UNITED STATES DEPARTMENT OF THE INTERIOR

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GEOLOGICAL SURVEY

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PREFACE

This edition of the annual hydrologic data report of Texas is one of a series of annual reports that document hydrologic data collected from the U.S. Geological Survey's collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and quality of water provide the hydrologic information needed by Federal, State, local agencies, and the private sector for developing and managing land and water resources in Texas which are contained in 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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13. ABSTRACT *(Maximum 200 words)*

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 3 contains records for water discharge at 126 gaging stations; stage only at 3 gaging stations; stage and contents at 15 lakes and reservoirs; water quality at 62 gaging stations; and data for 35 partial-record stations comprised of 8 flood-hydrograph, 14 low-flow, and 18 crest-stage, and 5 miscellaneous stations. Also included are lists of discontinued surface-water discharge or stage-only stations and discontinued surface-water-quality stations. Additional water data were collected at various sites, not part of the systematic data-collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating Federal, State, and local agencies in Texas. Records for a few pertinent stations in the bordering States also are included.

14. SUBJECT TERMS

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

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

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

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

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

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

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
San Bernard River near West Columbia (e)	08117700	766	1949, 1971-77
Mound Creek Tributary at Guy (e)	08117800	1.48	1966-73
Big Boggy Creek near Wadsworth (d)	08117900	10.30	1970-77
Lake J.B. Thomas near Vincent (e)	08118000	3,389	1954-86
Bull Creek near Ira (d)	08118500	26.30	1948-54, 1959-62
Colorado River below Bull Creek near Ira (e)	08118600	3,524	1975-78
Bluff Creek near Ira (d)	08119000	42.60	1948-65
Bluff Creek at mouth near Ira (e)	08119100	44.1	1975-78
Colorado River near Ira (d)	08119500	3,483	1948-52, 1959-89
Deep Creek near Dunn (d)	08120500	198	1953-86
Morgan Creek near Westbrook (d)	08121500	273	1954-63
Graze Creek near Westbrook (d)	08122000	21.70	1954-59
Morgan Creek near Colorado City (d)	08122500	313	1947-49
Champlin Creek near Colorado City (d)	08123500	198	1948-59
Sulphur Springs Draw near Wellman (e)	08123620	41.80	1966-74
Beals Creek above Big Spring (d)	08123650	9,319	1959-79
Beals Creek at Big Spring (d)	08123700	9,341	1957-59
Beals Creek near Coahoma (d)	08123720	9,383	1983-88
Coahoma Draw Tributary near Big Spring (e)	08123750	2.38	1966-74
Bull Creek Tributary near Forsan (e)	08123760	0.4	1966-74
Colorado River near Silver (d)	08123900	14,997	1957-70
Bitter Creek near Silver (e)	08123920	4.3	1967-74
Salt Creek Tributary near Hylton (e)	08125450	0.25	1966-74
Oak Creek Reservoir near Blackwell (e)	08125500	238	1953-83
Fish Creek Tributary near Hylton (e)	08126300	0.25	1966-71
Colorado River at Ballinger (d)	08126500	16,413	1907-79
Dry Creek near Christoval (e)	08127100	0.79	1965-73
South Concho Irrigation Co. Canal at Christoval (d)	08127500	N/A	1940-83
South Concho River at Christoval (d)	08128000*	412.6	1931-95
Middle Concho River above Tankersley (d)	08128400*	2,084	1962-95
Middle Concho River near Tankersley (d)	08128500	2,653	1930-61
Spring Creek above Tankersley (d)	08129300*	424.7	1961-95
Dove Creek Springs near Knickerbocker (d)	08129500*	N/A	1944-58
Dove Creek at Knickerbocker (d)	08130500	226.43	1961-95
Spring Creek near Tankersley (d)	08131000	699	1930-60
South Concho River above Pecan Creek near San Angelo (e)	08131300	470	1963-84
Pecan Creek near San Angelo (d)	08131400	81.10	1961-86
Tom Green Co. WCID No. 1 Canal near San Angelo (d)	08131600	N/A	1963-81
South Concho River at San Angelo (d)	08132500	3,866	1932-53
Quarry Creek near Sterling City (e)	08133300	3.25	1965-73
North Concho River at Sterling City (d)	08133500*	588.0	1939-87
Broome Creek near Broome (e)	08133800	0.29	1965-73
Nolke Station Creek near San Angelo (e)	08134300	0.59	1965-73
Gravel Pit Creek near San Angelo (e)	08134400	0.19	1965-74
North Concho River at San Angelo (d)	08135000	1,525	1916-31, 1947-90
Concho River near Veribest (e)	08136150	5,541	1969-73
Puddle Creek near Veribest (e)	08136200	12.0	1966-73
Frog Pond Creek near Eden (e)	08136300	1.96	1967-73
Mukewater Creek SWS No. 10A near Trickham (e)	08136900	15.3	1965-72

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Mukewater Creek SWS No. 9 near Trickham (e)	08137000	4.02	1961-72
Mukewater Creek at Trickham (d)	08137500	70	1951-73
Colorado River at Winchell (d)	08138000*	25,179	1924-34, 1939-93
Deep Creek SWS No. 3 near Placid (e)	08139000	3.42	1954-60
Deep Creek near Mercury (d)	08139500	43.90	1954-73
Deep Creek SWS No. 8 near Mercury (e)	08140000	5.14	1952-71
Dry Prong Deep Creek near Mercury (d)	08140500	8.31	1951-71
Lake Clyde near Clyde (e)	08140600	36.9	1970-85
Pecan Bayou near Cross Cut (d)	08140700	532	1968-79
Jim Ned Creek near Coleman (d)	08140800	333	1965-80
McCall Branch near Coleman (e)	08141100	2.17	1966-73
Hords Creek near Valera	08141500	54.20	1947-91
Hords Creek at Coleman (d)	08142000*	107	1941-70
Brown County WID No. 1 Canal near Brownwood (d)	08142500	N/A	1950-83
Lake Brownwood near Brownwood (e)	08143000	1,535	1948-85
Pecan Bayou at Brownwood (d)	08143500	1,660	1917-18, 1924-83
Brown Creek Tributary near Goldthwaite (e)	08143700	2.48	1966-73
Noyes Canal at Menard (d)	08144000	N/A	1924-83
San Saba River at Menard (d)	08144500	1,135	1916-93
San Saba River near Brady (d)	08144600	1,633	1979-93
Brady Creek near Eden (d)	08144800	101	1962-85
Brady Creek Reservoir near Brady (e)	08144900	513	1963-83
Brady Creek at Brady (d)	08145000	588	1939-86
Brady Creek Tributary near Brady (e)	08145100	4.05	1967-73
San Saba River at San Saba (d) (e)	08146000	3,046	1916-92, 1905-07, 1993
Lake Buchanan near Burnet (e)	08148000	31,910	1937-90
North Llano River near Junction (d)	08148500	914	1915-77
Llano River near Junction (d)	08150000	1,854.14	1915-93
Llano River Tributary near London (e)	08150200	0.58	1966-73
Llano River near Mason (d)	08150700	3,247.14	1968-93
Stone Creek Tributary near Art (e)	08150900	0.40	1966-73
Llano River near Castell (d)	08151000	3,747	1924-39
Johnson Creek near Valley Spring (e)	08151300	5.66	1967-73
Sandy Creek near Kingsland (d)	08152000	327	1967-93
Little Flatrock Creek near Marble Falls (e)	08152700	3.20	1966-74
Spring Creek near Fredricksburg (e)	08152800	15.20	1967-73
Pedernales River near Fredericksburg (d)	08152900	369	1979-93
Pedernales River at Stonewall (d)	08153000	647	1924-34
Cane Branch at Stonewall (e)	08153100	1.37	1965-71
Pedernales River near Spicewood (d)	08154000	1,294	1924-39
Lake Travis near Austin (d)	08154500	38,755	1940-90
Colorado River below Mansfield Dam, Austin (d)	08154510	38,755	1975-90
West Bull Creek at Loop 360 near Austin (e)	08154750	6.77	1976-82
Bull Creek at FM 2222, Austin (e)	08154760	30.4	1975-78
Bee Creek at West Lake Drive near Austin (e)	08154950	3.28	1980-82
Barton Creek near Camp Craft Road near Austin (d)	08155260	109	1982-89
Skunk Hollow Creek below Pond 1 at Austin (e)	08155400	0.12	1982-84
West Bouldin Creek at Riverside Drive, Austin (e)	08155550	3.12	1976-82
Shoal Creek at Steck Avenue, Austin (e)	08156650	2.79	1975-82
Shoal Creek at Northwest Park at Austin (d)	08156700	6.52	1975-84
Shoal Creek at White Rick Drive, Austin (e)	08156750	12.30	1975-82
Waller Creek at 38th Street, Austin (d)	08157000	2.31	1955-80
Waller Creek at 23rd Street, Austin (d)	08157500	4.13	1955-80
Boggy Creek at U.S. Highway 183, Austin (d)	08158050*	13.10	1976-86
Walnut Creek at Farm-Market 1325 near Austin (e)	08158100	12.60	1975-88
Walnut Creek at Dessau Road, Austin (e)	08158200	26.20	1975-88

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Ferguson Branch at Springdale Road, Austin (e)	08158300	1.63	1978-82
Little Walnut Creek at Georgian Drive, Austin (e)	08158380	5.22	1975-88
Little Walnut Creek at IH 35, Austin (e)	08158400	5.57	1975-82
Little Walnut Creek at Manor Road, Austin (e)	08158500	12.1	1975-82
Walnut Creek at Southern Pacific Railroad bridge, Austin (e)	08158640	53.5	1975-86
Onion Creek at Buda (e)	08158800	166	1961-78,
(d)			1979-83,
			1992-95
Bear Creek at Farm-Market Road 1626 near Manchaca (e)	08158820	24.0	1979-83
Little Bear Creek at Farm-Market Road 1626 near Manchaca (d)	08158825	21.0	1979
Slaughter Creek at FM 2304 near Austin (e)	08158860	23.1	1978-83
Boggy Creek (South) at Circle S Road, Austin (e)	08158880	3.58	1976-88
Fox Branch near Oak Hill (e)	08158900	0.12	1965-73
Williamson Creek at Oak Hill (d)	08158920	6.30	1978-93
Williamson Creek at Manchaca Road, Austin (e)	08158930	19	1975-85
Williamson Creek at Jimmy Clay Road, Austin (d)	08158970	27.60	1975-85
Onion Creek below Del Valle (e)	08159100	339	1962-75
Wilbarger Creek near Pflugerville (d)	08159150	4.6	1963-80
Big Sandy Creek near McDade (d)	08159165	38.70	1979-85
Big Sandy Creek near Elgin (d)	08159170	63.80	1979-85
Dogwood Creek near McDade (e)	08159180	0.53	1980-85
Dogwood Creek at Highway 95 near McDade (e)	08159185	5.03	1980-85
Reeds Creek near Bastrop (e)	08159450	5.22	1967-73
Colorado River at Smithville (d)	08159500	39,880	1931-75
Dry Creek at Buescher Lake near Smithville (d)	08160000	1.48	1940-66
Colorado River at La Grange (d)	08160500	40,430	1939-55
Colorado River above Columbus (d)	08160700	41,403	1983-85
Dry Branch Tributary near Altair (e)	08161580	0.68	1966-73
Little Robin Slough near Matagorda (e)	08162530	3.4	1969
Tres Palacios River near Midfield (d)	08162600	145	1970-97
Cashs Creek near Blessing (e)	08162650	14.8	1969-77
East Carancahua Creek near Blessing (e)	08162700	81.2	1968,
			1970-83
West Carancahua Creek near Laward (e)	08162800	57.1	1970-76
Navidad River near Ganado (d)	08164500	826	1939-80
Johnson Creek near Ingram (d)	08166000	114	1942-60,
			1962-93
Guadalupe River above Bear Creek at Kerrville (d)	08166140*	494	1978-86
Guadalupe River above Kerrville (e)	08166150	488	1976-79
Turtle Creek Tributary near Kerrville (e)	08166300	0.46	1966-74
Guadalupe River near Comfort (d)	08166500	762	1918-32
Rebecca Creek near Spring Branch (d)	08167600	10.90	1960-79
Blieders Creek at New Braunfels (e)	08168600	16.0	1962-89
Panther Canyon at New Braunfels (e)	08168700	0.73	1962-89
Trough Creek near New Braunfels (e)	08168720	0.48	1966-74
W.P. Dry Comal Creek Tributary near New Braunfels (e)	08168750	0.32	1966-74
Dry Comal Creek at New Braunfels (e)	08168800	N/A	1962-74
Guadalupe River at New Braunfels (d)	08169500*	1,652	1915-27
Walnut Branch near Seguin (e)	08169750	5.46	1967-74
East Pecan Branch near Gonzales (e)	08169850	0.24	1965-74
San Marcos River at San Marcos (d)	08169950	83.7	1915-21
West Elm Creek near Niederwald (e)	08172100	0.44	1965-74
Plum Creek near Lockhart (d)	08172500	184	1925-30
Plum Creek near Luling (d)	08173000	309	1930-93
San Marcos River at Ottine (d)	08173500	1,249	1915-43
Peach Creek below Dilworth (d)	08174600	460	1959-79
Guadalupe River below Cuero (d)	08176000	4,923	1903-07,
			1916-19,
			1921-36
Irish Creek near Cuero (e)	08176200	15.5	1967-74
Three Mile Creek near Cuero (e)	08176600	0.48	1966-74
Coleto Creek Reservoir inflow (Guadalupe diversion) near Schroeder (d)	08176990	357	1980-94

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Coleto Creek near Schroeder (d)	08177000	369	1930-34, 1953-79
Olmos Creek Tributary at FM 1535 at Savano Park (e)	08177600	0.33	1969-81
Olmos Creek at Dresden Drive, San Antonio (d)	08177700*	21.2	1968-81
Olmos Reservoir at San Antonio (e)	08177800	32.4	1968-71, 1976-89. 1992-95
San Antonio River at Woodlawn Avenue, San Antonio (e)	08177860	36.4	1989-95
San Antonio River at Dolorosa, San Antonio (d)	08177920	N/A	1980-86
San Antonio River at San Antonio (d)	08178000	41.8	1895-1906, 1915-29, 1939-97
Alazan Creek at St. Cloud Street, San Antonio (e)	08178300	3.26	1969-79
San Pedro Creek at Furnish St., San Antonio (d)	08178500*	2.60	1916-29
Harlandale Creek at W. Harding Street, San Antonio (e)	08178555	2.43	1977-81
Panther Springs Creek at FM 2696 near San Antonio (e)	08178600	9.54	1969-77
Lorence Creek at Thousand Oaks Blvd., San Antonio (e)	08178620	4.05	1980-84
West Elm Creek at San Antonio (e)	08178640	2.45	1976-88
East Elm Creek at San Antonio (e)	08178645	2.33	1976-81
Salado Creek Tributary at Bitters Road, San Antonio (e)	08178690	0.26	1969-81
Salado Creek at Rittman Road, San Antonio (e)	08178720	137.1	1968-81
Salado Creek Tributary at Bee Street, San Antonio (e)	08178736	0.45	1970-77
Salado Creek at E. Houston Street, San Antonio (e)	08178740	181	1968-81
Salado Creek at U.S. Highway 87, San Antonio (e)	08178760	186	1968-81
Salado Creek at Southcross Blvd., San Antonio (e)	08178780	188	1968-81
Bandera Creek Tributary near Bandera (e)	08178900	0.27	1966-74
Medina River near Pipe Creek (d)	08179000	474	1923-35, 1953-82
Red Bluff Creek near Pipe Creek (d)	08179100	56.30	1956-81
Medina River Tributary near Pipe Creek (e)	08179200	0.30	1966-74
Medina Lake near San Antonio (e)	08179500	634	1913-94
Medina Canal near Riomedina (e)	08180000	N/A	1922-34, 1957-93
Medina River near Riomedina (d)	08180500	650	1922-34, 1953-73
Medio Creek at Pearsall Road, San Antonio (e)	08180750	47.9	1987-95
Leon Creek Tributary at FM 1604, San Antonio (e)	08181000	5.57	1968-80
French Creek Tributary near Helotes (e)	08181200	1.08	1966-74
Ranch Creek near Helotes (d)	08181410		1978
Leon Creek Tributary at Kelly Air Force Base (d)	08181450	1.19	1969-79
Calaveras Creek SWS No. 6 (inflow) near Elmendorf (e)	08182400	7.01	1957-77
Calaveras Creek near Elmendorf (d)	08182500	77.20	1954-71
River at Calaveras (d)	08183000	1,786	1918-25
Cibolo Creek near Boerne (d)	08183900	68.4	1963-95
Cibolo Creek near Bulverde (d)	08184000	198	1946-66
Cibolo Creek above Bracken (d)	08184500	250	1946-51
Cibolo Creek at Sutherland Springs (d)	08185500	665	1924-29
Ecleto Creek near Runge (d)	08186500	239	1962-89
Escondido Creek SWS No. 1 (inflow) near Kenedy (e)	08187000	3.29	1955-73
Escondido Creek at Kenedy (d)	08187500	72.40	1954-73
Escondido Creek SWS No. 11 (inflow) near Kenedy (e)	08187900	8.45	1959-77
Dry Escondido Creek near Kenedy (d)	08188000	9.43	1954-59
Baugh Creek at Goliad (e)	08188400	3.02	1966-74
Guadalupe-Blanco River Authority Calhoun Canal-Flume No. 2 near Long Mott (d)	08188750	N/A	1972-86
Guadalupe River at State Highway 35 near Tivoli (e)	08188810	10,280	1975-82
Medio Creek near Beeville (d)	08189300	204	1962-77
Olmos Creek Tributary near Skidmore (e)	08189600	0.58	1966-73
Chiltipin Creek at Sinton (d)	08189800	128	1970-91

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Nueces River Basin:			
Nueces River near Uvalde (d)	08191500	1,930	1928-39
Nueces River near Cinonia (d)	08192500	2,150	1915-25
Plant Creek near Tilden (e)	08194550	0.36	1965-74
Nueces River at Simmons (d)	08194600	8,561	1965-77
Dry Frio River at Knippa (d)	08196500	179	1953
East Elm Creek near Sabinal (e)	08198900	10.6	1967-74
Frio River near Frio Town (d)	08199700	1,460	1924-27
Hondo Creek near Hondo (d)	08200500	132	1953-64
Bone Creek near Hondo (e)	08200900	0.19	1965-74
Seco Creek near Utopia (d)	08202000	53.20	1952-61
Seco Creek near D'Hanis (d)	08202500	87.40	1952-64
Leona River Tributary near Uvalde (e)	08203500	1.21	1966-74
Leona River Spring Flow near Uvalde (d)	08204000*	1.21	1939-77
Leona River near Divot (d)	08204500	565	1924-29
Frio River at Calliham (d)	08207000	5,491	1925-26, 1932-81
Rutledge Hollow Creek near Poteet (e)	08207200	9.33	1966-74
Atascosa River near McCoy (d)	08207500	530	1951-57
Lucas Creek near Pleasanton (e)	08207700	32.80	1966-73
Ramirena Creek near George West (d)	08210300	84.40	1968-72
Lagarto Creek near George West (d)	08210400	155	1972-89
Nueces River below Mathis (d)	08211100	16,726	1966-67
Pintas Creek Tributary near Banquete (e)	08211550	3.28	1966-74
Hamon Creek near Freer (e)	08211600	0.73	1965-73
San Diego Creek at Alice (d)	08211800	319	1964-89
Lake Alice at Alice (e)	08211850	150	1965-86
San Fernando Creek at Alice (d)	08211900	507	1965-77
San Fernando Creek near Alice (d)	08212000	518	1962-63
North Las Animas Creek Tributary near Freer (e)	08212320	0.07	1969-74
Los Olmos Creek near Falfurrias (d)	08212400	480	1967-73
Rio Grande at Vinton Bridge near Anthony (d)	08363840	28,680	1969-74
Rio Grande below Americal Dam (d)	08365000	29,271	1938-60
Northgate Reservoir at El Paso (e)	08365540	6.89	1973-75
Range Reservoir at El Paso (e)	08365545	11.89	1973-75
Franklin Canal at El Paso (d)	08365550	N/A	1969-72
McKelligon Canyon at El Paso (d)	08365600	2.30	1958-77
Government Ditch at El Paso (d)	08365800	6.40	1958-77
Rio Grande at Jaurez, MX (d)	08366000	29,350	1938-56
Riverside Canal near Socorro (d)	08366400	37,830	1969-72
Rio Grande at Island Station near El Paso (d)	08366500	29,743	1938-60
Rio Grande at Tornillo Branch near Fabens (d)	08367000	N/A	1924-38
Tornillo Drain at mouth near Tornillo (d)	08368000	N/A	1969-72
Tornillo Canal near Tornillo (d)	08368300	N/A	1969-72
Hudspeth Feeder Canal near Tornillo (d)	08368900	N/A	1969-72
Rio Grande at County Line Station near El Paso (d)	08369500	30,610	1938-60
Camo Rice Arroyo Tributary near Fort Hancock (e)	08370200	2.35	1966-74
Rio Grande at Fort Quitman (d)	08370500	31,944.0	1976-82
Wild Horse Creek Tributary near Van Horn (e)	08370800	0.74	1966-73
Rio Grande above Rio Conchos near Presidio (d)	08371500	34,966	1900-14, 1920, 1923-60
Cibolo Creek near Presidio (d)	08373200	276	1971-77
Rio Grande above Presidio (lower Station) (d)	08373500	N/A	1901-13, 1924-54
Alamito Creek near Presidio (d)	08374000	1,504	1932-72
Rio Grande below Rio Conchos near Presidio (d)	08374200	66,203	1955-60
Terlingua Creek near Terlingua (d)	08374500	1,070	1932-60
Rio Grande at Johnson Ranch (d)	08375000	70,215	1936-60
Sanderson Canyon at Sanderson (d)	08376300	195	1968-80

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Rio Grande at Langtry (d)	08377500	84,795	1900-14, 1920, 1924-60
Rio Grande Tributary near Langtry (e)	08377600	0.32	1966-74
Delware River Tributary near Orla (e)	08407800	1.6	1966-74
Pecos River near Angeles (d)	08409500	20,540	1914-37
Salt Screwbean Draw near Orla (d)	08411500	464	1939-41, 1944-57
Pecos River near Mentone (d)	08414000	21,650	1922-26, 1969-73
Reeves County WID No. 2 Canal near Mentone (d)	08414500	N/A	1922-25, 1939-57, 1964-90
Ward County WID No. 3 Canal near Barstow (d)	08415000	N/A	1939-57, 1964-90
Pecos River above Barstow (d)	08416500	21,800	1916-21
Ward County Irrigation District No. 1 Canal near Barstow (d)	08418000	N/A	1922-25, 1939-57, 1964-90
Pecos River at Pecos (d)	08420500	22,100	1898-1907, 1914-15, 1922-26, 1939-55
Madera Canyon near Toyahvale (d)	08424500	53.80	1932-49
Phantom Lake Spring near Toyahvale (d)	08425500*	N/A	1932-34, 1942-66
Giffin Springs at Toyahvale (d)	08427000*	N/A	1932-33
San Solomon Springs at Toyahvale (d)	08427500	N/A	1932-34, 1941-65
West Sandia Spring at Balmorhea (d)	08429000	N/A	1932-33
East Sandia Spring at Balmorhea (d)	08430000	N/A	1932-33
Toyah Creek near Pecos (d)	08431000	1,024	1940-41, 1944-45
Salt Draw near Pecos (d)	08431500	1,882	1939-41, 1944-45
Limpia Creek above Fort Davis (d)	08431700	52.40	1966-86
Limpia Creek below Fort Davis (d)	08431800	227	1962-77
Limpia Creek near Fort Davis (d)	08432000	303	1925-32
Barrilla Draw near Saragosa (d)	08433000	612	1925-26, 1932, 1976-83
Toyah Creek below Toyah Lake near Pecos (d)	08434000	3,709	1939-51
Grandfalls-Big Valley Canal near Barstow (d)	08435000	N/A	1922-26, 1939-57, 1964-76
Pecos River below Barstow (d)	08435500	25,980	1939-41
Toronto Creek near Alpine (d)	08435600	27.90	1971-76
Alpine Creek at Alpine (d)	08435620	18.10	1971-76
Moss Creek near Alpine (d)	08435660	11.30	1971-76
Sunny Glen Canyon near Alpine (d)	08435700	29.70	1968-77
Coyanosa Draw near Fort Stockton (d)	08435800	1,182	1964-77
Pecos County WID No. 2 (Upper Div.) Canal near Grandfalls (d)	08436500	N/A	1922-25, 1939-57, 1964-90
Courtney Creek Tributary near Fort Stockton (e)	08436800	0.44	1966-74
Pecos County WID No. 2 Canal near Imperial (d)	08437500	N/A	1940-57, 1964-90
Lake Leon Tributary near Fort Stockton (e)	08437550	1.59	1966-74
Pecos County WID No. 3 Canal near Imperial (d)	08437600	N/A	1940-57, 1964-90
Monument Draw Tributary at Pyote (e)	08437650	178	1966-74

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Ward County WID No. 2 Canal near Grand Falls (d)	08437700	N/A	1939-57, 1964-90
Pecos River near Grand Falls (d)	08438100	27,810	1916-26
Pecos River below Grand Falls (d)	08441500	27,820	1921-26, 1939-56
Three Mile Mesa Creek near Fort Stockton (e)	08444400	1.04	1966-74
Comanche Springs at Fort Stockton (d)	08444500	N/A	1936-64
Pecos River near Sheffield (d)	08447000	31,600	1922-25, 1940-49
Independence Creek near Sheffield (d)	08447020	763	1974-85
Howards Creek Tributary near Ozona (e)	08447200	7.53	1967-73
Pecos River near Shumla (d)	08447400	35,162	1955-60
Pecos River near Langtry (d)	08447410	35,179	1976-78, 1981-85
Pecos River near Comstock (d)	08447500	35,298	1900-54
Goodenough Springs near Comstock (e)	08448500	N/A	1929-60
Sonora Field Creek at Sonora (e)	08448800	2.60	1965-71
Devils River near Juno (d)	08449000	2,730	1925-49, 1964-73
Devils River near Comstock (d)	08449300	3,903	1955-58
Devils River at Pafford Crossing near Comstock (d)	08449400	3,961	1978-85
Rough Canyon Tributary near Del Rio (e)	08449470	7.90	1967-73
Devils River near Del Rio (d)	08449500	4,185	1900-14, 1924-57
Evans Creek Tributary near Del Rio (e)	08449600	0.39	1966-73
Devils River mear mouth, Del Rio (d)	08450500	4,305	1954-60
Rio Grande near Del Rio (d)	08452500	123,303	1900-15, 1920, 1924-54
San Felipe Creek near Del Rio (e)	08453000	46.0	1931-60
Zorro Creek near Del Rio (e)	08453100	10.0	1966-74
East Perdido Creek near Brackettville (e)	08454900	3.39	1965-74
Pinto Creek near Del Rio (d)	08455000	249	1929-69, 1971-72
Rio Grande at Eagle Pass (d)	08458000	127,312	1900-16, 1924-60
Rio Grande at San Antonio Crossing (d)	08458700	129,226	1952-60
Arroyo San Bartolo at Zapata (e)	08459600	0.61	1966-74
Rio Grande near Zapata (d)	08460500	163,344	1932-53
International Falcon Reservoir near Falcon Heights (d)	08461200	N/A	1953-60
Rio Grande at Roma (d)	08462500	166,464	1900-13, 1923-54
Rio Grande near Rio Grande City (d)	08465500	180,941	1932-54
Rio Grande Tributary near Rio Grande City (e)	08466100	1.20	1966-74
Rio Grande Tributary near Sullivan City (e)	08466200	0.40	1966-74
North Floodway South of McAllen (d)	08468000	N/A	1928-60
South Floodway South of McAllen (d)	08470000	N/A	1929-60
Rio Grande at Hildalgo (d)	08471500	176,100	1928-32, 1935, 1939, 1941-51
Rio Grande near Progreso Bridge (d)	08473300	176,228	1953-60
Rio Grande near San Beniot (d)	08473700	176,304	1953-60
Rio Grande at Matamoros, MX (d)	08474500	182,211	1900-13, 1923-54
Rio Grande near Brownsville (d)	08475000	176,333	1935-50

The following stations were discontinued as continuous-record surface-water-quality stations prior to the 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)
Colorado River above Bull Creek near Knapp	08118200	N/A	SC, T, Cl	1950-52
Bull Creek near Ira	08118500	26.30	SC, T, pH, Cl	1950-51
Bluff Creek near Ira	08119000	42.60	SC, T, pH, Cl	1950
Colorado River near Ira	08119500	3,483	SC, T	1950-52, 1959-70, 1975-82,
			Cl	1951-52
Deep Creek near Dunn	08120500	198	SC, T	1953-54
Morgan Creek near Westbrook	08121500	273	T	1954-55
Graze Creek near Westbrook	08122000	21.70	T	1954-55
Morgan Creek near Colorado City	08122500	313	T	1947-49
Lake Colorado City near Colorado City	08123000	340	T	1954-55
Beals Creek above Big Spring	08123650	9,319	SC, T	1973-78
Beals Creek near Big Spring	08123700	9,341	SC, T	1956-57
Beals Creek near Coahoma	08123720	9,383	SC, T	1983-88
Colorado River near Silver	08123900	14,997	SC, T	1957-68
Colorado River at Robert Lee	08124000	15,307	SC, T, pH, Cl	1948-51,
			S	1949-51
Oak Creek near Blackwell	08126000	209	SC, T	1950
Colorado River at Ballinger	08126500	16,413	SC, T	1961-79,
			S	1978-79
Elm Creek at Ballinger	08127000	450	SC, T	1968-91
Concho River at Paint Rock	08136500	6,574	SC, T	1946-50, 1967-90,
			S	1978-81
Pecan Bayou at Brownwood	08143500	1,660	SC, T	1948-49
Pecan Bayou near Mullin	08143600	2,073	SC, T	1968-91
San Saba River near San Saba	08145500	N/A	SC, T	1962-65
San Saba River at San Saba	08146000	3,046	SC	1962-69,
			T	1963-70
Colorado River near San Saba	08147000	37,217	SC, T	1947-92,
			S	1951-62
Llano River at Llano	08151500	4,197	SC, T	1979-81
Lake Austin at Austin	08154900	38,240	SC, T	1965-80
Barton Creek below Barton Springs at Austin	08155505	125	SC, T,	1965, 1975-83, 1989-91, 1994-97
Waller Creek at 23rd Street at Austin	08157500	4.13	T	1955-60
Colorado River at Austin	08158000	39,009	SC, T	1948-91
Colorado River above Columbus	08160700	41,403	SC, T	1983-86
Colorado River at Columbus	08161000	41,640	SC	1967-73,
			T	1957-59, 1961-68
			S	1957-73
Colorado River at Wharton	08162000	42,003	SC	1945-92,
			T	1946-48,
Lavaca River near Edna	08164000	817	SC, T	1978-81
Navidad River near Ganado	08164500	826	SC, T	1960-80
Guadalupe River near Spring Branch	08167500	1,315	SC	1942-45
Guadalupe River at Sattler	08167800	1,436	T	1984-87
Blanco River at Wimberley	08171000	355	T	1977-78
Plum Creek near Luling	08173000	309	SC, T	1968-86

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
Guadalupe River at Victoria	08176500	5,198	SC	1946-81,
			T	1951-81
Coleto Creek Reservoir (Condenser No. 1) near Fannin	08177360	414	T	1980-94
Coleto Creek Reservoir (outflow) near Victoria	08177410	494	T	1980-94
San Antonio River at San Antonio	08178000	41.8	SC, T	1991-92,
				1996-97
San Antonio River at Loop 410 at San Antonio	08178565	119	SC, pH, T, DO	1987-88
Medina River at La Coste	08180640	805	SC, pH, T, DO	1987-95
Medio Creek at Pearsall Rd. at San Antonio	08180750	47.9	SC, pH, T, DO	1987-95
San Antponio River near Falls City	08183500	2,113	SC, pH, T, DO	1987-96
Cibolo Creek near Falls City	08186000	827	SC, T	1969-91
Escondido Creek SWS #1 near Kenedy	08187000	3.29	S	1955-65
Guadalupe River at Tivoli	08188800	10,128	SC, T	1966-83
Mission River at Refugio	08189500	690	SC, T	1961-81
Nueces River at Cotulla	08194000	5,171	SC	1942
Nueces River near Tilden	08194500	8,093	SC, T, S	1950
Frio River at Calliham	08207000	5,491	SC, T	1968-81
Nueces River near Three Rivers	08210000	15,427	SC	1945-47,
			SC, T, pH, Cl, S	1951-52,
			SC, T	1975-81
Los Olmos Creek near Falfurrias	08212400	480	SC, T	1975-81
Rio Grande at Fort Quitman	08370500	31,944	SC, T	1975-78.
Rio Grande at Foster Ranch near Langtry	08377200	80,742	SC, T	1975-81
Pecos River below Red Bluff Dam near Orla	08410100	20,720	SC	1937-69,
			T	1953-69
Salt Draw near Orla	08411500	464	SC, T	1943-48
Pecos River near Mentone	08414000	21,650	SC	1939
Pecos River at Pecos	08420500	22,100	SC	1939-41
Toyah Creek near Pecos	08431000	1,024	SC	1940,
				1944
Salt Draw near Pecos	08431500	1,882	SC	1940,
				1944
Toyah Creek below Toyah Lake near Pecos	08434000	3,709	SC	1940-50,
			Cl	1940
Pecos River below Grand Falls	08441500	27,820	SC	1939-42,
				1947-56
Pecos River near Girvin	08446500	29,560	SC	1940-41,
				1947,
				1954-82
			T	1954-59,
				1964-82
Pecos River near Sheffield	08447000	31,600	SC	1940-41,
				1947
Pecos River near Langtry	08447410	35,179	SC, T	1971-76,
				1981-85
Devils River at Pafford Crossing near Comstock	08449400	3,961	SC, T	1978-85
Rio Grande at Laredo	08459000	132,578	SC	1975-86,
			T	1974-76
Rio Grande at Roma	08462500	166,464	SC	1942-43
Rio Grande at Mission Pumping Plant	08468000	171,800	SC	1945-50
Rio Grande at Cameron Co. WID #2 near San Benito	08473800	N/A	SC	1942-43
Rio Grande at Los Fresnos Pumping Plant near Brownsville	08474130	N/A	SC	1945-46
Rio Grande near Brownsville	08475000	176,333	SC	1943-44,
			SC, T	1967-83
			S	1966-83

WATER RESOURCES DATA—TEXAS, 1998

VOLUME 3

COLORADO RIVER BASIN, LAVACA RIVER BASIN, GUADALUPE RIVER BASIN, NUECES RIVER BASIN, RIO GRANDE 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 3 contains records for water discharge at 126 gaging stations; stage only at 3 gaging stations; stage and contents at 15 lakes and reservoirs; and water quality at 62 gaging stations. Also included are data for 35 partial-record stations comprised of 8 flood-hydrograph, 14 low-flow, and 8 crest-stage, and 5 miscellaneous measurement 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-98-3." 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; Edwards Underground Water District; Fort Bend Subsidence District; Franklin County Water District; Galveston County; Greenbelt Municipal and Industrial Water Authority; Guadalupe-Blanco River Authority; Harris County Office of Emergency Management Harris-Galveston Coastal Subsidence District; 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 3 includes the entire southwestern one-half of the State, extending from the western tip of the State to the central and lower Texas Gulf Coast. Normal annual precipitation ranges from less than 8 inches in parts of west Texas to more than 40 inches along the middle Texas Gulf Coast. Average annual runoff ranges from less than 0.1 inch in parts of west Texas to more than 10 inches in some places along the Texas Gulf Coast. The area described in volume 3 and the location of selected streamflow-gaging and water-quality stations in the area are shown in figure 1.

Streamflow

In the area covered in volume 3, streamflow was normal during water year 1998 in the Colorado River Basin and above normal in the Guadalupe River, Nueces River, and Rio Grande Basins. Streamflow for water year 1998 and streamflow for the period of record at the six selected stations (fig. 1) for which data are included in volume 3 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 North Concho River near Carlsbad had above normal streamflow during August and normal streamflow for the remaining 11 months of water year 1998. 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). Streamflow at the 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. The station North Bosque River near Clifton had above normal streamflow during December through March, and normal streamflow for the remaining 8 months.

Conservation storage in 20 selected reservoirs in this area of the State, with a total combined conservation capacity of 9,206,000 acre-feet, decreased from 66 percent of capacity at the end of September 1997 to 60 percent of capacity at the end of September 1998. Records from these reservoirs indicate that storage decreased in 15, increased in 4, and remained the same in 1.

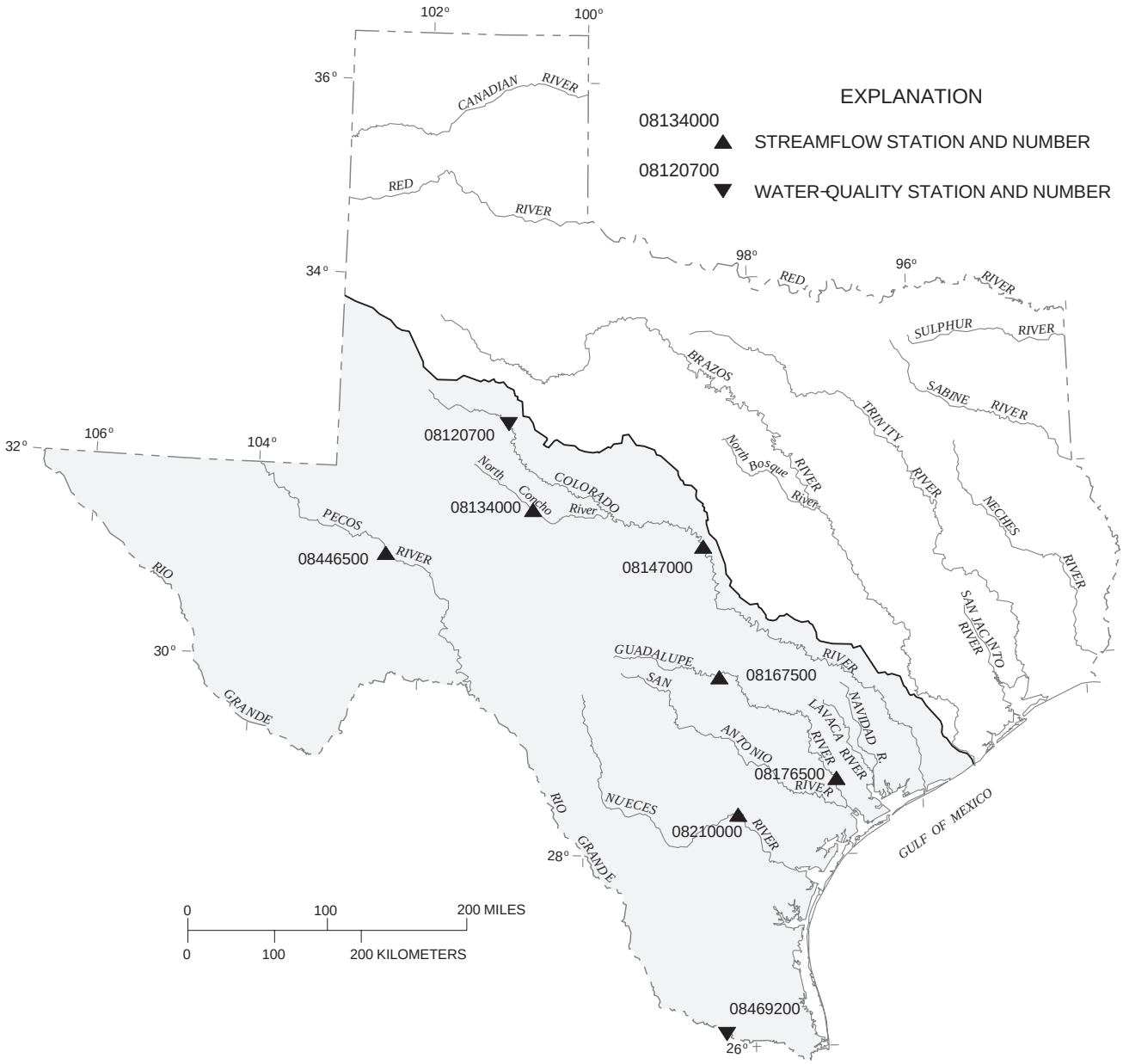
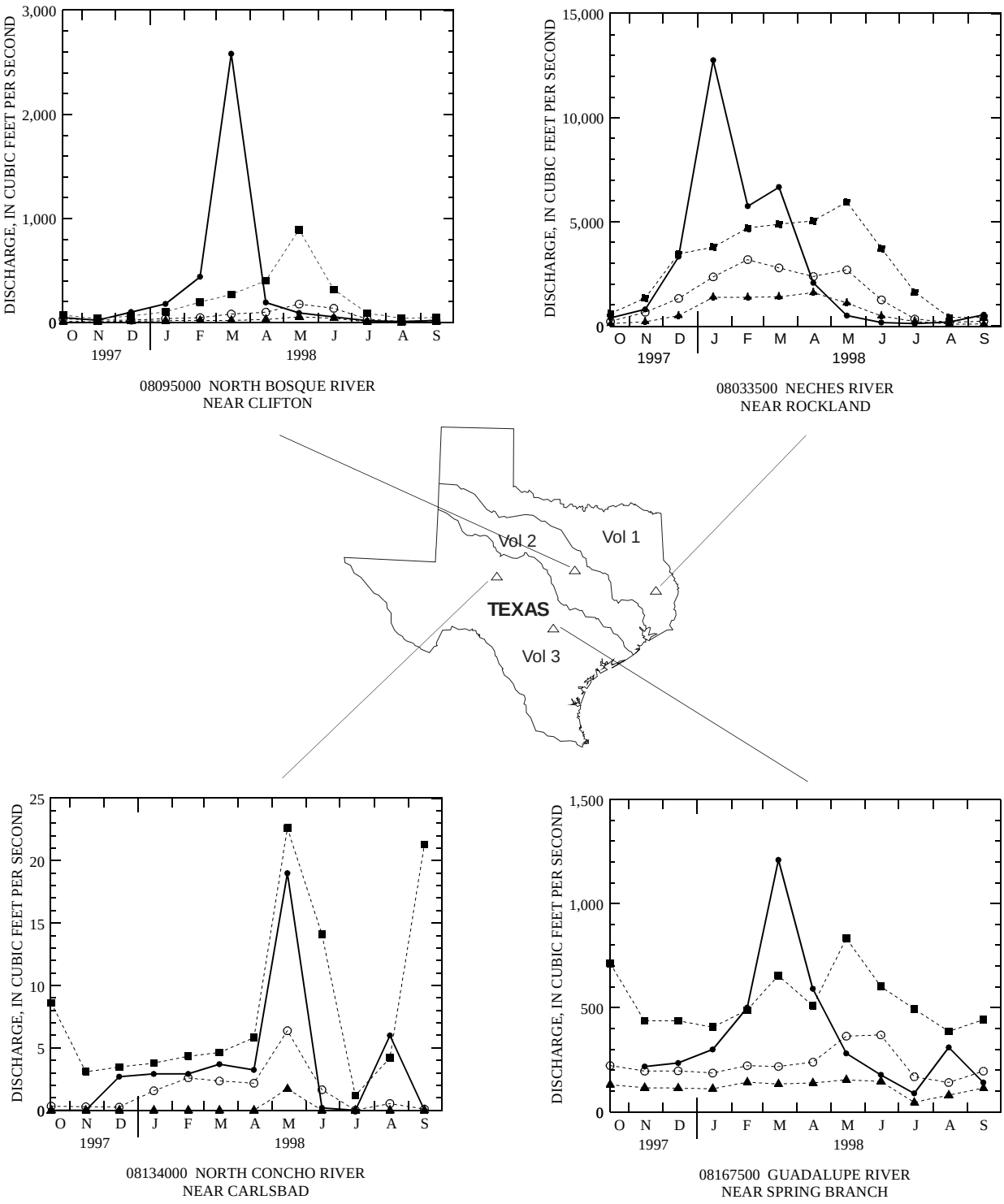


Figure 1. Area of Texas covered by volume 3 (shaded) and location of selected streamflow and water-quality stations in volume 3.



