998	171560	410	235	109000	26	12000	44	20600	140
FEB. 1998	96130	476	273	70800	35	9030	53	13830	150
MAR. 1998	304130	388	222	182600	23	19070	42	34150	130
APR. 1998	118029	430	246	78530	28	8930	47	14940	140
MAY 1998	30870	638	365	30450	58	4810	75	6280	160
JUNE 1998	25301	633	363	24790	57	3870	75	5090	170
JULY 1998	14410	728	417	16210	72	2810	88	3430	170
AUG. 1998	13493	751	430	15680	77	2800	92	3350	170
SEPT 1998	15733	710	406	17270	69	2940	86	3630	170
TOTAL	976171.00	**	**	673300	**	82240	**	130200	**
WTD.AVG.	2670	445	255	**	31	**	49	**	140

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	e875	702	689	695	629	602	612	538	525	531
2	---	---	e870	721	693	706	671	520	634	575	530	560
3	---	---	e875	714	685	696	541	448	492	645	535	595
4	890	850	876	695	680	685	519	453	472	643	311	559
5	898	874	889	723	679	702	591	519	559	599	292	353
6	895	841	868	703	679	693	656	591	617	327	288	305
7	854	778	842	719	703	711	713	404	640	352	327	340
8	873	484	719	725	696	711	453	347	396	380	348	361
9	562	457	510	738	720	731	402	325	366	442	380	405
10	621	416	521	738	698	717	412	357	386	517	442	485
11	646	544	632	702	671	684	454	412	433	519	327	470
12	685	564	633	688	492	603	467	454	462	391	328	381
13	564	394	430	551	475	514	486	460	476	397	382	388
14	484	402	442	501	476	490	488	472	479	427	397	408
15	596	484	541	550	492	514	495	478	485	433	420	427
16	686	596	635	591	548	573	497	487	493	433	427	429
17	743	686	705	642	583	605	495	484	489	454	425	436
18	762	738	749	672	634	650	506	485	493	446	441	444
19	772	746	756	688	666	675	506	496	501	443	436	440
20	776	748	759	695	675	683	504	251	382	481	441	455
21	752	708	725	711	693	701	304	177	283	543	481	499
22	720	697	708	731	709	718	319	177	282	526	512	521
23	697	283	538	739	724	731	346	312	331	530	501	514
24	389	311	335	736	715	725	348	330	340	501	461	482
25	435	336	383	721	711	718	411	347	373	491	458	462
26	516	435	484	743	721	733	426	394	410	472	455	464
27	620	510	574	746	645	683	519	426	482	473	448	463
28	651	615	629	666	377	544	527	455	474	449	442	446
29	666	638	649	532	437	477	516	468	504	450	443	446
30	675	658	666	612	532	572	577	498	520	455	443	450
31	694	670	677	---	---	---	594	525	538	509	443	468
MONTH	---	---	661	746	377	655	713	177	465	645	288	451

TRINITY RIVER BASIN

08057410 TRINITY RIVER BELOW DALLAS, TX--Continued
(National Water-Quality Assessment Program)

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	591	509	560	433	425	429	420	395	410	758	683	715
2	590	549	571	432	368	404	395	388	391	753	735	741
3	566	549	559	420	350	376	389	383	385	755	683	726
4	576	542	561	431	358	400	387	383	385	747	731	740
5	569	542	556	446	429	435	389	386	387	761	744	750
6	617	562	588	456	440	443	413	386	410	761	744	752
7	651	617	635	477	445	452	412	404	409	760	742	748
8	648	619	635	472	455	466	417	404	410	777	760	766
9	683	623	652	460	402	435	416	407	412	776	426	600
10	680	645	666	406	391	396	414	407	410	598	462	498
11	721	669	700	406	386	393	414	405	410	584	512	550
12	713	685	693	409	400	405	408	400	405	635	584	606
13	703	664	689	426	398	407	411	396	402	670	635	655
14	696	663	680	412	396	406	430	410	417	714	664	682
15	743	696	718	443	407	421	447	429	434	713	686	699
16	747	732	737	429	295	369	466	447	456	710	693	698
17	732	675	694	295	271	280	467	460	463	737	710	725
18	706	668	685	344	291	316	465	442	452	739	712	728
19	701	623	651	374	331	356	464	454	460	746	729	735
20	639	621	632	398	374	389	492	460	478	751	731	743
21	668	639	657	397	392	395	538	465	511	758	740	750
22	640	375	466	393	390	391	539	473	495	751	738	745
23	453	381	414	394	389	392	510	475	488	781	744	762
24	484	446	468	403	392	398	578	510	534	802	760	777
25	464	448	455	406	402	404	657	578	623	780	754	767
26	448	301	348	423	399	407	681	657	670	778	752	764
27	389	301	359	425	411	418	690	586	656	789	336	568
28	425	389	409	423	415	420	638	572	613	520	447	470
29	---	---	---	415	409	412	641	572	599	574	466	515
30	---	---	---	411	407	409	683	640	658	658	574	610
31	---	---	---	424	407	416	---	---	---	723	594	650
MONTH	747	301	587	477	271	401	690	383	474	802	336	685
DAY	JUNE			JULY			AUGUST			SEPTEMBER		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	717	614	666	674	656	666	793	767	783	781	753	766
2	743	717	735	685	665	677	803	754	787	849	770	792
3	763	742	754	712	673	695	786	758	773	791	746	777
4	776	713	745	705	686	697	790	768	778	762	744	752
5	750	474	639	695	649	667	785	764	774	768	740	755
6	573	474	527	662	622	636	771	734	755	753	744	748
7	650	573	626	715	637	690	734	696	710	766	722	748
8	659	611	627	742	715	730	793	698	744	755	720	733
9	714	659	690	729	708	718	764	733	746	761	722	742
10	723	500	692	736	708	720	738	695	708	779	725	744
11	581	436	502	740	712	729	758	699	723	730	707	718
12	527	453	497	755	722	739	777	572	730	776	726	748
13	578	495	545	765	730	746	766	561	726	726	643	690
14	627	575	602	756	724	744	759	730	750	673	463	602
15	674	609	631	773	721	751	792	691	734	672	550	642
16	719	674	689	721	704	712	696	631	653	---	---	e645
17	733	712	724	747	715	736	707	651	669	---	---	e655
18	719	700	710	771	744	756	777	707	739	---	---	e690
19	739	701	719	891	737	761	788	758	774	---	---	e758
20	715	696	705	750	725	741	768	749	761	---	---	e725
21	724	702	713	752	725	739	832	765	796	---	---	e714
22	704	668	691	763	729	748	799	781	790	---	---	e720
23	702	671	680	775	736	756	850	780	809	---	---	e705
24	728	679	709	760	736	747	850	767	791	---	---	e763
25	682	661	673	776	739	759	801	760	779	---	---	e759
26	719	670	697	794	765	781	798	764	783	757	699	713
27	729	712	720	775	748	764	796	766	780	726	711	718
28	721	691	708	782	749	764	787	768	779	720	711	715
29	698	672	687	829	762	783	781	761	769	750	718	733
30	676	658	665	829	742	763	791	759	775	796	750	776
31	---	---	---	782	745	765	787	747	768	---	---	---
MONTH	776	436	666	891	622	732	850	561	756	---	---	725

e Estimated

TRINITY RIVER BASIN

08057410 TRINITY RIVER BELOW DALLAS, TX--Continued
(National Water-Quality Assessment Program)

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	7.3	7.1	7.2	7.3	7.2	7.3	7.3	7.2	7.2	7.6	7.5	7.6
2	7.3	7.2	7.3	7.4	7.2	7.3	7.3	7.1	7.2	7.5	7.4	7.5
3	7.4	7.2	7.3	7.4	7.2	7.3	7.3	7.0	7.1	7.5	7.3	7.4
4	7.4	7.3	7.3	7.4	7.2	7.3	7.3	7.0	7.1	7.5	7.2	7.3
5	7.4	7.3	7.3	7.3	7.1	7.2	7.1	7.0	7.0	7.9	7.2	7.5
6	7.4	7.3	7.4	7.3	7.1	7.2	7.1	7.0	7.0	7.8	7.0	7.4
7	7.5	7.2	7.3	7.3	7.2	7.2	7.2	7.0	7.1	7.3	7.0	7.1
8	7.5	7.2	7.4	7.3	7.2	7.2	7.2	6.8	6.9	7.7	7.3	7.5
9	7.3	7.1	7.2	7.3	7.2	7.2	7.0	6.8	7.0	7.6	7.5	7.5
10	7.3	7.1	7.2	7.3	7.2	7.2	7.0	6.9	7.0	7.5	7.4	7.5
11	7.2	7.0	7.1	7.4	7.2	7.3	7.1	7.0	7.0	7.7	7.5	7.6
12	7.3	7.0	7.2	7.4	7.2	7.4	7.0	6.9	7.0	8.2	7.5	7.9
13	7.4	7.2	7.3	7.5	7.4	7.4	7.0	6.9	6.9	7.9	7.8	7.8
14	7.3	7.2	7.3	7.5	7.4	7.5	7.1	6.9	7.0	7.9	7.7	7.8
15	7.3	7.1	7.2	7.5	7.4	7.5	7.1	6.9	7.0	7.9	7.8	7.8
16	7.2	7.1	7.1	7.5	7.3	7.4	7.0	6.9	6.9	7.9	7.8	7.8
17	7.3	7.1	7.1	7.5	7.3	7.4	7.0	6.9	6.9	8.0	7.8	7.9
18	7.3	7.1	7.2	7.5	7.3	7.3	7.0	6.9	6.9	8.0	7.9	8.0
19	7.3	7.1	7.2	7.5	7.3	7.3	7.0	6.8	6.9	8.1	8.0	8.0
20	7.4	7.2	7.2	7.4	7.3	7.3	7.8	6.8	7.0	8.1	8.0	8.0
21	7.3	7.2	7.2	7.5	7.3	7.4	7.7	7.3	7.5	8.0	7.9	7.9
22	7.3	7.2	7.2	7.5	7.3	7.4	7.4	6.9	7.2	8.0	7.9	7.9
23	7.8	7.2	7.5	7.5	7.3	7.4	7.3	6.8	7.1	8.0	7.9	8.0
24	7.8	7.5	7.6	7.5	7.3	7.4	7.6	7.2	7.4	8.0	7.9	8.0
25	7.5	7.4	7.5	7.5	7.3	7.3	7.6	7.5	7.5	8.1	8.0	8.1
26	7.5	7.4	7.4	7.5	7.3	7.4	7.8	7.6	7.7	8.1	8.0	8.0
27	7.4	7.2	7.4	7.5	7.4	7.4	7.7	7.6	7.6	8.0	7.9	7.9
28	7.3	7.2	7.2	7.7	7.4	7.5	7.8	7.6	7.7	8.0	7.9	7.9
29	7.3	7.2	7.2	7.4	7.3	7.3	7.9	7.7	7.8	7.9	7.9	7.9
30	7.4	7.2	7.3	7.4	7.2	7.3	7.8	7.5	7.7	7.9	7.8	7.9
31	7.4	7.2	7.3	---	---	---	7.6	7.5	7.6	7.9	7.8	7.9
MONTH	7.8	7.0	7.3	7.7	7.1	7.3	7.9	6.8	7.2	8.2	7.0	7.8
DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	7.8	7.7	7.8	7.5	7.4	7.5	7.6	7.2	7.4	6.9	6.7	6.8
2	7.8	7.7	7.7	7.5	7.4	7.5	7.7	7.2	7.5	7.0	6.8	6.8
3	7.7	7.6	7.7	7.4	7.4	7.4	7.7	7.1	7.5	6.9	6.7	6.8
4	7.8	7.7	7.7	7.5	7.4	7.4	7.6	7.2	7.4	7.2	6.7	6.9
5	7.7	7.7	7.7	7.5	7.4	7.5	7.9	7.2	7.5	7.3	6.8	7.0
6	7.8	7.7	7.7	7.5	7.4	7.5	7.9	7.2	7.4	7.1	6.9	7.0
7	7.7	7.6	7.7	8.1	7.4	7.4	7.6	6.6	7.1	7.0	6.8	6.9
8	7.7	7.5	7.6	7.5	7.4	7.5	7.1	6.7	6.9	7.1	6.9	6.9
9	7.7	7.5	7.6	7.5	7.2	7.4	7.3	7.0	7.1	6.9	6.7	6.8
10	7.6	7.5	7.5	7.6	7.5	7.6	7.3	7.1	7.2	6.9	6.7	6.8
11	7.6	7.5	7.5	7.7	7.6	7.7	7.3	7.1	7.3	7.0	6.9	6.9
12	7.7	7.5	7.6	7.7	7.6	7.7	7.3	7.0	7.2	7.1	7.0	7.0
13	7.6	7.5	7.6	7.7	7.6	7.6	7.2	7.0	7.1	7.1	7.0	7.1
14	7.6	7.5	7.5	7.6	7.6	7.6	7.1	6.8	7.0	7.1	7.0	7.0
15	7.5	7.4	7.5	7.8	7.5	7.7	7.0	6.8	6.9	7.2	7.0	7.1
16	7.5	7.4	7.4	---	---	---	7.1	6.7	6.9	7.3	7.1	7.1
17	7.6	7.4	7.5	---	---	---	7.1	6.9	7.0	7.4	7.1	7.2
18	7.6	7.5	7.5	---	---	---	7.9	7.0	7.4	7.4	7.1	7.2
19	7.6	7.5	7.5	---	---	---	8.0	7.7	7.8	7.5	7.1	7.3
20	7.6	7.5	7.5	---	---	---	7.8	7.3	7.5	7.3	7.2	7.3
21	7.5	7.4	7.5	---	---	---	7.4	7.3	7.4	7.2	7.1	7.2
22	7.9	7.2	7.5	---	---	---	7.4	7.3	7.4	7.2	7.1	7.1
23	7.3	7.1	7.2	---	---	---	7.4	6.6	7.0	7.3	7.1	7.2
24	7.2	7.1	7.2	---	---	---	6.7	6.6	6.7	7.3	7.2	7.2
25	7.2	7.1	7.1	---	---	---	6.8	6.7	6.7	7.2	7.1	7.1
26	7.7	7.0	7.4	---	---	---	6.8	6.7	6.8	7.1	6.9	7.0
27	8.0	7.6	7.8	---	---	---	7.0	6.7	6.8	7.1	6.8	7.0
28	8.0	7.4	7.6	7.6	7.2	7.5	7.0	6.9	6.9	6.9	6.7	6.8
29	---	---	---	7.6	7.4	7.5	6.9	6.8	6.9	6.8	6.7	6.8
30	---	---	---	7.6	7.2	7.5	6.9	6.8	6.8	6.9	6.7	6.8
31	---	---	---	7.6	7.2	7.5	---	---	---	7.1	6.8	6.9
MONTH	8.0	7.0	7.5	---	---	---	8.0	6.6	7.2	7.5	6.7	7.0

TRINITY RIVER BASIN

08057410 TRINITY RIVER BELOW DALLAS, TX--Continued
(National Water-Quality Assessment Program)

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	JUNE			JULY			AUGUST			SEPTEMBER		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	7.1	6.8	6.9	7.5	7.3	7.4	7.4	6.8	7.0	7.1	6.9	7.0
2	7.3	6.9	7.1	7.5	7.3	7.4	7.7	7.1	7.3	7.4	6.9	7.0
3	7.2	7.0	7.1	7.5	7.3	7.4	7.5	7.1	7.2	6.9	6.8	6.9
4	7.2	6.9	7.0	7.6	7.4	7.5	7.4	7.0	7.2	6.8	6.7	6.8
5	7.2	7.0	7.1	7.6	7.3	7.4	7.3	7.2	7.2	7.0	6.8	6.9
6	7.2	7.1	7.1	7.5	7.3	7.4	7.3	7.2	7.2	7.0	6.8	6.9
7	7.2	7.1	7.1	7.4	7.3	7.4	7.4	7.2	7.3	6.9	6.6	6.8
8	7.4	7.1	7.2	7.5	7.3	7.4	7.5	7.3	7.4	---	---	---
9	7.4	7.2	7.3	7.6	7.3	7.4	7.4	7.2	7.3	---	---	---
10	7.3	7.1	7.2	7.4	7.3	7.4	7.4	7.2	7.3	---	---	---
11	7.4	7.1	7.3	7.5	7.3	7.4	7.4	7.2	7.3	---	---	---
12	7.3	7.2	7.3	7.5	7.3	7.3	7.4	7.2	7.2	---	---	---
13	7.3	7.2	7.2	7.5	7.3	7.4	7.6	7.2	7.3	---	---	---
14	7.6	7.2	7.5	7.5	7.3	7.4	7.5	7.3	7.4	---	---	---
15	7.7	7.5	7.6	7.5	7.4	7.5	7.6	7.5	7.5	---	---	---
16	7.7	7.4	7.6	7.5	7.3	7.4	7.6	7.4	7.5	---	---	---
17	7.6	7.4	7.5	7.5	7.3	7.4	7.6	7.4	7.5	---	---	---
18	7.5	7.3	7.4	7.6	7.3	7.4	7.7	7.4	7.6	---	---	---
19	7.6	7.3	7.4	7.7	7.3	7.5	7.7	7.5	7.6	---	---	---
20	7.6	7.3	7.5	7.7	7.3	7.5	7.8	7.5	7.6	---	---	---
21	7.7	7.4	7.5	---	---	---	8.5	7.6	7.8	---	---	---
22	7.6	7.4	7.5	7.7	7.3	7.4	7.9	7.6	7.6	---	---	---
23	7.6	7.4	7.5	7.7	7.4	7.5	8.3	7.4	7.8	---	---	---
24	7.6	7.4	7.5	7.6	7.3	7.4	8.2	7.5	7.6	---	---	---
25	7.5	7.4	7.5	7.7	7.3	7.4	7.7	7.5	7.6	---	---	---
26	7.5	7.4	7.4	7.5	7.0	7.3	7.5	7.4	7.4	7.6	7.0	7.2
27	7.7	7.4	7.6	7.1	6.9	7.0	7.5	7.3	7.4	7.3	7.0	7.1
28	7.8	7.4	7.5	7.3	6.9	7.1	7.3	7.1	7.2	7.2	7.0	7.1
29	7.6	7.4	7.5	7.9	6.9	7.1	7.3	7.0	7.1	7.2	7.0	7.1
30	7.6	7.4	7.5	7.9	6.9	7.0	7.2	6.9	7.1	7.2	7.0	7.1
31	---	---	---	7.1	6.9	7.0	7.2	6.9	7.1	---	---	---
MONTH	7.8	6.8	7.3	---	---	---	8.5	6.8	7.4	---	---	---

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	28.1	26.8	27.4	22.4	21.3	21.8	16.6	16.0	16.4	10.6	9.8	10.2
2	28.3	26.8	27.5	21.5	19.9	20.5	16.7	15.7	16.4	12.6	10.6	11.8
3	28.2	26.7	27.5	20.3	18.8	19.5	15.7	13.6	14.5	15.5	12.1	13.8
4	27.7	26.3	27.1	20.2	18.6	19.4	13.8	12.6	13.3	16.5	15.2	15.9
5	27.5	26.2	26.9	21.3	19.9	20.6	14.2	13.4	13.7	16.3	14.6	15.0
6	27.6	26.6	27.1	20.9	19.4	19.9	14.4	13.3	13.7	14.6	14.3	14.5
7	27.4	26.2	27.0	19.5	18.3	19.0	14.4	10.9	13.6	14.3	12.1	13.3
8	26.2	25.4	25.8	19.3	18.0	18.7	11.2	10.1	10.5	12.1	10.2	10.9
9	25.7	25.2	25.5	19.3	18.4	18.8	12.3	10.7	11.4	10.5	10.0	10.2
10	25.9	25.3	25.6	19.0	17.7	18.2	12.7	11.8	12.3	11.1	10.5	10.8
11	26.1	25.8	25.9	17.7	16.4	17.1	12.4	12.0	12.2	11.0	8.9	10.1
12	25.8	24.7	25.3	17.5	15.3	16.3	12.2	11.7	12.0	10.3	8.9	9.7
13	24.7	13.2	20.5	15.4	14.4	14.8	12.7	11.2	11.9	10.3	9.7	10.0
14	22.3	21.2	21.7	14.7	14.3	14.5	13.3	11.4	12.3	9.8	9.4	9.6
15	22.7	21.1	21.9	14.7	13.4	14.1	14.0	12.0	13.0	9.4	9.0	9.2
16	23.4	21.6	22.5	15.0	13.5	14.2	14.7	12.9	13.8	9.8	9.1	9.4
17	23.6	22.1	22.9	15.1	13.5	14.3	14.8	13.2	14.1	10.0	9.3	9.7
18	23.4	21.9	22.8	15.7	14.4	15.1	14.9	13.5	14.3	10.3	9.7	10.0
19	23.6	21.8	22.8	16.6	14.7	15.7	15.7	13.7	14.7	10.2	9.7	9.9
20	24.3	22.4	23.4	17.0	16.0	16.4	15.8	12.3	14.7	10.6	9.6	10.0
21	24.3	22.1	23.1	17.6	16.8	17.2	12.3	10.5	11.2	11.4	10.6	10.9
22	22.1	21.1	21.5	17.7	16.7	17.2	10.5	10.0	10.3	11.3	10.8	11.1
23	21.5	16.7	19.3	17.9	16.3	17.2	10.5	9.9	10.2	11.0	10.1	10.5
24	18.4	17.4	17.8	17.8	16.7	17.3	10.1	9.6	9.8	10.3	9.4	9.9
25	19.9	18.4	19.1	18.7	17.3	17.9	10.3	9.4	9.8	10.1	9.6	9.8
26	19.6	18.0	18.6	20.1	18.7	19.2	10.3	9.7	10.0	10.4	10.0	10.1
27	18.8	17.2	18.0	20.0	18.8	19.3	10.4	9.4	9.9	10.5	9.9	10.3
28	19.2	17.8	18.5	19.3	16.9	18.7	10.4	9.1	9.4	10.8	9.9	10.4
29	20.2	18.4	19.3	16.9	15.7	16.2	9.3	8.4	9.0	11.0	10.3	10.7
30	21.5	19.9	20.5	16.4	15.7	16.0	10.7	8.8	9.5	11.1	10.4	10.8
31	22.6	21.3	21.9	---	---	---	11.4	9.8	10.3	11.9	10.9	11.3
MONTH	28.3	13.2	23.1	22.4	13.4	17.5	16.7	8.4	12.2	16.5	8.9	11.0

TRINITY RIVER BASIN

08057410 TRINITY RIVER BELOW DALLAS, TX--Continued
(National Water-Quality Assessment Program)

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	13.4	11.9	12.8	12.9	12.2	12.5	17.7	16.7	17.2	23.9	21.4	22.6
2	13.5	12.9	13.2	12.5	11.8	12.1	17.8	16.7	17.3	24.8	22.5	23.6
3	13.4	12.3	12.9	12.2	11.5	11.9	17.5	16.7	17.2	25.0	23.3	24.2
4	13.2	12.2	12.8	13.0	11.8	12.3	17.2	16.2	16.7	25.0	23.1	24.1
5	12.7	12.1	12.4	13.9	13.0	13.4	17.0	16.1	16.6	25.1	23.7	24.4
6	12.3	11.3	11.9	13.8	12.9	13.4	16.9	16.2	16.6	26.6	24.3	25.3
7	12.7	11.8	12.3	12.9	12.3	12.7	17.6	16.1	17.0	27.5	25.4	26.4
8	13.5	12.2	12.7	12.6	11.3	12.0	18.0	17.1	17.5	26.9	25.5	26.3
9	14.4	12.8	13.4	11.3	10.5	10.8	17.9	17.1	17.5	25.8	24.2	24.8
10	14.6	14.1	14.4	10.6	9.7	10.2	18.3	17.3	17.7	24.7	23.1	24.0
11	14.5	13.1	13.8	10.7	9.8	10.3	18.6	17.7	18.1	25.7	24.3	24.9
12	14.4	13.9	14.1	10.6	9.8	10.3	18.2	17.7	17.9	26.2	24.7	25.4
13	14.7	13.3	14.0	10.5	10.2	10.3	18.7	17.5	18.0	26.0	25.1	25.6
14	14.9	13.8	14.3	10.7	10.3	10.5	19.7	18.3	18.9	25.9	25.0	25.5
15	15.3	14.7	14.9	12.0	10.7	11.4	20.4	19.1	19.7	26.7	25.2	25.9
16	15.0	14.4	14.8	13.8	11.9	13.0	20.4	19.6	20.0	27.0	24.9	25.9
17	14.6	13.7	14.2	13.7	12.9	13.2	20.0	18.6	19.1	27.1	25.7	26.4
18	14.8	13.4	14.1	13.8	12.5	13.1	---	---	---	27.5	25.9	26.7
19	14.7	13.4	14.1	13.8	12.7	13.4	---	---	---	27.4	26.0	26.7
20	14.5	12.9	13.6	12.7	11.9	12.3	---	---	---	27.3	25.9	26.6
21	14.6	13.8	14.4	12.3	11.2	11.8	19.7	18.7	19.2	27.8	26.2	27.0
22	13.8	11.4	12.1	12.7	11.5	12.1	19.9	18.7	19.3	27.5	26.4	27.0
23	12.9	11.2	11.8	13.4	12.0	12.7	20.7	18.9	19.8	27.2	26.0	26.6
24	13.4	12.3	12.8	14.4	12.9	13.6	21.7	19.8	20.7	26.8	26.0	26.3
25	13.8	12.9	13.3	15.3	13.9	14.6	22.3	21.0	21.6	26.8	25.7	26.1
26	14.9	13.7	14.3	16.2	14.4	15.2	22.2	21.7	21.9	27.9	26.0	26.8
27	14.3	13.4	13.8	16.6	15.9	16.2	21.7	20.9	21.3	27.6	23.8	25.7
28	13.6	12.8	13.1	17.1	15.8	16.4	21.0	20.2	20.6	27.1	25.2	25.9
29	---	---	---	17.5	16.6	17.0	21.1	19.6	20.3	28.8	26.9	27.6
30	---	---	---	17.8	17.1	17.4	22.5	20.0	21.2	29.8	27.8	28.7
31	---	---	---	17.8	17.0	17.4	---	---	---	29.7	28.5	29.1
MONTH	15.3	11.2	13.4	17.8	9.7	13.0	---	---	---	29.8	21.4	25.9
DAY	JUNE			JULY			AUGUST			SEPTEMBER		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	30.3	28.4	29.4	31.9	29.5	30.7	31.4	29.3	30.4	31.2	29.7	30.5
2	29.9	27.9	29.0	31.8	30.0	30.8	31.8	29.6	30.7	31.4	29.6	30.5
3	29.7	27.9	28.8	31.3	29.6	30.5	32.0	30.1	31.0	31.5	29.8	30.7
4	29.6	28.2	28.9	30.6	29.4	30.0	31.3	30.1	30.6	31.7	30.0	30.8
5	28.9	26.3	27.7	30.1	28.9	29.5	30.3	29.4	29.8	31.2	29.9	30.7
6	26.3	24.7	25.5	31.1	29.2	30.1	29.6	28.8	29.1	31.1	29.5	30.4
7	26.1	25.1	25.6	31.3	29.5	30.4	30.2	28.2	29.1	31.2	29.3	30.3
8	26.4	25.1	25.7	31.6	29.7	30.7	30.6	28.8	29.6	31.1	29.5	30.4
9	28.0	25.9	26.8	32.0	30.1	31.0	31.2	29.2	30.2	30.7	29.4	30.1
10	27.9	26.6	27.5	32.0	30.2	31.1	31.3	29.4	30.3	29.8	28.0	28.6
11	27.1	26.2	26.6	32.0	30.1	31.1	31.3	29.6	30.5	28.5	27.0	27.7
12	28.3	26.4	27.2	32.0	30.1	31.1	31.6	29.7	30.6	27.0	26.2	26.5
13	29.5	28.2	28.8	32.4	30.4	31.4	31.1	29.1	30.2	26.9	26.3	26.5
14	30.1	28.6	29.3	32.5	30.8	31.7	30.6	29.8	30.2	27.5	26.5	26.8
15	30.0	28.3	29.1	32.4	30.7	31.6	30.8	29.3	30.1	28.5	27.5	28.0
16	29.8	27.7	28.8	32.5	30.8	31.7	31.2	29.4	30.3	---	---	---
17	29.4	28.2	28.8	32.1	30.9	31.5	31.3	29.8	30.6	---	---	---
18	29.6	28.0	28.8	32.3	30.1	31.2	30.9	29.9	30.4	---	---	---
19	30.6	28.4	29.4	32.2	30.6	31.4	31.4	30.0	30.6	---	---	---
20	30.7	28.9	29.8	32.2	30.3	31.3	31.6	30.1	30.8	---	---	---
21	30.7	28.6	29.6	32.1	30.3	31.2	31.2	29.9	30.6	---	---	---
22	31.0	28.8	29.8	32.1	30.3	31.3	31.0	29.8	30.4	---	---	---
23	31.0	29.0	30.0	32.2	30.3	31.3	31.0	29.7	30.4	---	---	---
24	30.8	28.9	29.8	32.2	30.2	31.2	31.5	30.0	30.8	---	---	---
25	30.8	28.9	29.8	32.3	30.1	31.3	31.8	30.1	31.0	---	---	---
26	31.2	29.1	30.1	32.2	30.2	31.3	31.9	30.3	31.2	29.3	28.5	28.9
27	31.7	29.6	30.6	32.0	30.1	31.1	32.0	30.4	31.2	29.8	28.4	29.1
28	32.0	29.7	30.8	31.8	29.9	30.9	32.0	30.3	31.2	30.3	28.7	29.5
29	31.4	29.7	30.6	31.7	29.9	30.9	31.9	30.5	31.2	30.4	28.7	29.6
30	31.4	29.5	30.5	31.4	29.7	30.6	31.3	30.0	30.7	30.3	28.8	29.6
31	---	---	---	31.1	29.3	30.2	31.3	29.9	30.6	---	---	---
MONTH	32.0	24.7	28.8	32.5	28.9	31.0	32.0	28.2	30.5	---	---	---

TRINITY RIVER BASIN

08057410 TRINITY RIVER BELOW DALLAS, TX--Continued
(National Water-Quality Assessment Program)

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	5.6	5.1	5.3	4.5	3.0	3.9	9.9	9.6	9.8
2	---	---	---	6.3	5.4	5.8	---	---	---	9.7	8.9	9.1
3	---	---	---	---	---	---	---	---	---	9.3	8.1	8.6
4	6.4	5.3	5.8	---	---	---	---	---	---	8.2	7.1	7.8
5	6.4	5.5	5.9	---	---	---	6.9	6.5	6.7	8.8	7.8	8.4
6	6.2	5.4	5.8	7.9	7.2	7.5	7.5	6.9	7.2	8.3	7.8	8.0
7	6.0	4.0	5.4	8.0	7.3	7.6	8.8	7.1	7.5	9.9	8.0	8.9
8	5.0	4.0	4.5	8.1	7.4	7.7	9.5	8.5	8.9	9.7	9.2	9.5
9	4.9	4.4	4.7	7.6	7.1	7.4	9.7	8.5	8.8	9.2	9.1	9.2
10	5.0	4.5	4.8	7.2	6.7	7.0	8.5	8.2	8.3	9.6	9.1	9.3
11	4.8	4.6	4.7	7.6	7.0	7.3	8.4	8.2	8.3	10.8	9.6	10.2
12	4.9	4.4	4.7	7.6	7.1	7.4	8.3	8.1	8.2	10.9	10.4	10.6
13	10.4	4.8	6.2	7.8	7.5	7.7	8.4	8.1	8.2	10.5	10.1	10.3
14	5.3	5.0	5.1	7.7	7.5	7.6	8.5	8.2	8.3	11.0	10.4	10.6
15	5.6	5.2	5.4	7.7	7.1	7.5	8.3	8.0	8.2	11.3	11.0	11.1
16	5.8	5.5	5.6	8.0	7.5	7.7	8.0	7.8	7.9	11.0	10.7	10.8
17	5.9	5.6	5.7	7.9	7.6	7.7	7.9	7.6	7.7	10.9	10.7	10.8
18	5.9	5.6	5.7	7.8	7.5	7.7	7.7	7.5	7.6	10.9	10.8	10.9
19	6.0	5.5	5.7	7.9	7.3	7.6	7.7	7.3	7.5	11.1	10.8	11.0
20	5.9	5.4	5.6	7.5	7.2	7.4	9.8	5.0	7.1	11.1	10.6	10.8
21	5.6	5.2	5.5	7.5	6.9	7.2	9.8	8.6	9.1	10.6	9.9	10.3
22	5.6	5.0	5.3	7.5	6.8	7.1	9.1	8.8	9.0	10.5	10.2	10.4
23	6.2	5.4	5.7	7.7	6.8	7.1	9.6	8.7	9.3	10.9	10.4	10.6
24	6.0	5.3	5.5	7.5	6.6	6.9	---	---	---	11.3	10.8	11.1
25	5.3	4.8	5.0	6.7	5.9	6.4	---	---	---	11.3	11.1	11.2
26	5.8	5.2	5.4	6.0	5.3	5.7	---	---	---	11.2	11.1	11.1
27	6.0	5.6	5.8	5.7	5.1	5.4	---	---	---	11.2	11.0	11.1
28	5.8	5.5	5.6	5.3	1.8	4.0	---	---	---	11.2	11.1	11.1
29	5.8	5.5	5.6	4.3	3.2	3.9	---	---	---	11.2	11.0	11.1
30	5.6	5.3	5.5	4.7	3.2	4.1	9.9	9.2	9.5	11.2	11.0	11.1
31	5.4	5.0	5.2	---	---	---	9.9	9.1	9.7	11.1	10.4	10.8
MONTH	---	---	---	---	---	---	---	---	---	11.3	7.1	10.2
DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	10.4	9.9	10.1	10.0	9.4	9.7	9.3	8.7	9.0	7.5	6.4	6.8
2	10.0	9.7	9.8	10.2	9.9	10.0	9.3	8.9	9.1	---	---	---
3	10.0	9.4	9.7	10.4	10.2	10.3	9.0	6.6	8.0	---	---	---
4	10.3	10.0	10.1	10.3	10.0	10.2	7.8	6.5	7.2	---	---	---
5	10.3	10.0	10.1	10.0	9.7	9.9	8.2	6.9	7.7	---	---	---
6	10.3	9.9	10.1	9.8	9.6	9.6	8.8	7.7	8.4	---	---	---
7	10.0	9.7	9.8	9.8	9.6	9.7	9.5	8.6	9.0	---	---	---
8	9.8	9.4	9.7	9.8	9.6	9.7	9.0	8.6	8.8	---	---	---
9	9.6	9.0	9.4	10.9	9.8	10.3	8.9	8.7	8.8	---	---	---
10	9.0	8.1	8.7	11.2	10.7	10.8	9.0	8.8	8.8	---	---	---
11	9.1	8.6	8.9	11.0	10.7	10.9	8.9	8.7	8.8	---	---	---
12	9.2	8.7	9.0	11.1	10.7	10.9	8.7	8.5	8.6	---	---	---
13	9.0	8.3	8.7	11.2	10.5	10.7	8.5	8.2	8.4	---	---	---
14	9.2	8.5	9.0	10.7	10.5	10.6	---	---	---	---	---	---
15	8.6	8.2	8.5	10.5	9.9	10.1	---	---	---	---	---	---
16	8.3	7.9	8.2	10.0	8.1	9.2	---	---	---	---	---	---
17	8.5	7.7	8.1	8.2	7.9	8.0	---	---	---	---	---	---
18	9.0	8.3	8.6	8.3	8.0	8.1	---	---	---	---	---	---
19	8.6	8.1	8.3	8.1	7.9	8.0	8.9	7.0	7.8	8.2	6.5	7.3
20	8.8	8.4	8.6	9.1	7.0	8.5	9.3	7.4	8.5	7.9	6.4	7.1
21	8.6	8.5	8.5	9.5	9.1	9.4	7.4	6.8	7.1	---	---	---
22	9.6	8.3	9.1	9.8	9.1	9.5	7.2	6.7	6.9	---	---	---
23	9.5	9.3	9.4	9.6	9.2	9.4	8.2	6.8	7.7	---	---	---
24	10.0	9.5	9.8	9.6	8.9	9.2	8.0	7.4	7.7	---	---	---
25	9.9	9.7	9.8	9.3	8.7	8.9	7.4	7.0	7.2	---	---	---
26	9.7	8.1	8.7	10.2	8.7	9.2	7.3	6.8	7.0	---	---	---
27	8.6	8.0	8.3	9.9	9.5	9.7	6.9	5.6	6.5	---	---	---
28	9.4	8.6	9.0	9.7	9.3	9.5	6.8	6.4	6.6	---	---	---
29	---	---	---	9.5	9.2	9.3	7.4	6.6	6.9	---	---	---
30	---	---	---	9.2	9.0	9.1	7.3	6.6	6.9	---	---	---
31	---	---	---	9.1	8.5	8.9	---	---	---	---	---	---
MONTH	10.4	7.7	9.1	11.2	7.0	9.6	---	---	---	---	---	---

TRINITY RIVER BASIN

08057445 PRAIRIE CREEK AT U.S. HIGHWAY 175, DALLAS, TX

LOCATION.--Lat 32°42'17", long 96°40'11", Dallas County, Hydrologic Unit 12030105, on left bank at downstream side of the downstream access road bridge on U.S. Highway 175, 3.4 mi upstream from mouth, and 9.0 mi southeast of Dallas City Hall.

DRAINAGE AREA.--9.03 mi².

PERIOD OF RECORD.--Oct 1975 to Sep 1980, Apr 1984 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 390.00 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions. Several observations of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 20	2315	1,410	20.33	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	1.8	.08	.12	.66	2.6	3.1	.56	.18	.00	.00	.00
2	.01	2.6	23	.32	.62	2.2	1.8	.53	.13	.00	.00	.00
3	.01	2.9	26	1.7	.44	3.2	1.3	6.3	.10	.00	.00	.00
4	.00	3.1	1.1	3.8	.41	2.9	1.2	1.4	.10	.00	.00	.00
5	.00	3.3	.13	9.8	.36	2.4	1.5	.70	.11	.01	.00	.00
6	.01	3.6	.00	166	.33	2.0	1.2	.50	.12	.01	.00	.00
7	.04	3.9	26	111	.40	8.3	1.2	.41	.17	.01	.00	.00
8	.11	4.3	17	27	.55	8.1	1.4	.36	.17	.00	.00	.00
9	.07	4.9	1.2	8.5	.51	2.9	1.1	.44	.17	.01	.00	.00
10	.04	5.0	.19	3.6	14	1.7	1.0	.50	.48	.01	.00	.00
11	.03	5.5	.03	54	6.2	1.5	.90	.53	8.1	.01	.00	.00
12	2.8	19	.00	26	2.0	1.3	.88	.48	1.7	.01	.15	.00
13	42	12	.00	5.9	6.0	1.4	.94	.39	.27	.01	.01	.41
14	1.9	5.7	.00	4.1	3.7	13	.84	.41	.06	.01	.00	5.1
15	.95	4.0	.00	3.5	1.6	63	.82	.40	.00	.01	.00	12
16	.84	3.9	.00	1.9	1.6	169	.70	.32	.00	.01	.04	175
17	.93	3.9	.00	1.4	6.3	29	6.9	.35	.00	.01	.44	3.3
18	.43	4.5	.00	1.0	4.2	8.2	.97	.35	.00	.02	.05	.16
19	.09	5.2	.00	.98	10	60	.55	.31	.00	.02	.00	.07
20	.03	6.1	453	.74	4.2	7.7	2.0	.27	.00	.02	.00	.07
21	.11	6.7	177	.80	3.9	4.4	23	.24	.00	.01	.00	.09
22	.24	7.1	4.1	3.4	33	3.3	1.7	.21	.00	.01	.00	.09
23	132	7.2	55	1.9	5.5	2.8	.84	.25	.00	.01	.00	.08
24	8.7	7.5	19	.75	3.3	2.5	.68	.20	.00	.00	.00	.23
25	1.4	8.9	2.9	.62	5.2	2.3	.65	.20	.00	.00	.00	.23
26	.42	11	5.6	.63	145	2.0	1.5	.19	.01	.00	.00	.22
27	.28	11	3.6	.55	8.0	3.8	11	35	.01	.00	.00	.21
28	.13	122	.79	.52	4.1	4.0	1.7	3.4	.01	.00	.00	.21
29	.10	4.6	.34	.51	---	2.0	.84	.86	.00	.00	.00	.21
30	.26	.91	.30	.54	---	2.0	.63	.34	.00	.00	.00	.19
31	1.4	---	.24	.56	---	17	---	.24	---	.00	.00	---
MEAN	6.30	9.74	26.3	14.3	9.72	14.1	2.43	1.83	.40	.007	.022	6.60
MAX	132	122	453	166	145	169	23	35	8.1	.02	.44	175
MIN	.00	.91	.00	.12	.33	1.3	.55	.19	.00	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 1998h, BY WATER YEAR (WY)

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
MEAN	12.3	8.49	10.6	6.75	12.2	10.9	12.7	16.8	7.66	3.36	1.81	3.22			
MAX	46.3	43.1	37.2	19.8	41.6	26.6	42.2	72.4	35.5	24.9	11.0	8.30			
(WY)	1995	1995	1992	1990	1997	1977	1990	1989	1989	1994	1996	1980			
MIN	.000	.33	.42	.12	.34	1.28	.66	.64	.32	.000	.000	.005			
(WY)	1976	1990	1978	1976	1976	1996	1978	1977	1978	1980	1980	1984			

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1976 - 1998h

ANNUAL MEAN	12.4	7.66	9.04
HIGHEST ANNUAL MEAN			17.4
LOWEST ANNUAL MEAN			1.61
HIGHEST DAILY MEAN	511	Apr 4	1150
LOWEST DAILY MEAN	.00	Sep 19	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Dec 12	.00
INSTANTANEOUS PEAK FLOW			5660
INSTANTANEOUS PEAK STAGE			29.21
10 PERCENT EXCEEDS	19	9.3	11
50 PERCENT EXCEEDS	2.2	.51	.90
90 PERCENT EXCEEDS	.03	.00	.01

h See PERIOD OF RECORD paragraph.

08058900 EAST FORK TRINITY RIVER AT MCKINNEY, TX

LOCATION.--Lat 33°14'38", long 96°36'31", Collin County, Hydrologic Unit 12030106, at downstream side of highway embankment near left end of main channel bridge on State Highways 5 and 121, 750 ft downstream from Honey Creek, 1.2 mi upstream from Southern Pacific Railway Co. bridge, 1.7 mi upstream from Clemons Creek, 3.3 mi north of McKinney, 26.1 mi upstream from Lavon Dam, and 86.5 mi upstream from mouth.

DRAINAGE AREA.--164 mi².

PERIOD OF RECORD.--Oct 1975 to current year.

Water-quality records.--Chemical and biochemical analyses: Oct 1980 to Sep 1982, Oct 1985 to Jul 1987, Apr 1993 to Sep 1995.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 528.74 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in Oct 1975, at least 10% of contributing drainage area has been regulated by 49 floodwater-retarding structures with a combined detention capacity of 26,000 acre-ft. Several observations of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1913, about 28 ft in Apr 1942 (discharge not determined), from information by Texas Department of Transportation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	11	15	237	162	492	138	34	9.2	.01	.00	.00
2	.03	9.6	15	184	146	343	101	31	7.8	.01	.00	.00
3	.02	8.5	53	164	127	267	79	28	6.6	.00	.00	.00
4	.01	7.6	42	704	111	229	62	25	7.5	.01	.00	.00
5	.01	7.2	26	6900	106	198	58	24	19	.02	.00	.00
6	.01	6.6	21	2050	109	167	56	23	14	.01	.00	.00
7	.01	6.2	41	2100	96	312	52	22	9.7	.01	.00	.00
8	.28	6.5	251	3390	90	643	48	21	8.6	.00	.00	.00
9	6.6	6.5	83	1340	87	425	44	30	7.9	.00	.00	.00
10	21	7.0	42	1010	87	239	42	25	8.9	.00	.00	.00
11	14	7.4	34	814	83	177	40	22	19	.00	.00	.00
12	12	8.9	30	757	75	143	39	21	25	.00	.00	.00
13	72	12	27	589	85	129	38	20	14	.00	.00	.00
14	33	14	25	475	83	153	36	19	9.1	.00	.00	.00
15	22	12	23	425	76	1120	35	19	6.4	.00	.00	.00
16	17	11	21	383	77	4250	35	17	4.4	.00	.00	.19
17	13	10	20	319	130	3400	34	17	3.2	.00	.00	.00
18	11	10	19	263	124	1160	33	16	2.2	.00	.00	.00
19	10	10	19	222	132	911	32	15	1.7	.00	.00	.00
20	9.1	10	360	203	119	657	33	14	1.1	.00	.00	.00
21	8.3	10	4240	186	106	474	46	13	.60	.00	.00	.00
22	8.6	10	1470	197	1210	383	39	13	.42	.00	.00	.00
23	31	9.8	1840	176	597	332	35	12	.31	.00	.00	.00
24	80	9.6	3980	153	380	281	33	12	.19	.00	.00	.00
25	34	9.4	1030	142	311	222	29	12	.15	.00	.00	.00
26	22	9.3	754	458	4190	184	30	12	.11	.00	.00	.00
27	17	9.3	612	379	1040	174	179	16	.07	.00	.00	.00
28	14	12	506	245	687	159	61	17	.04	.00	.00	.00
29	12	19	392	192	---	134	42	15	.02	.00	.00	.00
30	12	17	337	161	---	134	37	13	.01	.00	.00	.00
31	11	---	285	148	---	244	---	11	---	.00	.00	---
TOTAL	490.98	297.4	16613	24966	10626	18136	1566	589	187.22	0.07	0.00	0.19
MEAN	15.8	9.91	536	805	380	585	52.2	19.0	6.24	.002	.000	.006
MAX	80	19	4240	6900	4190	4250	179	34	25	.02	.00	.19
MIN	.01	6.2	15	142	75	129	29	11	.01	.00	.00	.00
AC-FT	974	590	32950	49520	21080	35970	3110	1170	371	.1	.00	.4

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 1998, BY WATER YEAR (WY)

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
MEAN	94.5	145	150	101	196	230	152	272	137	23.5	3.74	7.79	
MAX	1022	1120	1160	805	926	644	804	1704	737	213	19.0	64.0	
(WY)	1982	1995	1992	1998	1997	1995	1990	1982	1989	1994	1990	1994	
MIN	.000	.000	.000	.000	1.37	2.30	4.08	2.52	.81	.000	.000	.000	
(WY)	1978	1978	1978	1978	1976	1976	1980	1996	1996	1984	1980	1977	

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1976 - 1998

ANNUAL TOTAL	74882.36	73471.86		
ANNUAL MEAN	205	201	126	
HIGHEST ANNUAL MEAN			373	1982
LOWEST ANNUAL MEAN			4.65	1980
HIGHEST DAILY MEAN	4900	Feb 20	6900	Jan 5
LOWEST DAILY MEAN	.00	Sep 10	.00	Jul 3
ANNUAL SEVEN-DAY MINIMUM	.00	Sep 18	.00	Jul 8
INSTANTANEOUS PEAK FLOW			13200	Jan 5
INSTANTANEOUS PEAK STAGE			20.24	Jan 5
ANNUAL RUNOFF (AC-FT)	148500	145700	91110	
10 PERCENT EXCEEDS	532	405	251	
50 PERCENT EXCEEDS	31	16	14	
90 PERCENT EXCEEDS	.01	.00	.00	

TRINITY RIVER BASIN

08059300 PILOT GROVE CREEK NEAR BLUE RIDGE, TX

LOCATION.--Lat 33°15'13", long 96°24'44", Collin County, Hydrologic Unit 12030106, on county road bridge, over center of channel at downstream side of bridge, 3.1 mi downstream from Desert Creek, and 3.2 mi south of Blue Ridge.

DRAINAGE AREA.--80.2 mi².

PERIOD OF RECORD.--Chemical and biochemical analyses: Nov 1985 to Jun 1987, Oct 1995 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CAC03) (00900)
DEC 17...	1515	10	528	8.1	7.5	12	5.9	10.6	90	.4	240
FEB 20...	1445	58	528	8.1	11.5	18	4.3	11.4	106	.6	260
APR 16...	1715	22	522	7.9	20.0	12	12	7.2	81	.4	260
MAY 05...	1145	14	524	7.9	18.5	13	26	7.0	77	.4	260

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CAC03 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
DEC 17...	2	92	2.6	15	.4	2.6	240	25	7.9	.36	9.0
FEB 20...	14	98	2.5	13	.3	1.5	240	23	6.7	.28	5.1
APR 16...	16	99	2.7	14	.4	1.4	240	21	7.4	.33	7.0
MAY 05...	8	97	2.5	13	.4	--	250	18	6.6	.38	7.6

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDE (MG/L) (00530)	RESIDUE VOLA-TILE, SUS-PENDE (MG/L) (00535)	RESIDUE FIXED NON FILTER-ABLE (MG/L) (00540)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)
DEC 17...	300	11	6	5	.651	.013	.664	<.020	--	.20	.019
FEB 20...	297	1	7	.00	--	<.010	.123	<.020	--	.15	<.010
APR 16...	297	21	6	15	--	<.010	.136	.039	.12	.16	.021
MAY 05...	--	39	7	32	--	<.010	.320	.063	.16	.22	<.010

DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
DEC 17...	.024	.07	3.4	--	--	--	--	--	--	--	--
FEB 20...	.019	.06	5.4	<1	67	<1.0	<8.0	<14	<12	<10	16
APR 16...	.013	.04	4.2	--	--	--	--	--	--	--	--
MAY 05...	.012	.04	4.1	1	80	<1.0	<8.0	<14	<12	<10	<10

TRINITY RIVER BASIN

08059300 PILOT GROVE CREEK NEAR BLUE RIDGE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	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)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
DEC 17...	--	--	--	--	--	--	--	--	--	--	--
FEB 20...	<100	8	28	<.1	<60	<40	<1	<4.0	1190	<10	<20
APR 16...	--	--	--	--	--	--	--	--	--	--	--
MAY 05...	<100	7	9.6	<.1	<60	<40	<1	<4.0	1220	<10	<20

TRINITY RIVER BASIN

08059400 SISTER GROVE CREEK NEAR BLUE RIDGE, TX

LOCATION.--Lat 33°17'40", long 96°28'58", Collin County, Hydrologic Unit 12030106, on left bank at upstream side of highway embankment of bridge on Farm Road 545, 3.5 mi upstream from Hatler Branch, 4.8 mi west of Blue Ridge, 7.4 mi upstream from Stiff Creek, 14.7 mi upstream from mouth, and 24.7 mi upstream from Lavon Dam.

DRAINAGE AREA.--83.1 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jul 1975 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 526.29 ft above sea level. Prior to Jun 29, 1988, at datum 10.00 ft higher at same site. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since installation of gage in Jul 1975, at least 10% of contributing drainage area has been affected at times by discharge from the flood-detention pools of 34 floodwater-retarding structures with a combined detention capacity of 12,710 acre-ft. These structures control runoff from 47.4 mi². Discharge may contain flow released from Lake Texoma and placed into channel 40 miles upstream from site. Several observations of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 30.7 ft, present datum, probably occurred in Jul 1913, from information by the Texas Department of Transportation. The probable date is from published records for discontinued station 08059500, located 9.7 mi downstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	5.4	11	126	83	280	73	28	6.4	.67	11	e46
2	.00	5.2	10	120	79	211	65	26	6.4	.47	72	21
3	.00	4.7	74	112	73	139	60	24	6.3	.11	74	23
4	.00	3.9	144	192	67	102	54	22	6.6	.09	31	19
5	.00	4.0	150	307	65	94	53	21	11	.06	23	38
6	.00	3.8	144	302	66	84	52	20	8.8	.03	24	73
7	.00	3.2	178	292	58	87	51	19	6.1	.02	24	75
8	.00	3.7	292	279	54	125	47	18	5.8	.09	44	74
9	17	4.3	221	279	52	107	45	22	5.6	.07	76	31
10	29	4.4	169	279	54	86	43	20	6.3	.03	76	20
11	4.1	5.0	134	283	51	79	42	17	9.6	.00	32	22
12	1.1	4.9	123	289	44	73	41	15	12	.00	26	46
13	40	7.0	118	284	47	72	40	15	7.0	.00	25	83
14	22	8.9	114	286	46	77	39	14	5.1	.00	24	83
15	6.7	5.9	110	260	43	245	39	14	4.1	.00	46	36
16	2.1	3.9	115	228	46	311	37	13	3.6	.00	79	30
17	1.3	2.8	110	207	78	286	33	12	3.5	.00	78	29
18	.90	2.9	107	181	77	305	31	12	3.4	.00	33	27
19	.78	3.1	110	145	75	288	30	11	3.3	.00	23	46
20	.85	3.0	226	136	70	283	28	11	2.6	.00	23	77
21	.68	2.4	291	129	61	254	35	11	2.5	.00	23	77
22	1.2	2.3	281	133	239	189	29	11	2.0	.00	44	37
23	7.6	2.1	298	110	167	148	24	9.8	1.6	.00	76	26
24	53	2.0	281	97	99	112	21	9.0	1.4	.00	75	25
25	18	2.3	284	90	111	98	18	9.0	1.2	4.3	31	24
26	7.1	.99	280	240	315	89	18	9.9	1.0	73	22	45
27	4.3	.88	283	196	300	87	70	18	.99	73	23	79
28	3.3	41	273	124	295	81	45	15	1.1	25	23	76
29	4.3	58	208	103	---	71	35	11	.91	4.3	30	37
30	4.1	19	174	95	---	70	31	8.7	.76	1.3	e75	26
31	4.5	---	148	84	---	91	---	7.5	---	.60	e76	---
TOTAL	233.91	220.97	5461	5988	2815	4624	1229	473.9	136.96	183.14	1342	1351
MEAN	7.55	7.37	176	193	101	149	41.0	15.3	4.57	5.91	43.3	45.0
MAX	53	58	298	307	315	311	73	28	12	73	79	83
MIN	.00	.88	10	84	43	70	18	7.5	.76	.00	11	19
AC-FT	464	438	10830	11880	5580	9170	2440	940	272	363	2660	2680

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 1998, BY WATER YEAR (WY)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
MEAN	47.8	54.6	75.3	54.9	103	127	92.9	127	74.3	13.0	6.46	7.84		
MAX	451	316	493	193	268	368	477	714	348	54.4	43.3	61.9		
(WY)	1982	1995	1992	1998	1997	1995	1990	1982	1989	1982	1998	1996		
MIN	.000	.000	.000	1.55	1.81	2.92	3.46	6.99	1.22	.000	.000	.000		
(WY)	1978	1978	1978	1976	1976	1976	1980	1988	1980	1978	1978	1978		

SUMMARY STATISTICS

	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1975 - 1998
ANNUAL TOTAL	26462.10	24058.88	
ANNUAL MEAN	72.5	65.9	65.2
HIGHEST ANNUAL MEAN			169
LOWEST ANNUAL MEAN			4.22
HIGHEST DAILY MEAN	715 Feb 20	315 Feb 26	8560 May 13 1982
LOWEST DAILY MEAN	.00 Sep 28	.00 Oct 1	.00 Oct 14 1975
ANNUAL SEVEN-DAY MINIMUM	.00 Sep 28	.00 Oct 1	.00 Oct 14 1975
INSTANTANEOUS PEAK FLOW		571 Jan 4	13300 May 13 1982
INSTANTANEOUS PEAK STAGE		17.94 Jan 4	32.50 May 13 1982
ANNUAL RUNOFF (AC-FT)	52490	47720	47240
10 PERCENT EXCEEDS	241	215	152
50 PERCENT EXCEEDS	28	31	13
90 PERCENT EXCEEDS	.49	.82	.00

e Estimated

08059400 SISTER GROVE CREEK NEAR BLUE RIDGE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Nov 1985 to Jun 1987, Oct 1995 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	
DEC 17...	1200	108	1770	8.1	10.0	10	35	10.4	94	.6	460
FEB 20...	1145	72	514	8.2	10.5	13	2.5	10.6	97	.7	250
APR 16...	1530	38	500	8.0	19.5	13	4.0	8.7	97	.7	230
MAY 05...	0945	20	509	7.9	18.5	8	4.1	7.0	0	.3	240
JUN 26...	1000	1.0	524	7.8	25.5	16	7.2	4.0	50	.3	210
AUG 20...	1100	22	1670	7.9	27.0	15	15	6.5	83	.5	440

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END CACO3 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
DEC 17...	320	120	39	169	3	5.2	140	350	270	.38	8.5
FEB 20...	12	95	2.6	13	.4	1.7	240	20	6.1	.27	5.8
APR 16...	12	89	2.7	14	.4	1.6	220	17	6.6	.38	6.1
MAY 05...	0	91	2.7	14	.4	1.6	240	16	6.5	.38	8.1
JUN 26...	--	79	2.9	32	1	2.5	240	13	10	.48	15
AUG 20...	320	110	39	171	4	5.1	120	310	260	.32	6.9

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDE (MG/L) (00530)	RESIDUE VOLA-TILE, SUS-PENDE (MG/L) (00535)	RESIDUE FIXED NON-FILTER-ABLE (MG/L) (00540)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)
DEC 17...	1040	58	10	48	.335	.010	.345	<.020	--	.29	.038
FEB 20...	289	3	8	.00	--	<.010	.428	<.020	--	.17	<.010
APR 16...	270	9	8	1	--	<.010	.231	.036	.17	.21	.010
MAY 05...	287	23	6	17	.421	.011	.432	.052	.21	.27	.010
JUN 26...	301	14	6	8	.177	.013	.190	.089	.27	.36	.041
AUG 20...	983	33	12	21	.119	.012	.131	.046	.24	.28	.013

TRINITY RIVER BASIN

08059400 SISTER GROVE CREEK NEAR BLUE RIDGE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
DEC 17...	.029	.09	4.7	--	--	--	--	--	--	--	--
FEB 20...	.017	.05	3.4	1	64	<1.0	<8.0	<14	<12	<10	<10
APR 16...	.016	.05	3.5	--	--	--	--	--	--	--	--
MAY 05...	<.010	--	3.7	1	75	<1.0	<8.0	<14	<12	<10	19
JUN 26...	.035	.11	8.0	--	--	--	--	--	--	--	--
AUG 20...	.098	.30	4.9	1	150	<1.0	<8.0	<14	<12	<10	38

DATE	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)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
DEC 17...	--	--	--	--	--	--	--	--	--	--	--
FEB 20...	<100	7	34	<.1	<60	<40	<1	<4.0	973	<10	<20
APR 16...	--	--	--	--	--	--	--	--	--	--	--
MAY 05...	<100	6	26	<.1	<60	<40	<1	<4.0	1010	<10	31
JUN 26...	--	--	--	--	--	--	--	--	--	--	--
AUG 20...	<100	20	8.3	<.1	<60	<40	<1	<4.0	1370	<10	<20

08060500 LAVON LAKE NEAR LAVON, TX

LOCATION.--Lat 33°01'54", long 96°28'56", Collin County, Hydrologic Unit 12030106, in right abutment of spillway in dam on East Fork Trinity River, 3,850 ft upstream from St. Louis Southwestern Railway Lines bridge, 4,000 ft upstream from bridge on State Highway 78, 2.9 mi west of Lavon, and 55.9 mi upstream from mouth.