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 where 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 Colorado River, and Rio Grande 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
Colorado River Basin							
08134000	North Concho River near Carlsbad, Tex. 1/	1,640	0	3.49	94,600	0	29.3 (1924-98)
08147000	Colorado River near San Saba, Tex.	23,900	32	459	224,000	0	1,054 (1931-98)
Guadalupe River Basin							
08167500	Guadalupe River near Spring Branch, Tex. 1/	15,500	45	371	160,000	0	434 (1922-98)
08176500	Guadalupe River at Victoria, Tex.	20,600	386	1,855	179,000	14	1,867 (1935-98)
Nueces River Basin							
08210000	Nueces River near Three Rivers, Tex.	9,900	31	379	18,300	0	698 (1946-98)
Rio Grande Basin							
08446500	Pecos River near Girvin, Tex.	115	5.9	19.4	20,000	1.9	73.1 (1939-98)

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
Colorado River Basin					
08120700	Colorado River near Cuthbert, Tex.	2.6	12	3,330	1,880
Rio Grande Basin					
08469200	Rio Grande below Anzalduas Dam, Tex.	1,110	1,250	753	801

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 NOx scheduled to begin in 2000.

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

http://nadp.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://txwww.cr.usgs.gov/trin/index.html
http://txwww.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 1996 water year that began October 1, 1995, and ended September 30, 1996. 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 indention in the "List of Stations" in the front of this report. Each indention represents one rank. This downstream order and system of indention shows which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

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

Records of Stage and Water Discharge

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

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

Data Collection and Computation

The data obtained at a complete record gaging station on a stream or canal consist of records of stage (that is 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 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.

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the "Remarks" and in the inclusion of a skeleton stage-capacity table when daily contents are given.

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

Data table of daily mean values

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

below the monthly summary, the figures shown are the appropriate discharges for the calendar and water years. At some stations monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversions or reservoir contents are given.

Statistics of monthly mean data

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

Summary statistics

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

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may not be the same as the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the column heading. When this occurs, it should be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration curve statistics and runoff data are also given. Runoff data is omitted if there is extensive regulation or diversion of flow in the drainage basin.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Identifying Estimated Daily Discharge

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

Accuracy of the Records

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

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

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

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

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

Other Records Available

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

Records of Surface-Water Quality

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

Classification of Records

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

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

Arrangement of Records

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

On-Site Measurements and Sample Collection

In obtaining water-quality data, a major concern needs to be assuring that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made onsite when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures need to be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Records of surface-water quality at some National Stream 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 (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 (NASQAN) 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. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (alkalinity), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of alkalinity in the laboratory.

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 punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the Texas District Office. The address is given on the back of the title page of this report.

Water Temperature

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

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the 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 (1996) 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 concen-

trations 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 staorage of water-quality-control data within the USGS. These procedures allow for staorage of all derived QC data and are identified so that they can be related to corresponding environmental samples.

Blank Samples

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

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

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

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

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

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

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

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

Reference Samples

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

Replicate Samples

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

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

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

Spike Samples

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

ACCESS TO USGS WATER DATA

The USGS provides near real-time stage and discharge data for many of the gaging stations equipped with necessary telemetry and historic daily-mean and peak-flow discharge data for most current or discontinued gaging stations through the world wide web (WWW). These data may be accessed at

http://txwww.water.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 or 3-1/2 inch floppy disk. 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-shaped bacteria which ferment lactose with gas formation within 48 hours at 35 °C. In the laboratory these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at +35 °C ± -1.0 °C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

Fecal streptococcal bacteria are bacteria found 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 °C ± -1.0 °C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

Benthic 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

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

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

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

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

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

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

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

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

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

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 th stream bottom sediments.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Organism is any living entity.

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

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

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

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

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

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

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

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

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

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

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

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of

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

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

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

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

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

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

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

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

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

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

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

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

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

Total-sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry mass or volume, that passes a 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 ºC. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 55 to 75 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

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

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

Substrate is the physical surface upon which an organism lives.

Natural substrate refers to any naturally occurring 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 beisolated 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 manujfacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They are often components of fuels, solvents, hydraulic fluids, paint thinners, and dry cleaning agents commonly used in urban settings. VOC contamination of drinking-water supplies is a human health concern because many are toxid and are known or suspected human carcinogens (U.S. Environmental Protection Agency, 1996).

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

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

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

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

PUBLICATIONS OF TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

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

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

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.

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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.

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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.

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

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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.

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

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

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

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

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

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

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

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

4-A1. ***Some statistical tools in hydrology***, by H.C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 p.

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

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4-D1. ***Computation of rate and volume of stream depletion by wells***, by C.T. Jenkins: USGS--TWRI Book 4,Chapter D1. 1970. 17 p.

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

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

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

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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.

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

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

9-A6. ***National Field Manual for the Collection of Water-Quality Data: Field Measurements***, edited by F.D. Wilde and D.B. Radtke: USGS--TWRI Book 9, Chapter A7. 1997. 49 p.

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.

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

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

08117995 COLORADO RIVER NEAR GAIL, TX

LOCATION.--Lat 32°37'43", long 101°17'06", Borden County, Hydrologic Unit 12080002, near right downstream end of bridge on FM 1205, 5.0 mi north of junction with FM 1785, 14 mi northwest of Vincent, 25 mi west of Ira, and 13 mi southeast of Gail.

DRAINAGE AREA.--498 mi^2.

PERIOD OF RECORD.--Mar 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,240 ft above sea level, from topographic map. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation or diversions.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s:

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

No peak greater than base discharge.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	20	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	8.4	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	6.5	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.93	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	11	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	6.6	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	8.5	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	1.3	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	81	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	9.3	.00
22	.00	.00	5.2	.00	.00	.00	.00	.00	.00	.00	.23	.00
23	.00	.00	7.4	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	7.7	.00	.00	.00	.00	.00	.00	.00	e.00	.00
25	.00	.00	1.9	.00	.00	.00	.00	.00	.00	.00	e.00	.00
26	.00	.00	.35	.00	.00	.00	.00	.00	.00	.00	e.00	.00
27	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	e.00	.00
28	.00	.00	.13	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	22.82	0.00	0.00	27.46	0.00	0.00	35.83	0.00	90.53	0.00
MEAN	.000	.000	.74	.000	.000	.89	.000	.000	1.19	.000	2.92	.000
MAX	.00	.00	7.7	.00	.00	11	.00	.00	20	.00	81	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	45	.00	.00	54	.00	.00	71	.00	180	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1998, BY WATER YEAR (WY)

MEAN	1.61	1.34	2.01	1.69	4.11	2.19	6.08	35.7	36.2	12.0	5.53	17.4
MAX	10.6	4.71	15.6	8.42	23.8	10.0	51.5	263	166	107	22.6	49.1
(WY)	1992	1992	1992	1992	1992	1990	1990	1992	1992	1988	1996	1989
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1990	1990	1990	1995	1991	1991	1991	1993	1990	1994	1994	1997

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1988 - 1998	
ANNUAL TOTAL	3015.37		176.64			
ANNUAL MEAN	8.26		.48		10.1	
HIGHEST ANNUAL MEAN					46.2	1992
LOWEST ANNUAL MEAN					.48	1998
HIGHEST DAILY MEAN	853	Jun 9	81	Aug 20	2060	May 25 1992
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Jun 7 1988
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Jun 7 1988
INSTANTANEOUS PEAK FLOW			180	Aug 20	4010	Jul 3 1988
INSTANTANEOUS PEAK STAGE			4.92	Aug 20	m16.43	May 26 1992
ANNUAL RUNOFF (AC-FT)	5980		350		7310	
10 PERCENT EXCEEDS	8.1		.00		7.2	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated
m Result of earthen dam.

08120700 COLORADO RIVER NEAR CUTHBERT, TX

LOCATION.--Lat 32°28'38", long 100°56'58", Mitchell County, Hydrologic Unit 12080002, on left bank at downstream side of bridge on Farm Road 1808, 4.0 mi downstream from Deep Creek, 4.8 mi east of Cuthbert, 8.0 mi northwest of Colorado City, and at mile 810.0.

DRAINAGE AREA.--3,912 mi^2, of which 2,381 mi^2 probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Mar 1965 to current year.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,073.49 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good except those below 1.0 ft^3/s, which are fair. Since installation of gage in Mar 1965, at least 10% of contributing drainage area has been regulated by Lake J. B. Thomas (capacity, 203,600 acre-ft), 27 mi upstream. There are numerous diversions from Lake J. B. Thomas for municipal use and for oil field operations. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in 1941 and 1946 reached a stage of 36.1 ft, from State Department of Highways and Public Transportation bridge plans.

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	.66	4.4	5.6	24	3.6	3.0	.88	.24	.00	.00	.00
2	.00	.57	4.8	6.3	8.0	3.3	3.1	.63	.13	.00	.00	.00
3	.00	.54	4.8	6.3	6.5	3.2	2.9	.50	.05	.00	.00	.00
4	.00	.49	4.4	6.5	5.9	3.6	2.2	.32	.02	.00	.00	.00
5	.00	.49	5.5	6.4	6.0	3.6	3.2	.27	.01	.00	.00	.00
6	.00	.89	4.8	6.2	7.6	3.6	2.5	.50	.00	.00	.00	.00
7	.00	1.2	5.3	6.2	6.3	4.0	2.5	.55	.00	.00	.00	.00
8	.00	1.1	5.7	6.2	5.5	12	2.6	.45	.01	.00	.00	.00
9	.00	1.0	6.2	6.0	5.3	7.0	2.6	.29	.00	.00	.00	.00
10	.00	1.1	6.1	6.2	5.2	5.7	2.7	.19	.05	.00	.00	.00
11	.00	.97	5.5	6.1	5.0	5.0	2.4	.12	.47	.00	.00	.00
12	.00	1.0	5.3	6.0	5.1	4.5	1.9	.07	.18	.00	.00	.00
13	.47	1.9	5.2	5.6	5.2	4.5	1.7	.06	.03	.00	.00	.00
14	.39	2.7	5.6	5.0	5.3	4.6	1.4	.05	.01	.00	.00	.00
15	.27	3.2	5.6	5.2	5.3	7.5	1.3	.03	.00	.00	.00	.00
16	.25	2.3	5.8	5.4	5.7	35	1.4	.02	.00	.00	.00	.00
17	.22	1.9	5.5	5.5	17	22	1.1	.01	.00	.00	.00	.00
18	.24	2.0	5.4	4.2	9.3	12	1.1	.00	.00	.00	.00	.00
19	.28	2.2	5.5	4.0	7.1	10	1.8	.00	.00	.00	.00	.00
20	.25	2.5	6.1	4.3	6.2	6.9	1.7	.00	.00	.00	3.1	.00
21	.23	2.1	12	3.8	6.0	5.2	1.6	.00	.00	.00	4.3	.00
22	.25	1.9	12	3.8	6.2	4.6	1.5	.00	.00	.00	.84	.00
23	3.4	2.5	9.2	3.7	6.5	4.3	1.2	.00	.00	.00	.14	.00
24	6.0	2.5	9.1	3.7	5.7	4.0	1.0	.00	.00	.00	.02	.00
25	1.9	2.5	9.1	3.8	4.8	4.0	.95	.00	.00	.00	.00	.00
26	.64	2.6	8.1	3.7	4.3	3.9	.95	.84	.00	.00	.00	.00
27	.47	2.8	7.3	3.4	4.0	3.7	.85	28	.00	.00	.00	.00
28	.39	3.1	7.3	3.4	3.8	3.3	1.4	19	.00	.00	.00	.00
29	.30	2.5	6.2	3.2	---	3.2	1.5	2.9	.00	.00	.00	.00
30	.14	3.6	5.6	3.2	---	3.5	1.1	.87	.00	.00	.00	.00
31	.55	---	5.5	7.0	---	3.4	---	.37	---	.00	.00	---
TOTAL	16.64	54.81	198.9	155.9	192.8	204.7	55.15	56.92	1.20	0.00	8.40	0.00
MEAN	.54	1.83	6.42	5.03	6.89	6.60	1.84	1.84	.040	.000	.27	.000
MAX	6.0	3.6	12	7.0	24	35	3.2	28	.47	.00	4.3	.00
MIN	.00	.49	4.4	3.2	3.8	3.2	.85	.00	.00	.00	.00	.00
AC-FT	33	109	395	309	382	406	109	113	2.4	.00	17	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1998, BY WATER YEAR (WY)

MEAN	29.1	8.32	8.24	7.43	11.5	10.5	29.0	75.0	77.8	16.9	57.2	50.9
MAX	304	37.1	51.5	30.2	86.5	66.0	204	403	592	131	771	810
(WY)	1987	1985	1992	1992	1992	1973	1981	1965	1982	1988	1971	1980
MIN	.000	.092	.53	.68	.82	.20	.39	.044	.000	.000	.000	.000
(WY)	1969	1971	1971	1971	1971	1971	1971	1967	1984	1970	1970	1983

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1965 - 1998	
ANNUAL TOTAL	10150.55		945.42			
ANNUAL MEAN	27.8		2.59		31.3	
HIGHEST ANNUAL MEAN					104	1980
LOWEST ANNUAL MEAN					2.59	1998
HIGHEST DAILY MEAN	1480	Jun 9	35	Mar 16	8770	Sep 29 1980
LOWEST DAILY MEAN	.00	Aug 16	.00	Oct 1	.00	Apr 13 1965
ANNUAL SEVEN-DAY MINIMUM	.00	Oct 1	.00	Oct 1	.00	Apr 13 1965
INSTANTANEOUS PEAK FLOW			63	Mar 16	11500	Aug 14 1972
INSTANTANEOUS PEAK STAGE			4.18	Mar 16	27.18	Sep 29 1980
ANNUAL RUNOFF (AC-FT)	20130		1880		22650	
10 PERCENT EXCEEDS	27		6.2		26	
50 PERCENT EXCEEDS	4.8		.89		4.2	
90 PERCENT EXCEEDS	.07		.00		.00	

08120700 COLORADO RIVER NEAR CUTHBERT, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Mar 1965 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Mar 1965 to current year.
WATER TEMPERATURE: Mar 1965 to May 1980, Apr 1983 to current year.

INSTRUMENTATION.--From Mar 1965 to Oct 1987, specific conductance was recorded continuously at this station. From Apr 1983 to Oct 1987, water temperature was recorded continuously at this station. Since Oct 1989, specific conductance and water temperature are continuously recorded at this station.

REMARKS.--No estimated mean specific conductance and water temperature values. Records good except for water temperatures for Oct 13 to Dec 17, which are fair. Interruptions in the maximum and minimum water temperature values on Dec 17 were due to malfunction of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. 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 21%, sulfate is 40% and for hardness is 20%. 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, 70,000 microsiemens, Nov 17, 1968; minimum, 102 microsiemens, Sep 28, 1980.
WATER TEMPERATURE: Maximum, 36.0°C, Aug 7, 1985; minimum, 0.0°C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 13,400 microsiemens, Oct 25; minimum, 1,110 microsiemens, May 27.
WATER TEMPERATURE: Maximum, 32.8°C, Jun 13; minimum, 0.7°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)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
DEC									
17...	1340	5.9	6550	5.5	900	660	220	86	1060
FEB									
12...	1115	5.0	5190	9.0	870	670	200	86	830
APR									
22...	0815	1.6	6480	14.5	1100	900	260	118	1040

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
DEC								
17...	15	11	250	620	1700	.95	3.1	3860
FEB								
12...	12	11	200	640	1300	.73	1.0	3240
APR								
22...	13	9.8	220	810	1700	.81	.64	4060

08120700 COLORADO RIVER NEAR CUTHBERT, 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	16.64	7690	4780	215	2200	97.9	780	35.2	1100
NOV.	1997	54.81	4860	3020	447	1200	171	660	97.6	890
DEC.	1997	198.9	6210	3860	2070	1600	850	770	412	1100
JAN.	1998	155.9	5690	3530	1490	1400	591	740	309	1000
FEB.	1998	192.8	5280	3280	1710	1300	668	700	363	940
MAR.	1998	204.7	4610	2860	1580	1100	598	640	353	850
APR.	1998	55.15	6020	3740	557	1500	228	750	111	1000
MAY	1998	56.92	3880	2410	370	900	139	540	83.2	720
JUNE	1998	1.2	3140	1950	6.3	670	2.2	480	1.6	630
JULY	1998	0	--	--	--	--	--	--	--	--
AUG.	1998	8.4	4310	2680	60.8	1100	24.8	530	12.1	740
SEPT	1998	0	--	--	--	--	--	--	--	--
TOTAL		945.42	**	**	8510	**	3370	**	1780	**
WTD.AVG.		2.6	5360	3330	**	1300	**	700	**	950

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	---	---	---	10200	6610	8620	7660	6710	7100	5510	5250	5440
2	---	---	---	6610	5310	5860	7710	6570	6990	5650	5460	5540
3	---	---	---	5310	5000	5140	6610	6320	6460	5820	5570	5690
4	---	---	---	5130	4930	5040	6660	6530	6590	5570	5290	5430
5	---	---	---	4930	4350	4610	6670	4780	5490	5300	5170	5220
6	---	---	---	4350	3920	4110	5470	4830	5210	5260	5220	5240
7	---	---	---	4080	3880	3980	5040	4810	4880	5420	5260	5310
8	---	---	---	4250	3930	4140	5430	5040	5260	5500	5150	5420
9	---	---	---	4110	3640	3780	5600	5240	5380	5610	5420	5510
10	---	---	---	3670	3600	3640	6230	5600	6000	5750	5610	5680
11	---	---	---	3870	3650	3750	6450	6180	6310	6120	5470	5700
12	---	---	---	4090	3870	3990	6890	6190	6520	5780	5630	5700
13	5320	3900	4440	4090	4020	4050	7100	6890	7000	5920	5670	5820
14	6250	5320	5790	4230	4020	4150	6890	6670	6740	5930	5730	5830
15	6250	5290	5700	4230	4020	4140	6710	6420	6550	6420	5840	6200
16	5490	5100	5250	4030	3710	3860	6560	6420	6520	6440	6160	6320
17	6360	5490	5830	4420	3810	4120	6590	6440	6530	6270	6020	6170
18	7490	6360	7000	4710	4420	4580	6610	6470	6510	6140	5850	6030
19	7610	6880	7340	5130	4710	4980	6750	6610	6690	5850	5460	5610
20	6880	6040	6350	5240	4990	5140	6750	6110	6590	5880	5650	5810
21	6040	4480	5280	5130	4940	5040	8860	6110	6880	5810	5650	5710
22	4500	3970	4250	4940	4530	4750	6980	4940	5820	6010	5810	5950
23	7220	3940	6160	4720	4530	4600	7100	6220	6720	5910	5510	5660
24	8270	5020	6640	4930	4520	4780	8010	6800	7160	5750	5620	5680
25	13400	5630	11700	4520	4320	4410	8180	5180	6850	5860	5750	5820
26	12200	10400	11000	4810	4460	4640	5450	4840	5030	5830	5500	5660
27	12000	10800	11300	6120	4810	5030	6400	5450	6060	5760	5630	5710
28	12800	12000	12500	6330	6100	6210	6490	5710	6180	5750	5550	5640
29	13000	12200	12600	6580	6310	6410	5710	5530	5630	6040	5620	5830
30	12600	11900	12200	6770	6580	6690	5530	5100	5370	6010	5820	5950
31	12000	10200	11100	---	---	---	5250	4840	4960	6010	5380	5750
MONTH	---	---	---	10200	3600	4810	8860	4780	6190	6440	5150	5710

08120700 COLORADO RIVER NEAR CUTHBERT, 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	6880	2330	3990	5300	5250	5280	5130	4940	5030	8790	8370	8680
2	6750	5600	6170	5330	5220	5270	5090	4890	5010	8760	8080	8470
3	7480	6230	7120	5430	5300	5370	5150	5080	5120	8080	7400	7680
4	6800	5640	6120	5440	5320	5370	5110	4940	5010	7420	7120	7280
5	7030	4970	6170	5450	5340	5390	5230	5010	5100	7390	7220	7310
6	5220	4650	5060	5450	5360	5390	5270	4510	4890	7950	7390	7610
7	4650	4250	4340	5390	5210	5290	5090	4590	4790	8830	7950	8370
8	4950	4380	4620	8030	5100	6240	5430	5090	5330	9420	8830	9140
9	5470	4950	5300	8120	6100	7440	5450	5360	5410	9700	9420	9550
10	5570	5380	5490	6100	4260	4840	5450	5160	5300	9820	9590	9710
11	5460	5320	5400	4260	3920	4000	5280	5160	5240	10000	9770	9880
12	5320	5000	5190	4020	3730	3880	5440	5270	5330	10200	9930	10100
13	5240	4970	5090	3730	3460	3600	5840	5440	5650	10300	10100	10200
14	5240	5190	5210	3690	3460	3540	6240	5750	6010	10500	10300	10400
15	5290	5200	5240	4360	2900	3740	6710	6230	6480	10900	10500	10700
16	5380	5190	5290	5510	3620	4260	7270	6660	6970	11100	10800	11000
17	5580	3040	4730	5040	2430	4070	7600	7270	7450	11100	10900	11100
18	6950	5570	6270	3980	3120	3540	7700	7560	7630	---	---	---
19	7050	6940	7010	4030	3260	3650	7760	7480	7660	---	---	---
20	7100	6090	6870	4650	3400	4200	7650	7370	7600	---	---	---
21	6090	4790	5180	5000	4650	4770	7690	6880	7390	---	---	---
22	5390	4750	5150	5160	4890	5030	6880	6520	6670	---	---	---
23	4750	4490	4620	5060	4830	4950	6910	6520	6670	---	---	---
24	5000	4610	4730	4950	4750	4850	7220	6830	7040	---	---	---
25	5160	5000	5110	4900	4790	4850	7520	7200	7400	---	---	---
26	5370	5150	5310	4910	4730	4830	7710	7440	7600	10300	5440	7410
27	5370	5250	5330	4870	4730	4810	7920	7580	7800	7360	1110	4180
28	5270	5210	5240	4980	4830	4890	8280	7740	8060	6650	1630	2490
29	---	---	---	5080	4860	4990	8380	8210	8300	2050	1710	1870
30	---	---	---	5150	5020	5080	8470	8170	8300	2230	2050	2130
31	---	---	---	5160	5010	5070	---	---	---	2360	2230	2320
MONTH	7480	2330	5410	8120	2430	4790	8470	4510	6410	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	2610	2330	2470	---	---	---	---	---	---	---	---	---
2	2720	2600	2650	---	---	---	---	---	---	---	---	---
3	2930	2710	2820	---	---	---	---	---	---	---	---	---
4	3040	2930	2980	---	---	---	---	---	---	---	---	---
5	3120	3040	3080	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	3650	3470	3590	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	2860	2700	2760	---	---	---	---	---	---	---	---	---
11	3410	2710	3190	---	---	---	---	---	---	---	---	---
12	4630	3410	4090	---	---	---	---	---	---	---	---	---
13	4930	4630	4760	---	---	---	---	---	---	---	---	---
14	5030	4930	4990	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	13100	4660	8070	---	---	---
21	---	---	---	---	---	---	4660	1490	2250	---	---	---
22	---	---	---	---	---	---	1590	1440	1490	---	---	---
23	---	---	---	---	---	---	1830	1590	1720	---	---	---
24	---	---	---	---	---	---	1970	1830	1890	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

08120700 COLORADO RIVER NEAR CUTHBERT, 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	---	---	---	17.5	12.2	14.4	10.6	8.3	9.6	8.0	2.3	5.1
2	---	---	---	15.6	10.3	12.6	10.7	10.0	10.4	12.0	5.6	8.5
3	---	---	---	13.8	8.7	11.1	11.7	8.8	10.0	12.8	8.8	10.8
4	---	---	---	15.5	9.5	12.1	10.1	5.4	8.0	13.3	11.5	12.2
5	---	---	---	15.9	10.9	13.0	9.1	5.0	7.1	12.4	10.4	11.3
6	---	---	---	14.8	10.0	12.3	7.1	4.5	5.8	11.1	9.2	10.3
7	---	---	---	13.6	9.8	11.7	8.7	6.5	7.5	9.2	6.3	7.3
8	---	---	---	14.8	10.1	12.4	11.3	5.8	8.6	8.0	3.9	5.9
9	---	---	---	13.3	9.9	11.6	11.5	8.2	9.7	8.3	3.4	5.7
10	---	---	---	11.2	8.2	9.4	9.1	5.4	7.4	6.6	4.7	5.4
11	---	---	---	8.5	6.3	7.4	7.4	4.6	5.4	8.6	3.1	5.5
12	---	---	---	8.3	7.7	8.0	6.3	2.4	4.1	9.3	3.9	6.5
13	20.7	15.4	17.7	9.1	7.6	8.3	5.7	.7	3.2	7.7	5.3	6.0
14	19.0	13.2	15.8	8.6	5.7	7.7	6.8	1.2	4.1	9.7	5.0	6.8
15	18.6	12.0	15.0	8.1	4.8	6.1	7.5	1.7	4.8	8.6	3.7	6.2
16	19.8	11.9	15.4	7.6	3.2	5.4	8.1	2.4	5.5	9.3	3.6	6.4
17	20.3	12.8	16.0	7.3	4.2	5.8	---	---	5.4	9.8	4.2	7.1
18	19.5	12.8	15.8	9.3	3.9	6.5	7.1	2.2	4.7	10.8	6.1	8.3
19	20.1	13.1	16.4	9.7	4.7	7.3	8.1	2.8	5.7	9.4	4.6	7.2
20	19.7	15.2	16.8	10.5	6.6	8.7	8.1	4.8	6.2	11.2	6.9	8.8
21	16.5	14.1	15.1	11.3	7.2	9.2	7.6	4.0	5.6	9.2	6.9	7.8
22	16.7	12.6	14.4	11.8	7.4	9.4	5.9	3.8	5.0	8.2	5.8	6.7
23	19.0	15.5	16.9	11.5	6.5	9.2	5.4	4.8	5.2	9.4	5.0	6.8
24	18.8	14.2	16.4	12.2	7.4	9.9	7.0	3.4	5.1	9.5	4.5	6.8
25	17.2	13.6	15.2	15.1	9.9	12.1	5.9	4.0	4.9	11.1	5.4	8.1
26	14.3	9.8	11.9	14.2	11.7	12.9	5.9	3.1	4.2	11.1	5.9	8.4
27	13.7	8.1	10.9	15.1	11.7	13.4	5.5	1.9	3.6	10.4	4.5	7.4
28	15.9	10.4	12.9	15.9	12.7	14.2	5.6	2.6	3.8	10.7	5.5	8.1
29	17.1	11.2	13.9	13.0	9.6	11.3	5.8	1.5	3.5	10.8	5.1	8.0
30	17.6	11.1	14.0	12.4	8.8	10.4	6.4	2.0	4.1	10.4	5.8	8.2
31	16.7	11.0	13.7	---	---	---	6.6	2.4	4.5	13.4	8.7	10.6
MONTH	---	---	---	17.5	3.2	10.1	---	---	5.9	13.4	2.3	7.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	11.7	8.4	10.1	13.2	6.9	9.8	20.7	11.4	15.9	24.6	17.0	20.9
2	11.5	6.8	9.1	12.9	6.2	9.3	20.4	13.9	16.9	26.5	17.8	21.7
3	12.1	6.6	9.2	13.9	6.3	10.0	20.3	12.1	16.1	27.0	18.3	22.2
4	10.6	7.7	9.0	17.4	10.0	13.2	21.2	12.7	17.0	27.7	19.0	22.7
5	8.8	6.6	7.8	16.3	11.5	13.6	23.1	14.1	18.4	28.5	19.4	23.2
6	6.6	5.6	6.0	13.3	10.5	11.3	20.7	16.5	18.5	26.9	18.2	22.1
7	9.7	4.0	6.6	13.8	9.9	11.5	20.9	13.3	17.1	27.1	18.2	22.4
8	11.7	5.9	8.5	11.8	7.4	9.7	20.3	13.4	17.0	25.6	18.6	21.7
9	12.7	8.4	10.4	11.9	6.1	8.9	21.6	12.6	17.2	27.1	17.3	21.7
10	13.1	9.5	11.1	12.1	5.4	8.6	22.8	14.1	18.6	28.4	17.4	22.3
11	12.2	7.4	9.8	13.0	5.7	8.9	22.1	15.8	19.1	28.9	19.6	23.3
12	11.8	8.4	9.9	9.3	5.4	7.3	23.3	15.5	19.3	29.7	18.1	23.3
13	13.5	8.8	10.8	14.8	7.4	10.7	23.3	16.9	20.3	26.8	20.3	23.6
14	11.7	9.7	10.8	15.2	12.3	13.6	23.6	16.2	19.8	29.6	21.6	24.9
15	12.8	10.2	11.3	14.8	13.5	14.2	23.3	16.6	19.8	27.5	19.1	23.3
16	13.3	10.5	11.7	13.5	11.3	12.5	22.6	16.4	19.2	27.0	17.1	21.9
17	11.6	9.4	10.5	15.9	9.4	12.5	18.3	14.3	15.9	30.0	21.5	24.2
18	12.2	8.0	10.0	18.4	11.6	14.7	20.1	11.5	15.5	---	---	---
19	11.9	8.4	10.0	15.9	11.6	13.8	21.4	14.1	17.7	---	---	---
20	13.4	7.1	10.0	16.4	9.0	12.5	19.5	15.1	17.5	---	---	---
21	10.9	9.9	10.3	17.3	9.3	13.1	20.5	12.8	16.5	---	---	---
22	14.3	9.1	11.3	19.0	10.6	14.5	22.4	14.4	18.1	---	---	---
23	16.1	9.2	12.4	21.4	12.9	16.8	22.9	15.3	19.0	---	---	---
24	16.0	10.0	13.0	22.8	14.9	18.6	24.6	17.8	20.7	---	---	---
25	15.9	12.7	14.2	24.1	17.3	20.1	25.5	17.9	21.2	---	---	---
26	14.0	9.2	11.7	23.7	18.4	20.5	25.3	20.0	22.1	23.2	20.7	21.7
27	13.3	7.5	10.4	20.7	16.1	18.5	20.8	16.9	18.3	26.4	18.8	22.4
28	13.9	8.5	10.9	22.3	13.9	17.9	21.2	14.2	17.3	29.4	21.5	25.1
29	---	---	---	25.0	17.9	20.8	22.4	14.7	18.4	31.4	24.1	27.4
30	---	---	---	23.5	17.2	20.5	24.8	16.0	20.1	30.7	24.6	27.5
31	---	---	---	19.5	12.6	16.0	---	---	---	32.4	23.7	27.6
MONTH	16.1	4.0	10.2	25.0	5.4	13.7	25.5	11.4	18.3	---	---	---

08120700 COLORADO RIVER NEAR CUTHBERT, 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	30.6	24.0	27.1	---	---	---	---	---	---	---	---	---
2	31.1	22.9	26.8	---	---	---	---	---	---	---	---	---
3	32.0	23.4	27.4	---	---	---	---	---	---	---	---	---
4	29.5	24.2	26.5	---	---	---	---	---	---	---	---	---
5	25.5	19.1	22.0	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	25.4	20.8	21.7	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	24.0	22.8	23.5	---	---	---	---	---	---	---	---	---
11	29.1	21.8	24.9	---	---	---	---	---	---	---	---	---
12	31.5	23.0	26.9	---	---	---	---	---	---	---	---	---
13	32.8	24.5	28.0	---	---	---	---	---	---	---	---	---
14	30.5	22.4	26.4	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	32.6	28.1	29.4	---	---	---
21	---	---	---	---	---	---	30.7	25.5	28.0	---	---	---
22	---	---	---	---	---	---	30.2	25.3	27.6	---	---	---
23	---	---	---	---	---	---	30.1	24.9	27.2	---	---	---
24	---	---	---	---	---	---	31.3	24.5	27.1	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

08121000 COLORADO RIVER AT COLORADO CITY, TX

LOCATION.--Lat 32°23'33", long 100°52'42", Mitchell County, Hydrologic Unit 12080002, on right bank at Colorado City, 3,517 ft upstream from bridge on State Highway 377, 4,100 ft upstream from the Texas and Pacific Railroad Company bridge, 1.3 mi downstream from bridge on Interstate Highway 20 and U.S. Highway 80, 1.6 mi upstream from Lone Wolf Creek, and at mile 796.3.

DRAINAGE AREA.--3,966 mi^2, of which 2,381 mi^2 probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Nov 1923 to Aug 1925 (published as "at Colorado"), May 1946 to current year.

REVISED RECORDS.--WSP 1512: 1946(M). WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,030.16 ft above sea level. Nov 28, 1923, to Aug 31, 1925, nonrecording gage at site 1.4 mi downstream at different datum. May 9 to Aug 5, 1946, nonrecording gage at site 185 ft upstream at present datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since Jul 1952 at least 10% of contributing drainage area has been regulated by Lake J.B. Thomas (capacity, 203,600 acre-ft) 31 mi upstream. The Colorado River Municipal Water District diverts low flow into an off channel reservoir 3 mi upstream for brine disposal. There are numerous diversions from Lake J.B. Thomas for municipal use and for oil field operations.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--6 years (water years 1947-52) prior to completion of Lake J.B. Thomas, 85.4 ft^3/s (61,870 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1947-52).--Maximum discharge, 24,900 ft^3/s Jul 6, 1948 (gage height, 22.37 ft, from floodmark); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1910, 35.9 ft Jun 20, 1939, present site and datum, based on floodmarks 1,000 ft upstream and 3,740 ft downstream from gage; discharge, 66,000 ft^3/s, by slope-area measurement of peak flow at site 2.5 mi upstream from 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	.12	.26	.52	.48	.43	.48	.25	.45	.06	.04	.02	.04
2	.11	.24	.89	.61	.32	.35	.15	.39	.05	.04	.02	.04
3	.13	.24	.87	.69	.32	.37	.15	.26	.03	.04	.02	.03
4	.14	.26	.52	.78	.42	.47	.15	.23	.02	.04	.01	.03
5	.14	.33	.41	.90	.75	.62	.30	.23	.02	.04	.02	.03
6	.34	.27	.42	.76	.45	.40	.20	.15	.03	.03	.02	.03
7	.54	.32	.90	.51	.46	.66	.20	.09	.03	.02	.02	.03
8	.36	.38	.89	.64	1.8	.44	.40	.10	.04	.04	.02	.03
9	.25	.41	.44	.50	.53	.42	.45	.11	.03	.03	.02	.03
10	.38	.41	.31	.50	.35	.31	.35	.17	.03	.03	.02	.03
11	.41	.31	.35	.55	.30	.32	.30	.13	.13	.02	.02	.03
12	.37	.67	.44	.57	.27	.33	.40	.10	.10	.02	.02	.03
13	.16	.92	.50	.61	.17	.55	.35	.10	.05	.03	.03	.03
14	.15	.86	.72	.71	.21	.57	.40	.12	.02	.02	.03	.03
15	.15	.66	.50	.50	.27	1.5	.50	.04	.02	.02	.03	.03
16	.14	.55	.61	.51	.54	8.0	.60	.07	.02	.02	.03	.04
17	.14	.53	.51	.36	.38	.83	.65	.07	.03	.25	.02	.04
18	.15	.65	.50	.56	.23	.42	.60	.05	.02	.03	.03	.06
19	.14	.54	.55	.49	.21	.23	.70	.05	.02	.02	.03	.64
20	.14	.38	1.8	.56	.26	.18	.60	.06	.02	.02	.02	.26
21	.20	.30	1.2	.47	.61	.16	.60	.05	.02	.03	.02	.21
22	.24	.32	.44	.43	.62	.17	.56	.06	.02	.01	.02	.15
23	11	.29	.76	.47	.36	.22	.52	.06	.02	.01	.03	.05
24	.63	.36	.74	.45	.28	.34	.43	.09	.02	.01	.03	.05
25	.25	.39	.41	.55	.28	.49	.33	.12	.03	.01	.03	.04
26	.21	.32	.71	.25	.33	.60	.36	.41	.03	.02	.03	.04
27	.27	.44	.53	.22	.35	1.6	.42	1.6	.03	.02	.03	.04
28	.34	.80	.56	.28	.50	.26	.42	.23	.03	.02	.02	.04
29	.36	.48	.35	.27	---	.35	.44	.13	.03	.02	.03	.04
30	.32	.49	.37	.36	---	.36	.37	.09	.03	.01	.03	.04
31	.29	---	.38	.68	---	.28	---	.07	---	.02	.04	---
TOTAL	18.57	13.38	19.10	16.22	12.00	22.28	12.15	5.88	1.03	0.98	0.76	2.21
MEAN	.60	.45	.62	.52	.43	.72	.41	.19	.034	.032	.025	.074
MAX	11	.92	1.8	.90	1.8	8.0	.70	1.6	.13	.25	.04	.64
MIN	.11	.24	.31	.22	.17	.16	.15	.04	.02	.01	.01	.03
AC-FT	37	27	38	32	24	44	24	12	2.0	1.9	1.5	4.4

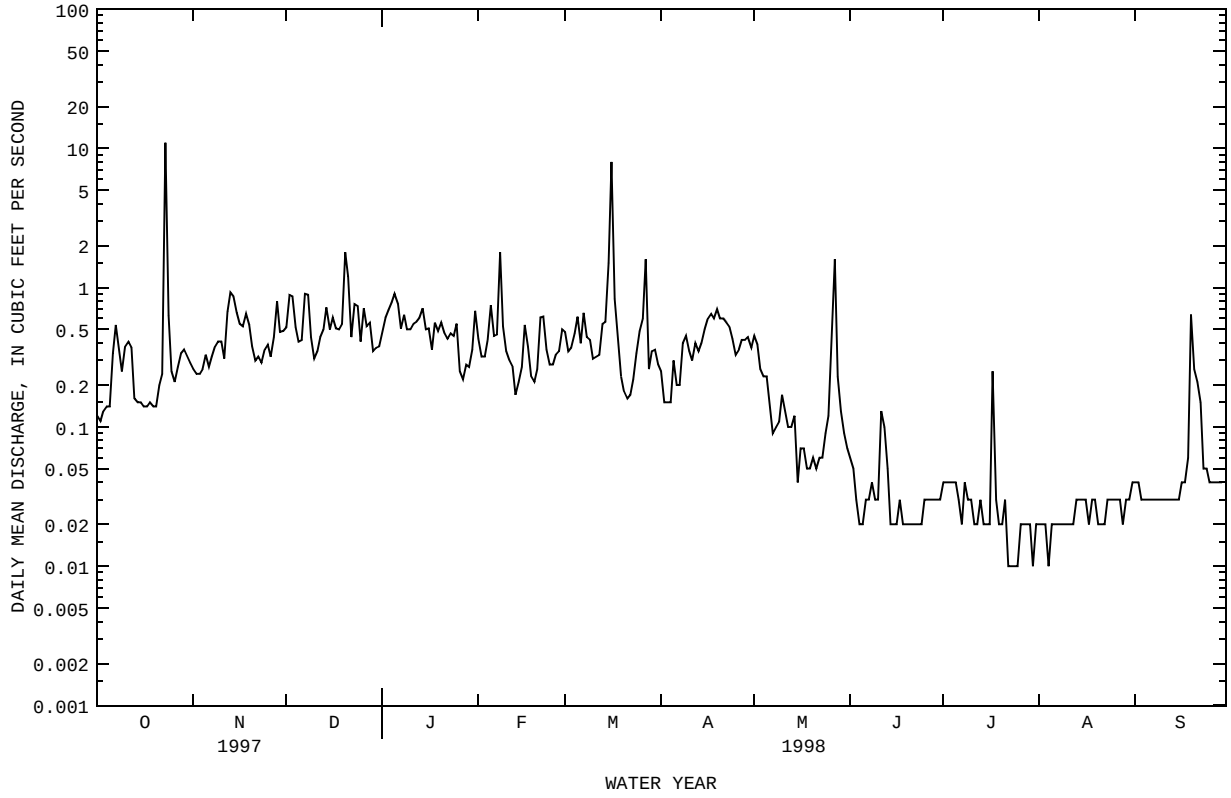
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 1998z, BY WATER YEAR (WY)

MEAN	37.8	7.68	5.79	4.51	10.4	7.68	37.4	99.9	79.0	20.6	41.2	58.5
MAX	339	61.1	49.6	33.6	99.0	88.3	332	1048	745	197	684	817
(WY)	1987	1985	1992	1992	1957	1973	1957	1957	1982	1961	1971	1962
MIN	.000	.000	.026	.051	.061	.000	.010	.001	.000	.000	.000	.000
(WY)	1969	1956	1955	1971	1971	1956	1955	1970	1953	1974	1954	1954

08121000 COLORADO RIVER AT COLORADO CITY, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1953 - 1998z	
ANNUAL TOTAL	11623.84		124.56			
ANNUAL MEAN	31.8		.34		34.3	
HIGHEST ANNUAL MEAN					143	1957
LOWEST ANNUAL MEAN					.34	1998
HIGHEST DAILY MEAN	1440	Jun 10	11	Oct 23	9560	May 25 1957
LOWEST DAILY MEAN	.04	Sep 18	.01	Jul 22	.00	Oct 4 1952
ANNUAL SEVEN-DAY MINIMUM	.05	Sep 15	.01	Jul 22	.00	Oct 4 1952
INSTANTANEOUS PEAK FLOW			82	Oct 23	13000	May 25 1957
INSTANTANEOUS PEAK STAGE			3.38	Oct 23	27.81	Sep 29 1980
ANNUAL RUNOFF (AC-FT)	23060		247		24820	
10 PERCENT EXCEEDS	68		.62		25	
50 PERCENT EXCEEDS	.56		.25		.56	
90 PERCENT EXCEEDS	.13		.02		.00	

z Period of regulated streamflow.



08121000 COLORADO RIVER AT COLORADO CITY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1946 to Sep 1954, Nov 1956 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: May 1946 to Sep 1954, Nov 1956 to current year.
WATER TEMPERATURE: Nov 1952 to Sep 1954, Nov 1956 to current year.

INSTRUMENTATION.--From 1969 to 1975, specific conductance was 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 10%, chloride is 23%, sulfate is 32% and for hardness is 20%. 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, 76,000 microsiemens, Sep 21, 1998; minimum daily, 240 microsiemens, Sep 29, 1980.
WATER TEMPERATURE: Maximum daily, 39.0°C, Jul 21, 1995; minimum daily, 0.0°C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 76,000 microsiemens, Sep 21; minimum daily, 2500 microsiemens, Jul 18.
WATER TEMPERATURE: Maximum daily, 37.0°C, Sep 4, 5; minimum daily, 2.5°C, Dec 15.

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)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT									
08...	1445	.45	24300	27.0	1800	1700	410	187	5220
DEC									
18...	1055	.41	25600	4.0	2000	1700	470	194	5150
FEB									
12...	1325	.49	18900	11.5	1800	1600	430	189	4030
APR									
22...	1040	.62	19500	15.5	1700	1500	370	188	4110
JUN									
17...	1120	.03	42900	29.5	2600	2400	570	282	7660
JUL									
22...	1450	.02	4290	35.0	630	470	110	83	742

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
OCT								
08...	54	16	130	1900	8000	.83	1.3	15800
DEC								
18...	51	14	230	2000	8000	.95	3.0	15900
FEB								
12...	41	12	210	1900	6300	.96	1.5	13000
APR								
22...	43	15	180	2100	6200	.69	2.1	13100
JUN								
17...	66	21	150	3200	11000	.79	2.2	23300
JUL								
22...	13	9.1	150	1100	640	.78	1.2	2830

08121000 COLORADO RIVER AT COLORADO CITY, 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	18.57	24520	15910	798	7600	383	2300	114	2100
NOV.	1997	13.38	23500	15280	552	7300	264	2200	80.9	2100
DEC.	1997	19.1	23830	15480	799	7400	382	2200	116	2100
JAN.	1998	16.22	19280	12660	554	5900	258	2000	88.0	1900
FEB.	1998	12	19560	12830	416	6000	194	2000	65.6	1900
MAR.	1998	22.28	18370	12080	727	5600	337	1900	117	1800
APR.	1998	12.15	19040	12510	410	5800	190	2000	65.5	1800
MAY	1998	5.88	24120	15660	249	7500	119	2300	35.8	2100
JUNE	1998	1.03	29860	19080	53.1	9600	26.6	2300	6.5	2200
JULY	1998	0.98	10490	6990	18.5	3100	8.2	1200	3.3	1100
AUG.	1998	0.76	9510	6380	13.1	2800	5.7	1200	2.5	1100
SEPT	1998	2.21	62450	36350	217	22900	137	*****	-1.58	460
TOTAL		124.56	**	**	4810	**	2300	**	693	**
WTD.AVG.		0.34	22000	14290	**	6900	**	2100	**	1900

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	22500	e23000	23800	e23000	20900	18000	16300	e22000	28100	20500	8370	8800
2	23900	e23000	24200	e22000	19300	19100	16100	e22000	28000	e19000	8730	8780
3	e24000	22800	25700	e21000	19900	19400	e17000	e23000	27400	17900	9110	9820
4	e24000	22700	e25000	20200	18800	19000	e17000	23200	e26000	16600	9320	12000
5	e24000	23100	24900	15300	19700	16800	e17000	23700	25300	15600	9290	15400
6	24100	e23000	25300	17700	e20000	e18000	17600	24200	24000	14200	9210	26500
7	26200	22800	25100	20400	e20000	e20000	18400	e24000	22400	12800	9160	26500
8	24500	22500	26300	20700	e22000	e22000	19000	23400	20100	12600	9340	31400
9	e24000	22500	25000	e21000	23800	22200	e19000	22800	18800	12100	9470	34200
10	22700	22500	24400	e21000	24400	21100	18500	23400	18400	12000	9730	36300
11	23800	22300	24200	e21000	22600	21300	18200	23700	34800	12200	9950	38200
12	24400	e22000	e24000	20800	18900	e21000	18600	23600	e36000	12300	10100	38800
13	24500	23700	e24000	19400	20800	21300	17500	23800	e37000	12000	9650	39400
14	24300	e23000	e23000	19900	19900	21400	19000	23100	e38000	11400	9490	39400
15	24400	e23000	22900	e18000	18200	21200	16100	e24000	38900	11600	9520	41700
16	24800	e23000	24300	17300	17900	20000	18600	e24000	39000	e11000	9680	56100
17	e25000	22800	23600	20500	16500	14700	e19000	e24000	40000	8000	9930	56000
18	e25000	23100	25600	16000	18100	12400	e19000	e24000	e35000	2500	9820	71600
19	e25000	23400	24500	17800	18600	13400	e19000	e24000	32600	2680	9660	71600
20	e25000	e24000	24800	16200	e18000	e13000	19200	e25000	31900	3200	9580	73300
21	e25000	e24000	e20000	15900	e17000	e12000	20100	e25000	31300	3700	9670	76000
22	e25000	24100	e23000	19900	e17000	e12000	20000	e25000	30900	4200	9730	74400
23	e25000	24400	e22000	e20000	16500	11700	e19000	e25000	30300	4680	9650	73300
24	e20000	24900	e22000	e20000	17500	12000	18800	25300	29300	e5000	9650	72500
25	e22000	25200	e23000	e20000	16300	11700	18900	27000	28300	e5500	9600	73400
26	21500	25100	e22000	20000	e18000	e14000	18900	31500	e27000	e6000	9580	73400
27	22000	25800	e23000	20800	18800	16200	20900	24100	e26000	6380	9620	72600
28	24700	e25000	e23000	20800	19000	15400	22900	20700	e25000	6800	9710	71800
29	24900	e24000	e24000	e20000	---	13800	22600	e23000	24400	7190	9560	73700
30	24000	24100	e24000	18100	---	14500	21000	e25000	22500	e7500	9450	73700
31	e24000	---	e24000	17800	---	16000	---	e27000	---	7830	9060	---
MEAN	24000	23500	23900	19400	19200	16900	18800	24200	29200	9840	9500	49000
MAX	26200	25800	26300	23000	24400	22200	22900	31500	40000	20500	10100	76000
MIN	20000	22000	20000	15300	16300	11700	16100	20700	18400	2500	8370	8780

e Estimated

08121000 COLORADO RIVER AT COLORADO CITY, 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	20.5	---	8.5	---	9.5	6.5	12.0	---	24.0	27.0	33.0	34.0
2	28.5	---	10.0	---	6.0	6.5	22.0	---	25.5	---	34.0	32.0
3	---	8.5	8.0	---	7.0	7.5	---	---	25.5	27.0	33.0	36.0
4	---	12.5	---	13.0	7.0	10.5	---	19.5	---	27.0	30.0	37.0
5	---	11.5	9.5	10.5	8.5	10.5	---	20.5	23.0	28.0	28.0	37.0
6	21.5	---	5.5	10.5	---	---	16.5	18.0	19.0	34.0	30.0	35.0
7	21.0	15.5	8.0	7.5	---	---	14.0	---	21.5	36.5	34.0	34.0
8	21.5	11.0	6.5	10.0	---	---	13.0	28.0	24.0	27.5	35.0	34.0
9	---	12.0	8.5	---	8.5	5.5	---	18.5	25.5	34.5	36.0	32.0
10	25.0	8.0	5.0	---	10.0	5.5	16.0	19.0	26.5	29.0	35.0	31.0
11	21.5	7.0	5.5	---	6.5	5.5	16.5	20.0	23.0	27.5	33.0	31.0
12	22.0	---	---	4.5	11.5	---	16.5	22.0	---	29.0	35.0	30.0
13	15.0	10.0	---	5.5	14.5	15.0	15.5	22.0	---	25.0	33.0	31.0
14	14.0	---	---	6.5	10.0	13.0	17.5	25.5	---	28.0	35.0	32.0
15	12.5	---	2.5	---	10.5	14.5	14.5	---	19.5	27.5	35.0	30.0
16	19.0	---	4.5	11.0	10.5	12.0	22.0	---	33.5	---	30.0	28.0
17	---	6.0	3.0	5.5	9.5	10.0	---	---	33.5	31.5	35.0	27.0
18	---	6.0	4.0	7.0	8.0	12.0	---	---	---	26.0	35.0	30.0
19	---	5.0	12.5	5.0	12.0	17.0	---	---	36.0	26.5	30.0	34.0
20	---	---	7.0	8.5	---	---	16.5	---	28.0	26.0	34.0	32.0
21	---	---	---	8.0	---	---	23.0	---	27.0	27.5	34.0	34.0
22	---	8.0	---	9.5	---	---	14.5	---	26.5	26.5	34.0	32.0
23	---	7.0	---	---	8.5	12.5	---	---	26.5	28.0	35.0	24.0
24	---	8.0	---	---	11.5	17.5	25.0	25.5	33.0	---	34.0	34.0
25	---	12.5	---	---	13.0	17.0	18.0	24.0	33.5	---	34.0	34.0
26	9.0	13.0	---	5.5	---	---	20.0	22.5	---	---	36.0	34.0
27	8.0	14.0	---	4.5	14.5	17.0	15.0	21.5	---	26.5	35.0	34.0
28	12.0	---	---	6.5	9.0	17.5	14.5	34.0	---	27.5	35.0	32.0
29	12.5	---	---	---	---	20.5	14.0	---	27.0	27.0	31.0	34.0
30	19.5	9.0	---	11.0	---	18.0	25.0	---	28.0	---	30.0	36.0
31	---	---	---	10.0	---	13.0	---	---	---	27.0	35.0	---
MEAN	---	---	---	---	---	---	---	---	---	---	33.4	32.5
MAX	---	---	---	---	---	---	---	---	---	---	36.0	37.0
MIN	---	---	---	---	---	---	---	---	---	---	28.0	24.0

08123000 LAKE COLORADO CITY NEAR COLORADO CITY, TX

LOCATION.--Lat 32°20'41", long 100°55'10", Mitchell County, Hydrologic Unit 12080002, on left bank at municipal water-intake structure, 1.7 mi upstream from Colorado City Dam on Morgan Creek, 2.2 mi downstream from the Texas and Pacific Railway Co. bridge, 2.5 mi upstream from mouth, and 4.0 mi southwest of Colorado City.

DRAINAGE AREA.--345 mi^2, of which 42.7 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Apr 1949 to current year.
Water-quality records.--Chemical analyses: Dec 1969 to May 1984.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Aug 23, 1950, non-recording gages at or near powerplant about 0.7 mi downstream at same datum. Satellite telemeter at station.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam 4,800 ft long. Storage began in Apr 1949, and the dam was completed in Sep 1949. The dam and lake are owned by the Texas Utilities Electric Co. to operate their thermal electric powerplant. The uncontrolled spillway is an excavated cut channel through natural ground 1,200 ft wide located 600 ft upstream and to the left of left end of dam. The spillway is designed to discharge 150,000 ft^3/s at the maximum design flood elevation. The service spillway is an uncontrolled rectangular drop inlet located 100 ft upstream from dam with two uncontrolled openings of 10.0 by 12.0 ft. The spillway is designed for a maximum discharge of 5,000 ft^3/s. A service outlet is provided for small releases downstream through a 30-inch valve-controlled concrete pipe. Record of pumpage from Champion Creek Reservoir (station 08123600), into Lake Colorado City can be obtained from the Texas Utilities Electric Co. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	2,090.0
Design flood	2,086.7
Crest of spillway	2,073.7
Crest of service spillway (top of conservation pool)	2,070.2
Lowest gated outlet (invert)	2,024.3

COOPERATION.--Capacity curve dated Oct 1, 1964 was furnished by the Texas Utilities Electric Co. Record of diversions for municipal use can be obtained from the city of Colorado City.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 40,280 acre-ft, Sep 7, 1962 (elevation, 2,075.10 ft); minimum since first appreciable storage, 5,800 acre-ft, Apr 11-13, 1950 (elevation, 2,045.72 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 20,840 acre-ft, Oct 9 (elevation, 2,062.43 ft); minimum contents, 15,820 acre-ft, Aug 11 (elevation, 2,058.00 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	20780	20330	19930	19830	19500	19190	18730	17910	17360	16730	16000	16240
2	20780	20320	19980	19830	19490	19180	18700	17880	17350	16710	16000	16240
3	20770	20290	19950	19830	19500	19140	18660	17860	17220	16690	15980	16230
4	20750	20270	19950	19820	19510	19130	18640	17830	17200	16670	15980	16220
5	20740	20240	19930	19820	19490	19120	18630	17800	17180	16680	15960	16220
6	20790	20240	19920	19820	19480	19120	18610	17770	17160	16630	15960	16210
7	20790	20190	19950	19810	19470	19120	18560	17750	17160	16630	15950	16200
8	20800	20190	19940	19800	19440	19070	18530	17690	17160	16590	15930	16190
9	20830	20160	19920	19770	19440	19050	18520	17670	17160	16560	15900	16170
10	20810	20130	19890	19770	19410	19030	18480	17630	17180	16530	15890	16150
11	20790	20110	19870	19760	19390	19010	18440	17580	17170	16510	15830	16070
12	20750	20140	19860	19750	19380	18990	18420	17540	17180	16510	15870	16070
13	20700	20140	19850	19740	19360	18980	18390	17520	17190	16490	15980	16060
14	20650	20110	19830	19730	19330	18980	18370	17520	17130	16470	15990	16060
15	20630	20110	19820	19720	19360	19050	18340	17430	17110	16460	15980	16060
16	20590	20080	19810	19690	19350	19070	18310	17430	17080	16400	15990	16050
17	20590	20070	19820	19680	19330	19050	18280	17390	17070	16400	15980	16060
18	20560	20070	19810	19670	19310	19040	18270	17360	17040	16380	15960	16060
19	20530	20060	19800	19640	19290	19010	18240	17330	17030	16350	16000	16060
20	20510	20050	19890	19630	19270	18990	18210	17310	17000	16340	16020	16050
21	20490	20040	19880	19610	19300	18970	18190	17280	16970	16310	16190	16030
22	20480	20020	19870	19600	19290	18960	18170	17200	16950	16280	16200	16010
23	20610	20020	19910	19570	19300	18950	18140	17160	16910	16270	16210	16010
24	20570	20000	19880	19560	19320	18940	18070	17130	16860	16230	16220	16000
25	20520	20000	19890	19550	19290	18940	18070	17110	16830	16220	16200	15990
26	20470	19990	19890	19540	19250	18910	18050	17120	16810	16180	16200	15990
27	20450	20010	19860	19520	19240	18870	18030	17140	16780	16150	16190	15990
28	20450	19990	19870	19510	19200	18850	17990	17230	16770	16120	16280	15990
29	20420	19960	19850	19500	---	18810	17970	17260	16760	16090	16280	15980
30	20380	19950	19850	19490	---	18800	17960	17260	16740	16060	16280	15970
31	20370	---	19830	19520	---	18760	---	17260	---	16030	16280	---
MAX	20830	20330	19980	19830	19510	19190	18730	17910	17360	16730	16280	16240
MIN	20370	19950	19800	19490	19200	18760	17960	17110	16740	16030	15830	15970
(+)	2062.05	2061.70	2061.60	2061.34	2061.07	2060.68	2059.98	2059.35	2058.87	2058.20	2058.43	2058.14
(@)	-420	-420	-120	-310	-320	-440	-800	-700	-520	-710	+250	-310

CAL YR 1997 MAX 21330 MIN 17980 (@) +1350
WTR YR 1998 MAX 20830 MIN 15830 (@) -4820

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

08123600 CHAMPION CREEK RESERVOIR NEAR COLORADO CITY, TX

LOCATION.--Lat 32°16'53", long 100°51'30", Mitchell County, Hydrologic Unit 12080002, 50 ft downstream from service outlet structure at Champion Creek Dam on Champion Creek, 1.0 mi upstream from mouth, 4.8 mi downstream from State Highway 208, and 7.2 mi south of Colorado City.

DRAINAGE AREA.--207 mi^2, of which 20.8 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Oct 1959 to Sep 1987, May 1997 to current year.
Water-quality records.--Chemical analyses: Aug 1967 to May 1984.

REVISED RECORDS.--WRD TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Sep 29, 1959, non-recording gages at same site and datum. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily contents, which are fair. The reservoir is formed by a rolled earthfill dam about 6,800 ft long. The dam was completed on Apr 30, 1959. Closure and storage began in Feb 1959. The capacity curve is based on U.S. Geological Survey topographic map surveyed in 1950: excavation for borrow, estimated not to exceed 1,200 acre-ft, is not included. The dam and reservoir are owned and operated by the Texas Utilities Electric Company. Water may be pumped from the reservoir through a 24-inch pipeline to Lake Colorado City (station 08123000) for municipal use and for cooling operations of a steam generating powerplant. There are two spillways. The uncontrolled emergency spillway, 450 ft wide and 800 ft long, is located at the right end of dam. The controlled service spillway, is a cut channel 50 ft wide, about 1,800 ft long, and 8 ft deep, and cut into the emergency spillway at the extreme right end. There is a controlled drop-inlet structure, 4.0 by 5.0 ft, with a side opening of 1.5 by 3.0 ft. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	2,109.0
Design flood	2,104.0
Crest of spillway	2,091.0
Crest of spillway (top of conservation pool	2,083.0
Lowest gated outlet (invert)	2,020.0

COOPERATION.--The capacity table dated Apr 14, 1959 was prepared from curve furnished by Feese and Nichols, Consulting Engineers, Fort Worth, Texas. Record of diversions into Lake Colorado City may be obtained from Texas Utilities Electric Co.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 47,060 acre-ft, Jun 29, 1982 (elevation, 2,085.79 ft); minimum, 1,600 acre-ft Oct 1, 1959 (elevation, 2,025.90 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 20,750 acre-ft, Oct 1 (elevation, 2,064.90 ft); minimum contents, 11,840 acre-ft, Sep 30 (elevation, 2,053.52 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	20700	20140	20000	20080	20160	20190	20170	19720	18960	16980	15020	13430
2	20640	20140	20010	20080	20150	20180	20140	19720	18890	16910	14960	13370
3	20580	20120	20010	20090	20160	20170	20120	19680	18840	16850	14900	13320
4	20520	20120	20010	20110	20190	20180	20120	19660	18760	16780	14830	13270
5	20470	20090	20010	20110	20170	20180	20100	19650	18690	16720	14790	13220
6	20460	20080	19990	20110	20170	20170	20090	19620	18610	16700	14740	13160
7	20410	20070	20020	20110	20170	20250	20070	19610	18530	16630	14690	13110
8	20350	20060	20020	20110	20180	20210	20060	19580	18480	16560	14630	13050
9	20350	20060	20020	20120	20180	20200	20060	19550	18420	16500	14580	13000
10	20340	20030	20000	20110	20170	20190	20030	19540	18390	16440	14520	12940
11	20340	20020	19990	20110	20170	20180	20000	19510	18320	16370	14470	12870
12	20330	20040	19990	20120	20170	20170	20000	19480	18260	16330	14420	12810
13	20300	20060	19980	20120	20170	20170	19990	19470	18190	16260	14390	12760
14	20290	20050	19990	20110	20170	20190	19980	19440	18120	16200	14330	12710
15	20280	20030	19990	20110	20190	20250	19960	19430	18070	16150	14280	12660
16	20270	20020	19980	20120	20190	20260	19950	19400	17980	16080	14230	12600
17	20260	20010	19980	20120	20200	20260	19920	19380	17900	16020	14170	12540
18	20240	20020	19970	20120	20200	20260	19910	19360	17850	15960	14110	12510
19	20220	20010	19990	20110	20190	20260	19890	19340	17790	15900	14090	12450
20	20200	20010	20040	20110	20190	20260	19880	19310	17750	15830	14040	12400
21	20170	20020	20040	20110	20220	20260	19870	19300	17650	e15700	13990	12340
22	20160	20010	20050	20110	20220	20260	19860	19290	17580	15670	13940	12290
23	20270	20000	20070	20110	20230	20260	19840	19270	17500	15610	13890	12220
24	20260	20000	20070	20110	20220	20250	19800	19250	17430	15550	13830	12170
25	20250	20000	20080	20110	20220	20250	19800	19250	17360	15480	13780	12100
26	20220	20000	20080	20110	20210	20240	19800	19290	17290	15410	13740	12050
27	20200	20020	20080	20110	20200	20240	19780	19270	17220	15350	13680	12000
28	20180	20000	20070	20100	20190	20230	19760	19240	17160	15290	13640	11950
29	20170	20010	20070	20100	---	20210	19750	19170	17100	15220	13580	11900
30	20170	20000	20070	20100	---	20190	19730	19090	17040	15150	13530	11840
31	20170	---	20070	20170	---	20190	---	19040	---	15090	13480	---
MAX	20700	20140	20080	20170	20230	20260	20170	19720	18960	16980	15020	13430
MIN	20160	20000	19970	20080	20150	20170	19730	19040	17040	15090	13480	11840
(+)	2064.26	2064.07	2064.14	2064.25	2064.28	2064.28	2063.77	2063.00	2060.60	2058.12	2055.89	2053.52
(@)	-580	-170	+70	+100	+20	0	-460	-690	-2000	-1950	-1610	-1640

WTR YR 1998 MAX 20700 MIN 11840 (@) -8910

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

e Estimated

08123800 BEALS CREEK NEAR WESTBROOK, TX

LOCATION.--Lat 32°11'57", long 101°00'49", Mitchell County, Hydrologic Unit 12080007, on left bank at downstream side of bridge on State Highway 163, 2.1 mi downstream from Hackberry Creek, 10.8 mi south of Westbrook, 15.7 mi southwest of Colorado City, and 19.1 mi upstream from mouth.

DRAINAGE AREA.--9,802 mi^2, of which 7,814 mi^2 probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1958 to current year.

REVISED RECORDS.--WRD TX-72-1: 1971. WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,048.74 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation. Low flow is affected by diversion upstream from station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1908, about 24.5 ft in 1922, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 19	1645	1,330	11.25	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	.22	.13	.04	.16	.02	.01	.01	.23	.00	.00	.00
2	.01	.21	.07	.07	.06	.02	.01	.02	.04	.00	.00	.00
3	.01	.21	.06	.07	.04	.03	.01	.01	.01	.00	.00	.00
4	.01	.18	.03	.08	.04	.03	.01	.02	.00	.00	.00	.00
5	.01	.21	.02	.07	.42	.03	.01	.01	.00	.00	.00	.00
6	.01	.23	.03	.05	.22	.03	.01	.01	.00	.00	.00	.00
7	.01	.23	.09	.03	.10	.09	.01	.01	.00	.00	.00	.00
8	.01	.20	.09	.05	.08	.07	.01	.02	.00	.00	.00	.00
9	.01	.16	.04	.04	.06	.03	.01	.01	.00	.00	.00	.00
10	.01	.16	.02	.03	.04	.02	.01	.01	.00	.00	.00	.00
11	.01	.13	.02	.04	.03	.03	.01	.01	.00	.00	.00	.00
12	.01	.22	.02	.04	.04	.02	.01	.01	.00	.00	.00	.00
13	.01	.28	.02	.03	.04	.05	.01	.02	.00	.00	.00	.00
14	.01	.19	.03	.04	.04	.04	.01	.02	.00	.00	.00	.00
15	.01	.17	.04	.03	.06	30	.01	.01	.00	.00	.00	.00
16	.01	.14	.04	.03	.08	4.5	.01	.01	.00	.00	.00	.00
17	.01	.14	.03	.04	.04	.77	.01	.01	.00	.01	.00	.00
18	.01	.17	.04	.04	.04	3.4	.01	.01	.00	.07	.00	.00
19	.01	.17	.04	.03	.04	.83	.01	.01	.00	.00	574	.00
20	.01	.20	.11	.04	.05	.13	.01	.01	.00	.00	489	.00
21	.01	.19	.11	.03	.09	.02	.01	.01	.00	.00	51	.00
22	.01	.19	.04	.03	.38	.01	.01	.01	.00	.00	12	.00
23	90	.22	.07	.03	.09	.01	.02	.01	.00	.00	3.3	.00
24	11	.23	.16	.03	.06	.01	.03	.01	.00	.00	.93	.00
25	2.7	.31	.06	.05	.07	.01	.03	.01	.00	.00	.20	.00
26	.94	.31	.07	.04	.05	.01	.02	.25	.00	.00	.05	.00
27	.39	.32	.04	.04	.02	.01	.01	105	.00	.00	.01	.00
28	.24	.33	.02	.05	.01	.01	.01	20	.00	.00	.00	.00
29	.22	.24	.02	.05	---	.01	.01	8.2	.00	.00	.00	.00
30	.22	.26	.03	.05	---	.01	.01	3.2	.00	.00	.00	.00
31	.24	---	.03	2.1	---	.01	---	1.0	---	.00	.00	---
TOTAL	106.17	6.42	1.62	3.39	2.45	40.26	0.36	137.95	0.28	0.08	1130.49	0.00
MEAN	3.42	.21	.052	.11	.087	1.30	.012	4.45	.009	.003	36.5	.000
MAX	90	.33	.16	2.1	.42	30	.03	105	.23	.07	574	.00
MIN	.01	.13	.02	.03	.01	.01	.01	.01	.00	.00	.00	.00
AC-FT	211	13	3.2	6.7	4.9	80	.7	274	.6	.2	2240	.00

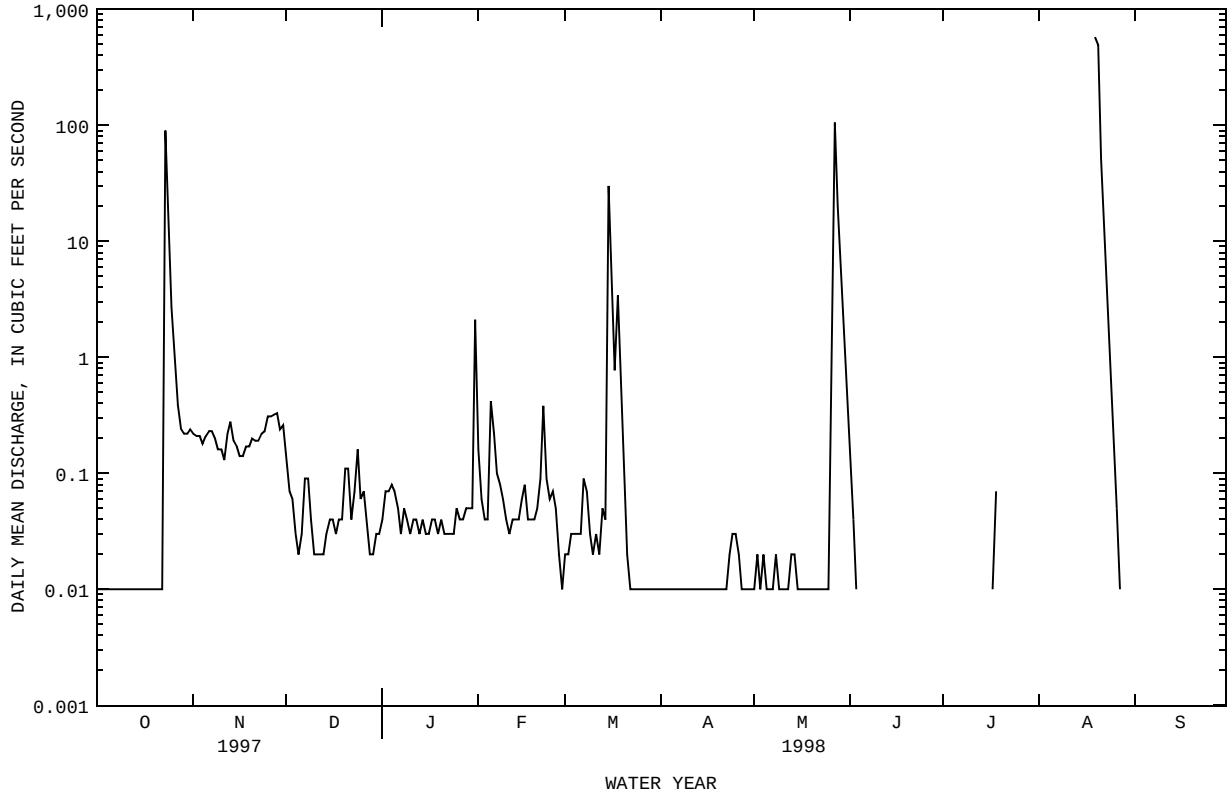
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1998, BY WATER YEAR (WY)

MEAN	40.7	6.21	5.46	5.17	8.86	7.07	19.6	59.7	42.3	25.8	18.9	64.1
MAX	572	29.4	49.2	47.0	94.9	75.6	256	334	254	258	168	680
(WY)	1987	1987	1992	1987	1992	1973	1966	1994	1987	1961	1971	1980
MIN	.000	.060	.048	.073	.068	.046	.012	.14	.009	.000	.005	.000
(WY)	1964	1990	1996	1996	1996	1996	1998	1962	1998	1964	1970	1998

08123800 BEALS CREEK NEAR WESTBROOK, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1959 - 1998	
ANNUAL TOTAL	5346.40		1429.47			
ANNUAL MEAN	14.6		3.92		25.4	
HIGHEST ANNUAL MEAN					107	1987
LOWEST ANNUAL MEAN					3.92	1998
HIGHEST DAILY MEAN	790	Jun 7	574	Aug 19	5890	Sep 29 1980
LOWEST DAILY MEAN	.01	Jul 22	.00	Jun 4	.00	Oct 1 1958
ANNUAL SEVEN-DAY MINIMUM	.01	Jul 22	.00	Jun 4	.00	Oct 1 1958
INSTANTANEOUS PEAK FLOW			1330	Aug 19	8780	May 19 1961
INSTANTANEOUS PEAK STAGE			a11.25	Aug 19	21.94	Sep 29 1980
ANNUAL RUNOFF (AC-FT)	10600		2840		18380	
10 PERCENT EXCEEDS	9.5		.23		24	
50 PERCENT EXCEEDS	.21		.01		2.2	
90 PERCENT EXCEEDS	.01		.00		.03	

a From floodmark.



08123800 BEALS CREEK NEAR WESTBROOK, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Nov 1958 to current year. Chemical and biochemical analyses: Nov 1974 to Oct 1977. Sediment analyses: Oct 1974 to Oct 1977.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Nov 1958 to current year.
WATER TEMPERATURE: Nov 1958 to current year.

INSTRUMENTATION.--Since Mar 5, 1981, specific conductance and water temperature are recorded continuously at this station.

REMARKS.--Records good except for estimated mean specific conductance values and specific conductance values for Jan 27 to Feb 17, which are poor, and specific conductance values for Oct 23 to Nov 7, May 26 to Jun 2, and water temperatures for Dec 6, 13, which are fair. Interruptions in the maximum and minimum specific conductance and water temperature values were due to malfunction of the instrument. No flow Jun 4 to Aug 18, Aug 28 to Sep 30. 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 21%, sulfate is 17% and for hardness is 7%. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 24,500 microsiemens, Aug 9, 1989; minimum, 133 microsiemens, Aug 19, 1998.
WATER TEMPERATURE: Maximum, 37.0°C, Jun 28, 1960, and Jul 3, 1976; minimum, 0.0°C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 7,800 microsiemens, May 21; minimum, 133 microsiemens, Aug 19.
WATER TEMPERATURE: Maximum, 34.5°C, May 31; minimum, 4.1°C, Dec 27.

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)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT									
08...	1640	.01	4700	26.0	960	780	190	120	630
DEC									
18...	1120	.05	5870	9.5	1200	960	240	150	771
FEB									
17...	0950	.06	3620	11.0	760	570	160	88	465
APR									
22...	1205	.01	7080	18.5	1700	1400	340	199	1000
JUN									
02...	1135	.05	2430	27.5	480	380	110	51	308
AUG									
20...	0935	400	560	23.0	110	58	32	8.3	63

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
OCT								
08...	9	11	180	540	1200	.98	10	2790
DEC								
18...	10	6.8	250	650	1400	.87	9.4	3430
FEB								
17...	7	4.3	190	390	840	.64	4.3	2060
APR								
22...	11	6.6	270	850	2000	.89	13	4560
JUN								
02...	6	7.8	100	240	580	.66	5.5	1360
AUG								
20...	3	4.6	56	59	89	.45	7.2	296

08123800 BEALS CREEK NEAR WESTBROOK, 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	106.17	1630	947	272	410	117	170	49.2	340
NOV.	1997	6.42	3800	2270	39.3	970	16.7	440	7.7	790
DEC.	1997	1.62	4800	2900	12.7	1200	5.4	580	2.5	1000
JAN.	1998	3.39	3760	2250	20.6	960	8.7	440	4.0	790
FEB.	1998	2.45	3370	2000	13.2	850	5.6	380	2.5	700
MAR.	1998	40.26	2980	1770	193	760	82.2	340	36.9	620
APR.	1998	0.36	6600	4080	4.0	1700	1.7	860	0.83	1400
MAY	1998	137.95	1140	661	246	290	106	120	44.0	240
JUNE	1998	0.28	2090	1220	0.92	530	0.40	220	0.17	430
JULY	1998	0.08			0.00	0.00	0.00	0.00	0.00	
AUG.	1998	1130.49	560	321	980	140	426	56	171	120
SEPT	1998	0	--	--	--	--	--	--	--	--
TOTAL		1429.47	**	**	1780	**	770	**	319	**
WTD.AVG.		3.9	797	461	**	200	**	83	**	170

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	6810	6700	6750	2410	2040	2230	4390	4000	4230	5310	4930	5140
2	6890	6770	6840	2710	2410	2580	4220	3070	3810	5340	4860	5110
3	6990	6860	6920	2950	2440	2700	4110	3630	3850	5090	4700	4900
4	7020	6910	6970	2870	2580	2710	4730	3980	4380	4880	4510	4760
5	7090	6960	7030	3400	2870	3170	4800	4040	4410	5030	4650	4840
6	7110	6450	6950	3640	3400	3520	4410	3720	4000	5330	4760	4970
7	6910	5020	6410	3920	3560	3670	4680	3530	4070	5390	5200	5290
8	5520	4600	5070	3780	2110	3240	5040	4180	4680	5250	4820	5100
9	5230	4840	5080	4220	3110	3790	5200	4770	4970	5220	4670	5040
10	5420	5230	5350	4180	3660	3990	5320	5100	5230	5470	5100	5290
11	5490	5370	5460	4080	3640	3840	5280	5060	5190	5310	4620	5060
12	5380	4650	4990	3710	2460	3090	5180	4770	5010	5300	4100	4940
13	4740	4620	4690	3970	2730	3430	5180	4940	5070	5400	5080	5260
14	4690	4620	4660	4470	2190	3350	5190	4840	5010	5140	4270	4850
15	4840	4690	4760	3830	2630	3250	5430	4450	5040	5240	3880	4780
16	5060	4840	4950	4380	3250	3910	5660	5120	5440	5080	3810	4610
17	5320	5040	5180	4600	2240	3610	5560	4620	5300	5250	3470	4500
18	5540	5320	5450	4330	2690	3870	5750	5370	5570	4960	3320	4230
19	5700	5540	5630	4580	2480	3910	5780	5070	5530	4920	3240	4030
20	5950	5690	5810	4840	3270	4150	5860	4740	5380	4220	2990	3560
21	6180	5950	6060	5430	4230	4970	4990	4740	4830	4650	3690	4180
22	6250	5870	6180	5440	4350	5100	5140	4710	4880	4940	4250	4700
23	5990	172	1740	5320	2890	4540	5220	4570	4880	4880	3500	4440
24	934	751	863	5170	2910	4480	4990	4780	4850	5060	3220	4230
25	1040	934	983	4950	3010	4240	4980	4810	4900	4410	2890	3680
26	1120	1040	1080	4770	4340	4590	5230	4870	4990	4430	2950	3660
27	1220	1120	1160	4560	4070	4310	5540	4890	5170	---	---	3490
28	1390	1220	1290	4380	3890	4110	5680	5540	5600	---	---	3180
29	1530	1390	1450	4300	4090	4210	5580	5180	5350	---	---	3360
30	1850	1530	1680	4360	4210	4280	5440	5210	5310	---	---	3450
31	2040	1850	1950	---	---	---	5470	4920	5230	---	---	3310
MONTH	7110	172	4500	5440	2040	3760	5860	3070	4910	---	---	4450

08123800 BEALS CREEK NEAR WESTBROOK, 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	---	---	3140	4540	4250	4400	4950	4610	4770	7190	7040	7130
2	---	---	3270	4780	4340	4580	5250	4950	5070	7200	7030	7150
3	---	---	3420	4750	4270	4550	5510	5250	5350	7260	7060	7170
4	---	---	4030	4640	4310	4500	5750	5500	5590	7200	7050	7150
5	---	---	e4000	4850	4580	4690	5940	5620	5790	7290	7090	7190
6	---	---	e3250	4860	4650	4780	6160	5940	6010	7300	7130	7230
7	---	---	e2800	4660	3460	4020	6210	6070	6150	7330	7150	7260
8	---	---	e2700	4400	4080	4270	6250	6120	6190	7360	7240	7310
9	---	---	e3100	4380	3980	4240	6290	6130	6220	7420	7240	7340
10	---	---	e3600	4590	4360	4440	6320	6180	6260	7450	7270	7360
11	---	---	e3700	5020	4590	4750	6430	6290	6360	7440	7290	7390
12	---	---	e3500	5180	4870	5050	6520	6350	6450	7520	7210	7420
13	---	---	e3500	5080	4750	4900	6620	6300	6530	7530	7390	7460
14	---	---	e3100	5170	4970	5080	6680	6510	6630	7510	7360	7460
15	---	---	e2900	5070	419	3570	6780	6610	6710	7600	7400	7490
16	---	---	e3300	761	506	675	6850	6760	6800	7630	7420	7560
17	---	---	3460	917	687	762	6930	6270	6870	7650	7460	7600
18	4210	2970	3780	1810	891	1400	6960	6700	6910	7700	7570	7640
19	4360	4090	4260	2190	1810	2050	6980	6880	6940	7730	7560	7670
20	4360	3310	3880	2190	2020	2140	7110	6950	7010	7760	7560	7680
21	4230	2790	3770	2120	1800	2030	7130	7010	7090	7800	7520	7660
22	3430	2420	2680	2250	1980	2160	7160	6880	7060	7650	7380	7600
23	3120	2730	2870	2740	2250	2450	7140	6880	7030	7570	7490	7530
24	3880	2960	3320	2860	2650	2770	7130	6780	7040	7590	7460	7540
25	4120	3780	3990	3200	2830	3000	7110	6650	7030	7610	7510	7570
26	4220	3910	4090	3450	3200	3350	7130	6780	7050	7620	5010	7420
27	4260	3930	4110	3650	3430	3570	7150	7010	7100	5170	283	1170
28	4390	4170	4290	3830	3620	3710	7190	7030	7120	977	807	868
29	---	---	---	4100	3830	3930	7200	7040	7130	1050	896	945
30	---	---	---	4420	4100	4220	7190	7020	7120	1430	1050	1230
31	---	---	---	4680	4420	4540	---	---	---	1850	1430	1630
MONTH	---	---	3490	5180	419	3570	7200	4610	6510	7800	283	6410

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	2230	1850	2020	---	---	---	---	---	---	---	---	---
2	2780	2230	2400	---	---	---	---	---	---	---	---	---
3	2480	2390	2460	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	2420	133	628	---	---	---
20	---	---	---	---	---	---	1100	231	482	---	---	---
21	---	---	---	---	---	---	569	288	438	---	---	---
22	---	---	---	---	---	---	980	569	875	---	---	---
23	---	---	---	---	---	---	937	896	908	---	---	---
24	---	---	---	---	---	---	956	915	932	---	---	---
25	---	---	---	---	---	---	974	953	964	---	---	---
26	---	---	---	---	---	---	990	971	979	---	---	---
27	---	---	---	---	---	---	1010	988	999	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

e Estimated

08123800 BEALS CREEK NEAR WESTBROOK, 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	27.0	21.2	23.7	17.8	13.4	15.2	11.1	9.6	10.2	11.3	5.3	9.0
2	26.3	20.9	23.4	16.3	12.2	14.0	11.3	9.8	10.4	14.8	9.8	12.0
3	25.6	20.9	23.2	16.1	11.1	13.5	11.7	8.9	10.4	14.0	11.2	12.6
4	26.1	21.4	23.3	17.0	11.9	14.2	13.1	9.3	10.8	15.3	12.6	13.6
5	26.3	21.6	23.4	16.6	13.2	14.7	12.0	7.6	9.3	14.3	11.3	12.7
6	22.7	21.1	21.9	16.6	11.8	14.2	---	---	7.2	13.0	10.4	11.4
7	23.8	20.7	21.8	15.3	12.1	14.0	10.2	6.9	8.6	10.5	7.9	8.8
8	26.1	21.1	23.2	17.0	12.4	14.7	12.2	8.4	10.3	9.9	6.3	8.0
9	26.6	22.4	23.9	14.5	11.6	13.1	11.5	9.2	10.2	9.8	5.8	7.9
10	23.4	22.0	22.8	13.2	10.0	11.1	11.3	7.6	9.1	8.0	5.9	7.1
11	22.8	21.4	22.1	10.5	8.7	9.6	7.6	5.8	6.5	11.0	5.1	8.4
12	23.2	19.6	21.9	10.3	8.0	9.6	7.9	5.0	6.3	11.2	7.6	9.4
13	21.0	17.1	19.0	11.3	9.4	10.3	---	---	6.4	9.0	5.7	7.7
14	19.9	14.7	17.1	11.2	6.7	9.6	10.0	4.6	7.3	11.5	6.4	8.7
15	19.3	13.8	16.4	10.7	6.1	8.7	11.5	6.8	9.0	10.0	6.6	8.4
16	20.1	13.4	16.4	12.3	9.0	10.3	11.6	7.6	9.5	11.4	7.2	8.9
17	20.1	14.0	16.6	10.3	7.5	9.2	11.6	6.4	8.8	11.8	7.0	9.6
18	20.4	13.7	16.9	12.5	9.5	11.1	11.2	7.0	9.0	13.8	9.0	10.8
19	20.6	14.7	17.4	13.7	9.1	11.2	12.8	7.2	10.0	12.2	7.3	9.5
20	19.3	15.6	17.0	13.0	10.5	12.1	11.3	6.7	8.6	13.2	8.5	10.5
21	16.7	14.8	15.6	14.3	10.9	12.7	9.4	6.1	7.9	10.1	8.2	9.1
22	16.9	14.3	15.5	14.2	10.3	12.3	8.6	4.8	6.9	10.0	7.1	8.3
23	18.7	14.8	16.3	14.1	9.4	11.9	7.9	6.2	7.3	10.4	4.7	7.7
24	18.5	14.3	16.2	14.8	11.8	13.2	9.4	4.4	7.1	10.7	4.8	7.9
25	16.8	13.6	15.0	16.8	12.0	14.3	7.3	4.6	6.4	12.2	7.6	9.9
26	13.9	9.9	11.9	15.8	13.7	14.7	8.6	5.0	6.5	12.5	7.8	9.9
27	15.9	9.2	12.2	16.2	12.8	14.6	9.8	4.1	6.4	13.1	6.9	9.8
28	18.2	11.0	13.9	15.9	12.1	14.3	6.9	5.1	5.9	14.1	8.5	10.9
29	18.3	12.2	14.7	13.0	10.6	11.8	8.6	4.5	6.2	13.5	7.6	10.5
30	17.1	13.2	15.1	12.9	9.7	11.1	9.7	5.2	7.3	12.6	7.9	10.3
31	17.5	12.7	15.2	---	---	---	10.8	5.7	7.7	15.6	9.2	12.2
MONTH	27.0	9.2	18.5	17.8	6.1	12.4	---	---	8.2	15.6	4.7	9.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	13.6	8.7	11.4	15.5	7.8	11.7	22.3	12.2	16.8	26.0	16.6	20.9
2	14.2	8.1	11.2	15.9	7.8	11.5	20.3	13.6	16.2	25.8	17.0	21.3
3	16.0	7.9	11.2	16.9	8.0	12.4	21.2	12.1	16.7	25.6	17.8	21.4
4	12.0	8.2	9.9	18.2	11.7	14.6	21.6	13.5	17.1	26.6	18.5	22.1
5	9.7	7.6	9.0	17.4	12.3	14.5	23.7	14.0	18.4	26.4	19.0	22.6
6	7.6	6.1	6.7	14.0	11.0	12.3	21.1	16.3	18.0	25.4	18.0	21.5
7	12.7	5.3	8.8	15.0	11.1	12.7	21.4	14.0	17.4	26.0	17.8	21.7
8	14.5	7.3	11.0	12.2	7.6	9.9	20.3	14.1	17.3	23.6	18.1	20.7
9	15.2	11.0	13.0	14.7	7.2	10.3	23.1	13.4	18.1	24.8	16.6	20.7
10	16.1	11.0	12.9	14.5	6.4	9.9	23.7	15.2	19.0	26.4	17.6	21.7
11	15.0	8.9	12.1	15.9	7.0	10.1	21.5	15.3	17.9	26.8	18.8	22.2
12	13.7	9.1	11.5	10.3	6.1	8.0	24.9	15.5	19.6	28.7	19.4	23.7
13	16.8	9.2	12.0	16.5	8.3	11.7	23.8	16.9	20.5	25.9	21.3	23.5
14	12.4	9.6	11.2	17.1	13.0	14.4	26.7	17.0	21.0	28.8	21.6	24.3
15	13.7	10.1	11.8	16.6	14.3	15.1	26.5	17.1	21.1	26.0	19.8	23.1
16	14.6	11.0	13.0	14.3	12.1	13.5	23.6	16.6	19.8	27.3	19.0	22.4
17	13.7	10.2	12.4	17.9	10.3	13.3	18.2	15.3	16.5	28.0	21.2	24.0
18	14.7	9.9	12.4	20.5	12.8	16.0	22.2	13.0	17.4	27.6	21.4	24.0
19	14.3	10.2	12.2	16.8	12.1	14.7	23.7	14.9	19.1	28.9	21.4	24.7
20	16.0	9.3	12.5	17.2	11.2	14.2	23.6	16.0	19.0	28.1	22.4	24.8
21	13.3	10.6	11.5	18.6	11.1	14.8	22.3	14.0	18.0	27.0	22.5	24.6
22	17.2	9.2	12.1	20.9	11.8	16.1	22.7	14.7	18.5	25.2	22.4	23.6
23	18.0	9.4	13.6	22.1	14.3	18.1	23.3	14.5	18.9	25.4	21.7	23.3
24	18.4	11.7	14.8	24.9	15.8	19.9	23.7	14.9	18.9	29.2	21.4	24.7
25	18.5	13.7	15.8	24.5	17.8	20.7	24.5	15.8	19.7	27.0	22.9	24.7
26	14.9	11.4	12.9	23.1	18.4	20.0	24.4	18.7	20.5	26.6	21.3	23.4
27	14.6	9.5	11.8	19.4	15.5	17.7	18.7	15.8	17.3	22.4	17.8	19.7
28	15.9	9.4	11.9	23.2	14.3	18.6	21.6	14.0	17.5	28.9	21.4	24.7
29	---	---	---	25.1	18.1	20.8	22.9	13.9	18.4	31.6	24.0	27.4
30	---	---	---	23.3	14.7	19.5	24.5	15.3	19.7	31.3	24.0	27.3
31	---	---	---	18.6	12.0	15.3	---	---	---	34.5	24.1	28.5
MONTH	18.5	5.3	11.8	25.1	6.1	14.6	26.7	12.1	18.5	34.5	16.6	23.3

08123800 BEALS CREEK NEAR WESTBROOK, 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	32.0	25.3	28.1	---	---	---	---	---	---	---	---	---
2	32.1	24.0	27.4	---	---	---	---	---	---	---	---	---
3	31.9	24.8	28.6	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	24.1	21.8	22.9	---	---	---
20	---	---	---	---	---	---	25.2	22.5	23.7	---	---	---
21	---	---	---	---	---	---	28.5	24.0	25.9	---	---	---
22	---	---	---	---	---	---	29.1	25.4	27.1	---	---	---
23	---	---	---	---	---	---	29.3	25.2	27.0	---	---	---
24	---	---	---	---	---	---	31.2	25.3	27.7	---	---	---
25	---	---	---	---	---	---	31.2	25.7	27.9	---	---	---
26	---	---	---	---	---	---	30.9	25.8	28.0	---	---	---
27	---	---	---	---	---	---	31.3	25.9	28.8	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

08123850 COLORADO RIVER ABOVE SILVER, TX

LOCATION.--Lat 32°03'13", long 100°45'42", Coke County, Hydrologic Unit 12080008, on right bank 25 ft downstream from Pan American Oil Co. bridge, 4.7 mi west of Silver, and at mile 756.0.