DRAINAGE AREA.--770 mi².

WATER-CONTENT RECORDS

PERIOD OF RECORD.--Sep 1953 to current year. Prior to Oct 1970, published as Lavon Reservoir.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Jan 20, 1954, non-recording gage in the approach channel at same datum. Satellite telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 18,860 ft long, including a 568-foot gated spillway with twelve 40.0- by 28.0-foot tainter gates. The original dam was 9,499 ft long, but conservation capacity was increased to present size in Dec 1975. Deliberate impoundment began Sep 14, 1953, and the dam was completed in Oct 1953. Low-flow outlets consist of five 36-inch-diameter controlled sluice gates. Capacity Table No. 9, is based on a sedimentation survey completed in 1970. Lake was designed for flood control and water conservation. Water for municipal supply can be released down to elevation 453.0 ft. Flow is affected at times by discharge from the flood-detention pools of 149 floodwater-retarding structures with a combined detention capacity of 69,170 acre-ft. These structures control runoff from 242 mi² in the East Fork Trinity River, Pilot Grove, and Sister Grove Creek drainage basins. Figures given herein represent total contents. Data regarding dam are given in the following table:

	Elevation (feet)
Top of dam.....	514.0
Design flood.....	509.0
Top of tainter gates.....	503.5
Top of conservation pool.....	492.0
Crest of spillway (sill of tainter gates).....	475.5
Lowest gated outlet (invert).....	453.0

COOPERATION.--Record of contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 791,000 acre-ft, May 3, 1990 (elevation, 504.93 ft); minimum since lake first filled in 1957, 80,150 acre-ft, Apr 17, 1976 (elevation, 465.96 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 613,400 acre-ft, Jan 13 (elevation, 498.64 ft); minimum daily contents, 293,200 acre-ft, Sep 30 (elevation, 483.34 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	373200	368100	360800	473600	469500	503400	462700	450800	429600	398600	353200	315100
2	372200	367200	361700	470800	466200	497400	459500	450400	428300	397200	351800	313700
3	371100	366000	362500	468400	462700	488000	458500	449500	427300	395300	350700	312100
4	370200	365100	362700	471000	460200	478400	457400	448700	427700	394700	349200	310600
5	369200	365300	362500	523900	459100	471000	457200	448000	428100	393900	348100	309900
6	368300	364300	362300	554700	458200	465100	456500	447600	426500	392500	346800	307700
7	367500	363200	365500	570400	457600	461900	457000	447400	425100	391400	346100	306500
8	367300	362700	370200	585900	457400	460200	457000	447000	423400	390000	344500	305300
9	369600	362900	372600	596700	457600	458200	456100	446800	423200	388700	343000	303800
10	369600	362500	373200	597800	459100	457800	455900	445900	423200	387100	342100	302100
11	368800	361900	373600	602100	458700	458000	455000	445700	422800	385600	340900	301700
12	371100	362900	373400	610100	459100	457000	454000	445100	422200	384200	339900	300600
13	372400	363000	373400	613400	459100	457200	454600	444300	421400	382700	338700	300000
14	371900	362900	373200	612700	459300	460600	453800	443600	420600	381200	337600	300600
15	371500	362100	373200	606000	459700	467900	453800	443200	419600	379800	336400	300900
16	370700	361400	373400	600100	460400	484900	454200	442400	418200	378500	335300	303800
17	370200	360800	373200	592200	460000	506600	453500	441300	416600	377200	334200	303300
18	369200	360600	373200	585400	459300	516500	452700	440300	415600	375800	333100	302600
19	368500	360100	373400	576800	458700	524200	452100	439500	414400	374100	331900	302100
20	368100	360100	388500	568700	457800	527000	453800	438400	413000	372600	330800	301400
21	367900	359500	422600	561300	458700	526700	453500	437600	411800	371100	329200	300700
22	366600	359100	441300	552300	462100	523700	453100	436500	410600	369400	327800	300200
23	370500	358600	454000	542200	464500	518600	452500	435700	409000	367900	326600	299200
24	371500	358000	469700	530500	464000	512800	451000	434700	407800	366200	325400	298200
25	372200	357700	480400	519300	467700	505600	450800	433900	406400	364500	324300	297200
26	371700	357700	486200	512500	487500	497200	451600	433200	405100	362900	322900	296500
27	370200	357300	487300	503800	501500	490500	452100	434500	403900	361400	321700	295900
28	369600	360600	486400	494100	504000	483100	452100	433700	402500	359900	320600	295000
29	369000	361200	483500	483500	---	475100	451600	433000	400900	358200	319100	294200
30	368700	361400	480700	475800	---	469500	451200	432000	399900	356200	317500	293200
31	368700	---	477300	472500	---	466400	---	431000	---	354500	316300	---
MAX	373200	368100	487300	613400	504000	527000	462700	450800	429600	398600	353200	315100
MIN	366600	357300	360800	468400	457400	457000	450800	431000	399900	354500	316300	293200
(+)	487.60	487.21	492.96	492.74	494.15	492.45	491.75	490.78	489.23	486.84	484.70	483.34
(@)	-5200	-7300	-115900	-4800	+31500	-37600	-15200	-20200	-31100	-45400	-38200	-23100
CAL YR 1997	MAX 648800	MIN 357300	(@) +16500									
WTR YR 1998	MAX 613400	MIN 293200	(@) -80700									

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

TRINITY RIVER BASIN

08060500 LAVON LAKE NEAR LAVON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Oct 1969 to Sep 1974, Oct 1975 to Sep 1982, Oct 1995 to current year.

REVISED RECORDS.--WDR TX-93-1: Phytoplankton.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

330203096284901 - LAVON LAKE SITE AC

DATE	TIME	RESER- VOIR STORAGE (AC-FT) (00054)	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (PER- CENT DIS- SOLVED SATUR- ATION) (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00301)	COLI- FORM, FECAL, UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)
FEB												
20...	1021	459000	1.00	292	7.9	10.0	.60	10.2	91	K16	K8	120
20...	1023	--	10.0	292	7.9	9.5	--	10.1	89	--	--	--
20...	1025	--	20.0	292	7.9	9.5	--	10.1	89	--	--	--
20...	1027	--	30.0	292	7.9	9.5	--	10.0	88	--	--	--
20...	1029	--	39.0	292	7.9	9.5	--	10.0	88	--	--	120
MAY												
05...	1302	448000	1.00	327	7.9	19.0	.55	5.7	63	K19	K12	140
05...	1306	--	10.0	328	7.9	19.0	--	5.4	60	--	--	--
05...	1310	--	20.0	330	7.8	19.0	--	5.1	57	--	--	--
05...	1314	--	30.0	329	7.8	19.0	--	5.0	56	--	--	--
05...	1318	--	37.0	329	7.8	19.0	--	4.9	54	--	--	140
JUL												
23...	0840	369000	1.00	293	7.7	29.5	1.22	4.1	55	K1	K1	110
23...	0845	--	10.0	293	7.7	29.5	--	4.1	55	--	--	--
23...	0851	--	20.0	293	7.6	29.5	--	3.5	47	--	--	--
23...	0856	--	33.0	311	7.3	28.5	--	.0	0	--	--	130

330203096284901 - LAVON LAKE SITE AC

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
FEB												
20...	17	43	2.6	12	.5	3.6	100	21	11	.22	8.9	164
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	6	42	2.5	12	.5	3.6	110	21	12	.21	8.8	170
MAY												
05...	11	51	2.6	11	.4	3.5	130	23	10	.29	1.9	182
05...	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--
05...	11	51	2.6	11	.4	3.5	130	24	9.9	.30	2.4	184
JUL												
23...	2	39	2.8	12	.5	4.1	110	20	10	.29	3.5	157
23...	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--
23...	11	46	3.0	12	.5	4.0	120	17	11	.29	6.3	171

TRINITY RIVER BASIN

08060500 LAVON LAKE NEAR LAVON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

330203096284901 - LAVON LAKE SITE AC

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
FEB											
20...	--	<.010	.514	.058	.23	.29	.041	.043	.13	<10	<4.0
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	<.010	.497	.064	.23	.29	.040	.043	.13	<10	<4.0
MAY											
05...	.428	.067	.495	.070	.26	.33	<.010	.015	.05	<10	<4.0
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	.414	.076	.490	.070	.23	.30	<.010	.012	.04	<10	<4.0
JUL											
23...	--	<.010	.085	.032	.27	.30	.033	<.010	--	<10	<4.0
23...	--	<.010	.074	.024	.23	.26	<.010	<.010	--	<10	8.2
23...	--	<.010	.083	.030	.24	.27	<.010	<.010	--	<10	35
23...	--	<.010	.083	.235	.23	.47	.070	.078	.24	400	675

330205096280001 - LAVON LAKE SITE AL

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 SATUR- ATION (MG/L) (00300)	OXYGEN, DIS- SOLVED SATUR- ATION (PER- CENT) (00301)
FEB							
20...	1107	1.00	292	8.0	9.6	10.1	89
20...	1109	10.0	291	8.0	9.6	10.0	88
20...	1111	20.0	292	8.0	9.8	10.1	89
20...	1113	28.0	291	8.0	9.6	10.0	88
MAY							
05...	1327	1.00	320	8.0	19.5	6.1	69
05...	1329	10.0	319	8.0	19.0	6.2	69
05...	1331	20.0	321	8.0	19.0	5.8	64
05...	1333	28.0	321	7.9	19.0	5.7	63
JUL							
23...	0902	1.00	296	7.7	29.5	4.0	53
23...	0904	10.0	296	7.7	29.5	3.9	52
23...	0906	23.0	296	7.6	29.5	3.4	45

330654096273201 - LAVON LAKE SITE BC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY DISK (M) (00078)	OXYGEN, DIS- SOLVED SATUR- ATION (MG/L) (00300)	OXYGEN, DIS- SOLVED SATUR- ATION (PER- CENT) (00301)	COLI- FORM, FECAL, UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOC- CI, FECAL, KF AGAR PER (COLS. 100 ML) (31673)	HARD- NESS TOTAL AS CACO3 (MG/L) (00900)	HARD- NESS NONCARB FLD. AS CACO3 (MG/L) (00904)
FEB												
20...	1142	1.00	280	8.1	10.5	.50	10.4	94	K11	K15	120	7
20...	1144	10.0	279	8.1	10.0	--	10.3	92	--	--	--	--
20...	1146	20.0	279	8.1	10.0	--	10.1	90	--	--	--	--
20...	1148	27.0	279	8.1	10.0	--	10.1	90	--	--	120	4
MAY												
05...	1357	1.00	313	8.4	21.0	.55	8.2	95	K3	K3	130	7
05...	1403	10.0	313	8.4	21.0	--	8.2	95	--	--	--	--
05...	1408	20.0	313	8.4	21.0	--	8.0	93	--	--	--	--
05...	1412	26.0	318	7.9	20.5	--	5.6	64	--	--	130	5
JUL												
23...	0926	1.00	282	8.2	31.0	.52	6.4	88	K1	K1	100	10
23...	0932	10.0	282	8.2	31.0	--	6.4	88	--	--	--	--
23...	0938	22.0	282	8.1	31.0	--	6.2	85	--	--	110	8

TRINITY RIVER BASIN

08060500 LAVON LAKE NEAR LAVON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

330654096273201 - LAVON LAKE SITE BC

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS FIX END CAC03 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
FEB											
20...	43	2.6	10	.4	3.4	110	18	9.2	.18	8.3	164
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	42	2.6	11	.4	3.5	110	18	9.6	.18	8.4	164
MAY											
05...	48	2.7	11	.4	3.5	130	20	9.4	.27	.99	172
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	48	2.7	11	.4	3.4	130	21	9.0	.26	1.5	174
JUL											
23...	37	2.9	12	.5	4.0	95	20	10	.29	3.8	148
23...	--	--	--	--	--	--	--	--	--	--	--
23...	38	2.9	12	.5	4.0	98	20	10	.29	3.9	151

330654096273201 - LAVON LAKE SITE BC

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- SOLVED (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
FEB											
20...	--	<.010	.312	.031	.23	.26	.035	.041	.13	<10	<4.0
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	<.010	.261	.031	.22	.26	.035	.041	.13	<10	<4.0
MAY											
05...	.206	.029	.235	.031	.20	.23	<.010	<.010	--	<10	<4.0
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	.198	.029	.227	.046	.18	.23	<.010	<.010	--	<10	<4.0
JUL											
23...	--	<.010	.083	.028	.23	.25	<.010	<.010	--	<10	<4.0
23...	--	<.010	.077	.025	.24	.26	<.010	<.010	--	<10	<4.0
23...	--	<.010	.084	.034	.23	.26	<.010	<.010	--	<10	<4.0

331023096250101 - LAVON LAKE SITE DC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS./ 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)
FEB											
20...	1533	1.00	386	8.4	12.5	--	11.3	106	31	28	180
20...	1535	8.00	412	8.2	11.5	--	9.9	91	--	--	190
MAY											
05...	1721	1.00	362	8.2	22.5	.18	7.4	88	K1	K1	160
05...	1726	7.00	363	8.2	22.5	--	7.4	88	--	--	160
JUL											
23...	1156	1.00	304	7.6	30.0	--	6.2	84	K1	K1	120
23...	1202	6.00	310	7.4	29.5	--	3.6	48	--	--	110

TRINITY RIVER BASIN

08060500 LAVON LAKE NEAR LAVON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

330448096315601 - LAVON LAKE SITE EC

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
FEB										
20...	<.010	.796	.043	.22	.26	.032	.040	.12	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	<.010	1.62	.054	.21	.26	.030	.039	.12	--	--
MAY										
05...	.020	.395	.046	.22	.26	<.010	<.010	--	<10	<4.0
05...	--	--	--	--	--	--	--	--	--	--
05...	.021	.401	.048	.19	.24	<.010	<.010	--	<10	<4.0
JUL										
23...	<.010	<.050	.023	.28	.31	<.010	.011	.03	<10	<4.0
23...	<.010	.084	.032	.34	.37	<.010	.011	.03	<10	<4.0

08060500 LAVON LAKE NEAR LAVON, TX--Continued

Lavon Lake Site AC (330203096284901)

Phytoplankton Analyses October 1997 to September 1998

Date	2-20-98
Time	1021
<hr/>	
TOTAL CELLS/mL	3,329
NUMBER OF SPECIES	5
DEPTH COLLECTED (ft.)	1.0
<hr/>	

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	30
Order Pennales	
<i>Navicula</i> sp.	60
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	450
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	2,699
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	90

Lavon Lake Site AC (330203096284901)

Phytoplankton Analyses October 1997 to September 1998

Date	5-5-98
Time	1302
<hr/>	
TOTAL CELLS/mL	5,128
NUMBER OF SPECIES	4
DEPTH COLLECTED (ft.)	0.9
<hr/>	

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	210
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	30
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	90
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	4,798

TRINITY RIVER BASIN

08060500 LAVON LAKE NEAR LAVON, TX--Continued

Lavon Lake Site AC (330203096284901)

Phytoplankton Analyses October 1997 to September 1998

Date	7-23-98
Time	840
TOTAL CELLS/mL	39,857
NUMBER OF SPECIES	14
DEPTH COLLECTED (ft.)	2.0
Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	60
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	900
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	240
<i>Chlamydomonas</i> sp.	60
<i>Staurastrum</i> sp.	30
<i>Tetrastrum punctatum</i>	30
CYANOPHYTA	
<i>Ababaena spiroides</i>	1,799
<i>Aphanizomenon flos-aquae</i>	600
<i>Aphanocapsa delicatissima</i>	13,795
<i>Aphanocapsa elachista</i>	1,200
<i>Chroococcus limneticus</i>	120
<i>Merismopedia tenuissima</i>	7,198
<i>Oscillatoria</i> sp.	13,795
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	30

Lavon Lake Site EC (330448096315601)

Phytoplankton Analyses October 1997 to September 1998

Date	2-20-98
Time	1229
TOTAL CELLS/mL	4,799
NUMBER OF SPECIES	6
DEPTH COLLECTED (ft.)	0.7
Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Melosira varians</i>	30
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	90
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	1,020
<i>Tetrastrum punctatum</i>	30
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	3,599
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	30

08060500 LAVON LAKE NEAR LAVON, TX--Continued

Lavon Lake Site EC (330448096315601)

Phytoplankton Analyses October 1997 to September 1998

Date	5-5-98
Time	1505
TOTAL CELLS/mL	6,418
NUMBER OF SPECIES	6
DEPTH COLLECTED (ft.)	0.30

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Stephanodiscus astraea</i>	30
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	30
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	60
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	5,998
<i>Merismopedia tenuissima</i>	240
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	60

Lavon Lake Site EC (330448096315601)

Phytoplankton Analyses October 1997 to September 1998

Date	7-23-98
Time	1016
TOTAL CELLS/mL	26,512
NUMBER OF SPECIES	13
DEPTH COLLECTED (ft.)	0.7

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
<i>Stephanodiscus astraea</i>	240
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	270
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	240
<i>Chlamydomonas</i> sp.	150
<i>Cosmarium</i> sp.	30
<i>Scenedesmus opoliensis</i>	30
CYANOPHYTA	
<i>Anabaena spiroides</i>	600
<i>Aphanizomonon flos-aquae</i>	450
<i>Aphanocapsa delicatissima</i>	8,397
<i>Chroococcus limneticus</i>	600
<i>Merismopedia tenuissima</i>	2,399
<i>Oscillatoria</i> sp.	12,596
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	510

TRINITY RIVER BASIN

08061540 ROWLETT CREEK NEAR SACHSE, TX

LOCATION.--Lat 32°57'35", long 96°36'51", Dallas County, Hydrologic Unit 12030106, on right bank at downstream side of railroad embankment of Gulf, Colorado, and Santa Fe Railway Co., 100 ft downstream from Spring Creek, 150 ft upstream from State Highway 78, and 1.5 mi southwest of Sachse. Prior to Aug 25, 1993, at site on left bank 150 ft downstream.

DRAINAGE AREA.--120 mi².

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 450.00 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. No known regulation or diversions. The North Texas Municipal Water District returns wastewater effluent into a tributary above this station. Several observations of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1942, 35.4 ft in 1942, from information by Texas Department of Transportation.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,500 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct 23	1510	4,670	19.45	Feb 26	0200	9,090	23.27
Dec 21	0100	8,230	23.75	Mar 16	1130	4,620	18.56
Jan 5	0430	32,200	28.07				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	82	91	105	124	159	108	50	45	20	7.7	18
2	35	75	316	102	108	147	104	48	37	18	6.4	31
3	19	75	275	100	105	142	101	49	34	16	9.8	37
4	17	75	106	1010	104	138	94	45	104	78	23	46
5	20	77	90	9480	110	130	93	46	414	103	22	37
6	27	80	82	1270	108	112	91	47	58	43	21	43
7	39	78	794	1430	104	176	89	41	48	31	25	45
8	217	80	433	680	102	159	105	39	46	24	24	49
9	132	86	112	299	103	131	80	374	40	26	20	45
10	78	107	95	216	123	115	81	58	516	29	18	38
11	67	83	86	1260	112	99	77	49	287	38	14	43
12	323	236	84	410	100	89	78	41	93	26	23	104
13	663	159	78	215	127	98	81	39	65	28	27	144
14	83	105	77	191	100	159	75	38	53	26	37	156
15	66	93	74	170	96	757	74	37	46	22	54	190
16	59	82	72	155	119	2730	113	35	40	34	45	1130
17	56	83	70	144	138	1310	82	29	40	30	46	136
18	55	77	66	139	122	296	76	28	37	73	36	104
19	53	75	64	134	205	521	76	30	35	51	25	84
20	55	73	2040	131	110	173	189	27	34	48	12	75
21	63	77	3750	138	139	158	440	30	31	31	8.9	65
22	68	74	211	132	648	145	95	27	25	31	13	61
23	1310	75	1950	118	136	136	58	28	18	21	12	66
24	181	73	1050	112	123	129	53	27	24	30	17	106
25	116	76	182	111	381	118	50	30	21	34	23	62
26	104	77	208	268	2990	106	49	32	21	14	14	58
27	98	77	153	130	272	132	165	503	26	7.9	15	58
28	95	829	130	122	188	104	54	79	35	8.3	17	56
29	91	123	119	116	---	94	47	57	26	7.9	20	49
30	88	99	115	108	---	140	49	49	22	8.2	36	52
31	85	---	107	116	---	299	---	50	---	12	36	---
TOTAL	4399	3461	13080	19112	7197	9202	2927	2062	2321	969.3	707.8	3188
MEAN	142	115	422	617	257	297	97.6	66.5	77.4	31.3	22.8	106
MAX	1310	829	3750	9480	2990	2730	440	503	516	103	54	1130
MIN	17	73	64	100	96	89	47	27	18	7.9	6.4	18
AC-FT	8730	6860	25940	37910	14280	18250	5810	4090	4600	1920	1400	6320

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1998, BY WATER YEAR (WY)

	MEAN	127	111	150	106	156	182	163	224	137	48.0	33.6	52.9
MAX	610	586	898	617	588	476	573	1039	566	241	105	180	180
(WY)	1982	1995	1992	1998	1997	1995	1990	1982	1981	1994	1997	1974	1974
MIN	4.88	7.63	7.52	6.72	7.83	11.9	23.8	18.8	4.60	1.91	1.78	3.75	3.75
(WY)	1979	1976	1978	1976	1976	1971	1972	1971	1971	1972	1972	1972	1969

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1968 - 1998

ANNUAL TOTAL		78609.9		68626.1									
ANNUAL MEAN		215		188						124			
HIGHEST ANNUAL MEAN										265			1992
LOWEST ANNUAL MEAN										22.2			1971
HIGHEST DAILY MEAN		3810			Apr 4	9480		Jan 5	14900		May 13	1982	
LOWEST DAILY MEAN		9.9			Sep 11	6.4		Aug 2	.00		Aug 24	1969	
ANNUAL SEVEN-DAY MINIMUM		14			Sep 7	8.3		Jul 27	.00		Aug 24	1969	
INSTANTANEOUS PEAK FLOW						32200		Jan 5	32200		Jan 5	1998	
INSTANTANEOUS PEAK STAGE						28.07		Jan 5	29.62		May 17	1989	
ANNUAL RUNOFF (AC-FT)		155900		136100					89650				
10 PERCENT EXCEEDS		317		273					191				
50 PERCENT EXCEEDS		91		78					44				
90 PERCENT EXCEEDS		32		23					7.8				

08061550 LAKE RAY HUBBARD NEAR FORNEY, TX

LOCATION.--Lat 32°48'00", long 96°29'45", Kaufman County, Hydrologic Unit 12030106, near right end of spillway on Forney Dam on East Fork Trinity River, 0.5 mi upstream from Duck Creek, 1.8 mi upstream from bridge on U.S. Highway 80, 3.8 mi northwest of Forney, 24 mi downstream from Lavon Dam, and 31.8 mi upstream from mouth.

DRAINAGE AREA.--1,071 mi²

PERIOD OF RECORD.--Jan 1968 to Dec 1993. Oct 1996 to current year.
Water-quality records.--Chemical analyses: Oct 1969 to Sep 1979.

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

REMARKS.--The lake is formed by a rolled earthfill dam 12,500 ft long, including a 664-foot gated spillway with fourteen 40- by 28-foot tainter gates. Closure was made in Sep 1967, but the gates were not closed until Mar 22, 1978. Low-flow releases are made through three 4.5- by 6.75-ft sluiceways. The lake was built by the city of Dallas for municipal water supply. Flow is affected at times by discharge from the flood-detention pools of 14 floodwater-retarding structures with a combined detention capacity of 12,530 acre-ft. These structures control runoff from 44.5 square miles above this station and below Lavon Lake station (08060500). Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	450.0
Design flood.....	440.5
Top of tainter gates.....	437.5
Top of conservation pool.....	435.5
Crest of spillway (sill of tainter gates).....	409.5
Lowest gated outlet (invert).....	388.0

COOPERATION.--The capacity table was provided by Forrest and Cotton, Consulting Engineers, for the city of Dallas.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 544,100 acre-ft, May 4, 1990 (elevation, 437.81 ft); minimum contents since first appreciable filling following closure of gates on Mar 22, 1970, 326,400 acre-ft, Sep 29, 30, 1978 (elevation, 427.48 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 425,700 acre-ft, Jan 5-6 (elevation, 436.06 ft); minimum contents, 327,500 acre-ft, Sep 13 (elevation, 431.16 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	361700	368300	373700	414200	414600	415000	413500	409200	399800	383700	355800	335000
2	360900	368300	375700	414800	414200	415000	414600	409800	399800	382300	355200	333900
3	360400	367300	376900	415900	414000	414800	414800	409200	398500	381300	354300	333000
4	360000	366500	377500	418500	413500	413300	414000	408100	400400	381300	353700	332200
5	359400	367700	376900	425700	413300	414000	413300	407900	400400	381100	353100	331300
6	359400	367100	376100	420500	413300	412200	412700	407900	398900	380500	352400	330800
7	359200	366100	379900	414600	413300	413700	413300	407900	397700	379500	352200	330200
8	359800	366100	382700	414200	413500	414600	414800	408500	395400	378900	351400	329900
9	360600	366700	383500	414000	413500	414800	414000	408800	397300	378100	350400	328800
10	360600	366700	383300	414200	415700	414000	413300	407900	397700	377100	349700	327900
11	359400	366700	382700	421100	414200	415000	412000	406600	398300	376300	349300	328400
12	363900	368500	382300	416800	414200	414000	410700	406800	397900	375700	348700	327900
13	365300	369500	382700	412700	413700	414200	412000	405900	397300	374500	348000	328200
14	364500	370100	382300	414800	413700	413500	410700	404900	397300	373300	347600	328800
15	364100	369500	381700	414800	414000	413700	411400	405500	396700	372300	346800	329700
16	363500	368500	382700	417400	414600	419800	412400	405300	396000	372100	346200	338600
17	363500	367900	382100	415900	413700	417200	412000	404200	394400	370500	345700	338600
18	362900	368300	381700	415900	414000	413700	410700	404000	394400	369900	344700	338400
19	362700	367700	382100	414000	414000	416600	410300	402900	393700	369100	344100	337900
20	362900	368300	397900	414000	413300	415300	412200	402300	392300	367500	343400	337700
21	362700	368500	414400	415900	415500	415300	411800	402300	392300	366300	342300	337500
22	362100	368300	415000	415500	414000	415000	411800	401400	391200	365500	341300	337300
23	369300	367900	418500	413100	413700	414800	410500	401000	390000	364100	340800	337000
24	369500	367900	415900	412700	413700	414800	408500	400800	389200	363300	340400	336400
25	369900	367900	414600	411600	416300	414800	409600	400200	388500	362300	339900	335900
26	369900	368500	416100	413700	420700	413700	411100	400200	387300	361300	339300	336100
27	368700	367900	413300	413300	416300	415000	410900	403600	386700	360400	338600	335700
28	368100	373100	415300	413500	415500	415500	410300	402900	385000	358500	338100	335700
29	368100	373700	414600	413500	---	413700	409600	402700	384800	356900	336400	335200
30	367500	373700	414800	414400	---	416300	409600	401600	384400	357500	336100	334600
31	368900	---	414000	414600	---	413300	---	401400	---	356600	335500	---
MAX	369900	373700	418500	425700	420700	419800	414800	409800	400400	383700	355800	338600
MIN	359200	366100	373700	411600	413300	412200	408500	400200	384400	356600	335500	327900
(+)	433.35	433.59	435.52	435.55	435.59	435.49	435.32	434.94	434.12	432.72	431.60	431.55
(@)	-65800	+4800	+40300	+600	+900	-2200	-3700	-8200	-17000	-27800	-21100	-900
CAL YR 1997	MAX 506700	MIN 359200	(@) -75500									
WTR YR 1998	MAX 425700	MIN 327900	(@) -100100									

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

LOCATION.--Lat 32°46'27", long 96°30'12", Kaufman County, Hydrologic Unit 12030106, on right bank 25 ft downstream from bridge on U.S. Highway 80, 0.2 mi downstream from Duck Creek, 1.9 mi downstream from Lake Ray Hubbard Dam, 2.5 mi upstream from Texas and Pacific Railroad Co. bridge, 2.6 mi northwest of Forney, and 30.8 mi upstream from mouth.

DRAINAGE AREA.--1,118 mi², of which 1,071 mi² is above Lake Ray Hubbard.

PERIOD OF RECORD.--Jan 1973 to current year.

Water-quality records.--Chemical and biochemical analyses: Nov 1981 to Jan 1993. Specific conductance: Oct 1981 to Jan 1993. pH: Aug 1986 to Jan 1993. Water temperature: Oct 1981 to Jan 1993. Dissolved oxygen: Aug 1986 to Jan 1993.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 374.86 ft above sea level. Prior to Aug 26, 1975, recording gage at 3 ft higher datum located at site 126 ft upstream and 868 ft to left. From Aug 26, 1975, to May 12, 1977, recording gage at 3 ft higher datum located at site 105 ft downstream. From May 13, 1977, to Sep 30, 1984, recording gage at 3 ft higher datum at current site. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since installation of gage in Jan 1973, at least 10% of contributing drainage area has been regulated by Lake Ray Hubbard (489,900 acre-ft), 1.9 mi upstream. Low flow is sustained by wastewater effluent discharge from the city of Garland into Duck Creek, which enters the East Fork Trinity River 0.2 mi upstream from this station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	47	100	2290	2300	1580	2430	47	43	40	43	51
2	52	48	96	2030	2370	3240	1490	44	37	53	37	49
3	50	54	581	1930	2380	4400	1030	73	39	46	42	47
4	48	48	180	2230	1780	4780	548	58	61	44	47	46
5	49	50	113	6110	1000	5450	86	51	204	133	45	47
6	50	49	87	8980	766	4870	70	51	61	61	49	48
7	54	49	191	7850	252	2530	65	50	45	79	51	48
8	102	48	796	2340	79	2750	156	43	64	65	48	46
9	236	51	228	1800	75	1670	110	307	46	49	43	51
10	135	75	123	2870	152	546	61	96	51	50	45	51
11	61	66	93	4770	605	526	54	54	379	46	44	54
12	99	329	79	7090	688	454	54	51	108	43	141	75
13	608	356	71	3530	461	94	61	65	55	48	62	204
14	129	164	81	2280	125	581	59	47	47	47	50	263
15	73	71	78	3500	75	2490	55	41	45	46	46	252
16	63	69	70	3990	82	5030	56	43	41	49	50	680
17	59	66	64	5310	839	5380	53	49	44	46	46	325
18	57	61	67	5450	1180	2880	49	50	46	44	50	92
19	58	57	67	5430	1290	1480	47	47	45	43	52	55
20	135	56	799	5420	1390	669	55	45	42	38	46	52
21	67	57	2700	5420	676	979	319	43	44	50	47	55
22	76	55	1470	5630	1500	2460	95	43	41	50	46	54
23	435	47	2960	6450	1080	3240	56	42	41	47	43	48
24	630	e48	5550	6930	739	3590	44	44	41	44	48	73
25	130	e48	2540	6750	981	3930	48	40	43	41	50	63
26	67	e47	604	6650	6690	4730	53	39	42	40	49	50
27	60	e48	1840	6640	5350	5000	87	425	44	39	49	49
28	51	e513	2630	6640	1630	5220	70	173	44	42	48	51
29	52	e351	2610	6630	---	5670	51	65	45	41	46	42
30	51	e121	2590	4430	---	4320	46	52	43	40	46	43
31	48	---	2450	2240	---	3630	---	47	---	42	54	---
TOTAL	3834	3149	31908	149610	36535	94169	7458	2325	1931	1546	1563	3064
MEAN	124	105	1029	4826	1305	3038	249	75.0	64.4	49.9	50.4	102
MAX	630	513	5550	8980	6690	5670	2430	425	379	133	141	680
MIN	48	47	64	1800	75	94	44	39	37	38	37	42
AC-FT	7600	6250	63290	296800	72470	186800	14790	4610	3830	3070	3100	6080

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1998, BY WATER YEAR (WY)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998		
MEAN	406	568	652	635	846	1112	1053	1599	1111	431	134	199																
MAX (WY)	3975	3076	3276	4826	2843	3038	3335	8008	5436	2207	1246	1583																
MIN (WY)	1974	1995	1992	1998	1997	1998	1997	1990	1989	1982	1989	1974																
MIN (WY)	15.8	26.4	22.3	24.7	33.2	34.5	35.7	42.5	28.2	19.7	23.1	22.6																
	1978	1977	1978	1981	1981	1980	1978	1988	1978	1978	1980	1977																

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1973 - 1998

ANNUAL TOTAL	407025	337092			
ANNUAL MEAN	1115	924			730
HIGHEST ANNUAL MEAN					1941
LOWEST ANNUAL MEAN					37.6
HIGHEST DAILY MEAN	12400	Apr 5	8980	Jan 6	50700
LOWEST DAILY MEAN	39	Jun 7	37	Jun 2	8.0
ANNUAL SEVEN-DAY MINIMUM	45	Jul 31	41	Jul 27	15
INSTANTANEOUS PEAK FLOW			9930	Jan 6	53000
INSTANTANEOUS PEAK STAGE			15.95	Jan 6	22.01
ANNUAL RUNOFF (AC-FT)	807300	668600			528800
10 PERCENT EXCEEDS	2820	3610			2320
50 PERCENT EXCEEDS	123	63			59
90 PERCENT EXCEEDS	48	43			26

e Estimated

08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX

LOCATION.--Lat 32°38'19", long 96°29'06", Kaufman County, Hydrologic Unit 12030106, on right bank 15 ft downstream from downstream eastbound bridge on U.S. Highway 175, 0.7 mi downstream from Mustang Creek, 1.8 mi northwest of Crandall, 4.0 mi upstream from Buffalo Creek, and 11.0 mi upstream from mouth.

DRAINAGE AREA.--1,256 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jun 1949 to current year.

REVISED RECORDS.--WSP 1922: Drainage area. WDR TX-75-1: 1974.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 338.69 ft above sea level. Prior to Feb 21, 1983, at datum 5.00 ft higher. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since Sep 1953, at least 10% of contributing drainage area has been regulated by Lavon Lake (station 08060500). Additional regulation by Lake Ray Hubbard since Mar 22, 1970. The city of Forney discharges wastewater effluent into a tributary below Lake Ray Hubbard and above this station. The North Texas Municipal Water District discharges wastewater effluent into tributaries above this station from their Mesquite and Changler's Landing wastewater treatment plants. Flow is also affected at times by discharge from the flood-detention pools of 20 floodwater-retarding structures with a combined detention capacity of 11,760 acre-ft. These structures control runoff from a 39.2 mi² area above this station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--4 years (water years 1950-53) prior to regulation by Lavon Lake, 652 ft³/s (472,400 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1950-53).--Maximum discharge, 16,400 ft³/s May 2, 1953 (gage height, 19.87 ft); no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	77	48	73	2280	2460	1740	3430	73	86	71	68	81
2	79	47	69	2130	2330	2140	2220	72	85	68	67	81
3	80	48	467	1770	2350	3270	1210	78	73	79	65	80
4	77	47	174	1820	2330	4350	593	92	71	74	71	78
5	79	45	e120	2360	1060	4760	204	73	105	93	75	77
6	81	44	e103	6540	e912	5340	105	72	129	113	76	77
7	85	46	e97	11500	e466	4680	98	74	81	81	80	79
8	102	47	e535	9150	e207	3130	103	68	75	103	77	80
9	156	45	e290	3080	94	2880	147	220	87	78	73	79
10	135	51	e165	2310	648	945	100	180	75	74	71	82
11	106	55	e110	3080	785	411	85	90	224	73	73	84
12	98	333	e90	5530	761	394	83	77	157	69	92	94
13	465	e706	e88	7030	470	226	84	72	99	70	109	156
14	216	300	e90	3370	360	181	85	71	78	71	88	191
15	106	72	e85	2770	167	2040	84	72	75	68	77	288
16	90	61	e90	3620	158	3780	81	67	75	68	76	940
17	85	57	e82	e3940	325	6490	78	68	72	69	78	837
18	83	54	e77	e5510	1290	5650	78	72	77	66	72	206
19	81	52	e74	e5790	1060	2910	77	70	79	66	80	132
20	85	52	934	e5760	1440	1340	83	68	75	65	79	114
21	108	51	5100	e5610	930	486	222	67	72	64	75	112
22	90	49	4070	e5450	1220	1840	183	66	72	71	76	108
23	350	49	2320	5340	1470	2660	108	67	70	72	75	102
24	810	51	3890	6200	704	e3660	92	68	73	70	76	96
25	170	51	4980	6680	661	e4240	88	69	70	68	77	117
26	79	50	2080	6680	2980	e4890	96	70	71	66	78	101
27	65	49	994	6780	6910	e5640	148	268	73	68	78	99
28	56	346	2100	6710	5050	e5900	118	315	74	64	76	101
29	53	585	2480	6630	---	e5890	80	113	74	67	75	99
30	53	121	2470	6530	---	4710	73	86	73	66	75	90
31	51	---	2430	4250	---	4010	---	85	---	66	78	---
TOTAL	4251	3612	36727	156200	39598	100583	10236	3003	2600	2261	2386	4861
MEAN	137	120	1185	5039	1414	3245	341	96.9	86.7	72.9	77.0	162
MAX	810	706	5100	11500	6910	6490	3430	315	224	113	109	940
MIN	51	44	69	1770	94	181	73	66	70	64	65	77
AC-FT	8430	7160	72850	309800	78540	199500	20300	5960	5160	4480	4730	9640

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1998z, BY WATER YEAR (WY)

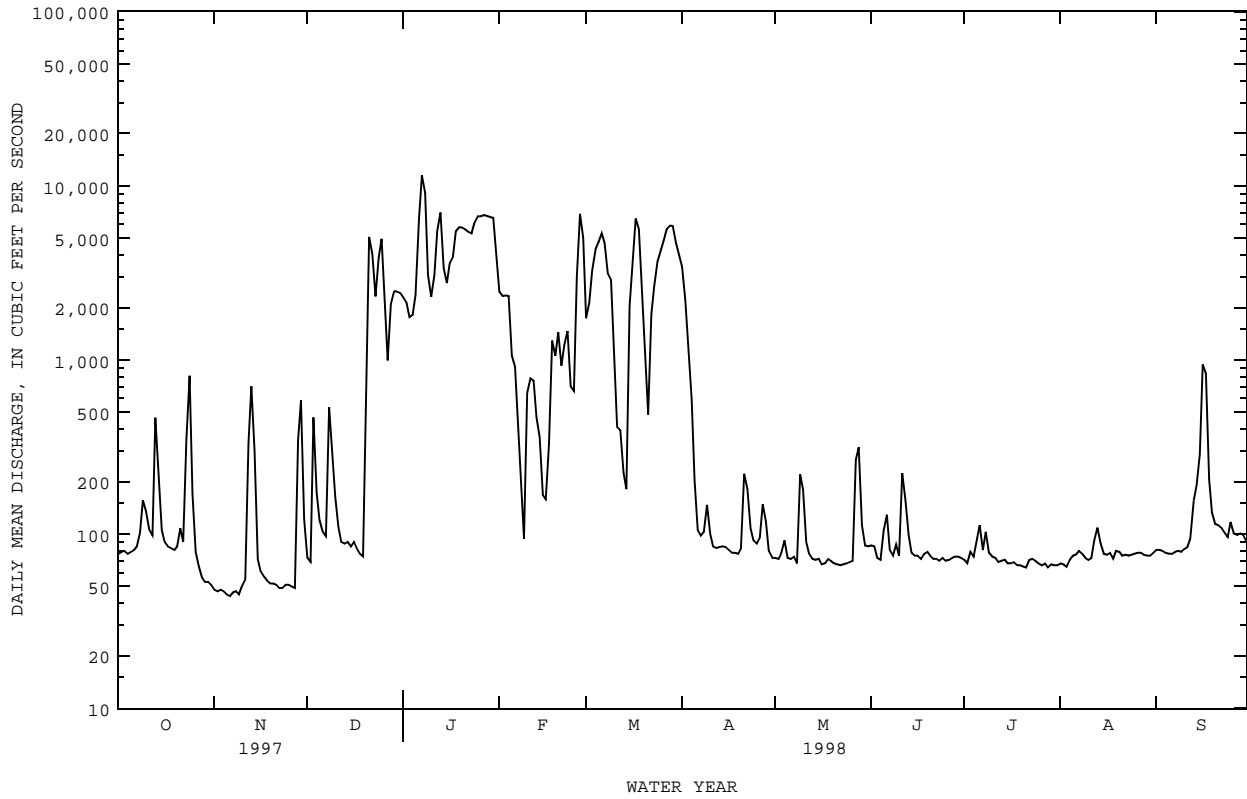
MEAN	389	489	686	621	813	935	1050	1735	1041	436	161	205
MAX	4116	3293	4401	5039	3539	3245	3755	9586	5718	2026	1459	1560
(WY)	1974	1995	1972	1998	1997	1998	1997	1957	1989	1982	1989	1974
MIN	1.58	3.78	3.57	7.77	23.1	10.6	7.47	42.1	17.8	3.84	.000	.000
(WY)	1957	1956	1955	1957	1957	1956	1956	1959	1954	1956	1956	1954

TRINITY RIVER BASIN

08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1954 - 1998z	
ANNUAL TOTAL	441140		366318		713	
ANNUAL MEAN	1209		1004		2209	
HIGHEST ANNUAL MEAN					38.4	
LOWEST ANNUAL MEAN					1995	
HIGHEST DAILY MEAN	13700	Apr 5	11500	Jan 7	48800	May 5 1990
LOWEST DAILY MEAN	44	Nov 6	44	Nov 6	.00	Oct 1 1953
ANNUAL SEVEN-DAY MINIMUM	46	Nov 3	46	Nov 3	.00	Oct 1 1953
INSTANTANEOUS PEAK FLOW			12100	Jan 7	59900	May 5 1990
INSTANTANEOUS PEAK STAGE			14.09	Jan 7	27.17	May 5 1990
ANNUAL RUNOFF (AC-FT)	875000		726600		516400	
10 PERCENT EXCEEDS	3040		4030		2150	
50 PERCENT EXCEEDS	129		90		93	
90 PERCENT EXCEEDS	55		66		18	

e Estimated
z Period of regulated streamflow.



08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Jan to Apr 1964, May 1966 to Sep 1981, Jun 1986 to current year. Pesticide analyses: Mar 1977 to Jul 1981. Sediment analyses: Apr to Sep 1964.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct 1967 to Sep 1981, May 1986 to current year.
 PH: Mar to Sep 1977, May 1986 to current year.
 WATER TEMPERATURE: Oct 1967 to Sep 1981, May 1986 to current year.
 DISSOLVED OXYGEN: Mar to Sep 1977, May 1986 to current year.

INSTRUMENTATION.--From Mar to Nov 1977, a four-parameter water-quality monitor continuously recorded specific conductance, pH, water temperature, and dissolved oxygen at this station. Since May 1986, a four-parameter water-quality monitor continuously records specific conductance, pH, water temperature, and dissolved oxygen at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1989 to 1998. The standard error of estimate for dissolved solids is 5%, chloride is 27%, sulfate is 15% and for hardness is 12%. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,010 microsiemens, Nov 23, 1968; minimum, 100 microsiemens, May 17, 1989.
 PH: Maximum, 9.5 units, Oct 30, 1989; minimum, 6.7 units, on several days during 1988 and 1991.
 WATER TEMPERATURE: Maximum, 34.0°C, Jun 26, Jul 1, Aug 16, 17, 1980; minimum, 1.0°C, Jan 3, 1979.
 DISSOLVED OXYGEN: Maximum, 16.4 mg/L, Mar 13, 1996; minimum, 0.0 mg/L, on many days during 1977 and 1991.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 811 microsiemens, Oct 31; minimum, 154 microsiemens, Oct 23-24.
 PH: Maximum, 8.7 units, Mar 16; minimum, 7.1 units, Oct 1, Nov 29.
 WATER TEMPERATURE: Maximum, 32.4°C, Jul 16; minimum, 7.0°C, Dec 29.
 DISSOLVED OXYGEN: Maximum, 11.4 mg/L, Mar 9; minimum, 0.2 mg/L, Jul 9.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	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 (PER- CENT SATUR- ATION) (00300)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L) (00310)	HARD- NESS NONCARB DISSOLV AS CACO3 (MG/L) (00900)	HARD- NESS DISSOLV AS CACO3 (MG/L) (00904)	CALCIUM DIS- SOLVED AS CA (MG/L) (00915)		
OCT											
30...	1230	634	7.8	18.0	7.0	74	--	160	42	56	
FEB											
18...	0845	329	7.7	9.5	10.1	89	2.0	120	5	43	
MAR											
27...	1000	326	7.9	14.5	9.0	88	1.6	130	9	46	
APR											
29...	0820	700	7.8	19.0	6.3	68	1.4	190	50	71	
JUN											
04...	0905	588	7.8	28.5	6.0	79	2.7	140	37	51	
JUL											
08...	0820	527	7.7	30.0	5.1	68	2.9	120	29	44	
DATE		MAGNE- SIUM, DIS- SOLVED AS MG (00925)	SODIUM, DIS- SOLVED AS NA (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED AS K (00935)	ALKA- LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS- SOLVED AS SO4 (00945)	CHLO- RIDE, DIS- SOLVED AS CL (00940)	FLUO- RIDE, DIS- SOLVED AS F (00950)	SILICA, DIS- SOLVED SIO2 (MG/L) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
OCT											
30...	4.1	60	2	9.0	120	61	64	.84	11	380	
FEB											
18...	2.6	17	.7	4.3	110	27	17	.32	6.5	192	
MAR											
27...	2.7	15	.6	3.8	120	25	15	.33	5.0	186	
APR											
29...	4.2	66	2	11	140	66	66	.87	6.7	417	
JUN											
04...	3.6	57	2	9.6	110	57	58	.86	6.7	348	
JUL											
08...	3.2	49	2	9.2	94	50	52	.80	7.3	312	

TRINITY RIVER BASIN

08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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- SOLVED (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)
OCT 30...	7.85	.319	8.17	.873	.72	1.6	2.08	1.82	5.6
FEB 18...	.870	.049	.919	.228	.33	.56	.157	.132	.40
MAR 27...	.564	.022	.586	.054	.29	.35	.065	.039	.12
APR 29...	7.04	.227	7.27	1.74	1.2	2.9	1.60	1.52	4.7
JUN 04...	7.85	.234	8.09	.044	.69	.73	1.92	1.95	6.0
JUL 08...	7.63	.049	7.68	.043	.82	.87	1.91	1.66	5.1

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1997 TO SEPTEMBER 1998

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. 1997	4251	511	294	3370	44	500	49	560	140
NOV. 1997	3612	538	310	3020	47	460	52	507	150
DEC. 1997	36727	293	165	16340	14	1420	24	2330	110
JAN. 1998	156200	295	166	69990	13	5630	23	9820	110
FEB. 1998	39598	341	192	20560	18	1920	28	2990	120
MAR. 1998	100583	351	198	53820	19	5110	29	7850	120
APR. 1998	10236	514	295	8150	41	1140	48	1330	150
MAY 1998	3003	596	344	2790	56	450	59	477	150
JUNE 1998	2600	621	359	2520	59	416	62	435	160
JULY 1998	2261	643	373	2280	63	384	65	396	160
AUG. 1998	2386	664	386	2480	67	431	68	437	160
SEPT 1998	4861	498	286	3760	42	548	47	621	140
TOTAL	366318	**	**	189100	**	18400	**	27740	**
WTD.AVG.	1000	338	191	**	19	**	28	**	120

TRINITY RIVER BASIN

08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	716	682	703	742	689	708	581	491	539	315	312	314
2	698	665	677	691	681	688	646	577	595	322	311	313
3	730	697	713	684	669	676	646	248	421	325	315	322
4	722	698	704	715	684	704	474	319	415	---	---	e200
5	705	693	700	703	678	689	563	474	518	---	---	e150
6	704	696	700	705	684	693	646	561	592	---	---	e220
7	706	693	700	729	705	720	678	560	661	---	---	e260
8	696	640	666	754	729	742	560	176	274	---	---	e300
9	724	618	649	768	741	756	432	289	363	330	306	323
10	754	518	628	743	735	737	530	432	490	318	309	315
11	581	535	560	742	697	721	594	530	571	324	306	309
12	619	575	593	697	674	689	667	594	624	324	285	298
13	641	206	428	---	---	e420	687	667	677	301	286	295
14	398	236	318	---	---	e440	709	687	701	343	301	326
15	526	398	461	518	438	468	730	702	714	316	306	310
16	606	526	557	591	513	547	731	711	722	311	308	310
17	669	606	649	675	591	639	711	689	702	311	307	308
18	697	665	681	675	662	668	720	688	699	307	305	306
19	717	695	708	673	661	666	739	720	734	307	303	304
20	736	709	722	681	659	667	738	193	512	305	303	304
21	709	667	683	696	681	688	197	171	181	305	303	304
22	671	629	652	715	695	702	280	197	223	307	303	305
23	645	154	544	727	711	717	314	247	282	307	303	305
24	404	154	269	727	714	721	273	246	260	303	300	301
25	402	315	346	731	708	723	296	273	286	302	300	301
26	510	402	469	715	701	706	400	296	326	304	302	303
27	596	506	545	760	714	740	420	297	346	306	304	305
28	620	596	603	741	204	606	309	297	304	305	303	304
29	635	620	629	450	253	326	311	307	308	305	304	305
30	694	624	647	491	379	441	313	309	311	310	305	306
31	811	694	771	---	---	---	314	308	310	328	309	322
MONTH	811	154	602	---	---	647	739	171	473	---	---	295
DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	328	324	326	367	341	355	---	---	e420	670	634	650
2	324	319	322	353	322	330	---	---	e480	709	670	692
3	321	318	319	328	322	323	---	---	e510	717	709	713
4	329	320	322	325	324	324	---	---	e560	709	684	697
5	359	329	354	325	322	323	---	---	e580	712	689	703
6	366	356	363	322	319	321	---	---	e600	689	641	667
7	448	365	398	344	319	326	---	---	e610	670	640	650
8	529	448	500	343	327	337	---	---	e620	688	670	680
9	656	524	568	334	324	327	---	---	e640	704	343	569
10	700	309	523	424	334	382	---	---	e640	658	416	495
11	437	314	378	444	421	430	---	---	e640	564	462	533
12	437	345	362	447	423	438	---	---	e640	596	564	575
13	474	348	388	470	441	456	---	---	e640	---	---	e600
14	529	375	415	639	467	541	---	---	e650	---	---	e640
15	511	439	484	641	330	394	---	---	e650	684	666	678
16	583	506	541	330	288	311	---	---	e650	677	668	670
17	638	579	604	---	---	e360	---	---	e660	695	677	687
18	584	332	354	---	---	e400	---	---	e660	698	693	696
19	420	339	375	---	---	e420	---	---	e670	711	695	703
20	339	330	333	---	---	e440	---	---	e670	714	655	678
21	391	335	360	---	---	e310	---	---	e680	697	649	677
22	465	337	382	---	---	e320	---	---	e680	718	690	706
23	355	334	339	338	332	a336	---	---	e680	718	708	713
24	397	355	384	336	333	334	---	---	e680	709	702	707
25	408	394	399	336	328	331	---	---	e670	706	692	702
26	397	249	302	---	---	e340	---	---	e670	702	692	697
27	313	290	301	---	---	e340	---	---	e650	694	283	567
28	342	313	324	---	---	e360	657	632	641	556	294	362
29	---	---	---	---	---	e360	676	656	670	508	374	455
30	---	---	---	---	---	e370	663	633	646	551	508	527
31	---	---	---	---	---	e400	---	---	---	600	551	576
MONTH	700	249	394	---	---	366	---	---	629	---	---	634