DRAINAGE AREA.--14,910 mi^2, of which 10,260 mi^2 probably is noncontributing.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,907.66 ft above sea level. Prior to Oct 4, 1972, water-stage recorder at site 0.5 mi downstream at same datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in Aug 1967, at least 10% of contributing drainage area has been regulated by Lake J.B. Thomas (capacity 203,600 acre-ft). Additional regulation by Lake Colorado City (station 08123000), and by Champion Creek Reservoir (station 08123600). The Colorado River Municipal Water District diverts low flow into an off channel reservoir 3 mi above Colorado River at Colorado City (station 08121000) for brine disposal. There are numerous diversions from Lake J.B. Thomas for municipal use and for oil field operations.

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	.50	1.9	3.3	4.2	4.1	2.7	1.7	.50	2.2	.00	.00	.19
2	.44	1.5	3.6	4.0	3.9	2.6	1.6	.48	1.1	.00	.00	.12
3	.37	1.4	4.4	4.0	3.8	3.0	1.1	.37	.56	.00	.00	.09
4	.28	1.6	4.2	3.9	4.3	2.8	1.4	.34	.25	.00	.00	.06
5	.23	1.4	3.6	3.8	4.9	2.4	1.4	.25	.13	.00	.00	.05
6	.34	1.8	3.3	3.7	4.2	2.7	1.4	.15	.08	.00	.00	.04
7	.50	1.9	3.9	3.7	4.0	6.4	1.1	.11	.07	.00	.00	.03
8	.51	1.8	4.8	3.8	3.9	8.2	.89	.12	.09	.00	.00	.03
9	.53	1.7	4.1	4.3	4.1	4.5	.91	.09	.06	.00	.00	.03
10	.52	1.8	3.5	4.0	3.5	3.4	1.0	.10	.05	.00	.00	.03
11	.61	2.0	3.4	3.9	3.4	3.2	1.1	.11	.16	.00	.00	.03
12	.74	2.4	4.1	3.7	3.1	3.1	.86	.08	.09	.00	.00	.02
13	.38	3.6	3.6	3.5	3.5	3.3	.43	.11	.09	.00	.00	.02
14	.77	3.7	3.4	3.5	3.5	3.3	.57	.11	.04	.00	.00	.02
15	1.7	3.8	3.3	3.4	3.5	3.7	.51	.10	.02	.00	.00	.02
16	1.4	3.5	2.9	3.4	3.9	19	.30	.07	.02	.00	.00	.02
17	1.2	3.6	3.2	3.4	3.8	20	.33	.07	.01	1.3	.00	.02
18	1.1	3.7	3.2	3.3	3.6	14	.34	.06	.01	14	.00	.03
19	.94	3.7	3.3	3.9	3.4	8.4	.31	.03	.01	4.7	.00	.03
20	.70	3.4	4.2	3.3	4.0	6.0	.36	.03	.01	.87	529	.03
21	.72	3.3	5.9	3.3	3.8	5.2	.26	.03	.00	.22	248	.02
22	.88	3.3	5.1	3.4	3.9	4.2	.26	.04	.00	.06	42	.02
23	3.6	3.2	6.7	4.5	3.6	3.7	.24	.05	.00	.02	11	.03
24	80	3.3	7.4	4.0	3.8	3.1	.27	.10	.00	.01	5.8	.04
25	31	3.4	5.7	3.5	3.7	3.1	.18	.10	.00	.00	3.0	.04
26	9.0	3.2	5.5	3.3	3.7	3.3	.28	.46	.00	.00	1.4	.03
27	5.7	3.8	5.5	3.3	3.1	2.1	.49	.33	.00	.00	.80	.02
28	4.3	4.6	4.3	3.0	2.7	2.3	.52	38	.00	.00	.52	.02
29	3.3	4.8	4.3	3.1	---	2.3	.51	14	.00	.00	1.9	.02
30	2.9	3.8	3.9	3.3	---	1.5	.51	9.4	.00	.00	1.0	.02
31	2.2	---	4.1	3.8	---	1.3	---	4.2	---	.00	.37	---
TOTAL	157.36	86.9	131.7	113.2	104.7	154.8	21.13	69.99	5.05	21.18	844.79	1.17
MEAN	5.08	2.90	4.25	3.65	3.74	4.99	.70	2.26	.17	.68	27.3	.039
MAX	80	4.8	7.4	4.5	4.9	20	1.7	38	2.2	14	529	.19
MIN	.23	1.4	2.9	3.0	2.7	1.3	.18	.03	.00	.00	.00	.02
AC-FT	312	172	261	225	208	307	42	139	10	42	1680	2.3

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

MEAN	126	20.0	19.2	18.1	31.5	28.5	52.0	158	163	52.0	87.3	155
MAX	1834	67.5	120	90.7	256	280	599	681	1242	313	1122	1853
(WY)	1987	1973	1992	1987	1992	1973	1981	1994	1982	1988	1971	1980
MIN	.000	.000	.30	1.17	1.02	.36	.70	1.91	.17	.000	.010	.000
(WY)	1969	1971	1971	1971	1971	1971	1998	1984	1998	1970	1984	1968

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1967 - 1998	
ANNUAL TOTAL	17910.36		1711.97			
ANNUAL MEAN	49.1		4.69		76.2	
HIGHEST ANNUAL MEAN					298	1987
LOWEST ANNUAL MEAN					4.69	1998
HIGHEST DAILY MEAN	1200	Jun 12	529	Aug 20	15900	Sep 30 1980
LOWEST DAILY MEAN	.07	Sep 17	.00	Jun 21	.00	Aug 2 1968
ANNUAL SEVEN-DAY MINIMUM	.10	Sep 15	.00	Jun 21	.00	Aug 2 1968
INSTANTANEOUS PEAK FLOW			817	Aug 20	18900	Sep 9 1980
INSTANTANEOUS PEAK STAGE			5.29	Aug 20	22.73	Sep 9 1980
ANNUAL RUNOFF (AC-FT)	35530		3400		55190	
10 PERCENT EXCEEDS	79		4.3		97	
50 PERCENT EXCEEDS	4.6		1.3		9.0	
90 PERCENT EXCEEDS	.42		.00		.23	

08123850 COLORADO RIVER ABOVE SILVER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Aug 1967 to current year. Chemical and biochemical analyses: Nov 1977 to Aug 1994. Pesticide analyses: Oct 1969 to Aug 1981. Sediment analyses: Aug 1977 to Aug 1994.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Dec 1967 to current year.
WATER TEMPERATURE: Dec 1967 to current year.

INSTRUMENTATION.--Since Dec 1967, specific conductance was recorded continuously. Since Jun 1981, specific conductance and water temperature are recorded continuously at this station.

REMARKS.--No estimated specific conductance and water temperature values. Records good except for specific conductance values for Aug 20 to Sep 30, which are fair. No flow Jun 21 to Jul 16, Jul 25 to Aug 19. 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 9%, sulfate is 41% and for hardness is 28%. 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, 19,900 microsiemens, Sep 10, 1988; minimum, 154 microsiemens, Sep 21, 1990.
WATER TEMPERATURE: Maximum, 35.5°C, Aug 2, 7, 1985; minimum, 0.0°C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 11,500 microsiemens, May 28; minimum, 321 microsiemens, Aug 20.
WATER TEMPERATURE: Maximum, 33.8°C, Jun 19; minimum, 2.1°C, Dec 29.

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 (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT												
30...	1127	3.4	3650	8.2	16.0	9.6	106	810	730	200	73	504
JAN												
14...	1215	3.7	6740	7.9	8.5	10.3	96	1600	1500	400	147	968
APR												
08...	1330	1.1	6560	8.0	18.5	8.6	102	1700	1600	440	156	877
JUN												
10...	0920	.05	3950	7.8	25.5	6.1	81	980	890	250	88	484
AUG												
21...	1000	423	687	7.6	24.5	6.9	88	140	86	39	11	75

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	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)
OCT												
30...	8	7.7	75	670	740	.49	4.7	2250	<.010	<.050	<.015	--
JAN												
14...	11	7.9	140	1500	1500	.55	2.4	4630	<.010	<.050	<.020	--
APR												
08...	9	9.7	120	1600	1400	.61	3.2	4530	<.010	<.050	.042	.27
JUN												
10...	7	10	90	760	840	.80	12	2490	<.010	<.050	<.020	--
AUG												
21...	3	4.8	57	85	110	.48	6.1	374	<.010	1.01	.049	.33

DATE	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)	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)
OCT												
30...	.27	<.010	<.010	--	1	222	--	<1.0	<1.0	--	1.0	<9.0
JAN												
14...	.15	.011	.019	.06	<1	46	--	<1.0	<1.0	--	<1.0	<50
APR												
08...	.31	<.010	.018	.06	<1	73	--	<1.0	<1.0	--	1.0	<50
JUN												
10...	.62	<.010	<.010	--	3	110	--	1.0	<1.0	--	1.8	<30
AUG												
21...	.38	.015	.022	.07	2	105	<1.0	<8.0	<14	<12	<10	<10

08123850 COLORADO RIVER ABOVE SILVER, 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											
30...	<1.0	--	9.2	.2	--	--	<1	<1.0	--	--	<9.0
JAN											
14...	<2.0	--	<20	<.1	--	--	2	<1.0	--	--	<100
APR											
08...	<2.0	--	61	<.1	--	--	2	<1.0	--	--	<100
JUN											
10...	<1.0	--	20	<.1	--	--	<1	<1.0	--	--	<60
AUG											
21...	<100	16	<4.0	<.1	<60	<40	<1	<4.0	601	13	<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	157.36	4910	3250	1380	1100	457	1000	429	1200
NOV.	1997	86.9	5020	3290	772	1100	252	1000	240	1200
DEC.	1997	131.7	6550	4380	1560	1500	521	1400	482	1500
JAN.	1998	113.2	6670	4460	1360	1500	457	1400	422	1600
FEB.	1998	104.7	6730	4500	1270	1500	427	1400	394	1600
MAR.	1998	154.8	6620	4430	1850	1500	623	1400	573	1600
APR.	1998	21.13	6600	4410	252	1500	84.4	1400	77.9	1600
MAY	1998	69.99	6970	4710	889	1600	302	1500	275	1600
JUNE	1998	5.05	3720	2400	32.7	760	10.4	750	10.2	910
JULY	1998	21.18	6390	4260	244	1400	81.4	1300	75.5	1500
AUG.	1998	844.79	860	534	1220	160	366	170	384	220
SEPT	1998	1.17	3910	2540	8.0	820	2.6	790	2.5	950
TOTAL		1711.97	**	**	10840	**	3590	**	3360	**
WTD.AVG.		4.7	3540	2350	**	780	**	730	**	840

08123850 COLORADO RIVER ABOVE SILVER, 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	5330	5230	5280	4490	4380	4440	6130	6010	6060	6610	6510	6560
2	5570	5310	5420	4540	4490	4520	6010	5720	5890	6570	6500	6540
3	5770	5570	5630	4570	4520	4550	5820	5680	5710	6600	6550	6580
4	5930	5770	5870	4560	4500	4530	6110	5820	5940	6610	6540	6590
5	6100	5840	6020	4540	4510	4520	6550	6110	6320	6630	6590	6610
6	6170	5910	6080	4560	4510	4540	6890	6550	6720	6620	6580	6600
7	6040	5930	5990	4590	4550	4570	7030	6860	6950	6600	6360	6510
8	5970	5830	5930	4610	4570	4590	6890	6700	6770	6370	6070	6200
9	6010	5860	5950	4700	4610	4660	6720	6480	6570	6080	5890	6000
10	6090	6010	6060	4760	4690	4730	6540	6470	6510	6210	5980	6060
11	6090	5980	6030	4780	4750	4770	6540	6480	6520	6400	6210	6310
12	6000	5910	5970	4780	4690	4750	6570	6490	6530	6580	6400	6520
13	6090	5950	6040	4700	4520	4590	6620	6500	6550	6650	6570	6630
14	6220	6030	6130	4570	4520	4540	6600	6510	6570	6830	6650	6730
15	6480	6140	6360	4530	4380	4440	6670	6510	6630	7010	6830	6920
16	6500	6330	6430	4480	4400	4440	6730	6660	6690	7140	7000	7050
17	6480	6240	6380	4540	4470	4500	6800	6710	6760	7240	7130	7200
18	6380	6200	6300	4600	4510	4570	6890	6790	6850	7260	7100	7180
19	6410	6190	6320	4810	4600	4700	6940	6880	6920	7110	6760	6920
20	6500	6340	6430	4980	4810	4900	6960	6600	6840	6760	6570	6650
21	6650	6470	6560	5160	4970	5070	6800	6470	6700	6590	6510	6550
22	6860	6640	6750	5350	5140	5240	6770	6600	6690	6740	6510	6580
23	6890	6420	6700	5400	5310	5360	6650	6480	6580	6830	6730	6780
24	8860	3400	6570	5450	5400	5440	6630	6420	6520	6890	6790	6830
25	3400	1340	1680	5490	5410	5450	6620	6470	6560	6840	6740	6800
26	1960	1530	1650	5630	5480	5540	6650	6470	6520	6820	6750	6790
27	2940	1960	2430	5790	5630	5720	6770	6620	6690	6900	6630	6860
28	3480	2940	3230	5790	5590	5650	6650	6540	6590	6980	6890	6940
29	3890	3480	3710	6200	5680	6070	6710	6590	6640	7010	6910	6960
30	4180	3880	4060	6250	6120	6190	6740	6630	6690	6950	6840	6890
31	4390	4170	4300	---	---	---	6690	6540	6630	6860	6670	6760
MONTH	8860	1340	5430	6250	4380	4920	7030	5680	6550	7260	5890	6680

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6870	6710	6820	7170	7070	7130	5850	5580	5690	8090	7780	7930
2	6950	6860	6910	7240	7110	7180	6130	5810	5960	8040	7900	7970
3	7040	6940	6990	7230	7120	7180	6280	6060	6200	8120	7890	8000
4	7100	7010	7070	7160	7010	7090	6290	6090	6210	8190	8000	8120
5	7020	6880	6920	7060	6950	7010	6340	6140	6250	8250	8060	8180
6	6940	6650	6780	6990	6880	6950	6330	6150	6250	8340	8140	8260
7	6660	6450	6560	8930	6930	8220	6390	6220	6330	8410	8260	8350
8	6480	6250	6350	9000	8720	8860	6430	6310	6370	8500	8310	8400
9	6430	6280	6320	9020	7120	7780	6480	6350	6420	8570	8420	8500
10	6610	6430	6540	8460	7210	7820	6500	6370	6440	8600	8380	8510
11	6650	6400	6540	9070	8460	8890	6610	6390	6520	8560	8390	8480
12	6400	6120	6250	9130	8870	9030	6680	6520	6620	8610	8280	8480
13	6130	5920	6010	9100	8600	8950	6740	6490	6660	8520	8270	8420
14	6120	5940	6010	8920	8750	8850	6780	6580	6710	8440	8080	8320
15	6410	6110	6260	8790	6810	8120	6850	6620	6770	8440	8090	8280
16	6690	6390	6500	6820	5640	6540	7040	6800	6930	8350	8020	8240
17	6830	6690	6790	6360	5680	6180	7170	6850	7080	8390	8080	8250
18	6870	6810	6840	6300	4990	5770	7260	7080	7190	8330	8170	8260
19	6930	6840	6900	5270	4970	5100	7330	7060	7260	8340	8090	8250
20	7020	6930	6970	5880	5240	5530	7480	7190	7360	8280	8140	8220
21	7050	6940	7010	5990	5670	5840	7590	7370	7510	8290	8140	8230
22	6960	6860	6920	5710	5420	5560	7670	7440	7570	8270	8090	8170
23	6970	6870	6930	5560	5450	5500	7760	7500	7670	8150	7910	8030
24	6960	6840	6900	5480	5200	5350	7940	7520	7800	7980	7740	7860
25	6930	6840	6900	5210	4930	5050	8080	7830	7980	7890	7430	7730
26	7100	6930	7020	5010	4950	4990	8110	7760	7970	7450	6770	7030
27	7150	7040	7090	5140	5010	5080	7910	7780	7850	6780	6320	6560
28	7110	7030	7080	5200	5140	5180	7870	7750	7820	11500	6200	8540
29	---	---	---	5280	5180	5230	7900	7740	7840	7280	4250	4820
30	---	---	---	5510	5280	5350	7920	7750	7860	4890	4390	4690
31	---	---	---	5630	5510	5570	---	---	---	4390	3760	4030
MONTH	7150	5920	6720	9130	4930	6670	8110	5580	6970	11500	3760	7780

08123850 COLORADO RIVER ABOVE SILVER, 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	3770	3400	3560	---	---	---	---	---	---	2360	2130	2260
2	3500	3420	3460	---	---	---	---	---	---	2580	2350	2490
3	3620	3500	3580	---	---	---	---	---	---	2800	2580	2690
4	3790	3620	3710	---	---	---	---	---	---	2980	2770	2870
5	3950	3790	3880	---	---	---	---	---	---	3160	2940	3050
6	4100	3950	4020	---	---	---	---	---	---	3370	3110	3230
7	4180	4090	4140	---	---	---	---	---	---	3460	3260	3370
8	4240	4140	4190	---	---	---	---	---	---	3730	3400	3550
9	4400	4230	4310	---	---	---	---	---	---	3810	3620	3710
10	4540	4400	4470	---	---	---	---	---	---	4030	3800	3910
11	4670	4430	4550	---	---	---	---	---	---	4250	3940	4110
12	4820	4670	4750	---	---	---	---	---	---	4430	4230	4320
13	4930	4780	4840	---	---	---	---	---	---	4580	4380	4470
14	5130	4930	5030	---	---	---	---	---	---	4780	4530	4650
15	5330	5120	5230	---	---	---	---	---	---	4940	4740	4840
16	5460	5280	5350	---	---	---	---	---	---	5120	4900	5020
17	5560	5440	5490	8040	7730	7840	---	---	---	5240	5060	5150
18	5710	5550	5630	7800	5390	6630	---	---	---	5370	5190	5280
19	5820	5680	5750	5760	5310	5530	---	---	---	5580	5310	5410
20	5960	5790	5890	5400	5200	5300	6570	321	962	5580	5430	5510
21	---	---	---	5430	5270	5360	798	553	678	5690	5470	5580
22	---	---	---	5530	5400	5460	631	475	554	5800	5610	5700
23	---	---	---	5640	5520	5570	741	631	669	5960	5770	5830
24	---	---	---	5710	5580	5660	962	741	850	5900	5750	5830
25	---	---	---	---	---	---	1220	962	1100	5970	5830	5910
26	---	---	---	---	---	---	1460	1220	1360	6030	5930	5980
27	---	---	---	---	---	---	1710	1460	1590	6100	5990	6040
28	---	---	---	---	---	---	1940	1710	1830	6170	6050	6080
29	---	---	---	---	---	---	2420	1740	2100	6200	6080	6110
30	---	---	---	---	---	---	1800	1650	1720	6250	6120	6170
31	---	---	---	---	---	---	2160	1800	2020	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	6250	2130	4640

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	27.4	23.0	25.2	17.2	13.7	15.6	11.3	9.2	10.0	10.6	5.5	7.8
2	27.4	23.3	25.4	15.5	12.1	14.2	10.3	9.5	9.9	13.9	9.7	11.6
3	26.7	22.1	24.5	15.3	10.8	13.2	10.5	8.9	9.8	13.7	11.8	12.7
4	27.1	22.3	24.7	17.5	12.1	14.8	10.2	6.6	8.5	15.6	13.5	14.3
5	27.0	23.2	25.0	16.7	14.0	15.5	9.4	6.7	8.3	14.3	12.5	13.4
6	25.0	22.4	23.1	16.1	12.4	14.4	8.4	6.1	6.9	13.3	10.1	11.8
7	24.5	21.3	22.7	14.9	12.0	13.7	8.1	6.4	7.2	10.1	6.6	7.8
8	27.1	22.2	24.2	16.3	12.4	14.5	12.5	7.4	9.7	8.9	5.1	7.0
9	27.6	24.1	25.5	15.6	11.3	13.7	11.4	9.3	10.4	9.2	5.3	7.4
10	25.8	23.8	24.5	11.3	8.8	9.8	9.4	6.7	8.1	8.4	6.5	7.5
11	23.9	22.5	23.2	9.3	7.2	8.1	8.0	4.6	5.8	11.3	6.0	8.3
12	23.8	21.7	23.0	8.6	7.9	8.2	5.9	3.5	4.7	11.7	7.7	9.8
13	21.7	17.8	19.8	10.0	8.4	9.1	5.6	2.4	4.1	10.4	7.6	8.6
14	20.0	15.5	17.9	9.9	7.2	9.1	7.1	3.2	5.1	10.7	6.9	8.6
15	19.9	14.2	17.3	8.2	5.5	6.9	8.2	4.1	6.2	9.9	6.2	8.3
16	20.1	14.4	17.2	8.9	5.1	7.1	8.9	5.6	7.4	10.6	7.0	8.7
17	20.9	15.4	18.1	8.3	6.2	7.3	8.7	5.2	7.2	11.8	7.0	9.4
18	21.2	15.9	18.4	10.2	5.8	8.0	9.8	5.9	7.9	12.5	9.2	10.8
19	22.0	16.4	18.9	11.1	6.8	9.2	11.9	7.3	9.6	11.2	7.5	9.6
20	21.6	17.5	19.3	12.2	9.2	10.7	11.5	7.1	9.4	12.7	9.0	10.8
21	20.3	16.5	18.1	12.5	9.2	10.9	9.5	5.6	7.5	11.7	8.4	9.6
22	17.4	15.4	16.3	12.5	8.7	10.5	8.6	5.9	7.3	8.5	7.1	7.9
23	20.4	16.3	18.1	12.6	8.6	10.9	7.9	6.4	7.4	10.4	6.1	8.1
24	19.4	16.0	17.7	14.2	10.3	12.3	8.8	4.9	6.8	10.0	5.6	8.1
25	17.6	14.4	16.2	16.9	12.4	14.6	7.7	5.1	6.1	13.1	8.3	10.4
26	14.7	10.5	12.7	16.3	14.4	15.4	6.4	4.4	5.4	11.8	8.5	10.4
27	15.8	9.4	12.5	16.4	13.4	15.0	6.7	2.6	4.7	11.8	7.1	9.7
28	17.1	11.7	14.5	16.2	13.6	15.2	6.3	3.2	4.9	13.3	9.2	11.1
29	18.6	14.0	16.0	13.6	10.5	12.1	6.5	2.1	4.5	13.1	9.0	11.0
30	19.8	15.3	17.1	12.1	9.4	10.9	7.9	3.9	5.9	12.9	9.3	11.1
31	18.0	13.6	16.0	---	---	---	8.2	4.9	6.8	16.1	11.7	13.5
MONTH	27.6	9.4	19.8	17.5	5.1	11.7	12.5	2.1	7.2	16.1	5.1	9.8

08123850 COLORADO RIVER ABOVE SILVER, 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	14.3	11.1	12.4	14.3	8.5	11.6	20.8	13.3	17.4	24.6	18.8	21.3
2	13.5	8.9	11.2	14.4	8.6	11.6	20.6	14.9	17.8	25.8	18.7	22.1
3	13.9	9.6	11.8	15.1	8.9	12.2	20.0	12.6	16.7	26.3	20.4	23.0
4	12.2	9.3	10.7	19.3	12.2	15.5	21.2	15.2	18.4	27.6	20.1	23.5
5	10.7	9.0	9.8	17.2	13.6	15.5	22.2	15.3	18.8	26.4	21.3	23.8
6	9.0	7.3	7.7	15.6	12.6	13.6	21.1	17.4	19.3	25.8	20.7	23.2
7	11.5	6.0	8.6	16.5	11.8	13.8	21.6	14.9	18.3	25.1	20.2	22.7
8	13.6	8.4	10.9	12.7	7.8	10.7	20.3	15.8	18.5	24.3	19.8	22.0
9	15.4	10.4	12.8	13.1	7.1	10.2	22.7	14.9	18.5	24.3	18.3	21.2
10	14.5	11.9	13.3	13.5	7.5	10.8	22.5	16.2	19.5	27.5	19.3	22.7
11	14.3	9.4	11.9	14.1	8.1	11.0	21.4	16.8	19.3	27.3	19.9	23.2
12	12.7	9.9	11.1	11.8	8.0	9.5	24.0	16.1	19.8	30.2	20.7	24.1
13	13.8	9.4	11.5	15.3	9.2	11.8	23.9	18.7	21.3	27.2	22.7	24.9
14	12.7	10.2	11.3	16.9	13.4	15.0	26.0	18.5	22.2	28.5	22.8	25.4
15	13.3	10.6	11.9	16.5	15.4	15.9	25.9	20.4	23.0	26.7	22.0	24.4
16	13.9	11.5	12.6	15.4	12.4	14.2	24.0	18.7	21.3	26.3	20.9	23.6
17	12.9	10.1	11.6	18.3	10.1	13.8	21.0	17.1	18.6	28.9	22.4	25.1
18	12.2	9.2	10.8	21.3	13.6	17.0	22.8	14.7	18.1	29.2	22.9	25.7
19	11.9	9.3	10.6	16.7	13.0	15.1	23.9	16.3	19.8	30.0	23.0	25.6
20	14.5	8.7	11.5	17.7	10.5	14.0	22.2	17.1	19.3	28.9	23.7	25.9
21	13.2	10.6	11.6	19.0	10.6	14.9	22.9	15.3	18.8	27.3	23.9	25.5
22	15.9	10.4	12.5	21.0	12.7	16.9	23.0	16.4	19.5	27.6	23.5	25.2
23	16.7	10.9	13.9	23.3	16.2	19.6	25.1	17.4	20.8	26.6	23.1	24.8
24	18.1	12.7	15.3	24.1	17.3	20.7	23.8	17.8	20.8	29.6	23.3	25.9
25	18.7	14.9	16.6	24.2	19.0	21.7	25.7	17.3	21.0	28.8	24.4	26.1
26	16.0	11.5	13.6	23.7	18.9	21.3	24.7	20.6	21.9	28.4	22.7	25.3
27	13.4	9.0	11.5	21.4	17.0	19.7	21.6	18.1	19.8	27.8	23.0	24.9
28	14.1	9.8	12.0	22.7	15.9	19.6	21.5	16.4	19.0	30.7	23.5	27.2
29	---	---	---	25.0	19.2	21.9	24.0	16.5	19.9	32.5	25.1	28.2
30	---	---	---	23.6	17.5	21.5	25.2	17.9	21.2	30.8	24.3	27.6
31	---	---	---	18.9	12.0	15.8	---	---	---	31.3	23.5	26.8
MONTH	18.7	6.0	11.8	25.0	7.1	15.4	26.0	12.6	19.6	32.5	18.3	24.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	30.9	25.6	28.3	---	---	---	---	---	---	30.3	26.1	27.8
2	31.5	23.4	27.1	---	---	---	---	---	---	29.7	24.6	26.9
3	31.7	25.3	28.3	---	---	---	---	---	---	31.5	25.5	27.6
4	29.8	26.4	27.9	---	---	---	---	---	---	31.3	25.3	27.4
5	27.1	23.0	24.9	---	---	---	---	---	---	31.2	25.9	28.0
6	27.7	21.0	23.5	---	---	---	---	---	---	30.9	26.5	28.4
7	23.8	20.3	21.8	---	---	---	---	---	---	31.3	25.5	28.1
8	29.2	21.7	25.1	---	---	---	---	---	---	31.0	25.7	27.9
9	31.0	24.8	27.3	---	---	---	---	---	---	30.0	25.4	27.1
10	28.0	25.2	26.6	---	---	---	---	---	---	29.5	25.5	27.0
11	29.9	22.6	25.6	---	---	---	---	---	---	28.1	24.4	26.1
12	31.6	24.0	26.3	---	---	---	---	---	---	27.6	23.9	25.6
13	32.5	25.0	27.7	---	---	---	---	---	---	28.9	23.9	26.3
14	28.5	24.7	26.7	---	---	---	---	---	---	31.4	24.9	27.6
15	30.8	22.7	26.2	---	---	---	---	---	---	29.7	25.5	27.4
16	30.0	23.4	26.5	---	---	---	---	---	---	29.3	25.1	26.9
17	32.0	24.2	27.6	30.1	28.3	29.0	---	---	---	28.7	24.8	26.2
18	32.9	25.2	28.6	31.4	27.2	28.8	---	---	---	29.2	24.7	26.2
19	33.8	26.4	29.6	32.2	27.2	29.6	---	---	---	30.6	24.3	26.6
20	33.2	26.1	29.3	33.2	27.7	30.0	25.4	22.8	24.2	30.6	24.4	27.1
21	---	---	---	32.0	27.5	29.7	27.4	23.9	25.5	32.1	25.8	28.3
22	---	---	---	32.6	27.5	29.7	28.9	25.2	26.9	28.9	25.9	27.4
23	---	---	---	32.4	27.6	29.7	29.0	25.3	26.8	27.0	23.2	24.8
24	---	---	---	32.5	27.3	29.3	30.4	25.3	27.2	29.7	24.3	26.6
25	---	---	---	---	---	---	30.3	25.6	27.7	28.8	24.7	26.6
26	---	---	---	---	---	---	30.7	26.3	28.3	28.9	23.4	25.9
27	---	---	---	---	---	---	30.7	26.6	28.6	29.6	25.2	27.2
28	---	---	---	---	---	---	30.6	27.2	28.4	30.6	25.3	27.6
29	---	---	---	---	---	---	30.0	25.9	27.5	30.4	25.6	27.7
30	---	---	---	---	---	---	29.5	25.6	27.2	30.5	25.7	27.8
31	---	---	---	---	---	---	30.9	24.6	27.2	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	32.1	23.2	27.1

08123950 E.V. SPENCE RESERVOIR NEAR ROBERT LEE, TX

LOCATION.--Lat 31°52'46", long 100°31'01", Coke County, Hydrologic Unit 12080008, in outlet works of Robert Lee Dam on the Colorado River, 2.2 mi west of Robert Lee, and at mile 716.0.

DRAINAGE AREA.--15,278 mi^2, approximately, of which 10,260 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Dec 1968 to current year.
Water-Quality records.--Chemical analyses: Nov 1969 to Aug 1988. Biochemical analyses: Jan 1978 to Aug 1988.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Jun 24, 1969, non-recording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily contents, which are fair. The reservoir is formed by a rolled earthfill dam 21,500 ft long. Closure was made Dec 30, 1968, and dam was completed in Jun 1969. The dam is the property of the Colorado River Municipal Water District, which has a permit to divert 50,000 acre-ft annually for municipal, mining, and industrial uses. Inflow into the reservoir is partially regulated by Lake J.B. Thomas (capacity, 283,600 acre-ft), Lake Colorado City (station 08123000), and Champion Creek Reservoir (station 08123600). There are two spillways: The controlled service spillway is a morning-glory type that is partially controlled by 12 lift gates, 14.48 by 22.0 ft, and discharges through a 28.0-foot-diameter concrete conduit. The uncontrolled spillway is a 3,200-foot-wide cut through natural ground near the right end of dam. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	1,928.0
Crest of spillway	1,908.0
Top of gates	1,900.0
Top of conservation pool	1,898.0
Crest of spillway	1,878.0
Lowest gated outlet (invert)	1,815.85

COOPERATION.--Capacity table dated Mar 1972 was furnished by the Colorado River Municipal Water District. Records of diversions can be obtained from the city of San Angelo and from the Colorado River Municipal Water District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 355,300 acre-ft, Jun 16, 1987 (elevation, 1,887.03 ft); minimum since first appreciable storage in Jun 1969 (not from recorder), about 330 acre-ft, May 29, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 131,100 acre-ft, Oct 1 (elevation, 1,860.03 ft); minimum contents, 79,580 acre-ft, Sep 30 (elevation, 1,849.17 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	130700	127000	125100	124500	122700	115700	101900	99140	96310	91990	85940	83140
2	130600	126900	125200	124400	122600	114900	102000	98960	96170	91720	85740	83020
3	130300	126900	125100	124400	122500	114200	101800	98920	96040	91540	85700	82860
4	130000	126600	125000	124500	122500	113000	101700	98870	95950	91310	85460	82740
5	129900	126500	125000	124300	122600	112200	101600	98780	95770	91130	85380	82660
6	129900	126500	124900	124400	122600	111400	101700	98600	95590	91040	85300	82540
7	129900	126400	125000	124300	122400	e110500	101500	98470	95270	90950	85100	82460
8	129800	126400	124900	124200	122500	e109600	101400	98380	95270	90640	84940	82380
9	129400	126200	124900	124100	122300	108800	101200	98150	95270	90460	84780	82300
10	129400	126100	124900	123900	122300	108000	101100	98060	95630	90140	84620	82060
11	129300	126000	124800	123900	122300	107100	100800	97930	95410	89920	84500	81940
12	129300	126200	124700	123800	122300	106500	100900	97520	95360	89830	84260	81780
13	129000	126100	124600	123800	122100	106200	100900	97480	95320	89650	84140	81580
14	128900	126100	124500	123700	121900	e105900	100800	97390	95140	89470	83940	81460
15	128900	126000	124500	123800	122100	e105700	100800	97070	95000	89290	83740	81300
16	128800	125800	124500	123400	122100	105300	100600	96940	94820	89110	83620	81180
17	128700	125900	124400	123500	122000	104700	100500	96850	94600	89020	83580	81060
18	128500	125700	124400	123400	122000	103800	100400	96620	94500	88840	83540	80940
19	128500	125800	124200	123500	121900	103000	100300	96530	94240	88570	83500	80860
20	128300	125700	124700	123500	121800	102900	100200	96350	94060	88430	83420	80700
21	128200	125700	124500	123300	121800	102700	100000	96310	93880	88210	83980	80580
22	128100	125600	124500	123300	121800	102700	100000	96120	93700	88030	84060	80420
23	128200	125500	124800	123200	121200	102700	99910	96080	93430	87760	83940	80260
24	128000	e125400	124900	123000	120300	102600	99680	95860	93250	87620	83900	80140
25	128000	125400	124700	123000	119400	102500	99640	95810	92930	87440	83820	79940
26	127800	125500	125000	122900	118400	102500	99590	96760	92800	87040	83700	79820
27	127600	125400	124800	122900	117600	102500	99500	96760	92570	86900	83580	79700
28	127300	125400	124700	123000	e116600	102500	99280	96800	92350	86780	83500	79820
29	127500	125500	124600	122900	---	102500	99230	96620	92300	86540	83500	79740
30	127200	125400	124600	122700	---	102600	99230	96580	92120	86340	83460	79580
31	127200	---	124500	122700	---	102200	---	96490	---	86140	83340	---
MAX	130700	127000	125200	124500	122700	115700	102000	99140	96310	91990	85940	83140
MIN	127200	125400	124200	122700	116600	102200	99230	95810	92120	86140	83340	79580
(+)	1859.32	1858.99	1858.83	1858.50	1857.35	1854.39	1853.74	1853.13	1852.16	1850.81	1850.11	1849.17
(@)	-3700	-1800	-900	-1800	-6100	-14400	-2970	-2740	-4370	-5980	-2800	-3760

CAL YR 1997 MAX 143100 MIN 112800 (@) +9800
WTR YR 1998 MAX 130700 MIN 79580 (@) -51320

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

e Estimated

08124000 COLORADO RIVER AT ROBERT LEE, TX

LOCATION.--Lat 31°53'07", long 100°28'49", Coke County, Hydrologic Unit 12080008, on left bank 190 ft upstream from bridge on State Highway 208 in Robert Lee, 0.4 mi upstream from Mountain Creek, 2.7 mi downstream from Messbox Creek, 3.6 mi downstream from Robert Lee Dam, and at mile 712.4.

DRAINAGE AREA.--15,307 mi^2, of which 10,260 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Oct 1923 to Dec 1927, Apr 1939 to May 1956, and Oct 1968 to current year. Prior to Dec 1927, published as "near Robert Lee".
Water-quality records.--Chemical analyses: Oct 1947 to Sep 1957.