TRINITY RIVER BASIN

08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	615	600	610	679	662	668	682	673	678	680	667	674
2	620	592	606	662	627	640	692	680	686	679	667	674
3	603	575	588	657	630	644	693	683	689	679	659	670
4	614	579	590	672	657	666	683	663	671	690	668	681
5	672	614	649	681	661	672	667	658	662	696	684	689
6	697	611	673	686	664	675	658	647	652	693	677	685
7	611	502	540	675	539	607	672	649	660	698	685	692
8	591	569	577	556	529	542	673	657	666	699	680	688
9	636	591	614	629	549	589	683	667	676	682	651	664
10	657	636	649	635	582	613	694	676	685	654	632	640
11	647	389	602	622	582	595	683	672	678	649	629	634
12	465	341	386	650	618	640	672	643	662	690	644	674
13	554	465	531	650	638	645	678	634	653	703	632	670
14	592	552	573	649	638	645	670	554	584	665	505	593
15	616	589	597	649	632	640	607	578	592	543	376	473
16	654	616	637	682	616	623	658	607	640	406	188	290
17	667	654	659	630	618	623	684	658	674	370	236	302
18	672	664	668	651	628	638	680	670	674	484	370	437
19	685	672	681	664	651	658	671	665	668	556	484	520
20	694	685	691	663	652	657	665	657	660	608	556	584
21	706	689	696	671	661	666	676	658	668	653	608	635
22	709	697	705	668	644	655	685	671	677	650	638	645
23	698	689	693	655	643	649	691	681	685	647	612	628
24	695	678	684	667	652	660	683	666	677	643	616	624
25	688	643	658	672	662	667	678	664	668	673	643	655
26	673	645	659	683	666	675	665	646	655	676	655	668
27	682	672	675	673	663	667	651	644	648	655	614	626
28	684	680	681	667	660	664	701	650	670	674	621	643
29	691	678	683	671	646	665	720	697	710	706	672	689
30	685	671	679	672	667	669	697	673	684	674	659	664
31	---	---	---	677	665	671	684	672	677	---	---	---
MONTH	709	341	631	686	529	645	720	554	665	706	188	614

e Estimated

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	7.9	7.1	7.6	---	---	---	7.3	7.3	7.3	8.3	8.2	8.3
2	7.7	7.3	7.4	---	---	---	7.4	7.3	7.3	8.3	8.2	8.3
3	7.7	7.3	7.5	---	---	---	7.5	7.3	7.4	8.4	8.2	8.3
4	7.7	7.4	7.5	---	---	---	7.3	7.3	7.3	8.4	8.3	8.3
5	7.5	7.4	7.4	---	---	---	7.3	7.3	7.3	---	---	---
6	7.5	7.4	7.4	---	---	---	7.3	7.3	7.3	---	---	---
7	7.4	7.3	7.4	---	---	---	7.4	7.2	7.3	---	---	---
8	7.5	7.3	7.4	---	---	---	7.8	7.4	7.5	---	---	---
9	7.5	7.4	7.5	---	---	---	7.4	7.3	7.4	---	---	---
10	7.5	7.4	7.5	---	---	---	7.4	7.3	7.3	---	---	---
11	7.5	7.5	7.5	---	---	---	7.4	7.3	7.4	---	---	---
12	7.6	7.5	7.6	---	---	---	7.4	7.4	7.4	---	---	---
13	7.9	7.6	7.7	---	---	---	7.5	7.4	7.4	---	---	---
14	7.9	7.7	7.8	---	---	---	7.4	7.4	7.4	---	---	---
15	7.7	7.6	7.7	---	---	---	7.4	7.4	7.4	---	---	---
16	7.7	7.6	7.6	---	---	---	7.4	7.3	7.4	---	---	---
17	7.7	7.7	7.7	---	---	---	7.6	7.4	7.5	---	---	---
18	7.7	7.6	7.7	---	---	---	7.6	7.4	7.5	---	---	---
19	7.7	7.6	7.6	---	---	---	7.5	7.4	7.4	---	---	---
20	7.6	7.6	7.6	---	---	---	7.8	7.4	7.5	---	---	---
21	7.7	7.5	7.6	---	---	---	7.8	7.3	7.4	---	---	---
22	7.7	7.5	7.6	7.4	7.3	7.4	7.9	7.3	7.5	---	---	---
23	---	---	---	7.4	7.3	7.4	7.9	7.5	7.7	---	---	---
24	---	---	---	7.4	7.3	7.4	7.9	7.6	7.7	---	---	---
25	---	---	---	7.4	7.3	7.3	8.3	7.8	8.1	---	---	---
26	---	---	---	7.3	7.2	7.3	8.2	7.9	8.0	---	---	---
27	---	---	---	7.3	7.2	7.3	8.2	8.0	8.1	---	---	---
28	---	---	---	7.7	7.2	7.3	8.2	8.2	8.2	---	---	---
29	---	---	---	7.3	7.1	7.3	8.3	8.1	8.2	---	---	---
30	---	---	---	7.3	7.2	7.3	8.3	8.2	8.2	---	---	---
31	---	---	---	---	---	---	8.3	8.2	8.2	7.4	7.2	7.3
MONTH	---	---	---	---	---	---	8.3	7.2	7.6	---	---	---

08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	7.7	7.3	7.5	8.1	7.9	8.0	---	---	---	8.2	8.1	8.1
2	7.7	7.5	7.6	8.3	8.1	8.2	---	---	---	8.3	8.0	8.2
3	7.8	7.6	7.7	8.2	8.0	8.1	---	---	---	8.3	8.1	8.2
4	7.9	7.6	7.7	8.1	7.9	8.0	---	---	---	8.2	8.1	8.2
5	7.8	7.5	7.6	8.1	7.8	7.9	---	---	---	8.3	8.0	8.1
6	7.7	7.5	7.6	8.0	7.7	7.9	---	---	---	8.4	8.1	8.2
7	7.7	7.6	7.7	8.0	7.7	7.8	---	---	---	8.3	8.1	8.2
8	7.6	7.5	7.5	8.1	7.7	7.9	---	---	---	8.4	8.1	8.2
9	7.5	7.4	7.5	8.2	7.9	8.1	---	---	---	8.4	7.9	8.2
10	7.6	7.4	7.4	8.2	8.0	8.0	---	---	---	8.1	8.0	8.0
11	7.6	7.4	7.5	8.1	8.0	8.1	---	---	---	8.3	8.0	8.1
12	7.8	7.6	7.7	8.2	8.1	8.1	---	---	---	8.3	8.1	8.2
13	7.8	7.6	7.7	8.1	8.1	8.1	---	---	---	8.3	8.2	8.2
14	7.7	7.5	7.7	8.1	8.0	8.0	---	---	---	8.3	8.2	8.3
15	7.7	7.6	7.6	8.0	7.9	8.0	---	---	---	---	---	---
16	7.7	7.7	7.7	8.7	7.9	8.1	---	---	---	---	---	---
17	7.8	7.6	7.7	---	---	---	---	---	---	---	---	---
18	8.0	7.6	8.0	---	---	---	---	---	---	---	---	---
19	7.9	7.8	7.9	---	---	---	---	---	---	---	---	---
20	8.0	7.9	8.0	---	---	---	---	---	---	---	---	---
21	8.0	7.9	7.9	---	---	---	---	---	---	8.0	7.6	7.8
22	7.9	7.8	7.9	---	---	---	---	---	---	7.9	7.6	7.7
23	8.0	7.9	8.0	---	---	---	---	---	---	7.9	7.6	7.7
24	8.0	7.8	7.9	---	---	---	---	---	---	7.8	7.6	7.7
25	7.9	7.8	7.9	---	---	---	---	---	---	7.7	7.6	7.6
26	8.0	7.7	7.9	---	---	---	---	---	---	7.8	7.3	7.6
27	7.9	7.7	7.8	---	---	---	---	---	---	7.9	7.7	7.8
28	8.0	7.8	7.9	---	---	---	---	---	---	7.9	7.8	7.8
29	---	---	---	---	---	---	8.2	8.1	8.1	7.8	7.8	7.8
30	---	---	---	---	---	---	8.2	8.0	8.1	7.9	7.8	7.9
31	---	---	---	---	---	---	---	---	---	8.0	7.8	7.9
MONTH	8.0	7.3	7.7	---	---	---	---	---	---	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	8.1	7.9	8.0	8.2	7.7	7.9	7.9	7.5	7.7	---	---	---
2	8.1	7.9	8.0	8.3	7.7	7.9	7.8	7.5	7.6	---	---	---
3	8.1	7.9	8.0	8.2	7.7	7.9	7.9	7.5	7.6	---	---	---
4	8.4	7.8	8.1	8.2	7.7	7.9	7.6	7.5	7.5	---	---	---
5	8.1	7.8	8.0	8.1	7.6	7.9	7.5	7.4	7.4	---	---	---
6	7.9	7.7	7.8	7.8	7.6	7.7	7.5	7.3	7.4	---	---	---
7	8.0	7.7	7.8	7.7	7.6	7.6	7.6	7.3	7.4	---	---	---
8	8.4	7.9	8.1	7.8	7.6	7.7	7.8	7.4	7.6	---	---	---
9	8.1	7.9	8.0	7.8	7.7	7.8	7.8	7.5	7.6	---	---	---
10	8.0	7.8	7.9	8.1	7.7	7.8	7.9	7.4	7.6	---	---	---
11	8.0	7.5	7.7	7.9	7.8	7.8	7.7	7.5	7.6	---	---	---
12	7.6	7.5	7.5	7.9	7.7	7.8	7.7	7.5	7.6	7.5	7.4	7.5
13	7.6	7.4	7.5	7.9	7.7	7.8	7.5	7.3	7.4	7.5	7.4	7.4
14	7.9	7.5	7.7	7.9	7.7	7.8	7.4	7.3	7.3	7.5	7.4	7.4
15	8.0	7.6	7.8	7.9	7.7	7.8	7.4	7.2	7.3	7.6	7.5	7.5
16	8.0	7.6	7.8	8.2	7.7	7.9	7.7	7.3	7.5	8.1	7.5	7.8
17	8.4	7.8	8.1	8.2	7.8	7.9	7.7	7.5	7.6	7.9	7.7	7.7
18	8.3	7.8	8.0	8.1	7.6	7.8	7.8	7.5	7.6	7.7	7.6	7.6
19	8.1	7.6	7.8	8.0	7.6	7.7	7.7	7.5	7.6	7.7	7.6	7.6
20	8.1	7.7	7.9	7.8	7.5	7.6	7.7	7.5	7.6	7.7	7.6	7.6
21	8.3	7.8	8.0	7.7	7.4	7.5	7.6	7.5	7.5	7.7	7.6	7.7
22	8.4	7.8	8.0	7.8	7.5	7.6	7.9	7.5	7.7	7.7	7.6	7.7
23	8.3	7.8	8.1	7.6	7.4	7.5	7.8	7.6	7.6	7.8	7.6	7.7
24	8.3	7.8	8.1	7.8	7.4	7.5	8.1	7.5	7.8	7.8	7.7	7.7
25	8.4	7.8	8.0	7.9	7.4	7.6	8.0	7.7	7.8	7.8	7.6	7.7
26	8.3	7.7	8.0	7.8	7.5	7.6	7.9	7.7	7.8	7.8	7.7	7.7
27	8.3	7.7	8.0	7.7	7.5	7.6	8.0	7.7	7.8	7.8	7.7	7.8
28	8.3	7.7	7.9	7.8	7.5	7.6	8.1	7.6	7.8	7.8	7.7	7.7
29	8.1	7.7	7.9	8.0	7.5	7.6	---	---	---	7.7	7.7	7.7
30	8.1	7.7	7.8	8.0	7.5	7.7	---	---	---	7.8	7.7	7.7
31	---	---	---	8.0	7.5	7.7	---	---	---	---	---	---
MONTH	8.4	7.4	7.9	8.3	7.4	7.7	---	---	---	---	---	---

TRINITY RIVER BASIN

08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

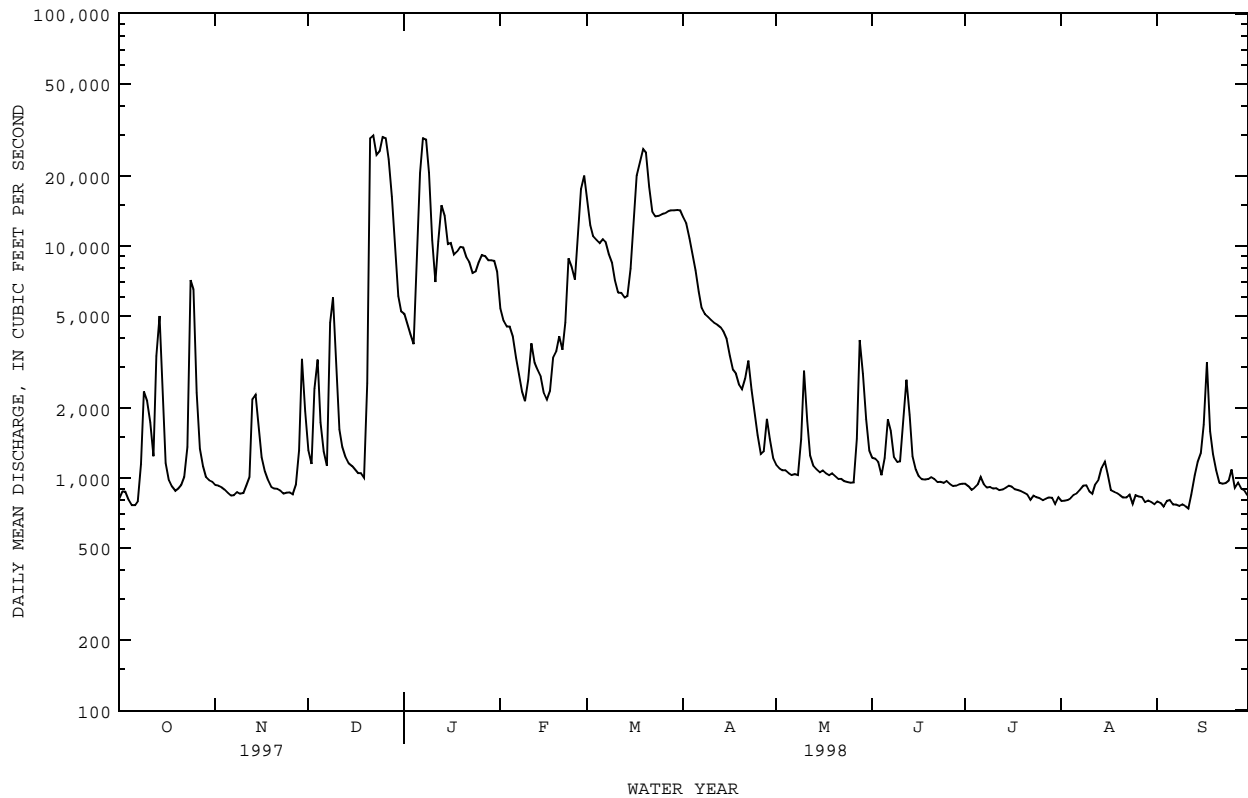
DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	27.2	25.6	26.4	20.6	19.5	20.1	14.8	14.6	14.7	9.1	7.5	8.2
2	27.3	25.8	26.6	19.5	18.2	18.7	14.7	14.2	14.4	10.2	9.1	9.5
3	27.1	25.7	26.5	18.3	16.7	17.4	14.7	12.5	13.6	10.7	10.1	10.4
4	26.7	25.2	26.0	17.2	15.9	16.7	13.2	12.3	12.7	13.3	10.4	10.9
5	26.0	24.7	25.4	18.8	17.2	17.9	12.5	11.7	12.1	13.9	10.4	12.9
6	26.2	25.0	25.6	18.6	16.8	17.8	11.8	10.8	11.3	13.9	11.0	13.1
7	26.0	25.2	25.5	16.8	15.5	16.2	11.8	10.6	11.4	12.9	8.3	10.7
8	25.3	24.6	25.0	16.3	15.0	15.7	11.2	7.7	8.8	11.5	8.0	9.2
9	25.3	24.9	25.1	15.9	15.2	15.5	11.6	9.6	10.6	9.2	7.8	8.3
10	25.5	24.8	25.1	15.8	14.5	15.1	11.9	11.3	11.6	9.2	8.8	9.0
11	25.5	25.0	25.2	15.0	14.0	14.6	11.5	10.7	11.0	9.1	8.7	8.9
12	25.1	24.5	24.9	---	---	---	10.7	9.8	10.1	10.1	9.0	9.4
13	24.5	20.7	22.4	---	---	---	9.8	8.8	9.2	9.9	8.2	9.0
14	20.9	19.6	20.3	---	---	---	9.8	8.1	9.1	9.1	8.0	8.4
15	20.6	19.3	20.0	13.3	12.5	12.9	10.7	8.8	9.8	8.9	7.7	8.3
16	20.7	19.0	20.0	12.6	11.2	12.0	11.5	9.9	10.8	9.2	7.5	8.4
17	20.9	19.3	20.2	11.8	10.4	11.1	12.1	10.8	11.5	9.2	7.7	8.6
18	20.9	19.3	20.2	12.0	11.0	11.5	12.1	10.9	11.6	9.7	7.5	9.2
19	21.2	19.4	20.4	12.9	11.5	12.3	13.0	11.3	12.1	9.5	7.9	8.5
20	22.1	20.1	21.1	13.6	12.3	13.0	14.4	12.4	13.6	9.8	8.2	8.8
21	21.8	20.4	21.0	14.8	13.4	14.1	12.4	10.7	11.6	9.9	9.2	9.6
22	20.4	19.3	19.7	14.7	13.7	14.3	10.7	7.6	10.1	9.2	8.3	8.7
23	19.3	15.5	18.0	14.6	13.2	14.0	10.4	9.4	9.8	8.4	7.2	7.9
24	17.7	15.5	16.7	14.4	13.4	14.0	9.4	8.6	9.0	8.8	7.4	8.2
25	19.5	17.7	18.5	15.5	14.1	14.6	9.3	8.4	8.9	8.8	8.0	8.3
26	18.8	17.1	17.9	17.6	15.5	16.6	9.3	8.7	8.9	9.3	8.5	8.9
27	17.1	15.6	16.5	18.8	17.6	18.3	9.2	8.3	8.6	9.3	7.9	8.7
28	16.6	15.2	15.8	19.2	16.5	18.4	8.4	7.6	8.0	9.9	8.4	9.2
29	17.0	15.3	16.1	16.9	16.0	16.4	8.3	7.0	7.7	10.3	9.0	9.8
30	18.8	17.0	17.8	16.0	14.8	15.3	9.0	7.4	8.2	10.1	8.8	9.6
31	20.8	18.8	19.8	---	---	---	9.0	7.6	8.3	10.1	9.7	9.9
MONTH	27.3	15.2	21.6	---	---	---	14.8	7.0	10.6	13.9	7.2	9.3
DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	10.7	9.2	9.8	12.3	10.8	11.6	---	---	---	22.9	20.3	21.5
2	10.5	9.5	10.0	12.3	10.4	11.3	---	---	---	24.1	21.6	22.8
3	11.1	9.3	10.1	12.2	9.5	10.9	---	---	---	24.6	22.6	23.6
4	11.0	9.2	10.0	13.0	11.0	11.8	---	---	---	24.3	22.5	23.5
5	10.6	9.6	10.0	14.2	12.7	13.4	---	---	---	24.8	22.7	23.6
6	9.7	8.9	9.4	13.5	11.0	11.7	---	---	---	26.3	23.5	24.7
7	10.1	8.9	9.5	11.7	11.1	11.3	---	---	---	27.1	25.3	26.2
8	10.8	9.9	10.3	11.7	9.5	10.8	---	---	---	27.2	25.8	26.6
9	12.3	10.4	11.2	10.9	8.2	9.4	---	---	---	26.5	24.1	25.0
10	13.3	11.6	12.4	10.5	9.1	9.8	---	---	---	25.1	23.3	24.4
11	11.8	10.6	11.3	11.0	9.1	10.1	---	---	---	26.1	24.2	25.0
12	11.5	10.0	10.4	10.9	9.6	10.4	---	---	---	26.5	24.3	25.4
13	12.1	10.2	11.0	11.2	10.4	10.8	---	---	---	26.1	25.2	25.6
14	12.2	10.7	11.5	12.6	11.1	11.7	---	---	---	26.5	25.5	25.8
15	12.6	12.1	12.5	13.2	11.5	12.0	---	---	---	27.0	25.2	26.0
16	12.7	12.3	12.5	13.4	12.0	12.6	---	---	---	27.1	25.3	26.2
17	13.0	12.3	12.6	---	---	---	---	---	---	27.3	25.6	26.4
18	12.6	9.5	10.5	---	---	---	---	---	---	27.4	25.7	26.6
19	11.5	10.5	11.1	---	---	---	---	---	---	27.3	25.7	26.6
20	11.4	9.6	10.4	---	---	---	---	---	---	27.1	25.4	26.3
21	11.3	10.4	10.7	---	---	---	---	---	---	27.4	25.6	26.6
22	11.5	10.9	11.1	---	---	---	---	---	---	27.4	25.9	26.7
23	11.9	10.2	11.0	---	---	---	---	---	---	27.0	25.7	26.4
24	12.9	11.7	12.3	---	---	---	---	---	---	26.5	25.8	26.1
25	13.4	12.8	13.1	16.5	13.5	15.1	---	---	---	26.1	25.2	25.7
26	13.7	12.4	13.0	---	---	---	---	---	---	27.6	25.4	26.4
27	12.9	11.4	12.2	---	---	---	---	---	---	27.3	24.5	26.0
28	12.6	11.0	12.0	---	---	---	---	---	---	26.4	23.9	25.3
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	20.7	19.2	20.0	28.5	26.1	27.2
31	---	---	---	---	---	---	21.6	19.2	20.4	29.8	27.6	28.6
MONTH	13.7	8.9	11.1	---	---	---	---	---	---	30.2	20.3	25.7

TRINITY RIVER BASIN

08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1925 - 1998h	
ANNUAL TOTAL	2203816		1539747		3092	
ANNUAL MEAN	6038		4218		280	
HIGHEST ANNUAL MEAN					9702	
LOWEST ANNUAL MEAN					280	
HIGHEST DAILY MEAN	31300	Apr 6	29900	Dec 22	133000	Apr 23 1942
LOWEST DAILY MEAN	755	Sep 2	739	Sep 11	32	Oct 4 1924
ANNUAL SEVEN-DAY MINIMUM	786	Aug 28	767	Sep 5	32	Oct 14 1924
INSTANTANEOUS PEAK FLOW			38600		150000	
INSTANTANEOUS PEAK STAGE			34.92		41.55	
ANNUAL RUNOFF (AC-FT)	4371000		3054000		2240000	
10 PERCENT EXCEEDS	15500		11400		8690	
50 PERCENT EXCEEDS	2150		1220		899	
90 PERCENT EXCEEDS	861		826		212	

e Estimated
 h See PERIOD OF RECORD paragraph.



08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Oct 1954 to current year. Chemical and biochemical analyses: Jan 1968 to current year. Pesticide analyses: Jan 1968 to Jul 1981. Sediment analyses: Oct 1963 to Sep 1964, Apr 1972 to Apr 1975.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct 1954 to current year.
 PH: Mar 1977 to current year.
 WATER TEMPERATURE: Oct 1954 to current year.
 DISSOLVED OXYGEN: Mar 1977 to current year.

INSTRUMENTATION.--Since Mar 1977, a four-parameter water-quality monitor records water temperature, DO, pH, and specific conductance continuously at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1989 to 1998. The standard error of estimate for dissolved solids is 5%, chloride is 15%, sulfate is 10% and for hardness is 10%. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 2,990 microsiemens, Oct 13, 1956; minimum, 122 microsiemens, Sep 30, 1981.
 PH: Maximum, 9.9 units, Jul 12, 1982; minimum, 6.8 units, Oct 3, 19, 20, Nov 19, 1980.
 WATER TEMPERATURE: Maximum, 36.0°C, Jul 1, 1955; minimum, 1.0°C, on many days during winter months.
 DISSOLVED OXYGEN: Maximum, 13.6 mg/L, Feb 18, 1996; minimum, 0.0 mg/L, on several days during 1979-81.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 793 microsiemens, Aug 11; minimum, 156 microsiemens, Dec 21.
 PH: Maximum, 8.5 units, Jun 19; minimum, 7.1 units, Nov 29-30, Dec 3-4, May 10.
 WATER TEMPERATURE: Maximum, 33.3°C, Jul 16; minimum, 8.2°C, Dec 29-30.
 DISSOLVED OXYGEN: Maximum, 11.0 mg/L, May 21; minimum, 1.4 mg/L, May 10.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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 (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L) (00900)	HARD-NESS NONCARBONATE (MG/L) (00904)	
OCT 30...	1145	1000	586	7.8	18.0	8.6	91	2.8	160	56
FEB 18...	0745	3280	696	7.4	13.0	10.7	102	1.9	190	42
MAR 26...	0915	13700	432	8.1	16.0	10.7	108	1.7	140	17
APR 29...	0715	2030	654	8.1	20.5	7.5	83	1.0	200	64
JUN 04...	0730	448	645	8.1	29.5	7.2	96	2.3	170	48
JUL 08...	0700	945	664	7.8	30.5	6.5	88	.8	150	28

DATE	CALCIUM DIS-SOLVED (MG/L) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L) (00925)	SODIUM, DIS-SOLVED (MG/L) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L) (00935)	ALKA-LINITY WAT DIS FIX END FIELD (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L) (00950)	SILICA, DIS-SOLVED (MG/L) (00955)
OCT 30...	56	4.9	52	2	8.0	100	75	49	1.1	8.1
FEB 18...	68	5.8	53	2	7.8	150	82	51	.83	7.6
MAR 26...	49	5.3	24	.9	4.6	130	40	24	.33	4.9
APR 29...	69	6.4	57	2	7.9	140	78	53	.84	5.4
JUN 04...	59	5.4	61	2	9.1	120	84	58	1.2	6.0
JUL 08...	50	5.7	73	3	10	120	76	70	1.2	7.2

TRINITY RIVER BASIN

08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	SOLIDS, SUM OF CONSTITUENTS, 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- SOLVED (MG/L) AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L) AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L) AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L) AS PO4) (00660)
OCT 30...	356	8.05	.040	8.09	.068	.73	.80	1.40	1.26	3.9
FEB 18...	399	6.20	.130	6.34	.304	.59	.90	1.29	1.20	3.7
MAR 26...	234	.894	.027	.921	.075	.34	.41	.121	.089	.27
APR 29...	391	6.32	.035	6.36	.080	.58	.66	1.11	1.04	3.2
JUN 04...	395	7.96	.072	8.03	<.020	--	.67	1.22	1.23	3.8
JUL 08...	407	8.25	.042	8.29	.071	.74	.81	1.73	1.47	4.5

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1997 TO SEPTEMBER 1998

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. 1997	54320	491	277	40590	36	5290	52	7650	150
NOV. 1997	34633	612	348	32530	52	4900	69	6500	160
DEC. 1997	268100	338	188	136000	18	13250	32	23160	120
JAN. 1998	334810	358	199	179800	19	17410	34	30560	130
FEB. 1998	147970	450	252	100900	30	11960	46	18360	140
MAR. 1998	402120	395	220	238800	23	24860	38	41550	140
APR. 1998	135040	436	244	88860	28	10060	44	15910	140
MAY 1998	41582	639	364	40880	57	6350	74	8280	170
JUNE 1998	35876	635	362	35030	56	5380	73	7060	170
JULY 1998	27246	712	408	30000	68	5030	85	6270	170
AUG. 1998	27031	712	408	29770	68	4990	85	6230	170
SEPT 1998	31019	617	351	29420	54	4490	71	5910	160
TOTAL	1539747.00	**	**	982600	**	114000	**	177400	**
WTD.AVG.	4220	422	236	**	27	**	43	**	140

TRINITY RIVER BASIN

08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	709	665	693	653	625	644	507	444	478	448	427	431
2	699	681	688	664	653	660	572	507	538	428	411	421
3	720	699	710	677	662	668	581	487	561	446	412	434
4	719	695	703	678	675	676	494	444	465	466	415	431
5	701	688	694	685	676	681	457	437	445	484	276	354
6	712	687	698	681	671	676	508	452	476	300	266	275
7	740	712	727	685	676	679	555	508	534	297	275	284
8	740	707	729	708	685	699	557	353	464	323	297	312
9	707	521	651	713	699	703	391	353	367	361	323	339
10	521	446	464	726	713	717	418	358	387	393	361	375
11	542	477	505	729	710	718	473	418	439	420	393	405
12	524	441	475	731	706	723	539	473	507	436	329	386
13	561	374	523	706	531	645	581	539	560	356	338	349
14	390	330	369	572	475	517	611	581	599	383	354	366
15	410	371	392	543	495	512	646	607	622	401	383	395
16	451	410	430	515	500	509	651	636	642	396	392	394
17	519	451	482	556	515	528	655	646	650	392	386	390
18	579	519	553	601	556	581	666	655	662	390	380	384
19	639	579	622	617	601	611	668	656	662	387	383	386
20	671	639	656	645	617	637	674	370	624	386	382	384
21	682	671	678	667	641	659	370	156	202	390	385	387
22	681	674	677	679	666	674	265	218	249	398	362	379
23	676	516	636	684	674	679	313	265	280	400	395	397
24	543	284	377	699	684	693	313	288	296	396	381	389
25	353	321	335	720	698	710	316	300	309	381	374	379
26	400	353	376	720	700	717	366	316	339	378	373	377
27	461	400	430	701	696	699	402	366	391	381	373	377
28	531	461	498	717	679	705	425	396	405	375	361	368
29	569	531	546	679	355	453	427	395	401	363	360	362
30	609	569	592	444	383	423	424	397	411	364	362	363
31	627	609	622	---	---	---	428	409	415	390	364	376
MONTH	740	284	566	731	355	640	674	156	464	484	266	376
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	417	390	401	413	372	396	409	402	406	621	598	604
2	448	417	434	416	405	412	406	397	402	658	621	642
3	448	432	439	409	396	403	406	402	404	697	658	678
4	441	428	433	396	389	393	405	402	403	722	697	715
5	498	441	466	397	389	393	413	402	408	730	709	725
6	507	489	496	400	393	396	413	409	411	724	706	713
7	542	507	520	408	394	400	417	410	414	729	718	723
8	599	542	574	433	408	423	436	413	417	734	728	732
9	612	599	605	428	416	422	430	417	424	737	729	731
10	615	503	592	445	416	428	429	420	425	735	524	627
11	524	427	478	442	434	437	424	415	421	609	494	550
12	550	517	538	436	432	434	422	413	419	532	487	504
13	580	545	565	439	431	435	417	406	414	592	532	561
14	601	576	588	448	429	435	420	404	412	625	585	607
15	623	591	614	445	404	428	428	418	423	669	625	648
16	640	614	626	413	358	401	464	423	439	684	669	675
17	675	640	658	358	310	327	472	464	468	716	684	705
18	675	513	612	317	308	310	475	464	468	706	691	698
19	573	513	544	363	317	339	491	470	479	719	695	704
20	575	506	541	397	363	381	496	490	493	754	715	743
21	535	496	507	424	397	412	519	486	495	744	717	727
22	576	493	550	439	419	426	538	484	518	729	714	721
23	493	375	409	421	414	418	541	491	515	736	724	728
24	445	386	420	418	414	416	497	483	490	741	733	737
25	471	445	461	423	415	419	534	497	517	741	735	739
26	450	310	388	423	415	420	574	534	549	760	741	751
27	349	314	338	415	413	413	636	574	605	767	720	754
28	372	337	351	413	408	411	652	636	644	720	438	551
29	---	---	---	408	400	405	662	599	629	523	470	486
30	---	---	---	400	394	397	635	608	628	509	474	492
31	---	---	---	404	391	397	---	---	---	584	509	542
MONTH	675	310	505	448	308	404	662	397	471	767	438	662

TRINITY RIVER BASIN

08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN												
													JUNE			JULY			AUGUST			SEPTEMBER		
1	642	584	611	720	706	715	778	754	761	731	712	722												
2	665	629	649	706	695	701	785	752	770	724	705	714												
3	700	634	669	695	689	691	768	727	756	718	706	713												
4	709	636	678	689	685	687	733	725	729	721	705	711												
5	719	705	711	693	685	688	---	---	e730	749	716	731												
6	742	621	722	705	686	698	---	---	e730	740	699	731												
7	621	521	556	705	677	697	---	---	e730	720	708	713												
8	585	529	559	681	667	674	---	---	e740	721	709	714												
9	645	585	609	667	629	642	---	---	e740	714	703	709												
10	660	635	652	702	643	678	---	---	e740	720	706	713												
11	699	633	663	719	702	715	793	710	747	714	694	706												
12	679	470	543	713	693	702	749	739	744	711	699	705												
13	519	467	497	706	693	700	739	717	722	717	688	701												
14	524	505	514	709	700	704	717	657	678	699	681	690												
15	571	513	541	710	699	705	725	544	673	686	601	646												
16	598	571	582	714	705	711	685	562	643	613	460	548												
17	616	598	611	718	705	709	701	685	694	536	320	374												
18	656	609	632	725	691	711	717	664	701	481	350	400												
19	695	656	671	691	682	685	664	620	647	551	481	519												
20	698	687	692	712	687	702	659	620	636	625	551	584												
21	693	681	686	725	712	719	689	659	671	674	625	659												
22	707	685	696	724	710	718	700	689	696	669	650	662												
23	698	685	692	724	706	714	700	692	696	677	638	642												
24	702	692	697	740	714	725	728	694	714	646	639	642												
25	694	680	688	756	730	739	718	705	714	647	602	623												
26	720	684	695	760	751	756	736	700	715	671	620	644												
27	726	690	710	753	742	748	731	695	707	671	652	662												
28	692	685	688	769	744	754	709	695	703	678	628	662												
29	724	690	710	784	766	779	727	706	717	632	620	626												
30	728	719	723	780	768	773	730	723	726	631	624	628												
31	---	---	---	768	758	762	737	723	732	---	---	---												
MONTH	742	467	645	784	629	713	---	---	713	749	320	650												

e Estimated

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN												
													OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.8	7.5	7.7	7.7	7.6	7.6	7.3	7.2	7.3	8.0	7.8	7.9												
2	7.7	7.5	7.6	7.7	7.6	7.7	7.4	7.3	7.3	8.0	7.8	7.9												
3	7.8	7.6	7.7	7.7	7.6	7.7	7.4	7.1	7.3	7.9	7.9	7.9												
4	7.8	7.6	7.7	7.8	7.7	7.7	7.2	7.1	7.2	7.9	7.8	7.9												
5	7.8	7.6	7.7	7.8	7.7	7.8	7.3	7.2	7.3	7.9	7.3	7.7												
6	7.7	7.5	7.6	7.9	7.7	7.8	7.3	7.3	7.3	8.0	7.7	7.9												
7	7.6	7.5	7.6	8.0	7.8	7.9	7.3	7.3	7.3	8.1	7.8	7.9												
8	7.6	7.5	7.5	7.9	7.8	7.8	7.4	7.2	7.3	7.9	7.8	7.9												
9	7.5	7.3	7.4	7.9	7.8	7.8	7.3	7.2	7.2	7.9	7.8	7.9												
10	7.4	7.3	7.3	7.8	7.7	7.8	7.3	7.2	7.3	8.2	7.9	8.1												
11	7.4	7.3	7.3	7.8	7.8	7.8	7.4	7.3	7.3	8.2	8.1	8.1												
12	7.4	7.3	7.4	7.8	7.8	7.8	7.4	7.4	7.4	8.2	8.2	8.2												
13	7.4	7.3	7.3	7.8	7.6	7.7	7.4	7.4	7.4	8.3	8.1	8.2												
14	7.4	7.3	7.3	7.7	7.6	7.7	7.5	7.4	7.4	8.3	8.1	8.2												
15	7.4	7.3	7.3	7.8	7.7	7.8	7.5	7.4	7.4	---	---	---												
16	7.4	7.4	7.4	7.8	7.8	7.8	7.5	7.4	7.4	---	---	---												
17	7.5	7.4	7.4	7.9	7.8	7.9	7.5	7.4	7.4	---	---	---												
18	7.5	7.5	7.5	7.9	7.8	7.9	7.5	7.4	7.4	---	---	---												
19	7.5	7.5	7.5	7.9	7.8	7.9	7.5	7.4	7.5	---	---	---												
20	7.6	7.5	7.5	7.9	7.3	7.7	7.5	7.4	7.4	---	---	---												
21	7.6	7.5	7.6	7.4	7.3	7.4	7.7	7.4	7.6	---	---	---												
22	7.6	7.5	7.5	7.5	7.4	7.4	7.5	7.4	7.4	---	---	---												
23	7.6	7.5	7.5	7.6	7.4	7.5	7.9	7.4	7.5	7.3	7.2	7.3												
24	7.6	7.4	7.5	7.6	7.4	7.5	7.8	7.6	7.7	7.3	7.3	7.3												
25	7.5	7.4	7.4	7.6	7.5	7.5	8.1	7.7	7.9	7.3	7.3	7.3												
26	7.4	7.4	7.4	7.6	7.4	7.5	8.1	7.7	7.9	7.3	7.3	7.3												
27	7.5	7.4	7.5	7.5	7.4	7.5	8.2	7.6	7.9	7.4	7.3	7.3												
28	7.5	7.5	7.5	7.4	7.3	7.4	7.8	7.6	7.7	---	---	---												
29	7.6	7.5	7.6	7.3	7.1	7.2	7.9	7.6	7.8	---	---	---												
30	7.7	7.5	7.6	7.2	7.1	7.2	8.0	7.7	7.9	---	---	---												
31	7.7	7.6	7.6	---	---	---	8.0	7.8	7.9	---	---	---												
MONTH	7.8	7.3	7.5	8.0	7.1	7.7	8.2	7.1	7.5	---	---	---												

TRINITY RIVER BASIN

08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	7.8	7.6	7.7	---	---	---	7.7	7.6	7.6
2	---	---	---	7.8	7.6	7.7	---	---	---	7.8	7.6	7.7
3	---	---	---	7.8	7.6	7.7	---	---	---	7.9	7.6	7.7
4	---	---	---	7.8	7.7	7.7	---	---	---	8.0	7.6	7.8
5	---	---	---	7.7	7.7	7.7	---	---	---	8.0	7.7	7.8
6	---	---	---	7.8	7.7	7.7	---	---	---	8.0	7.6	7.8
7	---	---	---	7.7	7.7	7.7	---	---	---	8.1	7.8	7.9
8	---	---	---	7.7	7.6	7.7	---	---	---	8.1	7.8	7.9
9	---	---	---	7.7	7.6	7.7	7.6	7.2	7.4	7.9	7.4	7.8
10	---	---	---	7.8	7.7	7.7	7.6	7.2	7.4	7.4	7.1	7.2
11	---	---	---	7.8	7.7	7.7	7.7	7.2	7.5	7.3	7.2	7.3
12	---	---	---	7.8	7.8	7.8	7.7	7.4	7.5	7.4	7.3	7.4
13	---	---	---	7.8	7.7	7.8	7.6	7.2	7.4	7.5	7.4	7.5
14	---	---	---	7.8	7.7	7.8	7.6	7.3	7.5	7.6	7.5	7.5
15	---	---	---	7.8	7.6	7.7	7.7	7.2	7.5	7.8	7.5	7.6
16	---	---	---	7.7	7.3	7.5	7.6	7.2	7.5	7.9	7.6	7.7
17	---	---	---	7.4	7.3	7.3	7.8	7.4	7.5	8.1	7.6	7.8
18	---	---	---	7.5	7.3	7.4	7.7	7.3	7.5	8.2	7.8	8.0
19	7.7	7.7	7.7	7.9	7.4	7.6	7.7	7.4	7.6	8.2	7.9	8.0
20	7.7	7.6	7.6	7.9	7.6	7.7	7.8	7.5	7.7	8.4	7.8	7.9
21	7.7	7.6	7.6	8.0	7.7	7.8	7.8	7.5	7.7	8.1	7.6	7.9
22	7.8	7.6	7.7	7.8	7.6	7.7	7.8	7.2	7.6	8.1	7.7	7.9
23	7.8	7.5	7.7	7.9	7.7	7.8	7.7	7.4	7.6	7.9	7.6	7.8
24	7.7	7.6	7.6	8.0	7.9	7.9	7.8	7.5	7.6	7.7	7.4	7.6
25	7.8	7.7	7.8	---	---	---	7.9	7.7	7.8	7.6	7.3	7.5
26	7.8	7.6	7.7	---	---	---	7.8	7.8	7.8	7.6	7.3	7.5
27	7.6	7.4	7.5	---	---	---	7.8	7.7	7.8	---	---	---
28	7.7	7.5	7.7	---	---	---	7.8	7.7	7.8	---	---	---
29	---	---	---	---	---	---	7.9	7.2	7.5	---	---	---
30	---	---	---	---	---	---	7.6	7.3	7.5	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	8.1	8.0	8.0	---	---	---	7.9	7.7	7.8
2	---	---	---	8.1	7.9	8.0	---	---	---	8.0	7.8	7.9
3	---	---	---	8.1	7.9	8.0	---	---	---	8.1	7.8	7.9
4	---	---	---	8.1	8.0	8.0	---	---	---	8.0	7.8	7.9
5	8.1	7.9	8.0	8.1	7.9	8.0	---	---	---	8.0	7.8	7.9
6	7.9	7.5	7.6	8.1	7.9	8.0	---	---	---	7.9	7.8	7.8
7	7.5	7.4	7.5	8.0	7.9	7.9	---	---	---	7.9	7.8	7.8
8	7.5	7.5	7.5	7.9	7.7	7.8	---	---	---	8.0	7.8	7.9
9	7.7	7.5	7.6	7.8	7.7	7.7	---	---	---	8.0	7.8	7.9
10	7.8	7.7	7.7	7.8	7.6	7.7	---	---	---	8.0	7.8	7.9
11	7.8	7.6	7.7	7.8	7.6	7.7	7.8	7.7	7.7	7.9	7.6	7.7
12	7.6	7.5	7.5	7.9	7.6	7.8	7.7	7.6	7.7	7.6	7.5	7.6
13	7.6	7.5	7.6	7.8	7.6	7.7	7.7	7.6	7.6	7.6	7.5	7.5
14	7.7	7.6	7.6	7.8	7.6	7.7	7.7	7.6	7.6	7.5	7.4	7.5
15	7.8	7.7	7.7	7.8	7.6	7.7	7.6	7.6	7.6	7.5	7.4	7.4
16	8.2	7.8	7.9	7.8	7.6	7.7	7.6	7.5	7.6	7.9	7.4	7.7
17	8.4	8.0	8.1	7.8	7.6	7.7	7.7	7.6	7.6	7.7	7.4	7.5
18	8.4	8.1	8.2	7.8	7.7	7.7	7.8	7.7	7.7	7.4	7.4	7.4
19	8.5	8.1	8.3	7.9	7.7	7.8	7.8	7.6	7.7	7.4	7.4	7.4
20	8.3	8.1	8.2	7.9	7.7	7.8	---	---	---	7.5	7.4	7.5
21	8.2	7.9	8.1	8.0	7.7	7.8	8.0	7.7	7.8	7.6	7.5	7.6
22	8.1	7.9	8.0	8.0	7.8	7.9	8.1	7.8	8.0	7.6	7.5	7.6
23	8.1	7.9	8.0	8.0	7.7	7.8	8.0	7.8	7.9	7.6	7.5	7.6
24	8.1	7.9	8.0	7.9	7.7	7.8	8.1	7.8	7.9	7.7	7.5	7.6
25	8.1	7.9	8.0	7.9	7.7	7.8	8.0	7.8	7.9	7.6	7.6	7.6
26	8.1	7.8	7.9	7.9	7.7	7.8	8.0	7.8	7.9	7.7	7.6	7.6
27	8.1	7.9	8.0	7.9	7.7	7.8	8.0	7.8	7.9	7.7	7.6	7.7
28	8.1	7.8	7.9	8.2	7.7	7.9	8.0	7.8	7.9	7.9	7.6	7.7
29	8.1	7.9	8.0	8.2	7.9	8.1	7.9	7.8	7.9	7.8	7.7	7.7
30	8.2	8.0	8.1	8.2	7.8	8.0	7.9	7.8	7.8	7.9	7.7	7.8
31	---	---	---	---	---	---	7.8	7.7	7.8	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	8.1	7.4	7.7

TRINITY RIVER BASIN

08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	27.7	26.3	27.0	20.2	19.4	19.8	15.1	14.8	15.0	9.4	9.0	9.1
2	27.8	26.7	27.2	19.7	18.9	19.2	14.9	14.7	14.8	10.6	9.4	10.0
3	27.7	26.5	27.1	18.9	18.0	18.5	15.3	14.7	15.0	12.2	10.6	11.4
4	27.1	26.1	26.6	18.3	17.5	17.9	14.7	13.3	13.9	13.4	12.2	12.6
5	26.8	25.8	26.3	19.0	17.9	18.4	13.7	11.9	12.5	15.6	13.4	14.8
6	26.7	25.9	26.3	18.5	17.2	17.9	12.1	11.7	11.9	15.1	14.2	14.6
7	26.4	25.8	26.1	17.3	16.4	16.9	12.3	11.9	12.1	14.2	11.6	12.9
8	25.9	25.4	25.6	17.4	16.5	16.9	11.9	10.4	11.2	11.6	9.8	10.7
9	26.0	25.3	25.7	16.8	16.4	16.7	11.1	10.4	10.8	9.8	9.2	9.4
10	25.4	25.1	25.3	16.4	15.6	16.1	11.3	10.7	10.9	9.8	9.4	9.6
11	25.6	25.3	25.5	15.6	14.9	15.3	11.3	10.7	11.0	10.0	9.8	9.9
12	25.3	24.8	25.1	15.7	15.1	15.5	10.7	10.3	10.5	10.1	9.7	9.9
13	24.8	23.3	24.2	15.3	14.5	15.0	10.3	9.8	10.1	10.1	9.5	9.9
14	23.3	21.8	22.3	14.6	13.8	14.1	10.3	9.8	10.0	9.5	9.2	9.3
15	21.8	20.8	21.1	13.9	12.8	13.3	10.9	10.1	10.4	9.4	9.0	9.3
16	21.2	20.8	21.1	12.8	12.2	12.5	11.6	10.9	11.2	9.2	8.8	9.0
17	21.7	20.8	21.2	12.2	11.5	11.8	12.2	11.6	11.8	9.4	9.1	9.3
18	21.8	20.8	21.3	12.2	11.7	11.9	12.5	11.9	12.1	9.9	9.4	9.6
19	22.2	21.0	21.5	12.7	11.8	12.2	13.2	12.3	12.8	9.9	9.3	9.5
20	22.7	21.4	22.0	14.1	12.5	13.3	14.4	13.2	14.0	9.8	9.1	9.4
21	22.4	21.3	22.1	14.9	13.7	14.4	14.0	11.7	12.4	10.2	9.8	10.1
22	21.3	20.8	21.0	15.3	14.4	14.9	11.7	10.5	10.9	10.2	9.4	9.6
23	20.8	18.4	20.1	15.4	14.4	15.0	10.5	10.1	10.3	9.5	8.8	9.1
24	18.8	16.7	17.8	15.5	14.8	15.2	10.1	9.6	9.7	9.3	8.7	9.0
25	18.7	17.8	18.3	16.2	15.0	15.5	9.6	9.4	9.5	9.3	8.8	9.0
26	18.6	17.5	18.0	17.7	16.2	17.0	9.7	9.5	9.6	9.6	9.0	9.3
27	17.5	17.0	17.3	18.4	17.6	18.0	9.5	9.1	9.3	9.8	9.1	9.4
28	17.3	16.6	16.9	19.0	18.4	18.7	9.3	8.4	8.8	10.2	9.5	9.7
29	17.1	16.7	16.9	18.9	16.7	17.3	9.0	8.2	8.5	10.7	10.1	10.3
30	18.1	17.1	17.7	17.2	15.1	15.8	8.9	8.2	8.5	10.6	10.2	10.3
31	19.8	18.1	19.2	---	---	---	9.0	8.7	8.9	10.9	10.5	10.7
MONTH	27.8	16.6	22.4	20.2	11.5	15.8	15.3	8.2	11.2	15.6	8.7	10.2
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	11.5	10.8	11.0	12.9	12.3	12.8	17.6	17.2	17.4	22.5	21.0	21.7
2	11.9	11.5	11.8	12.4	11.9	12.2	17.9	17.2	17.6	23.6	22.1	22.8
3	12.0	11.6	11.8	11.9	11.6	11.8	18.1	17.3	17.6	24.6	23.2	23.8
4	11.8	11.5	11.6	12.3	11.6	12.0	17.6	16.9	17.2	24.6	23.2	23.9
5	11.7	11.5	11.6	13.8	12.3	13.1	17.5	16.6	17.0	25.1	24.0	24.4
6	11.6	10.8	11.2	13.8	12.4	13.1	17.5	16.6	17.1	25.9	24.2	24.9
7	11.5	10.6	11.1	12.4	12.2	12.3	18.2	17.3	17.7	27.1	25.5	26.2
8	12.3	11.1	11.7	12.3	11.2	12.0	18.4	17.6	18.0	27.4	26.1	26.7
9	12.9	12.3	12.5	11.2	10.3	10.6	18.4	17.6	18.0	27.1	26.0	26.5
10	13.4	12.3	13.1	10.8	10.1	10.5	18.5	17.4	17.9	26.6	24.0	25.1
11	13.0	11.8	12.3	11.0	9.9	10.4	18.8	17.7	18.2	25.3	24.5	24.9
12	13.0	12.2	12.6	10.8	10.1	10.5	18.8	18.1	18.4	25.6	24.6	25.1
13	13.4	12.1	12.7	10.8	10.4	10.6	19.2	18.1	18.6	26.2	25.4	25.7
14	13.7	13.0	13.3	11.0	10.6	10.8	19.9	18.6	19.1	25.9	25.4	25.6
15	13.8	13.4	13.7	12.1	10.9	11.5	20.6	19.4	19.9	26.5	25.4	25.9
16	13.4	13.2	13.3	13.6	12.1	12.7	21.1	20.0	20.5	26.7	25.6	26.2
17	13.8	13.3	13.5	13.8	13.2	13.6	20.8	19.8	20.1	27.4	26.2	26.7
18	13.7	12.8	13.1	13.9	12.9	13.1	19.9	18.5	19.2	27.4	26.3	26.8
19	13.2	12.6	12.9	14.2	13.6	14.0	19.8	18.5	19.2	27.3	26.3	26.8
20	13.1	12.4	12.8	13.6	12.6	12.8	20.3	19.2	19.8	27.4	26.2	26.8
21	12.9	12.2	12.4	12.6	12.2	12.5	20.2	19.4	19.9	27.8	26.5	27.1
22	13.0	12.4	12.6	12.9	12.2	12.6	20.0	19.0	19.4	27.9	26.7	27.2
23	12.6	11.5	11.8	13.4	12.5	13.1	20.1	19.1	19.6	27.4	26.5	26.9
24	13.5	11.7	12.5	14.5	13.2	14.0	20.8	19.8	20.3	27.0	26.3	26.7
25	13.9	13.3	13.6	15.5	14.3	15.1	21.3	20.4	20.8	26.7	26.1	26.4
26	14.2	13.6	13.8	16.2	15.4	15.9	21.3	21.0	21.1	27.6	25.9	26.7
27	14.2	13.3	13.7	16.5	15.9	16.3	21.1	20.7	20.9	27.9	27.0	27.3
28	13.4	12.8	13.2	17.1	16.3	16.7	21.1	20.4	20.8	27.2	24.9	26.1
29	---	---	---	17.7	17.1	17.5	21.0	20.2	20.7	27.7	26.2	26.9
30	---	---	---	17.8	17.3	17.6	21.2	20.3	20.8	28.9	27.7	28.2
31	---	---	---	17.8	17.4	17.6	---	---	---	29.6	28.8	29.2
MONTH	14.2	10.6	12.5	17.8	9.9	13.2	21.3	16.6	19.1	29.6	21.0	26.0

TRINITY RIVER BASIN

08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN												
													JUNE			JULY			AUGUST			SEPTEMBER		
1	30.2	29.1	29.6	32.3	30.8	31.5	28.4	27.2	27.8	30.4	29.3	29.9												
2	30.2	28.9	29.5	32.5	31.1	31.8	28.6	27.4	28.1	30.5	29.3	29.9												
3	30.3	28.9	29.6	32.0	30.9	31.4	31.0	27.7	28.3	30.9	29.5	30.2												
4	30.3	29.1	29.7	31.4	30.5	30.9	31.0	29.9	30.3	31.3	29.9	30.6												
5	29.5	27.8	28.8	31.4	30.4	30.8	---	---	---	30.9	29.9	30.4												
6	27.8	26.5	27.0	31.4	30.2	30.8	---	---	---	30.8	29.5	30.1												
7	26.7	25.8	26.2	31.7	30.5	31.0	---	---	---	30.9	29.6	30.3												
8	26.0	25.5	25.7	32.0	30.6	31.2	---	---	---	30.7	29.5	30.2												
9	27.4	25.8	26.5	32.5	31.1	31.8	---	---	---	30.4	29.5	30.0												
10	28.0	27.1	27.4	32.7	31.3	32.0	---	---	---	29.6	27.9	28.5												
11	27.9	26.8	27.3	32.5	31.1	31.9	31.3	30.0	30.7	27.9	26.8	27.2												
12	28.3	26.8	27.6	32.5	31.0	31.8	31.3	30.1	30.6	26.8	26.0	26.2												
13	28.8	27.9	28.4	32.6	31.1	31.9	30.9	29.8	30.2	26.1	25.8	25.9												
14	29.5	28.4	28.9	32.9	31.6	32.2	29.9	29.1	29.3	26.5	25.9	26.1												
15	30.1	29.1	29.5	32.9	31.5	32.2	30.0	28.6	29.6	26.9	26.5	26.7												
16	30.1	28.7	29.4	33.3	31.6	32.3	30.1	28.7	29.6	26.8	26.2	26.5												
17	30.1	28.9	29.5	33.0	31.7	32.2	30.6	30.0	30.3	26.7	24.8	25.4												
18	29.8	28.8	29.3	32.5	31.1	31.8	31.2	30.0	30.6	27.2	25.8	26.3												
19	30.4	28.8	29.5	32.5	31.4	32.0	31.0	30.0	30.5	28.2	27.2	27.6												
20	30.8	29.3	30.0	32.5	31.2	31.8	31.5	30.0	30.8	29.1	28.2	28.6												
21	30.7	29.3	30.0	32.4	31.1	31.8	31.0	30.1	30.5	29.8	28.7	29.2												
22	31.2	29.6	30.3	32.2	31.1	31.7	30.8	29.9	30.3	30.5	29.2	29.7												
23	31.3	30.0	30.6	31.9	30.0	30.8	30.8	29.7	30.2	30.5	29.4	29.9												
24	31.1	29.8	30.4	30.0	28.9	29.5	30.7	29.7	30.2	30.2	29.2	29.7												
25	31.2	29.7	30.4	29.8	28.8	29.3	31.2	29.8	30.5	30.0	29.4	29.7												
26	31.6	30.0	30.8	29.5	28.5	29.1	31.6	30.3	30.9	29.8	29.0	29.4												
27	31.7	30.1	30.9	29.4	28.4	29.0	31.8	30.5	31.1	29.6	28.7	29.0												
28	32.0	30.3	31.1	29.3	28.4	28.8	31.8	30.7	31.2	29.7	28.9	29.2												
29	31.6	30.3	31.0	28.9	27.8	28.4	31.9	30.7	31.3	30.1	28.8	29.4												
30	31.7	30.2	30.9	28.5	27.7	28.1	31.5	30.2	30.6	30.3	28.9	29.6												
31	---	---	---	28.2	27.2	27.8	30.3	29.6	30.0	---	---	---												
MONTH	32.0	25.5	29.2	33.3	27.2	30.9	---	---	---	31.3	24.8	28.7												

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN												
													OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.2	6.1	6.9	8.2	8.0	8.1	7.6	7.1	7.4	9.3	9.0	9.2												
2	7.2	6.5	6.8	8.4	8.1	8.2	8.2	7.6	7.8	9.3	9.1	9.2												
3	7.1	6.2	6.6	8.8	8.2	8.5	8.3	6.4	7.8	9.1	8.7	8.9												
4	6.6	5.9	6.3	9.5	8.4	8.8	7.4	5.9	6.9	8.8	8.5	8.7												
5	6.2	5.4	5.9	9.3	8.6	8.9	8.1	7.4	7.8	8.5	7.2	7.7												
6	5.7	4.7	5.2	9.6	8.6	9.1	8.3	8.1	8.2	7.6	7.1	7.3												
7	---	---	---	9.8	8.9	9.4	8.4	8.2	8.3	7.5	7.1	7.3												
8	---	---	---	9.8	9.0	9.3	8.4	7.6	8.0	7.9	7.5	7.7												
9	---	---	---	9.2	8.7	9.0	7.8	7.6	7.7	7.9	7.8	7.8												
10	---	---	---	9.0	8.7	8.9	8.0	7.6	7.8	8.4	7.9	8.2												
11	---	---	---	9.5	8.8	9.1	8.2	8.0	8.1	8.6	8.4	8.5												
12	---	---	---	9.2	8.9	9.0	8.3	8.2	8.2	9.1	8.5	8.9												
13	---	---	---	9.0	7.8	8.4	8.7	8.2	8.5	9.1	8.8	8.9												
14	---	---	---	8.7	8.0	8.4	8.9	8.6	8.7	8.9	8.8	8.9												
15	---	---	---	9.1	8.5	8.9	8.7	8.5	8.6	9.5	8.9	9.2												
16	---	---	---	9.4	9.1	9.2	8.6	8.3	8.4	9.5	9.2	9.3												
17	---	---	---	9.8	9.4	9.6	8.3	8.0	8.2	9.4	9.2	9.3												
18	---	---	---	9.6	9.5	9.5	8.0	7.8	7.9	9.4	9.2	9.3												
19	---	---	---	9.7	9.3	9.5	8.4	7.6	8.1	9.5	9.3	9.3												
20	---	---	---	---	---	---	8.1	6.8	7.8	9.5	9.2	9.4												
21	---	---	---	---	---	---	7.9	6.9	7.5	9.2	8.7	9.0												
22	---	---	---	---	---	---	7.3	6.7	6.9	---	---	---												
23	---	---	---	---	---	---	7.3	6.7	7.0	---	---	---												
24	---	---	---	---	---	---	7.6	7.3	7.5	---	---	---												
25	---	---	---	---	---	---	7.9	7.6	7.8	---	---	---												
26	---	---	---	---	---	---	8.2	7.7	7.9	---	---	---												
27	---	---	---	9.4	8.6	9.1	8.9	8.2	8.6	---	---	---												
28	---	---	---	8.6	7.4	8.0	8.9	8.7	8.8	---	---	---												
29	---	---	---	7.4	4.1	5.3	9.1	8.7	9.0	9.6	9.2	9.4												
30	---	---	---	7.1	5.2	6.4	9.3	9.1	9.2	9.5	9.2	9.4												
31	8.5	8.1	8.4	---	---	---	9.3	9.1	9.2	9.5	8.9	9.2												
MONTH	---	---	---	---	---	---	9.3	5.9	8.1	---	---	---												

08062700 TRINITY RIVER AT TRINIDAD, TX

LOCATION.--Lat 32°08'05", long 96°06'20", Henderson County, Hydrologic Unit 12030105, on left bank at pumping station of Texas Power and Light Co., near southwest boundary of Trinidad, 0.5 mi downstream from St. Louis Southwestern Railway Lines bridge, 0.9 mi downstream from bridge on State Highway 31, 8 mi upstream from Cedar Creek, and at mile 391.2.