REVISED RECORDS.--WSP 1723: 1925(M). WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,771.70 ft above sea level. Prior to Dec 31, 1927, nonrecording gage at site 9 mi downstream at different datum. Apr 18 to Sep 26, 1939, nonrecording gage, and Sep 27, 1939 to May 9, 1956, water-stage recorder at site 200 ft downstream at same datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Beginning Apr 1949, flow was affected by Lake Colorado City (station 08123000) and since Jul 1952, at least 10% of contributing drainage area has been regulated by Lake J.B. Thomas (capacity 203,600 acre-ft). Since Dec 1968, flow completely regulated by E.V. Spence Reservoir (station 08123950) 3.6 mi upstream. There are many diversions above station for municipal, mining, agricultural, and industrial uses. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--16 years (water years 1925-27, 1940-52) prior to completion of Lake J.B. Thomas, 220 ft^3/s (159,100 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1925-27, 1940-52).--Maximum discharge, 32,500 ft^3/s Sep 6, 1926 (gage height, 20.20 ft, site and datum then in use), from rating curve extended above 15,000 ft^3/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1907, 26.7 ft Oct 13, 1957, from floodmarks. Flood in Apr 1922 reached a stage of 25.5 ft, present 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	15	15	17	15	13	459	13	13	18	15	18	20
2	15	15	17	14	13	456	13	13	17	14	18	19
3	15	15	17	14	13	453	13	13	17	14	18	19
4	15	15	17	14	13	451	13	12	17	14	18	19
5	15	15	17	14	13	448	12	12	17	15	19	19
6	16	15	16	14	12	447	12	12	18	14	20	18
7	16	16	17	14	12	446	12	12	18	14	19	18
8	16	15	16	14	12	441	11	12	17	14	19	18
9	16	15	16	14	12	416	11	12	17	14	19	18
10	17	15	16	14	12	436	12	12	18	14	19	18
11	18	15	14	13	12	432	12	12	19	17	18	18
12	18	16	14	13	12	344	12	13	17	17	20	18
13	18	16	14	13	13	228	12	18	17	18	20	19
14	17	16	14	13	13	243	12	18	17	18	20	19
15	16	16	14	12	13	186	12	18	17	17	20	18
16	16	16	14	9.2	13	278	12	21	16	17	19	19
17	15	16	14	14	13	295	12	22	16	18	19	19
18	15	16	14	14	13	405	13	22	16	18	20	19
19	15	16	14	13	13	408	13	22	16	18	20	19
20	15	16	16	6.7	13	313	13	22	15	18	20	19
21	15	16	14	7.6	13	16	13	22	15	18	20	19
22	15	16	14	13	13	15	13	22	15	18	20	19
23	16	16	15	13	230	14	12	22	15	18	20	19
24	15	16	14	12	471	14	12	22	15	18	20	19
25	15	16	14	13	471	14	12	22	15	18	20	19
26	15	16	15	12	468	14	13	37	15	18	20	19
27	15	16	14	10	465	14	13	23	15	18	20	19
28	15	17	14	2.3	461	13	13	20	15	18	20	20
29	15	16	14	1.4	---	13	13	17	14	18	22	16
30	15	16	14	4.5	---	13	13	18	14	18	20	15
31	15	---	14	13	---	12	---	18	---	18	20	---
TOTAL	485	471	464	363.7	2845	7737	372	554	488	516	605	557
MEAN	15.6	15.7	15.0	11.7	102	250	12.4	17.9	16.3	16.6	19.5	18.6
MAX	18	17	17	15	471	459	13	37	19	18	22	20
MIN	15	15	14	1.4	12	12	11	12	14	14	18	15
AC-FT	962	934	920	721	5640	15350	738	1100	968	1020	1200	1100

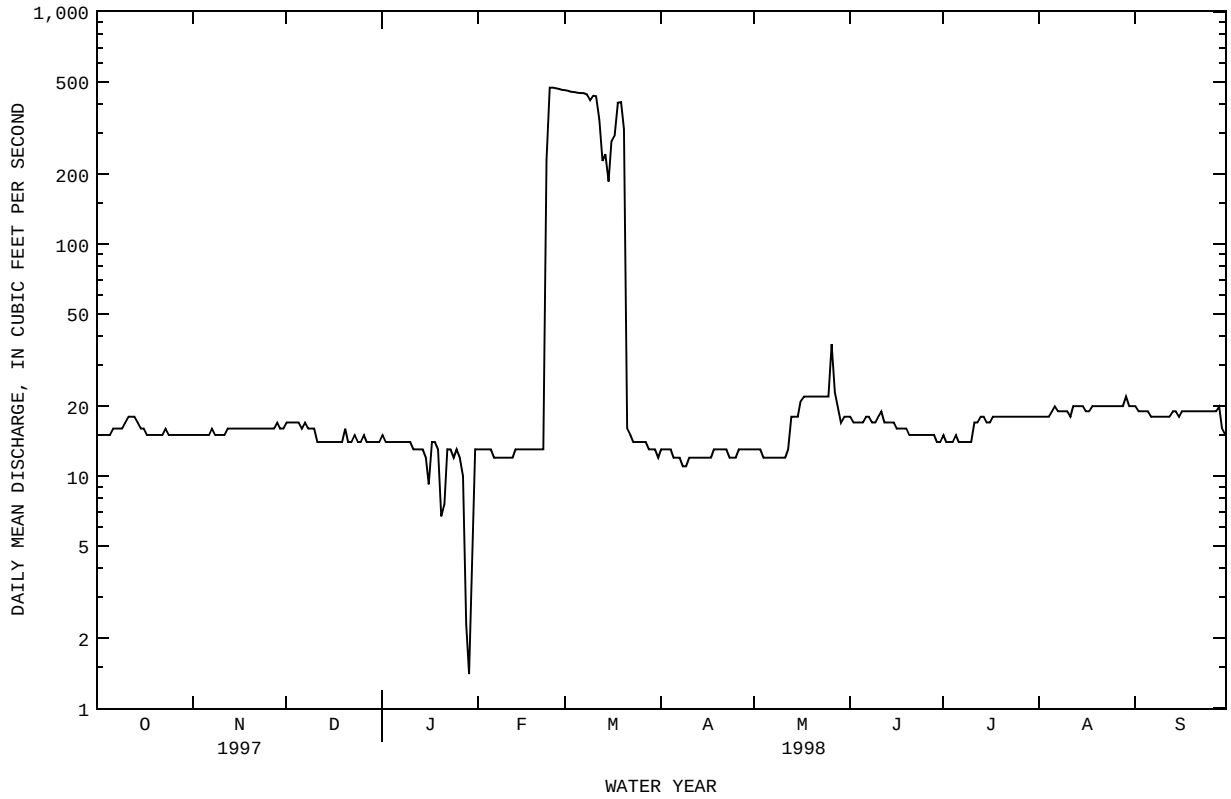
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 1998z,h, BY WATER YEAR (WY)

MEAN	39.6	10.3	2.25	1.82	4.91	9.49	30.0	99.1	41.5	44.6	55.1	35.3
MAX	578	219	15.0	11.8	102	250	714	1540	473	495	578	438
(WY)	1987	1987	1998	1997	1998	1998	1954	1954	1989	1988	1953	1986
MIN	.000	.000	.000	.000	.000	.000	.000	.011	.000	.000	.000	.000
(WY)	1955	1955	1955	1953	1953	1956	1956	1971	1980	1970	1954	1954

08124000 COLORADO RIVER AT ROBERT LEE, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1953 - 1998z,h	
ANNUAL TOTAL	5001		15457.7			
ANNUAL MEAN	13.7		42.3		31.0	
HIGHEST ANNUAL MEAN					237	1954
LOWEST ANNUAL MEAN					1.04	1969
HIGHEST DAILY MEAN	62	Feb 20	471	Feb 24	13400	May 12 1954
LOWEST DAILY MEAN	10	Jun 23	1.4	Jan 29	.00	Oct 4 1952
ANNUAL SEVEN-DAY MINIMUM	11	Jan 16	7.9	Jan 24	.00	Oct 4 1952
INSTANTANEOUS PEAK FLOW			480	Feb 24	24500	Sep 9 1980
INSTANTANEOUS PEAK STAGE			5.27	Feb 24	20.63	Sep 9 1980
ANNUAL RUNOFF (AC-FT)	9920		30660		22430	
10 PERCENT EXCEEDS	16		22		14	
50 PERCENT EXCEEDS	13		16		.63	
90 PERCENT EXCEEDS	12		12		.00	

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



08126380 COLORADO RIVER NEAR BALLINGER, TX

LOCATION.--Lat 31°42'55", long 100°01'34", Runnels County, Hydrologic Unit 12090101, at left downstream end of bridge on Farm Road 2111, 0.4 mi upstream from Rocky Creek, 5.0 mi northwest of Ballinger, and at mile 665.8.

DRAINAGE AREA.--16,358 mi^2, approximately, of which 10,260 mi^2 probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jun 1907 to Sep 1979 (published as "at Ballinger", station 08126500), Oct 1979 to current year. Monthly discharge only for some periods published in WSP 1312. Gage-height records collected in this vicinity from 1903-29 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1118: Drainage area. WSP 1512: 1916-17, 1919-20, 1921(M), 1922-25, 1928(M), 1930(M). WSP 1712: 1935, 1954-55(M). WDR TX-78-3: 1975-77.

GAGE.--Water-stage recorder. Datum of gage is 1,606.51 ft above sea level. Prior to Nov 29, 1930, nonrecording gages at several sites and at various datums near site 5.4 mi downstream. Nov 29, 1930, to May 1, 1975, water-stage recorder at site 6.2 mi downstream and May 1, 1975, to Sep 30, 1979, water-stage recorder at site 5.4 mi downstream, both at datum 12.77 ft lower. 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 Robert Lee Dam. Many diversions upstream from station for irrigation, municipal supplies, and for oil field operations. Flow is also affected by E. V. Spence (station 08123950) and Oak Creek Reservoir (capacity, 39,360 acre-ft), and at times by discharge from the floodwater-retarding structures in the Kickapoo and Valley Creeks drainage basins.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--61 years (water years 1908-68) prior to completion of Robert Lee Dam, 336 ft^3/s (243,400 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1908-68).--Maximum discharge, 75,400 ft^3/s Sep 18, 1936 (gage height, 28.6 ft, at former site and datum); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1882, about 36 ft sometime in 1884, at former site and datum, from information by local residents. Flood of Aug 6, 1906, reached a stage of about 32.0 ft, at former site and datum, from floodmarks (backwater from Elm Creek).

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	13	21	27	30	26	415	28	11	20	14	12	37
2	12	19	29	29	24	416	27	12	17	11	15	19
3	11	17	30	30	23	414	26	14	16	9.4	14	17
4	13	17	28	31	23	414	25	15	17	13	13	18
5	13	20	28	30	28	412	24	14	16	21	29	17
6	12	19	27	31	28	411	24	14	14	18	21	16
7	14	20	30	31	28	418	23	13	16	15	19	14
8	21	20	32	30	27	416	23	13	17	14	18	13
9	21	22	32	29	27	404	21	13	18	11	20	13
10	21	22	30	29	26	391	19	7.5	682	7.2	19	13
11	23	21	29	28	25	403	19	4.8	357	8.7	15	13
12	24	25	28	29	24	399	22	7.5	117	10	14	15
13	22	28	27	28	24	363	22	8.6	186	10	14	16
14	22	29	26	28	24	255	21	3.5	49	11	16	16
15	20	29	26	28	24	282	17	3.4	30	13	17	16
16	19	29	26	25	27	310	18	6.1	25	13	17	13
17	19	29	26	26	27	320	18	8.2	22	13	14	13
18	18	29	25	26	26	356	17	9.7	20	14	18	11
19	17	29	25	24	26	409	17	12	18	13	17	42
20	18	28	30	22	24	403	17	15	16	13	17	43
21	19	28	34	24	26	376	16	15	16	14	18	21
22	19	27	33	26	29	153	16	11	15	15	17	19
23	20	28	36	25	28	75	15	12	15	14	18	17
24	21	28	38	22	27	55	12	16	14	13	18	14
25	21	27	37	21	357	49	9.6	18	13	12	20	17
26	22	27	38	22	411	45	10	34	13	8.0	28	18
27	20	27	37	23	413	43	11	644	13	7.0	19	18
28	18	31	36	23	415	39	12	158	14	8.9	17	17
29	18	30	33	23	---	37	10	51	14	10	15	18
30	19	28	31	23	---	36	10	29	13	14	14	17
31	20	---	31	26	---	30	---	24	---	10	49	---
TOTAL	570	754	945	822	2217	8549	549.6	1217.3	1813	378.2	572	551
MEAN	18.4	25.1	30.5	26.5	79.2	276	18.3	39.3	60.4	12.2	18.5	18.4
MAX	24	31	38	31	415	418	28	644	682	21	49	43
MIN	11	17	25	21	23	30	9.6	3.4	13	7.0	12	11
AC-FT	1130	1500	1870	1630	4400	16960	1090	2410	3600	750	1130	1090

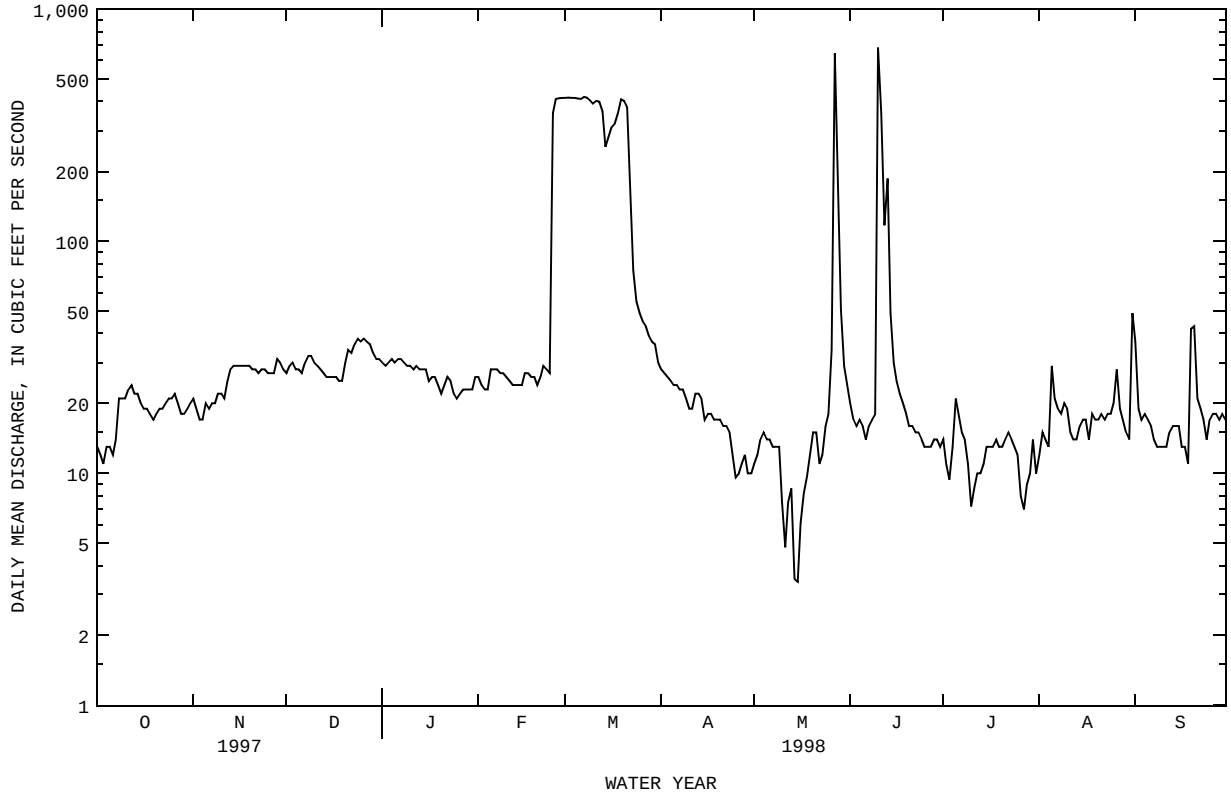
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1998z, BY WATER YEAR (WY)

MEAN	102	41.3	33.7	28.8	58.9	49.7	41.8	94.3	133	52.7	100	131
MAX	1194	374	259	159	756	299	161	427	739	455	639	833
(WY)	1987	1987	1992	1992	1992	1987	1996	1996	1982	1987	1987	1986
MIN	.78	.82	2.33	2.48	1.52	.67	.47	1.07	1.13	.000	.000	.23
(WY)	1980	1980	1984	1986	1984	1980	1980	1971	1974	1984	1984	1983

08126380 COLORADO RIVER NEAR BALLINGER, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1969 - 1998z	
ANNUAL TOTAL	37067.0		18938.1			
ANNUAL MEAN	102		51.9		72.2	
HIGHEST ANNUAL MEAN					405	1987
LOWEST ANNUAL MEAN					7.18	1984
HIGHEST DAILY MEAN	5730	Jun 23	682	Jun 10	9220	Aug 28 1986
LOWEST DAILY MEAN	8.0	Sep 19	3.4	May 15	.00	Mar 20 1971
ANNUAL SEVEN-DAY MINIMUM	9.6	Sep 16	5.9	May 10	.00	Mar 20 1971
INSTANTANEOUS PEAK FLOW			2250	Jun 10	16600	Aug 3 1978
INSTANTANEOUS PEAK STAGE			12.51	Jun 10	27.50	Sep 21 1990
ANNUAL RUNOFF (AC-FT)	73520		37560		52300	
10 PERCENT EXCEEDS	190		49		127	
50 PERCENT EXCEEDS	48		21		14	
90 PERCENT EXCEEDS	16		12		1.2	

z Period of regulated streamflow.



08126380 COLORADO RIVER NEAR BALLINGER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Sep 1961 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1961 to Sep 1997.
WATER TEMPERATURE: Oct 1961 to Sep 1997.
SUSPENDED SEDIMENT DISCHARGE: Jan 1978 to Sep 1981.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using daily (or continuous) records of specific conductance and regression relations 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. Prior to Oct 1979, published as "at Ballinger", station 08126500.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 13,500 microsiemens, May 3, 1963; minimum daily, 244 microsiemens, Sep 9, 1980.
WATER TEMPERATURE: Maximum daily, 39.0°C, Jul 3, 1977; minimum daily, 0.0°C, Jan 9-11, 1973.
SEDIMENT CONCENTRATION: Maximum daily mean, 3,740 mg/L, Sep 9 1980; minimum daily mean, 4 mg/L, Feb 2, 1980.
SEDIMENT LOADS: Maximum daily, 94,100 tons Aug 3, 1978; minimum daily, 0 tons on many days during 1978 and 1980-81.

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)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT									
08...	1535	31	4710	25.5	1300	1100	290	132	575
DEC									
04...	1420	29	3160	13.0	800	640	170	90	379
JAN									
30...	0850	23	3330	9.5	880	710	190	97	399
FEB									
27...	0945	415	4660	12.0	910	780	180	114	627
APR									
16...	1120	20	4850	20.5	1300	1100	280	137	607
MAY									
27...	1300	1320	1540	21.0	340	260	78	35	174

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
OCT								
08...	7	16	150	1100	910	.72	10	3100
DEC								
04...	6	11	160	660	580	.66	7.3	2000
JAN								
30...	6	10	170	690	630	.64	6.0	2130
FEB								
27...	9	19	130	730	1000	.57	6.9	2770
APR								
16...	7	16	160	1000	990	.60	6.1	3160
MAY								
27...	4	9.1	84	240	280	.34	6.8	878

08127000 ELM CREEK AT BALLINGER, TX

LOCATION.--Lat 31°44'57", long 99°56'51", Runnels County, Hydrologic Unit 12090101, on right bank 1,000 ft upstream from storage dam at Ballinger and 1.9 mi upstream from mouth.

DRAINAGE AREA.--450 mi^2, of which 63.5 mi^2 is above Lake Winters Dam.

PERIOD OF RECORD.--Apr 1932 to current year.
Water-quality records.--Chemical analyses: Sep 1958, Mar 1964 to Aug 1991. Specific conductance: Oct 1967 to Sep 1991. Water temperatures: Oct 1967 to Sep 1991.

REVISED RECORDS.--WSP 1442: 1935, 1946, 1954. WDR TX-81-3: Drainage area. WDR TX-96-3.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,617.72 ft sea level. Satellite telemeter at station.

REMARKS.--Records good except those below 10 ft^3/s and estimated daily discharges, which are fair. The stage-discharge relation during periods of low flow are affected by wind action and by occasional accumulation of drift on dam. Since water year 1983 at least 10% of contributing drainage area has been regulated by New Lake Winters. The city of Winters diverts water from New Lake Winters (capacity, 8,374 acre-ft at elevation, 1,790.0 ft) for municipal use. Prior to Jun 1982, capacity of Old Lake Winters (just upstream from new dam) was 3,060 acre-ft.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--50 years (water years 1933-82) prior to completion of New Lake Winters, 47.6 ft^3/s (34,490 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1933-82).--Maximum discharge, 50,000 ft^3/s Oct 13, 1957 (gage height, 14.20 ft, from floodmark); no flow at times. Highest stage not affected by backwater from the Colorado River since at least 1904, was that of Oct 13, 1957, from information by local residents.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Aug 1906 reached a stage of 14.5 ft, affected by backwater from Colorado River.

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	.80	8.5	10	21	9.2	13	1.6	5.6	.02	.00	.00
2	.22	.70	9.2	10	25	9.0	11	1.8	2.1	.01	.00	.00
3	.24	.69	8.8	10	20	8.5	9.6	1.5	1.4	.00	.00	.00
4	.23	.69	9.1	11	18	9.0	9.6	1.1	.89	.00	.00	.00
5	.21	e.75	9.3	11	17	9.0	9.4	1.0	.77	29	.00	.00
6	.20	e1.0	9.2	12	16	9.1	9.7	1.0	.64	13	.00	.00
7	.23	e1.0	9.7	10	16	11	9.9	.93	.48	4.6	.00	.00
8	.31	e1.5	9.7	10	15	11	9.0	.76	.40	1.2	.00	.00
9	.65	e2.0	8.9	10	14	13	8.8	.73	.34	.56	.00	.00
10	.57	e3.5	8.5	11	13	12	8.4	.59	66	.31	.00	.00
11	.60	e4.5	8.2	11	12	10	9.1	.55	130	.14	.00	.00
12	.64	5.8	7.3	11	11	9.7	7.9	.47	38	.08	.00	.00
13	.57	7.2	7.1	11	11	9.3	7.9	.44	22	.04	.00	.00
14	.49	7.6	7.5	11	11	9.8	7.4	.59	13	.02	.00	.00
15	.45	7.5	7.7	11	10	13	7.6	.72	17	.00	.00	.00
16	.42	6.9	8.3	10	11	53	6.6	.53	11	.00	.00	.00
17	.42	7.9	8.4	10	11	75	6.6	.42	7.7	.00	.00	.00
18	.42	7.3	8.4	10	11	61	6.6	.35	6.6	.00	.00	.00
19	.42	6.9	8.4	10	11	43	7.5	.28	4.3	.00	.00	.00
20	.42	7.5	11	10	10	31	6.9	.19	1.8	.00	.00	.00
21	.43	9.7	15	12	13	26	5.4	.18	.97	.00	.00	.00
22	.48	8.9	21	14	14	25	5.4	.28	.73	.00	.00	.00
23	.51	8.6	22	13	13	23	5.1	.33	.55	.00	.00	.00
24	.53	8.4	19	12	13	22	4.2	.24	.39	.00	.00	.00
25	.86	8.4	18	13	12	19	3.6	.57	.27	.00	.00	.00
26	2.1	7.6	18	13	9.4	17	3.7	3.5	.16	.00	.00	.00
27	2.1	7.4	16	13	9.5	16	4.6	432	.11	.00	.00	.00
28	1.6	9.8	13	11	9.1	16	4.4	75	.07	.00	.00	.00
29	1.0	9.0	13	10	---	16	3.1	27	.05	.00	.00	.00
30	.90	8.5	13	13	---	15	2.9	15	.03	.00	.00	.00
31	.82	---	11	17	---	13	---	9.0	---	.00	.00	---
TOTAL	19.25	168.03	352.2	351	377.0	623.6	214.9	578.65	333.35	48.98	0.00	0.00
MEAN	.62	5.60	11.4	11.3	13.5	20.1	7.16	18.7	11.1	1.58	.000	.000
MAX	2.1	9.8	22	17	25	75	13	432	130	29	.00	.00
MIN	.20	.69	7.1	10	9.1	8.5	2.9	.18	.03	.00	.00	.00
AC-FT	38	333	699	696	748	1240	426	1150	661	97	.00	.00
CFSM	.00	.01	.03	.03	.03	.04	.02	.04	.02	.00	.00	.00
IN.	.00	.01	.03	.03	.03	.05	.02	.05	.03	.00	.00	.00

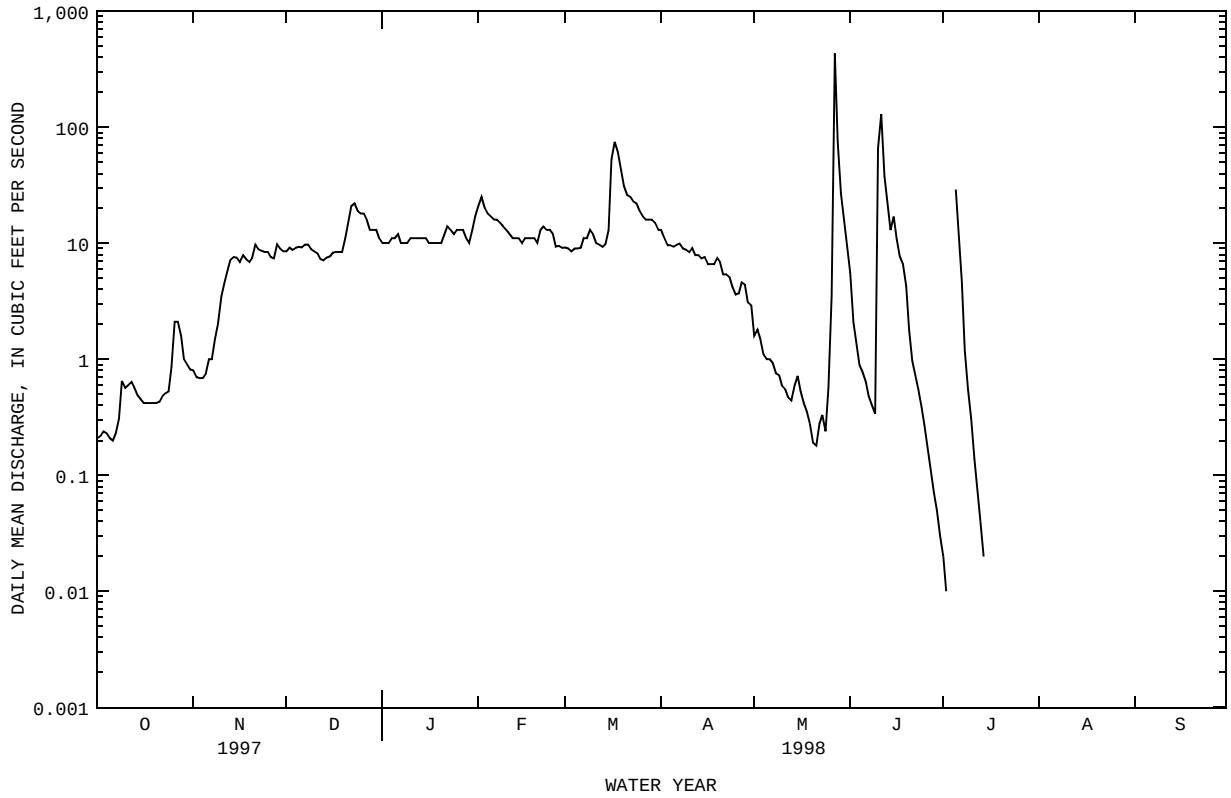
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1998z, BY WATER YEAR (WY)

MEAN	26.9	15.3	48.8	21.8	77.9	40.3	21.8	83.6	125	8.13	13.0	67.3
MAX	165	59.7	576	164	911	268	76.4	655	770	42.5	90.1	760
(WY)	1987	1987	1992	1992	1992	1992	1992	1994	1997	1997	1995	1996
MIN	.000	.000	.46	.42	.85	.39	.17	.000	1.07	.000	.000	.000
(WY)	1984	1989	1994	1986	1984	1986	1986	1984	1984	1984	1983	1983

08127000 ELM CREEK AT BALLINGER, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1983 - 1998z	
ANNUAL TOTAL	35154.84		3066.96			
ANNUAL MEAN	96.3		8.40		45.4	
HIGHEST ANNUAL MEAN					188	1992
LOWEST ANNUAL MEAN					.96	1984
HIGHEST DAILY MEAN	11100	Jun 23	432	May 27	12400	Sep 15 1996
LOWEST DAILY MEAN	.19	Sep 21	.00	Jul 3	.00	Jul 20 1983
ANNUAL SEVEN-DAY MINIMUM	.22	Oct 1	.00	Jul 15	.00	Jul 20 1983
INSTANTANEOUS PEAK FLOW			1050	May 27	16700	Jun 23 1997
INSTANTANEOUS PEAK STAGE			4.76	May 27	9.06	Jun 23 1997
ANNUAL RUNOFF (AC-FT)	69730		6080		32920	
ANNUAL RUNOFF (CFSM)	.21		.019		.10	
ANNUAL RUNOFF (INCHES)	2.91		.25		1.37	
10 PERCENT EXCEEDS	113		16		66	
50 PERCENT EXCEEDS	25		4.5		3.3	
90 PERCENT EXCEEDS	.42		.00		.00	

e Estimated
z Period of regulated streamflow.



08128000 SOUTH CONCHO RIVER AT CHRISTOVAL, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 31°11'13", long 100°30'06", Tom Green County, Hydrologic Unit 12090102, on left upstream side of U.S. Highway 277 bridge, 9.5 mi upstream from Twin Buttes Dam, and 23.7 mi upstream from mouth.

DRAINAGE AREA.--413 mi^2, of which 58.6 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Feb 1930 to Sep 1995 (daily mean discharge). Oct 1995 to current year (peak discharges greater than base discharge).

REVISED RECORDS.--WSP 1118: 1943(M). WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,010.22 ft above sea level. Prior to Jul 17, 1930, nonrecording gage at same site and datum. Jul 17, 1930 to Nov 15, 1977, water-stage recorder at same site and datum. Nov 16, 1977 to May 5, 1987, water-stage recorder at site 160 ft downstream at same datum. Satellite telemeter at station.

REMARKS.--Records good. No known regulation. Low flow is affected by diversions to the South Concho Irrigation Company canal 800 ft upstream from station.

AVERAGE DISCHARGE.--65 years (water years 1931-95), 31.4 ft^3/s (22,770 acre-ft/year).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 100,000 ft^3/s Jul 23, 1938 (gage height, 21.95 ft, from floodmark), from rating curve extended above 15,100 ft^3/s on basis of slope-area measurement of 80,100 ft^3/s; prior to Oct 1, 1995, no flow Feb 28 and Mar 1, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1882, about 23 ft Aug 6, 1906 (discharge, 115,000 ft^3/s), from rating curve extended as noted above, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 160 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 26	0600	264	3.17	No other peak greater than base discharge.			

08128400 MIDDLE CONCHO RIVER ABOVE TANKERSLEY, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 31°25'38", long 100°42'39", Irion County, Hydrologic Unit 12090103, on left bank 0.3 mi upstream from East Rocky Creek, 0.5 mi southwest of Tullos Ranch Headquarters, 6.7 mi northwest of Tankersley, and 20.9 mi upstream from mouth.

DRAINAGE AREA.--2,084 mi^2, of which 968 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Mar 1961 to Sep 1995 (daily mean discharge). Oct 1995 to current year (peak discharges greater than base discharge).
Water-quality records.--Chemical analyses: Aug 1964 to Apr 1965.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,986.47 ft above sea level. Satellite telemeter at station.

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

AVERAGE DISCHARGE.--34 years (water years 1962-95), 16.7 ft^3/s (12,060 acre-ft/year).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,500 ft^3/s Sep 21, 1974 (gage height, 24.98 ft); prior to Oct 1, 1995, no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1900, 29.5 ft Sep 26, 1936. A flood in 1900 reached the same stage, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft^3/s:

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

No peak greater than base discharge.

08129300 SPRING CREEK ABOVE TANKERSLEY, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 31°19'48", long 100°38'24", Tom Green County, Hydrologic Unit 12090102, on right bank at downstream side of bridge on Farm Road 2335, 1.4 mi south of Tankersley, 2.5 mi upstream from Dove Creek, and 10.4 mi upstream from mouth.

DRAINAGE AREA.--425 mi^2, of which 19.7 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Oct 1960 to Sep 1995 (daily mean discharge). Oct 1995 to current year (peak discharges greater than base discharge).
Water-quality records.--Chemical analyses: Sep 1964 to May 1967.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,964.72 ft above sea level. Prior to Nov 10, 1960, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records good. No known regulation. There are many small diversions above station for irrigation.

AVERAGE DISCHARGE.--35 years (water years 1961-95), 13.1 ft^3/s (9,490 acre-ft/year).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,400 ft^3/s Aug 12, 1971 (gage height, 16.57 ft); prior to Oct 1, 1995, no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Notable floods since at least 1853 occurred in 1882 and 1884. Flood of Oct 3, 1959, reached a stage of 18.4 ft, from floodmarks. At former gage near Tankersley 8 mi downstream, the flood of Oct 3, 1959, had a discharge of 82,100 ft^3/s and was found to be about 3 ft lower than the 1882 flood, the greatest at that location since at least 1853.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft^3/s:

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

08130500 DOVE CREEK AT KNICKERBOCKER, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 31°16'26", long 100°37'50", Tom Green County, Hydrologic Unit 12090102, on left downstream end of bridge on Farm Road 2335, 0.5 mi west of Knickerbocker, and 5.7 mi upstream from mouth.

DRAINAGE AREA.--226 mi^2, of which 8.4 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Oct 1960 to Sep 1995 (daily mean discharge). Oct 1995 to current year (peak discharges greater than base discharge).

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,001.45 ft above sea level. Prior to Nov 10, 1960, nonrecording gage, Nov 10, 1960 to Mar 17, 1986, water-stage recorder, both at site 278 ft to the right at present datum. Satellite telemeter at station.

REMARKS.--Records good. No known regulation. Flow is affected by diversions from two small upstream channel dams, and by small upstream diversions (for irrigation). Flow is sustained by springflow from Dove Creek Spring about 9 mi upstream.

AVERAGE DISCHARGE.--35 years (water years 1961-95), 16.2 ft^3/s (11,740 acre-ft/year).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,500 ft^3/s Aug 12, 1971 (gage height, 20.66 ft); prior to Oct 1, 1995, no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1882, 30.4 ft in 1906 and Oct 3, 1959; floods in 1882 and 1884 reached about the same stage, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 6	1330	166	5.27	Aug 25	2230	2,080	11.43

08131200 TWIN BUTTES RESERVOIR NEAR SAN ANGELO, TX

LOCATION.--Lat 31°22'55", long 100°32'17", Tom Green County, Hydrologic Unit 12090102, in outlet control tower at Twin Buttes Dam on Middle Concho River, Spring Creek, and South Concho River, 3.8 mi upstream from Lake Nasworthy Dam, 8.1 mi southwest of San Angelo, and 75.0 mi upstream from mouth.

DRAINAGE AREA.--3,868 mi^2, of which 1,055 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Oct 1962 to current year.
Water-quality records.--Chemical analyses: May 1965 to Nov 1966, Jul 1970 to Apr 1984.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder on Middle Concho-Spring Creek pool and nonrecording gage on South Concho pool. Datum of gage is sea level. Satellite telemeter at station.

REMARKS.--Records fair, the South Concho and Middle Concho-Spring Creek pools were not equalized. The reservoir is formed by a rolled earthfill dam 8.1 mi long, including a 200-foot-wide uncontrolled off-channel concrete gravity spillway with ogee weir section. Outlet works consist of three 15.5-foot concrete conduits, each controlled by a 12.0- by 15.0-foot fixed-wheel gate and a 12.0- by 15.0-foot radial gate, located in the Middle Concho-Spring Creek pool. Low-flow releases are made through 2.0- by 2.0-foot gates located in the center of three fixed-wheel gates. The South Concho and Middle Concho-Spring Creek pools are connected by a 3.22-mile equalizing channel. At an elevation of 1,926.5 ft, the two pools join to form one lake. Below elevation 1,926.5 ft, daily contents are obtained from capacity tables for South Concho and Middle Concho-Spring Creek pools and summed to obtain combined daily contents. Lake level elevations below 1,926.5 ft represent Middle Concho-Spring Creek pool only. Deliberate impoundment of water began on Dec 1, 1962; dam was completed Feb 13, 1963. Capacity curve is based on a survey made in 1958. Reservoir was built for flood control, irrigation, and municipal uses. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	1,991.0
Crest of spillway	1,969.1
Top of conservation storage	1,940.2
Bottom of equalizing channel (Middle Concho-Spring Creek pool)	1,926.5
Dead storage in South Concho pool	1,926.5
Lowest gated outlet (invert at Middle Concho-Spring Creek pool)	1,885.0

COOPERATION.--Capacity curve dated Mar 1964 furnished by the U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 205,200 acre-ft, May 12, 1975 (elevation, 1,942.20 ft); minimum since first appreciable storage, 2,120 acre-ft, Apr 15, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum combined daily contents, 46,430 acre-ft, Mar 29; minimum combined daily, 23,160 acre-ft, Sep 30.

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	45120	42280	42250	43790	45130	45430	46030	42360	38010	32170	26130	25990
2	45010	42170	42280	43870	45180	45380	45840	42210	37770	31910	25940	25930
3	44890	42110	42350	43960	45200	45350	45630	42080	37540	31680	25740	25850
4	44790	42020	42340	e44210	45270	45270	45480	41970	37340	31620	25580	25690
5	44730	41940	42410	44280	45290	45200	45390	41780	37110	31400	25390	25480
6	44700	41860	42600	44300	45360	45220	45290	41590	36870	31240	25340	25260
7	44620	41780	42800	44300	45400	45220	45160	41450	36670	31080	25270	25070
8	44570	41710	42940	44370	45440	45070	44990	41230	36470	30910	25150	24960
9	44480	41600	43050	44380	45470	45000	44840	40960	36260	30760	25040	25030
10	44400	41520	42340	44450	45480	44970	44730	40790	36180	30610	24940	24950
11	44370	41430	42420	44470	45530	44940	44570	40570	36060	30480	24830	24820
12	44310	41510	42530	44500	45540	44960	44460	40410	35910	30330	24740	24770
13	44170	41610	42620	44530	45540	45990	44300	40220	35810	30190	24640	24720
14	44090	41650	42710	44560	45570	45080	44200	40000	35650	30030	24640	24650
15	43980	41730	42800	44570	45640	45360	44070	39840	35500	29830	24540	24550
16	43890	41810	42850	44590	45660	45730	43890	39660	35370	29700	24440	24470
17	43780	41840	42800	44650	45640	45840	43720	39420	35180	29500	24400	24400
18	43680	41840	42810	44620	45680	45900	43650	39250	35120	29270	24300	24340
19	43570	41820	42760	44670	45640	45920	43580	39060	34980	29050	24320	24290
20	43490	41800	42740	44720	45650	45980	43470	38870	34850	28810	24310	24220
21	43380	41800	e42720	44710	45720	46050	43400	38700	34680	28590	24280	24150
22	43320	42190	42750	44730	45750	46100	43290	38530	34540	28380	24190	24080
23	43250	42760	42970	44750	45770	46170	43260	38370	34370	28130	24150	24000
24	43120	43160	43020	44780	45840	46190	43180	38190	34160	27910	24130	23870
25	42970	42250	43110	44830	45760	46260	43070	38030	33930	27670	24510	23760
26	42840	42330	43270	44830	45660	46350	42980	38160	33690	27470	25720	e23630
27	42720	42300	43360	44880	45570	46340	42880	38310	33420	27240	25910	e23500
28	42630	42400	43380	44880	45500	46380	42770	38290	33160	27050	25910	e23360
29	42550	42230	43450	44910	---	46430	42660	38260	32880	26800	25950	23280
30	42470	42250	43530	44930	---	46350	42530	38220	32600	26570	25990	23160
31	42380	---	43630	45110	---	46170	---	38170	---	26350	26010	---
MAX	45120	43160	43630	45110	45840	46430	46030	42360	38010	32170	26130	25990
MIN	42380	41430	42250	43790	45130	44940	42530	38030	32600	26350	24130	23160
(+)	1909.34	1910.15	1911.23	1911.87	1912.08	1912.36	1910.89	1908.78	1905.88	1902.18	1901.79	1899.68
(@)	-2880	-130	+1380	+1480	+390	+670	-3640	-4360	-5570	-6250	-340	-2850

CAL YR 1997 MAX 79760 MIN 41430 (@) -23510
WTR YR 1998 MAX 46430 MIN 23160 (@) -22100

(+) Elevation, in feet, at end of month of Middle Concho and Spring Creek pool.
(@) Change in combined contents, in acre-feet.

e Estimated

08132000 LAKE NASWORTHY NEAR SAN ANGELO, TX

LOCATION.--Lat 31°23'19", long 100°28'41", Tom Green County, Hydrologic Unit 12090102, on left bank 250 ft upstream from Nasworthy Dam on South Concho River, 3.8 mi downstream from Twin Buttes Dam, 6.0 mi southwest of San Angelo, and 68.9 mi upstream from mouth.

DRAINAGE AREA.--3,975 mi^2, of which 3,868 mi^2 is above Twin Buttes Reservoir and 1,055 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Mar 1930 to current year. Prior to Oct 1969, end of month contents only.
Water-quality records.--Chemical analyses: Mar 1964 to May 1965, Nov 1969 to Apr 1984.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,840.00 ft sea level. Satellite telemeter at station.

REMARKS.--Records good. The lake is formed by a 6,090-foot dam with a 5,590-foot earthen section that has an earthen spillway 300 ft long, a concrete spillway 475 ft long with a bank of fifteen 25.0- by 18.0-foot tainter gates, and a 25.0- by 3.0-foot collapsible floodgate. The dam was completed and storage began Mar 28, 1930. Since Jul 1966, West Texas Utilities Co. has operated a steam generating powerplant on the lake. Since Sep 1962, the lake has been almost totally controlled by releases or pumpage from Twin Buttes Reservoir (station 08131200). Siltation surveys in Dec 1938 and May 1953 by the National Resource Conservation Service (formerly the Soil Conservation Service) show that 1,191 acre-ft of silt was deposited from Mar 1930 to Dec 1938 and an additional 1,023 acre-ft was deposited from Dec 1938 to May 1953, totaling 2,214 acre-ft. Water is used for part of San Angelo municipal supply and for irrigation east of San Angelo. The capacity curve is based on a survey by the Texas Water Development Board in Aug and Sep 1993 and has been used since Oct 1995. The City of San Angelo is in the process of planning and securing necessary permits to dredge Lake Nasworthy in the near future. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	1,883.5
Crest of spillway (300 ft)	1,879.1
Top of gates	1,873.2
Top of collapsible floodgate	1,872.2
Lowest outlet to canal (invert)	1,867.5
Crest of spillway (tainter gates sill)	1,855.3
Lowest gated outlet (invert)	1,836.0

COOPERATION.--Capacity curve dated Dec 2, 1993 furnished by City of San Angelo.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 26,900 acre-ft, Sep 15, 1936 (elevation, 1,878.36 ft); minimum, 209 acre-ft, Aug 22, 1964 (elevation, 1,853.21 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 9,330 acre-ft, Dec 9 (elevation, 1,871.70 ft); minimum contents, 8,640 acre-ft, Jun 26 (elevation, 1,871.15 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	8910	9070	9180	8890	8880	8730	8810	8800	8720	8980	8960	8700
2	8890	9070	9210	8840	8890	8750	8880	8790	8750	9000	8960	8700
3	8840	9090	9210	8810	8880	8790	8900	8800	8790	9020	8980	8700
4	8790	9100	9230	8800	8900	8790	8940	8850	8810	9100	9110	8730
5	8750	9110	9200	8800	8900	8790	9000	8830	8810	9160	9110	8790
6	8790	9130	9210	8800	8900	8840	9040	8830	8810	9190	9140	8900
7	8810	9140	9240	8840	8900	8930	9050	8830	8830	9160	9130	9000
8	8850	9150	9240	8860	8900	8900	9060	8840	8880	9100	9100	9010
9	8890	9150	9240	8880	8900	8930	9090	8810	8950	9050	9060	8960
10	8900	9150	9200	8890	8890	8940	9110	8850	9070	8990	9040	8910
11	8990	9160	9180	8900	8890	8930	9140	8860	9130	8930	9000	8890
12	9000	9190	9150	8900	8880	8960	9160	8880	9130	8890	8960	8890
13	8990	9150	9110	8900	8890	8980	9150	8900	9140	8860	8960	8880
14	8950	9100	9050	8910	8890	8990	9190	8910	9070	8840	8990	8860
15	8960	9070	8990	8930	8900	9140	9200	8910	9050	8830	8980	8810
16	8980	9020	8940	8930	8900	9230	9160	8930	9020	8830	8980	8790
17	8980	9000	8960	8950	8890	9200	9150	8930	9010	8850	9000	8790
18	8990	9000	8950	8930	8860	9190	9150	8950	9010	8880	9020	8790
19	8990	9010	8980	8950	8840	9090	9160	8960	8980	8890	9040	8790
20	9000	9020	9100	8940	8830	9090	9140	8980	8930	8900	9000	8790
21	9000	9020	9180	8940	8830	9060	9140	8980	8880	8930	8960	8780
22	9010	9040	9160	8940	8780	9010	9150	9000	8830	8940	8940	8730
23	9040	9040	9210	8910	8730	9000	9130	9010	8750	8950	8930	8730
24	9040	9050	9160	8910	8720	8990	9070	9020	8730	8960	8900	8740
25	9010	9070	9140	8900	8730	8960	8960	9040	8650	8980	8980	8740
26	9010	9070	9130	8900	8720	8950	8880	9160	8670	8990	8940	8750
27	9020	9110	9090	8890	8720	8890	8830	9150	8720	9000	8900	8770
28	9040	9150	9020	8860	8720	8890	8800	9060	8750	9000	8840	8780
29	9050	9150	8990	8850	---	8850	8800	8980	8800	9000	8790	8790
30	9060	9160	8930	8850	---	8780	8800	8850	8880	8960	8780	8790
31	9090	---	8900	8890	---	8770	---	8740	---	8960	8720	---
MAX	9090	9190	9240	8950	8900	9230	9200	9160	9140	9190	9140	9010
MIN	8750	9000	8900	8800	8720	8730	8800	8740	8650	8830	8720	8700
(+)	1871.51	1871.57	1871.36	1871.35	1871.21	1871.25	1871.28	1871.23	1871.34	1871.41	1871.21	1871.27
(@)	+150	+70	-260	-10	-170	+50	+30	-60	+140	+80	-240	+70

CAL YR 1997 MAX 9940 MIN 8320 (@) +490
WTR YR 1998 MAX 9240 MIN 8650 (@) -150

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

08133500 NORTH CONCHO RIVER AT STERLING CITY, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 31°49'48", long 100°59'36", Sterling County, Hydrologic Unit 12090104, on right bank 100 ft upstream from bridge on State Highway 163, 0.5 mi south of Sterling City, 4.0 mi upstream from Sterling Creek, 5.1 mi downstream from Lacy Creek, and at mile 57.2.

DRAINAGE AREA.--588 mi^2, of which 19.6 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Sep 1939 to Sep 1985 (daily mean discharge). Oct 1985 to Sep 1995 (daily discharges greater than 100 ft^3/s). Oct 1995 to current year (peak discharges greater than base discharge).

REVISED RECORDS.--WSP 1512: 1945, 1948. WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,242.36 ft above sea level. Prior to Dec 6, 1939, nonrecording gage at same site and datum. Satellite telemeter at station.

AVERAGE DISCHARGE.--46 years (water years 1940-85), 7.80 ft^3/s (5,650 acre-ft/year).

REMARKS.--Records good except for Aug 18-28, which is fair. No known regulation. There are several small diversions above station for irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,300 ft^3/s Jul 6, 1948 (gage height, 23.70 ft); prior to Oct 1, 1985, no flow at times each year. Maximum stage since at least 1891, that of Jul 6, 1948.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 19	Unknown	1,160	a12.19	Aug 25	e1730	958	a11.44

e Estimated.
a From floodmark.

08134000 NORTH CONCHO RIVER NEAR CARLSBAD, TX
(Hydrologic index station)

LOCATION.--Lat 31°35'33", long 100°38'12", Tom Green County, Hydrologic Unit 12090104, near left bank at downstream side of bridge on county road, 0.6 mi southeast of Carlsbad, 1.5 mi upstream from Mule Creek, 2.5 mi upstream from Grape Creek, 16.2 mi upstream from O.C. Fisher Dam, and 21.3 mi upstream from mouth.

DRAINAGE AREA.--1,266 mi^2, of which 75.1 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Mar 1924 to current year.
Water-quality records.--Chemical and biochemical analyses: Apr 1980 to Jul 1982.

REVISED RECORDS.--WSP 1512: 1924(M), 1925, 1926(M), 1928, 1930, 1932(M), 1935, 1937-38(M), 1941(M), 1945(M), 1947-49(M). WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,968.02 ft above sea level. Prior to Feb 4, 1925, and Sep 27, 1936 to Feb 7, 1937, nonrecording gage; Feb 4, 1925 to Sep 26, 1936, and Feb 8, 1937 to Nov 6, 1955, water-stage recorder, all at site 2.5 mi upstream at datum 32.76 ft higher. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation. There are several diversions (by pumping) upstream from station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since Jun 1853, that of Sep 26, 1936.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 26	1645	1,640	9.88	No other peak greater than base discharge.			

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

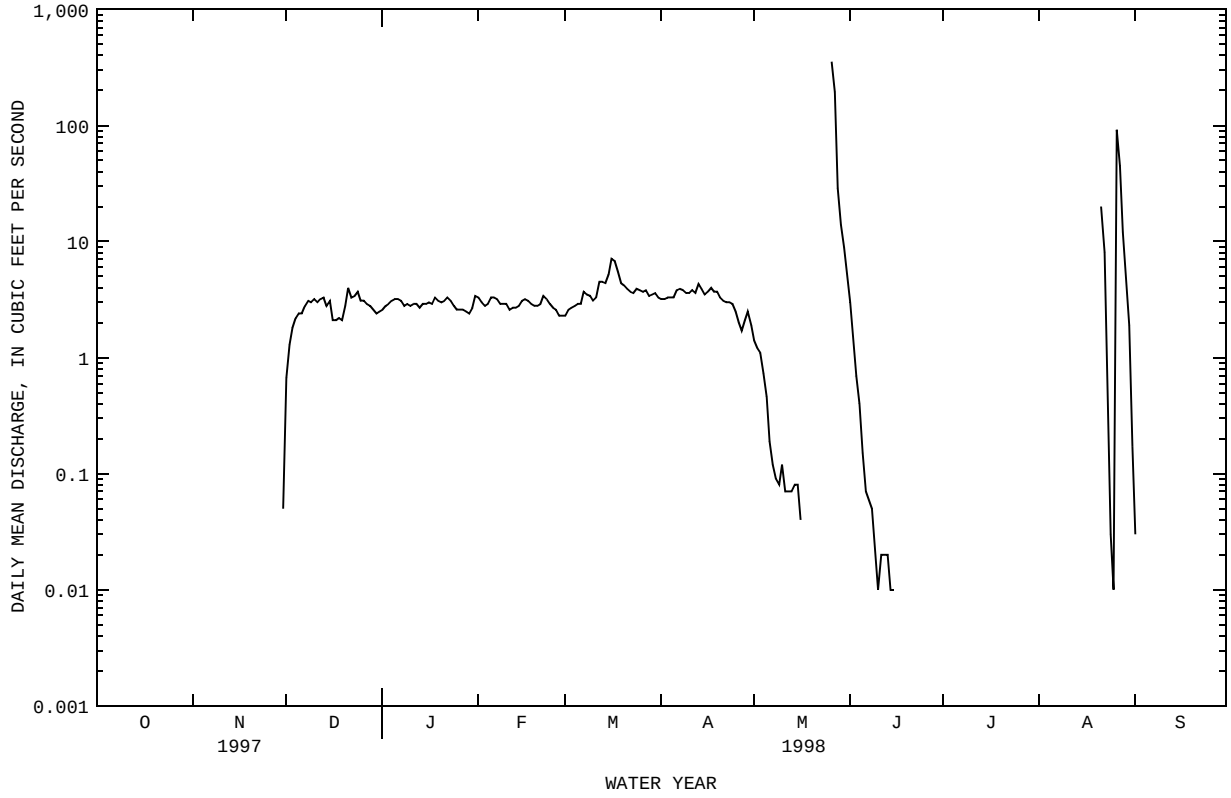
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.67	2.6	3.3	2.3	3.2	1.4	3.0	.00	.00	.03
2	.00	.00	1.3	2.8	3.0	2.6	3.2	1.2	1.4	.00	.00	.00
3	.00	.00	1.8	2.9	2.8	2.7	3.3	1.1	.70	.00	.00	.00
4	.00	.00	2.2	3.1	2.9	2.8	3.3	.73	.40	.00	.00	.00
5	.00	.00	2.4	3.2	3.3	2.9	3.3	.46	.15	.00	.00	.00
6	.00	.00	2.4	3.2	3.3	2.9	3.8	.19	.07	.00	.00	.00
7	.00	.00	2.8	3.1	3.2	3.7	3.9	.12	.06	.00	.00	.00
8	.00	.00	3.1	2.8	2.9	3.5	3.8	.09	.05	.00	.00	.00
9	.00	.00	3.0	2.9	2.9	3.4	3.6	.08	.02	.00	.00	.00
10	.00	.00	3.2	2.8	2.9	3.1	3.6	.12	.01	.00	.00	.00
11	.00	.00	3.0	2.9	2.6	3.3	3.8	.07	.02	.00	.00	.00
12	.00	.00	3.2	2.9	2.7	4.5	3.6	.07	.02	.00	.00	.00
13	.00	.00	3.3	2.7	2.7	4.5	4.3	.07	.02	.00	.00	.00
14	.00	.00	2.8	2.9	2.8	4.4	3.9	.08	.01	.00	.00	.00
15	.00	.00	3.1	2.9	3.1	5.2	3.5	.08	.01	.00	.00	.00
16	.00	.00	2.1	3.0	3.2	7.1	3.7	.04	.00	.00	.00	.00
17	.00	.00	2.1	2.9	3.1	6.8	4.0	.00	.00	.00	.00	.00
18	.00	.00	2.2	3.3	2.9	5.5	3.7	.00	.00	.00	.00	.00
19	.00	.00	2.1	3.1	2.8	4.4	3.7	.00	.00	.00	.00	.00
20	.00	.00	2.8	3.0	2.8	4.2	3.3	.00	.00	.00	.00	.00
21	.00	.00	4.0	3.1	2.9	3.9	3.1	.00	.00	.00	20	.00
22	.00	.00	3.3	3.3	3.4	3.7	3.0	.00	.00	.00	8.1	.00
23	.00	.00	3.4	3.1	3.2	3.6	3.0	.00	.00	.00	.85	.00
24	.00	.00	3.7	2.8	2.9	3.9	2.9	.00	.00	.00	.03	.00
25	.00	.00	3.1	2.6	2.7	3.8	2.5	.00	.00	.00	.01	.00
26	.00	.00	3.1	2.6	2.6	3.7	2.0	354	.00	.00	92	.00
27	.00	.00	2.9	2.6	2.3	3.8	1.7	194	.00	.00	45	.00
28	.00	.00	2.8	2.5	2.3	3.4	2.1	29	.00	.00	12	.00
29	.00	.00	2.6	2.4	---	3.5	2.5	14	.00	.00	5.1	.00
30	.00	.05	2.4	2.7	---	3.6	1.9	8.9	.00	.00	1.9	.00
31	.00	---	2.5	3.4	---	3.3	---	5.1	---	.00	.17	---
TOTAL	0.00	0.05	83.37	90.1	81.5	120.0	97.2	610.90	5.94	0.00	185.16	0.03
MEAN	.000	.002	2.69	2.91	2.91	3.87	3.24	19.7	.20	.000	5.97	.001
MAX	.00	.05	4.0	3.4	3.4	7.1	4.3	354	3.0	.00	92	.03
MIN	.00	.00	.67	2.4	2.3	2.3	1.7	.00	.00	.00	.00	.00
AC-FT	.00	.1	165	179	162	238	193	1210	12	.00	367	.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1998, BY WATER YEAR (WY)

MEAN	36.5	4.07	4.20	4.01	6.83	10.3	35.6	79.6	27.1	40.1	16.7	83.5
MAX	1463	65.2	20.1	16.0	85.0	307	631	1355	252	1195	255	4019
(WY)	1958	1935	1931	1937	1935	1926	1925	1925	1937	1948	1953	1936
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1934	1934	1953	1953	1953	1953	1963	1967	1934	1924	1929	1930

08134000 NORTH CONCHO RIVER NEAR CARLSBAD, TX--Continued
(Hydrologic index station)

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1924 - 1998	
ANNUAL TOTAL	2055.08		1274.25			
ANNUAL MEAN	5.63		3.49		29.3	
HIGHEST ANNUAL MEAN					336	1936
LOWEST ANNUAL MEAN					.000	1970
HIGHEST DAILY MEAN	487	Feb 20	354	May 26	62900	Sep 17 1936
LOWEST DAILY MEAN	.00	Jul 20	.00	Oct 1	.00	Jun 20 1924
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 20	.00	Oct 1	.00	Jun 20 1924
INSTANTANEOUS PEAK FLOW			1640	May 26	94600	Sep 26 1936
INSTANTANEOUS PEAK STAGE			9.88	May 26	29.10	Sep 26 1936
ANNUAL RUNOFF (AC-FT)	4080		2530		21190	
10 PERCENT EXCEEDS	8.4		3.7		12	
50 PERCENT EXCEEDS	3.4		.08		1.6	
90 PERCENT EXCEEDS	.00		.00		.00	



08134500 O.C. FISHER LAKE AT SAN ANGELO, TX

LOCATION.--Lat 31°29'04", long 100°28'53", Tom Green County, Hydrologic Unit 12090104, in intake structure of O.C. Fisher Dam on North Concho River, 3.1 mi northwest of San Angelo, and 6.6 mi upstream from mouth.

DRAINAGE AREA.--1,488 mi^2, of which 105 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Feb 1952 to current year. Published as San Angelo Reservoir prior to Oct 1970, and as San Angelo Lake, Oct 1970 to Sep 1974.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to May 12, 1953, non-recording gage at same site and datum. Satellite telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 40,885 ft long, including spillway. Closure was completed Mar 7, 1951, and the dam was completed May 3, 1951. Deliberate impoundment began Feb 1, 1952. The lake is operated for flood control and recreation with part as municipal supply for the city of San Angelo. The spillway is an uncontrolled off-channel concrete gravity dam with ogee weir section 1,150 ft wide located to the right and upstream from the right end of dam. The spillway is designed to discharge 356,000 ft^3/s at maximum design flood level. The control outlet works consist of six gate-controlled outlets, 7.5 by 14.5 ft, opening into two 18.0-foot-diameter concrete conduits, and two 2.5-foot gate-controlled outlets for water-supply outlets. Since Feb 1973, the capacity is based on a survey made in 1962. Prior to 1973, the capacity was based on a survey made in 1944. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	1,964.0
Design flood	1,958.0
Crest of spillway	1,938.5
Top of conservation pool	1,908.0
Lowest gated outlet (invert)	1,840.0

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, 174,100 acre-ft, Oct 14, 1957 (elevation, 1,916.47 ft); minimum since first appreciable storage, lake dry Jul 16, 1970, to Apr 15, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 18,460 acre-ft, May 29 (elevation, 1,876.93 ft); minimum daily contents, 14,180 acre-ft, Sep 30 (elevation, 1,873.69 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	17430	16710	16420	16230	16060	15830	15800	15020	18400	17110	15660	15050
2	17400	16690	16420	16250	16060	15830	15790	14980	18360	17060	15620	15020
3	17370	16660	16390	16250	16050	15830	15730	14940	18310	17020	15570	14990
4	17330	16660	16380	16250	16050	15830	15720	14940	18290	16980	15540	14950
5	17290	16630	16370	16250	16040	15800	15710	14900	18210	16940	15540	14930
6	17280	16610	16350	16250	16020	15800	15710	14880	18160	16910	15550	14890
7	17280	16610	16370	16250	16020	15850	15670	14840	18130	16870	15550	14870
8	17280	16610	16380	16230	16020	15800	15630	14820	18100	16820	15510	14840
9	17250	16590	16370	16230	16020	15750	15590	14770	18060	16780	15470	14800
10	17240	16550	16310	16220	16000	15730	15570	14720	18070	16730	15450	14770
11	17260	16550	16290	16220	15980	15710	15540	14680	18060	16690	15410	14730
12	17260	16550	16270	16210	15980	15710	15530	14640	18010	16650	15370	14700
13	17210	16570	16270	16190	15970	15710	15500	14620	18000	16590	15330	14670
14	17150	16550	16260	16180	15970	15710	15500	14590	17960	16570	15400	14630
15	17140	16550	16260	16170	15980	15800	15470	14540	17900	16510	15400	14580
16	17130	16540	16250	16170	16010	15930	15420	14510	17840	16460	15360	14540
17	17100	16540	16230	16150	15970	15940	15370	14470	17790	16420	15320	14520
18	17100	16540	16230	16130	15970	15970	15360	14450	17790	16380	15300	14510
19	17060	16530	16230	16140	15930	15970	15330	14420	17750	16340	15300	14510
20	17030	16490	16260	16140	15920	15940	15300	14400	17700	16290	15270	14480
21	17010	16470	16270	16130	15930	15940	15270	14390	17650	16230	15240	14450
22	16990	16450	16270	16100	15940	15940	15240	14370	17580	16190	15220	14400
23	17030	16430	16300	16100	15930	15940	15240	14340	17510	16140	15190	14360
24	16990	16430	16300	16100	15930	15940	15220	14310	17450	16090	15180	14350
25	16940	16430	16270	16100	15940	15940	15170	14310	17400	16020	15170	14320
26	16860	16430	16270	16060	15930	15940	15140	14690	17360	15970	15160	14290
27	16820	16430	16300	16060	15890	15940	15100	18010	17300	15920	15130	14250
28	16820	16460	16300	16060	15850	15930	15070	18420	17250	15880	15100	14240
29	16810	16450	16270	16050	---	15920	15030	18460	17190	15830	15090	14200
30	16790	16430	16260	16050	---	15920	15020	18450	17150	15760	15080	14180
31	16780	---	16230	16060	---	15840	---	18430	---	15720	15070	---
MAX	17430	16710	16420	16250	16060	15970	15800	18460	18400	17110	15660	15050
MIN	16780	16430	16230	16050	15850	15710	15020	14310	17150	15720	15070	14180
(+)	1875.72	1875.46	1875.31	1875.18	1875.02	1975.01	1874.37	1876.91	1876.00	1874.92	1874.41	1873.69
(@)	-670	-350	-200	-170	-210	-10	-820	+3410	-1280	-1430	-650	-890

CAL YR 1997 MAX 20830 MIN 16230 (@) -1470
WTR YR 1998 MAX 18460 MIN 14180 (@) -3270

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

08136000 CONCHO RIVER AT SAN ANGELO, TX

LOCATION.--Lat 31°27'16", long 100°24'37", Tom Green County, Hydrologic Unit 12090105, on left bank 0.4 mi downstream from confluence of North and South Concho Rivers, 1.8 mi southeast of Tom Green County Courthouse, in San Angelo at Rio Concho Sports Complex on Rio Concho Dr. below Bell St. bridge, and 61.9 mi upstream from mouth.

DRAINAGE AREA.--5,542 mi^2, of which 1,131 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Sep 1915 to current year. Prior to Oct 1969, published as "near San Angelo".

REVISED RECORDS.--WSP 568: 1915-16, 1919-22. WSP 1148: 1916-22(M), 1924(M), 1925-26, 1929(M), 1930-32, 1935-37. WSP 1512: 1917-18. WSP 1712: 1936. WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,776.79 ft above sea level. Prior to Aug 11, 1917, nonrecording gage at same site and datum. Aug 11, 1917, to May 15, 1963, water-stage recorder on right bank at same datum. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Since water year 1931 at least 10% of contributing drainage area has been regulated by Lake Nasworthy (station 08132000). There are many diversions upstream from station for irrigation, industrial, and municipal supply. Since Dec 1962, flow regulated by Twin Buttes Reservoir (station 08131200) on the South Concho River and since Feb 1952 by O.C. Fisher Lake (station 08134500) on the North Concho River. Several observations of water temperatures were made during the year.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--15 years (water years 1916-30) prior to completion of Lake Nasworthy, 142 ft^3/s (102,600 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1916-30).--Maximum discharge, 92,000 ft^3/s Apr 26, 1922 (gage height, 36.8 ft, from floodmarks), on basis of slope-area measurements of 167,000 and 230,000 ft^3/s in 1936; no flow at times in 1921.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1853, 47.5 ft Aug 6, 1906 (discharge, about 246,000 ft^3/s), from information by local resident. Other large floods are known to have occurred in Jun 1853, Aug 1882, and Apr 1900.

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	2.8	1.5	4.5	7.5	6.7	.07	.07	.05	5.4	1.5	.06	.11
2	3.8	1.3	5.0	7.0	.09	.08	.07	.05	3.3	2.2	.06	.09
3	4.6	1.7	5.3	8.1	.37	.09	.06	.03	1.5	10	.07	.08
4	4.2	2.8	3.6	3.3	8.8	.10	.07	.04	.06	10	e9.0	.07
5	17	4.0	2.7	2.5	12	.07	.07	.10	.05	12	e38	.07
6	12	3.4	2.5	2.1	13	.08	.07	.03	16	3.9	23	.07
7	11	4.0	4.8	2.7	22	.12	.06	.03	26	.65	7.4	.07
8	3.3	6.2	3.4	.75	22	.10	.06	.03	21	.03	5.1	.07
9	2.8	2.4	2.7	.11	14	.08	.07	.06	4.4	.02	4.0	.07
10	2.9	1.6	.06	.08	.07	.08	.06	.04	4.7	.02	2.1	.07
11	8.5	7.8	.04	.05	.05	.09	.06	.12	14	.03	1.2	.06
12	9.3	14	.06	.04	.05	.09	.07	.12	7.0	.03	1.3	.08
13	2.7	14	.12	.04	.17	.09	.10	.03	5.1	.03	.11	.07
14	1.4	13	.13	.04	.30	.09	.10	.03	4.0	.04	60	.07
15	1.2	30	.11	.04	.18	.22	.11	.05	.97	.04	17	.08
16	1.2	14	.15	.04	.07	105	.14	.12	.08	.04	22	.09
17	1.2	11	.11	.05	.05	16	.08	.13	.06	.05	13	.12
18	1.4	11	.06	.14	.05	13	.06	7.0	.07	.05	21	.09
19	2.5	9.0	.04	.17	.05	6.4	.07	1.8	.07	.97	9.3	.07
20	4.0	8.4	.08	.12	.05	1.9	.06	.05	.03	1.3	4.0	.07
21	1.3	7.5	8.9	.13	.11	.13	.07	.04	.03	.46	.16	.07
22	1.3	7.3	3.5	.12	.08	.12	.08	.04	.04	.24	.11	.08
23	5.3	7.5	38	.04	.13	.84	.06	.04	.03	.07	.10	.08
24	2.1	7.1	18	.04	3.4	.68	.04	.09	.03	.07	.10	.07
25	2.5	8.2	9.2	.05	4.8	.09	.04	18	.03	.06	8.7	.07
26	1.1	6.5	25	.28	6.4	.08	.04	37	.90	.06	14	.07
27	1.6	2.9	15	2.5	.10	.09	.05	254	2.0	.06	.24	.08
28	1.1	12	11	3.4	.06	.08	.05	33	3.2	.06	.75	.08
29	1.6	4.8	8.7	3.7	---	.08	.04	5.2	2.7	.07	2.4	.08
30	2.8	1.9	7.9	3.7	---	.07	.04	4.1	1.6	.06	2.9	.07
31	2.8	---	8.2	24	---	.06	---	5.0	---	.06	1.2	---
TOTAL	121.3	226.8	188.86	72.83	115.13	146.07	2.02	366.42	124.35	44.17	268.36	2.32
MEAN	3.91	7.56	6.09	2.35	4.11	4.71	.067	11.8	4.14	1.42	8.66	.077
MAX	17	30	38	24	22	105	.14	254	26	12	60	.12
MIN	1.1	1.3	.04	.04	.05	.06	.04	.03	.03	.02	.06	.06
AC-FT	241	450	375	144	228	290	4.0	727	247	88	532	4.6

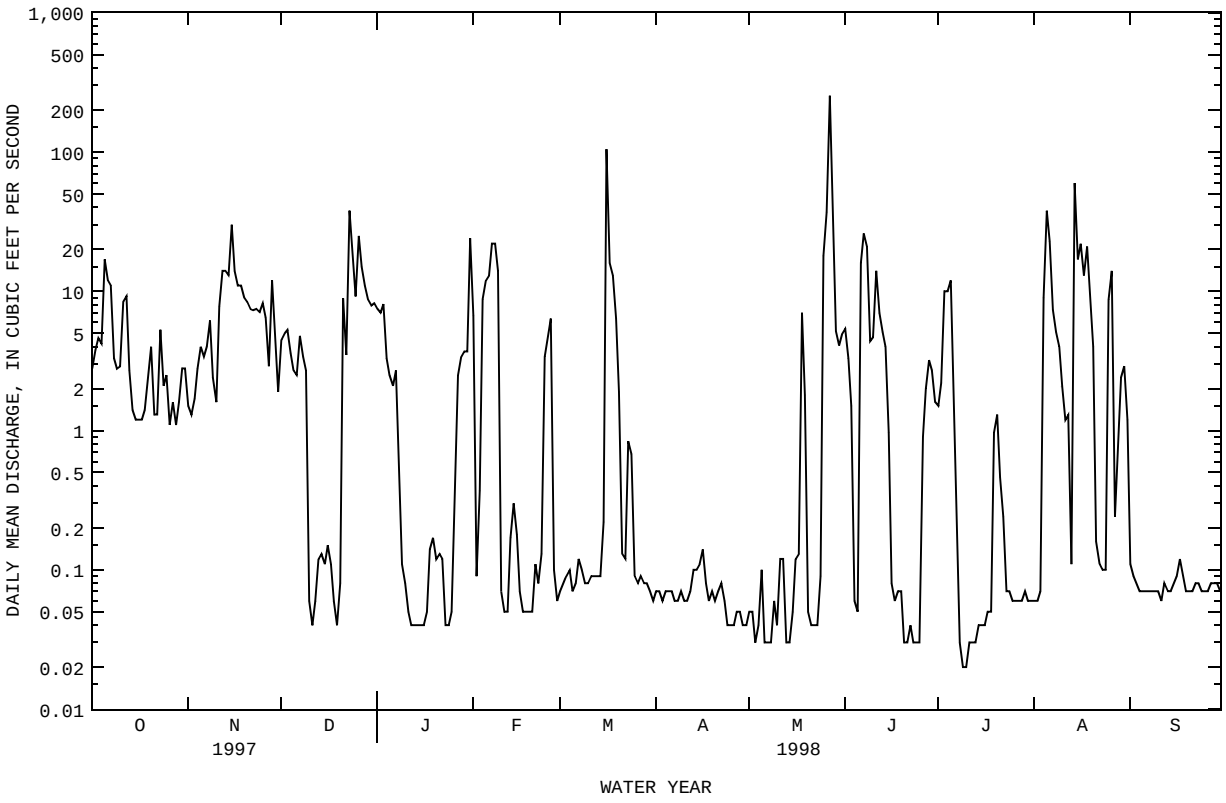
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1998z, BY WATER YEAR (WY)

MEAN	124	33.5	34.6	30.9	36.4	29.4	96.2	193	87.0	107	41.2	263
MAX	2659	434	274	205	213	242	1604	3984	1132	2137	900	13190
(WY)	1960	1975	1975	1938	1975	1941	1949	1957	1941	1938	1942	1936
MIN	.077	.11	.095	.055	.062	.050	.067	.083	.090	.069	.15	.077
(WY)	1953	1971	1974	1974	1971	1971	1972	1971	1971	1969	1985	1998

08136000 CONCHO RIVER AT SAN ANGELO, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1931 - 1998z	
ANNUAL TOTAL	16966.02		1678.63			
ANNUAL MEAN	46.5		4.60		89.7	
HIGHEST ANNUAL MEAN					1132	1936
LOWEST ANNUAL MEAN					1.62	1952
HIGHEST DAILY MEAN	950	Feb 22	254	May 27	128000	Sep 17 1936
LOWEST DAILY MEAN	.02	Feb 11	.02	Jul 9	.00	Sep 14 1952
ANNUAL SEVEN-DAY MINIMUM	.10	Dec 10	.03	Jul 8	.00	Sep 16 1952
INSTANTANEOUS PEAK FLOW			751	May 27	c230000	Sep 17 1936
INSTANTANEOUS PEAK STAGE			3.91	May 27	a46.60	Sep 17 1936
ANNUAL RUNOFF (AC-FT)	33650		3330		64970	
10 PERCENT EXCEEDS	69		12		69	
50 PERCENT EXCEEDS	5.2		.14		7.5	
90 PERCENT EXCEEDS	.20		.04		.13	

e Estimated
z Period of regulated streamflow.
a From floodmark.
c From rating curve extended above 105,000 ft^3/s on basis of slope-area measurements of 167,000 and 230,000 ft^3/s.



08136150 CONCHO RIVER NEAR VERIBEST, TX

LOCATION.--Lat 31°32'15", long 100°13'09", Tom Green County, Hydrologic Unit 12090105, at upper end of county park, about 0.1 mi above low-water crossing on FM 2334, also known as Mullins Crossing, 2.8 mi downstream from Crownest Creek, 4.5 mi northeast of Veribest, and 17.3 miles downstream from station 08136000.

DRAINAGE AREA.--5,541 mi^2, of which 1,131 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Apr 1970 to Apr 1974 (periodic discharge measurements). Jul 1998 to Sep 1998 (gage heights only).
Water-quality records.--Chemical and biochemical analyses: Feb 1969 to Sep 1981.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,694.66 ft above sea level. From Jul 28, 1970 to Sep 30, 1981, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records good. Interruptions in the maximum and minimum gage heights for Jul 1, 1998 to Sep 30, 1998 were the result of no flow. Since Feb 1969, at least 10% of contributing drainage area has been regulated by Lake Nasworthy (station 08132000) and Twin Buttes Reservoir (station 08131200) on the South Concho River and by O.C. Fisher Lake (station 08134500) on the North Concho River. There are many diversions upstream from station for irrigation, industrial, and municipal supply.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood on May 9, 1957 reached a stage of 29.76 ft, from Ft. Worth Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 2.12 ft Aug 25; minimum gage height, 0.16 ft Sep 19.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

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

08136150 CONCHO RIVER NEAR VERIBEST, TX--Continued

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	---	---	---	---	---	---	.82	.79
2	---	---	---	---	---	---	---	---	---	---	.84	.81
3	---	---	---	---	---	---	---	---	---	---	.84	.80
4	---	---	---	---	---	---	---	---	---	---	.81	.75
5	---	---	---	---	---	---	---	---	---	---	.75	.73
6	---	---	---	---	---	---	---	---	---	---	.74	.72
7	---	---	---	---	---	---	---	---	---	---	.73	.72
8	---	---	---	---	---	---	---	---	---	---	.73	.71
9	---	---	---	---	---	---	---	---	---	---	.73	.71
10	---	---	---	---	---	---	---	---	---	---	.72	.66
11	---	---	---	---	---	---	---	---	---	---	.67	.63
12	---	---	---	---	---	---	---	---	---	---	.64	.56
13	---	---	---	---	---	---	---	---	---	---	.57	.54
14	---	---	---	---	---	---	---	---	---	---	.70	.57
15	---	---	---	---	---	---	---	---	1.12	.18	.69	.58
16	---	---	---	---	---	---	---	---	1.00	.84	.58	.52
17	---	---	---	---	---	---	---	---	.88	.83	.52	.50
18	---	---	---	---	---	---	---	---	.89	.84	.50	.27
19	---	---	---	---	---	---	---	---	.89	.82	.27	.16
20	---	---	---	---	---	---	---	---	.89	.80	---	---
21	---	---	---	---	---	---	---	---	.80	.75	---	---
22	---	---	---	---	---	---	---	---	.75	.67	---	---
23	---	---	---	---	---	---	---	---	.70	.67	---	---
24	---	---	---	---	---	---	---	---	.67	.63	---	---
25	---	---	---	---	---	---	---	---	2.12	.63	---	---
26	---	---	---	---	---	---	---	---	1.56	.89	---	---
27	---	---	---	---	---	---	---	---	.91	.84	---	---
28	---	---	---	---	---	---	---	---	.89	.83	---	---
29	---	---	---	---	---	---	---	---	.84	.81	---	---
30	---	---	---	---	---	---	---	---	.81	.78	---	---
31	---	---	---	---	---	---	---	---	.79	.78	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

08136500 CONCHO RIVER AT PAINT ROCK, TX

LOCATION.--Lat 31°30'57", long 99°55'09", Concho County, Hydrologic Unit 12090105, near left bank at downstream end of pier of bridge on U.S. Highway 83, 0.5 mi north of Concho County Courthouse in Paint Rock, 2.7 mi downstream from Kickapoo Creek, and 20.0 mi upstream from mouth.

DRAINAGE AREA.--6,574 mi^2, of which 1,131 mi^2 probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Sep 1915 to current year. Prior to Oct 1970, published as "near Paint Rock".

REVISED RECORDS.--WSP 458: 1915-16. WSP 568: 1919-20. WSP 1712: 1922(M). WSP 1732: 1918(M), 1923(M). WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,574.36 ft above sea level. See WSP 1922 for history of changes prior to Jan 15, 1940. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1931 at least 10% of contributing drainage area has been regulated by Lake Nasworthy (station 08132000). There are many diversions above station for irrigation and municipal supply. Flow affected at times by discharge from the flood-detention pools of two floodwater-retarding structures with a combined detention capacity of 2,690 acre-ft. These structures control runoff from 16.5 mi^2 in the Willow Creek drainage basin.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--15 years (water years 1916-30) prior to construction of Lake Nasworthy, 186 ft^3/s (134,700 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1916-30).--Maximum discharge, 76,500 ft^3/s Apr 27, 1922 (gage height, 27.50 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Aug 1882 reached a stage of about 39.9 ft, and flood in Aug 1906 reached a stage of 39.5 ft, from information by local resident. Maximum stage since at least 1853, 43.3 ft Sep 17, 1936.

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	13	17	45	37	15	7.5	1.1	.00	34	.00	.00	1.7
2	11	16	48	38	29	7.8	.68	.00	21	.00	.00	.85
3	12	16	48	39	36	8.6	.26	.00	14	.00	.00	.41
4	11	18	46	39	29	6.7	.55	.00	11	.00	.00	.32
5	10	18	46	37	25	6.1	1.4	.00	9.4	.00	.00	.17
6	11	17	46	36	22	6.1	2.8	.00	5.9	.00	.00	.08
7	13	18	48	33	24	6.6	2.3	.00	5.3	.00	.00	.03
8	20	22	50	29	34	5.6	.97	.00	5.6	.00	.00	.01
9	25	24	44	28	36	5.5	.72	.00	4.0	.00	.00	.02
10	27	24	40	27	36	5.1	.59	.00	4.2	.48	.00	.03
11	27	26	41	28	28	4.3	.39	.00	8.8	.81	.00	.02
12	29	29	38	26	24	3.0	.33	.00	20	.23	.00	.07
13	24	30	37	24	18	5.3	.25	.00	23	.11	.00	.09
14	22	34	35	23	17	6.4	.16	.00	11	.06	.00	.08
15	24	52	32	23	17	8.4	.11	.00	5.7	.04	.00	.05
16	25	45	28	21	15	36	.06	.00	4.4	.03	.00	.04
17	24	52	26	20	19	23	.03	.00	6.5	.03	.00	.06
18	21	55	25	20	18	83	.05	.00	7.9	.02	.00	.09
19	19	46	28	19	15	42	.08	.00	4.8	.01	.00	.07
20	20	48	30	19	12	28	.06	.00	2.3	.00	.00	.05
21	21	49	35	19	11	23	.03	.00	.77	.00	.00	.04
22	20	51	36	22	15	20	.02	.00	.34	.00	.00	.04
23	22	49	43	22	17	18	.00	.00	.12	.00	.00	.02
24	21	47	43	20	17	13	.00	.00	.05	.00	.00	.04
25	19	51	60	20	15	11	.00	.00	.01	.00	.00	.03
26	15	55	65	20	13	7.9	.00	6.1	.00	.00	40	.02
27	16	54	47	19	10	6.5	.00	8210	.00	.00	49	.02
28	16	56	46	18	8.4	5.2	.00	693	.00	.00	19	.01
29	18	50	46	16	---	3.4	.00	177	.00	.00	11	.00
30	19	44	42	15	---	2.6	.00	90	.00	.00	7.2	.00
31	17	---	38	15	---	1.1	---	53	---	.00	3.8	---
TOTAL	592	1113	1282	772	575.4	416.7	12.94	9229.10	210.09	1.82	130.00	4.46
MEAN	19.1	37.1	41.4	24.9	20.6	13.4	.43	298	7.00	.059	4.19	.15
MAX	29	56	65	39	36	83	2.8	8210	34	.81	49	1.7
MIN	10	16	25	15	8.4	1.1	.00	.00	.00	.00	.00	.00
AC-FT	1170	2210	2540	1530	1140	827	26	18310	417	3.6	258	8.8

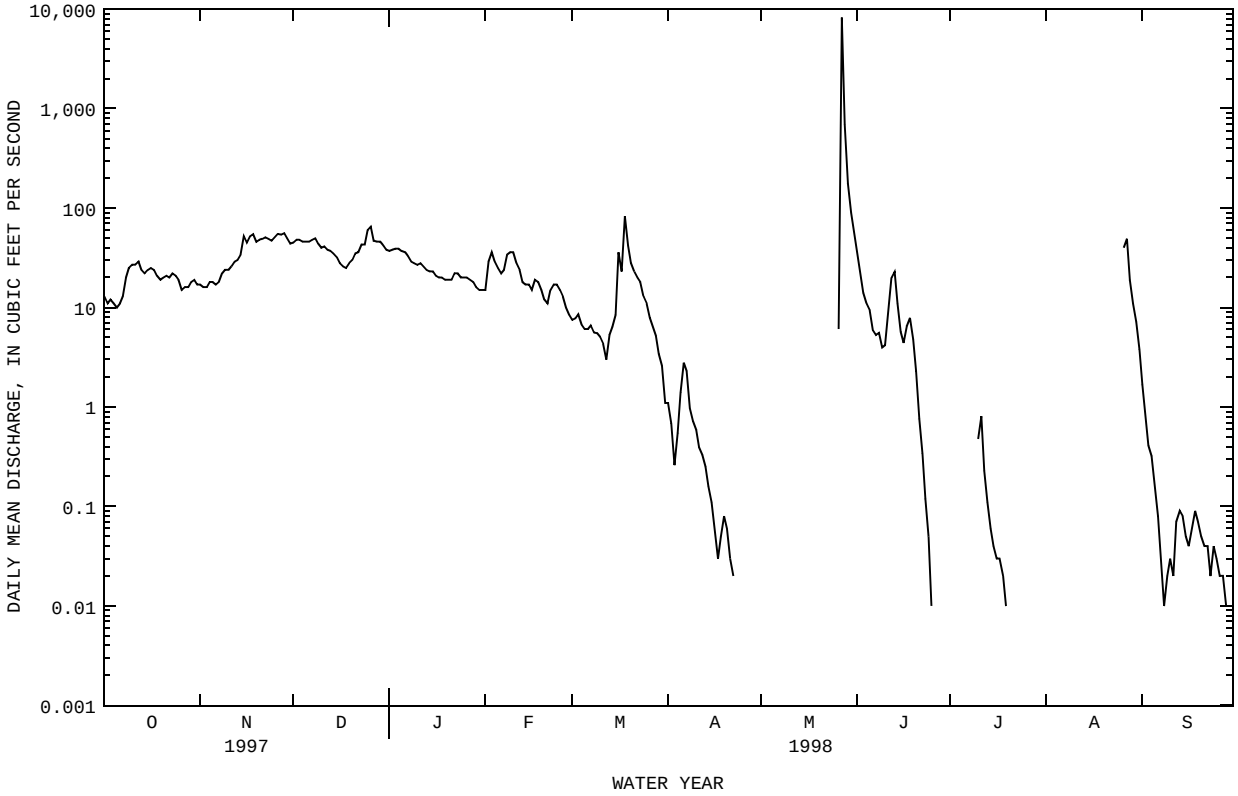
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1998z, BY WATER YEAR (WY)

MEAN	204	58.5	58.5	54.5	68.1	54.3	140	305	138	154	59.5	383
MAX	3805	615	367	274	740	318	2131	4756	1227	3519	980	17220
(WY)	1931	1975	1975	1975	1992	1992	1949	1957	1941	1938	1942	1936
MIN	.000	.000	.000	.000	.000	.000	.000	.057	.000	.000	.000	.000
(WY)	1935	1952	1952	1955	1955	1955	1955	1984	1967	1934	1952	1954

08136500 CONCHO RIVER AT PAINT ROCK, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1931 - 1998z	
ANNUAL TOTAL	28125.28		14339.51			
ANNUAL MEAN	77.1		39.3		140	
HIGHEST ANNUAL MEAN					1470	1936
LOWEST ANNUAL MEAN					13.6	1952
HIGHEST DAILY MEAN	1070	Feb 26	8210	May 27	134000	Sep 17 1936
LOWEST DAILY MEAN	.92	Jul 29	.00	Apr 23	.00	Sep 28 1931
ANNUAL SEVEN-DAY MINIMUM	1.6	Jul 26	.00	Apr 23	.00	Sep 28 1931
INSTANTANEOUS PEAK FLOW			15000	May 27	c301000	Sep 17 1936
INSTANTANEOUS PEAK STAGE			19.91	May 27	a43.40	Sep 17 1936
ANNUAL RUNOFF (AC-FT)	55790		28440		101300	
10 PERCENT EXCEEDS	134		44		130	
50 PERCENT EXCEEDS	29		7.9		26	
90 PERCENT EXCEEDS	12		.00		.20	

z Period of regulated streamflow.
a From floodmark.
c From rating curve extended above 98,000 ft^3/s on basis of slope-area measurements of 144,000 and 301,000 ft^3/s.



08136500 CONCHO RIVER AT PAINT ROCK, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Apr 1946 to Oct 1949. Chemical and biochemical analyses: Mar 1964 to current year. Pesticide analyses: Apr 1968 to Oct 1981. Sediment analyses: Feb 1978 to Sep 1981.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Apr 1946 to Oct 1949, Oct 1967 to Sep 1990.
WATER TEMPERATURE: Apr 1946 to Oct 1949, Oct 1967 to Sep 1990.
SUSPENDED SEDIMENT DISCHARGE: Feb 1978 to Sep 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,690 microsiemens, Jun 28, Aug 12, 1984; minimum daily, 268 microsiemens, Sep 9, 1980.
WATER TEMPERATURE: Maximum daily, 35.0°C, on several days during summer months; minimum daily, 0.0°C, on many days during winter months.
SEDIMENT CONCENTRATION: Maximum daily mean, 4,190 mg/L, Sep 9, 1980; minimum daily mean, 3 mg/L, Feb 2, 1979.
SEDIMENT LOADS: Maximum daily, 269,000 tons Sep 9, 1980; minimum daily, 0.0 tons on several days during Sep 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)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT											
28...	1030	14	2990	8.0	14.5	9.9	104	1.0	930	780	190
JAN											
13...	1120	24	2560	8.0	9.5	10.6	99	1.5	830	620	180
APR											
07...	1030	2.3	2920	7.9	18.5	7.9	91	1.7	880	720	180
JUN											
09...	1115	4.0	1750	8.0	26.0	5.3	70	5.9	470	390	96
SEP											
09...	1510	.01	2680	8.1	26.5	6.4	86	K6.5	940	870	200

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT											
28...	108	276	4	5.3	150	440	650	.62	20	1830	10.9
JAN											
13...	89	224	3	4.9	210	340	530	.63	17	1580	14.6
APR											
07...	104	261	4	5.7	160	450	590	.61	11	1710	3.41
JUN											
09...	56	160	3	8.7	86	200	380	.40	20	972	.074
SEP											
09...	107	203	3	2.9	69	600	500	.48	24	1680	--

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)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)
OCT										
28...	.050	11.0	<.020	--	.35	<.010	<.010	--	--	--
JAN										
13...	.029	14.6	<.020	--	.37	<.010	.015	.05	2	87
APR										
07...	.053	3.46	.034	.47	.50	.014	.012	.04	--	--
JUN										
09...	.029	.103	.202	.62	.83	<.010	<.010	--	--	--
SEP										
09...	<.010	<.050	.027	.52	.55	<.010	.011	.03	7	180

08136500 CONCHO RIVER AT PAINT ROCK, TX--Continued

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

DATE	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT										
28...	--	--	--	--	--	--	--	--	--	--
JAN										
13...	<1.0	<1.0	<1.0	<30	<1.0	<12	<.1	4	<1.0	<60
APR										
07...	--	--	--	--	--	--	--	--	--	--
JUN										
09...	--	--	--	--	--	--	--	--	--	--
SEP										
09...	<1.0	<1.0	1.2	<30	<1.0	69	<.1	2	<1.0	<60

08136600 O.H. IVIE RESERVOIR NEAR VOSS, TX

LOCATION.--Lat 31°30'00", long 99°40'05", Coleman County, Hydrologic Unit 12090106, on left bank, in outlet structure of Freese-Nichols Dam on Colorado River, 8 mi northeast of Millersview, 10 mi southwest of Voss, and at mile 615.1.