DRAINAGE AREA.--8,538 mi², not including 1,007 mi² upstream from Cedar Creek Reservoir.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1964 to current year. Records of gage height collected in this vicinity for period Oct 1913 to Sep 1915 are contained in reports of U.S. Army Corps of Engineers, and records collected since Oct 1915 are contained in reports of the National Weather Service.

REVISED RECORDS.-- WDR TX-89-1: 1988. WDR TX-90-1: 1989.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 239.21 ft above sea level. Prior to May 3, 1967, at site 0.9 mi upstream at datum 1.28 ft higher. Satellite telemeter at station.

REMARKS.--Records good, except those for estimated daily discharge, which are fair. Since installation of gage in Oct 1964, at least 10% of contributing drainage area has been regulated by 15 upstream reservoirs having a combined capacity of 3,572,000 acre-ft, of which 1,138,000 acre-ft is for flood control. The cities of Fort Worth, Dallas, and several smaller cities divert considerable water for their municipal use, of which about 60 percent is returned as wastewater effluent that sustains low flows at this site. There are 62 floodwater-retarding structures with a combined detention capacity of 38,690 acre-ft in the drainage basin above this station. These structures control runoff from 126 mi² above this station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stages since at least 1908, 49.8 ft Apr 25, 1942 and 48.3 ft date unknown, 1908 (present site and datum), from records of the National Weather Service.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	891	1010	2070	7120	9610	17000	17300	1360	1280	930	e798	771
2	849	973	1440	5930	7470	18300	16900	1230	1170	938	e804	799
3	892	957	1280	5040	5540	19400	16500	1160	1020	915	e800	801
4	890	940	3010	4310	4790	18600	15800	1130	1010	877	e822	768
5	835	916	3320	5690	4650	16100	14400	1140	1050	898	e841	790
6	800	888	1890	23600	3910	14000	11700	1090	1140	933	e858	794
7	803	863	1430	35700	3110	13000	8720	1060	2020	1020	873	764
8	823	864	1810	37300	2500	12900	6850	1070	1490	938	895	751
9	1280	893	5840	38600	2050	11700	6110	1050	1150	899	930	740
10	2510	e901	6340	38000	2710	9970	5800	1750	1040	905	933	745
11	2300	e940	3220	35800	7780	8060	5600	3280	1010	891	876	754
12	1840	e1120	1760	30400	8390	6770	5450	2080	1920	891	868	781
13	1440	e1810	1420	24400	7410	6480	5350	1410	2930	875	945	865
14	4150	e2210	1280	20600	6690	6270	5220	1210	2050	879	1020	1070
15	5030	2440	1190	19100	6020	8510	5020	1130	1330	897	1160	2120
16	2370	1790	1160	17900	3480	12800	4710	1090	1120	919	1250	3000
17	1260	1340	1090	15900	1960	17000	4050	1120	1030	914	1090	3400
18	1020	1150	1060	13900	2140	17700	3590	1070	974	889	890	3460
19	954	1060	1040	13300	3720	19700	3400	1040	972	877	869	1710
20	914	964	1070	12800	3780	23400	3050	1060	978	e868	e850	1260
21	926	935	7890	12600	3940	27300	2910	1020	1000	e858	e841	1090
22	966	931	15300	14700	4370	28700	3390	982	978	e845	e828	987
23	1170	917	21700	15900	6620	27600	3940	969	945	e820	e810	967
24	3030	889	30700	14200	9490	24700	2930	941	943	e820	868	968
25	7820	896	34300	12900	8960	21900	2280	926	936	e824	809	985
26	6780	898	33400	12900	10500	19300	1770	919	953	e805	825	1060
27	2820	884	31200	12400	13800	17600	1480	927	923	e785	817	954
28	1530	1010	27400	11600	16100	16900	1500	1920	900	e783	815	963
29	1240	1940	20700	11200	---	16600	2040	4210	905	e790	772	931
30	1100	3290	13600	10900	---	16500	1730	2640	916	e800	782	919
31	1040	---	10100	10800	---	17000	---	1490	---	e788	788	---
TOTAL	60273	36619	289010	545490	171490	511760	189490	43474	36083	27071	27327	35967
MEAN	1944	1221	9323	17600	6125	16510	6316	1402	1203	873	882	1199
MAX	7820	3290	34300	38600	16100	28700	17300	4210	2930	1020	1250	3460
MIN	800	863	1040	4310	1960	6270	1480	919	900	783	772	740
AC-FT	119600	72630	573300	1082000	340200	1015000	375900	86230	71570	53700	54200	71340

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1998, BY WATER YEAR (WY)

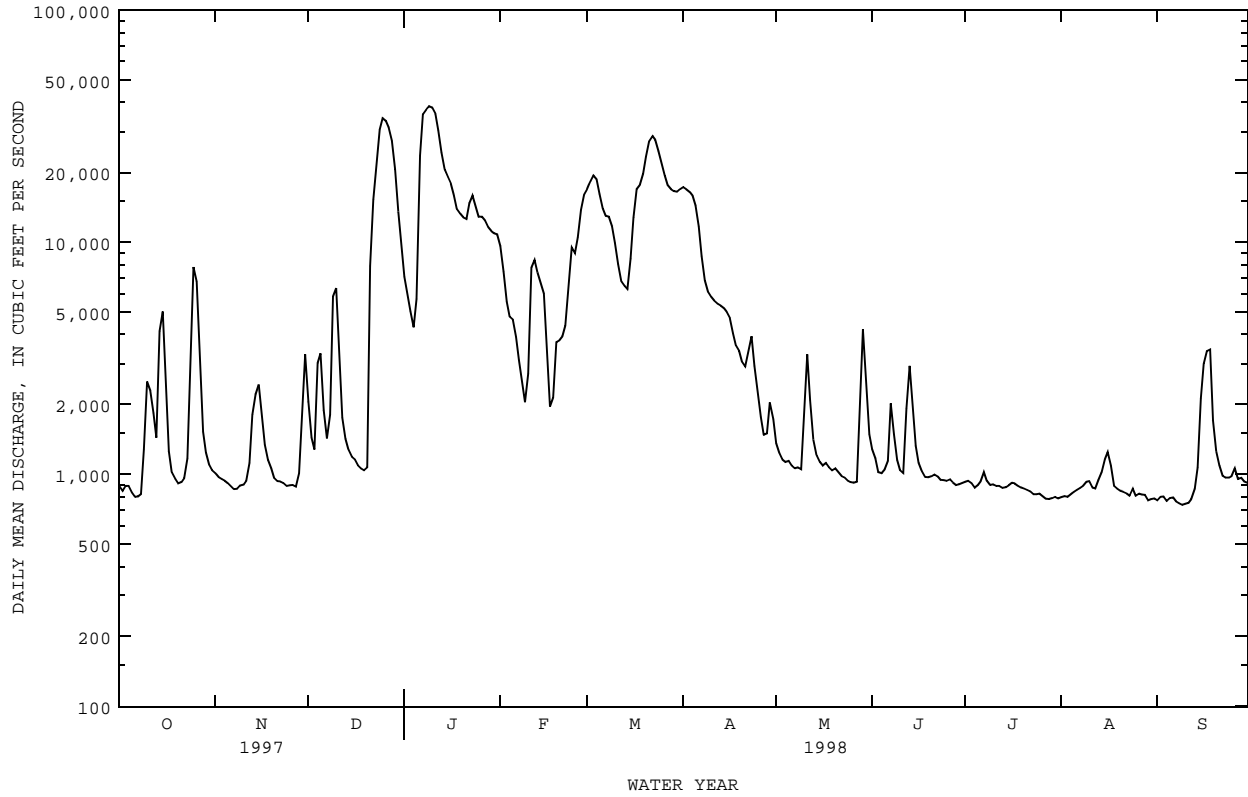
MEAN	2642	3848	4614	3738	5150	6514	5951	9462	6496	2534	1386	1223
MAX	11390	20160	24320	20490	20550	21210	20550	47120	26790	11800	6886	3347
(WY)	1974	1975	1992	1992	1992	1997	1997	1990	1989	1982	1982	1974
MIN	417	403	460	415	424	542	798	693	526	394	394	448
(WY)	1976	1967	1967	1967	1967	1967	1978	1971	1972	1972	1967	1972

TRINITY RIVER BASIN

08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1965 - 1998	
ANNUAL TOTAL	2927393		1974054		4459	
ANNUAL MEAN	8020		5408		11400	
HIGHEST ANNUAL MEAN					854	
LOWEST ANNUAL MEAN					1992	
HIGHEST DAILY MEAN	36300	Apr 9	38600	Jan 9	94100	May 7 1990
LOWEST DAILY MEAN	800	Oct 6	740	Sep 9	312	Aug 9 1972
ANNUAL SEVEN-DAY MINIMUM	824	Aug 29	761	Sep 6	326	Jul 7 1972
INSTANTANEOUS PEAK FLOW			38900		94500	
INSTANTANEOUS PEAK STAGE			37.96		48.11	
ANNUAL RUNOFF (AC-FT)	5806000		3916000		3230000	
10 PERCENT EXCEEDS	25100		16900		12300	
50 PERCENT EXCEEDS	2440		1280		1260	
90 PERCENT EXCEEDS	891		827		507	

e Estimated



08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: May 1966 to Jun 1994. Pesticide analyses: Nov 1977 to Jun 1982. Sediment analyses: Nov 1977 to Jun 1994.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Sep 1967 to Sep 1981, May 1986 to current year.
 PH: Sep 1967 to Oct 1969, May 1986 to current year.
 WATER TEMPERATURE: Sep 1967 to Sep 1981, May 1986 to current year.
 DISSOLVED OXYGEN: Sep 1967 to Oct 1969, May 1986 to current year.

INSTRUMENTATION.--From Apr 1967 to Oct 1969, a four-parameter water-quality monitor continuously recorded specific conductance, pH, water temperature, and dissolved oxygen. Since May 1986, a four-parameter water-quality monitor continuously records specific conductance, pH, water temperature, and dissolved oxygen at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed for previous years using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the U.S. Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,000 micromsiemens Dec 28, 1977; minimum daily, 170 micromsiemens May 4, 1990.
 PH: Maximum, 8.9 units, Mar 17, Apr 20 and 21, 1996; minimum, 5.7 units, Aug 13, 1988.
 WATER TEMPERATURE: Maximum daily, 34.0°C, Jul 17, 1979, Jul 9, 13, 1980; minimum daily, 2.5°C, Dec 24, 1989.
 DISSOLVED OXYGEN: Maximum, 16.8 mg/L, Mar 11, 1986; minimum, 0.0 mg/L, May 3, 1987.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 832 micromsiemens, Oct 1; minimum, 219 micromsiemens, Jan 6.
 PH: Maximum, 8.8 units, Jun 22; minimum, 7.1 units, Feb 15.
 WATER TEMPERATURE: Maximum, 33.4°C, Jul 14, 16, 19; minimum, 8.0°C, Dec 28-29.
 DISSOLVED OXYGEN: Maximum, 12.1 mg/L, Jan 22; minimum, 2.6 mg/L, Aug 31.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	832	719	769	603	557	576	453	388	419	366	362	364
2	766	741	759	639	603	624	445	416	434	378	363	372
3	762	696	719	656	639	651	496	445	466	376	372	374
4	731	700	720	682	656	672	575	496	540	381	369	373
5	728	703	711	693	682	689	573	466	503	383	327	350
6	731	709	720	701	690	695	487	466	480	327	219	250
7	733	709	725	705	700	703	480	460	467	231	222	227
8	709	694	703	709	702	706	499	443	463	236	224	230
9	715	689	696	705	690	698	528	380	469	264	236	247
10	729	667	711	701	693	696	394	358	373	290	264	279
11	680	462	586	718	701	712	384	359	367	312	290	300
12	465	447	454	714	704	707	416	384	398	326	311	317
13	522	461	492	719	713	717	449	416	430	351	321	336
14	533	447	497	722	686	713	502	449	474	336	329	332
15	461	333	375	686	547	607	536	502	521	353	336	343
16	374	360	366	547	489	511	567	536	553	390	353	380
17	408	374	390	548	509	532	577	567	574	394	389	391
18	432	408	421	525	509	515	602	576	593	391	381	388
19	458	432	445	534	520	529	603	595	599	384	363	369
20	500	458	477	567	518	542	603	510	590	387	384	386
21	547	500	526	602	567	586	512	383	457	385	371	383
22	595	547	575	619	602	614	383	251	309	371	312	334
23	623	595	610	647	619	637	259	245	252	312	291	302
24	626	586	616	666	646	657	270	257	262	351	312	340
25	586	422	478	672	664	668	281	262	272	358	351	354
26	429	395	403	672	665	668	291	278	288	360	354	357
27	422	403	414	680	672	675	298	291	296	401	359	388
28	434	421	428	681	665	678	306	298	302	411	401	407
29	451	434	442	684	671	677	330	306	315	409	401	406
30	494	451	467	685	387	563	341	330	337	401	399	400
31	557	494	530	---	---	---	363	336	347	400	398	400
MONTH	832	333	556	722	387	641	603	245	424	411	219	344

TRINITY RIVER BASIN

08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	425	398	407	407	390	397	399	370	389	678	631	663
2	429	394	405	437	407	422	412	399	407	642	618	632
3	489	425	466	457	437	448	430	412	420	643	608	633
4	494	483	489	466	456	460	438	430	435	622	604	609
5	483	468	473	462	457	459	---	---	e430	657	622	643
6	500	473	482	461	449	457	---	---	e430	693	657	676
7	543	500	530	462	439	455	---	---	e430	719	693	711
8	546	531	539	454	444	447	---	---	e430	726	716	723
9	573	546	556	493	454	476	431	427	429	721	709	713
10	594	371	546	492	484	489	444	430	435	734	721	725
11	383	307	345	505	484	490	---	---	e440	734	564	697
12	376	296	326	507	495	501	---	---	e440	651	564	604
13	327	308	320	501	482	496	---	---	e440	620	556	601
14	330	324	326	501	493	499	---	---	e450	556	513	526
15	367	323	328	493	428	457	---	---	e450	558	515	535
16	590	367	450	461	384	432	---	---	e460	607	558	579
17	621	586	606	400	381	391	---	---	e460	639	607	623
18	638	615	622	392	361	374	478	447	470	674	639	657
19	655	519	574	361	359	360	481	476	478	691	674	684
20	655	457	523	381	361	368	486	476	482	718	691	709
21	577	475	563	418	381	401	502	484	495	713	695	701
22	475	425	443	445	418	434	504	498	501	721	699	709
23	523	427	477	461	445	455	530	377	497	741	721	734
24	498	393	421	463	457	460	554	486	544	738	724	729
25	474	397	420	481	448	459	554	507	522	734	725	728
26	497	464	478	481	406	431	512	503	507	736	731	733
27	464	355	410	417	410	416	537	511	521	734	727	731
28	390	355	374	410	408	408	563	537	550	739	724	730
29	---	---	---	408	407	408	651	563	606	743	470	623
30	---	---	---	407	401	405	667	651	660	514	465	499
31	---	---	---	401	367	378	---	---	---	511	480	489
MONTH	655	296	461	507	359	437	---	---	474	743	465	656
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	498	478	486	691	680	684	747	733	739	730	712	718
2	531	498	513	714	682	696	759	747	754	743	730	740
3	584	531	554	723	714	718	751	743	747	744	731	736
4	624	584	605	723	712	717	743	716	728	745	735	741
5	640	619	632	713	701	706	738	716	730	735	726	731
6	684	630	660	703	696	699	746	727	734	740	731	736
7	734	655	705	704	696	701	761	746	752	732	722	726
8	747	734	740	710	704	706	770	757	762	742	726	733
9	744	598	665	725	708	718	776	767	771	759	740	754
10	598	551	562	727	721	725	776	730	753	754	726	739
11	594	559	578	721	702	707	734	722	732	730	700	723
12	652	594	621	705	667	688	743	689	729	712	686	700
13	680	540	626	718	666	688	742	706	726	701	691	696
14	553	475	507	750	718	736	757	696	738	703	685	694
15	514	476	490	751	733	743	750	720	739	692	269	579
16	524	501	516	734	726	730	723	672	696	607	288	516
17	530	521	525	739	728	735	717	650	702	609	487	556
18	572	526	549	744	733	738	650	579	607	504	387	449
19	596	572	586	745	736	742	694	645	668	387	345	360
20	618	596	612	746	727	736	709	692	697	418	372	382
21	654	614	629	748	732	742	713	664	691	528	418	482
22	686	654	666	741	716	726	664	621	639	575	528	553
23	695	686	692	736	717	724	645	624	634	641	575	604
24	693	685	689	757	736	749	681	645	670	695	641	680
25	702	688	696	768	748	757	709	681	699	696	685	692
26	691	684	687	749	703	732	707	698	702	685	673	675
27	694	687	691	726	703	719	719	696	702	681	674	677
28	687	674	682	733	722	730	722	712	716	681	647	661
29	687	673	676	748	730	742	716	702	708	711	654	680
30	708	687	700	749	736	742	727	716	723	716	704	711
31	---	---	---	742	737	740	718	704	710	---	---	---
MONTH	747	475	618	768	666	723	776	579	713	759	269	647

e Estimated

TRINITY RIVER BASIN

08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	8.1	7.7	7.9	8.0	8.0	8.0	7.6	7.6	7.6	7.8	7.8	7.8
2	8.1	7.9	8.0	8.0	8.0	8.0	7.7	7.6	7.7	7.8	7.7	7.7
3	8.1	7.9	8.0	8.1	8.0	8.0	7.8	7.7	7.7	7.7	7.6	7.6
4	8.1	7.9	8.0	8.1	8.0	8.0	7.8	7.7	7.8	7.6	7.6	7.6
5	8.1	8.0	8.0	8.2	8.0	8.1	7.7	7.6	7.6	7.7	7.6	7.7
6	8.1	7.9	8.0	8.4	8.1	8.2	7.6	7.6	7.6	8.0	7.6	7.8
7	7.9	7.8	7.9	8.5	8.2	8.3	7.7	7.6	7.7	8.0	7.7	7.9
8	7.9	7.7	7.8	8.5	8.3	8.4	7.7	7.6	7.7	8.0	7.9	8.0
9	7.8	7.6	7.7	8.4	8.2	8.3	7.7	7.5	7.6	8.0	7.9	7.9
10	7.6	7.4	7.5	8.3	8.1	8.2	7.7	7.5	7.7	7.9	7.9	7.9
11	7.6	7.4	7.5	8.3	8.1	8.2	7.6	7.6	7.6	7.9	7.8	7.9
12	7.6	7.6	7.6	8.3	8.1	8.2	7.7	7.6	7.7	7.9	7.8	7.8
13	7.7	7.6	7.6	8.1	8.1	8.1	7.8	7.7	7.7	7.9	7.8	7.9
14	7.7	7.5	7.6	8.1	7.9	8.0	7.8	7.7	7.8	7.9	7.9	7.9
15	7.6	7.5	7.5	7.9	7.8	7.8	7.8	7.8	7.8	7.9	7.8	7.8
16	7.7	7.6	7.6	7.9	7.9	7.9	7.8	7.8	7.8	7.9	7.8	7.9
17	7.7	7.7	7.7	8.0	7.9	7.9	7.8	7.8	7.8	7.9	7.9	7.9
18	7.8	7.7	7.7	8.0	8.0	8.0	7.8	7.7	7.8	7.9	7.9	7.9
19	7.8	7.7	7.8	8.1	8.0	8.0	7.8	7.7	7.8	8.0	7.9	7.9
20	7.8	7.7	7.8	8.1	8.0	8.1	7.8	7.7	7.7	8.0	7.9	8.0
21	7.8	7.8	7.8	8.2	8.1	8.1	7.8	7.5	7.6	8.0	8.0	8.0
22	7.8	7.7	7.8	8.3	8.1	8.2	8.0	7.6	7.9	8.0	7.9	8.0
23	7.8	7.7	7.8	8.4	8.1	8.2	8.1	7.7	7.9	8.0	7.9	7.9
24	7.8	7.7	7.8	8.4	8.2	8.3	7.9	7.6	7.7	8.0	7.9	7.9
25	8.0	7.8	7.9	8.5	8.2	8.3	7.8	7.6	7.7	8.0	8.0	8.0
26	7.8	7.7	7.8	8.5	8.2	8.3	7.7	7.6	7.6	8.0	8.0	8.0
27	7.8	7.6	7.7	8.4	8.1	8.3	7.8	7.6	7.6	8.0	8.0	8.0
28	7.8	7.7	7.8	8.2	7.9	8.1	7.7	7.6	7.6	8.0	7.8	7.9
29	7.8	7.7	7.7	8.0	7.7	7.9	7.7	7.6	7.7	7.8	7.8	7.8
30	7.9	7.7	7.8	7.7	7.6	7.6	7.7	7.7	7.7	7.8	7.8	7.8
31	8.0	7.9	7.9	---	---	---	7.8	7.7	7.8	7.8	7.8	7.8
MONTH	8.1	7.4	7.8	8.5	7.6	8.1	8.1	7.5	7.7	8.0	7.6	7.9
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	7.8	7.7	7.8	7.5	7.5	7.5	7.7	7.6	7.6	8.1	7.8	7.9
2	7.8	7.6	7.7	7.6	7.5	7.5	7.7	7.7	7.7	8.2	8.0	8.1
3	7.7	7.6	7.7	7.6	7.6	7.6	7.7	7.7	7.7	8.4	8.1	8.2
4	7.7	7.7	7.7	7.6	7.5	7.6	7.7	7.6	7.6	8.6	8.3	8.4
5	7.7	7.7	7.7	7.6	7.6	7.6	7.7	7.6	7.6	8.5	8.3	8.4
6	7.7	7.6	7.7	7.6	7.6	7.6	---	---	---	8.4	8.2	8.3
7	7.6	7.6	7.6	7.6	7.6	7.6	---	---	---	8.3	8.1	8.2
8	7.6	7.6	7.6	7.6	7.6	7.6	---	---	---	8.3	8.1	8.2
9	7.6	7.6	7.6	7.6	7.5	7.6	---	---	---	8.2	8.0	8.1
10	7.6	7.4	7.6	7.6	7.5	7.6	---	---	---	8.0	7.6	7.9
11	7.4	7.3	7.3	7.6	7.5	7.6	---	---	---	7.6	7.2	7.3
12	7.3	7.3	7.3	7.6	7.6	7.6	---	---	---	7.3	7.2	7.3
13	7.3	7.3	7.3	7.6	7.5	7.5	---	---	---	7.5	7.3	7.4
14	7.3	7.2	7.3	7.5	7.5	7.5	---	---	---	7.5	7.5	7.5
15	7.3	7.1	7.2	7.5	7.4	7.5	---	---	---	7.6	7.5	7.6
16	7.3	7.2	7.2	7.5	7.4	7.4	---	---	---	7.8	7.6	7.7
17	7.3	7.2	7.3	7.4	7.4	7.4	---	---	---	8.0	7.7	7.8
18	7.4	7.3	7.3	7.4	7.4	7.4	7.6	7.5	7.6	8.0	7.8	7.9
19	7.3	7.3	7.3	7.4	7.3	7.4	7.6	7.5	7.6	8.0	7.8	7.9
20	7.4	7.3	7.4	7.4	7.4	7.4	7.7	7.6	7.6	7.9	7.8	7.9
21	7.5	7.4	7.5	7.4	7.3	7.4	7.7	7.6	7.7	8.4	7.8	8.2
22	7.5	7.5	7.5	7.3	7.3	7.3	7.7	7.7	7.7	8.4	8.2	8.3
23	7.5	7.2	7.5	7.4	7.3	7.4	7.9	7.4	7.5	8.2	8.1	8.1
24	7.4	7.2	7.3	7.4	7.4	7.4	7.6	7.5	7.5	8.1	7.9	8.0
25	7.5	7.4	7.4	7.5	7.4	7.5	7.6	7.6	7.6	7.9	7.8	7.9
26	7.5	7.4	7.5	7.6	7.5	7.5	7.7	7.6	7.6	7.8	7.7	7.7
27	7.5	7.4	7.5	7.6	7.6	7.6	7.8	7.7	7.7	7.7	7.6	7.6
28	7.5	7.5	7.5	7.6	7.6	7.6	7.8	7.7	7.7	7.8	7.6	7.7
29	---	---	---	7.6	7.6	7.6	7.8	7.8	7.8	7.6	7.4	7.4
30	---	---	---	7.6	7.5	7.6	7.9	7.8	7.8	7.4	7.4	7.4
31	---	---	---	7.6	7.5	7.5	---	---	---	7.5	7.4	7.5
MONTH	7.8	7.1	7.5	7.6	7.3	7.5	---	---	---	8.6	7.2	7.9

TRINITY RIVER BASIN

08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN												
													JUNE			JULY			AUGUST			SEPTEMBER		
1	7.6	7.5	7.5	8.4	8.2	8.3	---	---	---	8.1	7.9	8.0												
2	7.7	7.6	7.6	8.3	8.2	8.3	---	---	---	8.1	7.9	8.0												
3	7.8	7.7	7.7	8.4	8.2	8.3	---	---	---	8.1	7.9	8.0												
4	7.8	7.7	7.8	8.6	8.3	8.4	---	---	---	8.1	7.9	8.0												
5	7.8	7.7	7.8	8.5	8.3	8.4	---	---	---	8.1	7.9	8.0												
6	7.9	7.8	7.8	8.5	7.9	8.2	---	---	---	8.1	7.9	8.0												
7	7.9	7.8	7.8	8.2	7.9	8.1	7.8	7.7	7.7	8.2	7.8	8.1												
8	7.8	7.8	7.8	8.2	7.9	8.1	7.8	7.7	7.8	8.2	8.0	8.1												
9	7.8	7.8	7.8	8.3	7.9	8.1	7.9	7.8	7.8	8.3	8.0	8.1												
10	7.8	7.8	7.8	8.2	8.0	8.1	7.9	7.9	7.9	8.2	8.0	8.1												
11	7.9	7.8	7.8	8.0	7.8	7.9	7.9	7.8	7.8	8.1	7.9	8.0												
12	7.9	7.8	7.9	8.0	7.8	7.8	7.9	7.8	7.8	8.0	7.8	7.9												
13	7.8	7.6	7.7	7.9	7.7	7.8	8.0	7.8	7.9	8.0	7.9	7.9												
14	7.7	7.6	7.7	7.8	7.6	7.7	8.1	7.9	8.0	8.0	8.0	8.0												
15	7.8	7.7	7.7	8.1	7.7	7.9	8.0	8.0	8.0	8.1	7.9	8.0												
16	7.8	7.8	7.8	8.1	7.9	8.0	8.0	7.9	7.9	8.1	7.8	7.8												
17	7.9	7.7	7.8	8.0	7.8	7.9	7.9	7.8	7.9	7.8	7.7	7.8												
18	8.0	7.9	7.9	8.0	7.8	7.9	7.8	7.8	7.8	7.8	7.7	7.8												
19	8.2	7.9	8.0	8.0	7.8	7.9	7.9	7.8	7.8	7.9	7.8	7.8												
20	8.4	8.2	8.3	8.1	7.8	7.9	8.0	7.9	8.0	7.9	7.8	7.9												
21	8.6	8.3	8.4	8.0	7.8	7.9	8.0	7.9	8.0	7.9	7.9	7.9												
22	8.8	8.4	8.6	8.0	7.8	7.9	8.1	7.9	8.0	8.0	7.9	8.0												
23	8.6	8.4	8.5	7.9	7.7	7.8	8.1	7.9	8.0	8.2	8.0	8.1												
24	8.6	8.3	8.4	7.9	7.7	7.8	8.1	8.0	8.1	8.1	7.9	8.0												
25	8.6	8.2	8.4	8.1	7.8	7.9	8.1	8.0	8.0	8.1	7.9	8.0												
26	8.6	8.4	8.5	8.0	7.9	7.9	8.2	8.0	8.1	8.1	8.0	8.0												
27	8.6	8.3	8.4	8.0	7.9	7.9	8.2	8.0	8.1	8.1	7.9	8.0												
28	8.6	8.4	8.5	8.1	7.8	7.9	8.2	8.0	8.1	8.1	7.9	8.0												
29	8.7	8.3	8.5	8.1	7.9	8.0	8.2	8.0	8.1	8.1	7.9	8.0												
30	8.5	8.3	8.4	8.1	7.9	8.0	8.1	8.0	8.0	8.1	7.9	8.0												
31	---	---	---	8.1	7.8	7.9	8.1	8.0	8.0	---	---	---												
MONTH	8.8	7.5	8.0	8.6	7.6	8.0	---	---	---	8.3	7.7	8.0												

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN												
													OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	27.7	26.2	26.8	18.6	17.9	18.3	16.0	15.5	15.8	9.0	8.6	8.8												
2	27.8	26.5	27.1	18.3	17.6	17.9	15.5	14.4	14.9	10.0	8.9	9.6												
3	27.6	26.4	26.9	17.8	17.0	17.4	14.5	14.0	14.3	11.4	10.0	10.7												
4	27.1	25.8	26.5	17.7	16.7	17.2	14.4	13.5	14.0	13.0	11.4	12.1												
5	26.6	25.8	26.2	18.5	17.5	17.9	14.1	12.7	13.6	13.5	12.4	12.8												
6	26.5	25.9	26.2	17.8	16.8	17.3	12.7	12.1	12.3	14.7	11.9	13.1												
7	26.2	25.8	26.0	17.0	16.0	16.5	12.1	10.7	11.5	12.6	11.5	12.1												
8	25.8	25.4	25.6	16.5	15.6	16.1	11.7	10.5	11.1	11.5	10.3	10.9												
9	25.9	25.2	25.5	16.1	15.7	15.9	11.8	11.1	11.5	10.3	9.8	10.0												
10	25.8	25.2	25.5	15.7	14.9	15.3	11.2	10.6	10.8	10.0	9.7	9.8												
11	25.6	25.0	25.2	14.9	14.4	14.6	10.6	9.9	10.2	9.8	9.6	9.7												
12	25.0	24.5	24.8	14.5	14.0	14.2	9.9	9.4	9.6	10.7	9.8	10.2												
13	24.5	23.4	23.9	14.5	14.0	14.2	9.4	8.9	9.2	10.6	9.7	10.1												
14	23.4	22.5	23.0	14.8	14.5	14.7	9.3	8.5	8.9	9.7	9.4	9.5												
15	22.5	21.4	21.8	14.7	13.2	13.8	9.8	8.5	9.1	9.4	8.9	9.1												
16	21.5	20.6	21.1	13.2	12.1	12.5	10.3	8.9	9.6	9.3	8.8	9.1												
17	21.2	20.1	20.7	12.1	11.3	11.7	10.6	9.4	10.0	9.3	9.0	9.1												
18	20.9	19.7	20.3	11.6	11.1	11.3	10.9	9.6	10.2	9.7	9.2	9.5												
19	21.0	19.8	20.5	11.6	10.7	11.2	11.9	10.4	11.0	9.7	9.5	9.6												
20	21.4	20.2	20.8	12.4	11.2	11.8	13.0	11.9	12.3	9.7	9.5	9.6												
21	21.1	20.5	20.9	13.3	12.4	12.8	13.8	12.7	13.3	10.1	9.5	9.7												
22	20.5	19.8	20.2	13.5	12.6	13.0	13.4	11.3	12.1	10.2	9.9	10.1												
23	19.8	18.5	19.3	13.7	12.6	13.1	11.4	10.8	11.1	9.9	9.3	9.5												
24	19.6	18.4	18.8	13.6	12.9	13.3	10.8	10.2	10.4	9.4	9.0	9.2												
25	18.5	17.4	17.9	14.7	13.6	14.2	10.2	9.6	9.8	9.2	8.9	9.0												
26	18.3	17.4	17.7	16.3	14.7	15.6	9.7	8.8	9.3	9.3	9.1	9.2												
27	17.4	16.7	17.0	17.1	16.1	16.7	8.8	8.1	8.5	9.6	9.0	9.3												
28	16.7	16.0	16.3	17.4	17.1	17.2	8.4	8.0	8.2	9.7	9.2	9.4												
29	16.7	15.7	16.2	17.3	16.7	17.0	8.4	8.0	8.1	10.2	9.6	9.9												
30	17.5	16.2	16.7	17.5	16.0	16.9	8.7	8.4	8.5	10.6	10.1	10.3												
31	18.6	17.5	18.0	---	---	---	8.8	8.5	8.6	10.6	10.3	10.5												
MONTH	27.8	15.7	22.0	18.6	10.7	15.0	16.0	8.0	10.9	14.7	8.6	10.0												

08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN												
													FEBRUARY			MARCH			APRIL			MAY		
1	11.1	10.6	10.8	13.4	12.9	13.1	18.5	18.0	18.2	23.4	21.1	22.1												
2	11.3	11.0	11.1	12.9	12.3	12.6	18.4	18.0	18.2	23.8	21.8	22.8												
3	12.0	11.1	11.5	12.5	11.8	12.2	18.6	18.2	18.4	24.0	22.9	23.5												
4	12.0	11.3	11.7	12.7	12.2	12.4	18.4	17.8	18.0	24.5	22.9	23.7												
5	11.7	11.1	11.4	13.6	12.7	13.2	---	---	---	24.5	23.9	24.2												
6	11.3	10.6	11.0	13.6	13.4	13.5	---	---	---	25.9	24.1	24.9												
7	11.2	10.4	10.8	13.5	12.6	13.2	---	---	---	27.1	25.2	26.0												
8	11.2	10.3	10.8	12.6	11.7	12.2	---	---	---	27.5	25.9	26.7												
9	11.7	11.0	11.3	11.7	11.1	11.4	19.0	18.1	18.6	27.7	26.5	27.0												
10	12.3	11.2	12.0	11.1	10.3	10.6	19.0	17.9	18.5	27.2	25.8	26.6												
11	11.6	10.8	11.2	10.9	10.2	10.5	19.1	18.0	18.6	26.7	25.7	26.2												
12	11.3	10.9	11.2	10.8	10.1	10.5	---	---	---	26.5	25.0	25.7												
13	11.9	11.2	11.5	10.8	10.5	10.7	---	---	---	26.4	25.6	26.0												
14	11.8	11.4	11.6	11.2	10.7	10.9	---	---	---	26.1	25.3	25.7												
15	11.6	11.3	11.4	11.7	11.2	11.4	---	---	---	26.3	25.3	25.8												
16	12.5	11.6	11.9	12.3	11.7	12.0	---	---	---	27.0	25.6	26.3												
17	12.7	12.4	12.6	13.3	12.2	12.6	---	---	---	27.6	26.5	27.0												
18	13.2	12.0	12.6	14.3	13.3	13.6	20.7	20.1	20.4	27.9	26.7	27.3												
19	13.5	12.4	13.0	14.4	13.4	14.2	20.4	19.4	19.9	27.8	26.7	27.3												
20	13.4	11.9	12.7	13.4	12.3	12.8	20.6	19.3	19.9	28.0	26.7	27.3												
21	13.1	12.6	13.0	13.4	12.4	12.9	20.6	19.4	20.0	28.2	26.9	27.5												
22	12.6	11.9	12.1	14.1	12.9	13.4	20.8	19.5	20.1	28.3	27.0	27.6												
23	13.0	11.7	12.3	14.9	13.7	14.2	21.0	19.5	20.1	27.7	26.9	27.4												
24	12.8	12.0	12.4	15.9	14.5	15.1	21.1	19.4	20.3	27.6	26.9	27.2												
25	13.9	12.5	13.0	17.0	15.5	16.1	21.3	20.2	20.8	27.7	26.7	27.2												
26	14.3	13.6	13.9	17.6	16.7	17.1	21.2	20.9	21.1	28.4	26.8	27.6												
27	13.9	13.3	13.6	17.6	17.4	17.5	21.0	20.5	20.8	28.2	27.4	27.8												
28	13.7	13.4	13.5	18.2	17.4	17.7	20.9	19.7	20.3	28.6	27.3	28.0												
29	---	---	---	18.9	18.2	18.5	21.3	19.6	20.5	28.4	27.2	27.6												
30	---	---	---	19.1	18.9	19.0	22.1	20.3	21.1	28.9	27.1	27.9												
31	---	---	---	19.1	18.5	18.7	---	---	---	29.8	28.1	28.9												
MONTH	14.3	10.3	12.0	19.1	10.1	13.7	---	---	---	29.8	21.1	26.3												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN												
													JUNE			JULY			AUGUST			SEPTEMBER		
1	30.5	28.4	29.4	33.0	31.1	32.1	32.3	30.2	31.2	31.4	29.7	30.5												
2	30.4	28.6	29.6	33.0	31.4	32.2	32.5	30.5	31.5	31.0	29.4	30.2												
3	30.4	29.1	29.7	32.8	31.6	32.1	32.7	30.8	31.7	31.3	29.6	30.4												
4	30.5	29.3	29.8	31.9	31.1	31.5	32.1	31.0	31.5	31.8	29.9	30.8												
5	29.5	27.7	28.7	31.8	30.6	31.2	31.4	30.4	31.0	31.4	30.0	30.6												
6	27.7	26.8	27.1	32.0	30.4	31.2	31.1	29.9	30.3	31.4	29.5	30.4												
7	27.3	26.4	26.9	32.3	30.6	31.4	30.8	29.3	30.0	31.2	29.6	30.4												
8	27.5	26.5	26.9	32.8	31.1	31.9	31.2	29.5	30.2	31.5	29.6	30.5												
9	28.2	26.6	27.4	33.1	31.4	32.3	31.5	29.6	30.5	30.7	29.6	30.2												
10	28.2	27.3	27.8	33.3	31.6	32.4	31.7	30.1	30.8	29.6	27.8	28.5												
11	28.2	27.3	27.7	33.0	31.3	32.2	32.2	30.6	31.2	27.8	26.2	26.9												
12	29.0	27.4	28.1	33.0	31.3	32.2	31.2	30.4	30.8	26.2	25.7	26.0												
13	29.5	28.1	28.8	32.6	31.4	32.1	30.7	29.5	30.0	26.2	25.7	26.0												
14	29.8	28.2	29.1	33.4	31.5	32.3	29.7	29.0	29.4	26.8	25.9	26.3												
15	30.4	28.7	29.5	33.2	31.6	32.4	30.4	29.2	29.7	26.7	25.0	26.0												
16	30.3	28.4	29.4	33.4	31.8	32.6	31.0	29.2	30.0	25.9	25.1	25.7												
17	30.5	29.2	29.9	33.2	32.0	32.5	31.3	29.8	30.5	26.2	25.8	26.0												
18	30.8	29.6	30.1	33.3	31.3	32.2	30.6	29.3	30.0	26.6	26.1	26.3												
19	31.4	29.6	30.4	33.4	31.7	32.5	31.4	29.8	30.5	27.3	26.0	26.6												
20	31.5	29.8	30.6	33.2	31.6	32.4	31.3	30.2	30.8	29.0	27.0	27.8												
21	31.5	29.7	30.6	33.3	31.5	32.4	31.7	30.3	31.0	29.9	27.9	28.7												
22	31.7	30.0	30.8	33.1	31.3	32.2	31.4	30.2	30.7	30.0	28.9	29.5												
23	31.8	30.4	31.1	33.2	31.2	32.2	31.2	30.0	30.5	30.5	29.3	29.8												
24	31.9	30.2	31.0	33.1	31.2	32.2	31.2	29.7	30.4	30.6	29.3	29.9												
25	32.1	30.3	31.2	33.1	31.2	32.2	32.1	30.2	30.9	30.5	29.5	30.0												
26	32.0	30.6	31.3	32.9	31.1	32.1	32.1	30.4	31.1	30.1	29.2	29.7												
27	32.3	30.5	31.4	32.9	31.0	32.0	32.3	30.5	31.4	30.4	29.2	29.7												
28	32.2	30.7	31.5	33.0	31.1	32.1	32.3	30.6	31.5	30.6	29.2	29.9												
29	32.3	30.7	31.5	32.8	31.0	31.9	32.6	31.0	31.8	30.5	29.1	29.8												
30	32.4	30.9	31.7	32.3	30.7	31.6	31.8	30.4	30.9	30.3	28.9	29.6												
31	---	---	---	32.2	30.2	31.2	31.7	30.2	30.9	---	---	---												
MONTH	32.4	26.4	29.6	33.4	30.2	32.1	32.7	29.0	30.7	31.8	25.0	28.8												

08063010 CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX

LOCATION.--Lat 32°14'35", long 96°08'26", Henderson County, Hydrologic Unit 12030107, inside pumphouse on lower level, 1,000 ft north of spillway, 5.5 mi upstream from Joe B. Hogsett Dam on Cedar Creek, and 8.0 mi northwest of Trinidad.

DRAINAGE AREA.--1,007 mi².

PERIOD OF RECORD.--Jan 1965 to current year.

Water-quality records.--Chemical and biochemical analyses: Oct 1969 to Sep 1985.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to May 15, 1972, at unfinished pumphouse at same site and datum. May 16, 1972 to Sep 8, 1975, at site 0.25 mi north and upstream from pumphouse at same datum. Satellite telemeter at station.

REMARKS.--Records good. The reservoir is formed by a rolled earthfill dam 17,539 ft long. The spillway is located on the right bank 5.5 mi upstream from the dam and discharges into the Trinity River through a cut channel 2 mi long. Deliberate impoundment began Jul 2, 1965, and the dam was completed in Feb 1966. The spillway is 474 ft long and has eight 40- by 24-ft radial gates and two automatically operated 40- by 8.5-ft hinged gates. Low-flow releases may be made downstream through a 5.0 foot diameter conduit through the dam. The dam is the property of Tarrant Regional Water District and was built for municipal and industrial supply and for recreational purposes. Water is diverted from the reservoir for municipal and industrial uses by lakeside developments and by the cities of Arlington, Fort Worth, Mansfield, Kemp, Trinidad, and Mabank. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	340.0
Top of radial gates.....	325.0
Top of automatic gates.....	322.5
Top of conservation pool.....	322.0
Crest of spillway (automatic gates).....	314.0
Crest of spillway (radial gates).....	302.0
Lowest gated outlet (invert).....	263.5

COOPERATION.--Records of diversions maintained by the Tarrant Regional Water District. Capacity Table 1-C was provided by Freese and Nichols, Consulting Engineers for the Tarrant Regional Water District. A new capacity table, Table 2-C, provided by the Texas Water Development Board was put into effect Oct 1, 1995.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 722,000 acre-ft, Jun 4, 1973 (elevation, 323.24 ft); minimum contents since first appreciable storage in 1966, 332,900 acre-ft, Mar 19, 1967 (elevation, 309.42 ft) using Table 1-C.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 662,800 acre-ft, Jan 6 (elevation, 322.78 ft); minimum contents, 527,800 acre-ft, Sep 10-11 (elevation, 318.38 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	601300	600400	595500	635300	638200	644400	636900	630700	613600	591900	561400	537200
2	599500	599500	597300	636900	636600	641800	637500	630700	612100	591600	560200	535700
3	599200	598600	597000	636900	636600	637500	637500	631300	610800	589100	558400	534500
4	598600	597300	598300	637200	636200	637800	636900	629400	608300	589100	558700	533100
5	597600	598300	598000	641100	636600	638800	636600	629400	614900	588800	556900	532200
6	597300	597300	596400	660500	635600	638500	634700	629400	613000	587300	557500	531300
7	596700	595800	598900	652900	635600	637800	636600	629400	610800	587000	555700	531000
8	598300	595500	602500	649700	635600	636600	636900	627900	609900	586100	555100	530200
9	597300	597300	605600	650000	635300	636900	635900	628500	610200	584900	553400	529600
10	597300	596700	606200	648000	647000	635000	635600	627600	609000	584000	552200	527800
11	595500	596400	605600	645100	650300	635900	633800	625700	609000	582700	553400	530500
12	601000	597600	604600	643400	651300	634700	632800	624800	608300	581800	551600	531300
13	597300	597600	604300	640100	648000	634700	634100	624200	607400	581200	551600	531300
14	595800	598600	603700	641100	641100	637800	634100	622300	607100	580300	551300	531300
15	595500	597300	603400	636600	636600	642800	633100	623800	606200	579400	550400	546800
16	594600	596100	604300	638500	636600	650300	634700	623200	604300	579100	548900	551300
17	594000	595200	603400	637200	636600	655200	633800	622300	603400	577300	548900	553400
18	592800	594600	602800	639100	638200	657500	632800	621400	602500	576300	547700	553400
19	591900	594300	603400	635300	637200	657500	633800	621100	601600	574500	546800	553100
20	591900	594600	613900	636600	637500	652300	636600	620100	600100	573900	545300	552500
21	591900	594300	630400	642400	638800	649300	634100	620100	600100	572200	544100	552200
22	591000	593700	647700	642400	637500	645700	634100	618600	599800	571900	544100	552200
23	601900	593400	651000	641100	637500	642800	632500	617300	598000	571300	543300	551600
24	604000	592800	650600	641400	636900	638800	630400	616700	597300	570100	541800	550700
25	606500	592500	650000	636600	639800	637500	629700	617300	596400	569200	541500	549800
26	605900	592800	650000	637200	648300	636600	633100	616700	595500	567700	540900	548900
27	602800	591900	644700	636200	648300	638500	632500	617600	594600	566800	540100	548900
28	601900	596100	642100	636600	647400	638500	632200	616700	594300	565900	539800	548900
29	601300	596400	638800	637200	---	638800	631600	616400	593400	564100	538900	548000
30	601000	596400	637200	637500	---	641400	631600	615500	592800	562300	538300	547700
31	601000	---	635900	637200	---	636600	---	614500	---	562000	537500	---
MAX	606500	600400	651000	660500	651300	657500	637500	631300	614900	591900	561400	553400
MIN	591000	591900	595500	635300	635300	634700	629700	614500	592800	562000	537500	527800
(+)	320.83	320.68	321.96	322.00	322.31	321.98	321.82	321.27	320.56	319.54	318.71	319.06
(@)	-300	-4600	+39500	+1300	+10200	-10800	-5000	-17100	-21700	-30800	-24500	+10200
CAL YR 1997	MAX 658200	MIN 497100	(@)	+138300								
WTR YR 1998	MAX 660500	MIN 527800	(@)	-53600								

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

08063050 NAVARRO MILLS LAKE NEAR DAWSON, TX

LOCATION.--Lat 31°57'27", long 96°41'21", Navarro County, Hydrologic Unit 12030108, in left abutment of spillway of Navarro Mills Dam on Richland Creek, 1.7 mi upstream from bridge on State Highway 31, 3.0 mi upstream from St. Louis Southwestern Railway Lines bridge, 4.2 mi upstream from Post Oak Creek, 4.6 mi north of Dawson, and 63.9 mi upstream from mouth.

DRAINAGE AREA.--320 mi².

PERIOD OF RECORD.--Aug 1962 to current year. Prior to Oct 1970, published as Navarro Mills Reservoir.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by U.S. Army Corps of Engineers). Prior to Oct 8, 1962, nonrecording gage in low-water channel at same datum. Satellite telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 7,570 ft long, including a 240-foot off-channel gated spillway with six 40.0- by 29.0-foot tainter gates. From Aug 27, 1962, to Mar 14, 1963, lake was operated as a detention basin only. Deliberate impoundment began Mar 15, 1963, and dam was completed in Sep 1963. Low-flow outlet works consist of two 36-inch-diameter gate-controlled conduits. Lake was built for flood control and water conservation. Capacity table prior to Sep 1976 is based on survey made in Feb 1956 by U.S. Army Corps of Engineers. Capacity table after Aug 31, 1976, is based on a sedimentation survey made in Sep 1972. Flow is affected at times by discharge from the flood-detention pools of 51 floodwater-retarding structures with a combined detention capacity of 26,160 acre-ft. These structures control runoff from 86.9 mi² in the Richland Creek drainage basin. An unknown amount of water is diverted for municipal and industrial uses. Figures given herein represent total contents. Data regarding dam are given in the following table:

	Elevation (feet)
Top of dam.....	457.0
Design flood.....	451.9
Top of gates (top of flood-control storage pool).....	443.0
Top of conservation pool.....	424.5
Crest of spillway.....	414.0
Lowest gated outlet (invert).....	400.0

COOPERATION.--Record of contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 183,300 acre-ft, May 18, 1968 (elevation, 440.36 ft); minimum since since initial filling in May 1965, 32,490 acre-ft, Dec 28, 1978 (elevation, 418.89 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 152,300 acre-ft, Jan 15 (elevation, 437.78 ft); minimum daily contents, 42,470 acre-ft, Sep 10 (elevation, 421.41 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48880	51080	52250	114200	91770	58490	65360	57170	54360	50310	45730	43890
2	48740	51030	52590	113000	88100	57470	63570	57120	54160	50070	45640	43760
3	48650	50890	52780	110200	84400	57220	61760	57010	54010	49980	45420	43630
4	48510	50790	52830	107600	80620	57270	60450	56960	54160	50020	45420	43500
5	48460	50790	52880	107100	77110	57320	59260	56860	54110	49880	45460	43500
6	48370	50740	52930	127900	73650	57320	58490	56860	53910	49740	46310	43370
7	48460	50650	53320	140900	70100	57720	58080	56710	53720	49590	46170	43110
8	48600	50600	54260	144400	66730	57570	58030	56710	53670	49400	46080	43030
9	48510	50700	54860	146800	63570	57420	57780	56560	53520	49260	45990	42770
10	48460	50650	54760	148400	64710	57270	57720	56410	53420	49070	45860	42470
11	48510	50650	54810	149600	63840	57120	57520	56360	53370	48930	45730	42680
12	48790	50940	54810	150800	62240	57170	57420	56210	53220	48980	45640	43280
13	48510	51080	54760	151400	61240	57270	57270	56110	53180	48650	45730	43370
14	48410	51130	54760	152100	60820	57670	57170	56060	52930	48550	45730	43280
15	48320	51030	55010	152300	60350	58340	57120	56060	52780	48370	45590	43540
16	48230	50990	55050	150600	59930	64710	57060	55960	52640	48270	45510	45150
17	48230	50940	55100	147000	59370	68010	56960	55910	52390	48090	45420	45200
18	48040	50940	55100	143800	59060	69470	56910	55750	52250	48040	45330	45200
19	47990	50940	55200	140100	58750	73360	56960	55600	52100	47900	45240	45200
20	47900	50990	59830	136300	58290	72940	57120	55500	51950	47760	45110	45240
21	47950	50940	94890	132800	58390	72180	57320	55400	51760	47630	44980	45070
22	47810	50940	98290	129500	61450	71190	57320	55350	51610	47490	44940	45020
23	48650	50940	102200	125900	60770	69760	57270	55100	51420	47260	44850	44940
24	50460	50890	104700	122100	59370	69080	57220	55050	51280	47120	44720	44850
25	50940	50940	106600	118500	58850	69360	57170	55050	51080	46940	44670	44720
26	50940	50940	108700	114800	62130	69530	57370	54910	50940	46800	44540	44670
27	50940	50940	110100	110900	61610	69700	57320	55010	50790	46580	44460	44670
28	50990	51860	111600	107000	60140	69820	57270	54860	50650	46440	44330	44590
29	50990	52250	112500	103200	---	69990	57170	54760	50600	46260	44370	44540
30	51080	52200	113300	99320	---	69360	57170	54610	50460	46040	44110	44410
31	51080	---	113800	95540	---	67290	---	54460	---	45860	44020	---
MAX	51080	52250	113800	152300	91770	73360	65360	57170	54360	50310	46310	45240
MIN	47810	50600	52250	95540	58290	57120	56910	54460	50460	45860	44020	42470
(+)	423.32	423.54	433.29	430.88	425.12	426.45	424.54	424.00	423.18	422.18	421.77	421.86
(@)	+2150	+1120	+61600	-18260	-35400	+7150	-10120	-2710	-4000	-4600	-1840	+390
CAL YR 1997	MAX 136400	MIN 46170	(@) +67720									
WTR YR 1998	MAX 152300	MIN 42470	(@) -4520									

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

LOCATION.--Lat 31°56'18", long 96°40'52", Navarro County, Hydrologic Unit 12030108, at downstream side of bridge on State Highway 31, 1.3 mi upstream from St. Louis Southwestern Railway Lines bridge, 1.7 mi downstream from Navarro Mills Dam, 2.5 mi upstream from Post Oak Creek, and 3.6 mi northeast of Dawson.

DRAINAGE AREA.--333 mi².

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

Water-quality records.--Chemical and biochemical analyses: Oct 1980 to Sep 1982.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 367.52 ft above sea level. Nov 21, 1960, to Sep 30, 1982, water-stage recorder at same site and at 3.00 ft higher datum. Prior to Nov 21, 1960, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. Since Mar 15, 1963, at least 10% of contributing drainage area has been regulated by Navarro Mills Lake (station 08063050), 1.7 mi upstream. Flow may be slightly affected at times by discharge from the flood-detention pool of one floodwater-retarding structure with a conservation capacity of 297 acre-ft. This structure controls runoff from a 1.28 mi² area below Navarro Mills Lake and above this station. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1961-63).--Maximum discharge, 25,500 ft³/s Jul 3, 1961 (gage height, 25.50 ft), from rating curve extended above 14,000 ft³/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since about 1895, about 31 ft Jun 19, 1929, from information by local residents. Floods in 1946 and 1957 reached a stage of about 26 ft, from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.10	.38	.20	1950	1080	1080	7.4	.66	.06	.00	.00
2	.00	.10	.40	820	1920	726	1060	7.2	.66	.04	.00	.00
3	.00	.05	.38	1700	1890	256	921	6.8	.66	.02	.00	.00
4	.00	.10	.24	1680	1870	84	702	6.8	.61	.06	.00	.00
5	.00	.09	.21	1670	1850	86	696	6.9	.58	.23	.00	.00
6	.00	.08	.22	2120	1820	90	499	6.9	.59	.20	1.4	.00
7	.00	.07	.42	452	1780	92	242	6.5	.59	.16	.83	.00
8	.07	.13	.55	12	1750	92	116	5.8	.56	.11	.41	.00
9	.05	.16	.28	5.5	1720	92	78	5.3	.53	.09	1.9	.00
10	.02	.24	.15	4.1	1370	88	52	5.8	.53	.04	1.8	.00
11	.02	.19	.22	3.3	1090	87	52	6.0	.52	.03	.99	.02
12	.03	.41	.26	2.7	1080	51	52	6.1	.48	.02	.34	1.0
13	.09	.39	.32	1.9	747	23	52	5.5	.45	.03	.44	1.7
14	.03	.24	.29	.04	363	23	51	5.5	.45	.04	.65	.81
15	.02	.18	.28	.00	358	24	36	5.5	.45	.05	.52	.99
16	.02	.18	.22	975	356	101	6.7	5.8	.42	.04	.35	29
17	.03	.22	.26	1970	353	36	5.4	5.7	.39	.02	.28	3.0
18	.03	.36	.27	1940	351	25	3.5	5.6	.40	.05	.22	1.4
19	.03	.30	.27	1920	348	446	2.9	5.1	.40	.04	.17	.78
20	.04	.28	55	2090	346	784	3.3	1.9	.37	.04	.15	.56
21	.03	.29	352	2270	347	770	8.1	.92	.35	.04	.10	.49
22	.03	.21	5.0	2100	381	761	7.1	.89	.34	.03	.07	.40
23	.16	.24	2.0	2060	760	955	5.5	.82	.34	.01	.08	.37
24	.24	.27	6.3	2030	1000	613	6.0	.81	.32	.00	.09	.36
25	.11	.37	1.3	2000	714	25	7.5	.81	.30	.00	.04	.31
26	.06	.27	.41	1980	759	24	7.6	.80	.30	.00	.04	.29
27	.05	.24	.25	2030	866	24	7.7	.74	.30	.00	.05	.32
28	.07	.89	.20	2060	1100	23	7.5	.73	.28	.98	.02	.32
29	.10	.49	.30	2030	---	23	7.5	.73	.26	.19	.01	.30
30	.11	.36	.26	2010	---	558	7.4	.72	.20	.07	.01	.28
31	.10	---	.20	1980	---	1100	---	.67	---	.02	.01	---
TOTAL	1.54	7.50	428.84	39916.74	29239	9162	5782.7	126.74	13.29	2.71	10.97	42.70
MEAN	.050	.25	13.8	1288	1044	296	193	4.09	.44	.087	.35	1.42
MAX	.24	.89	352	2270	1950	1100	1080	7.4	.66	.98	1.9	.29
MIN	.00	.05	.15	.00	346	23	2.9	.67	.20	.00	.00	.00
AC-FT	3.1	15	851	79170	58000	18170	11470	251	26	5.4	22	85

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1998z, BY WATER YEAR (WY)

	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964
MEAN	42.4	134	140	186	194	215	226	290	337	104	28.6	21.5
MAX	400	1366	1050	1288	1090	971	992	980	1356	773	541	269
(WY)	1974	1968	1975	1998	1992	1970	1992	1980	1975	1968	1995	1974
MIN	.000	.000	.000	.058	.066	.22	.023	.019	.000	.000	.068	.005
(WY)	1964	1964	1964	1964	1964	1971	1964	1964	1964	1970	1981	1997

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1964 - 1998z

ANNUAL TOTAL	68418.40	84734.73	
ANNUAL MEAN	187	232	159
HIGHEST ANNUAL MEAN			561
LOWEST ANNUAL MEAN			.20
HIGHEST DAILY MEAN	1900	Mar 27	2270
LOWEST DAILY MEAN	.00	Sep 10	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Sep 10	.00
INSTANTANEOUS PEAK FLOW			3790
INSTANTANEOUS PEAK STAGE			22.61
ANNUAL RUNOFF (AC-FT)	135700	168100	115500
10 PERCENT EXCEEDS	939	1020	674
50 PERCENT EXCEEDS	.39	.52	1.9
90 PERCENT EXCEEDS	.02	.02	.03

z Period of regulated streamflow.

08063700 BARDWELL LAKE NEAR ENNIS, TX

LOCATION.--Lat 32°15'00", long 96°38'49", Ellis County, Hydrologic Unit 12030109, in intake structure of Bardwell Dam on Waxahachie Creek, 5 mi south of Ennis, and 5.6 mi upstream from mouth.

DRAINAGE AREA.--178 mi².

PERIOD OF RECORD.--Nov 1965 to current year. Prior to Oct 1970, published as Bardwell Reservoir.

GAGE.--Water-stage recorder. Datum of gage is sea level (U.S. Army Corps of Engineers benchmark). Prior to Apr 25, 1966, nonrecording gage on intake structure at same datum. Satellite telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 15,400 ft long, including a 350-foot uncontrolled off-channel concrete-gravity spillway with ogee weir section. Deliberate impoundment began Nov 20, 1965, and dam was completed Mar 27, 1966. Controlled low-flow outlet works consists of a 10.0-foot-diameter concrete conduit with two 5.0- by 10.0-foot sluice gates. Lake was built for flood control and water conservation. Capacity table beginning Oct 1976 is based on a survey completed in 1972. Runoff from 81.4 mi above Bardwell Lake is modified by Lake Waxahachie, with a capacity of 13,500 acre-ft at spillway elevation. The city of Waxahachie diverts water from Lake Waxahachie and returns an unknown amount of effluent to Waxahachie Creek. Inflow is affected at times by discharge from flood-detention pools of 23 floodwater-retarding structures with a combined detention capacity of 15,370 acre-ft. These structures control runoff from 52.4 mi² in the Chambers Creek watershed. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	460.0
Design flood.....	455.9
Crest of spillway (top of flood-control pool).....	439.0
Top of conservation pool.....	421.0
Lowest gated outlet (invert).....	391.0

COOPERATION.--Records of elevation and contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 112,100 acre-ft, May 22, 1990 (elevation, 434.54 ft); minimum since initial filling, 39,720 acre-ft, Nov 10, 1978 (elevation, 417.21 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 111,700 acre-ft, Jan 15 (elevation, 434.45 ft); minimum daily contents, 43,180 acre-ft, Sep 10 (elevation, 418.31 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48500	51690	52400	92390	60250	54090	58280	52860	51580	49160	45560	44150
2	48400	51580	52650	92000	58280	53620	57300	52900	51480	49060	45490	44050
3	48330	51510	52900	90630	57150	53470	56370	52860	51370	48920	45490	43950
4	48260	51480	52930	89510	55960	53370	55440	52790	51400	48950	45430	43830
5	48190	51510	52930	93200	54850	53370	54530	52790	51480	48780	45360	43730
6	48190	51440	52900	98030	53980	53190	53800	52790	51260	48680	45360	43630
7	48230	51330	53260	103100	53400	53150	53190	52860	51160	48610	45290	43540
8	48400	51300	53580	105200	52830	53190	52830	52790	51050	48540	45190	43440
9	48540	51440	53510	106600	52760	52860	52720	52760	51020	48400	45100	43310
10	48570	51440	53150	107700	53840	52540	52760	52650	51020	48260	45000	43180
11	48540	51400	52790	108800	53870	52400	52720	52540	51020	48120	45060	43500
12	48920	51620	52650	109900	53580	52260	52720	52510	50980	47990	44900	43660
13	49020	51720	52680	110500	53370	52400	52790	52470	50880	48020	45230	43730
14	48950	51790	52720	111300	53440	52900	52830	52430	50840	47920	45460	43700
15	48920	51760	52760	111700	53440	54310	52860	52430	50730	47780	45390	44020
16	48850	51650	52830	111100	53510	57900	52930	52360	50590	47680	45330	44700
17	48850	51620	52860	108200	53470	59720	52930	52330	50450	47540	45260	44730
18	48740	51620	52860	104800	53550	60710	52790	52260	50380	47410	45160	44730
19	48710	51620	52930	101200	53550	61480	52720	52220	50310	47340	45130	44730
20	48710	51620	60210	97380	53550	60980	52970	52150	50170	47200	45060	44770
21	48710	51650	76210	95860	53840	60520	52860	52110	50070	47070	45260	44770
22	48610	51650	78620	93530	54230	59950	52830	52080	50000	46930	44930	44770
23	50450	51620	81270	90770	54160	59260	52760	51970	49860	46800	44870	45260
24	51760	51620	83600	87100	53800	59070	52610	51940	49750	46630	44770	45160
25	51900	51620	85140	83640	53800	59340	52650	51900	49680	46490	44700	45100
26	51830	51650	86600	80250	55190	59530	52930	51830	49580	46360	44640	45060
27	51720	51690	87750	76560	55220	59950	52900	51940	49470	46260	44540	45030
28	51650	52180	89040	72890	54710	60210	52900	51900	49370	46090	44540	44960
29	51650	52400	89930	69600	---	60410	52860	51870	49340	45960	44440	44900
30	51690	52400	90920	66320	---	60330	52860	51760	49230	45760	44280	44830
31	51720	---	91580	63120	---	59260	---	51690	---	45690	44210	---
MAX	51900	52400	91580	111700	60250	61480	58280	52900	51580	49160	45560	45260
MIN	48190	51300	52400	63120	52760	52260	52610	51690	49230	45690	44210	43180
(+)	420.84	421.03	430.47	423.89	421.67	422.89	421.17	420.83	420.13	419.09	418.62	418.83
(@)	+3220	+680	+39180	-28460	-8410	+4550	-6400	-1170	-2460	-3540	-1480	+620
CAL YR 1997	MAX 98770	MIN 48190	(@) +38110									
WTR YR 1998	MAX 111700	MIN 43180	(@) -3670									

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

TRINITY RIVER BASIN

08063800 WAXAHACHIE CREEK NEAR BARDWELL, TX

LOCATION.--Lat 32°14'36", long 96°38'24", Ellis County, Hydrologic Unit 12030109, on left bank at downstream side of highway embankment near left end of bridge on county road, 0.8 mi downstream from Bardwell Dam, 3.6 mi southeast of Bardwell, 3.8 mi downstream from bridge on State Highway 34, and 4.1 mi upstream from mouth.

DRAINAGE AREA.--178 mi².

PERIOD OF RECORD.--Oct 1963 to current year.

Water-quality records.--Chemical and biochemical analyses: Oct 1980 to Sep 1982.

GAGE.--Water-stage recorder. Datum of gage is 370.18 ft above sea level (U.S. Army Corps of Engineers benchmark). Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since Nov 1965, at least 10% of contributing drainage area has been regulated by Bardwell Lake (station 08063700) 0.8 mi upstream. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--2 years (water years 1964-65), 32.8 ft³/s (23,720 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1964-65).--Maximum discharge 2,960 ft³/s Feb 9, 1965 (gage height, 17.55 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1944, about 23 ft in 1944 and 1945, from information by U.S. Army Corps of Engineers.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.23	.22	.57	.51	1360	441	493	.68	.03	.02	.02	.00
2	.24	.23	.57	433	980	355	491	.66	.02	.02	.02	.00
3	.26	.43	.50	913	581	193	460	.66	.03	.03	.02	.00
4	.26	.36	.35	909	572	194	425	.63	.03	.03	.02	.00
5	.25	.27	.31	921	567	194	423	.65	.03	.03	.03	.00
6	.26	.24	.26	537	414	194	360	.62	.03	.02	.03	.00
7	.29	.21	.50	211	312	191	307	.56	.03	.02	.03	.00
8	.33	.24	.69	165	313	191	249	.50	.03	4.9	.03	.00
9	.30	.27	161	20	130	189	75	.46	.03	11	.03	.00
10	.28	.26	158	2.9	6.9	190	.65	.42	.03	8.5	.02	.00
11	.28	.24	156	2.8	188	190	.45	.40	.03	8.1	.02	.00
12	.32	.35	64	3.1	311	70	.36	.34	.03	8.6	.03	.00
13	.30	.33	.68	2.3	218	5.1	.31	.22	.03	9.2	.05	.00
14	.28	.25	.61	2.2	94	5.0	.25	.61	.02	9.5	.05	.00
15	.32	.22	.60	1.8	93	5.8	.23	.42	.02	9.9	.00	.00
16	.33	.20	.56	527	91	17	.19	.28	.02	9.7	.00	.47
17	.31	.20	.54	1430	89	128	12	.37	.03	9.1	.00	.11
18	.28	.21	.53	1760	88	52	20	.47	.03	9.1	.00	.03
19	.30	.20	.52	1740	88	244	20	.48	.03	7.0	.00	.02
20	.31	.20	7.2	1720	87	446	19	.47	.02	1.2	.00	.02
21	.31	.18	501	1710	86	440	19	.36	.02	.70	.00	.02
22	.33	.17	391	1550	89	437	19	.14	.02	.55	.00	.02
23	.75	.16	45	1320	221	474	19	.08	.02	.40	.00	.02
24	.41	.17	11	1670	314	256	13	.06	.02	.02	.00	.02
25	.35	.17	1.1	1650	314	2.5	.98	.06	.02	.02	.00	.02
26	.32	.22	.81	1620	319	1.7	1.0	.04	.02	.02	.00	.02
27	.34	.18	.73	1600	366	1.5	1.1	.04	.03	.02	.00	.01
28	.35	.43	.65	1580	443	1.2	.80	.03	.03	.02	.00	.01
29	.39	.57	.60	1560	---	1.0	.73	.03	.03	.02	.00	.01
30	.31	.57	.57	1530	---	264	.71	.03	.03	.02	.00	.01
31	.23	---	.51	1470	---	498	---	.03	---	.02	.00	---
TOTAL	9.82	7.95	1575.27	28561.61	8734.9	5871.8	3431.76	10.80	0.79	107.78	0.40	0.81
MEAN	.32	.26	50.8	921	312	189	114	.35	.026	3.48	.013	.027
MAX	.75	.57	501	1760	1360	498	493	.68	.03	11	.05	.47
MIN	.23	.16	.26	.51	6.9	1.0	.19	.03	.02	.02	.00	.00
AC-FT	19	16	3120	56650	17330	11650	6810	21	1.6	214	.8	1.6

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1998z, BY WATER YEAR (WY)

MEAN	22.2	79.4	80.9	130	114	166	127	175	188	27.5	5.07	6.68
MAX	299	723	394	921	605	710	590	827	773	370	71.8	178
(WY)	1974	1992	1986	1998	1992	1997	1977	1973	1989	1981	1973	1976
MIN	.000	.014	.018	.022	.022	.024	.11	.11	.001	.000	.000	.000
(WY)	1967	1970	1990	1967	1967	1967	1996	1996	1996	1966	1966	1966

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1966 - 1998z

ANNUAL TOTAL	50470.42	48313.69	
ANNUAL MEAN	138	132	93.3
HIGHEST ANNUAL MEAN			318
LOWEST ANNUAL MEAN			.063
HIGHEST DAILY MEAN	1520	Mar 23	1760
LOWEST DAILY MEAN	.03	Aug 27	.00
ANNUAL SEVEN-DAY MINIMUM	.06	Aug 21	.00
INSTANTANEOUS PEAK FLOW			1770
INSTANTANEOUS PEAK STAGE			15.56
ANNUAL RUNOFF (AC-FT)	100100	95830	67560
10 PERCENT EXCEEDS	490	435	319
50 PERCENT EXCEEDS	1.6	.39	1.2
90 PERCENT EXCEEDS	.20	.02	.00

z Period of regulated streamflow.

08064100 CHAMBERS CREEK NEAR RICE, TX

LOCATION.--Lat 32°11'54", long 96°31'12", Navarro County, Hydrologic Unit 12030109, on downstream side of highway embankment 20 ft to left of left end of bridge on Farm Road 1126, 3.6 mi downstream from Oak Branch, 3.9 mi upstream from Cummins Creek, 4.2 mi upstream from bridge on Interstate Highway 45, 5.0 miles downstream from Waxahachie Creek, and 3.4 mi southwest of Rice.

DRAINAGE AREA.--807 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1984 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 340.00 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good, except those daily discharges less than 5 ft³/s, which are fair. Since installation of gage in Oct 1984, at least 10% of contributing drainage area has been regulated by Bardwell Lake (station 08063700) on Waxahachie Creek. Flood releases from Bardwell Lake will sustain flows at this site from time to time. In addition, flow is affected at times by discharge from the flood-detention pools of numerous floodwater-retarding structures in the drainage basin above this station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood information for the next downstream station, Chambers Creek near Corsicana, (08064500, discontinued) indicates that the maximum stage since at least 1870 occurred in Aug 1887, and that other significant floods occurred in Dec 1913, May 1944, and May 1958. Stages for these floods are unknown, but over the years a levee system has been developed along the main channel to limit cropland flooding.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.42	49	107	551	1630	1030	787	77	6.0	.42	.17	.12
2	.40	35	76	665	1420	855	748	71	5.0	.37	.16	.12
3	.39	25	204	1390	e753	577	715	60	4.4	.33	.14	.11
4	.37	18	285	1350	e740	531	652	47	3.9	.32	.12	.10
5	.37	17	173	2790	e730	507	637	41	3.6	.32	.13	.08
6	.38	15	132	6400	e612	482	598	40	3.4	.31	.13	.07
7	.39	12	120	7800	e349	487	518	39	3.2	.26	.13	.05
8	.54	12	675	7840	e350	519	485	33	3.0	.23	.11	.03
9	.55	12	839	5440	341	511	336	29	3.0	.23	.10	.04
10	8.8	12	561	2220	338	464	194	25	3.2	.21	.09	.03
11	86	13	462	1340	920	441	184	21	3.0	2.1	.08	.05
12	17	18	364	1340	757	381	176	19	3.1	3.1	.10	.15
13	12	24	170	809	641	261	164	18	3.0	3.2	.11	.24
14	148	33	151	628	476	256	151	19	2.7	3.1	.41	.22
15	49	28	139	561	446	838	149	24	2.5	3.3	.80	.99
16	17	20	128	731	425	2410	142	18	2.2	3.4	.70	971
17	9.3	16	120	1690	420	6840	132	16	1.9	3.6	.53	819
18	6.4	14	108	2190	403	5830	155	13	1.7	3.6	.44	239
19	4.8	13	105	2160	410	2450	151	12	1.6	3.3	.37	93
20	3.7	12	419	2100	447	2710	144	11	1.4	3.2	.32	29
21	2.9	12	15100	2140	408	1550	153	9.4	1.2	2.0	.24	13
22	2.7	11	13600	4570	977	1160	170	9.1	1.0	1.3	.22	7.9
23	103	10	7100	2000	1370	1010	157	9.1	.85	.84	.20	6.3
24	3230	9.8	6040	2150	877	848	149	9.1	.82	.66	.18	5.8
25	1770	9.8	5020	2050	727	460	109	8.9	.82	.54	.16	4.1
26	501	9.7	2960	1990	2670	413	97	9.0	.73	.46	.15	3.4
27	273	10	2300	1940	3470	379	99	8.8	.67	.39	.15	3.3
28	167	111	1760	1890	1390	356	88	8.7	.57	.33	.13	2.9
29	122	484	1350	1860	---	335	85	9.5	.52	.30	.11	2.8
30	92	191	1040	1820	---	426	82	9.3	.49	.26	.11	2.6
31	70	---	781	1770	---	791	---	7.4	---	.22	.12	---
TOTAL	6699.41	1256.3	62389	74175	24497	36108	8407	731.3	69.47	42.20	6.91	2205.50
MEAN	216	41.9	2013	2393	875	1165	280	23.6	2.32	1.36	.22	73.5
MAX	3230	484	15100	7840	3470	6840	787	77	6.0	3.6	.80	971
MIN	.37	9.7	76	551	338	256	82	7.4	.49	.21	.08	.03
AC-FT	13290	2490	123700	147100	48590	71620	16680	1450	138	84	14	4370

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1998, BY WATER YEAR (WY)

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MEAN	346	305	862	603	877	842	579	845	646	46.8	40.4	28.7			
MAX	1499	1811	3579	2393	2450	1819	2218	2932	2560	194	185	149			
(WY)	1986	1992	1992	1998	1997	1992	1995	1989	1986	1989	1995	1991			
MIN	.000	1.72	1.45	4.66	5.16	6.35	12.2	1.34	.051	.081	.000	.000			
(WY)	1989	1989	1989	1996	1996	1996	1996	1996	1988	1988	1988	1985			

SUMMARY STATISTICS

	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1984 - 1998
ANNUAL TOTAL	292248.28	216587.09	
ANNUAL MEAN	801	593	500
HIGHEST ANNUAL MEAN			1263
LOWEST ANNUAL MEAN			12.9
HIGHEST DAILY MEAN	15100	15100	22700
LOWEST DAILY MEAN	.22	.03	.00
ANNUAL SEVEN-DAY MINIMUM	.28	.05	.00
INSTANTANEOUS PEAK FLOW		24600	43400
INSTANTANEOUS PEAK STAGE		31.51	32.57
ANNUAL RUNOFF (AC-FT)	579700	429600	362400
10 PERCENT EXCEEDS	1760	1760	1220
50 PERCENT EXCEEDS	146	29	43
90 PERCENT EXCEEDS	1.3	.22	.14

e Estimated

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Oct 1983 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct 1983 to current year.

WATER TEMPERATURE: Oct 1983 to current year.

INSTRUMENTATION.--Since Jan 1994, a two-parameter water-quality monitor records water temperature and specific conductance continuously at this station.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1989 to 1998. The standard error of estimate for dissolved solids is 4%, chloride is 34%, sulfate is 26% and for hardness is 13%. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request. National water-quality assessment program data are included in this record. Prior to Jan 1994, period of daily record consists of daily observer measurements.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (1983-90): Maximum daily, 2,510 microsiemens, Nov 21, 1988; minimum, 105 microsiemens, Jan 2, 1998.

WATER TEMPERATURE (1983-89): Maximum daily, 38.0°C, Aug 16, 1987; minimum daily, 0.0°C, Feb 7, 1989.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,070 microsiemens, Sep 16; minimum, 105 microsiemens, Jan 2.

WATER TEMPERATURE: Maximum, 31.9°C, Jul 12, 22; minimum, 4.3°C, Dec 14.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD)	TEMPERATURE WATER (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN DEMAND, 5 DAY (MG/L)	HARDNESS TOTAL (MG/L AS CaCO3)	
		(00061)	(00095)	(00400)	(00010)	(00080)	(00076)	(00300)	(00301)	(00310)	(00900)
NOV 14...	1420	31	470	8.1	11.0	32	24	11.1	102	1.6	200
FEB 05...	1150	730	358	7.6	11.0	16	26	--	--	.9	150
MAR 31...	1314	801	420	8.2	18.0	16	45	9.8	105	2.5	180
MAY 12...	1221	19	783	7.9	26.0	20	21	7.4	93	2.1	250
JUN 09...	0920	3.0	1020	7.7	26.0	23	6.0	5.4	67	1.7	300
AUG 26...	1226	.16	954	7.9	32.0	45	6.1	6.8	94	4.1	260

DATE	HARDNESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CaCO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)
	(00904)	(00915)	(00925)	(00930)	(00931)	(00935)	(39036)	(00945)	(00940)	(00950)	(00955)
NOV 14...	31	74	4.2	38	1	4.6	170	67	35	.30	7.3
FEB 05...	17	54	2.4	16	.6	3.5	130	31	10	.31	7.5
MAR 31...	25	66	3.2	19	.6	3.6	150	41	13	.28	3.4
MAY 12...	72	91	6.7	67	2	3.3	180	140	57	.39	6.8
JUN 09...	120	110	8.5	100	3	4.2	190	190	99	.50	9.2
AUG 26...	55	94	7.3	91	2	4.6	210	130	94	.40	8.8

TRINITY RIVER BASIN

08064100 CHAMBERS CREEK NEAR RICE, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1997 TO SEPTEMBER 1998

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. 1997	6699.41	356	210	3800	16	292	47	856	130
NOV. 1997	1256.3	529	314	1070	29	100	75	255	180
DEC. 1997	62389	237	139	23380	9.0	1520	30	5040	87
JAN. 1998	74175	303	178	35670	12	2500	39	7840	110
FEB. 1998	24497	399	236	15580	19	1250	54	3560	140
MAR. 1998	36108	401	237	23110	19	1870	54	5290	140
APR. 1998	8407	561	334	7580	32	732	81	1830	190
MAY 1998	731.3	804	484	955	58	115	130	250	260
JUNE 1998	69.47	957	579	109	79	14.8	160	29.8	290
JULY 1998	42.2	837	505	57.5	65	7.4	140	15.4	260
AUG. 1998	6.91	980	593	11.1	82	1.5	160	3.1	300
SEPT 1998	2205.5	364	215	1280	17	101	49	291	130
TOTAL	216587.1	**	**	112600	**	8500	**	25250	**
WTD.AVG.	593	327	193	**	15	**	43	**	120

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	e1060	499	484	495	470	454	464	347	303	334
2	---	---	e1070	511	496	502	490	468	482	362	105	319
3	---	---	e1080	518	509	512	493	418	467	313	281	300
4	---	---	e1100	549	518	537	527	418	475	306	306	306
5	---	---	e1110	565	547	552	481	465	475	339	135	287
6	---	---	e1140	586	565	578	488	466	475	326	255	287
7	---	---	e1010	587	580	585	505	488	496	261	231	247
8	---	---	e1010	608	582	596	532	346	414	292	261	275
9	---	---	e1010	617	608	611	433	386	408	329	292	312
10	---	---	e1050	621	615	618	434	402	414	354	329	340
11	---	---	e714	---	---	e595	411	393	405	377	349	366
12	501	427	453	---	---	e570	447	387	395	387	317	352
13	647	501	581	---	---	e555	512	447	496	427	387	409
14	736	521	616	---	---	e538	515	510	512	451	427	441
15	676	533	612	693	665	682	522	515	517	470	451	461
16	558	495	514	665	649	657	529	521	525	480	323	438
17	503	495	499	659	648	652	537	529	532	325	302	317
18	517	501	508	674	659	667	537	534	536	311	305	309
19	538	517	528	685	674	680	547	536	542	309	305	308
20	555	538	548	702	685	693	554	203	500	306	304	305
21	572	555	564	706	702	705	203	169	182	332	305	308
22	584	572	579	705	699	702	220	194	202	332	262	287
23	595	352	559	699	692	695	231	220	228	313	301	308
24	370	298	320	696	691	693	242	118	233	312	304	308
25	348	324	334	698	695	697	243	118	238	315	312	313
26	346	338	342	696	677	688	251	241	243	313	311	312
27	390	346	365	677	670	673	269	246	256	313	309	311
28	423	390	409	673	494	649	276	259	268	312	309	311
29	446	423	434	517	383	459	288	263	278	312	309	310
30	464	446	453	484	468	472	304	111	258	312	310	311
31	484	464	474	---	---	---	322	204	290	322	311	315
MONTH	---	---	679	---	---	610	554	111	394	480	105	326

TRINITY RIVER BASIN

08064100 CHAMBERS CREEK NEAR RICE, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	326	319	322	399	396	397	---	---	e500	757	734	741
2	379	325	340	435	398	402	---	---	e510	754	737	747
3	372	360	366	452	435	446	---	---	e515	769	740	759
4	371	364	366	462	452	455	---	---	e520	818	769	797
5	366	362	364	467	461	464	---	---	e525	832	818	827
6	409	365	379	467	464	465	---	---	e530	835	820	825
7	404	398	401	479	466	473	---	---	e535	835	811	820
8	399	396	397	485	477	481	---	---	e540	818	807	812
9	534	396	417	493	483	487	---	---	e545	821	806	816
10	613	270	523	501	493	496	---	---	e550	828	814	822
11	410	281	357	494	486	490	---	---	e555	823	787	811
12	413	359	386	602	481	505	---	---	e560	---	---	e820
13	472	410	425	619	602	615	---	---	e570	---	---	e830
14	484	472	481	619	614	617	---	---	e580	---	---	e850
15	490	484	486	616	396	508	---	---	e600	---	---	e860
16	501	490	494	478	328	396	---	---	e610	---	---	e870
17	504	501	503	340	313	324	---	---	e620	---	---	e880
18	505	500	503	383	319	351	---	---	e630	---	---	e890
19	510	502	504	387	336	364	---	---	e640	---	---	e890
20	516	510	513	388	358	370	---	---	e650	---	---	e900
21	528	512	521	400	378	389	---	---	e660	---	---	e900
22	527	442	482	413	400	407	---	---	e670	---	---	e910
23	487	431	464	419	413	416	---	---	e680	---	---	e920
24	431	424	426	515	415	436	---	---	e690	---	---	e930
25	434	424	430	550	515	535	---	---	e700	---	---	e940
26	430	300	343	574	550	562	---	---	e715	---	---	e950
27	376	350	363	588	574	579	---	---	e720	---	---	e960
28	396	376	389	597	587	592	727	710	719	---	---	e480
29	---	---	---	609	595	600	749	718	736	---	---	e550
30	---	---	---	645	419	575	754	723	733	---	---	e600
31	---	---	---	---	---	e420	---	---	---	---	---	e700
MONTH	613	270	427	---	---	472	---	---	610	---	---	820
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	e750	---	---	e1040	---	---	e1020	---	---	e1030
2	---	---	e800	---	---	e1040	---	---	e1030	---	---	e1060
3	---	---	e840	---	---	e1040	---	---	e1030	---	---	e1110
4	---	---	e880	---	---	e1040	---	---	e1030	---	---	e1130
5	---	---	e900	---	---	e1040	---	---	e1040	---	---	e1130
6	---	---	e920	---	---	e1040	---	---	e1040	---	---	e1120
7	---	---	e940	---	---	e1040	---	---	e1050	---	---	e1170
8	---	---	e960	---	---	e1040	---	---	e1050	---	---	e1180
9	---	---	e1020	---	---	e1040	---	---	e1060	---	---	e1180
10	---	---	e1050	---	---	e1040	---	---	e1060	---	---	e1180
11	---	---	e1050	---	---	e1040	---	---	e550	---	---	e1110
12	---	---	e1050	---	---	e1040	---	---	e700	---	---	e1020
13	---	---	e1050	---	---	e1050	---	---	e800	---	---	e1050
14	---	---	e1050	---	---	e1050	---	---	e880	---	---	e1070
15	---	---	e1050	---	---	e1050	---	---	e950	---	---	e962
16	---	---	e1050	---	---	e700	---	---	e960	1070	157	468
17	---	---	e1050	886	731	805	---	---	e980	517	218	257
18	---	---	e1050	731	646	683	---	---	e1000	315	241	272
19	---	---	e1040	646	597	614	---	---	e1010	352	315	334
20	---	---	e1040	597	557	570	---	---	e1010	407	352	382
21	---	---	e1040	559	546	551	---	---	e1020	460	407	434
22	---	---	e1040	556	548	552	---	---	e1020	502	460	483
23	---	---	e1040	---	---	e600	---	---	e1010	539	502	524
24	---	---	e1040	---	---	e700	---	---	e1020	577	539	556
25	---	---	e1040	---	---	e800	---	---	e1020	612	577	600
26	---	---	e1040	---	---	e880	---	---	e1010	642	612	628
27	---	---	e1040	---	---	e950	---	---	e1000	664	640	652
28	---	---	e1040	---	---	e1000	---	---	e1000	681	664	672
29	---	---	e1040	---	---	e1010	---	---	e1000	688	679	682
30	---	---	e1040	---	---	e1020	---	---	e1000	696	679	686
31	---	---	---	---	---	e1020	---	---	e1000	---	---	---
MONTH	---	---	998	---	---	906	---	---	979	---	---	804

e Estimated

TRINITY RIVER BASIN

08064100 CHAMBERS CREEK NEAR RICE, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	---	---	---	---	---	---	29.9	26.1	27.8
2	---	---	---	---	---	---	---	---	---	29.6	25.9	27.7
3	---	---	---	---	---	---	---	---	---	30.3	26.5	28.2
4	---	---	---	---	---	---	---	---	---	30.8	27.1	28.8
5	---	---	---	---	---	---	---	---	---	30.5	27.2	28.9
6	---	---	---	---	---	---	---	---	---	30.1	26.1	28.1
7	---	---	---	---	---	---	---	---	---	30.0	26.1	28.0
8	---	---	---	---	---	---	---	---	---	29.8	25.8	27.7
9	---	---	---	---	---	---	---	---	---	28.8	25.8	27.3
10	---	---	---	---	---	---	---	---	---	26.4	23.9	25.0
11	---	---	---	---	---	---	---	---	---	24.4	23.4	23.7
12	28.9	26.6	27.5	31.9	29.9	30.8	---	---	---	24.4	23.4	23.9
13	29.5	27.9	28.6	31.5	30.2	30.9	---	---	---	25.0	24.1	24.5
14	29.7	27.9	28.7	31.8	30.1	30.9	---	---	---	25.9	24.3	25.1
15	29.6	27.5	28.5	31.8	29.7	30.7	---	---	---	25.5	24.5	25.1
16	29.7	26.8	28.2	31.5	29.7	30.6	29.9	26.5	27.8	24.8	22.9	23.7
17	29.9	27.8	28.7	30.9	29.6	30.4	28.7	27.1	28.0	23.9	23.1	23.5
18	---	---	---	30.9	29.1	30.0	---	---	---	25.2	23.8	24.4
19	---	---	---	30.9	29.3	30.1	---	---	---	26.0	25.1	25.5
20	---	---	---	31.5	29.4	30.3	---	---	---	26.9	25.5	26.2
21	---	---	---	31.7	29.6	30.5	---	---	---	27.7	26.4	27.0
22	---	---	---	31.9	29.5	30.6	---	---	---	28.5	27.0	27.6
23	---	---	---	---	---	---	---	---	---	28.2	27.4	27.8
24	---	---	---	---	---	---	---	---	---	28.2	27.1	27.7
25	---	---	---	---	---	---	---	---	---	28.0	27.0	27.6
26	---	---	---	---	---	---	---	---	---	27.8	26.9	27.4
27	---	---	---	---	---	---	31.4	27.8	29.5	27.9	27.0	27.4
28	---	---	---	---	---	---	30.6	27.4	29.0	28.2	26.8	27.5
29	---	---	---	---	---	---	30.6	27.8	29.2	28.0	26.5	27.3
30	---	---	---	---	---	---	29.8	27.4	28.5	27.7	26.2	26.9
31	---	---	---	---	---	---	29.7	26.4	28.0	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	30.8	22.9	26.6

TRINITY RIVER BASIN

08064550 RICHLAND-CHAMBERS RESERVOIR NEAR KERENS, TX

LOCATION.--Lat 32°02'25", long 96°12'23", Navarro County, Hydrologic Units 12030108 and 12030109, on upper floor of pumphouse, on left bank of Chambers Creek arm of Richland-Chambers Reservoir, 7.0 mi south of intersection of State Highway 31 and Farm Road 309 in Kerens, and 14.4 mi upstream from dam on Richland Creek.

DRAINAGE AREA.--1,957 mi².

PERIOD OF RECORD.--Nov 1988 to current year.

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

REMARKS.--Records good. The reservoir is formed by a rolled earthfill dam 31,000 ft long. Deliberate impoundment of water began Jul 14, 1987, and the dam was completed in Dec 1988. A gated concrete spillway is located near the left end of dam. The spillway is 1,155 ft long and contains twenty-four 40- x 29.4-ft radial gates. The low flow outlet works consist of two 3- x 5-ft outlets at elevation 266.0 ft, one 1.5 x 2.5 ft outlet, and one 1 x 1 ft outlet at elevation 285.0 ft. Each of the low flow outlets is controlled by sluice gates. The dam is owned by Tarrant Regional Water District, and was built for municipal and industrial water supply and for recreation. Flow from 464 mi² above the dam is controlled by Bardwell and Navarro Mills Lakes. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	330.0
Top of gates.....	317.34
Top of conservation pool.....	315.0
Crest of spillway.....	290.0
Lowest gated outlet.....	266.0

COOPERATION.--Capacity table No. 1-C was prepared by Freese and Nichols, consulting engineers for Tarrant Regional Water District. A new capacity, Table No. 2-C, was prepared by the Texas Water Development Board and put into use Oct 1, 1995.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,267,000 acre-ft, Dec 22, 1991 (elevation 316.85 ft); minimum contents, 233,600 acre- ft Dec 8, 1988 (elevation, 283.02 ft), using Capacity Table No. 1-C.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,217,000 acre-ft, Jan 7 (elevation, 316.93 ft); minimum contents, 985,500 acre-ft, Sep 11 (elevation, 311.27 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1052000	1045000	1036000	1154000	1144000	1157000	1146000	1127000	1103000	1059000	1025000	1001000
2	1051000	1044000	1039000	1152000	1144000	1153000	1145000	1127000	1102000	1056000	1024000	999000
3	1050000	1042000	1037000	1153000	1142000	1149000	1144000	1126000	1100000	1053000	1023000	998600
4	1048000	1042000	1037000	1153000	1140000	1148000	1142000	1126000	1098000	1051000	1023000	997800
5	1048000	1040000	1036000	1166000	1140000	1144000	1142000	1125000	1102000	1049000	1023000	995800
6	1047000	1039000	1036000	1213000	1140000	1142000	1143000	1125000	1100000	1048000	1024000	994600
7	1046000	1038000	1038000	1213000	1139000	1144000	1141000	1124000	1099000	1047000	1024000	993400
8	1046000	1037000	1039000	1184000	1138000	1142000	1142000	1123000	1099000	1047000	1023000	991800
9	1045000	1038000	1041000	1172000	1140000	1140000	1140000	1122000	1097000	1047000	1023000	989500
10	1044000	1037000	1040000	1163000	1149000	1138000	1138000	1121000	1096000	1046000	1019000	985900
11	1045000	1037000	1040000	1160000	1154000	1137000	1138000	1121000	1095000	1045000	1019000	988300
12	1044000	1039000	1040000	1156000	1152000	1137000	1137000	1120000	1094000	1045000	1019000	993800
13	1044000	1040000	1041000	1154000	1149000	1137000	1137000	1119000	1095000	1044000	1019000	993800
14	1042000	1038000	1040000	1152000	1146000	1141000	1137000	1119000	1091000	1043000	1020000	995800
15	1042000	1037000	1040000	1149000	1143000	1144000	1137000	1117000	1089000	1043000	1020000	1008000
16	1041000	1037000	1039000	1147000	1141000	1156000	1135000	1116000	1089000	1042000	1019000	1014000
17	1039000	1037000	1039000	1150000	1140000	1164000	1135000	1116000	1087000	1041000	1017000	1034000
18	1039000	1036000	1039000	1154000	1141000	1169000	1134000	1116000	1086000	1041000	1017000	1037000
19	1037000	1036000	1038000	1155000	1140000	1171000	1133000	1114000	1085000	1039000	1017000	1038000
20	1037000	1035000	1049000	1154000	1139000	1171000	1131000	1114000	1084000	1039000	1016000	1038000
21	1037000	1035000	1065000	1154000	1140000	1171000	1133000	1113000	1082000	1038000	1013000	1038000
22	1037000	1034000	1107000	1159000	1144000	1168000	1132000	1112000	1081000	1036000	1012000	1037000
23	1040000	1034000	1144000	1162000	1146000	1166000	1131000	1111000	1079000	1037000	1011000	1036000
24	1044000	1033000	1159000	1162000	1148000	1165000	1132000	1111000	1078000	1037000	1010000	1036000
25	1049000	1033000	1164000	1160000	1150000	1161000	1130000	1109000	1076000	1035000	1009000	1035000
26	1048000	1034000	1165000	1157000	1156000	1158000	1130000	1108000	1073000	1034000	1009000	1034000
27	1047000	1033000	1168000	1156000	1160000	1154000	1130000	1107000	1070000	1032000	1007000	1033000
28	1047000	1037000	1165000	1153000	1160000	1152000	1129000	1107000	1067000	1031000	1006000	1032000
29	1046000	1038000	1163000	1150000	---	1149000	1128000	1106000	1065000	1029000	1005000	1031000
30	1046000	1037000	1160000	1147000	---	1147000	1128000	1105000	1063000	1028000	1004000	1031000
31	1046000	---	1157000	1146000	---	1147000	---	1105000	---	1027000	1003000	---
MAX	1052000	1045000	1168000	1213000	1160000	1171000	1146000	1127000	1103000	1059000	1025000	1038000
MIN	1037000	1033000	1036000	1146000	1138000	1137000	1128000	1105000	1063000	1027000	1003000	985900
(+)	312.77	312.56	315.48	315.22	315.57	315.25	314.79	314.22	313.21	312.30	311.70	312.40
(@)	-7000	-9000	+120000	-11000	+14000	-13000	-19000	-23000	-42000	-36000	-24000	+28000
CAL YR 1997	MAX 1195000	MIN 915000	(@)	+242000								
WTR YR 1998	MAX 1213000	MIN 985900	(@)	-22000								

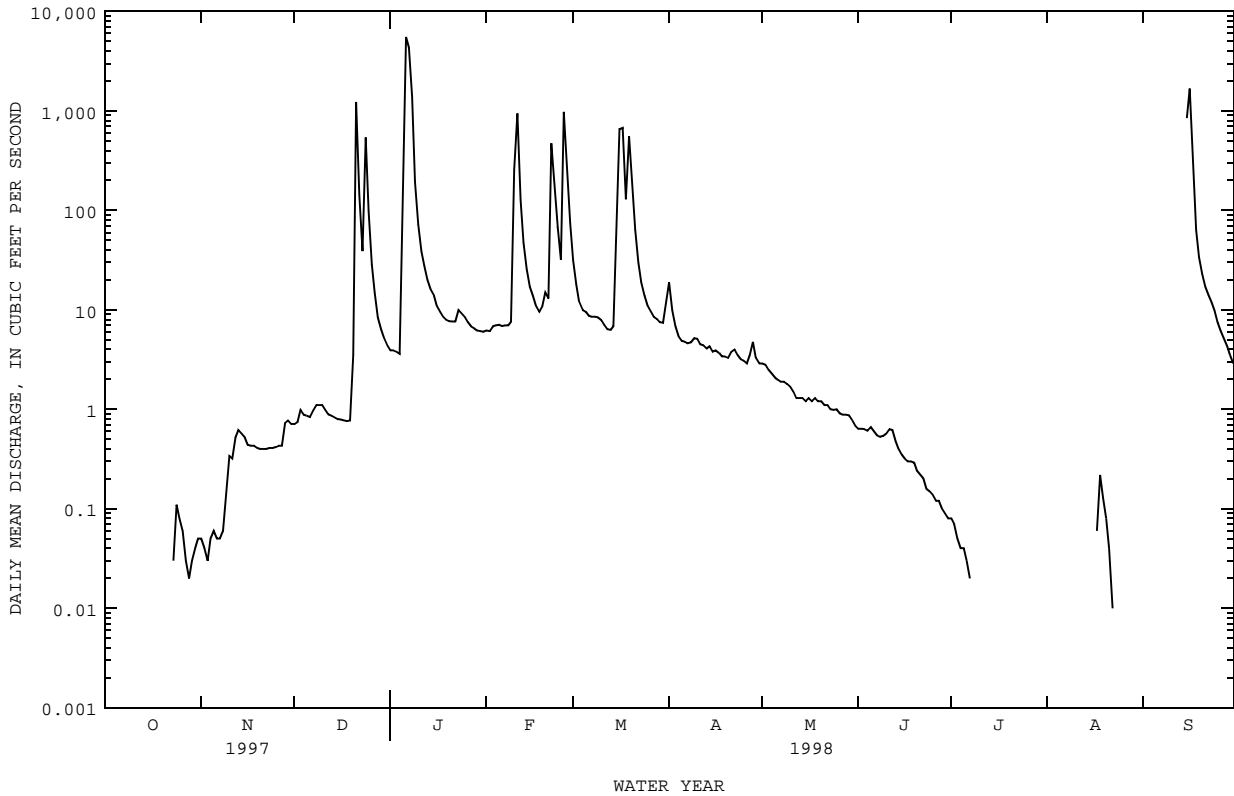
(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

TRINITY RIVER BASIN

08064700 TEHUACANA CREEK NEAR STREETMAN, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1968 - 1998	
ANNUAL TOTAL	58227.51		23495.76		84.3	
ANNUAL MEAN	160		64.4		3.52	1989
HIGHEST ANNUAL MEAN					274	1996
LOWEST ANNUAL MEAN						
HIGHEST DAILY MEAN	8280	Apr 5	5530	Jan 6	42000	May 4 1989
LOWEST DAILY MEAN	.00	Aug 25	.00	Oct 1	.00	Sep 30 1968
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 25	.00	Oct 1	.00	Sep 30 1968
INSTANTANEOUS PEAK FLOW			9510	Jan 6	985700	May 17 1989
INSTANTANEOUS PEAK STAGE			33.57	Jan 6	33.57	Jan 6 1998
ANNUAL RUNOFF (AC-FT)	115500		46600		61110	
ANNUAL RUNOFF (CFSM)	1.12		.45		.59	
ANNUAL RUNOFF (INCHES)	15.25		6.16		8.07	
10 PERCENT EXCEEDS	118		29		51	
50 PERCENT EXCEEDS	1.9		.88		1.6	
90 PERCENT EXCEEDS	.00		.00		.00	

g At site and datum then in use.



08064700 TEHUACANA CREEK NEAR STREETMAN, TX--Continued

WATER-QUALITY RECORDS

LOCATION.--Lat 31°50'54", long 96°17'23", Freestone County, Hydrologic Unit 12030201, at downstream side of bridge on U.S. Highway 75, 2.8 mi southeast of Streetman, 3.1 mi downstream from Chicago, Rock Island, and Pacific Railroad Co. bridge, 3.8 mi upstream from Caney Creek, and 25 mi upstream from mouth.

PERIOD OF RECORD.--Chemical analyses: Feb 1968 to Sep 1985, Oct 1990 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DEMAND, BIO-CHEM-ICAL, 5 DAY SATUR-ATION (MG/L) (00301)	OXYGEN, DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
OCT 01...	1022	.01	2250	7.8	24.0	22	3.2	6.3	76	1.7	530
FEB 02...	1329	6.0	1030	7.9	13.0	22	7.8	--	--	.7	290
MAR 30...	1405	7.1	780	7.7	24.0	50	6.5	8.5	103	3.4	210
MAY 11...	1420	1.7	1560	7.8	29.0	18	2.9	9.3	123	2.4	370
JUN 08...	1409	.53	2000	8.0	33.0	12	1.4	10.7	150	1.6	510
SEP 18...	1454	58	215	7.4	27.0	140	34	7.2	91	3.7	68

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS ST02) (00955)
OCT 01...	320	110	63	293	6	6.9	200	330	440	.59	6.4
FEB 02...	120	72	26	98	3	5.2	170	170	120	.33	15
MAR 30...	77	53	19	71	2	5.9	130	110	85	.25	11
MAY 11...	120	87	38	169	4	5.5	250	230	200	.46	8.9
JUN 08...	230	120	52	237	5	5.1	280	300	300	.66	12
SEP 18...	19	18	5.9	15	.8	--	49	34	15	.19	10

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDEDED (MG/L) (00530)	RESIDUE VOLA-TILE, SUS-PENDEDED (MG/L) (00535)	RESIDUE FIXED NON FILTER-ABLE (MG/L) (00540)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)
OCT 01...	1370	3	11	.00	--	<.010	<.050	<.015	--	.43	<.010
FEB 02...	615	9	7	2	--	<.010	<.050	<.020	--	.24	.018
MAR 30...	433	10	5	5	--	<.010	<.050	.057	.61	.67	.030
MAY 11...	895	6	4	2	--	<.010	<.050	.034	.43	.46	.019
JUN 08...	1190	<1	3	--	--	<.010	<.050	.050	.33	.38	.019
SEP 18...	--	70	540400	.00	.300	.016	.316	.080	1.0	1.1	.138

08065000 TRINITY RIVER NEAR OAKWOOD, TX

LOCATION.--Lat 31°38'54", long 95°47'21", Anderson County, Hydrologic Unit 12030201, on left bank at downstream side of bridge on U.S. Highways 79 and 84, 1.5 mi upstream from Missouri Pacific Railroad Co. bridge, 6 mi northeast of Oakwood, and at mile 313.4.

DRAINAGE AREA.--12,833 mi².

PERIOD OF RECORD.--Oct 1923 to Sep 1924 (monthly discharge only), Oct 1924 to current year. Records of Jan 1905 to Sep 1923, published in WSP 850 and 878, have been found unreliable and should not be used. Gage-height records collected in this vicinity since 1904 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1442: 1934. See also PERIOD OF RECORD. WSP 1922: Drainage area. WDR TX-81-1: 1980 (M,m).