DRAINAGE AREA.--24,038 mi^2, of which 11,391 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Sep 1990 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 concrete dam and spillway with six 50- by 40-foot tainter gates, and a 6,000 ft overflow spillway with a 2,000 ft tapered fuse plug release feature. Total length of the dam is 12,000 ft. The dam was completed and storage began Mar 15, 1990. Recording equipment was installed May 30, 1990, but water did not reach the sensing point until Sep 21, 1990 (at an elevation of 1,502.05 ft). Water is utilized for municipal use for several West Texas communities, the city of San Angelo being the largest user. The capacity curve is based on a survey made in 1989 by Freese and Nichols, Fort Worth, Tex. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	1,584.0
Crest of overflow spillway	1,563.0
Top of conservation storage	1,551.5
Crest of spillway (tainter gates sill)	1,528.0
Lowest gated outlet (service outlet)	1,440.0

COOPERATION.--The capacity table dated Sep 15, 1990 was furnished by the Colorado River Municipal Water District, and based on a survey made in 1989 by Freese and Nichols, Consulting Engineers, Fort Worth, Texas.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 574,700 acre-ft, Jun 26, 1997 (elevation, 1,552.55 ft); minimum recorded, 57,780 acre-ft, Sep 21, 1990 (elevation, 1,502.05 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 526,000 acre-ft, Mar 17 (elevation, 1,550.00 ft); minimum contents, 448,200 acre-ft, Sep 30 (elevation, 1,545.58 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	524400	513500	509300	509500	509700	512400	512100	488700	499100	490300	472800	461000
2	524000	513000	509700	509700	509300	512800	511000	488500	498400	489900	472100	460700
3	523500	512600	509700	509700	509300	513700	509500	487800	498200	489200	471800	460300
4	522900	512400	509500	509900	509500	514600	508400	487500	498200	489200	471300	459500
5	522500	512100	509300	510100	509700	515000	507500	487300	497500	488900	471100	459000
6	522000	511700	509100	510800	509500	515900	506600	487000	496800	488400	470200	458600
7	521600	511500	509700	510600	509500	518000	505700	486100	496200	488000	469900	458300
8	521800	511000	509300	510100	509300	517800	504500	485700	496000	487300	469400	457600
9	521400	511700	509300	510600	509500	518100	503400	485200	495900	486600	469000	456900
10	522000	510400	509000	510100	509500	518500	502100	484700	496800	486100	468500	456200
11	521800	510200	508800	510200	509300	519100	500900	484200	498700	485700	467800	455900
12	522000	510200	508600	510200	509700	519600	499800	484000	500200	485200	467700	455100
13	520900	510800	508400	509900	509300	520000	498900	483300	500700	484700	467500	454400
14	520300	510600	508200	510100	509300	520500	497600	483100	500000	484200	467500	454200
15	520300	510800	508200	510000	509500	523800	497100	482400	499600	483600	467300	453700
16	520000	510400	508000	509700	510100	525700	495300	481900	498900	483300	467000	453600
17	519200	510200	507900	509900	509900	525300	494400	481700	498700	482900	466800	453400
18	519100	510400	508000	509900	509700	525500	494100	481000	498200	482200	466500	453100
19	518900	510100	508200	509700	509700	525500	493900	480800	497800	481600	466300	452700
20	518500	510400	509500	509300	509300	524700	493400	480300	497300	480800	465600	452600
21	518100	509900	509000	509500	510400	524000	492800	479800	496600	480300	464900	452200
22	517400	510200	508800	509100	510200	523300	492500	479600	495900	479600	464600	451700
23	517600	509900	510100	509300	510200	522400	491900	479100	495100	479100	464100	451200
24	516900	509900	509500	509100	510200	521100	491400	478900	494600	478600	463800	450700
25	516900	509900	510200	509700	510400	519600	491200	478900	493900	477700	463800	450400
26	515400	509900	510100	509100	511000	518000	491000	479100	493000	477200	463100	449700
27	514800	509700	509900	509000	511300	517000	490700	496900	492600	476300	462700	449700
28	514600	510100	509700	509000	512100	516100	489900	499600	491700	475800	462600	449100
29	514600	510100	509900	508800	---	515000	489400	499600	491400	475300	462000	448600
30	514500	509900	509500	509000	---	514800	489100	499400	490800	474000	461900	448400
31	514300	---	509100	509300	---	513200	---	499300	---	473500	461200	---
MAX	524400	513500	510200	510800	512100	525700	512100	499600	500700	490300	472800	461000
MIN	514300	509700	507900	508800	509300	512400	489100	478900	490800	473500	461200	448400
(+)	1549.36	1549.12	1549.08	1549.09	1549.24	1549.30	1547.96	1548.53	1548.06	1547.07	1546.35	1545.59
(@)	-10400	-4400	-800	+200	+2800	+1100	-24100	+10200	-8500	-17300	-12300	-12800

CAL YR 1997 MAX 574500 MIN 422700 (@) +86100
WTR YR 1998 MAX 525700 MIN 448400 (@) -76300

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

08136700 COLORADO RIVER NEAR STACY, TX

LOCATION.--Lat 31°29'37", long 99°34'25", Coleman County, Hydrologic Unit 12090106, on left bank at downstream side of bridge on Farm Road 503, 1.2 mi upstream from Bois d'Arc Creek, 1.8 mi northeast of Stacy, 10.5 mi downstream from O.H. Ivie Reservoir, 24 mi downstream from Concho River, and at mile 604.8.

DRAINAGE AREA.--24,193 mi^2, of which approximately 11,391 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Mar 1968 to current year. Prior to Oct 1970, published as "at Stacy".
Water-quality records.--Chemical analyses: Dec 1961 to Jul 1994. Chemical and biochemical analyses: Oct 1974 to Aug 1977. Pesticide analyses: Apr 1975 to Aug 1977. Sediment analyses: Oct 1974 to Oct 1977. Specific conductance and water temperature: Apr 1968 to Sep 1994.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,394.66 ft above sea level (State Department of Highways and Public Transportation bridge plans). Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in Mar 1968, at least 10% of contributing drainage area has been regulated by upstream reservoirs, and since Mar 15, 1990, flow completely regulated by O.H. Ivie Reservoir (station 08136600), 10.5 mi upstream. There are many diversions above station for irrigation, municipal, and oil field operations. Wastewater effluent is returned to the river from numerous wastewater plants above station. At times flow may be slightly affected by discharge from the flood-detention pools of 42 floodwater-retarding structures with a combined detention capacity of 56,730 acre-ft. These structures control runoff from 277 mi^2 above this station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1882, 356,000 ft^3/s Sep 18, 1936 (gage height, 64.59 ft), by slope-area measurement of peak flow. The flood of Sep 18, 1936, was 4 ft higher than the 1906 flood and 7 to 8 ft higher than the 1882 flood, from information by local resident.

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

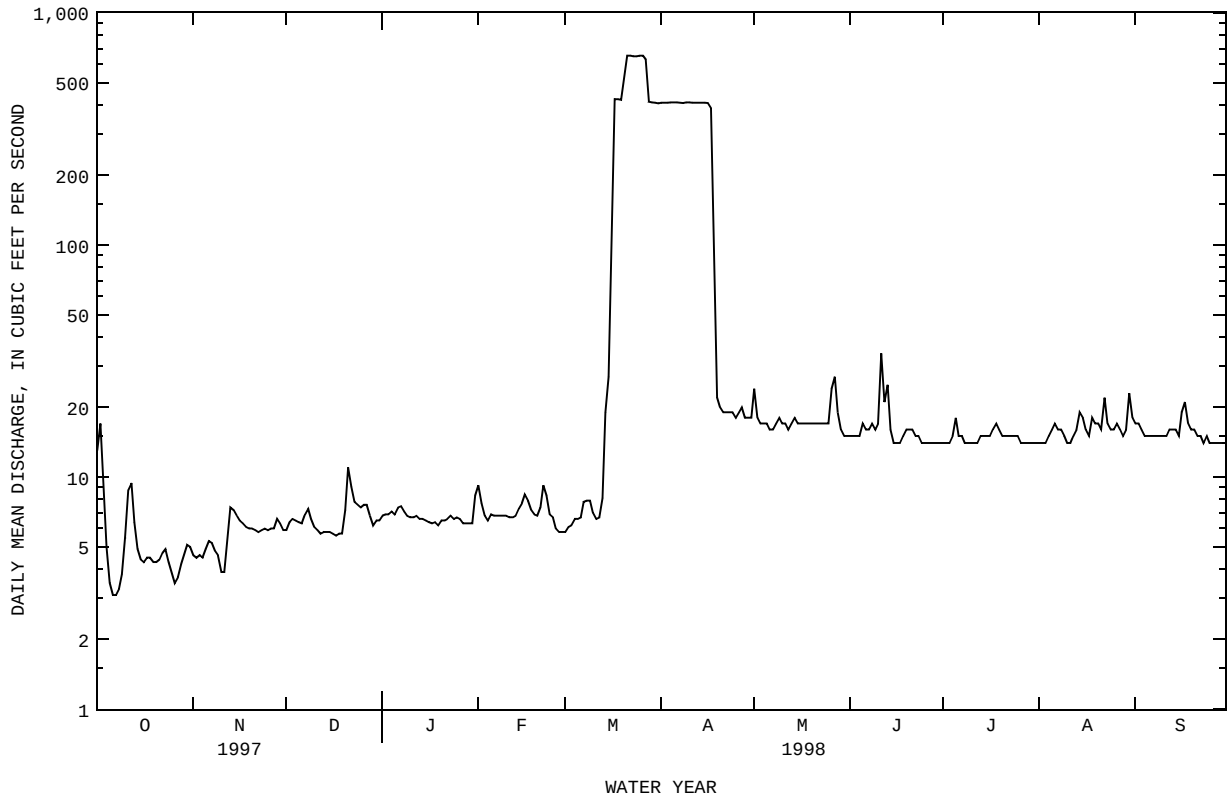
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	4.6	5.9	6.8	9.2	5.8	410	24	15	14	14	17
2	17	4.5	6.4	6.9	7.7	6.1	410	18	15	14	14	17
3	9.6	4.6	6.6	6.9	6.8	6.2	410	17	15	14	14	16
4	5.0	4.5	6.5	7.1	6.5	6.6	411	17	15	15	15	15
5	3.5	4.9	6.4	6.9	6.9	6.6	411	17	17	18	16	15
6	3.1	5.3	6.3	7.4	6.8	6.7	411	16	16	15	17	15
7	3.1	5.2	6.9	7.5	6.8	7.8	410	16	16	15	16	15
8	3.3	4.8	7.3	7.1	6.8	7.9	408	17	17	14	16	15
9	3.8	4.6	6.6	6.8	6.8	7.9	411	18	16	14	15	15
10	5.5	3.9	6.1	6.7	6.8	7.0	411	17	17	14	14	15
11	8.8	3.9	5.9	6.7	6.7	6.6	410	17	34	14	14	15
12	9.4	5.5	5.7	6.8	6.7	6.7	410	16	21	14	15	16
13	6.4	7.4	5.8	6.6	6.8	8.1	409	17	25	15	16	16
14	4.9	7.2	5.8	6.6	7.3	19	410	18	16	15	19	16
15	4.4	6.8	5.8	6.5	7.7	27	409	17	14	15	18	15
16	4.3	6.5	5.7	6.4	8.4	162	408	17	14	15	16	19
17	4.5	6.3	5.6	6.3	7.9	424	388	17	14	16	15	21
18	4.5	6.1	5.7	6.4	7.2	424	67	17	15	17	18	17
19	4.3	6.0	5.7	6.2	6.9	421	22	17	16	16	17	16
20	4.3	6.0	7.2	6.5	6.8	524	20	17	16	15	17	16
21	4.4	5.9	11	6.5	7.4	654	19	17	16	15	16	15
22	4.7	5.8	9.1	6.6	9.2	654	19	17	15	15	22	15
23	4.9	5.9	7.8	6.8	8.3	649	19	17	15	15	17	14
24	4.3	6.0	7.6	6.6	6.9	649	19	17	14	15	16	15
25	3.9	5.9	7.4	6.7	6.7	653	18	17	14	15	16	14
26	3.5	6.0	7.6	6.6	6.0	652	19	24	14	14	17	14
27	3.7	6.0	7.6	6.3	5.8	629	20	27	14	14	16	14
28	4.2	6.6	6.8	6.3	5.8	414	18	19	14	14	15	14
29	4.6	6.3	6.2	6.3	---	411	18	16	14	14	16	14
30	5.1	5.9	6.5	6.3	---	409	18	15	14	14	23	14
31	5.0	---	6.5	8.3	---	407	---	15	---	14	18	---
TOTAL	171.0	168.9	208.0	208.4	199.6	8272.0	7243	548	488	458	508	465
MEAN	5.52	5.63	6.71	6.72	7.13	267	241	17.7	16.3	14.8	16.4	15.5
MAX	17	7.4	11	8.3	9.2	654	411	27	34	18	23	21
MIN	3.1	3.9	5.6	6.2	5.8	5.8	18	15	14	14	14	14
AC-FT	339	335	413	413	396	16410	14370	1090	968	908	1010	922

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

MEAN	243	124	106	107	110	151	147	343	387	120	177	280
MAX	1475	1344	562	470	666	732	873	1440	1783	623	1516	2953
(WY)	1987	1975	1975	1975	1975	1987	1977	1987	1996	1987	1978	1980
MIN	5.52	5.63	6.71	6.16	6.48	6.11	.41	.000	.000	.000	2.24	.000
(WY)	1998	1998	1998	1995	1996	1996	1986	1984	1984	1974	1983	1983

08136700 COLORADO RIVER NEAR STACY, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1968 - 1998	
ANNUAL TOTAL	27533.0		18937.9			
ANNUAL MEAN	75.4		51.9		190	
HIGHEST ANNUAL MEAN					719	1987
LOWEST ANNUAL MEAN					24.6	1984
HIGHEST DAILY MEAN	4420	Jun 24	654	Mar 21	31300	Sep 10 1980
LOWEST DAILY MEAN	3.1	Oct 6	3.1	Oct 6	.00	Jun 22 1974
ANNUAL SEVEN-DAY MINIMUM	3.9	Oct 4	3.9	Oct 4	.00	Jun 22 1974
INSTANTANEOUS PEAK FLOW			663	Mar 25	45000	Sep 10 1980
INSTANTANEOUS PEAK STAGE			6.37	Mar 25	28.00	Sep 10 1980
ANNUAL RUNOFF (AC-FT)	54610		37560		137400	
10 PERCENT EXCEEDS	19		27		400	
50 PERCENT EXCEEDS	13		14		49	
90 PERCENT EXCEEDS	5.5		5.5		6.9	



08138000 COLORADO RIVER AT WINCHELL, TX

LOCATION.--Lat 31°28'04", long 99°09'43", McCulloch-Brown County line, Hydrologic Unit 12090106, near left bank at downstream end of pier of old abandoned bridge, 300 ft upstream from bridge on U.S. Highway 377, 0.3 mi south of Winchell, 5.9 mi downstream from Home Creek, and at mile 560.7.

DRAINAGE AREA.--25,179 mi^2, approximately, of which 11,391 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Nov 1923 to Sep 1934 (published as "near Milburn"), Jun 1939 to Sep 1993, Oct 1997 to Sep 1998.
Water-quality records.--Chemical analyses: Nov 1967 to Sep 1985. Chemical and biochemical analyses: Dec 1990 to Aug 1993. Specific conductance and water temperature: Feb 1991 to Sep 1993.

REVISED RECORDS.--WDR TX-81-3: Drainage area. WDR TX-88-3: 1985.

GAGE.--Water-stage recorder. Datum of gage is 1,264.86 ft above sea level. Nov 1923 to Sep 1934, nonrecording gage at site 4.2 mi downstream at datum 10.14 ft lower. Jan 13, 1939 to Mar 24, 1940, nonrecording gage at present site and datum. Radio telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. There are many diversions above station for irrigation, municipal supply, and for oil field operation. Since water year 1931, at least 10% of contributing drainage area has been regulated by Lake Nasworthy (station 08132000). Since Mar 15, 1990, 95 percent of the drainage area above this station is regulated by O.H. Ivie Reservoir (station 08136600), 54.4 miles upstream, and by eight other upstream reservoirs, with a total combined (9 reservoirs) capacity of 1,676,000 acre-ft at conservation level. At times, flow may also be affected by discharge from the flood-detention pools of 89 floodwater-retarding structures with a combined detention capacity of 105,100 acre-ft. These flood-detention structures control runoff from 512 mi^2 above this station.

COOPERATION.--Lower Colorado River Authority provides operation and maintenance of the gage and verification of stage discharge relation at low stages. USGS maintains stage discharge relation at medium to high stages, and computes and publishes streamflow record.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--6 years (water years 1925-30) prior to construction of Lake Nasworthy, 798 ft^3/s (578,400 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1925-30).--Maximum discharge, 42,300 ft^3/s Jun 15, 1930 (gage height, 38.3 ft, at site 4.2 mi downstream at datum 10.14 ft lower); no flow Aug 8-10, Sep 1-5, 1929.

EXTREMES OUTSIDE PERIOD OF RECORD.--Highest stages since 1882 were 62.2 ft Sep 19, 1936, and 56.2 ft Aug 8, 1906, at railway bridge 1,000 ft upstream and converted to present site and datum, from information 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	9.0	3.0	3.7	4.8	3.5	e4.0	329	20	18	2.3	.61	39
2	8.0	2.6	6.7	4.6	3.3	2.0	330	e18	12	1.6	.47	114
3	7.9	1.9	7.0	4.6	2.4	1.7	331	e18	8.3	1.2	.13	39
4	8.1	.90	5.6	4.2	1.8	1.5	329	16	6.5	260	.00	20
5	8.0	.40	5.5	10	1.7	1.4	331	17	9.5	16	.00	13
6	8.0	.20	5.2	52	2.3	1.1	329	14	12	6.8	.00	7.6
7	7.0	.04	5.8	13	2.6	.99	333	11	9.6	7.0	.01	6.0
8	7.0	.00	5.2	9.7	2.7	.74	348	9.8	8.7	6.4	.08	5.6
9	6.8	.00	4.5	7.1	2.4	5.7	331	11	7.7	6.1	.10	5.2
10	6.8	.00	4.6	5.7	2.2	8.8	330	9.9	7.0	5.7	2.1	5.0
11	8.0	.00	4.3	5.2	1.8	5.7	331	10	12	4.4	2.8	5.2
12	9.1	.00	4.1	5.2	2.1	3.7	332	9.5	26	3.1	2.5	5.2
13	6.4	.00	3.8	5.2	2.7	2.8	334	11	778	3.2	3.5	5.2
14	5.1	.00	4.1	4.6	2.3	2.3	331	11	147	4.3	14	6.5
15	4.3	.00	4.1	4.4	2.5	4.4	332	9.5	85	3.8	8.8	8.6
16	3.5	.00	3.8	3.9	3.2	4440	332	8.7	52	3.3	6.5	18
17	3.5	.00	3.5	3.9	2.6	1220	328	8.2	33	3.5	9.2	21
18	4.6	.90	2.9	3.6	3.0	851	315	7.3	21	6.0	14	19
19	4.3	4.5	2.9	3.6	4.1	674	139	7.3	14	6.4	9.6	19
20	3.1	5.8	6.5	3.6	3.2	572	57	7.1	9.7	5.9	8.7	16
21	2.7	5.8	14	3.6	4.5	626	35	7.0	7.1	5.4	7.2	14
22	3.1	5.4	14	2.6	11	666	27	6.7	6.1	7.8	6.5	12
23	10	5.0	10	1.5	13	634	23	6.3	5.0	5.9	7.6	10
24	9.2	4.6	9.1	1.4	14	612	21	6.4	4.3	4.1	7.3	9.3
25	6.4	4.2	8.4	1.4	65	602	20	6.7	3.4	2.9	6.3	9.5
26	7.8	5.5	10	1.3	46	596	20	15	3.0	e2.0	10	7.7
27	5.3	6.3	10	1.3	8.0	597	24	29	2.6	1.9	13	6.3
28	4.1	6.5	8.2	1.4	e6.0	545	26	106	2.5	1.4	8.1	6.5
29	3.6	5.6	6.2	1.6	---	349	25	77	2.3	.88	6.0	6.8
30	3.2	3.4	5.8	1.6	---	341	22	43	5.5	.67	9.2	6.8
31	3.4	---	5.5	2.5	---	334	---	25	---	.69	92	---
TOTAL	187.3	72.54	195.0	179.1	219.9	13705.83	6395	562.4	1318.8	390.64	256.30	467.0
MEAN	6.04	2.42	6.29	5.78	7.85	442	213	18.1	44.0	12.6	8.27	15.6
MAX	10	6.5	14	52	65	4440	348	106	778	260	92	114
MIN	2.7	.00	2.9	1.3	1.7	.74	20	6.3	2.3	.67	.00	5.0
AC-FT	372	144	387	355	436	27190	12680	1120	2620	775	508	926

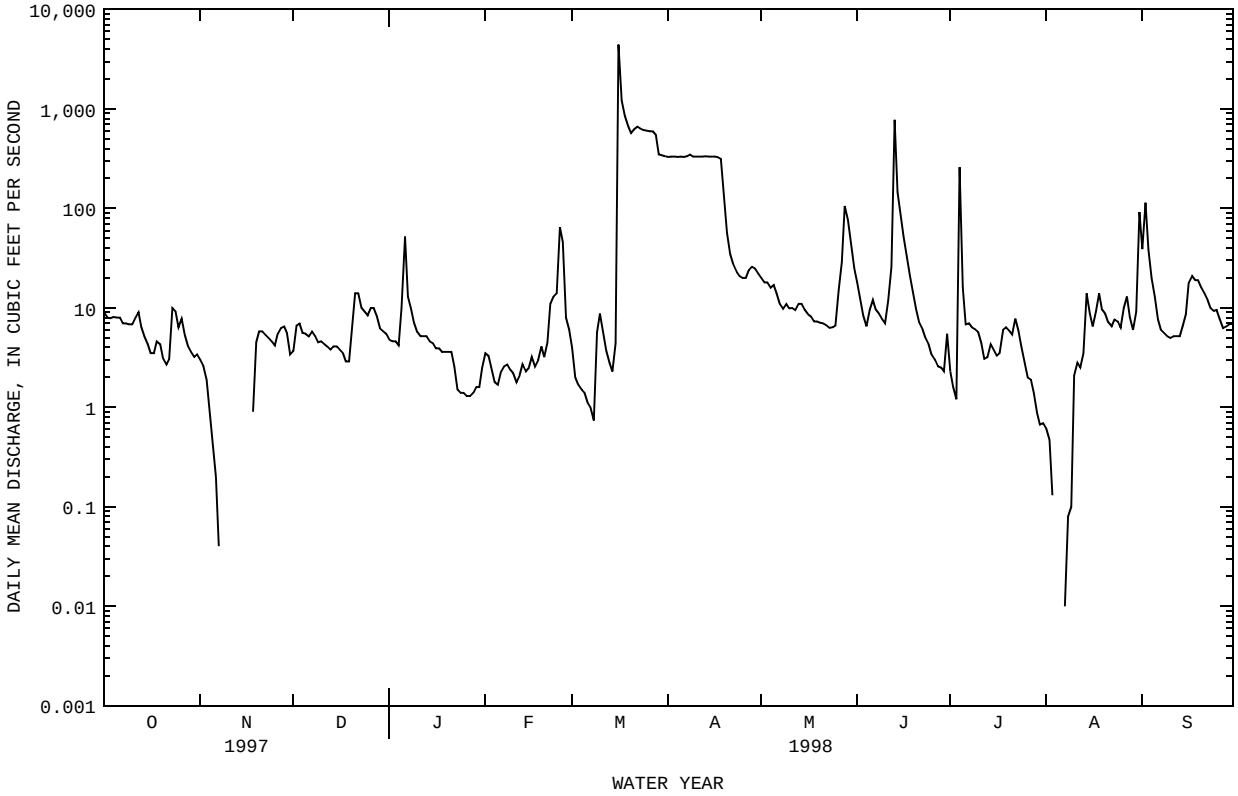
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1998hz, BY WATER YEAR (WY)

MEAN	733	151	163	154	179	201	498	1331	773	430	275	568
MAX	9878	1515	1907	1718	2453	1069	4576	13910	5313	4746	2227	6020
(WY)	1931	1975	1992	1968	1992	1987	1949	1957	1941	1945	1942	1932
MIN	.074	1.09	.000	.000	.000	.000	.29	.000	.000	.000	.000	.000
(WY)	1964	1952	1952	1952	1952	1952	1959	1984	1984	1974	1952	1954

08138000 COLORADO RIVER AT WINCHELL, TX--Continued

SUMMARY STATISTICS	FOR 1998 WATER YEAR		WATER YEARS 1931 - 1998hz	
ANNUAL TOTAL	23949.81			
ANNUAL MEAN	65.6		453	
HIGHEST ANNUAL MEAN			2070	1957
LOWEST ANNUAL MEAN			33.7	1984
HIGHEST DAILY MEAN	4440	Mar 16	67000	Oct 14 1930
LOWEST DAILY MEAN	.00	Nov 8	.00	Aug 15 1934
ANNUAL SEVEN-DAY MINIMUM	.00	Nov 8	.00	Aug 15 1934
INSTANTANEOUS PEAK FLOW	7230	Mar 16	76100	Oct 15 1930
INSTANTANEOUS PEAK STAGE	14.04	Mar 16	51.80	Oct 15 1930
ANNUAL RUNOFF (AC-FT)	47500		327900	
10 PERCENT EXCEEDS	192		681	
50 PERCENT EXCEEDS	6.4		62	
90 PERCENT EXCEEDS	1.4		3.2	

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



08141000 HORDS CREEK LAKE NEAR VALERA, TX

LOCATION.--Lat 31°49'58", long 99°33'38", Coleman County, Hydrologic Unit 12090108, at outlet-works structure near right end of dam on Hords Creek, 5.6 mi north of Valera, and 8.8 mi west of Coleman.

DRAINAGE AREA.--48 mi^2, approximately.

PERIOD OF RECORD.--Apr 1948 to current year. Prior to Oct 1970, published as Hords Creek Reservoir.
Water-quality records.--Chemical analyses: Oct 1969 to Aug 1982.

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

REMARKS.--The lake is formed by a rolled earthfill dam 6,800 ft long, including spillway. Deliberate impoundment of water began Apr 7, 1948, and the dam was completed in Jun 1948. The spillway is an excavated channel through natural ground, 500 ft wide, located about 600 ft from the right end of dam. The spillway consists of three concrete conduits; two controlled by 5.0- by 6.0-foot slide gates, and a third uncontrolled ogee spillway 4.0 ft wide and 19.5 ft high. The lake is operated for flood control and municipal water supply for the city of Coleman. The capacity table of Aug 1974 is based on a sedimentation survey made in 1948. Flow is affected at times by discharge from the flood-detention pool of one floodwater-retarding structure with a detention capacity of 1,370 acre-ft. This structure controls runoff from 6.82 mi^2 in the Jim Ned Creek drainage basin. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	1,939.0
Design flood	1,933.6
Crest of spillway	1,920.0
Crest of spillway (top of conservation pool)	1,900.0
Lowest gated outlet (invert)	1,856.0

COOPERATION.--Record of contents furnished by U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 12,790 acre-ft, May 1, 1956 (elevation 1906.86 ft); maximum elevation, Mar 4, 1992 (elevation, 1907.31 ft); minimum since first appreciable storage in Jun 1951, 1,550 acre-ft, Sep 2, 1984 (elevation, 1878.01 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 7,210 acre-ft, Oct 1 (elevation, 1,898.13 ft); minimum daily contents, 5,570 acre-ft, Sep 30 (elevation, 1,894.20 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	7210	6980	6780	6650	6540	6460	6610	6230	7030	6670	6220	5890
2	7200	6970	6790	6650	6540	6460	6600	6220	7010	6660	6200	5890
3	7180	6950	6780	6650	6540	6450	6590	6210	7000	6640	6190	5890
4	7170	6950	6780	6650	6530	6450	6580	6190	6990	6640	6180	5870
5	7160	6940	6770	6650	6530	6440	6570	6180	6970	6620	6170	5860
6	7150	6930	6760	6650	6520	6440	6570	6160	6950	6610	6180	5840
7	7140	6920	6760	6650	6520	6460	6560	6150	6930	6590	6160	5810
8	7140	6910	6760	6640	6510	6450	6550	6130	6930	6570	6150	5800
9	7130	6900	6740	6640	6510	6440	6540	6110	6920	6550	6130	5780
10	7150	6890	6740	6630	6500	6440	6530	6100	6990	6540	6120	5770
11	7160	6880	6730	6630	6500	6430	6520	6080	6980	6520	6100	5750
12	7160	6890	6720	6620	6500	6420	6510	6070	6980	6520	6100	5750
13	7140	6880	6710	6620	6490	6420	6500	6060	6970	6520	6090	5740
14	7130	6870	6700	6620	6500	6420	6490	6050	6950	6540	6090	5730
15	7120	6870	6700	6610	6500	6530	6480	6040	6940	6530	6070	5720
16	7100	6860	6690	6600	6500	6660	6460	6020	6920	6520	6060	5700
17	7090	6850	6680	6600	6490	6670	6440	6010	6900	6500	6050	5700
18	7080	6850	6670	6590	6490	6670	6430	6000	6890	6490	6040	5700
19	7070	6840	6670	6580	6480	6670	6410	5990	6880	6470	6030	5700
20	7060	6840	6700	6580	6470	6670	6380	5970	6860	6460	6020	5680
21	7060	6830	6700	6580	6510	6670	6370	5960	6850	6430	6010	5670
22	7040	6830	6690	6580	6510	6660	6350	5950	6830	6420	6000	5660
23	7080	6820	6700	6570	6510	6660	6340	5940	6810	6400	5990	5650
24	7070	6810	6700	6570	6500	6660	6320	5930	6790	6380	5980	5640
25	7050	6810	6690	6570	6500	6650	6310	5990	6770	6360	5970	5620
26	7030	6810	6690	6560	6490	6650	6300	6370	6750	6340	5960	5610
27	7020	6810	6680	6550	6480	6650	6280	7070	6740	6320	5950	5600
28	7020	6810	6670	6540	6470	6640	6270	7070	6720	6300	5940	5590
29	7010	6800	6670	6540	---	6640	6260	7070	6700	6280	5920	5580
30	7000	6790	6660	6540	---	6640	6250	7060	6690	6260	5910	5570
31	6990	---	6650	6550	---	6620	---	7040	---	6250	5900	---
MAX	7210	6980	6790	6650	6540	6670	6610	7070	7030	6670	6220	5890
MIN	6990	6790	6650	6540	6470	6420	6250	5930	6690	6250	5900	5570
(+)	1897.64	1897.20	1896.87	1896.64	1896.45	1896.80	1895.93	1897.75	1896.97	1895.93	1895.07	1894.21
(@)	-230	-200	-140	-100	-80	+150	-370	+790	-350	-440	-350	-330

CAL YR 1997 MAX 12660 MIN 6360 (@) +90
WTR YR 1998 MAX 7210 MIN 5570 (@) -1650

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

08143600 PECAN BAYOU NEAR MULLIN, TX

LOCATION.--Lat 31°31'02", long 98°44'25", Mills County, Hydrologic Unit 12090107, on right bank 44 ft downstream from bridge on Farm Road 573, 0.6 mi downstream from Blanket Creek, 5.5 mi southwest of Mullin, and 13.6 mi upstream from mouth.

DRAINAGE AREA.--2,073 mi^2.

PERIOD OF RECORD.--Oct 1967 to current year.
Water-quality records.--Chemical analyses: Oct 1967 to Aug 1991. Chemical and biochemical analyses: Nov 1991 to Aug 1996. Specific conductance and water temperature: Oct 1967 to Sep 1991.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,202.93 ft above sea level. Radio telemeter at station. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Since installation of gage in water year 1968, at least 10% of contributing drainage area has been regulated by Lake Brownwood (capacity, 143,400 acre-ft) 45 miles upstream. In addition, flow from 152 mi^2 (from an intervening drainage area of 641 mi^2) above this station and below Lake Brownwood was partly controlled by 41 floodwater-retarding structures, with a combined detention capacity of 43,420 acre-ft below the flood-spillway crests.

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	7.4	12	23	21	e30	59	114	36	22	6.3	6.3	4.5
2	7.3	12	23	20	39	56	98	32	18	5.7	5.6	5.2
3	7.4	12	25	20	29	51	90	29	14	4.9	5.4	5.8
4	7.9	12	31	20	26	47	85	28	12	4690	14	5.1
5	9.7	11	26	86	26	45	83	27	30	2860	9.0	4.6
6	10	10	23	154	25	43	84	26	17	428	5.3	4.3
7	12	9.2	24	85	25	45	84	25	13	266	8.4	4.2
8	13	9.0	24	75	24	59	93	25	12	234	27	4.7
9	134	10	29	51	23	93	80	27	10	159	22	5.7
10	61	13	27	41	22	63	74	24	11	58	15	5.3
11	32	14	23	35	22	51	73	23	32	37	11	4.9
12	41	15	21	31	23	46	70	23	87	29	7.8	4.3
13	67	16	21	29	26	44	71	24	45	38	6.3	4.5
14	45	22	20	28	30	43	69	25	33	52	6.6	4.8
15	24	21	21	28	30	51	68	23	25	31	5.6	5.4
16	18	18	21	26	28	6060	67	20	19	23	5.6	72
17	16	22	22	25	29	4240	65	18	15	19	9.0	62
18	16	20	22	25	31	3980	61	16	13	17	10	13
19	16	17	23	24	31	2750	63	16	12	16	9.1	11
20	14	17	29	23	37	1850	61	15	10	14	8.3	8.8
21	14	17	81	23	96	1210	55	16	9.4	12	6.9	8.1
22	14	18	65	24	301	892	52	15	9.2	9.6	6.1	8.3
23	39	18	42	23	156	734	49	13	8.3	8.8	5.4	8.3
24	56	18	50	23	79	620	45	12	7.7	8.4	5.2	7.0
25	23	18	53	23	178	530	42	12	7.2	10	5.1	13
26	18	19	35	23	313	460	49	16	6.8	9.5	5.8	9.4
27	14	19	32	22	132	416	51	155	9.3	7.3	5.7	6.2
28	13	20	36	22	77	396	41	221	7.7	6.3	5.0	5.5
29	13	20	28	22	---	372	39	64	6.2	6.7	4.3	27
30	12	23	25	22	---	363	38	39	5.7	7.7	5.4	16
31	13	---	23	24	---	228	---	27	---	7.1	5.2	---
TOTAL	787.7	482.2	948	1098	1888	25897	2014	1072	527.5	9081.3	257.4	348.9
MEAN	25.4	16.1	30.6	35.4	67.4	835	67.1	34.6	17.6	293	8.30	11.6
MAX	134	23	81	154	313	6060	114	221	87	4690	27	72
MIN	7.3	9.0	20	20	22	43	38	12	5.7	4.9	4.3	4.2
AC-FT	1560	956	1880	2180	3740	51370	3990	2130	1050	18010	511	692

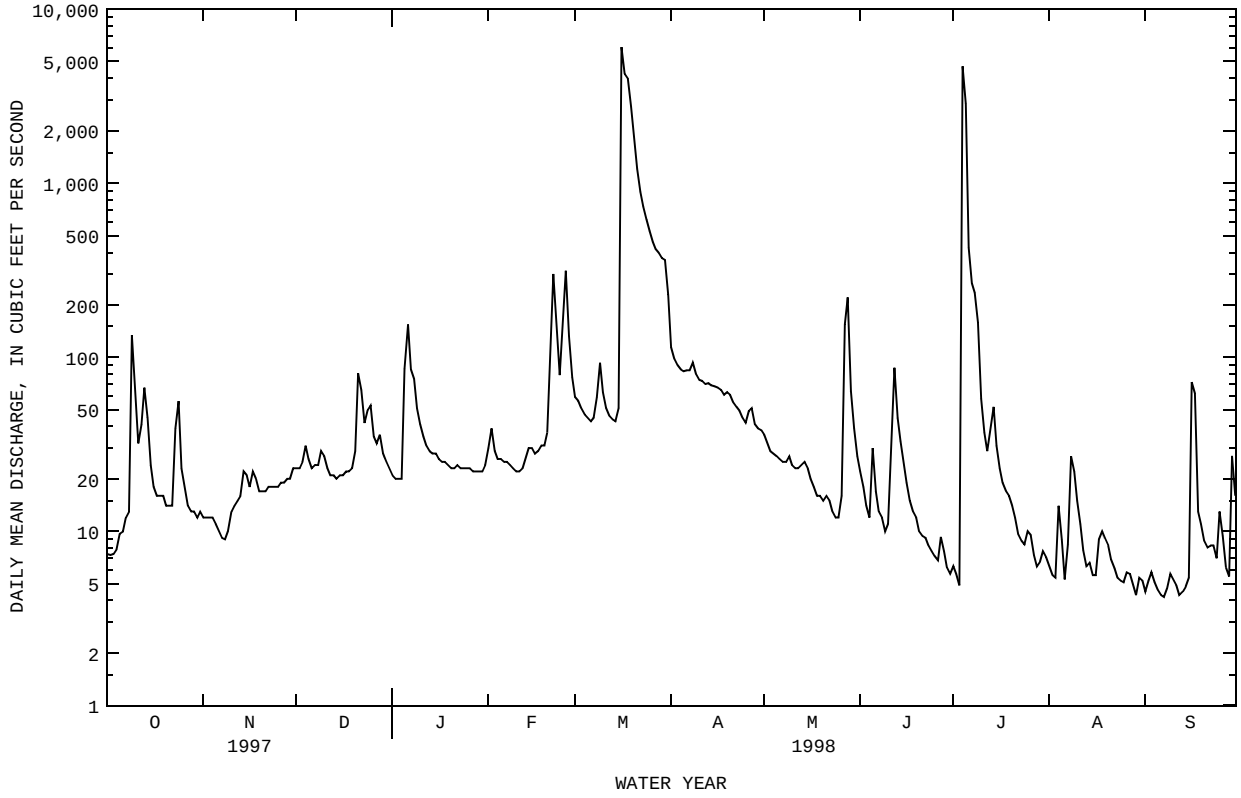
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1998, BY WATER YEAR (WY)

MEAN	155	84.0	200	150	249	254	237	301	366	56.7	27.3	83.2
MAX	987	1227	4741	1965	4416	2361	3510	1975	2898	434	195	980
(WY)	1975	1975	1992	1968	1992	1992	1990	1994	1997	1997	1971	1991
MIN	.59	4.79	3.90	4.57	6.55	5.45	3.63	.12	.000	.000	.000	.79
(WY)	1989	1989	1984	1986	1983	1996	1984	1984	1984	1974	1980	1989

08143600 PECAN BAYOU NEAR MULLIN, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1968 - 1998	
ANNUAL TOTAL	182417.9		44402.0			
ANNUAL MEAN	500		122		180	
HIGHEST ANNUAL MEAN					1245	1992
LOWEST ANNUAL MEAN					9.01	1984
HIGHEST DAILY MEAN	12700	Jun 26	6060	Mar 16	37000	Apr 27 1990
LOWEST DAILY MEAN	7.3	Oct 2	4.2	Sep 7	.00	Jun 29 1974
ANNUAL SEVEN-DAY MINIMUM	8.1	Sep 29	4.8	Sep 6	.00	Jun 29 1974
INSTANTANEOUS PEAK FLOW			9710	Jul 4	38300	Apr 27 1990
INSTANTANEOUS PEAK STAGE			21.58	Jul 4	42.15	Apr 27 1990
ANNUAL RUNOFF (AC-FT)	361800		88070		130100	
10 PERCENT EXCEEDS	1180		91		283	
50 PERCENT EXCEEDS	60		23		15	
90 PERCENT EXCEEDS	13		6.3		3.0	

e Estimated



08144500 SAN SABA RIVER AT MENARD, TX

LOCATION.--Lat 30°55'08", long 99°47'07", Menard County, Hydrologic Unit 12090109, at downstream side of bridge on U.S. Highway 83 in Menard, 1.1 mi downstream from Las Moras Creek, 1.9 mi upstream from Volkmann Draw, and 116.3 mi upstream from mouth.

DRAINAGE AREA.--1,135 mi^2, of which 6.6 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Sep 1915 to Sep 1993, Oct 1997 to Sep 1998.
Water-quality records.--Chemical analyses: Nov 1964 to Jul 1967.

REVISED RECORDS.--WDR TX-81-3: Drainage area. WSP 1512: 1918-20, 1922-25, 1926(M), 1927-32, 1934(M), 1936, 1938(M).

GAGE.--Water-stage recorder. Datum of gage is 1,863.05 ft above sea level. Sep 14, 1915 to Mar 12, 1924, nonrecording gage at site 635 ft downstream at datum 2.20 ft lower. Mar 13, 1924 to Feb 21, 1939, nonrecording gage at site 1,000 ft upstream at datum 2.00 ft higher. Feb 22, 1939 to Jan 25, 1940, nonrecording gage at present site and datum. Jan 26, 1940 to Sep 19, 1957, water-stage recorder at site 240 ft to right at present datum. Feb 8, 1962 to Jan 22, 1963, nonrecording gage at site 600 ft downstream at present datum. Radio telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since about 1890, low flow regulated during irrigation season by diversions to Noyes Canal 4.5 mi upstream and diversions by pumping at several locations upstream.