GAGE.--Water-stage recorder. Datum of gage is 175.06 ft above sea level. Prior to Jul 1932, nonrecording gage at site 1.5 mi downstream at datum 1.06 ft lower. Jul 15, 1932, to Oct 7, 1934, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--Records good. Since installation of gage in water year 1924, at least 10% of contributing drainage area has been regulated by Lake Worth and twenty additional upstream reservoirs with a capacity of 4,200,000 acre-ft, of which 1,362,000 acre-ft is for flood control. Streamflow is affected at times by discharge from the flood-detention pools of 252 floodwater-retarding structures with a combined detention capacity of 183,300 acre-ft. These structures control runoff from 614 mi² in the Richland, Chambers and Tehuacana Creeks drainage basins. The Industrial Generating Co. at Fairfield makes a minor diversion from the river at a site about 34 mi upstream. The diversion to Big Brown Lake is used to maintain the normal pool elevation for that lake.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1890 reached a stage of 53 ft (discharge about 180,000 ft³/s) and was the highest since that date, from information in local newspapers. Flood of Jun 4, 1908, reached a stage of 52.2 ft, present site and datum, from information by the National Weather Service (discharge, about 164,000 ft³/s).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1060	1310	3440	32300	18900	17800	24500	2350	2480	882	697	745
2	1040	1240	3190	29600	18200	18700	23000	1960	1630	891	670	739
3	990	1190	2380	24300	16600	19400	21900	1670	1400	914	706	729
4	965	1150	1880	15500	13600	20000	21100	1540	1230	940	710	761
5	994	1140	2510	12400	10900	20700	20500	1480	1140	902	796	742
6	972	1120	4030	13900	9050	21200	20000	1470	1180	870	790	719
7	924	1080	3200	20300	7560	21400	19200	1450	1220	875	816	750
8	904	1040	2390	27100	6760	20900	16900	1380	1730	955	845	747
9	923	1020	2240	58800	6040	19600	13200	1330	2040	997	858	711
10	1020	1090	5000	e73700	5430	17900	10200	1310	1550	887	889	697
11	2040	1120	7100	e66100	8270	15800	8480	1400	1240	847	928	705
12	2660	1140	5650	e59400	12100	13100	7320	2930	1100	838	890	778
13	2490	1260	3280	50100	14600	10100	6650	3140	1340	828	854	810
14	1930	1340	2150	46300	15100	8470	6370	2160	2720	814	925	846
15	3020	2100	1800	43400	13700	8150	6180	1620	2860	802	1000	997
16	5300	2860	1650	40700	11900	10200	5960	1410	1990	802	1090	1990
17	4180	2520	1560	38200	9300	13900	5650	1330	1410	832	1240	5230
18	2230	1920	1500	35700	5750	16500	5110	1310	1180	858	1270	6550
19	1390	1560	1440	32700	4350	18600	4460	1290	1060	848	1040	6940
20	1170	1390	1440	29100	5110	20200	4100	1240	982	809	858	4780
21	1100	1290	2360	26100	5750	21600	3780	1230	963	793	816	2510
22	1080	1200	7260	23800	6000	23000	3530	1220	970	781	803	1700
23	1110	1170	12800	22200	6910	24500	3670	1180	981	766	791	1390
24	1390	1140	16300	21300	9080	26000	4340	1140	954	730	800	1240
25	2370	1120	17600	21100	11100	27600	4030	1130	927	699	808	1190
26	6570	1100	19000	21300	13200	29100	3100	1100	926	729	808	1140
27	7880	1100	20800	21300	14900	29900	2490	1080	922	718	743	1160
28	5570	1130	23300	21000	16500	29900	2050	1070	925	709	770	1150
29	2850	1330	26200	20600	---	29000	1860	1260	885	695	768	1030
30	1760	1740	29600	20100	---	27500	2120	3540	874	704	752	1010
31	1460	---	32200	19500	---	26200	---	3890	---	713	738	---
TOTAL	69342	40910	265250	987900	296660	626920	281750	51610	40809	25428	26469	50486
MEAN	2237	1364	8556	31870	10600	20220	9392	1665	1360	820	854	1683
MAX	7880	2860	32200	73700	18900	29900	24500	3890	2860	997	1270	6940
MIN	904	1020	1440	12400	4350	8150	1860	1070	874	695	670	697
AC-FT	137500	81140	526100	1959000	588400	1243000	558900	102400	80940	50440	52500	100100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1998, BY WATER YEAR (WY)

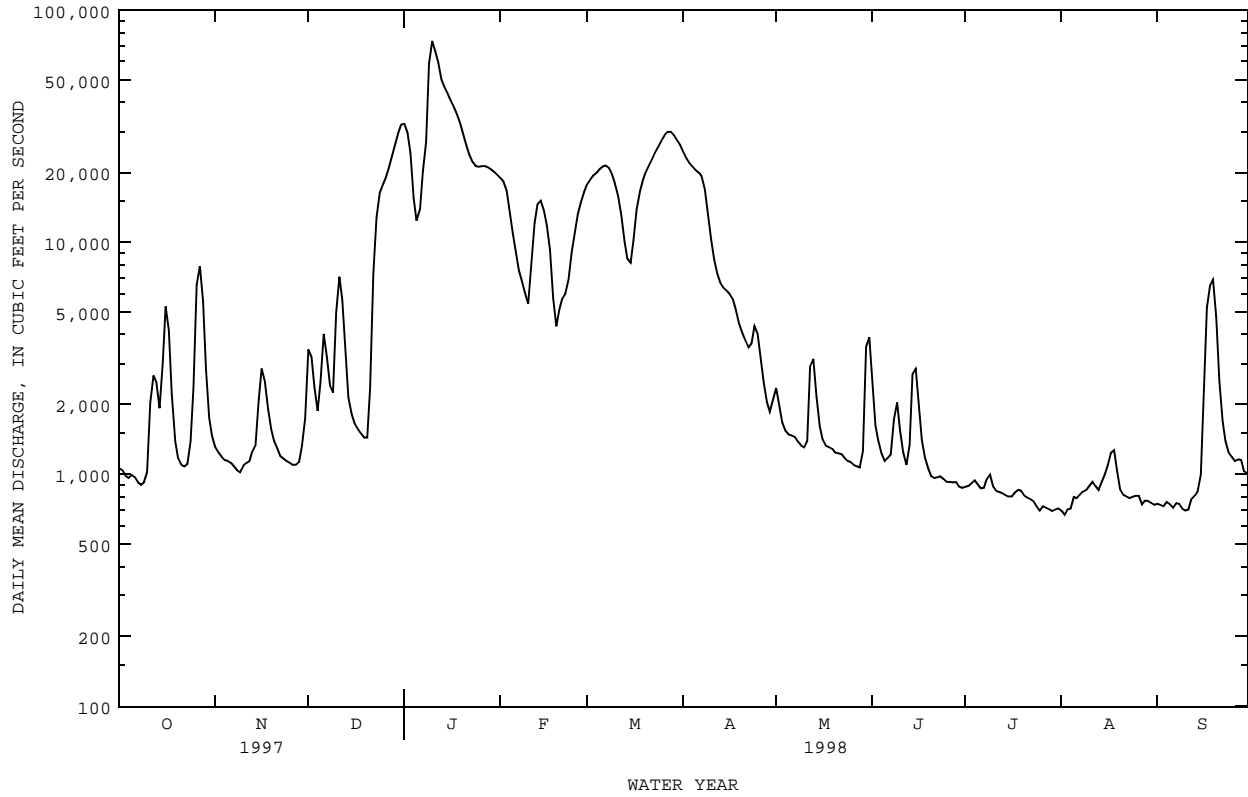
	1925	1925	1926	1940	1925	1925	1925	1971	1925	1925	1925	1930
MEAN	2435	3498	4961	5208	6238	7576	7695	11690	7918	2758	1269	1450
MAX	14250	25900	33280	31870	35060	40450	45710	56050	33550	15240	7050	7361
(WY)	1974	1975	1992	1998	1932	1945	1945	1990	1957	1941	1982	1962
MIN	85.0	100	146	166	222	242	278	812	151	74.2	62.7	62.8
(WY)	1925	1925	1926	1940	1925	1925	1925	1971	1925	1925	1925	1930

TRINITY RIVER BASIN

08065000 TRINITY RIVER NEAR OAKWOOD, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1925 - 1998	
ANNUAL TOTAL	3509135		2763534		5218	
ANNUAL MEAN	9614		7571		15240	
HIGHEST ANNUAL MEAN					1992	
LOWEST ANNUAL MEAN					657	
HIGHEST DAILY MEAN	45500	Mar 1	73700	Jan 10	153000	Apr 29 1942
LOWEST DAILY MEAN	904	Oct 8	670	Aug 2	28	Nov 1 1924
ANNUAL SEVEN-DAY MINIMUM	953	Oct 3	699	Jul 28	38	Aug 19 1925
INSTANTANEOUS PEAK FLOW			e76700		153000	Apr 29 1942
INSTANTANEOUS PEAK STAGE					51.64	Apr 29 1942
ANNUAL RUNOFF (AC-FT)	6960000		5481000		3780000	
10 PERCENT EXCEEDS	28300		21700		14900	
50 PERCENT EXCEEDS	3020		1740		1460	
90 PERCENT EXCEEDS	1030		801		298	

e Estimated



TRINITY RIVER BASIN

485

08065200 UPPER KEECHI CREEK NEAR OAKWOOD, TX

LOCATION.--Lat 31°34'11", long 95°53'17", Leon County, Hydrologic Unit 12030201, at right bank at downstream side of bridge on U.S. Highway 79, 1.9 mi upstream from Missouri Pacific Railroad Co. bridge, 2 mi southwest of Oakwood, 11 mi upstream from Buffalo Creek, and 21 mi upstream from mouth.

DRAINAGE AREA.--150 mi².

PERIOD OF RECORD.--Apr 1962 to current year.

Water-quality records.--Chemical analyses: Jun 1962 to Apr 1964, Nov 1967 to Sep 1975.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 240.11 ft above sea level. Satellite telemeter at station.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1900, about 21 ft in 1932, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 6	1745	4,400	14.10	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	1.3	28	28	39	192	136	8.2	1.2	.01	.00	.03
2	.96	1.1	16	27	41	76	70	6.6	.88	.00	.00	.02
3	.78	.95	27	27	39	61	41	6.5	.71	.00	.00	.01
4	.65	1.1	33	e27	37	54	31	6.9	.61	.00	.00	.00
5	.63	1.0	28	309	35	52	27	5.9	1.5	.00	.00	.00
6	.65	1.3	19	1720	34	49	24	5.5	1.3	.00	.00	.00
7	.64	1.8	18	2120	33	47	23	5.0	3.1	.00	.00	.00
8	.68	2.3	42	1340	32	47	24	4.4	4.9	.00	.00	.00
9	.78	4.0	49	761	31	44	30	3.7	2.9	.00	.00	.00
10	1.1	5.7	36	397	124	40	28	3.0	1.8	.00	.00	.00
11	2.1	8.4	22	135	693	36	21	2.8	1.6	.00	.00	.00
12	1.9	15	17	160	937	35	18	2.3	1.3	.00	.00	.67
13	12	23	14	154	464	35	17	1.9	.97	.00	.00	.49
14	22	21	13	95	133	38	16	1.9	.73	.00	.00	.20
15	19	18	13	76	93	59	15	1.8	.98	.00	.00	2.6
16	8.1	15	12	66	98	118	15	1.8	1.3	.00	.02	23
17	4.0	12	12	56	94	272	13	1.9	1.2	.00	.03	98
18	2.2	9.8	12	51	78	446	12	1.8	1.0	.00	.02	89
19	1.5	8.8	11	46	79	314	11	1.6	.86	.00	.02	12
20	1.1	8.1	15	44	102	179	10	1.5	.66	.00	.01	2.8
21	.81	7.3	94	43	83	166	12	1.3	.48	.00	.01	.98
22	.71	7.3	168	62	145	71	17	1.2	.32	.00	.00	.43
23	3.1	6.5	285	56	218	52	15	1.1	.23	.00	.01	.19
24	3.0	6.0	404	47	219	44	12	1.0	.16	.00	.05	.10
25	1.8	6.3	490	43	95	39	9.5	.95	.11	.00	.06	.08
26	1.3	6.6	516	41	241	36	8.7	.77	.08	.00	.04	.04
27	1.2	7.2	128	40	325	34	10	.75	.05	.00	.03	.03
28	1.1	13	68	38	467	37	13	.71	.03	.00	.02	.02
29	.93	45	50	37	---	35	13	.77	.02	.00	.02	.01
30	1.1	79	38	37	---	31	11	1.2	.01	.00	.09	.00
31	1.3	---	32	37	---	111	---	1.3	---	.00	.05	---
TOTAL	98.22	343.85	2710	8120	5009	2850	703.2	86.05	30.99	0.01	0.48	230.70
MEAN	3.17	11.5	87.4	262	179	91.9	23.4	2.78	1.03	.000	.015	7.69
MAX	22	79	516	2120	937	446	136	8.2	4.9	.01	.09	98
MIN	.63	.95	11	27	31	31	8.7	.71	.01	.00	.00	.00
AC-FT	195	682	5380	16110	9940	5650	1390	171	61	.02	1.0	458
CFSM	.02	.08	.58	1.75	1.19	.61	.16	.02	.01	.00	.00	.05
IN.	.02	.09	.67	2.01	1.24	.71	.17	.02	.01	.00	.00	.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1998, BY WATER YEAR (WY)

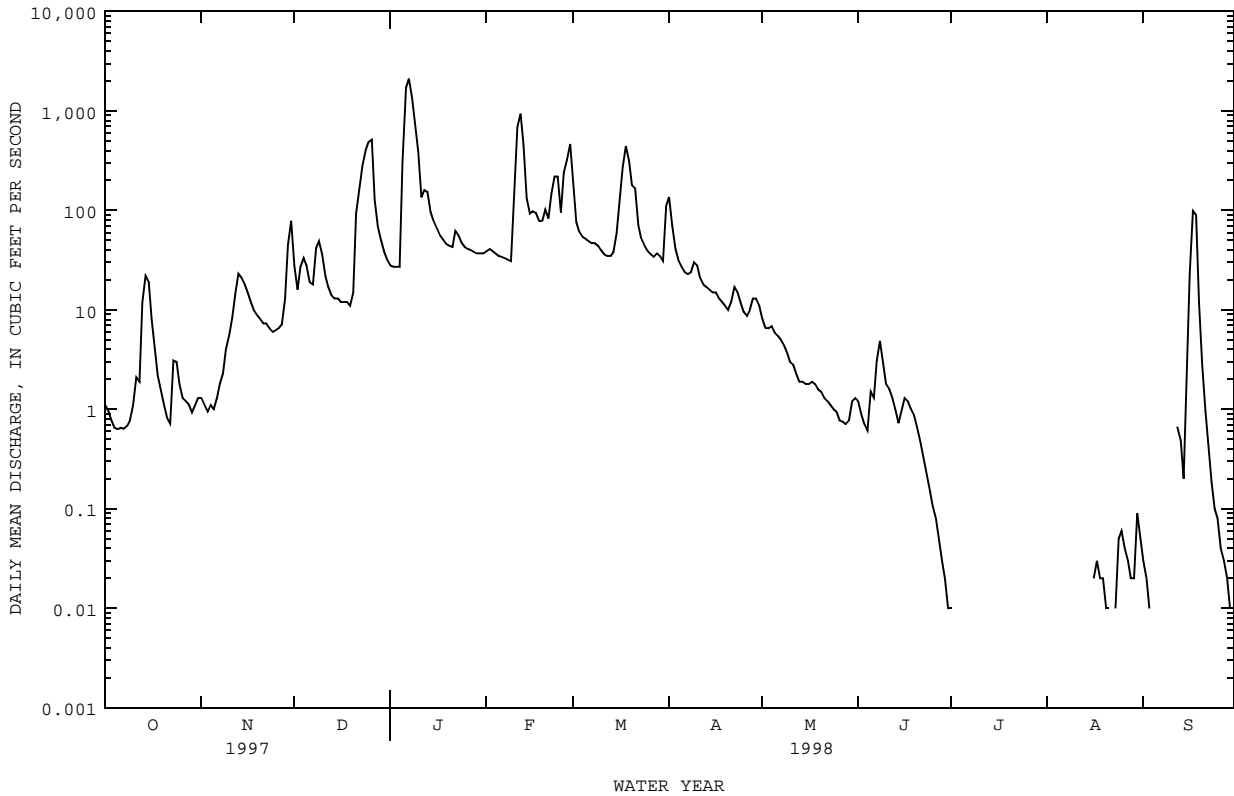
	MEAN	MAX	(WY)	MIN	(WY)
41.9	47.5	104	96.0	127	127
371	513	878	403	425	461
1974	1975	1992	1991	1997	1973
.000	.000	.36	4.03	8.28	8.79
1964	1964	1964	1964	1964	1996

TRINITY RIVER BASIN

08065200 UPPER KEECHI CREEK NEAR OAKWOOD, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1962 - 1998	
ANNUAL TOTAL	32933.73		20182.50		75.2	
ANNUAL MEAN	90.2		55.3		4.52	
HIGHEST ANNUAL MEAN					168	1965
LOWEST ANNUAL MEAN					1963	
HIGHEST DAILY MEAN	1900	Feb 21	2120	Jan 7	9530	Apr 25 1966
LOWEST DAILY MEAN	.50	Sep 22	.00	Jul 2	.00	Aug 5 1962
ANNUAL SEVEN-DAY MINIMUM	.66	Sep 16	.00	Jul 2	.00	Aug 5 1962
INSTANTANEOUS PEAK FLOW			4400	Jan 6	24000	May 16 1965
INSTANTANEOUS PEAK STAGE			14.10	Jan 6	15.58	Dec 21 1991
ANNUAL RUNOFF (AC-FT)	65320		40030		54510	
ANNUAL RUNOFF (CFSM)	.60		.37		.50	
ANNUAL RUNOFF (INCHES)	8.17		5.01		6.82	
10 PERCENT EXCEEDS	239		100		128	
50 PERCENT EXCEEDS	15		6.0		11	
90 PERCENT EXCEEDS	1.1		.00		.08	

e Estimated



TRINITY RIVER BASIN

08065350 TRINITY RIVER NEAR CROCKETT, TX

LOCATION.--Lat 31°20'18", long 95°39'22", Houston-Leon County line, Hydrologic Unit 12030201, on left bank at an abandoned bridge abutment near left end of an abandoned lock and dam, 1,000 ft upstream from State Highway 7, 6.9 mi downstream from Upper Keechi Creek, 11.9 mi west of Crockett, and at mile 265.4.

DRAINAGE AREA.--13,911 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 141.15 ft above sea level. Prior to Oct 13, 1983, water-stage recorder at site 1,000 ft downstream at datum 4.56 ft lower. Satellite telemeter at station.

REMARKS.--Records fair. Since installation of gage in water year 1964, at least 10% of contributing drainage area has been regulated by Lake Worth and other major reservoirs. Flow from 44 mi² in the Elkhart Creek basin is affected by storage in Houston County Lake near Crockett (capacity 19,500 acre-ft). There are many diversions above station for irrigation, municipal, and industrial uses.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1900, 56.1 ft Apr 30 or May 1, 1942, at former site and datum, from information by Texas Department of Transportation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	967	1310	2100	24600	18800	17600	24100	2520	3340	1100	933	1010
2	966	1230	3230	25000	18400	18300	22900	2540	2390	1100	914	1030
3	941	1190	3520	e22000	17700	18800	21900	2230	1860	1110	890	1010
4	884	1140	2760	e17300	16100	19100	21000	2020	1690	1150	937	991
5	877	1380	1990	e14600	13300	19300	20400	1910	1580	1160	974	1010
6	915	1800	2910	e14800	10900	19700	19900	1840	1520	1120	1010	994
7	899	1230	3620	23600	8950	e20000	19500	1830	1530	1090	1030	974
8	888	1070	3040	25600	7590	20000	18600	1790	1570	1090	1100	999
9	887	1030	2430	27900	6720	19600	16500	1730	2010	1180	1160	993
10	882	1120	2660	33200	6990	18700	13200	1680	2090	1210	1140	948
11	1040	1180	5310	42500	10400	17300	10400	1660	1750	1120	1150	981
12	1730	1310	6260	57000	12300	15400	8650	1880	1530	1080	1200	1050
13	2110	1430	4250	64100	14900	12700	7490	3050	1420	1070	1200	1150
14	1890	1400	2450	59200	17300	9920	6860	2880	1740	1060	1220	1150
15	1600	1520	1790	54100	16900	8580	6560	2220	2670	1050	1290	1220
16	3090	2180	1610	48500	15000	9360	6310	1880	2540	1040	1330	1440
17	4200	2450	1520	43900	12600	13100	6000	1730	1960	1050	1430	2770
18	2750	2070	1460	40200	9010	15900	5620	1670	1600	1110	1540	5070
19	1610	1680	1410	36500	5720	17400	4980	1650	1430	1130	1540	6300
20	1230	1460	1400	31900	4920	18900	4440	1630	1310	1120	1360	6140
21	1110	1360	1810	28500	5590	19900	4150	1590	1230	1040	1180	4090
22	1060	1290	3320	27500	7420	20700	3880	1570	1200	1040	1110	2640
23	1060	1230	9150	25400	8500	21400	3700	1560	1200	1010	1090	2090
24	1150	1210	14700	22800	8950	22000	3970	1540	1210	1000	1070	1840
25	1330	1190	17100	21300	10800	22800	4370	1500	1180	965	1070	1720
26	3000	1170	17700	20700	14900	23600	3910	1490	1160	933	1080	1670
27	6380	1150	18900	20400	18100	24400	3290	1470	1160	971	1080	1630
28	6560	1450	20100	20200	17400	24900	2840	1450	1160	966	1010	1640
29	3980	2010	21400	20000	---	25000	2450	1430	1160	942	1030	1600
30	2020	1730	22500	19700	---	24800	2300	1860	1120	924	1050	1490
31	1490	---	23700	19300	---	24600	---	3550	---	929	1050	---
TOTAL	59496	42970	226100	952300	336160	583760	300170	59350	49310	32860	35168	57640
MEAN	1919	1432	7294	30720	12010	18830	10010	1915	1644	1060	1134	1921
MAX	6560	2450	23700	64100	18800	25000	24100	3550	3340	1210	1540	6300
MIN	877	1030	1400	14600	4920	8580	2300	1430	1120	924	890	948
AC-FT	118000	85230	448500	1889000	666800	1158000	595400	117700	97810	65180	69760	114300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1998, BY WATER YEAR (WY)

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998			
MEAN	3137	5324	7143	6471	7872	10120	8911	13620	9630	3440	1867	1799																										
MAX	16840	26110	35440	33620	30490	33670	25960	62100	29570	15030	7188	6932																										
(WY)	1974	1975	1992	1992	1992	1992	1977	1990	1989	1989	1982	1974																										
MIN	548	619	719	514	670	730	931	939	822	374	413	513																										
(WY)	1979	1967	1967	1964	1967	1967	1972	1971	1971	1964	1967	1972																										

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1964 - 1998

ANNUAL TOTAL	3721127	2735284		
ANNUAL MEAN	10190	7494	6605	
HIGHEST ANNUAL MEAN			16810	1992
LOWEST ANNUAL MEAN			1084	1964
HIGHEST DAILY MEAN	46000	Mar 4	64100	Jan 13
LOWEST DAILY MEAN	877	Oct 5	877	Oct 5
ANNUAL SEVEN-DAY MINIMUM	890	Oct 4	890	Oct 4
INSTANTANEOUS PEAK FLOW			64400	Jan 13
INSTANTANEOUS PEAK STAGE			45.27	Jan 13
ANNUAL RUNOFF (AC-FT)	7381000	5425000	4785000	
10 PERCENT EXCEEDS	29300	21300	18900	
50 PERCENT EXCEEDS	3010	1880	2340	
90 PERCENT EXCEEDS	1220	1020	715	

e Estimated

TRINITY RIVER BASIN

08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	SOLIDS, SUM OF CONSTITUENTS, 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- SOLVED (MG/L) AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L) AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L) AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L) AS PO4) (00660)
MAR 11...	210	1.03	.021	1.05	.033	.35	.38	.114	.080	.25
APR 24...	291	2.67	.023	2.69	.044	.34	.38	.291	.276	.85
JUN 30...	395	4.69	.036	4.72	.028	.52	.55	.598	.594	1.8
JUL 20...	405	6.22	.041	6.26	.029	.48	.51	.754	.708	2.2
AUG 19...	434	9.38	.072	9.46	.085	.70	.79	1.34	1.25	3.8
SEP 08...	436	7.88	.016	7.89	.028	.57	.59	1.46	1.14	3.5

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1997 TO SEPTEMBER 1998

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. 1997	59496	540	308	49560	47	7630	58	9300	150
NOV. 1997	42970	531	304	35250	45	5240	56	6550	150
DEC. 1997	226100	338	196	119600	21	12810	34	20550	120
JAN. 1998	952300	336	195	500600	20	51150	33	85170	120
FEB. 1998	336160	340	197	179000	20	18310	34	30460	120
MAR. 1998	583760	365	211	333200	23	35830	36	57290	130
APR. 1998	300170	416	240	194600	29	23130	42	34200	140
MAY 1998	59350	646	367	58790	63	10130	71	11390	160
JUNE 1998	49310	608	347	46140	57	7560	66	8810	160
JULY 1998	32860	721	408	36170	77	6820	81	7210	160
AUG. 1998	35168	699	396	37570	73	6900	78	7420	160
SEPT 1998	57640	509	291	45320	44	6810	54	8440	140
TOTAL	2735284.00	**	**	1635800	**	192300	**	286800	**
WTD.AVG.	7490	383	221	**	26	**	39	**	130

TRINITY RIVER BASIN

08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	e720	403	396	399	594	482	538	323	314	317
2	---	---	e730	418	402	410	661	594	628	336	323	e330
3	---	---	e730	437	418	427	652	503	553	---	---	e345
4	---	---	e730	458	437	449	519	469	493	---	---	e370
5	---	---	e725	461	336	401	474	403	437	---	---	e390
6	---	---	e725	336	242	274	442	404	430	---	---	e380
7	---	---	e725	526	269	420	508	438	471	---	---	e280
8	---	---	e725	584	526	555	535	508	526	238	206	224
9	---	---	e725	618	584	605	517	459	482	---	---	e230
10	734	725	731	618	610	614	460	446	e454	---	---	e290
11	734	717	726	634	604	613	511	416	459	402	334	370
12	720	717	718	643	553	609	549	423	486	433	402	422
13	721	674	704	556	519	533	426	411	418	---	---	e440
14	707	674	697	601	556	583	411	401	404	---	---	e410
15	701	641	669	608	558	588	402	397	399	---	---	e360
16	649	486	562	615	558	582	415	399	405	---	---	e330
17	561	498	530	674	615	652	431	415	423	---	---	e315
18	561	405	480	693	674	684	456	431	444	---	---	e310
19	421	405	414	690	649	671	481	456	467	---	---	e310
20	427	421	426	649	556	595	513	481	499	---	---	e313
21	427	421	424	561	517	546	505	447	471	---	---	e310
22	435	423	428	526	507	513	484	441	456	---	---	e310
23	447	435	442	547	526	540	557	359	456	---	---	e295
24	468	447	457	544	524	531	402	218	286	---	---	e270
25	495	468	479	532	524	528	227	214	219	---	---	e280
26	645	481	524	540	532	537	243	227	236	---	---	e290
27	669	463	588	555	538	545	255	243	249	---	---	e300
28	463	356	380	575	446	535	294	255	285	---	---	e315
29	383	359	364	450	371	406	309	294	302	---	---	e325
30	389	364	375	501	450	487	316	301	e309	---	---	e320
31	399	389	396	---	---	---	314	309	312	---	---	e320
MONTH	---	---	582	693	242	528	661	214	419	---	---	325
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	e322	353	338	350	397	394	395	---	---	e520
2	---	---	e333	338	313	321	395	388	394	---	---	e535
3	---	---	e330	333	320	326	389	383	385	---	---	e565
4	---	---	e345	350	333	342	397	389	393	---	---	e620
5	342	331	334	372	350	361	400	397	e399	---	---	e675
6	374	341	362	---	---	e380	401	400	401	---	---	e680
7	386	374	378	---	---	e390	401	400	400	---	---	e685
8	398	386	395	391	389	e390	401	399	400	---	---	e645
9	395	381	386	395	391	393	400	396	399	---	---	e650
10	392	279	363	394	382	387	402	396	399	---	---	e625
11	312	270	291	389	382	385	409	401	406	---	---	e660
12	335	268	310	410	389	404	419	409	414	---	---	e690
13	358	281	318	407	402	405	437	419	428	732	647	695
14	297	287	293	442	406	422	444	437	442	739	732	736
15	287	272	278	448	442	446	445	438	441	742	733	737
16	304	285	294	447	416	e434	441	435	438	735	698	727
17	317	303	e309	425	348	400	441	430	435	698	603	637
18	324	317	321	363	335	348	436	428	433	641	604	625
19	367	323	336	348	304	314	449	430	441	621	599	608
20	431	367	379	316	310	314	454	444	449	624	573	606
21	475	431	456	310	305	307	466	449	454	573	540	551
22	472	391	432	307	305	306	489	466	482	565	540	549
23	402	332	371	320	307	312	493	487	490	595	565	581
24	504	359	448	341	320	330	493	486	489	625	595	611
25	450	366	e385	360	341	351	508	492	502	645	625	634
26	415	318	e386	375	360	368	---	---	e510	663	645	656
27	335	293	308	380	375	378	---	---	e515	685	662	671
28	369	331	347	384	380	381	---	---	e510	691	679	685
29	---	---	---	392	384	388	---	---	e560	681	676	679
30	---	---	---	397	392	395	---	---	e535	706	680	689
31	---	---	---	398	396	397	---	---	---	708	699	704
MONTH	---	---	350	---	---	369	---	---	445	---	---	643

08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	705	698	701	699	675	690	732	723	725	638	620	626
2	700	611	e668	707	696	702	744	732	739	654	638	646
3	611	508	542	719	702	710	753	743	e749	675	654	668
4	521	504	510	716	709	713	753	737	e744	707	675	e740
5	552	521	543	719	709	715	737	727	e732	727	707	715
6	553	530	546	715	706	712	---	---	e720	729	725	727
7	530	519	523	708	703	705	730	713	721	753	729	735
8	536	525	532	726	707	718	736	685	718	754	686	e726
9	563	533	544	721	707	712	696	665	677	686	678	681
10	635	563	602	729	705	715	722	691	706	705	686	695
11	637	607	622	742	729	738	736	722	732	709	691	704
12	661	633	650	744	736	740	733	716	727	691	681	685
13	702	661	687	736	724	730	719	711	714	688	657	669
14	733	702	714	724	716	720	719	689	706	703	670	684
15	737	583	689	717	712	715	697	681	685	715	703	711
16	636	580	598	---	---	e715	727	697	713	718	690	702
17	669	636	649	---	---	e728	732	712	725	746	702	727
18	684	627	667	---	---	e732	714	647	680	752	371	573
19	627	574	586	---	---	e725	712	677	e697	388	267	303
20	575	534	555	---	---	e710	698	683	688	415	304	360
21	554	529	538	---	---	e690	714	695	710	408	380	e393
22	554	533	543	732	692	713	716	704	713	419	380	400
23	564	534	546	740	732	738	704	686	696	416	392	402
24	574	563	569	737	726	730	689	664	672	393	363	377
25	575	568	572	729	724	727	695	668	687	378	361	369
26	605	572	587	733	729	731	693	609	643	385	378	382
27	625	605	616	737	729	734	659	611	637	439	385	406
28	639	625	634	744	736	740	677	659	670	490	439	467
29	658	634	645	745	740	743	686	677	681	529	490	510
30	675	657	666	748	741	745	684	623	e655	582	529	552
31	---	---	---	745	725	735	629	608	e618	---	---	---
MONTH	737	504	601	---	---	722	---	---	699	754	267	578

e Estimated

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	7.5	7.2	7.3	7.9	7.7	7.8	7.9	7.7	7.8
2	---	---	---	7.5	7.3	7.4	7.9	7.9	7.9	7.9	7.8	7.8
3	---	---	---	7.5	7.5	7.5	7.9	7.7	7.8	---	---	---
4	---	---	---	7.5	7.5	7.5	7.8	7.7	7.7	---	---	---
5	---	---	---	7.5	7.2	7.4	7.9	7.8	7.8	---	---	---
6	---	---	---	7.2	6.9	7.1	7.9	7.9	7.9	---	---	---
7	---	---	---	7.5	6.9	7.2	8.0	7.9	8.0	---	---	---
8	---	---	---	7.6	7.5	7.5	8.0	7.9	8.0	8.0	7.8	7.9
9	---	---	---	7.6	7.5	7.5	7.9	7.8	7.9	---	---	---
10	7.1	7.0	7.1	7.7	7.6	7.6	8.0	7.8	7.9	---	---	---
11	7.1	7.0	7.1	7.6	7.6	7.6	8.1	8.0	8.0	7.7	7.5	7.6
12	7.3	7.1	7.2	7.6	7.5	7.6	8.0	8.0	8.0	7.7	7.7	7.7
13	7.5	7.3	7.4	7.5	7.4	7.5	8.1	7.9	8.0	---	---	---
14	7.5	7.5	7.5	7.6	7.5	7.6	7.9	7.9	7.9	---	---	---
15	7.5	7.4	7.5	7.6	7.6	7.6	7.9	7.9	7.9	---	---	---
16	7.5	7.4	7.5	7.8	7.6	7.7	8.0	7.9	7.9	---	---	---
17	7.5	7.5	7.5	7.7	7.7	7.7	8.0	7.9	8.0	---	---	---
18	7.6	7.5	7.5	7.7	7.7	7.7	8.0	8.0	8.0	---	---	---
19	7.6	7.5	7.6	7.7	7.6	7.7	8.0	8.0	8.0	---	---	---
20	7.6	7.5	7.6	8.0	7.6	7.8	8.0	7.9	8.0	---	---	---
21	7.6	7.5	7.6	8.1	8.0	8.1	7.9	7.8	7.8	---	---	---
22	7.7	7.6	7.7	8.1	8.1	8.1	7.8	7.7	7.8	---	---	---
23	7.7	7.7	7.7	8.2	8.1	8.1	7.9	7.8	7.8	---	---	---
24	7.8	7.7	7.7	8.2	8.2	8.2	8.0	7.8	7.9	---	---	---
25	7.8	7.7	7.7	8.3	8.2	8.2	8.1	8.0	8.0	---	---	---
26	7.8	7.7	7.7	8.4	8.2	8.3	8.0	7.9	8.0	---	---	---
27	7.8	7.7	7.8	8.4	8.3	8.3	7.9	7.8	7.8	---	---	---
28	7.8	7.8	7.8	8.4	8.0	8.2	8.0	7.8	7.9	---	---	---
29	7.8	7.8	7.8	8.0	7.7	7.7	7.9	7.9	7.9	---	---	---
30	7.8	7.8	7.8	7.9	7.7	7.8	7.9	7.6	7.8	---	---	---
31	7.8	7.2	7.6	---	---	---	7.8	7.7	7.8	---	---	---
MONTH	---	---	---	8.4	6.9	7.7	8.1	7.6	7.9	---	---	---

TRINITY RIVER BASIN

08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	19.0	18.0	18.4	15.4	14.7	14.9	8.6	8.0	8.3
2	---	---	---	18.2	17.4	17.8	14.7	14.5	14.6	9.4	8.5	9.0
3	---	---	---	17.7	16.7	17.2	14.7	14.3	14.5	---	---	---
4	---	---	---	17.1	16.1	16.7	14.3	13.5	13.9	---	---	---
5	---	---	---	17.5	16.5	17.1	13.5	12.6	13.1	---	---	---
6	---	---	---	17.3	15.5	16.2	12.6	12.1	12.3	---	---	---
7	---	---	---	16.2	15.0	15.6	12.1	11.5	11.8	---	---	---
8	---	---	---	16.2	15.2	15.7	12.1	11.4	11.7	13.0	12.1	12.6
9	---	---	---	15.8	15.5	15.7	12.4	11.7	12.1	---	---	---
10	26.4	25.7	26.0	15.8	14.9	15.4	12.2	11.4	11.8	---	---	---
11	26.1	25.8	25.9	14.9	14.4	14.6	11.5	10.5	11.1	10.9	10.3	10.6
12	26.0	25.6	25.8	14.5	13.7	14.1	10.8	9.9	10.4	11.6	10.9	11.2
13	25.8	24.3	25.0	13.8	13.5	13.7	9.9	9.3	9.6	---	---	---
14	24.3	23.0	23.6	14.3	13.7	13.9	9.3	8.7	9.0	---	---	---
15	23.0	22.2	22.6	13.9	12.4	13.1	9.2	8.5	8.8	---	---	---
16	22.3	21.6	21.9	12.5	11.8	12.2	9.3	8.3	8.8	---	---	---
17	22.2	21.5	21.9	12.0	11.6	11.8	9.4	8.6	9.0	---	---	---
18	21.9	21.2	21.6	12.0	11.6	11.9	9.5	8.5	9.0	---	---	---
19	21.9	21.0	21.4	12.2	11.9	12.0	10.0	8.9	9.4	---	---	---
20	22.1	20.9	21.5	12.3	11.9	12.1	11.3	10.0	10.6	---	---	---
21	22.0	21.2	21.6	13.1	12.3	12.6	12.3	11.3	11.8	---	---	---
22	21.6	20.7	21.1	13.1	12.1	12.6	12.1	11.2	11.7	---	---	---
23	20.7	20.4	20.5	13.2	12.0	12.6	12.7	12.1	12.3	---	---	---
24	21.4	20.3	20.8	13.1	12.2	12.7	12.8	11.8	12.4	---	---	---
25	21.8	21.0	21.4	13.6	12.7	13.1	11.8	10.9	11.1	---	---	---
26	21.2	19.6	20.3	14.7	13.6	14.2	10.9	10.1	10.5	---	---	---
27	19.6	18.0	18.9	15.7	14.7	15.2	10.1	9.3	9.7	---	---	---
28	18.0	17.2	17.5	16.9	15.7	16.2	9.3	8.2	8.7	---	---	---
29	17.5	17.2	17.3	17.0	16.1	16.6	8.2	7.8	8.0	---	---	---
30	18.0	17.4	17.7	16.1	15.4	15.6	7.8	---	7.7	---	---	---
31	18.5	17.8	18.2	---	---	---	8.2	7.6	7.9	---	---	---
MONTH	---	---	---	19.0	11.6	14.6	15.4	---	10.9	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	14.0	13.5	13.8	20.7	20.1	20.4	22.4	20.7	21.5
2	---	---	---	13.6	13.2	13.4	20.1	19.5	19.7	23.2	21.7	22.4
3	---	---	---	13.3	12.7	13.0	19.6	19.0	19.3	23.6	22.6	23.0
4	---	---	---	13.2	12.6	12.9	19.5	18.8	19.1	24.3	22.3	23.3
5	11.7	11.4	11.6	13.9	12.8	13.3	19.2	18.5	18.9	24.2	23.4	23.8
6	11.6	11.2	11.4	---	---	---	19.0	18.5	18.7	25.0	23.6	24.2
7	11.5	11.0	11.3	---	---	---	19.4	18.5	18.9	26.0	24.1	25.0
8	11.4	10.9	11.1	---	13.0	---	19.7	18.9	19.3	26.7	24.9	25.8
9	11.4	11.0	11.2	13.0	12.4	12.8	19.8	19.1	19.4	27.2	25.5	26.3
10	12.5	11.4	12.0	12.4	11.5	11.8	19.7	19.1	19.4	27.3	25.5	26.4
11	12.9	11.7	12.3	11.5	10.9	11.3	19.8	19.0	19.4	27.5	25.6	26.6
12	12.6	11.8	12.1	11.3	10.9	11.1	19.6	19.1	19.4	27.7	26.0	26.8
13	12.2	11.9	12.0	10.9	10.6	10.7	20.1	19.2	19.6	27.0	26.5	26.8
14	12.2	12.0	12.1	11.1	10.6	10.9	20.8	19.7	20.2	26.9	26.4	26.6
15	12.2	12.0	12.1	11.9	11.1	11.4	20.9	20.5	20.7	27.1	26.2	26.6
16	12.0	11.9	12.0	12.6	11.9	12.2	21.8	20.7	21.2	27.3	26.4	26.8
17	11.9	11.4	11.7	13.6	12.4	13.0	21.3	20.8	21.0	27.8	26.2	27.0
18	11.7	11.0	11.4	13.9	13.2	13.5	20.8	20.3	20.5	28.1	26.6	27.3
19	12.3	11.5	11.9	14.4	13.9	14.1	21.1	20.1	20.6	28.0	26.6	27.3
20	12.8	12.0	12.4	14.7	14.1	14.3	21.2	20.2	20.7	28.2	26.7	27.4
21	12.8	12.5	12.7	14.3	13.4	13.8	21.3	20.4	20.8	28.4	26.9	27.7
22	12.7	12.5	12.6	13.7	12.9	13.3	21.2	20.3	20.7	28.7	27.3	28.0
23	13.2	11.9	12.5	14.4	13.3	13.8	21.2	20.0	20.6	28.3	27.4	27.8
24	13.8	12.7	13.2	15.5	14.3	14.8	21.2	20.2	20.6	28.3	27.4	27.8
25	13.5	13.1	13.4	16.9	15.5	16.1	21.3	20.5	20.9	28.3	27.3	27.8
26	14.9	13.6	14.3	18.4	16.9	17.6	21.1	20.9	21.0	28.7	27.4	28.1
27	14.5	13.7	14.1	19.1	18.3	18.7	21.1	20.7	20.9	29.5	28.0	28.7
28	14.2	13.8	14.0	19.7	19.0	19.3	21.2	20.4	20.8	30.2	28.5	29.3
29	---	---	---	20.4	19.5	19.9	21.2	19.9	20.5	30.8	28.9	29.9
30	---	---	---	20.9	20.3	20.6	21.8	20.0	20.9	31.3	29.5	30.4
31	---	---	---	21.0	20.6	20.7	---	---	---	31.0	30.1	30.5
MONTH	---	---	---	---	---	---	21.8	18.5	20.1	31.3	20.7	26.7

TRINITY RIVER BASIN

08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN												
													JUNE			JULY			AUGUST			SEPTEMBER		
1	30.6	29.7	30.2	32.7	31.4	32.0	33.0	31.2	31.9	31.8	30.4	30.9												
2	30.5	29.3	29.8	33.0	31.9	32.4	33.2	31.5	32.2	31.3	30.2	30.6												
3	30.4	29.2	29.7	32.3	31.6	32.0	33.4	31.7	32.3	31.7	30.2	30.8												
4	30.5	29.2	29.8	31.9	31.1	31.5	33.1	31.5	32.1	31.9	30.6	31.1												
5	30.0	29.1	29.7	32.1	30.9	31.4	32.7	31.4	31.8	31.7	30.4	30.9												
6	29.1	27.4	28.1	32.4	31.2	31.8	---	30.5	---	31.8	30.3	30.8												
7	28.0	26.5	27.3	33.1	31.6	32.3	30.6	29.8	30.3	31.6	30.3	30.7												
8	27.8	26.8	27.3	33.3	31.9	32.5	30.5	29.5	29.9	31.6	30.2	30.7												
9	27.8	27.0	27.4	33.3	32.3	32.8	30.6	29.0	29.8	31.2	29.8	30.6												
10	28.5	27.2	27.8	33.7	32.3	33.0	31.5	29.8	30.5	29.8	28.1	29.0												
11	28.7	27.7	28.2	33.6	32.2	32.9	32.1	30.8	31.3	28.1	26.6	27.5												
12	29.9	27.9	28.8	33.6	32.3	32.9	31.8	31.1	31.4	26.6	26.2	26.5												
13	30.6	28.9	29.7	32.9	32.2	32.5	31.1	30.0	30.4	26.3	25.9	26.1												
14	30.9	29.2	30.0	33.3	31.9	32.5	30.0	28.5	29.1	27.1	26.1	26.5												
15	31.0	30.0	30.4	33.1	31.9	32.4	29.5	28.1	28.7	27.1	26.7	26.8												
16	30.8	29.7	30.2	---	---	---	30.4	28.8	29.6	27.0	26.6	26.8												
17	30.9	29.6	30.1	---	---	---	30.7	29.5	30.1	27.5	26.5	27.0												
18	30.7	29.6	30.1	---	---	---	30.7	29.5	30.1	26.9	26.2	26.6												
19	31.3	29.7	30.5	---	---	---	31.3	29.6	30.4	26.4	25.6	26.1												
20	31.6	30.0	30.8	---	---	---	31.6	30.1	30.9	27.1	26.0	26.5												
21	31.8	30.2	31.0	---	---	---	31.4	30.6	31.0	28.3	27.0	27.6												
22	32.0	30.4	31.2	32.8	31.8	32.2	30.7	30.0	30.3	29.1	27.9	28.5												
23	32.0	30.8	31.4	33.0	31.8	32.2	30.6	29.7	30.1	29.8	28.5	29.1												
24	32.1	30.7	31.4	33.1	31.7	32.2	31.3	29.8	30.4	30.3	28.8	29.5												
25	32.0	30.7	31.4	33.0	31.8	32.3	31.7	30.5	31.0	30.3	28.9	29.6												
26	32.2	31.0	31.6	33.2	31.6	32.3	32.2	31.0	31.5	29.9	28.9	29.5												
27	31.9	31.2	31.5	33.2	31.7	32.3	32.4	31.2	31.7	30.2	28.9	29.5												
28	31.9	31.0	31.4	33.2	31.9	32.4	32.7	31.6	32.0	30.5	29.0	29.7												
29	31.7	30.8	31.3	33.2	31.7	32.2	32.9	31.4	32.0	30.5	29.1	29.8												
30	32.3	31.0	31.6	32.9	31.4	31.9	32.3	30.9	31.5	30.5	29.1	29.8												
31	---	---	---	32.8	31.1	31.8	31.7	30.6	31.0	---	---	---												
MONTH	32.3	26.5	30.0	---	---	---	---	28.1	---	31.9	25.6	28.8												

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN												
													OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	7.6	7.4	7.5	7.9	6.6	7.3	---	---	---												
2	---	---	---	7.8	7.5	7.7	7.9	7.5	7.6	---	---	---												
3	---	---	---	8.1	7.8	7.9	8.1	7.3	7.7	---	---	---												
4	---	---	---	8.1	7.9	8.0	7.5	7.2	7.4	---	---	---												
5	---	---	---	8.1	5.1	7.1	8.0	7.5	7.7	---	---	---												
6	---	---	---	6.8	5.0	5.5	9.0	8.0	8.5	---	---	---												
7	---	---	---	8.3	6.8	7.9	9.4	9.0	9.3	---	---	---												
8	---	---	---	8.5	8.1	8.3	9.3	8.9	9.1	9.2	8.7	8.9												
9	---	---	---	8.4	8.3	8.3	9.0	8.6	8.7	---	---	---												
10	---	---	---	8.4	8.3	8.3	9.7	8.7	9.1	---	---	---												
11	---	---	---	8.6	8.3	8.4	9.7	7.2	8.2	---	---	---												
12	---	---	---	8.5	8.3	8.4	7.3	6.7	7.0	---	---	---												
13	---	---	---	8.5	8.4	8.4	8.0	7.2	7.6	---	---	---												
14	6.9	6.0	6.6	8.8	8.4	8.6	8.1	7.7	7.9	---	---	---												
15	7.0	6.7	6.9	9.2	8.6	8.9	8.1	7.6	7.9	---	---	---												
16	7.4	6.8	7.0	9.6	9.1	9.4	8.0	7.7	7.9	---	---	---												
17	6.8	5.9	6.5	9.5	9.2	9.3	8.1	7.7	7.9	---	---	---												
18	6.7	6.1	6.4	9.2	9.0	9.1	8.2	7.7	8.0	---	---	---												
19	6.6	6.3	6.5	9.0	8.8	8.9	8.1	7.8	8.0	---	---	---												
20	7.3	6.4	6.9	8.8	8.5	8.7	7.8	7.5	7.7	---	---	---												
21	7.4	6.7	7.1	8.7	8.4	8.6	7.6	7.1	7.4	---	---	---												
22	7.8	7.3	7.6	8.9	8.6	8.7	7.8	7.0	7.4	---	---	---												
23	7.8	7.3	7.6	9.2	8.7	8.9	---	---	---	---	---	---												
24	8.0	7.4	7.6	9.4	8.9	9.1	---	---	---	---	---	---												
25	7.9	7.5	7.6	9.8	8.9	9.3	---	---	---	---	---	---												
26	8.3	7.6	7.9	10.0	9.1	9.5	---	---	---	---	---	---												
27	7.6	6.7	7.0	10.0	8.9	9.4	---	---	---	---	---	---												
28	7.3	6.7	6.9	9.1	7.4	8.5	---	---	---	---	---	---												
29	8.3	7.3	7.8	7.4	6.2	6.6	---	---	---	---	---	---												
30	7.9	7.6	7.8	7.3	6.5	7.0	---	---	---	---	---	---												
31	8.0	7.4	7.7	---	---	---	9.5	---	---	---	---	---												
MONTH	---	---	---	10.0	5.0	8.3	---	---	---	---	---	---												

TRINITY RIVER BASIN

08065800 BEDIAS CREEK NEAR MADISONVILLE, TX

LOCATION.--Lat 30°53'03", long 95°46'39", Madison-Walker County line, Hydrologic Unit 12030202, on right bank at downstream side of bridge on U.S. Highways 75 and 190, 0.5 mi upstream from Interstate Highway 45, 1.5 mi downstream from Caney Creek, and 9.5 mi southeast of Madisonville.

DRAINAGE AREA.--321 mi².

PERIOD OF RECORD.--Oct 1967 to current year.

Water-quality records.--Chemical analyses: Jul 1962 to Apr 1964, Jan 1968 to Sep 1974. Chemical and biochemical analyses: Sep 1970 to Sep 1974, Apr 1985 to Jun 1988, Apr 1993 to Sep 1995. Pesticide analyses: Apr 1985 to Apr 1988. Specific conductance: Oct 1984 to Sep 1987. Water temperature: Oct 1984 to Sep 1987. Suspended sediment discharge: Oct 1984 to Sep 1986.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 150.00 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. No known regulation or diversions. Flow may be slightly affected at times by discharge from the flood-detention pools of three floodwater-retarding structures with a combined detention capacity of 1,290 acre-ft. These structures control runoff from 2.71 mi² in the upper Caney Creek and Town Branch drainage basins.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1910, 34 ft in May 1922 (discharge unknown), from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,400 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 7	1800	7,770	20.02	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

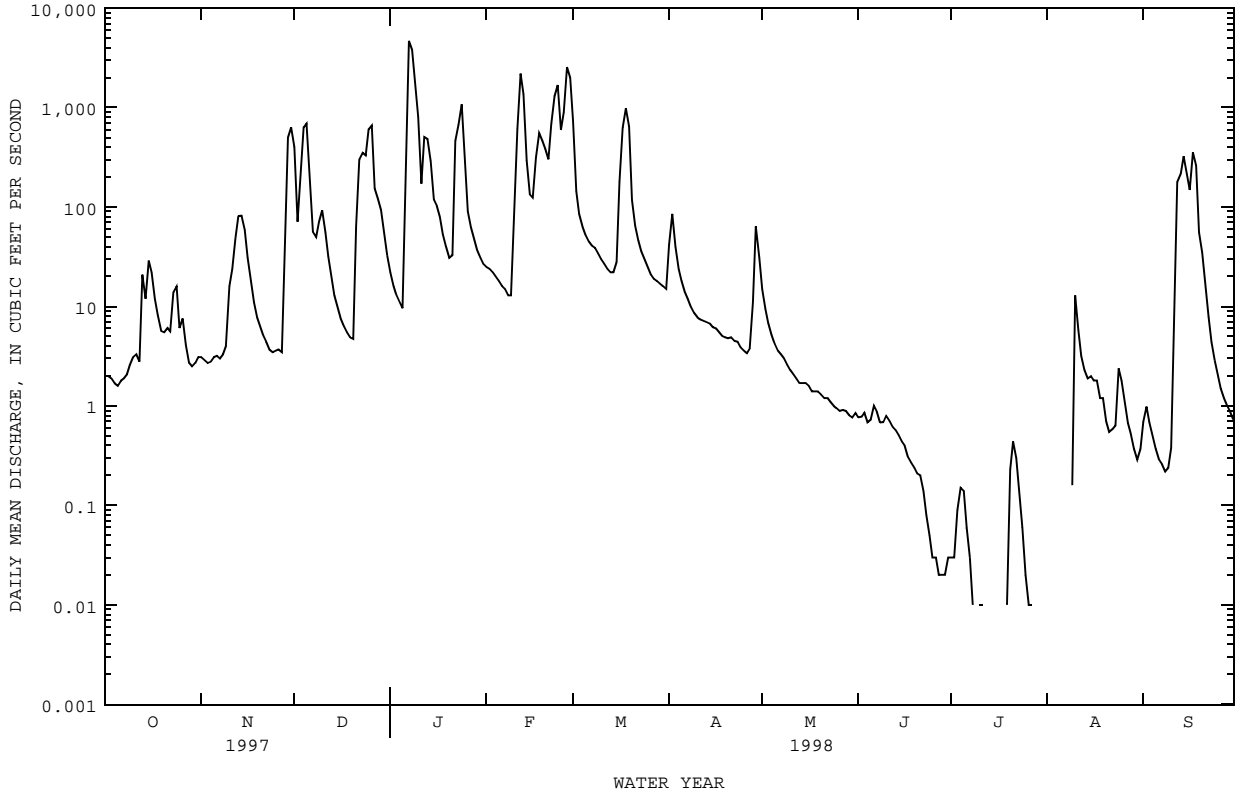
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	3.1	403	22	25	722	42	15	.77	.03	.00	.70
2	2.0	2.9	71	16	24	145	86	9.5	.78	.03	.00	.99
3	1.9	2.7	213	13	22	85	40	6.8	.86	.09	.00	.68
4	1.7	2.8	635	11	20	63	24	5.2	.69	.15	.00	.50
5	1.6	3.1	693	9.6	18	52	18	4.2	.73	.14	.00	.37
6	1.8	3.2	197	299	16	45	14	3.6	1.0	.06	.00	.29
7	1.9	3.0	56	4670	15	41	12	3.3	.88	.03	.00	.26
8	2.1	3.3	50	3810	13	39	9.9	3.0	.68	.01	.00	.22
9	2.6	4.0	71	1950	13	34	8.6	2.6	.69	.00	.16	.24
10	3.1	16	93	802	65	30	7.8	2.3	.80	.01	13	.38
11	3.3	24	56	172	616	27	7.4	2.1	.71	.01	5.8	5.0
12	2.8	49	32	509	2200	24	7.2	1.9	.62	.00	3.2	178
13	21	81	20	486	1370	22	7.0	1.7	.57	.00	2.3	216
14	12	82	13	291	296	22	6.8	1.7	.51	.00	1.9	325
15	29	59	9.7	119	134	28	6.2	1.7	.44	.00	2.0	214
16	22	31	7.5	103	124	180	6.0	1.6	.40	.00	1.8	150
17	12	19	6.3	79	315	630	5.5	1.4	.31	.00	1.8	357
18	8.3	11	5.5	53	555	984	5.1	1.4	.27	.00	1.2	262
19	5.7	7.7	4.9	40	464	650	4.9	1.4	.24	.01	1.2	56
20	5.5	6.3	4.7	31	385	119	4.8	1.3	.21	.23	.70	35
21	6.1	5.1	64	33	302	65	4.9	1.2	.20	.44	.55	17
22	5.6	4.4	303	465	693	46	4.5	1.2	.14	.30	.59	7.9
23	14	3.7	353	680	1300	36	4.4	1.1	.08	.13	.64	4.4
24	16	3.5	333	1080	1680	30	3.9	1.0	.05	.06	2.4	2.9
25	6.1	3.6	607	302	597	25	3.6	.95	.03	.02	1.8	2.1
26	7.6	3.7	661	91	903	21	3.4	.89	.03	.01	1.1	1.5
27	4.1	3.5	154	62	2540	19	3.8	.91	.02	.01	.67	1.2
28	2.7	77	121	47	1990	18	11	.89	.02	.00	.52	1.0
29	2.5	499	93	37	---	17	64	.81	.02	.00	.37	.88
30	2.7	631	52	31	---	16	31	.77	.03	.00	.29	.73
31	3.1	---	33	27	---	15	---	.85	---	.00	.37	---
TOTAL	212.8	1648.6	5415.6	16340.6	16695	4250	457.7	82.27	12.78	1.77	44.36	1842.24
MEAN	6.86	55.0	175	527	596	137	15.3	2.65	.43	.057	1.43	61.4
MAX	29	631	693	4670	2540	984	86	15	1.0	.44	13	357
MIN	1.6	2.7	4.7	9.6	13	15	3.4	.77	.02	.00	.00	.22
AC-FT	422	3270	10740	32410	33110	8430	908	163	25	3.5	88	3650
CFSM	.02	.17	.54	1.64	1.86	.43	.05	.01	.00	.00	.00	.19
IN.	.02	.19	.63	1.89	1.93	.49	.05	.01	.00	.00	.01	.21

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1998, BY WATER YEAR (WY)

	208	118	214	318	322	275	252	318	260	21.2	27.2	91.9
MEAN	208	118	214	318	322	275	252	318	260	21.2	27.2	91.9
MAX	3021	688	983	2015	1580	909	1333	1046	1745	260	266	1551
(WY)	1985	1986	1995	1991	1992	1973	1969	1969	1968	1979	1995	1974
MIN	.000	.025	.22	1.99	5.41	3.13	2.30	2.65	.43	.013	.000	.000
(WY)	1979	1989	1968	1971	1971	1971	1981	1998	1998	1977	1969	1969

08065800 BEDIAS CREEK NEAR MADISONVILLE, TX--Continued

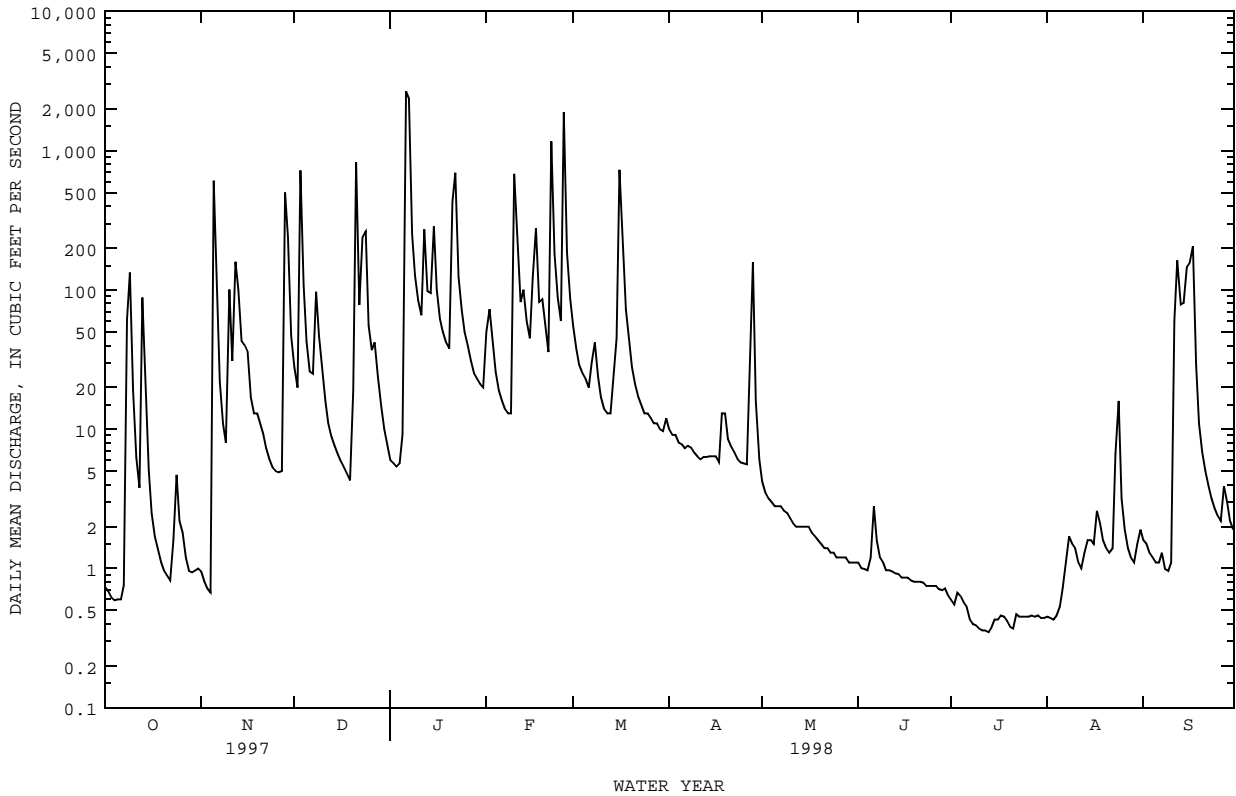
SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1968 - 1998	
ANNUAL TOTAL	55668.29		47003.72			
ANNUAL MEAN	153		129		201	
HIGHEST ANNUAL MEAN					423	
LOWEST ANNUAL MEAN					35.8	
HIGHEST DAILY MEAN	3480	Feb 14	4670	Jan 7	23000	Jan 10 1991
LOWEST DAILY MEAN	.85	Aug 17	.00	Jul 9	.00	Aug 31 1968
ANNUAL SEVEN-DAY MINIMUM	.93	Aug 14	.00	Jul 12	.00	Aug 31 1968
INSTANTANEOUS PEAK FLOW			7770	Jan 7	33800	Sep 14 1974
INSTANTANEOUS PEAK STAGE			20.02	Jan 7	25.07	Sep 14 1974
ANNUAL RUNOFF (AC-FT)	110400		93230		145900	
ANNUAL RUNOFF (CFSM)	.48		.40		.63	
ANNUAL RUNOFF (INCHES)	6.45		5.45		8.53	
10 PERCENT EXCEEDS	451		328		409	
50 PERCENT EXCEEDS	12		5.5		8.5	
90 PERCENT EXCEEDS	1.6		.04		.07	



08066170 KICKAPOO CREEK NEAR ONALASKA, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1966 - 1998	
ANNUAL TOTAL	16776.98		22538.20		48.1	
ANNUAL MEAN	46.0		61.7		223	
HIGHEST ANNUAL MEAN					4.63	
LOWEST ANNUAL MEAN					223	
HIGHEST DAILY MEAN	1540	Feb 12	2660	Jan 6	38800	Oct 17 1994
LOWEST DAILY MEAN	.39	Aug 22	.35	Jul 13	.02	Sep 27 1967
ANNUAL SEVEN-DAY MINIMUM	.44	Aug 16	.37	Jul 8	.02	Sep 27 1967
INSTANTANEOUS PEAK FLOW			10600	Jan 6	84600	Oct 17 1994
INSTANTANEOUS PEAK STAGE			22.17	Jan 6	41.85	Oct 17 1994
ANNUAL RUNOFF (AC-FT)	33280		44700		34830	
ANNUAL RUNOFF (CFSM)	.81		1.08		.84	
ANNUAL RUNOFF (INCHES)	10.95		14.71		11.46	
10 PERCENT EXCEEDS	101		101		60	
50 PERCENT EXCEEDS	7.5		5.8		3.5	
90 PERCENT EXCEEDS	.63		.60		.49	

e Estimated



TRINITY RIVER BASIN

08066190 LIVINGSTON RESERVOIR NEAR GOODRICH, TX

LOCATION.--Lat 30°38'00", long 95°00'36", Polk-San Jacinto County line, Hydrologic Unit 12030202, at left end of gated spillway at Livingston Dam on Trinity River, 4.4 mi northwest of Goodrich, 7 mi southwest of Livingston, 11.7 mi upstream from Long King Creek, and at mile 129.2.

DRAINAGE AREA.--16,583 mi².

WATER-CONTENT RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Trinity River Authority). Prior to Feb 26, 1969, temporary nonrecording gages at site about 200 ft upstream and at same datum. Satellite telemeter at station.

REMARKS.--Records good. The reservoir is formed by an earthfill dam 14,400 ft long. The dam was completed Sep 29, 1968, and deliberate impoundment began Jun 26, 1969. The reservoir is operated for industrial water supply in the Houston metropolitan area. The spillway has twelve 40 x 35 ft tainter gates located near the left end of dam. Low-flow releases may be made through multi-gated inlet tower. There are five gated openings at various elevations located in the tower, and all discharge into a 10-foot-diameter concrete conduit through the dam. Flow is affected at times by discharge from the flood-detention pools of 255 floodwater-retarding structures with a combined detention capacity of 184,600 acre-ft. These structures control runoff from an 617 mi² area in the Richland, Chambers, Tehuacana, and Bedias Creek drainage basins above this station. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam.....	145.0
Design flood.....	135.0
Top of tainter gates.....	134.0
Top of conservation pool.....	131.0
Crest of spillway (sill of tainter gates).....	99.0
Lowest gated outlet (invert).....	58.0

COOPERATION.--The capacity table, furnished by the Trinity River Authority, is based on a survey by the Bureau of Reclamation dated Dec 1991.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 2,081,000 acre-ft, Oct 17, 1994 (elevation, 134.39 ft); minimum since conservation pool capacity was reached on Nov 2, 1971, 1,345,000 acre-ft, Oct 25, 1988 (elevation, 125.22 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,905,000 acre-ft, Jan 7 (elevation, 132.90 ft); minimum contents, 1,429,000 acre-ft, Sep 10 (elevation, 127.01 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1728000	1753000	1758000	1827000	1749000	1830000	1841000	1756000	1731000	1640000	1536000	1465000
2	1726000	1748000	1750000	1834000	1748000	1817000	1841000	1749000	1731000	1636000	1528000	1460000
3	1722000	1741000	1779000	1834000	1746000	1791000	1841000	1758000	1735000	1634000	1527000	1455000
4	1723000	1736000	1776000	1840000	1742000	1782000	1826000	1750000	1737000	1629000	1527000	1451000
5	1725000	1755000	1771000	1847000	1744000	1775000	1810000	1749000	1741000	1626000	1521000	1445000
6	1723000	1755000	1757000	1898000	1742000	1768000	1799000	1748000	1733000	1622000	1518000	1448000
7	1726000	1750000	1751000	1889000	1736000	1765000	1785000	1752000	1719000	1617000	1517000	1442000
8	1740000	1746000	1757000	1851000	1736000	1765000	1775000	1745000	1722000	1612000	1514000	1442000
9	1753000	1740000	1760000	1819000	1735000	1760000	1762000	1760000	1719000	1608000	1512000	1436000
10	1744000	1754000	1755000	1794000	1768000	1753000	1752000	1750000	1712000	1604000	1508000	1433000
11	1739000	1747000	1757000	1775000	1789000	1753000	1733000	1741000	1720000	1596000	1503000	1463000
12	1742000	1755000	1759000	1777000	1799000	1750000	1730000	1740000	1716000	1593000	1497000	1470000
13	1759000	1756000	1763000	1782000	1805000	1743000	1735000	1740000	1708000	1596000	1507000	1478000
14	1758000	1757000	1761000	1783000	1809000	1745000	1732000	1737000	1710000	1589000	1503000	1480000
15	1754000	1761000	1756000	1777000	1813000	1733000	1730000	1744000	1708000	1584000	1498000	1488000
16	1751000	1756000	1753000	1782000	1816000	1765000	1739000	1744000	1701000	1584000	1494000	1495000
17	1750000	1756000	1750000	1782000	1816000	1775000	1736000	1744000	1698000	1584000	1495000	1497000
18	1751000	1762000	1744000	1798000	1821000	1781000	1740000	1744000	1698000	1577000	1495000	1502000
19	1751000	1757000	1743000	1792000	1792000	1805000	1739000	1742000	1690000	1573000	1494000	1511000
20	1749000	1756000	1744000	1798000	1771000	1801000	1741000	1736000	1689000	1570000	1490000	1519000
21	1750000	1756000	1758000	1815000	1759000	1803000	1744000	1735000	1684000	1568000	1490000	1528000
22	1739000	1751000	1755000	1827000	1801000	1806000	1742000	1734000	1678000	1564000	1490000	1534000
23	1739000	1747000	1778000	1818000	1805000	1810000	1739000	1731000	1675000	1563000	1491000	1536000
24	1739000	1743000	1788000	1798000	1795000	1817000	1735000	1732000	1670000	1560000	1486000	1536000
25	1739000	1740000	1801000	1776000	1790000	1816000	1734000	1734000	1664000	1557000	1485000	1536000
26	1744000	1738000	1810000	1769000	1838000	1816000	1747000	1733000	1661000	1555000	1482000	1537000
27	1735000	1734000	1807000	1751000	1841000	1830000	1760000	1733000	1658000	1554000	1479000	1538000
28	1744000	1770000	1821000	1751000	1845000	1835000	1762000	1732000	1654000	1551000	1476000	1538000
29	1750000	1771000	1821000	1752000	---	1834000	1761000	1734000	1651000	1547000	1473000	1537000
30	1750000	1765000	1823000	1750000	---	1837000	1753000	1731000	1647000	1544000	1467000	1536000
31	1749000	---	1825000	1745000	---	1845000	---	1730000	---	1541000	1466000	---
MAX	1759000	1771000	1825000	1898000	1845000	1845000	1841000	1760000	1741000	1640000	1536000	1538000
MIN	1722000	1734000	1743000	1745000	1735000	1733000	1730000	1730000	1647000	1541000	1466000	1433000
(+)	131.08	131.27	131.98	131.04	132.21	132.21	131.13	130.86	129.83	128.49	127.50	128.42
(@)	+21000	+16000	+60000	-80000	+100000	0	-92000	-23000	-83000	-106000	-75000	+70000
CAL YR 1997	MAX 1884000	MIN 1712000	(@) +61000									
WTR YR 1998	MAX 1898000	MIN 1433000	(@) -292000									

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

08066190 LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Oct 1969 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

303807095011101 - LIVINGSTON RES SITE AC

DATE	TIME	RESER- VOIR STORAGE (AC-FT) (00054)	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, (PER- CENT SATUR- ATION) (MG/L) (00301)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
FEB											
25...	1225	1790000	1.00	300	8.0	14.0	.60	9.5	92	110	11
25...	1227	--	10.0	300	7.9	13.5	--	9.4	90	--	--
25...	1229	--	20.0	300	7.9	13.5	--	9.4	90	--	--
25...	1231	--	30.0	300	7.9	13.5	--	9.3	90	--	--
25...	1233	--	40.0	300	7.8	13.5	--	9.2	89	--	--
25...	1235	--	50.0	300	7.8	13.5	--	9.2	89	--	--
25...	1237	--	65.0	300	7.8	13.5	--	9.2	89	110	14
AUG											
27...	1130	1480000	1.00	380	8.8	31.5	1.48	7.6	103	130	12
27...	1132	--	10.0	385	8.6	30.5	--	6.9	92	--	--
27...	1134	--	20.0	390	8.2	30.0	--	5.7	75	--	--
27...	1136	--	30.0	390	7.7	29.0	--	4.1	53	--	--
27...	1138	--	40.0	390	7.6	29.0	--	3.7	48	--	--
27...	1140	--	50.0	390	7.5	29.0	--	3.6	47	--	--
27...	1142	--	60.0	405	7.2	23.0	--	2.4	28	--	--
27...	1144	--	67.0	410	7.1	22.5	--	2.4	28	140	--

303807095011101 - LIVINGSTON RES 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)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
FEB											
25...	38	3.4	16	.7	4.1	98	29	15	.24	7.2	174
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	38	3.4	16	.7	4.2	95	28	15	.22	7.3	172
AUG											
27...	43	4.5	25	1	4.6	110	36	25	.38	3.5	210
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	49	4.6	19	.7	4.3	150	15	19	.27	15	228

303807095011101 - LIVINGSTON RES SITE AC

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
FEB											
25...	--	<.010	.722	<.020	--	.31	.066	.075	.23	<10	<4.0
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	<.010	.719	<.020	--	.30	.068	.073	.22	<10	4.1
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	<.010	.704	<.020	--	.33	.068	.076	.23	<10	<4.0
AUG											
27...	--	<.010	<.050	<.020	--	.34	.093	.094	.29	<10	21
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	.046	.012	.058	.029	.34	.37	.146	.123	.38	<10	136
27...	--	--	--	--	--	--	--	--	--	--	--
27...	.071	.020	.091	.060	.33	.39	.149	.149	.46	200	666
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	<.010	<.050	2.10	.42	2.5	2.12	1.47	4.5	1500	2000

TRINITY RIVER BASIN

08066190 LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

303821095005001 - LIVINGSTON RES SITE AL

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)
FEB								
25...	1245	1.00	300	7.9	14.0	.55	9.5	92
25...	1247	10.0	300	7.9	14.0	--	9.4	92
25...	1249	20.0	300	7.9	14.0	--	9.3	91
25...	1251	30.0	300	7.8	13.5	--	9.1	88
25...	1253	40.0	300	7.9	14.0	--	9.3	91
25...	1255	46.0	300	7.9	14.0	--	9.3	91
AUG								
27...	1200	1.00	380	8.8	31.5	1.30	7.6	103
27...	1202	10.0	380	8.7	31.0	--	7.3	98
27...	1204	20.0	390	8.1	29.5	--	5.3	70
27...	1206	30.0	390	7.7	29.0	--	3.9	51
27...	1208	40.0	390	7.6	29.0	--	3.7	48
27...	1210	50.0	390	7.5	28.5	--	3.4	44
27...	1212	61.0	405	7.2	23.0	--	2.5	29

303935095055401 - LIVINGSTON RES SITE BC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)
FEB								
25...	1120	1.00	315	7.9	13.5	.40	9.3	90
25...	1122	10.0	315	7.8	13.0	--	9.2	88
25...	1124	20.0	315	7.8	13.0	--	8.9	85
25...	1126	30.0	315	7.8	13.0	--	8.8	84
25...	1128	40.0	315	7.8	13.0	--	8.8	84
25...	1130	50.0	315	7.8	13.0	--	8.8	84
25...	1132	58.0	315	7.8	13.0	--	8.8	84
AUG								
27...	1100	1.00	400	8.6	30.5	1.00	6.7	89
27...	1102	10.0	400	8.1	29.5	--	5.0	66
27...	1104	20.0	405	8.0	29.5	--	4.7	62
27...	1106	30.0	405	8.0	29.5	--	4.4	58
27...	1108	40.0	405	7.9	29.5	--	4.2	55
27...	1110	52.0	430	7.3	27.0	--	2.5	31

304144095073001 - LIVINGSTON RES SITE CC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)
FEB								
25...	1050	1.00	315	7.9	13.5	.30	9.4	91
25...	1052	10.0	315	7.9	13.5	--	9.2	89
25...	1054	20.0	315	7.9	13.5	--	9.2	89
25...	1056	30.0	315	7.9	13.5	--	9.2	89
25...	1058	40.0	315	7.8	13.5	--	9.0	87
25...	1100	49.0	315	7.8	13.5	--	9.0	87
JUN								
03...	0934	--	--	--	--	--	--	--
AUG								
27...	1030	1.00	400	8.8	30.5	.90	7.5	100
27...	1032	10.0	410	8.6	30.0	--	6.0	80
27...	1034	20.0	410	8.4	30.0	--	5.3	70
27...	1036	30.0	415	7.8	29.5	--	3.2	42
27...	1038	40.0	440	7.8	29.5	--	2.4	32
27...	1040	48.0	460	7.8	29.5	--	2.4	32

08066190 LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

304521095075501 - LIVINGSTON RES 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)	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	OXYGEN, SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (MG/L) (00301)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L) (00613)
FEB										
25...	1000	1.00	305	7.9	14.0	.30	9.3	91	--	<.010
25...	1002	10.0	305	7.9	14.0	--	9.3	91	--	--
25...	1004	20.0	305	7.9	14.0	--	9.2	90	--	--
25...	1006	30.0	305	7.9	14.0	--	9.2	90	--	--
25...	1008	40.0	305	7.9	14.0	--	9.2	90	--	--
25...	1010	53.0	305	7.9	14.0	--	9.2	90	--	<.010
AUG										
27...	0950	1.00	400	8.9	30.5	1.00	7.4	99	--	<.010
27...	0952	10.0	400	8.8	30.5	--	7.2	97	--	--
27...	0954	20.0	410	8.6	30.0	--	6.2	82	--	--
27...	0956	30.0	440	7.9	29.5	--	3.6	47	--	--
27...	0958	40.0	510	7.9	29.5	--	3.0	40	--	--
27...	1000	48.0	580	7.8	29.5	--	2.5	33	.945	.184

304521095075501 - LIVINGSTON RES SITE DC

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L) (00607)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L) (00671)	PHOS-PHORUS PHATE, ORTHO, DIS-SOLVED (MG/L) (00660)	IRON, DIS-SOLVED (UG/L) (01046)	MANGA-NESE, DIS-SOLVED (UG/L) (01056)
FEB									
25...	.911	<.020	--	.37	.073	.073	.22	16	16
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	.881	.032	.37	.40	.071	.073	.22	17	24
AUG									
27...	<.050	<.020	--	.35	.169	.109	.33	<10	20
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	1.13	.121	.51	.63	.177	.161	.49	<10	80

304453095064901 - LIVINGSTON RES SITE DL

DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	OXYGEN, SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (MG/L) (00301)
FEB								
25...	0945	1.00	310	7.9	14.0	--	9.6	94
25...	0947	10.0	310	7.9	14.0	--	9.6	94
25...	0949	21.0	310	7.9	14.0	--	9.6	94
AUG								
27...	0935	1.00	390	8.9	31.0	1.00	7.8	105
27...	0937	10.0	395	8.8	30.5	--	7.6	102
27...	0939	17.0	400	8.7	30.5	--	7.0	94

304659095052001 - LIVINGSTON RES SITE EC

DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	OXYGEN, SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (MG/L) (00301)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L) (00613)
FEB										
25...	0910	1.00	300	7.9	14.0	.30	9.3	91	--	<.010
25...	0912	10.0	300	7.8	14.0	--	9.2	90	--	--
25...	0914	24.0	300	7.8	14.0	--	9.2	90	--	<.010
AUG										
27...	0905	1.00	400	9.0	31.0	.90	8.2	111	--	<.010
27...	0907	10.0	405	8.7	30.5	--	6.9	93	--	--
27...	0909	24.0	440	7.6	29.5	--	2.3	30	.015	.049

TRINITY RIVER BASIN

08066190 LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

304659095052001 - LIVINGSTON RES SITE EC

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
FEB									
25...	.803	<.020	--	.36	.071	.076	.23	14	4.1
25...	--	--	--	--	--	--	--	--	--
25...	.758	<.020	--	.40	.078	.069	.21	18	<4.0
AUG									
27...	<.050	.029	.36	.39	.093	.094	.29	<10	18
27...	--	--	--	--	--	--	--	--	--
27...	.064	.091	.37	.46	.155	.145	.44	<10	176

304843095104001 - LIVINGSTON RES SITE FC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, (PER- CENT SATUR- ATION) (00301)
FEB								
25...	1415	1.00	290	7.8	14.5	.18	9.1	90
25...	1417	10.0	290	7.7	14.5	--	9.1	90
25...	1419	20.0	290	7.7	14.5	--	9.0	89
25...	1421	30.0	290	7.7	14.5	--	9.0	89
25...	1423	40.0	290	7.7	14.5	--	9.0	89
25...	1425	53.0	290	7.7	14.5	--	9.1	90
AUG								
27...	1315	1.00	455	9.2	32.0	.70	9.0	124
27...	1317	10.0	455	9.0	30.5	--	7.2	97
27...	1319	20.0	520	8.3	30.0	--	3.9	52
27...	1321	30.0	635	7.8	29.5	--	2.5	33
27...	1323	40.0	655	7.8	29.5	--	2.5	33
27...	1325	50.0	655	7.8	29.5	--	2.5	33

305411095144901 - LIVINGSTON RES SITE GC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, (PER- CENT SATUR- ATION) (00301)	HARD- NESS TOTAL AS CACO3 (00900)	HARD- NESS DISSOLV FLD. AS CACO3 (00904)	CALCIUM DIS- SOLVED (MG/L) AS CA (00915)
FEB											
26...	0910	1.00	265	7.6	14.5	.18	8.6	85	72	26	23
26...	0912	10.0	270	7.6	14.5	--	8.6	85	--	--	--
26...	0914	20.0	270	7.6	14.5	--	8.6	85	--	--	--
26...	0916	30.0	275	7.7	14.5	--	8.6	85	--	--	--
26...	0918	42.0	295	7.8	14.5	--	8.6	85	90	29	30
AUG											
27...	1410	1.00	600	9.2	33.0	.30	9.9	139	130	4	43
27...	1412	10.0	660	8.3	31.5	--	4.9	67	--	--	--
27...	1414	20.0	660	7.8	30.5	--	2.8	38	--	--	--
27...	1416	30.0	640	7.8	29.5	--	2.5	33	--	--	--
27...	1418	37.0	640	7.8	29.5	--	2.4	32	150	23	49

TRINITY RIVER BASIN

08066190 LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

305411095144901 - LIVINGSTON RES SITE GC

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)
FEB											
26...	3.7	20	1	3.6	46	38	21	.15	8.9	149	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	4.0	20	.9	3.9	61	36	22	.21	8.2	166	--
AUG											
27...	5.5	66	3	7.4	130	72	66	1.0	6.8	349	.924
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	2.32
27...	--	--	--	--	--	--	--	--	--	--	--
27...	6.2	64	2	7.2	130	70	68	.99	8.7	356	1.05

305411095144901 - LIVINGSTON RES SITE GC

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
FEB										
26...	<.010	.730	.024	.55	.58	.083	.082	.25	94	38
26...	--	--	--	--	--	--	--	--	--	--
26...	<.010	.873	<.020	--	.56	.090	.090	.28	78	21
26...	--	--	--	--	--	--	--	--	--	--
26...	<.010	1.12	<.020	--	.65	.126	.107	.33	75	9.7
AUG										
27...	.190	1.11	<.020	--	.57	.169	.143	.44	<10	6.6
27...	--	--	--	--	--	--	--	--	--	--
27...	.380	2.70	.080	.57	.65	.324	.296	.91	<10	48
27...	--	--	--	--	--	--	--	--	--	--
27...	.210	1.26	.195	.55	.75	.252	.227	.70	<10	177

305447095161401 - LIVINGSTON RES SITE HC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)
FEB										
26...	1150	1.00	195	6.9	15.5	.20	8.4	85	--	<.010
26...	1152	10.0	195	7.0	15.0	--	8.4	84	--	--
26...	1154	20.0	195	7.0	15.0	--	8.4	84	--	--
26...	1156	30.0	200	7.1	15.0	--	8.4	84	--	--
26...	1158	41.0	200	7.0	15.0	--	8.4	84	--	<.010
AUG										
27...	1440	1.00	605	9.6	33.5	.28	14.2	200	.125	.039
27...	1442	10.0	610	8.6	30.5	--	5.4	72	--	--
27...	1444	20.0	600	8.1	29.5	--	3.1	41	--	--
27...	1446	33.0	605	7.9	29.5	--	2.5	33	.219	.138

TRINITY RIVER BASIN

08066190 LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

305447095161401 - LIVINGSTON RES SITE HC

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
FEB									
26...	.075	<.020	--	.57	.018	.018	.06	180	94
26...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
26...	.116	<.020	--	.66	.023	.028	.09	160	95
AUG									
27...	.164	.055	.55	.60	.106	.090	.28	<10	50
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	.357	.321	.56	.88	.212	.192	.59	27	405

305135095193601 - LIVINGSTON RES SITE IC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT) (00301)
FEB									
26...	1005	1.00	295	7.7	14.5	.18	8.6	85	
26...	1007	10.0	295	7.7	14.5	--	8.6	85	
26...	1009	20.0	295	7.7	14.5	--	8.6	85	
26...	1011	30.0	295	7.7	14.5	--	8.6	85	
26...	1013	42.0	295	7.7	14.5	--	8.6	85	
AUG									
28...	0900	1.00	650	9.1	31.0	.40	11.0	149	
28...	0902	10.0	690	7.4	30.0	--	3.2	43	
28...	0904	20.0	690	7.3	30.0	--	2.3	31	
28...	0906	33.0	685	7.3	29.5	--	2.3	30	

305135095235401 - LIVINGSTON RES SITE JC

DATE	TIME	SAM- PLING DEPTH (FEET) (00003)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT) (00301)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS- SOLVED (MG/L) AS CA (00915)
FEB											
26...	1040	1.00	315	7.8	14.5	.12	8.6	85	98	23	33
26...	1042	10.0	310	7.8	14.5	--	8.6	85	--	--	--
26...	1044	20.0	310	7.8	14.5	--	8.6	85	--	--	--
26...	1046	30.0	310	7.7	14.5	--	8.6	85	--	--	--
26...	1048	40.0	315	7.7	14.5	--	8.6	85	99	24	33
AUG											
28...	0940	1.00	700	9.2	32.0	.60	11.8	162	160	27	54
28...	0942	10.0	720	8.1	30.5	--	6.2	83	--	--	--
28...	0944	15.0	725	7.6	30.0	--	4.2	56	--	--	--
28...	0946	20.0	725	7.5	30.0	--	3.8	51	--	--	--
28...	0948	32.0	730	7.4	30.0	--	3.3	44	170	56	56

TRINITY RIVER BASIN

08066190 LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

305135095235401 - LIVINGSTON RES SITE JC

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS FIELD CAC03 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)
FEB											
26...	4.1	21	.9	4.1	75	34	22	.22	8.8	177	1.15
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	1.16
26...	--	--	--	--	--	--	--	--	--	--	--
26...	4.2	20	.9	4.0	75	35	22	.23	8.7	178	1.14
AUG											
28...	5.8	77	3	9.1	130	79	79	1.2	8.7	413	3.84
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	5.56
28...	--	--	--	--	--	--	--	--	--	--	--
28...	6.2	77	3	9.2	110	81	79	1.3	8.2	410	5.29

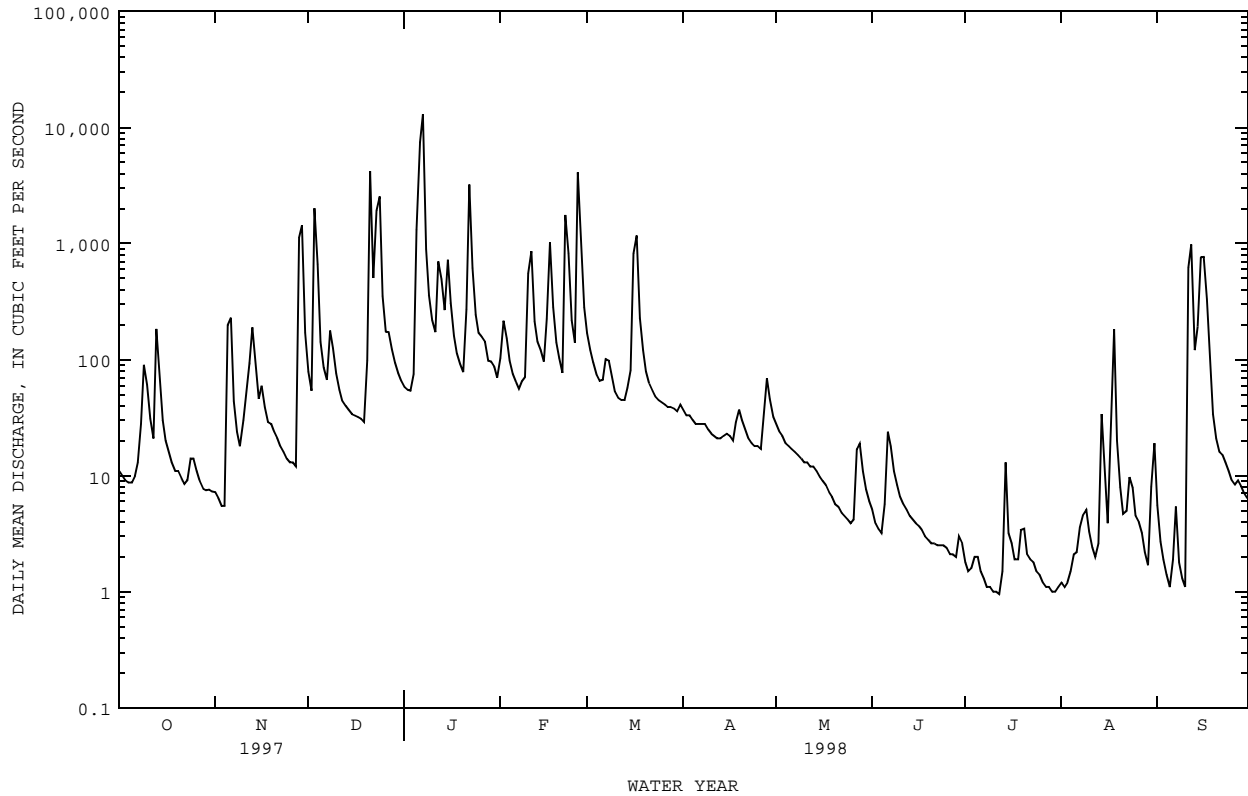
305135095235401 - LIVINGSTON RES SITE JC

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- SOLVED (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04) (00660)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
FEB										
26...	.017	1.17	.034	.54	.57	.158	.137	.42	48	<4.0
26...	--	--	--	--	--	--	--	--	--	--
26...	.019	1.18	.041	.47	.51	.143	.139	.43	43	7.2
26...	--	--	--	--	--	--	--	--	--	--
26...	.019	1.16	.046	.50	.55	.145	.137	.42	67	<4.0
AUG										
28...	.161	4.00	.064	.70	.77	.434	.377	1.2	<10	<4.0
28...	--	--	--	--	--	--	--	--	--	--
28...	.296	5.86	.032	.61	.64	.721	.651	2.0	<10	12
28...	--	--	--	--	--	--	--	--	--	--
28...	.319	5.61	.020	.59	.61	.725	.647	2.0	<10	31

08066200 LONG KING CREEK AT LIVINGSTON, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1963 - 1998	
ANNUAL TOTAL	63532.3		74162.16		111	
ANNUAL MEAN	174		203		318	
HIGHEST ANNUAL MEAN					12.3	
LOWEST ANNUAL MEAN					1995	
HIGHEST DAILY MEAN	4880	Feb 13	13000	Jan 7	30100	Oct 17 1994
LOWEST DAILY MEAN	5.5	Nov 3	.96	Jul 12	.00	Aug 5 1965
ANNUAL SEVEN-DAY MINIMUM	6.5	Sep 16	1.1	Jul 27	.00	Jun 28 1971
INSTANTANEOUS PEAK FLOW			21800	Jan 7	50900	Oct 17 1994
INSTANTANEOUS PEAK STAGE			26.12	Jan 7	30.49	Oct 17 1994
ANNUAL RUNOFF (AC-FT)	126000		147100		80420	
ANNUAL RUNOFF (CFSM)	1.23		1.44		.79	
ANNUAL RUNOFF (INCHES)	16.76		19.57		10.70	
10 PERCENT EXCEEDS	286		276		152	
50 PERCENT EXCEEDS	39		22		13	
90 PERCENT EXCEEDS	8.9		2.0		.93	

e Estimated



TRINITY RIVER BASIN

08066250 TRINITY RIVER NEAR GOODRICH, TX

LOCATION.--Lat 30°34'19", long 94°56'55", Polk-San Jacinto County line, Hydrologic Unit 12030202, on left bank at downstream bridge on U.S. Highway 59, 0.2 mi downstream from Long King Creek, 3.0 mi southeast of Goodrich, 11.9 mile downstream from Livingston Dam, and at mile 117.3.

DRAINAGE AREA.--16,844 mi².

PERIOD OF RECORD.--Dec 1965 to current year.

Water-quality records.--Chemical analyses: Mar 1966 to Sep 1973. Specific conductance: Oct 1969 to Sep 1973. Water temperature: Oct 1969 to Sep 1973.

GAGE.--Water-stage recorder. Datum of gage is 40.00 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in Dec 1965, at least 10% of contributing drainage area has been regulated by Lake Worth, Livingston Reservoir, and twenty-one additional upstream reservoirs with a capacity of 6,246,000 acre-ft, of which 1,362,000 acre-ft is for flood control, partly regulate the flow. Streamflow is affected at times by discharge from the flood-detention pools of 252 floodwater-retarding structures with a combined detention capacity of 183,300 acre-ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1929, 52.0 ft in May 1942, from information by Texas Department of Transportation and by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	661	3030	7190	20800	21900	28000	25700	2860	1160	2630	2290	1950
2	664	3010	5510	22700	22100	27700	26400	2850	1200	2630	2330	1940
3	666	2420	8350	23700	21300	27500	26400	2850	1970	2640	2340	1930
4	667	1920	10800	24400	20000	26100	26400	2830	2100	2630	2350	1930
5	677	1350	9270	25300	18400	24700	26400	2810	2130	2620	2370	1930
6	690	2450	8620	33600	16300	24000	26300	2440	2140	2610	2350	1920
7	704	2420	7000	61800	13800	22800	26300	1810	2150	2610	2400	1940
8	747	2330	5690	62200	10400	22800	26200	1760	2160	2600	2370	1910
9	2320	2300	5470	57000	8890	22200	25000	1730	2170	2600	2360	1890
10	3280	2370	5310	51800	9280	21000	21800	1700	2180	2600	2350	1910
11	3020	2350	5150	46800	11000	19400	18900	1690	2280	2580	2350	2510
12	2480	2410	4480	45400	13600	19000	13900	1680	2720	2580	2340	4190
13	2780	2630	4380	45000	16200	18700	10400	1670	2750	2580	2340	2840
14	2720	2550	4370	44500	16500	16900	9300	1670	2740	2590	2350	2200
15	2430	2410	4360	44700	17900	16100	8360	1660	2740	2410	2370	1770
16	2350	2370	4340	44400	18700	13500	7550	1650	2740	2030	2350	2290
17	2320	2360	4330	44100	22000	16300	7100	1660	2730	2010	2300	1560
18	2360	2330	4320	44000	21700	15200	5180	1660	2730	2010	2050	1200
19	3090	2620	3690	44000	21300	14800	4860	1670	2720	2000	1900	964
20	3190	3100	3600	44000	19600	14900	4830	1670	2710	1940	1860	893
21	3190	3100	13200	44400	13700	17100	4810	1680	2700	1550	1980	867
22	3120	3090	10100	49300	15100	17300	4440	1660	2700	1170	2010	849
23	2490	3080	10300	46800	19900	17800	3870	1220	2690	1130	2010	839
24	2500	2810	14900	43300	18900	19100	3520	1140	2690	1130	1990	830
25	2330	2350	14500	41400	18600	20200	2970	1130	2690	1120	1980	825
26	2290	2320	15700	36700	25200	20900	2930	1140	2690	1110	1960	821
27	2280	2320	17300	30800	31100	21400	2970	1140	2680	1110	1950	814
28	2290	3860	17200	24900	28700	22700	2970	1150	2680	1110	1950	805
29	2560	9320	17300	22300	---	23800	2930	1150	2660	1160	1940	799
30	3030	8030	18800	22000	---	24600	2880	1150	2650	1770	1930	799
31	3040	---	20600	21900	---	24700	---	1150	---	1900	1940	---
TOTAL	66936	89010	286130	1214000	512070	641200	381570	54030	73050	63160	67360	47915
MEAN	2159	2967	9230	39160	18290	20680	12720	1743	2435	2037	2173	1597
MAX	3280	9320	20600	62200	31100	28000	26400	2860	2750	2640	2400	4190
MIN	661	1350	3600	20800	8890	13500	2880	1130	1160	1110	1860	799
AC-FT	132800	176600	567500	2408000	1016000	1272000	756800	107200	144900	125300	133600	95040

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1998, BY WATER YEAR (WY)

	3518	6040	8655	9524	9808	12240	11470	15290	12240	4627	2284	2128
MEAN	3518	6040	8655	9524	9808	12240	11470	15290	12240	4627	2284	2128
MAX	25630	30260	30270	45550	38660	40490	30750	57850	32120	24310	6819	15230
(WY)	1974	1975	1992	1992	1992	1992	1977	1990	1973	1989	1982	1974
MIN	283	449	317	321	472	724	1262	1294	907	1043	355	455
(WY)	1973	1971	1971	1971	1971	1981	1971	1971	1972	1971	1972	1971

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	FOR WATER YEARS 1966 - 1998
ANNUAL TOTAL	4182291	3496431	
ANNUAL MEAN	11460	9579	8091
HIGHEST ANNUAL MEAN			18310
LOWEST ANNUAL MEAN			746
HIGHEST DAILY MEAN	45500	Mar 13	120000
LOWEST DAILY MEAN	661	Oct 1	191
ANNUAL SEVEN-DAY MINIMUM	676	Oct 1	240
INSTANTANEOUS PEAK FLOW		67200	125000
INSTANTANEOUS PEAK STAGE		40.06	48.97
ANNUAL RUNOFF (AC-FT)	8296000	6935000	5862000
10 PERCENT EXCEEDS	31000	25500	23500
50 PERCENT EXCEEDS	4650	2730	2750
90 PERCENT EXCEEDS	1140	1170	750

TRINITY RIVER BASIN

08066300 MENARD CREEK NEAR RYE, TX

LOCATION.--Lat 30°28'52", long 94°46'46", Liberty County, Hydrologic Unit 12030202, on left bank 20 ft downstream from bridge on State Highway 146, 2.3 mi northwest of Rye, and about 6 mi upstream from mouth.

DRAINAGE AREA.--152 mi².

PERIOD OF RECORD.--Dec 1965 to current year.

Water-quality records.--Chemical analyses: Aug 1950 to Aug 1994.

GAGE.--Water-stage recorder and crest-stage gage. Datum of of gage is 62.32 ft above sea level. Sep 1974 to Aug 1976, wire-weight gage read twice daily.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in water year 1966, at least 10% contributing drainage area has been regulated by Bear Foot Lake on Mill Creek, located 0.5 mi upstream from station. No known diversions. A section of the dam on this lake washed out on Jun 26-27, 1986, and was repaired in 1987.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1929 reached a stage of about 39.4 ft, from information by the Texas Department of Transportation. Flood in Sep 1961 reached a stage of about 34.0 ft, from information by local resident. Flood of May 1929 may have been equaled or exceeded by other floods during the period 1929-65.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 23	0730	1,950	20.98	Jan 23	1645	2,260	21.70
Jan 8	1045	5,160	25.15	Feb 28	0430	2,370	21.89

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	26	294	125	152	1080	99	49	21	17	11	18
2	25	25	320	109	157	563	92	44	21	16	11	18
3	24	25	149	99	181	300	84	42	20	15	11	17
4	24	24	154	98	183	220	77	40	20	16	11	16
5	23	30	213	103	167	188	72	39	22	15	11	16
6	23	39	285	290	140	169	69	39	36	15	13	15
7	26	46	155	1330	127	164	66	38	29	15	27	16
8	28	82	114	3800	116	195	64	37	25	14	26	16
9	30	52	126	1810	108	194	61	36	22	14	22	15
10	30	45	180	1030	157	178	59	35	22	13	20	15
11	37	39	148	566	296	142	56	33	21	13	18	300
12	45	46	102	540	262	122	53	32	20	13	18	608
13	55	56	77	523	284	115	52	31	19	13	18	257
14	47	64	69	471	191	115	52	31	19	13	18	442
15	65	80	63	471	145	124	52	30	18	13	18	652
16	73	68	59	358	154	161	52	30	19	13	17	670
17	40	52	55	333	308	254	51	29	18	13	17	418
18	31	49	51	284	306	257	55	28	18	13	17	428
19	27	51	48	204	384	360	60	28	17	13	18	257
20	25	48	55	168	326	257	61	27	17	13	20	116
21	24	48	826	169	188	152	62	26	16	14	37	85
22	23	47	604	1210	324	123	56	26	16	13	35	72
23	25	42	1650	1850	368	109	50	26	16	14	39	64
24	51	39	1150	1530	441	101	47	25	16	14	31	58
25	61	36	733	914	595	96	45	25	15	13	28	53
26	70	35	1040	503	721	92	44	24	15	12	24	49
27	45	34	687	315	965	89	44	24	16	12	23	46
28	34	52	336	244	1900	86	43	24	17	12	21	43
29	30	107	220	202	---	84	43	23	17	12	21	41
30	28	146	175	177	---	82	53	23	16	11	20	39
31	27	---	143	162	---	87	---	22	---	11	20	---
TOTAL	1123	1533	10281	19988	9646	6259	1774	966	584	418	641	4860
MEAN	36.2	51.1	332	645	345	202	59.1	31.2	19.5	13.5	20.7	162
MAX	73	146	1650	3800	1900	1080	99	49	36	17	39	670
MIN	23	24	48	98	108	82	43	22	15	11	11	15
AC-FT	2230	3040	20390	39650	19130	12410	3520	1920	1160	829	1270	9640

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1998, BY WATER YEAR (WY)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
MEAN	75.2	77.4	153	217	232	185	172	191	145	63.9	46.2	51.4																						
MAX	1092	514	457	777	727	528	977	757	788	464	354	192																						
(WY)	1995	1975	1975	1974	1992	1997	1983	1986	1989	1989	1983	1983																						
MIN	3.42	3.55	8.05	14.6	14.0	13.5	9.77	21.8	8.72	4.52	5.47	4.43																						
(WY)	1968	1968	1968	1971	1971	1971	1971	1996	1971	1971	1967	1967																						

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1966 - 1998	
ANNUAL TOTAL	65947		58073			
ANNUAL MEAN	181		159		135	
HIGHEST ANNUAL MEAN					279	
LOWEST ANNUAL MEAN					14.7	
HIGHEST DAILY MEAN	2060	Mar 13	3800	Jan 8	12000	Oct 18 1994
LOWEST DAILY MEAN	20	Sep 21	11	Jul 30	2.6	Nov 1 1967
ANNUAL SEVEN-DAY MINIMUM	21	Sep 16	11	Jul 30	2.9	Nov 1 1967
INSTANTANEOUS PEAK FLOW			5160	Jan 8	13700	Oct 17 1994
INSTANTANEOUS PEAK STAGE			25.15	Jan 8	31.12	Oct 17 1994
ANNUAL RUNOFF (AC-FT)	130800		115200		97870	
10 PERCENT EXCEEDS	447		363		284	
50 PERCENT EXCEEDS	64		47		49	
90 PERCENT EXCEEDS	24		15		14	

LOCATION.--Lat 30°25'30", long 94°51'02", Liberty County, Hydrologic Unit 12030202, near right bank at downstream side of bridge on State Highway 787, 1.9 mi south of Romayor, 1.9 mi downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 3.7 mi downstream from Big Creek, and at mile 94.3.

DRAINAGE AREA.--17,186 mi².

PERIOD OF RECORD.--May 1924 to current year. Monthly discharge only for some periods, published in WSP 1312.

Water-quality records.--Chemical analyses: Oct 1941 to Nov 1949, Feb 1950 to Sep 1951, Oct 1953, to Sep 1995. Chemical and biochemical analyses: Feb 1968 to Sep 1995. Pesticide analyses: Feb 1968 to Jul 1981, Aug 1983 to Sep 1995. Sediment records: Mar 1959 to Sep 1995. Specific conductance: Oct 1941 to Sep 1942, Jan 1944 to Sep 1951, Oct 1953 to Sep 1994. Water temperature: Oct 1941 to Sep 1950, Oct 1953 to Sep 1994. Suspended-sediment discharge: Oct 1954 to Sep 1955, Oct 1968 to Sep 1971.

REVISED RECORDS.--WSP 1392: 1932, 1935. WSP 1922: Drainage area. WDR TX-81-1: 1980 (M, m).

GAGE.--Water-stage recorder. Datum of gage is 25.92 ft above sea level. Prior to Oct 1, 1943, nonrecording gage at datum 63.57 ft higher at railroad bridge 1.9 mi upstream. Oct 1, 1943 to Dec 31, 1988, water-stage recorder and nonrecording gage (Sep 15, 1975 to Jun 16, 1977) at present site and at datum 10.00 ft higher than current datum. Satellite telemeter at station.

REMARKS.--Records good. Since installation of gage in water year 1924, at least 10% of contributing drainage area has been regulated by Lake Worth. Additional regulation since Sep 28, 1968, by Livingston Reservoir, capacity 1,788,000 acre-ft, 35 mi upstream. There are no known large diversions between Livingston Reservoir and this station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	758	2590	7210	20700	23000	31600	25500	3200	1620	2750	1960	1960
2	731	2610	5860	22000	23100	30400	27000	3160	1610	2740	2170	1950
3	723	2310	6430	23600	22900	29700	27200	3170	1960	2740	2240	1950
4	716	1910	10300	24500	21400	28500	27200	3160	2310	2720	2270	1940
5	717	1350	9140	25200	19900	26200	27100	3140	2350	2710	2300	1940
6	729	1800	8540	31500	18100	25600	27100	3050	2390	2710	2280	1940
7	744	2170	7120	61800	15400	23900	27000	2370	2350	2680	2360	1960
8	758	2090	5560	75900	12100	23600	27000	2230	2330	2680	2340	1960
9	1540	2050	5060	70600	9720	23300	26300	2220	2330	2670	2300	1950
10	2790	2080	4910	63400	9730	21900	22800	2200	2320	2670	2280	1950
11	2780	2090	4780	56100	11400	20500	20000	2180	2320	2670	2270	2470
12	2270	2120	4190	52400	13700	19600	15500	2180	2650	2670	2260	4560
13	2280	2300	3870	51300	16700	19300	10700	2170	2790	2680	2240	3530
14	2530	2360	3820	50300	17500	17800	9520	2170	2790	2700	2240	2860
15	2200	2240	3790	e50000	18200	16800	8640	2180	2790	2620	2240	2680
16	2110	2160	3770	e50000	19300	14200	7830	2180	2790	2220	2210	3050
17	2020	2120	3750	49800	22300	16400	7470	2170	2770	2080	2200	2430
18	1970	2100	3740	49300	23100	16200	6090	2170	2770	2020	2020	1990
19	2370	2140	3440	49000	22500	15400	5330	2170	2770	1980	1950	1660
20	2680	2630	3030	49000	21700	15200	5200	2160	2760	1920	1870	1410
21	2690	2720	11600	49100	16200	17000	5120	2160	2760	1690	1970	1300
22	2680	2710	13100	54400	14700	17700	4940	2170	2750	1280	2020	1260
23	2280	2700	11200	55100	20600	17700	4270	1940	2730	1140	2070	1220
24	2300	2620	15600	51400	20500	19000	4030	1720	2740	1080	2060	1200
25	2120	2130	15800	48000	20000	19700	3360	1690	2740	1060	2020	1190
26	2080	2020	16100	43100	24400	21000	3240	1680	2750	1050	2000	1180
27	2020	2010	17800	36200	35100	21300	3250	1680	2750	1050	2010	1180
28	1960	2240	17600	28800	33500	22500	3290	1720	2750	1050	1960	1170
29	2020	7790	17400	24200	---	23400	3250	1650	2750	1050	1950	1160
30	2500	8140	18200	23300	---	24900	3240	1620	2750	1370	1950	1160
31	2590	---	20400	23100	---	25100	---	1620	---	1660	1950	---
TOTAL	58656	78300	283110	1363100	546750	665400	398470	69280	76240	64110	65960	58160
MEAN	1892	2610	9133	43970	19530	21460	13280	2235	2541	2068	2128	1939
MAX	2790	8140	20400	75900	35100	31600	27200	3200	2790	2750	2360	4560
MIN	716	1350	3030	20700	9720	14200	3240	1620	1610	1050	1870	1160
AC-FT	116300	155300	561500	2704000	1084000	1320000	790400	137400	151200	127200	130800	115400

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1998, BY WATER YEAR (WY)

	MEAN	MAX	MIN	(WY)	(WY)	(WY)	(WY)
MEAN	3327	5185	7712	9455	9822	11540	10840
MAX	25380	30780	43240	51740	44510	46100	65710
MIN	1974	1975	1941	1992	1992	1992	1945
(WY)	1974	1975	1941	1992	1992	1992	1945
MIN	181	274	351	347	450	528	415
(WY)	1957	1956	1971	1971	1971	1925	1925

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1924 - 1998
ANNUAL TOTAL	4334034	3727536	
ANNUAL MEAN	11870	10210	7789
HIGHEST ANNUAL MEAN			20630
LOWEST ANNUAL MEAN			730
HIGHEST DAILY MEAN	50900	75900	117000
LOWEST DAILY MEAN	716	716	104
ANNUAL SEVEN-DAY MINIMUM	731	731	106
INSTANTANEOUS PEAK FLOW		77300	122000
INSTANTANEOUS PEAK STAGE		38.05	45.80
ANNUAL RUNOFF (AC-FT)	8597000	7394000	5643000
10 PERCENT EXCEEDS	32400	26600	22200
50 PERCENT EXCEEDS	4700	2740	2680
90 PERCENT EXCEEDS	1300	1660	542

e Estimated

08067000 TRINITY RIVER AT LIBERTY, TX

LOCATION.--Lat 30°03'27", long 94°49'05", Liberty County, Hydrologic Unit 12030203, at downstream side of downstream bridge on U.S. Highway 90 in Liberty, 450 ft downstream from Texas and New Orleans Railroad Co. bridge, and at mile 40.3.

DRAINAGE AREA.--17,468 mi².

PERIOD OF RECORD.--Oct 1938 to Sep 1940 (gage heights, discharge measurements, and some records of daily discharge), Oct 1940 to current year (high-water records only). Gage-height records collected in this vicinity since 1903 are contained in reports of the National Weather Service.

Water-quality records.--Chemical and biochemical analyses: Oct 1970 to Sep 1972. Pesticide analyses: May 1971 to Sep 1972.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2.22 ft below sea level; unadjusted land-surface subsidence. Prior to Mar 13, 1973, nonrecording gage at site at same datum. Satellite and gage-height telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Discharges for current year were computed using stage discharge relationship. During years with predominantly low releases from Livingston Reservoir, discharges are estimated using records for Trinity River near Romayor (station 08066500), intervening area computation, and discharge measurements. Estimated discharges below 10,000 ft³/s are not published. Since installation of gage in water year 1941, at least 10% of contributing drainage area has been regulated by Lake Worth, Livingston Reservoir, and other major reservoirs. Many diversions above station for municipal supplies, industrial uses, and irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 135,000 ft³/s Oct 12, 1994 (gage height, 31.00 ft); minimum not determined (affected by tides); minimum gage height observed, 2.32 ft Nov 24, 1970. Maximum gage height since at least 1903, 31.00 ft, Oct 21, 1994 (at 0500 hours).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 8-11, 1922, reached a stage of 28.6 ft, present datum, from observations by the National Weather Service at nonrecording gage on railroad bridge upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 50,700 ft³/s Jan 11 at 2215 hours (gage height, 28.25 ft); minimum discharge not determined (affected by tides); minimum gage height, 4.57 ft, Oct 2-3.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 50,700 ft³/s, Jan 11 (gage height, 28.25 ft); minimum discharge, 10,000 ft³/s, Apr 16 (gage height, 14.70 ft).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	19300	25600	29800	24000	---	---	---	---	---
2	---	---	---	19800	24800	29600	24600	---	---	---	---	---
3	---	---	---	21100	24300	29200	25500	---	---	---	---	---
4	---	---	---	22400	23400	28900	25900	---	---	---	---	---
5	---	---	---	23400	21900	28100	26000	---	---	---	---	---
6	---	---	---	25600	20200	26900	26100	---	---	---	---	---
7	---	---	---	32300	18000	25900	26200	---	---	---	---	---
8	---	---	---	36800	15600	24800	26200	---	---	---	---	---
9	---	---	---	39800	12900	24100	26200	---	---	---	---	---
10	---	---	---	43700	11300	23400	25500	---	---	---	---	---
11	---	---	---	47900	11900	22100	23400	---	---	---	---	---
12	---	---	---	48100	12700	20600	20500	---	---	---	---	---
13	---	---	---	47200	14100	19700	16300	---	---	---	---	---
14	---	---	---	45700	15900	19000	13000	---	---	---	---	---
15	---	---	---	44100	16500	17600	11300	---	---	---	---	---
16	---	---	---	42900	17400	16600	---	---	---	---	---	---
17	---	---	---	42400	19100	15300	---	---	---	---	---	---
18	---	---	---	41800	21500	16300	---	---	---	---	---	---
19	---	---	---	41400	22200	15800	---	---	---	---	---	---
20	---	---	---	40900	22100	15200	---	---	---	---	---	---
21	---	---	---	40800	20700	15100	---	---	---	---	---	---
22	---	---	13500	41300	17300	16200	---	---	---	---	---	---
23	---	---	13900	41900	17800	16600	---	---	---	---	---	---
24	---	---	13700	42700	20500	16900	---	---	---	---	---	---
25	---	---	16000	42800	20400	17900	---	---	---	---	---	---
26	---	---	16000	42000	20500	18900	---	---	---	---	---	---
27	---	---	16400	40200	25600	19900	---	---	---	---	---	---
28	---	---	17200	36900	29300	20400	---	---	---	---	---	---
29	---	---	17000	32700	---	21500	---	---	---	---	---	---
30	---	---	16900	29300	---	22500	---	---	---	---	---	---
31	---	---	17900	27000	---	23600	---	---	---	---	---	---

TRINITY RIVER BASIN

08067070 CWA CANAL NEAR DAYTON, TX

LOCATION.--Lat 29°57'40", long 94°48'36", Liberty County, Hydrologic Unit 12030203, at flume on left bank of Coastal Water Authority canal, 1,000 ft west of the Trinity River, 2 mi east of Farm Road 1409, and 7.4 mi southeast of Dayton.

PERIOD OF RECORD.--Apr 1981 to current year. Prior to Oct 1990, published as "CIWA Canal near Dayton, TX".

GAGE.--Water-stage recorder. Mean sea level of gage not determined.

REMARKS.--No estimated daily discharges. Records good. There are no known diversions between pumping plant and the gage. Water is pumped from the Trinity River for industrial and municipal use in the area.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	784	683	642	720	649	707	728	769	1060	810	985	818
2	765	681	630	738	683	686	731	804	1060	833	967	793
3	767	677	661	739	690	646	748	790	1020	896	957	784
4	769	672	647	743	688	659	774	809	980	896	959	791
5	770	675	658	705	674	708	787	896	957	867	920	795
6	796	667	659	610	659	722	705	843	860	855	892	826
7	798	695	663	657	658	718	724	824	856	818	891	841
8	778	712	664	659	656	718	701	817	865	875	826	805
9	646	717	662	680	668	716	703	801	886	915	837	768
10	732	695	657	708	569	713	703	787	916	1000	849	714
11	726	688	651	689	683	703	739	785	1010	943	846	274
12	700	673	682	678	704	691	751	784	1060	976	847	591
13	677	659	648	679	741	669	756	784	993	906	791	877
14	720	658	666	688	714	659	776	803	976	852	837	741
15	726	652	683	694	718	648	759	806	1020	801	793	812
16	738	649	683	694	722	635	747	809	950	813	774	801
17	738	649	683	694	723	643	725	813	998	937	826	790
18	737	652	722	693	690	461	609	813	1040	886	849	772
19	754	651	738	693	678	731	591	804	1040	855	773	744
20	759	653	722	693	678	740	722	844	1030	862	798	719
21	760	698	692	747	666	748	762	826	998	857	772	712
22	753	728	693	673	658	748	754	824	952	821	731	698
23	729	728	683	684	656	721	773	818	1020	806	699	693
24	743	728	656	669	659	708	763	819	1080	804	721	736
25	692	728	693	643	659	708	769	819	1030	817	786	800
26	726	728	661	659	644	706	769	827	994	858	821	814
27	723	724	649	659	641	708	769	863	942	908	854	792
28	727	725	663	659	652	708	769	899	932	1010	801	782
29	729	720	660	657	---	708	767	900	836	1030	783	780
30	732	685	654	654	---	708	769	981	816	1020	799	779
31	686	---	654	651	---	718	---	1010	---	1010	824	---
TOTAL	22880	20650	20779	21209	18880	21462	22143	25771	29177	27537	25808	22642
MEAN	738	688	670	684	674	692	738	831	973	888	833	755
MAX	798	728	738	747	741	748	787	1010	1080	1030	985	877
MIN	646	649	630	610	569	461	591	769	816	801	699	274
AC-FT	45380	40960	41220	42070	37450	42570	43920	51120	57870	54620	51190	44910

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1998, BY WATER YEAR (WY)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MEAN	442	422	405	407	415	433	465	492	520	539	507	481						
MAX	738	688	670	684	674	692	738	831	973	888	833	783						
(WY)	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1997						
MIN	226	236	219	233	226	235	275	273	303	293	237	251						
(WY)	1985	1985	1983	1983	1983	1985	1982	1986	1983	1983	1983	1983						

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1981 - 1998

ANNUAL TOTAL	256562	278938	
ANNUAL MEAN	703	764	466
HIGHEST ANNUAL MEAN			764
LOWEST ANNUAL MEAN			259
HIGHEST DAILY MEAN	835	Sep 20	1080
LOWEST DAILY MEAN	521	Apr 26	274
ANNUAL SEVEN-DAY MINIMUM	605	Feb 12	629
INSTANTANEOUS PEAK FLOW			1220
INSTANTANEOUS PEAK STAGE			3.07
ANNUAL RUNOFF (AC-FT)	508900	553300	337300
10 PERCENT EXCEEDS	790	934	713
50 PERCENT EXCEEDS	695	738	423
90 PERCENT EXCEEDS	632	657	250

08067118 LAKE CHARLOTTE NEAR ANAHUAC, TX

LOCATION.--Lat 29°52'02", long 94°42'53", Chambers County, Hydrologic Unit 12030203, on east side of Lake Charlotte, which is connected to the Trinity River by a small channel, 1.0 mi west of State Highway 563, 1.9 mi north of Interstate Highway 10, and 2.7 mi northeast of Wallisville.

DRAINAGE AREA.--55 mi².

WATER-STAGE RECORDS

PERIOD OF RECORD.--Dec 1991 to current year.

GAGE.--Water-stage recorder. Datum of gage is 5.81 ft below sea level. Satellite telemeter at station.

REMARKS.--Records fair. Lake Charlotte is a shallow natural lake within the Trinity River delta. Dec 1991 to Nov 9, 1992, the lowest stilling well intake was at gage height of 7.3 ft. Thereafter it was at gage height of 6.7 ft.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 15.9 ft Oct 22, 1994 at 1345 hours.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 12.9 ft, Jan 13-22.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	<6.7	6.9	7.6	11.7	12.2	12.1	12.0	7.4	6.8	6.9	<6.7	7.1
2	<6.7	6.7	7.8	11.8	12.1	12.1	12.0	7.3	7.0	6.9	<6.7	7.4
3	<6.7	<6.7	8.1	11.9	12.1	12.1	12.0	7.3	7.1	7.4	<6.7	7.5
4	<6.7	<6.7	8.0	12.1	12.1	12.2	12.0	7.0	7.3	7.4	6.9	7.7
5	6.8	6.7	8.2	12.1	12.1	12.2	12.0	7.2	7.2	7.1	6.9	7.7
6	6.8	<6.7	8.5	12.4	12.0	12.2	12.1	7.3	6.8	6.8	6.8	7.6
7	7.3	<6.7	8.9	12.4	11.9	12.2	12.1	7.3	6.8	<6.7	6.7	7.6
8	7.6	<6.7	9.1	12.5	11.7	12.1	12.1	7.1	7.4	6.8	6.8	7.9
9	7.8	<6.7	8.8	12.6	11.5	12.1	12.1	7.4	7.6	6.8	6.8	7.9
10	7.8	<.7	8.4	12.7	11.2	12.0	12.1	6.9	7.6	<6.7	6.7	8.5
11	8.3	<6.7	8.0	12.8	11.0	12.0	12.1	6.9	7.7	<6.7	6.7	10.1
12	8.8	<6.7	7.5	12.9	10.9	12.0	12.1	7.3	7.6	<6.7	<6.7	10.2
13	8.7	6.7	7.1	12.9	10.9	11.9	11.9	7.4	7.4	<6.7	<6.7	9.6
14	8.1	6.7	6.7	12.8	11.1	11.9	11.5	7.5	7.4	<6.7	<6.7	9.6
15	7.7	<6.7	<6.7	12.8	11.4	11.8	11.2	7.6	7.3	<6.7	<6.7	9.7
16	7.4	<6.7	<6.7	12.8	11.5	11.9	10.7	7.4	7.0	<6.7	<6.7	9.5
17	7.2	<6.7	<6.7	12.7	11.6	11.7	10.1	7.1	7.3	<6.7	<6.7	9.2
18	7.0	<6.7	<6.7	12.7	11.6	11.6	9.7	6.9	7.4	<6.7	<6.7	8.9
19	7.0	<6.7	<6.7	12.7	11.8	11.6	9.3	6.8	7.3	<6.7	<6.7	8.6
20	6.9	<6.7	6.8	12.7	11.8	11.4	8.8	6.9	7.2	<6.7	6.8	8.2
21	6.8	6.7	7.5	12.9	11.9	11.3	8.5	7.2	7.1	<6.7	7.1	7.9
22	<6.7	<6.7	8.3	12.8	11.9	11.3	8.1	7.2	6.9	<6.7	7.5	7.5
23	7.1	<6.7	9.7	12.7	11.8	11.4	7.7	7.3	6.9	<6.7	7.5	7.1
24	7.3	6.7	10.4	12.7	11.8	11.4	7.5	7.2	6.9	<6.7	7.4	7.0
25	7.2	6.7	10.9	12.7	11.8	11.5	7.7	7.2	6.9	<6.7	7.2	7.2
26	6.7	6.7	11.3	12.7	11.9	11.6	7.7	7.2	7.1	<6.7	7.1	7.5
27	<6.7	<6.7	11.4	12.7	11.9	11.7	7.7	7.2	7.2	<6.7	6.8	7.4
28	<6.7	7.1	11.5	12.6	12.0	11.7	7.3	7.1	7.5	<6.7	<6.7	7.3
29	6.9	7.0	11.6	12.5	---	11.8	7.3	7.1	7.4	<6.7	<6.7	7.3
30	7.1	7.3	11.6	12.4	---	12.0	7.4	7.0	7.2	<6.7	6.7	6.8
31	7.1	---	11.6	12.3	---	12.0	---	6.9	---	<6.7	6.9	---
MAX	8.8	7.3	11.6	12.9	12.2	12.2	12.1	7.6	7.7	7.4	7.5	10.2

< Actual value is known to be less than the value shown

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct 1994 to current year.
 WATER TEMPERATURE: Dec 1991 to current year.

INSTRUMENTATION.-- Since Jun 1995, a water-quality monitoring system continuously records water temperature and specific conductance at this station.

REMARKS.-- Interruption in the record was due to malfunctions of the instrumentation.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 4,560 microsiemens, Nov 17, 1997; minimum recorded, 46 microsiemens, Oct 20, 1994.
 WATER TEMPERATURES: Maximum recorded, 38.7°C, Jul 18, 1998; minimum recorded, 4.1°C, Nov 17, 1998.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 2,530 microsiemens, Sep 12; minimum, 187 microsiemens, Dec 25.
 WATER TEMPERATURE: Maximum, 38.7°C, Jul 18; minimum, 4.1°C, Nov 17.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	907	803	845	---	---	---	450	436	448	362	322	347
2	917	749	847	---	---	---	386	365	373	375	331	350
3	920	619	723	---	---	---	395	335	374	375	350	363
4	685	549	636	---	---	---	406	362	386	378	372	375
5	700	611	646	---	---	---	399	334	375	374	369	371
6	680	588	639	---	---	---	343	325	336	376	348	361
7	681	578	620	---	---	---	350	283	328	350	274	310
8	649	547	570	---	---	---	314	296	305	323	277	303
9	979	592	748	---	---	---	359	311	323	299	267	281
10	986	962	971	---	---	---	382	334	345	296	263	280
11	991	693	878	---	---	---	411	340	366	316	295	304
12	785	587	673	---	---	---	401	338	347	328	316	323
13	660	543	576	---	---	---	411	340	352	337	324	331
14	759	613	714	---	---	---	418	347	382	337	327	333
15	747	596	691	---	---	---	459	365	414	332	327	329
16	780	457	644	---	---	---	478	384	438	338	328	333
17	807	457	641	---	---	---	429	398	419	339	336	338
18	810	579	701	---	---	---	428	381	405	338	332	335
19	731	661	691	---	---	---	452	408	423	333	330	331
20	694	669	685	---	---	---	455	359	387	336	332	334
21	696	662	684	486	436	467	455	320	340	334	310	330
22	690	616	651	475	451	463	370	334	347	310	277	296
23	667	621	643	506	454	483	373	263	309	297	263	281
24	664	403	539	533	477	501	333	222	290	276	251	267
25	591	418	528	514	447	471	222	187	199	277	269	273
26	531	440	498	514	464	487	272	192	246	276	265	269
27	563	462	512	495	459	478	264	234	251	273	265	269
28	601	545	580	490	460	471	296	239	267	274	266	269
29	623	563	608	459	411	447	340	233	275	271	264	267
30	573	550	561	469	429	451	345	316	338	272	266	270
31	---	---	---	---	---	---	322	301	307	273	268	271
MONTH	---	---	---	---	---	---	478	187	345	378	251	313

TRINITY RIVER BASIN

08067118 LAKE CHARLOTTE NEAR ANAHUAC, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	275	271	272	284	276	281	321	317	319	378	355	364
2	275	272	274	283	275	279	325	319	322	387	352	368
3	284	273	276	284	273	277	322	318	320	398	365	385
4	288	278	283	282	274	280	324	321	323	406	368	386
5	289	281	284	284	281	282	327	323	324	449	373	394
6	295	287	289	297	283	291	333	326	330	481	370	418
7	298	289	293	301	292	298	335	332	333	384	365	372
8	296	290	293	307	298	303	336	330	334	395	379	386
9	300	291	296	309	303	307	336	332	334	407	385	399
10	304	293	297	311	308	310	335	332	334	425	380	397
11	299	293	296	314	307	309	340	333	336	425	378	413
12	304	295	297	322	310	313	347	339	341	479	379	411
13	304	295	298	316	313	314	342	338	341	471	407	452
14	304	290	298	318	311	314	345	340	342	441	399	418
15	301	292	297	322	312	315	346	339	341	443	402	418
16	292	285	288	319	301	308	343	336	340	437	406	415
17	294	285	289	326	302	309	341	336	338	438	410	419
18	300	293	295	322	306	310	339	335	337	472	414	441
19	301	296	298	310	295	305	338	335	336	442	409	423
20	299	294	296	307	288	297	341	335	337	421	407	415
21	298	289	295	304	294	298	347	338	340	455	402	426
22	297	288	291	306	300	303	344	322	335	456	402	434
23	300	291	294	307	303	304	340	327	334	445	408	423
24	300	287	293	316	305	309	361	337	345	455	424	439
25	288	265	276	314	311	312	403	331	351	447	428	439
26	280	269	272	318	312	315	398	349	371	433	408	420
27	281	275	277	319	315	317	369	348	358	457	415	432
28	289	278	285	320	317	319	373	345	358	465	433	451
29	---	---	---	319	317	318	374	347	359	483	437	459
30	---	---	---	321	317	319	369	351	361	453	440	447
31	---	---	---	332	315	317	---	---	---	473	449	459
MONTH	304	265	289	332	273	304	403	317	339	483	352	417
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	519	466	490	510	468	497	599	579	589	514	468	493
2	519	502	512	512	492	502	607	588	600	489	473	481
3	512	494	502	526	490	506	603	586	594	491	456	477
4	511	489	502	525	480	505	603	588	597	490	436	459
5	496	469	492	504	480	494	605	589	599	471	435	457
6	486	469	475	496	440	456	601	592	598	497	462	482
7	500	483	490	451	441	445	---	---	---	505	487	494
8	509	492	499	452	437	445	---	---	---	492	471	478
9	519	462	500	472	445	453	---	---	---	487	466	474
10	482	442	461	471	438	455	---	---	---	487	477	482
11	476	432	453	495	444	469	---	---	---	1000	440	488
12	477	422	450	501	457	490	---	---	---	2530	1000	1880
13	479	426	443	506	489	500	---	---	---	2380	1850	2000
14	489	462	475	512	474	497	---	---	---	2060	1760	1890
15	514	484	497	487	463	475	---	---	---	1800	1000	1540
16	522	504	511	496	465	486	---	---	---	1240	881	1010
17	536	506	521	514	476	502	---	---	---	1110	823	982
18	513	485	496	490	462	473	---	---	---	1330	696	971
19	513	484	497	491	481	485	---	---	---	1260	600	914
20	507	458	481	503	488	496	---	---	---	1220	998	1110
21	508	489	501	509	494	500	---	---	---	1110	949	1050
22	513	488	503	536	505	529	---	---	---	1100	889	1040
23	529	510	522	545	534	538	457	421	445	1060	536	681
24	529	518	525	593	543	578	445	420	434	1030	509	830
25	563	514	536	593	531	552	481	438	455	1210	824	1010
26	552	529	543	564	545	555	488	456	469	1440	1010	1240
27	556	538	545	568	544	554	478	439	458	1260	1170	1190
28	546	481	510	576	553	566	453	439	449	1210	1160	1180
29	632	479	520	592	560	576	460	449	453	1180	914	1070
30	626	492	573	633	586	612	568	460	476	1040	884	957
31	---	---	---	616	580	594	498	468	480	---	---	---
MONTH	632	422	501	633	437	509	---	---	---	2530	435	927

TRINITY RIVER BASIN

08067118 LAKE CHARLOTTE NEAR ANAHUAC, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	28.0	25.4	26.5	24.6	20.0	22.7	15.1	14.1	14.3	10.6	10.1	10.3
2	26.5	24.9	26.2	21.9	16.5	19.1	14.7	14.0	14.3	11.8	10.6	11.2
3	26.7	24.7	24.9	21.0	14.2	17.2	16.6	14.7	15.5	12.6	11.4	12.1
4	25.8	23.0	25.0	21.9	12.5	17.1	15.1	13.1	14.1	13.1	12.4	12.9
5	26.9	24.3	25.9	20.8	18.3	19.4	14.4	11.9	13.0	13.5	13.1	13.3
6	26.9	24.6	26.1	19.5	14.4	17.5	13.1	11.3	12.0	15.0	13.2	14.0
7	26.8	24.1	25.2	21.1	10.6	15.3	11.7	11.3	11.5	15.0	13.4	14.3
8	25.7	23.5	24.5	22.2	9.6	15.7	13.7	11.3	12.4	13.7	12.8	13.3
9	26.3	25.0	25.5	20.2	13.9	16.7	15.8	13.2	14.3	13.4	12.5	12.8
10	26.1	25.0	25.5	18.0	14.6	16.3	15.5	13.1	14.4	13.3	12.1	12.7
11	25.4	25.0	25.2	17.3	12.3	14.7	13.1	9.2	10.5	13.6	12.9	13.1
12	26.3	24.7	25.3	15.6	14.2	14.9	9.2	7.7	8.3	14.1	13.4	13.7
13	25.9	22.5	24.6	16.5	14.0	15.1	9.2	6.4	7.8	14.0	13.7	13.8
14	22.5	19.5	20.7	18.0	13.4	15.5	10.3	4.9	7.7	14.4	13.9	14.1
15	20.6	17.8	19.1	15.4	7.9	11.2	12.0	6.1	9.1	14.3	13.1	13.5
16	20.4	16.9	18.5	15.9	5.2	9.6	14.5	7.0	10.9	13.5	12.6	13.0
17	22.1	17.0	19.3	9.6	4.1	7.4	16.4	10.1	13.3	13.1	12.4	12.7
18	22.5	17.5	20.1	10.0	8.7	9.3	16.4	9.9	13.3	13.8	12.8	13.4
19	24.0	18.5	21.5	13.3	9.8	11.4	19.0	12.0	15.2	13.6	12.8	13.1
20	25.6	20.7	23.1	17.7	11.7	14.7	17.7	15.2	16.3	13.4	12.6	13.0
21	27.0	21.2	24.1	18.5	16.4	17.4	18.2	16.1	17.3	14.5	13.4	13.7
22	24.7	20.0	21.8	18.7	13.6	16.0	16.2	14.0	15.2	14.7	14.2	14.5
23	21.7	17.7	19.8	19.1	12.3	15.4	16.4	14.6	15.5	14.2	13.3	13.7
24	25.8	20.8	22.9	18.0	11.8	14.9	15.4	14.2	14.9	13.3	12.2	12.6
25	26.1	23.8	24.8	19.1	14.9	17.0	14.2	13.4	13.8	12.7	12.0	12.4
26	24.6	14.6	18.6	19.7	17.0	18.4	14.0	11.7	13.2	13.5	12.6	13.0
27	19.4	12.3	15.3	22.7	18.2	20.1	11.8	11.1	11.5	13.6	12.4	13.0
28	14.2	11.5	13.1	20.7	19.0	20.1	11.3	10.3	11.0	13.4	12.6	13.0
29	15.9	13.2	14.5	21.6	17.9	19.2	10.3	9.4	9.9	14.0	12.6	13.1
30	19.8	15.3	17.3	17.6	14.0	15.9	11.0	10.0	10.5	14.8	13.1	13.5
31	24.1	18.1	21.4	---	---	---	10.7	9.9	10.3	14.1	13.5	13.8
MONTH	28.0	11.5	22.1	24.6	4.1	15.8	19.0	4.9	12.6	15.0	10.1	13.1
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	14.8	14.0	14.4	15.6	14.2	14.8	21.2	19.4	20.0	27.6	22.1	24.8
2	14.5	13.9	14.2	15.4	14.3	14.9	19.9	18.6	19.2	28.3	24.0	26.0
3	14.5	13.5	14.0	15.0	14.2	14.4	20.6	19.0	19.7	28.9	24.4	26.4
4	14.2	13.3	13.6	15.5	14.3	14.9	20.0	18.9	19.5	30.5	25.3	27.6
5	13.7	13.0	13.2	17.2	15.4	16.2	19.8	18.6	19.2	28.3	25.3	26.9
6	13.0	12.3	12.7	17.3	16.7	17.1	19.7	18.8	19.3	28.6	24.8	26.5
7	13.1	11.8	12.5	17.3	16.5	16.8	19.4	18.9	19.1	30.1	25.2	27.4
8	13.0	12.3	12.6	17.1	14.2	15.8	22.8	19.0	20.4	30.6	26.9	28.4
9	14.3	12.6	13.3	14.5	13.4	13.9	21.5	19.9	20.6	30.9	25.7	28.0
10	14.9	14.2	14.5	13.8	12.6	13.2	21.0	19.5	20.1	29.9	24.8	27.5
11	15.0	13.6	14.4	13.1	12.1	12.4	21.0	19.5	20.2	31.8	23.1	27.3
12	14.6	13.9	14.2	12.8	12.3	12.5	20.7	19.5	20.0	30.6	25.3	27.8
13	14.8	14.1	14.3	12.8	12.4	12.6	20.1	19.5	19.8	28.1	25.8	26.7
14	14.6	14.1	14.4	13.1	12.7	12.8	21.0	20.1	20.4	26.7	25.2	26.0
15	14.2	13.3	13.8	13.8	13.0	13.3	22.0	20.9	21.4	28.8	24.9	26.7
16	13.3	12.6	12.8	14.4	13.6	14.1	23.7	21.6	22.1	31.1	26.7	28.6
17	13.6	12.2	12.9	15.0	14.3	14.5	23.5	20.2	21.4	32.1	26.2	29.0
18	13.1	12.4	12.7	15.6	14.4	14.8	20.2	18.4	19.1	32.9	26.3	29.4
19	14.9	12.8	13.9	17.7	14.6	16.1	20.0	17.6	18.6	32.7	25.9	29.2
20	14.3	13.4	13.7	16.0	14.6	15.3	21.2	17.6	19.2	32.1	26.3	29.0
21	14.6	13.7	14.0	16.1	14.6	15.3	22.1	19.4	20.5	30.5	26.0	27.9
22	14.2	13.3	13.7	17.1	15.0	15.9	22.7	18.3	20.2	29.7	25.3	27.3
23	14.3	13.0	13.5	17.1	15.7	16.5	24.6	18.3	21.5	29.0	25.2	27.2
24	15.4	14.1	14.6	17.7	15.7	16.7	25.2	20.0	22.4	29.9	25.9	27.9
25	15.9	14.7	15.3	18.0	16.8	17.4	24.4	20.3	22.3	30.7	26.3	28.5
26	16.9	15.7	16.1	18.0	16.9	17.5	22.6	21.1	21.9	31.9	26.9	29.3
27	16.2	15.6	15.8	19.5	17.5	18.5	24.2	20.7	22.1	31.3	27.3	29.2
28	15.6	14.7	15.4	19.3	17.9	18.7	26.0	21.5	23.6	34.4	27.3	30.7
29	---	---	---	20.1	18.8	19.5	23.2	19.3	21.4	38.0	29.2	32.8
30	---	---	---	21.3	19.3	20.3	27.5	19.2	23.0	35.8	29.7	32.7
31	---	---	---	21.8	20.0	21.0	---	---	---	35.7	29.3	32.3
MONTH	16.9	11.8	13.9	21.8	12.1	15.7	27.5	17.6	20.6	38.0	22.1	28.2

TRINITY RIVER BASIN

08067118 LAKE CHARLOTTE NEAR ANAHUAC, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	35.2	28.3	31.5	37.2	29.4	32.9	38.4	27.9	32.5	31.6	27.6	29.2
2	34.0	27.4	30.4	35.3	29.9	32.2	38.5	28.4	32.9	31.4	27.2	29.4
3	33.8	28.0	30.6	32.3	29.4	30.4	36.0	29.2	32.4	34.8	28.4	31.4
4	32.3	28.3	30.1	33.1	28.3	30.4	34.0	29.5	32.0	33.7	30.2	31.9
5	31.9	28.9	29.9	34.8	29.4	31.8	37.6	29.8	33.3	31.8	28.9	30.4
6	29.9	24.9	27.1	36.0	29.3	32.4	33.3	29.4	31.9	30.2	28.2	29.0
7	31.7	23.3	27.1	36.4	29.2	32.8	29.8	29.7	29.7	29.2	26.6	28.0
8	31.1	26.6	28.6	36.4	29.4	32.6	---	---	---	28.6	26.8	27.8
9	32.4	27.3	29.7	35.9	29.6	32.5	31.1	31.1	31.1	28.1	26.6	27.3
10	33.3	28.5	30.8	36.4	29.3	32.3	---	---	---	26.6	24.6	25.5
11	32.3	28.4	30.3	36.1	28.9	32.1	---	---	---	27.0	24.4	24.9
12	32.2	28.9	30.3	35.8	28.7	31.8	---	---	---	27.2	25.8	26.6
13	32.5	28.4	30.0	32.5	28.5	30.4	---	---	---	26.9	26.2	26.5
14	32.7	27.7	29.8	34.8	28.1	30.3	---	---	---	27.2	26.1	26.7
15	32.4	28.0	30.0	35.3	27.2	30.6	---	---	---	26.1	25.7	25.9
16	35.0	28.4	31.2	37.8	28.4	32.4	---	---	---	26.7	25.6	26.0
17	33.4	29.1	31.2	38.5	27.9	31.9	---	---	---	27.2	25.6	26.3
18	33.8	28.8	31.1	38.7	25.9	31.8	---	---	---	27.6	26.2	26.8
19	33.6	29.4	31.2	38.1	28.1	32.5	30.5	30.5	30.5	28.6	26.8	27.5
20	33.5	28.6	30.9	38.5	28.5	32.9	---	---	---	32.4	28.2	30.0
21	34.2	28.3	30.9	35.8	28.9	32.3	---	---	---	32.8	29.6	31.1
22	34.6	28.8	31.5	35.9	28.8	32.1	---	---	---	31.4	29.9	30.6
23	35.8	29.0	32.1	36.7	28.8	32.3	28.8	26.7	27.4	32.3	27.4	29.6
24	35.4	29.5	32.3	36.1	29.0	32.3	29.7	27.1	28.3	30.0	27.6	28.9
25	35.4	29.5	32.0	36.2	29.4	32.4	31.6	27.6	29.4	31.8	27.5	29.4
26	32.2	29.0	30.5	36.3	29.3	32.5	33.3	28.9	31.1	30.0	28.4	29.1
27	33.0	29.2	31.0	37.4	29.4	32.7	37.4	29.9	33.4	32.0	27.5	29.6
28	31.3	27.8	29.1	36.8	29.1	32.2	36.6	30.0	33.8	32.0	27.9	29.9
29	32.5	27.0	29.3	35.8	28.4	31.6	36.9	36.3	36.8	32.7	28.1	30.2
30	34.0	28.9	31.3	34.2	27.7	30.9	33.9	30.9	32.1	36.0	26.8	31.4
31	---	---	---	36.5	28.0	31.8	32.5	30.8	31.4	---	---	---
MONTH	35.8	23.3	30.4	38.7	25.9	31.9	---	---	---	36.0	24.4	28.6

TRINITY RIVER BASIN

08067252 TRINITY RIVER AT WALLISVILLE, TX

LOCATION.--Lat 29°50'10", long 94°44'57", Chambers County, Hydrologic Unit 12030203, on the left bank at the U.S. Army Corps of Engineers boat ramp which is located 3.2 miles west along Interstate 10 highway from the the Interstate overpass over Farm Road 563 and 0.25 miles south of the Corp of Engineers office and .50 miles west of Wallisville, TX.

DRAINAGE AREA.--17,796 mi².

WATER-STAGE RECORDS

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

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

REMARKS.--Records fair. Mostly tidal.

EXTREMES FOR PERIOD OF RECORD.--Maximum, 7.7 ft Oct 22, 1994 at 0300 hours; minimum, less than -.1 ft at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum, 5.8 ft Jan 13 at 1200 hours; minimum, less than -.1 ft at times during the year.

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	.2	<-.1	1.1	-.1	1.3	.9	4.8	4.7	5.4	5.3	5.2	5.1
2	.6	<-.1	.1	<-.1	1.6	1.0	4.9	4.8	5.3	5.2	5.3	5.1
3	.6	.0	.1	<-.1	1.9	1.0	5.0	4.8	5.2	5.1	5.4	5.2
4	.7	.1	.3	<-.1	1.1	.8	5.2	5.0	5.3	5.1	5.4	5.2
5	.9	.1	1.3	.3	1.6	1.1	5.2	5.1	5.4	5.1	5.5	5.2
6	1.0	.3	.6	<-.1	1.8	1.5	5.4	5.1	5.2	5.0	5.4	5.2
7	1.4	.8	-.1	<-.1	2.4	1.6	5.4	5.3	5.2	5.0	5.4	5.2
8	1.9	1.2	.2	<-.1	2.6	1.9	5.4	5.3	5.1	4.8	5.4	5.1
9	2.2	.9	.5	<-.1	2.0	1.6	5.6	5.4	5.0	4.5	5.3	5.1
10	1.9	1.1	.3	<-.1	1.7	.8	5.7	5.5	4.6	4.2	5.3	5.1
11	2.9	1.3	.3	<-.1	.8	.3	5.7	5.6	4.2	3.8	5.3	5.1
12	3.1	2.0	.8	-.1	.4	.0	5.8	5.7	4.0	3.8	5.3	5.1
13	2.6	1.0	.8	.0	.3	-.1	5.8	5.7	4.1	3.9	5.2	5.0
14	1.0	.0	.6	<-.1	.3	<-.1	5.8	5.7	4.4	4.1	5.2	5.0
15	1.3	.3	.3	<-.1	.1	<-.1	5.7	5.6	4.7	4.3	5.1	4.9
16	1.2	.3	-.1	<-.1	.2	<-.1	5.6	5.5	4.8	4.6	5.2	4.9
17	1.1	.2	.3	-.1	.2	<-.1	5.6	5.5	4.8	4.7	5.1	4.8
18	1.1	.1	.4	<-.1	.1	<-.1	5.6	5.5	4.9	4.7	4.8	4.7
19	1.2	.1	.6	<-.1	.2	<-.1	5.6	5.5	5.0	4.8	4.8	4.6
20	1.1	.0	.6	<-.1	1.3	.1	5.6	5.5	5.0	4.9	4.6	4.3
21	.9	<-.1	.9	<-.1	1.7	.9	5.8	5.5	5.1	4.9	4.4	4.3
22	.4	<-.1	.3	<-.1	3.1	1.3	5.8	5.6	5.2	4.9	4.5	4.3
23	1.8	<-.1	.3	<-.1	3.5	3.1	5.6	5.5	5.0	4.8	4.6	4.3
24	1.9	.3	.7	.2	3.6	3.3	5.6	5.5	4.9	4.8	4.6	4.4
25	1.1	.3	.7	.1	4.0	3.6	5.6	5.5	5.1	4.9	4.7	4.5
26	.5	<-.1	.9	.0	4.1	4.0	5.6	5.5	5.2	5.0	5.0	4.7
27	.0	<-.1	.9	-.1	4.3	4.1	5.6	5.5	5.1	5.0	5.0	4.8
28	.7	-.1	1.5	.5	4.4	4.3	5.6	5.4	5.2	5.1	5.0	4.9
29	1.2	.4	1.2	.0	4.6	4.4	5.6	5.4	---	---	5.1	4.9
30	1.2	.5	.9	.6	4.7	4.5	5.5	5.3	---	---	5.4	5.0
31	1.1	.2	---	---	4.7	4.6	5.4	5.3	---	---	5.3	5.0
MONTH	3.1	-.1	1.5	-.1	4.7	-.1	5.8	4.7	5.4	3.8	5.5	4.3

TRINITY RIVER BASIN

08067252 TRINITY RIVER AT WALLISVILLE, TX--Continued

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	5.1	5.0	1.5	.7	1.1	.1	1.0	.4	.6	<.1	1.7	.4
2	5.3	5.0	1.5	.5	1.5	.7	1.0	.5	.6	<.1	2.2	.8
3	5.2	5.1	1.5	.6	1.5	.7	2.4	.7	1.3	.1	2.1	1.0
4	5.2	5.0	1.0	<.1	1.7	1.0	1.7	.6	1.6	.4	2.2	.9
5	5.2	5.1	1.5	.7	1.4	.4	1.3	.5	1.2	.3	2.3	1.0
6	5.3	5.2	1.4	1.0	.4	.1	.9	<.1	1.2	<.1	1.8	.8
7	5.3	5.2	1.5	.8	1.2	.1	.9	<.1	1.0	<.1	2.4	.9
8	5.3	5.2	1.5	.6	2.5	.7	1.0	<.1	1.2	<.1	2.6	1.7
9	5.2	5.1	1.9	.8	2.3	1.3	1.2	<.1	1.2	.2	2.7	1.5
10	5.2	5.1	.8	.1	2.1	1.0	.8	<.1	1.1	<.1	3.7	2.4
11	5.3	5.1	1.4	<.1	2.3	1.2	1.0	<.1	1.0	.2	5.2	3.0
12	5.3	5.2	1.7	.6	1.9	.8	.9	<.1	1.0	.3	5.0	2.8
13	5.3	5.0	1.8	.7	1.5	.5	.9	<.1	.8	<.1	3.5	2.2
14	5.1	4.6	2.1	1.0	1.7	.7	.9	<.1	.8	<.1	3.7	2.3
15	4.7	4.2	2.0	1.2	1.5	.6	.5	<.1	.9	<.1	3.2	2.3
16	4.3	3.6	1.5	.5	1.2	.1	.6	<.1	1.0	<.1	3.0	2.3
17	3.6	3.0	1.3	.1	1.7	1.0	.6	<.1	1.1	<.1	2.6	2.2
18	3.1	2.7	1.1	<.1	1.7	1.2	.3	<.1	1.2	<.1	2.4	1.9
19	2.8	2.1	1.2	<.1	1.6	.7	.6	<.1	1.0	<.1	2.4	1.7
20	2.2	1.6	1.5	.4	1.5	.5	.7	<.1	1.3	<.1	2.1	1.5
21	2.0	1.1	1.4	.9	1.5	.3	.8	<.1	2.0	.2	1.8	1.2
22	1.2	.6	1.6	.8	1.1	.2	.9	<.1	2.4	1.2	1.7	.7
23	1.0	.5	1.7	.6	1.2	.1	1.2	<.1	1.9	.9	1.3	.3
24	1.2	.7	1.5	.4	1.2	.1	1.0	<.1	1.6	.6	1.3	.7
25	2.2	1.1	1.6	.4	1.5	.1	.9	.1	1.4	.6	1.8	1.0
26	2.1	.9	1.6	.2	1.6	.5	.7	<.1	1.4	.6	2.2	1.3
27	1.9	.9	1.7	.4	1.6	.7	.7	.1	1.1	.2	2.0	.4
28	.9	.2	1.5	.1	2.4	1.0	.8	.2	.9	<.1	1.7	.8
29	1.8	.1	1.5	.2	1.5	.1	.9	.3	.9	<.1	2.1	.1
30	1.7	.8	1.3	.1	1.3	.7	1.0	.1	1.2	.1	1.0	.1
31	---	---	1.2	<.1	---	---	.7	.1	1.4	.1	---	---
MONTH	5.3	.1	2.1	.1	2.5	.1	2.4	.1	2.4	.1	5.2	.1
YEAR	5.8	<-.1										

< Actual value is known to be less than the value shown

TRINITY RIVER BASIN

08067252 TRINITY RIVER AT WALLISVILLE, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	291	287	289	290	276	286	328	327	327	383	371	377
2	294	289	291	292	285	289	341	328	331	382	369	374
3	298	293	295	304	292	296	347	331	337	375	367	371
4	302	297	300	305	300	303	332	330	331	388	368	371
5	300	296	297	309	305	307	334	331	333	394	366	373
6	304	298	302	310	309	309	346	334	336	397	367	375
7	306	304	305	314	310	313	336	335	336	375	371	372
8	308	306	307	317	311	313	337	336	336	380	372	376
9	310	308	309	316	311	315	340	336	337	380	375	377
10	310	308	309	321	316	318	343	337	338	385	377	380
11	310	300	306	318	314	316	344	338	340	386	382	384
12	300	291	295	317	314	315	349	342	344	390	383	385
13	291	271	281	316	314	315	347	342	343	389	383	385
14	300	279	291	318	315	316	348	341	344	392	385	388
15	302	298	301	316	315	315	350	342	344	394	388	390
16	303	301	302	315	310	313	347	343	344	401	391	394
17	304	302	304	315	313	314	348	343	346	396	390	393
18	306	303	305	316	301	313	349	346	348	398	392	394
19	303	298	300	301	289	293	352	348	349	400	392	396
20	312	301	305	306	293	301	352	349	350	400	394	397
21	313	304	306	307	304	306	353	350	351	401	391	396
22	304	298	300	314	307	309	358	351	354	395	391	393
23	300	292	296	317	314	314	361	353	356	398	390	394
24	293	270	281	317	315	316	373	360	362	405	393	398
25	291	277	284	322	317	320	372	363	365	404	394	399
26	293	291	292	330	321	322	368	364	366	434	398	410
27	294	291	293	323	320	321	372	364	368	428	403	414
28	291	267	274	324	322	323	375	369	371	477	405	420
29	---	---	---	324	322	323	384	373	377	464	409	423
30	---	---	---	329	322	326	392	377	380	450	408	423
31	---	---	---	329	326	328	---	---	---	437	409	421
MONTH	313	267	297	330	276	312	392	327	348	477	366	392
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	451	413	425	394	382	387	2120	1160	1310	401	394	398
2	1020	441	614	399	388	391	1160	899	1020	403	395	399
3	1650	653	1090	390	383	386	1320	897	1160	490	401	433
4	2770	1280	1960	393	382	385	1960	1040	1460	880	407	582
5	2480	593	1160	394	385	388	1040	450	576	612	406	427
6	667	469	516	401	390	394	450	417	425	415	402	407
7	486	474	479	400	390	394	419	409	414	411	406	409
8	633	467	523	396	381	388	420	406	413	473	409	414
9	696	468	548	390	384	387	422	397	404	579	407	444
10	468	403	418	391	385	389	402	383	392	6090	471	2940
11	426	400	410	393	384	389	394	383	389	17000	2500	10100
12	412	395	403	395	384	389	401	376	385	2990	728	1250
13	410	393	401	395	386	390	393	381	387	1120	607	822
14	409	391	400	395	387	392	403	391	397	630	351	490
15	406	385	393	397	389	393	402	395	399	500	392	437
16	410	391	399	395	386	391	401	395	398	434	364	395
17	410	395	402	393	384	389	400	395	398	388	334	364
18	395	379	385	398	386	391	402	397	400	377	336	359
19	388	377	382	396	388	392	404	393	398	372	272	330
20	399	384	392	401	387	393	396	387	392	402	280	339
21	396	386	391	397	388	392	393	391	392	439	382	412
22	421	387	394	399	391	394	396	391	392	475	385	422
23	400	391	393	412	392	397	397	389	392	500	439	463
24	403	383	389	416	397	401	395	387	391	474	363	429
25	389	383	386	539	399	441	396	390	393	363	257	310
26	399	384	391	606	404	496	395	382	388	315	265	291
27	394	382	387	937	430	641	405	393	398	311	252	266
28	391	375	382	1790	712	1100	405	390	397	325	296	308
29	383	370	375	2170	1490	1780	400	391	396	385	325	339
30	383	376	379	2700	1740	2180	397	389	392	449	385	411
31	---	---	---	2850	1860	2550	397	392	395	---	---	---
MONTH	2770	370	519	2850	381	599	2120	376	511	17000	252	846

TRINITY RIVER BASIN

08067252 TRINITY RIVER AT WALLISVILLE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN												
													OCTOBER			NOVEMBER			DECEMBER			JANUARY		
													MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	27.4	26.5	26.9	---	---	---	---	---	---	11.0	10.5	10.8												
2	27.7	26.9	27.2	---	---	---	---	---	---	11.8	11.0	11.4												
3	27.5	26.9	27.2	---	---	---	15.3	15.2	15.3	12.6	11.8	12.2												
4	27.6	26.7	27.1	---	---	---	15.3	14.8	15.0	12.9	12.6	12.8												
5	27.4	27.0	27.2	---	---	---	14.9	14.2	14.4	13.3	12.9	13.1												
6	27.5	26.9	27.1	---	---	---	14.2	13.3	13.6	---	---	---												
7	27.2	26.5	26.9	---	---	---	13.3	12.9	13.0	---	---	---												
8	26.8	26.4	26.7	---	---	---	13.0	12.7	12.8	---	---	---												
9	26.7	26.3	26.5	---	---	---	13.9	13.0	13.4	---	---	---												
10	26.5	26.3	26.4	---	---	---	14.3	13.9	14.0	---	---	---												
11	26.5	26.3	26.4	---	---	---	14.1	12.5	13.3	---	---	---												
12	26.3	25.7	25.9	---	---	---	12.5	11.2	11.8	---	---	---												
13	26.0	24.6	25.6	---	---	---	11.2	10.5	10.8	---	---	---												
14	24.6	23.3	23.7	---	---	---	10.7	10.2	10.5	---	---	---												
15	23.3	22.0	22.3	---	---	---	10.6	10.1	10.4	---	---	---												
16	---	---	---	---	---	---	11.0	10.3	10.6	---	---	---												
17	---	---	---	---	---	---	11.4	10.8	11.0	---	---	---												
18	---	---	---	---	---	---	12.1	11.2	11.5	---	---	---												
19	---	---	---	---	---	---	12.6	11.9	12.2	---	---	---												
20	---	---	---	---	---	---	13.0	12.5	12.7	---	---	---												
21	---	---	---	---	---	---	13.9	13.0	13.6	---	---	---												
22	---	---	---	---	---	---	14.7	13.9	14.4	---	---	---												
23	---	---	---	---	---	---	14.3	14.0	14.1	---	---	---												
24	---	---	---	---	---	---	14.1	13.5	13.7	---	---	---												
25	---	---	---	---	---	---	13.5	12.9	13.2	---	---	---												
26	---	---	---	---	---	---	12.9	12.1	12.6	---	---	---												
27	---	---	---	---	---	---	12.1	11.4	11.7	---	---	---												
28	---	---	---	---	---	---	11.4	11.1	11.2	---	---	---												
29	---	---	---	---	---	---	11.1	10.4	10.7	13.5	13.0	13.2												
30	---	---	---	---	---	---	10.7	10.2	10.5	13.8	13.1	13.4												
31	---	---	---	---	---	---	10.9	10.4	10.6	14.0	13.5	13.7												
MONTH	---	---	---	---	---	---	---	---	---	---	---	---												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN												
													FEBRUARY			MARCH			APRIL			MAY		
													MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	14.0	13.8	13.9	14.7	14.1	14.4	18.8	18.3	18.6	24.0	22.2	22.9												
2	13.9	13.1	13.5	14.6	14.0	14.3	18.6	18.4	18.5	24.4	22.9	23.6												
3	13.3	12.8	13.1	14.6	14.0	14.3	19.0	18.4	18.6	24.9	23.5	24.1												
4	13.4	12.9	13.1	14.8	14.3	14.5	19.0	18.4	18.7	26.1	24.3	25.0												
5	13.2	12.7	12.9	15.8	14.8	15.2	19.2	18.5	18.8	25.9	25.0	25.5												
6	12.8	12.4	12.6	16.0	15.6	15.8	19.1	18.8	18.9	26.2	25.3	25.6												
7	12.7	12.1	12.5	16.2	15.9	16.0	19.6	18.9	19.2	26.4	25.7	25.9												
8	12.8	12.2	12.5	16.2	15.2	15.9	20.1	19.5	19.7	27.2	26.1	26.5												
9	13.4	12.6	12.9	15.2	13.9	14.3	20.2	19.7	19.9	27.5	26.5	26.9												
10	13.8	13.4	13.7	13.9	13.2	13.6	20.2	19.3	19.7	27.1	26.1	26.5												
11	14.2	13.5	13.8	13.6	12.9	13.3	20.6	19.8	20.1	27.3	26.7	27.0												
12	14.0	13.6	13.8	13.3	12.9	13.0	20.3	19.7	20.0	27.8	26.7	27.2												
13	14.1	13.4	13.7	12.9	12.6	12.8	20.1	19.7	19.9	27.5	26.8	26.9												
14	13.8	13.5	13.7	13.2	12.8	13.0	20.3	19.7	20.0	26.8	26.6	26.7												
15	13.7	13.1	13.3	13.7	13.0	13.3	21.2	20.3	20.7	27.4	26.4	26.8												
16	13.1	12.6	12.9	14.1	13.7	13.9	21.9	21.2	21.5	27.8	26.7	27.2												
17	12.9	12.3	12.6	15.0	14.0	14.5	21.9	20.9	21.4	28.4	27.0	27.6												
18	13.0	12.4	12.7	15.7	14.9	15.3	20.9	19.4	20.0	28.5	27.1	27.7												
19	13.4	12.8	13.1	16.7	15.7	16.2	19.4	18.7	19.1	28.4	27.1	27.7												
20	13.9	13.1	13.5	16.4	15.3	15.7	20.1	18.9	19.4	28.3	27.3	27.8												
21	13.7	13.5	13.6	15.4	14.4	14.9	20.6	19.8	20.1	28.3	27.3	27.8												
22	13.8	13.6	13.7	15.3	14.6	14.9	21.0	20.0	20.4	28.6	27.5	28.0												
23	13.7	13.3	13.5	15.3	14.6	14.9	21.3	20.4	20.8	28.5	27.8	28.1												
24	14.3	13.2	13.7	15.9	15.0	15.4	21.5	20.7	21.1	28.6	27.8	28.2												
25	15.1	14.2	14.6	16.2	15.6	15.9	21.7	21.0	21.3	28.8	27.9	28.3												
26	15.8	15.1	15.4	16.9	16.1	16.5	21.6	21.5	21.5	28.8	28.0	28.4												
27	15.5	15.1	15.3	17.3	16.6	17.0	22.0	21.5	21.7	28.9	28.3	28.5												
28	15.1	14.7	15.0	17.9	17.1	17.4	22.5	22.0	22.1	29.2	28.3	28.8												
29	---	---	---	18.5	17.7	18.1	22.5	21.9	22.2	30.0	28.8	29.2												
30	---	---	---	19.0	18.5	18.7	23.1	21.6	22.2	30.3	29.2	29.7												
31	---	---	---	19.0	18.6	18.8	---	---	---	30.7	29.6	30.1												
MONTH	15.8	12.1	13.5	19.0	12.6	15.2	23.1	18.3	20.2	30.7	22.2	27.1												

TRINITY RIVER BASIN

08067252 TRINITY RIVER AT WALLISVILLE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	30.7	29.8	30.3	31.9	30.6	31.1	33.1	31.8	32.3	32.1	31.5	31.7
2	31.2	30.1	30.6	33.1	30.8	31.6	33.4	31.9	32.6	32.1	31.3	31.6
3	31.1	30.5	30.8	32.0	31.0	31.3	33.4	32.5	32.8	32.0	31.4	31.6
4	31.3	30.6	30.8	31.9	31.0	31.4	32.9	32.4	32.6	32.1	31.7	31.8
5	31.0	30.5	30.7	32.3	31.1	31.6	33.3	32.1	32.5	32.2	31.3	31.7
6	30.7	29.2	30.2	32.7	31.3	31.8	32.7	32.0	32.3	32.0	30.7	31.2
7	30.7	28.7	29.4	32.7	31.5	32.1	32.2	31.4	31.9	31.1	30.0	30.4
8	30.5	28.6	29.2	33.0	31.5	32.2	32.2	30.9	31.5	30.4	29.9	30.1
9	30.3	29.0	29.5	32.9	31.9	32.3	32.5	31.0	31.6	30.3	29.8	30.1
10	30.9	29.7	30.2	33.5	32.0	32.6	32.3	31.0	31.6	30.1	28.7	29.3
11	30.7	29.9	30.3	33.0	32.0	32.5	32.8	31.2	31.9	28.7	25.8	27.4
12	30.4	29.6	30.1	32.7	32.0	32.4	32.7	31.5	32.0	28.1	26.9	27.8
13	30.2	29.5	29.9	32.5	31.9	32.2	33.0	31.7	32.2	26.9	26.2	26.4
14	30.3	29.6	30.0	32.3	31.6	32.0	32.1	31.4	31.7	26.5	26.3	26.4
15	31.0	30.0	30.4	32.3	30.9	31.5	32.1	30.8	31.3	26.5	26.2	26.3
16	31.3	30.4	30.8	33.0	31.3	32.0	32.3	31.3	31.7	26.5	26.2	26.3
17	31.5	30.8	31.1	32.9	31.6	32.1	31.8	31.1	31.4	26.8	26.1	26.4
18	31.9	31.0	31.4	33.5	31.8	32.4	31.2	30.5	30.7	27.5	26.6	27.0
19	32.2	31.0	31.5	33.0	31.8	32.3	31.6	30.1	30.6	28.2	27.4	27.7
20	32.3	31.2	31.7	33.1	31.9	32.4	31.6	30.4	30.9	28.9	28.0	28.3
21	32.3	31.3	31.7	33.2	32.2	32.6	30.9	30.2	30.4	29.5	28.4	28.9
22	32.7	31.4	32.0	33.1	32.2	32.6	30.2	29.7	29.8	29.9	29.2	29.5
23	32.6	31.6	32.1	32.8	32.1	32.5	31.0	29.6	30.0	30.3	29.5	29.9
24	32.7	31.6	32.1	33.0	32.2	32.5	31.4	29.8	30.3	30.2	29.9	30.1
25	32.9	31.6	32.2	33.0	32.3	32.6	31.3	29.9	30.3	30.4	29.8	30.0
26	32.6	31.4	31.8	33.1	32.3	32.6	30.3	29.6	30.0	30.1	29.8	30.0
27	32.4	31.4	31.7	33.2	32.2	32.6	31.2	30.2	30.6	30.4	29.7	30.0
28	31.6	30.7	31.1	33.1	32.1	32.5	31.5	30.9	31.1	30.6	30.0	30.3
29	31.2	30.0	30.6	32.7	32.1	32.4	32.7	31.1	31.7	30.9	30.1	30.5
30	31.8	30.5	31.0	32.7	32.0	32.4	32.5	31.7	32.1	32.0	30.4	30.9
31	---	---	---	32.6	32.0	32.2	32.2	31.8	31.9	---	---	---
MONTH	32.9	28.6	30.8	33.5	30.6	32.2	33.4	29.6	31.4	32.2	25.8	29.3

CEDAR BAYOU BASIN

08067500 CEDAR BAYOU NEAR CROSBY, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°58'21", long 94°59'08", Liberty County, Hydrologic Unit 12040203, on right bank at downstream side of bridge on U.S. Highway 90 and 6.6 mi northeast of Crosby.

DRAINAGE AREA.--64.9 mi².

PERIOD OF RECORD.--Mar to Aug 1946, Mar 1963 to Feb 1964, May to Aug 1971 (discharge measurements only). Oct 1971 to Sep 1991 (daily mean discharge). Oct 1991 to current year (peak discharges greater than base discharge).
Water-quality records.--Chemical, biochemical, and pesticide analyses: May 1971 to Sep 1979.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 31.31 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good. Stage-discharge relationship is affected by seasonal vegetation during most years. No known regulation. Low flow is sustained by drainage from irrigated lands. There are diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--20 years (water years 1972-91), 78.7 ft³/s (57,020 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,800 ft³/s Oct 18, 1994 (gage height, 28.33 ft); no flow occasionally during pumping season of some years.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 21	1115	2,390	20.99	Jan 7	0445	2,960	22.52

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 1998

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 Hwy. 327 near Silsbee, Tex.	Lat 30°20'48", long 94°16'44", Hardin County, at bridge on State Highway 327, about 1.6 mi upstream from Mill Creek, and 2.7 mi west of Silsbee.	1,043	1979-98	10-06-97 07-07-98	101 80.1	
08041720	Pine Island Bayou at State Highway 105 near Sour Lake, Tex.	Lat 30°08'08", long 94°16'44", Hardin-Jefferson County line, at bridge on State Highway 105, about 2.0 mi upstream from mouth of Little Pine Island Bayou, and 7.90 mi east of Sour Lake.	338	1979-98	05-26-98	20.7	

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Crest-stage partial-record stations

The following table contains annual maximum stage and (or) discharge at partial-record stations operated primarily for the purpose of defining the flooding characteristics of the streams. At stations where discharge is given, or is footnoted "to be determined", a stage-discharge relation has been, or will be, defined by discharge measurements obtained by current meter or by indirect procedures. Water-stage recorders are located at these flood-hydrograph stations to facilitate complete hydrograph definition. At stations where only the maximum stage is given (discharge column is dashed), the data are generally collected for use in stage-frequency studies of flood-profile definition. gages at these stations usually consist of a device that will register the peak stage occurring between inspection of the gage. The years used in the column "Period of record" identify the years in which the annual maximum has been determined.

Annual maximum stage and (or) discharge during water year 1998

Station name and number	Location	Period of record	Water Year 1998 maximum			Period of record maximum			
			Date	Gage height (ft)	Discharge (ft ³ /s)	Date	Gage height (ft)	Discharge (ft ³ /s)	
Sabine River Basin									
Long Branch at Greenville, Tex. 08017210	Lat 33°07'20", long 96°05'54", Hunt County, on left edge of low-water channel 80 ft upstream from culvert under Moulton St. (Business Rte. U.S. Highway 69), 0.5 mi upstream from IH-30, and 1.3 mi southeast of Hunt County Courthouse in Greenville. Drainage area is 5.37 mi ² .	1986-98	12-21-97	8.65	--	03-31-95	12.40	--	
Trinity River Basin									
Big Fossil Creek Haltom City, Tex. 08048800	Lat 32°48'26", long 97°14'54", Tarrant County, at center of channel at downstream side of downstream bridge on State Highway 183, 2.0 mi upstream from Little Fossil Creek, 3.5 mi upstream from mouth, and 6.0 mi northeast of Tarrant County Courthouse in Fort Worth. Drainage area is 52.8 mi ² .	1960-73† 1974-84φ 1985-98	03-16-98	11.92	--	09-07-62	26.90	27,000	
Cedar Bayou Basin									
Cedar Bayou near Baytown, Tex. 08067510	Lat 29°46'12", long 94°54'59", Chambers-Harris County Line, at bridge on State Highway 146, 0.2 mi downstream from Cary Bayou, 0.2 mi upstream from Saw Pit Gully, and 4.3 mi northeast of Baytown. Drainage area is 169 mi ² .	1984-98	01-21-98	*7.69	--	10-19-94	*10.87	--	

* Elevation, in feet.

† Operated as a continuous-record station.

φ Operated as an unpublished stage-only station.

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