COOPERATION.--Lower Colorado River Authority provides operation and maintenance of the gage and verification of stage discharge relation at low stages. USGS maintains stage discharge relation at medium to high stages, computes, and publishes streamflow record.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1880, 23.3 ft Jun 6, 1899, present site and datum, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 670 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 26	1015	3,840	8.71	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	13	16	25	23	18	16	8.1	22	10	6.7	3.1	26
2	13	16	26	23	17	16	8.1	23	9.6	7.8	3.0	23
3	12	17	28	e25	17	16	7.9	22	8.8	7.7	3.5	21
4	12	18	27	e25	17	15	7.5	22	8.4	7.6	5.3	20
5	12	19	26	23	18	15	7.9	22	11	8.8	12	19
6	13	20	25	23	18	15	8.6	22	10	9.7	12	19
7	15	20	24	23	18	15	9.5	21	9.7	8.6	17	18
8	15	19	25	28	17	15	10	19	10	8.6	16	18
9	15	20	26	29	17	15	9.1	18	11	8.3	12	16
10	17	21	25	29	17	15	9.3	18	12	6.9	9.4	16
11	19	21	24	29	16	15	9.2	17	25	6.1	7.3	16
12	22	22	24	28	16	15	9.4	16	23	5.5	5.9	19
13	20	25	22	27	16	15	10	16	20	5.0	5.6	20
14	20	26	22	27	17	15	10	16	18	4.3	7.8	22
15	18	30	23	26	17	15	10	e15	14	4.9	15	21
16	17	29	23	26	19	28	11	e15	12	6.6	16	26
17	16	27	22	26	17	30	11	e15	12	9.2	14	33
18	15	25	22	25	17	21	11	e15	11	9.4	17	34
19	16	24	23	25	17	15	11	13	9.7	9.6	15	28
20	16	24	25	24	16	11	12	12	9.9	9.3	13	26
21	17	24	28	24	16	10	13	13	8.7	7.7	12	24
22	16	24	28	24	18	10	13	12	7.7	6.7	12	23
23	17	24	28	24	17	10	16	13	7.7	6.2	14	22
24	17	24	27	25	17	9.9	20	13	6.9	6.2	19	22
25	16	24	25	22	17	9.7	19	13	6.1	5.7	25	22
26	15	24	26	20	16	9.3	19	12	6.0	e5.0	1530	21
27	16	24	27	20	16	9.2	21	14	6.5	4.2	408	21
28	16	27	25	20	16	9.2	22	16	e7.0	3.6	107	21
29	17	28	24	20	---	9.4	22	15	7.6	3.5	54	21
30	18	26	24	20	---	9.7	23	13	6.7	3.3	39	21
31	18	---	23	23	---	8.6	---	11	---	3.2	32	---
TOTAL	499	688	772	756	475	438.0	378.6	504	326.0	205.9	2461.9	659
MEAN	16.1	22.9	24.9	24.4	17.0	14.1	12.6	16.3	10.9	6.64	79.4	22.0
MAX	22	30	28	29	19	30	23	23	25	9.7	1530	34
MIN	12	16	22	20	16	8.6	7.5	11	6.0	3.2	3.0	16
AC-FT	990	1360	1530	1500	942	869	751	1000	647	408	4880	1310

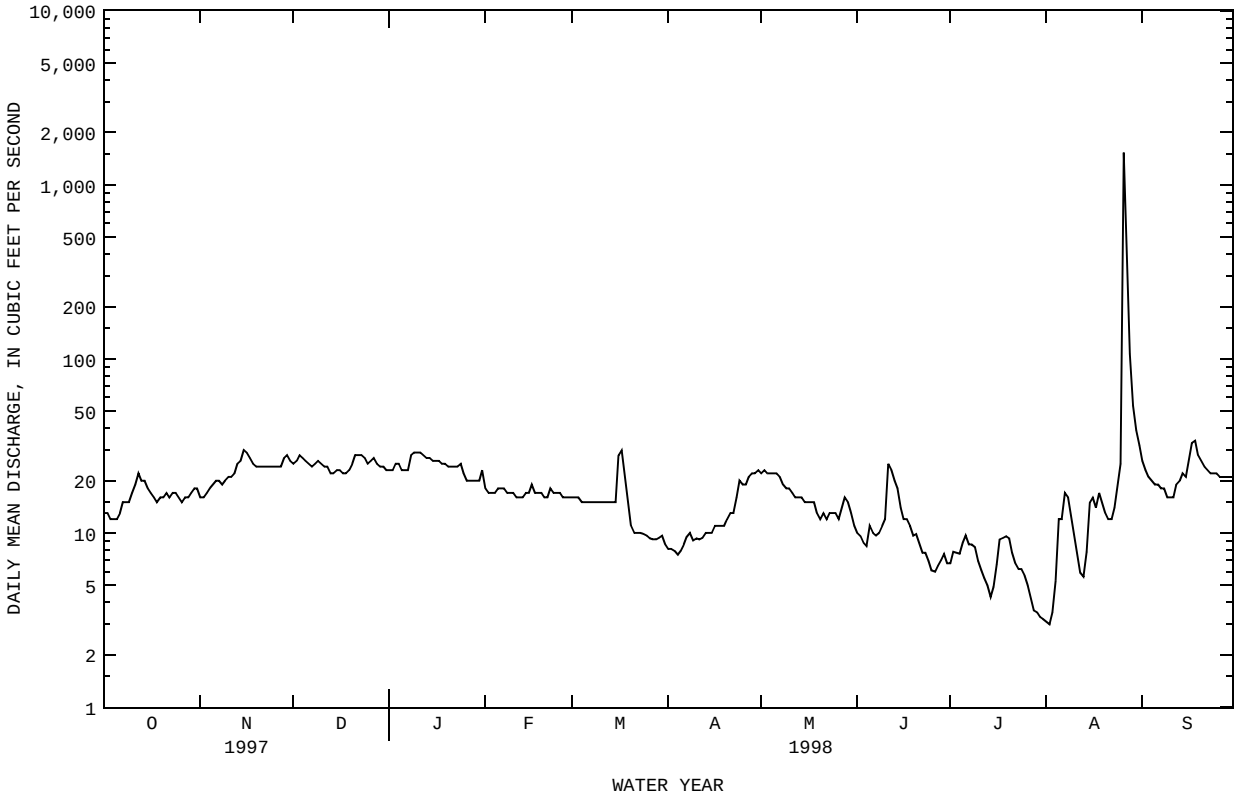
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1916 - 1998h, BY WATER YEAR (WY)

MEAN	89.8	36.7	31.8	32.1	38.6	33.2	69.6	78.5	58.4	105	43.5	137
MAX	914	383	152	80.4	261	251	1206	1631	667	5140	869	2870
(WY)	1942	1924	1985	1985	1958	1922	1922	1957	1958	1938	1974	1936
MIN	.000	.000	.000	.035	.82	.99	.89	1.22	.000	.000	.000	.000
(WY)	1957	1957	1955	1957	1955	1956	1955	1964	1953	1952	1952	1954

08144500 SAN SABA RIVER AT MENARD, TX--Continued

SUMMARY STATISTICS	FOR 1998 WATER YEAR		WATER YEARS 1916 - 1998h	
ANNUAL TOTAL	8163.4			
ANNUAL MEAN	22.4		62.9	
HIGHEST ANNUAL MEAN			485	1938
LOWEST ANNUAL MEAN			6.12	1952
HIGHEST DAILY MEAN	1530	Aug 26	53300	Jul 23 1938
LOWEST DAILY MEAN	3.0	Aug 2	.00	Jul 12 1918
ANNUAL SEVEN-DAY MINIMUM	3.3	Jul 28	.00	Jul 19 1918
INSTANTANEOUS PEAK FLOW	3840	Aug 26	c130000	Jul 23 1938
INSTANTANEOUS PEAK STAGE	8.71	Aug 26	a22.20	Jul 23 1938
ANNUAL RUNOFF (AC-FT)	16190		45580	
10 PERCENT EXCEEDS	26		60	
50 PERCENT EXCEEDS	17		23	
90 PERCENT EXCEEDS	7.7		2.1	

e Estimated
h See PERIOD OF RECORD paragraph.
c From rating curve extended above 56,000 ft^3/s on basis of slope-area measurement of 130,000 ft^3/s.
a From floodmark.



08144600 SAN SABA RIVER NEAR BRADY, TX

LOCATION.--Lat 31°00'14", long 99°16'07", McCulloch County, Hydrologic Unit 12090109, on right bank at downstream side of bridge on U.S. Highways 87 and 377, 0.4 mi upstream from Hudson Branch, and 8.4 mi southeast of Brady, and 72.9 mi upstream from mouth.

DRAINAGE AREA.--1,633 mi^2, of which 6.60 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Jul 1979 to Sep 1993, Oct 1997 to Sep 1998.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,530.98 ft above sea level. Radio telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation. Noyes Canal at Menard (discontinued station 08144000) diverts water from right bank of San Saba River 4.7 mi upstream from Menard for irrigation near Menard. First diversion was about 1890.

COOPERATION.--Lower Colorado River Authority provides operation and maintenance of the gage and verification of stage discharge relation at low stages. USGS maintains stage discharge relation at medium to high stages, and computes and publishes streamflow record.

EXTREMES OUTSIDE PERIOD OF RECORD.--Highest stage since June 1899, 33.8 ft Jul 23, 1938, from floodmark on left bank 150 ft upstream from present site.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 16	0600	1,400	5.06	Aug 27	0200	1,650	5.35

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	13	23	35	38	33	38	14	5.0	.97	.17	38
2	14	14	25	36	38	31	35	13	4.0	.74	.16	33
3	14	14	26	37	33	30	35	13	3.4	.56	.16	26
4	14	14	25	35	30	31	35	14	2.8	.89	.16	21
5	14	14	25	33	32	32	35	13	4.1	1.7	.31	17
6	14	14	25	50	29	33	32	11	4.2	1.5	.30	12
7	14	14	26	52	27	34	35	9.8	3.7	.94	.23	9.8
8	14	14	28	43	26	32	34	8.7	3.5	.60	.18	10
9	14	14	30	40	28	29	30	8.1	3.0	.49	.22	7.9
10	14	15	29	39	28	29	30	6.9	2.8	.37	.20	8.0
11	15	14	29	39	27	31	28	6.3	32	.32	.18	7.6
12	21	14	30	38	29	30	27	5.3	28	.35	.20	7.5
13	24	17	30	38	31	29	26	4.4	17	.40	.32	9.6
14	18	17	30	39	29	30	25	4.0	15	.42	.33	11
15	15	22	30	38	29	41	24	e4.0	13	.39	.38	10
16	15	23	30	37	32	616	24	e4.0	12	.34	.34	14
17	15	24	29	37	31	190	22	e4.0	9.5	.33	.41	18
18	15	23	29	37	32	147	22	e4.0	8.2	.40	.51	24
19	14	23	29	36	34	96	20	e4.0	6.7	.54	.47	31
20	14	23	43	36	31	75	18	4.1	5.5	.42	.39	24
21	14	23	50	36	36	65	16	5.9	4.2	.34	.32	22
22	14	23	43	37	47	59	20	5.9	3.4	.29	.31	21
23	14	24	42	36	40	55	22	5.0	3.0	.29	.44	20
24	14	23	47	35	38	51	22	4.7	e2.5	.27	.55	18
25	14	23	41	36	36	50	22	4.6	2.0	.24	.54	17
26	14	22	43	38	89	46	21	4.5	1.8	e.20	3.5	16
27	14	23	42	37	42	45	19	5.8	1.7	.21	886	15
28	14	23	41	35	35	38	17	5.7	e1.5	.19	282	12
29	14	23	41	34	---	36	16	5.6	1.3	.18	138	13
30	14	23	38	34	---	37	16	6.1	1.2	.18	75	13
31	14	---	36	36	---	38	---	5.7	---	.17	49	---
TOTAL	460	570	1035	1169	977	2119	766	215.1	206.0	15.23	1441.28	506.4
MEAN	14.8	19.0	33.4	37.7	34.9	68.4	25.5	6.94	6.87	.49	46.5	16.9
MAX	24	24	50	52	89	616	38	14	32	1.7	886	38
MIN	14	13	23	33	26	29	16	4.0	1.2	.17	.16	7.5
AC-FT	912	1130	2050	2320	1940	4200	1520	427	409	30	2860	1000

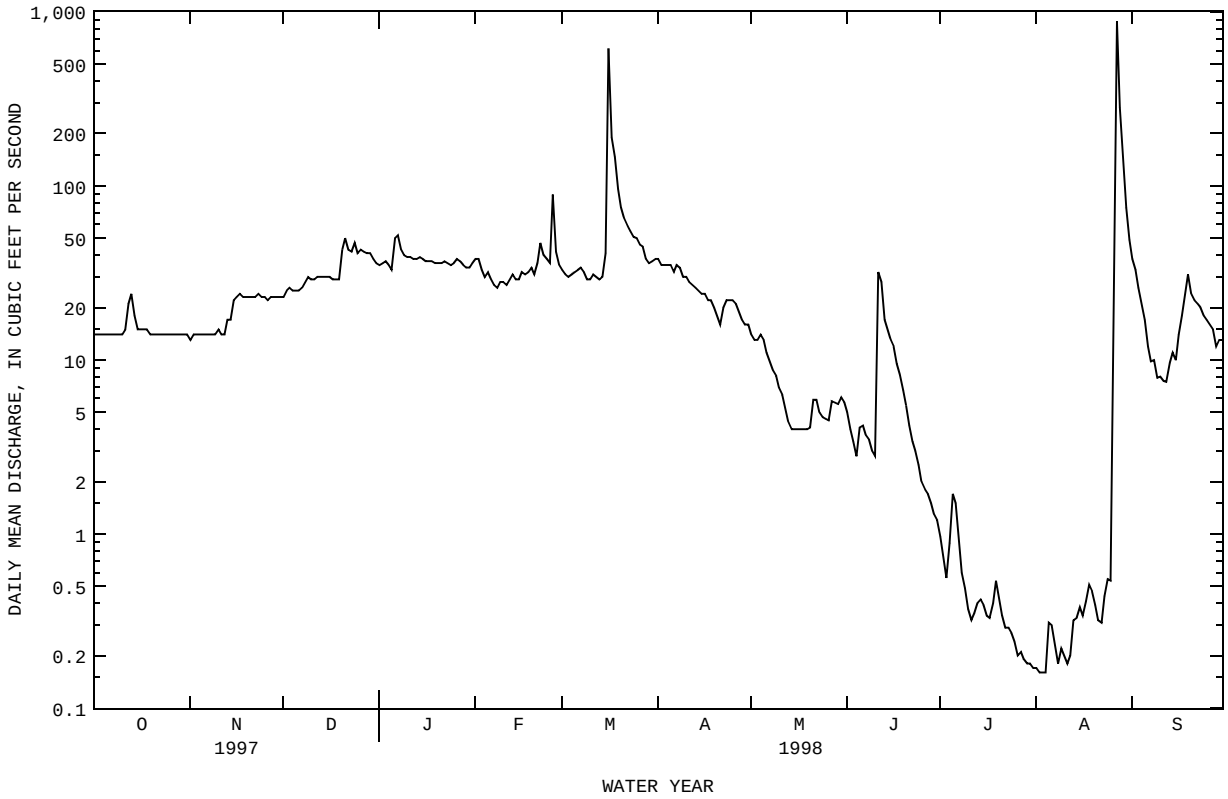
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1998h, BY WATER YEAR (WY)

MEAN	50.7	45.5	90.8	70.2	78.2	63.9	52.4	65.4	103	86.2	59.2	207
MAX	118	91.3	516	282	400	160	144	167	511	901	543	1631
(WY)	1991	1991	1985	1985	1992	1992	1992	1987	1987	1990	1990	1980
MIN	10.5	19.0	22.6	26.8	34.4	24.1	16.3	6.35	.75	.49	2.29	.074
(WY)	1984	1998	1986	1986	1984	1986	1986	1984	1984	1998	1984	1984

08144600 SAN SABA RIVER NEAR BRADY, TX--Continued

SUMMARY STATISTICS	FOR 1998 WATER YEAR		WATER YEARS 1979 - 1998h	
ANNUAL TOTAL	9480.01			
ANNUAL MEAN	26.0		81.8	
HIGHEST ANNUAL MEAN			256	1990
LOWEST ANNUAL MEAN			17.0	1984
HIGHEST DAILY MEAN	886	Aug 27	23900	Sep 8 1980
LOWEST DAILY MEAN	.16	Aug 2	.02	Sep 13 1984
ANNUAL SEVEN-DAY MINIMUM	.17	Jul 29	.02	Sep 13 1984
INSTANTANEOUS PEAK FLOW	1650	Aug 27	66000	Sep 8 1980
INSTANTANEOUS PEAK STAGE	5.35	Aug 27	25.50	Sep 8 1980
ANNUAL RUNOFF (AC-FT)	18800		59260	
10 PERCENT EXCEEDS	39		93	
50 PERCENT EXCEEDS	18		42	
90 PERCENT EXCEEDS	.40		7.1	

e Estimated
h See PERIOD OF RECORD paragraph.



08146000 SAN SABA RIVER AT SAN SABA, TX

LOCATION.--Lat 31°12'47", long 98°43'09", San Saba County, Hydrologic Unit 12090109, on left bank near left downstream end of bridge on State Highway 16, 1.2 mi north of San Saba, 2.7 mi upstream from Mill Creek, 4.8 mi downstream from China Creek, and 16.8 mi upstream from mouth.

DRAINAGE AREA.--3,046 mi^2, of which 6.6 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Dec 1904 to Dec 1906 (gage heights only), Sep 1915 to Sep 1993, Oct 1997 to Sep 1998. Published as "near San Saba" Dec 1904 to Dec 1906 and Sep 1915 to Aug 1930.
Water-quality records.--Chemical analyses: Sep 1947 to Feb 1949, Nov 1958 to Sep 1969. Water temperatures: Sep 1962 to Sep 1969.

REVISED RECORDS.--WSP 458: 1915-16. WSP 1282: WDR TX-81-3: Drainage area. WSP 1512: 1918-19(M), 1922, 1931(M), 1935 WSP 1922: 1917.

GAGE.--Water-stage recorder. Datum of gage is 1,162.16 ft above sea level. See WSP 1922 for brief history of changes prior to Jul 8, 1953. From Oct 1956 to Sep 1993, supplementary water-stage recorder 2,780 ft to right of main channel gage used for floodflows. Radio telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Many diversions above station for irrigation and municipal use that affect low flows. Flow partly affected by Brady Creek Reservoir, capacity 90,300 acre-ft.

COOPERATION.--Lower Colorado River Authority provides operation and maintenance of the gage and verification of stage discharge relation at low stages. USGS maintains stage discharge relation at medium to high stages, and computes and publishes streamflow record.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jun 6, 1899, reached a stage of 36.7 ft, present site and datum, from information by local residents.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 16	2100	8,600	22.48	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	88	92	111	122	120	e170	176	105	66	45	33	121
2	85	90	114	124	118	145	174	e100	62	39	34	96
3	83	89	123	124	116	134	171	e100	59	39	31	83
4	85	88	122	124	113	131	164	100	59	71	34	81
5	90	91	118	124	117	126	159	97	93	175	42	75
6	90	89	114	151	116	121	160	94	90	80	45	68
7	94	88	113	148	110	122	161	90	74	61	45	63
8	93	93	117	148	109	124	160	92	70	54	44	58
9	93	96	117	147	104	122	153	88	70	52	42	54
10	99	98	113	135	104	117	150	83	67	47	44	48
11	104	103	110	128	102	109	147	80	88	47	36	47
12	107	106	109	127	103	106	143	78	111	45	35	59
13	113	115	109	127	110	107	139	75	107	50	40	62
14	111	114	110	124	114	111	136	76	106	50	66	58
15	109	115	110	123	119	117	136	75	95	48	61	54
16	107	121	110	123	122	4150	133	72	82	44	62	78
17	107	118	110	121	124	3030	127	68	74	45	50	91
18	105	118	110	118	123	840	125	67	69	49	47	102
19	102	119	110	116	133	612	123	62	67	47	47	112
20	101	119	125	115	159	452	122	60	64	47	47	100
21	99	120	177	117	160	370	120	60	61	45	46	87
22	98	116	169	114	e260	321	116	67	56	43	46	85
23	98	115	160	113	251	290	112	68	54	40	48	76
24	98	114	164	114	194	263	108	67	50	36	51	72
25	94	113	148	113	161	245	111	66	48	37	51	70
26	91	114	144	114	190	231	120	67	47	e40	49	67
27	91	115	142	114	210	223	132	78	42	39	45	66
28	93	118	135	113	e190	214	115	80	39	36	434	63
29	95	118	134	115	---	207	109	72	42	37	403	64
30	96	113	125	110	---	196	108	67	48	35	273	62
31	94	---	122	115	---	183	---	65	---	35	181	---
TOTAL	3013	3218	3895	3821	3952	13689	4110	2419	2060	1558	2512	2222
MEAN	97.2	107	126	123	141	442	137	78.0	68.7	50.3	81.0	74.1
MAX	113	121	177	151	260	4150	176	105	111	175	434	121
MIN	83	88	109	110	102	106	108	60	39	35	31	47
AC-FT	5980	6380	7730	7580	7840	27150	8150	4800	4090	3090	4980	4410

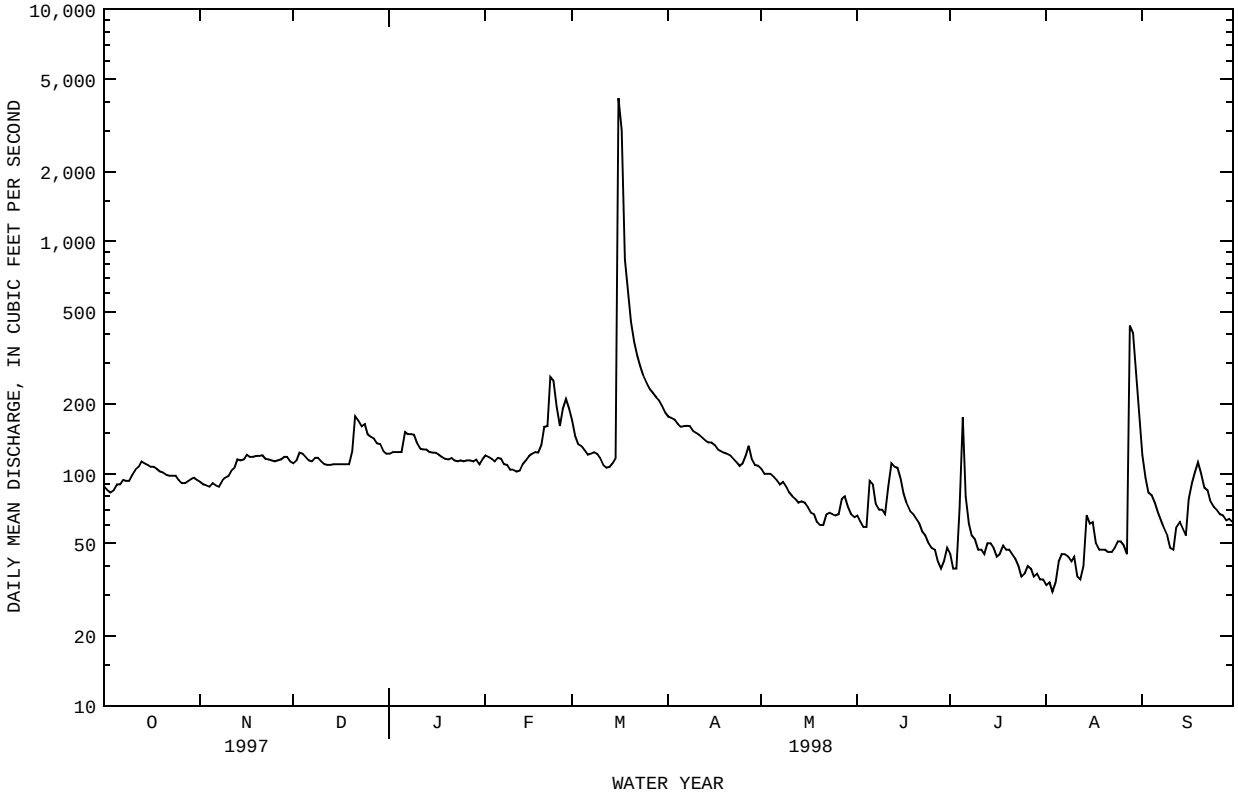
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1916 - 1998h, BY WATER YEAR (WY)

MEAN	272	137	140	157	172	154	276	376	249	289	126	324
MAX	2150	791	893	896	1542	635	5157	3031	1873	12050	1768	4164
(WY)	1931	1924	1992	1968	1992	1992	1922	1957	1935	1938	1971	1936
MIN	11.9	11.6	16.1	14.9	21.3	14.8	23.4	10.3	5.31	.32	.25	5.40
(WY)	1957	1957	1957	1957	1957	1955	1986	1984	1984	1964	1954	1954

08146000 SAN SABA RIVER AT SAN SABA, TX--Continued

SUMMARY STATISTICS	FOR 1998 WATER YEAR		WATER YEARS 1916 - 1998h	
ANNUAL TOTAL	46469			
ANNUAL MEAN	127		223	
HIGHEST ANNUAL MEAN			1318	1938
LOWEST ANNUAL MEAN			29.2	1984
HIGHEST DAILY MEAN	4150	Mar 16	117000	Jul 23 1938
LOWEST DAILY MEAN	31	Aug 3	.00	Jul 6 1918
ANNUAL SEVEN-DAY MINIMUM	34	Jul 29	.00	Jul 13 1954
INSTANTANEOUS PEAK FLOW	8600	Mar 16	c203000	Jul 23 1938
INSTANTANEOUS PEAK STAGE	22.48	Mar 16	39.30	Jul 23 1938
ANNUAL RUNOFF (AC-FT)	92170		161400	
10 PERCENT EXCEEDS	161		292	
50 PERCENT EXCEEDS	105		88	
90 PERCENT EXCEEDS	47		26	

e Estimated
h See PERIOD OF RECORD paragraph.
c From rating curve extended above 41,000 ft^3/s on basis of slope-area measurement of 203,000 ft^3/s.



08147000 COLORADO RIVER NEAR SAN SABA, TX

LOCATION.--Lat 31°13'04", long 98°33'51", San Saba-Lampasas County line, Hydrologic Unit 12090201, on left bank at downstream side of bridge on U.S. Highway 190, 5.2 mi downstream from San Saba River, 9.2 mi east of San Saba, and at mile 474.3.

DRAINAGE AREA.--31,217 mi^2, approximately, of which 11,398 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Oct 1915 to Oct 1922 (published as "near Chadwick"), Oct 1923 to Aug 1930 (published as "near Tow"), Sep 1930 to current year. Monthly discharge only for some periods, published in WSP 1312.
Water-quality records.--Chemical analyses: Aug 1941, Sep 1947 to Sep 1967. Chemical and biochemical analyses: Jan 1968 to Aug 1993. Pesticide analyses: Jan 1968 to Apr 1982. Sediment analyses: May 1951 to Oct 1962, Oct 1977 to Aug 1993. Specific conductance and water temperature: Sep 1947 to Sep 1992. Suspended sediment discharge: Dec 1950 to Sep 1962.

REVISED RECORDS.--WSP 458: 1916. WSP 858: 1900(M), 1936(M). WDR TX-81-3: Drainage area. WSP 1512: 1916-18(M), 1936. WSP 1732: 1925-26(M).

GAGE.--Water-stage recorder. Datum of gage is 1,096.22 ft above sea level. See WSP 1922 for brief history of changes prior to May 23, 1940. Radio telemeter at station. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good except for Mar 17 to Apr 6 and Jul 7 to Sep 30, which are fair. Since water year 1931 at least 10% of contributing drainage area has been regulated by Lake Nasworthy (08132000). Since Mar 15, 1990, 66% of the drainage area above this station has been controlled by O.H. Ivie Reservoir (station 08136600), 140.8 miles upstream, and by an additional twelve reservoirs (8 above and 4 below O.H. Ivie Reservoir), for a total combined capacity (13 reservoirs) of 1,897,000 acre-ft at conservation level. Flow is also affected at times by discharge from the flood-detention pools of 187 floodwater-retarding structures with a combined capacity of 205,700 acre-ft. These flood- detention structures control runoff from an 944 mi^2 area above this station. There are many diversions above station for irrigation, municipal use, and for oil field operations.

COOPERATION.--Lower Colorado River Authority provides operation and maintenance of the gage and verification of stage discharge relation of low stages. USGS maintains stage discharge relation at medium to high stages, and computes and publishes streamflow record.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--12 years (water years 1917-19, 1921-22, 1924-30) prior to completion of Lake Nasworthy, 1,440 ft^3/s (1,040,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1917-19, 1921-22, 1924-30).--Maximum discharge, 130,000 ft^3/s Apr 26, 1922 (gage height about 54.0 ft, present site), from information by local residents; minimum observed discharge, 1.5 ft^3/s Aug 22, 23, 1918.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage during period 1878 to Jul 22, 1938, 58.4 ft Sep 25, 1900 (discharge, 184,000 ft^3/s, present site), from floodmarks at former site.

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	96	135	201	287	259	725	819	179	191	53	34	143
2	97	136	212	280	264	596	752	174	155	48	32	112
3	92	135	225	276	265	529	647	174	127	43	32	92
4	90	136	231	272	280	504	699	168	175	566	33	125
5	93	132	230	269	293	488	715	156	297	11200	52	147
6	99	136	228	441	285	489	694	142	138	2610	48	114
7	104	137	235	1120	282	502	677	133	187	749	49	90
8	123	136	234	571	275	500	693	128	154	435	50	76
9	140	144	232	446	273	516	698	124	128	340	47	66
10	159	156	229	363	277	572	675	117	116	263	43	58
11	263	162	231	316	278	597	652	114	204	176	43	50
12	195	177	232	295	276	558	640	115	145	130	41	54
13	177	184	229	285	280	537	630	111	201	120	60	60
14	178	193	230	273	294	533	619	107	500	115	108	64
15	192	203	228	265	302	575	613	102	577	110	83	58
16	175	201	227	258	313	11300	604	95	341	114	70	152
17	157	208	229	255	324	21200	594	93	253	100	68	145
18	145	205	232	250	338	8620	583	92	200	85	59	447
19	137	204	230	245	343	5460	581	92	165	81	54	224
20	131	204	262	245	347	3810	523	84	140	76	55	160
21	127	203	307	244	550	2790	377	80	120	73	53	120
22	125	204	331	248	1110	2320	299	80	107	67	52	104
23	123	200	403	248	1030	2050	253	85	96	59	54	95
24	121	195	378	250	791	1800	225	85	87	53	56	86
25	126	194	346	250	594	1670	206	86	72	46	57	81
26	171	190	354	249	2020	1560	200	87	61	42	53	77
27	149	195	351	250	1760	1470	225	105	57	42	50	75
28	137	197	318	249	972	1370	252	114	51	41	85	73
29	137	202	303	251	---	1180	217	315	45	38	401	70
30	136	203	303	252	---	1040	191	218	47	34	253	69
31	136	---	293	259	---	975	---	226	---	33	186	---
TOTAL	4331	5307	8274	9762	14675	76836	15553	3981	5137	17942	2361	3287
MEAN	140	177	267	315	524	2479	518	128	171	579	76.2	110
MAX	263	208	403	1120	2020	21200	819	315	577	11200	401	447
MIN	90	132	201	244	259	488	191	80	45	33	32	50
AC-FT	8590	10530	16410	19360	29110	152400	30850	7900	10190	35590	4680	6520

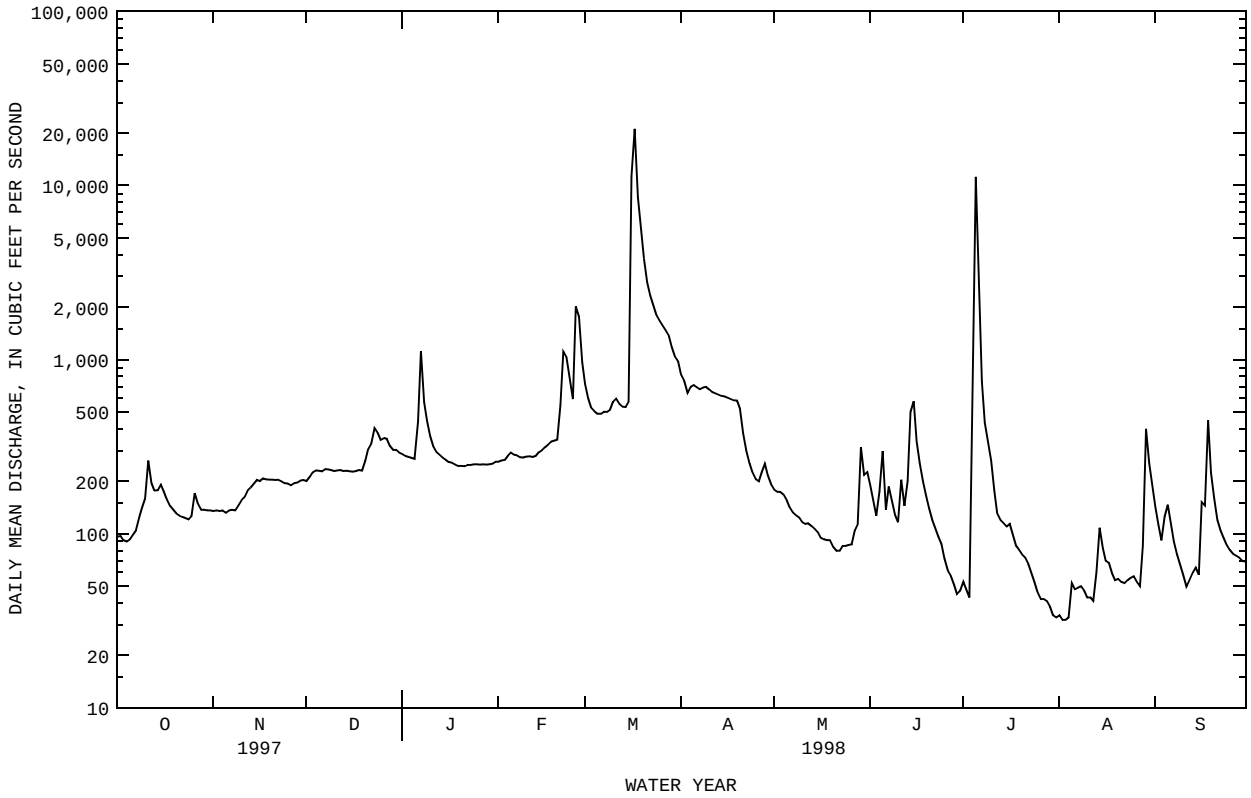
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1998z, BY WATER YEAR (WY)

MEAN	1383	414	479	525	669	629	1011	2427	1751	1294	489	1562
MAX	15300	3444	9242	5105	10760	5002	6907	23620	10940	32210	3915	29380
(WY)	1931	1975	1992	1968	1992	1992	1957	1957	1935	1938	1971	1936
MIN	29.5	39.3	31.8	41.5	40.5	24.4	33.6	11.2	4.16	2.06	2.68	11.9
(WY)	1952	1952	1955	1955	1952	1952	1986	1984	1984	1964	1952	1954

08147000 COLORADO RIVER NEAR SAN SABA, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1931 - 1998z	
ANNUAL TOTAL	566482		167446			
ANNUAL MEAN	1552		459		1054	
HIGHEST ANNUAL MEAN					3880	1938
LOWEST ANNUAL MEAN					84.1	1984
HIGHEST DAILY MEAN	47200	Jun 23	21200	Mar 17	191000	Jul 23 1938
LOWEST DAILY MEAN	90	Oct 4	32	Aug 2	.00	Aug 27 1954
ANNUAL SEVEN-DAY MINIMUM	95	Sep 29	34	Jul 29	.00	Aug 3 1963
INSTANTANEOUS PEAK FLOW			23900	Mar 17	224000	Jul 23 1938
INSTANTANEOUS PEAK STAGE			a20.20	Mar 17	aa62.24	Jul 23 1938
ANNUAL RUNOFF (AC-FT)	1124000		332100		763800	
10 PERCENT EXCEEDS	3230		661		1650	
50 PERCENT EXCEEDS	260		200		228	
90 PERCENT EXCEEDS	127		57		56	

z Period of regulated streamflow.
a From floodmark.
aa From floodmarks at site then in use adjusted to present datum.



08150000 LLANO RIVER NEAR JUNCTION, TX

LOCATION.--Lat 30°30'15", long 99°44'03", Kimble County, Hydrologic Unit 12090204, on right bank 960 ft upstream from abandoned low-water crossing, 1.0 mi east of Junction, 2.6 mi downstream from bridge on Interstate Highway 10, 2.8 mi downstream from confluence of North and South Llano Rivers, 5.3 mi upstream from Johnson Fork, and 114.8 mi upstream from mouth.

DRAINAGE AREA.--1,854 mi^2, of which 5.1 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Sep 1915 to May 1993, Oct 1997 to Sep 1998.

REVISED RECORDS.--WSP 568: 1915-16, 1918-20, 1922. WDR TX-81-3: Drainage area. WSP 1922: 1920, 1923.

GAGE.--Water-stage recorder. Datum of gage is 1,634.32 ft above sea level. Prior to Aug 14, 1925, nonrecording gage, and Aug 14, 1925 to May 17, 1940, and Aug 18, 1944 to Oct 12, 1981, water-stage recorder at site 5,330 ft downstream at datum 6.0 ft lower, designated as regular gage (destroyed by flood of Oct 13, 1981). Prior to Jun 13, 1990 at datum 2.0 ft higher. Radio telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation. There are diversions above station for irrigation.

COOPERATION.--Lower Colorado River Authority provides operation and maintenance of the gage and verification of stage discharge relation at low stages. USGS maintains stage discharge relation at medium to high stages, and computes and publishes streamflow record.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1875, that of Jun 14, 1935. A major flood in 1889 was the highest known prior to Jun 14, 1935.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 23	1630	53,100	a25.18	Sep 17	0300	5,760	7.87
Aug 24	2100	8,390	10.06	Sep 17	2400	2,890	5.35
Aug 26	0500	7,780	9.55				

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	128	132	144	143	153	133	133	107	79	74	73	306
2	126	132	149	144	144	133	133	105	78	71	75	275
3	126	134	153	144	139	132	134	103	77	69	73	254
4	125	136	149	145	137	132	132	103	76	75	75	235
5	126	139	146	143	143	133	132	103	77	118	77	220
6	129	138	146	145	139	132	130	99	75	87	86	204
7	138	138	148	145	139	133	132	95	77	80	101	193
8	139	138	148	141	137	132	152	95	83	77	92	183
9	137	139	145	140	136	129	143	93	82	75	84	174
10	140	141	143	139	136	128	140	92	86	74	81	168
11	147	140	141	142	135	129	137	92	122	71	77	166
12	161	147	141	142	136	128	131	92	101	71	76	170
13	172	158	142	139	135	130	128	93	91	71	77	164
14	151	153	143	140	138	135	127	94	89	71	99	159
15	146	161	142	141	138	142	126	95	83	74	107	152
16	142	155	142	138	153	284	122	91	80	73	94	180
17	141	152	141	138	144	270	119	90	77	71	105	2890
18	139	151	142	138	137	213	120	89	77	79	116	1220
19	137	149	142	137	135	191	121	89	77	81	101	545
20	137	142	149	137	132	179	122	88	76	75	95	417
21	136	146	154	137	137	174	118	85	75	73	92	363
22	139	146	147	137	157	169	118	86	74	70	94	327
23	142	147	151	136	148	162	116	87	74	67	10800	302
24	139	146	154	136	140	159	115	86	71	67	5000	286
25	136	147	149	137	138	157	113	87	70	67	5350	269
26	134	148	153	134	148	154	113	88	70	e70	4360	256
27	135	150	150	133	142	152	111	97	72	82	1170	245
28	138	152	145	133	136	147	110	94	e75	80	654	237
29	138	147	144	133	---	147	110	87	72	76	474	228
30	138	145	144	133	---	144	110	83	72	74	387	220
31	137	---	142	150	---	137	---	81	---	75	336	---
TOTAL	4299	4349	4529	4320	3932	4820	3748	2869	2388	2338	30481	11008
MEAN	139	145	146	139	140	155	125	92.5	79.6	75.4	983	367
MAX	172	161	154	150	157	284	152	107	122	118	10800	2890
MIN	125	132	141	133	132	128	110	81	70	67	73	152
AC-FT	8530	8630	8980	8570	7800	9560	7430	5690	4740	4640	60460	21830
CFSM	.08	.08	.08	.08	.08	.08	.07	.05	.04	.04	.53	.20
IN.	.09	.09	.09	.09	.08	.10	.08	.06	.05	.05	.61	.22

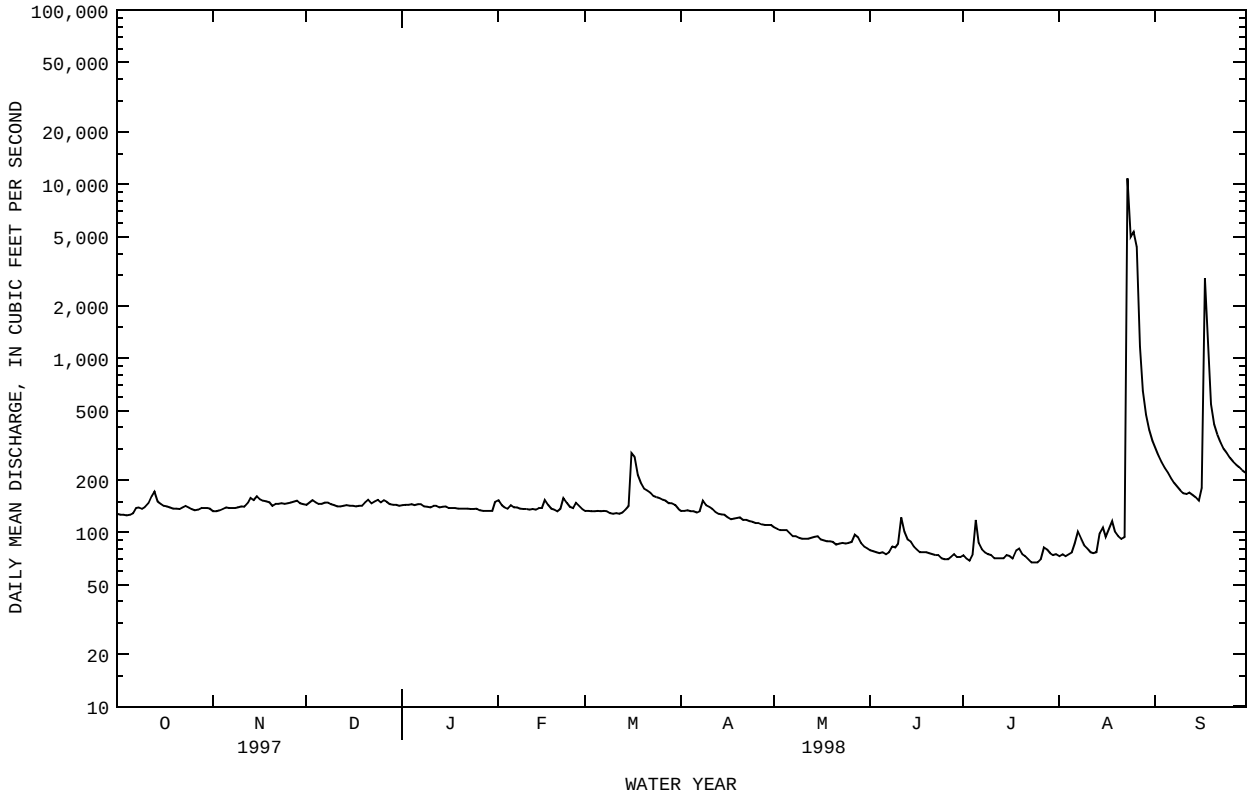
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1916 - 1998h, BY WATER YEAR (WY)

MEAN	262	141	140	123	132	116	172	244	294	207	186	341
MAX	2708	1572	1229	641	816	428	1222	2395	5797	4236	2299	4298
(WY)	1924	1924	1985	1968	1958	1992	1977	1925	1935	1938	1974	1932
MIN	15.8	21.5	25.3	26.2	27.9	27.0	21.3	30.3	12.4	10.5	11.4	13.1
(WY)	1957	1957	1957	1957	1954	1954	1955	1954	1953	1956	1956	1956

08150000 LLANO RIVER NEAR JUNCTION, TX--Continued

SUMMARY STATISTICS	FOR 1998 WATER YEAR		WATER YEARS 1916 - 1998h	
ANNUAL TOTAL	79081			
ANNUAL MEAN	217		197	
HIGHEST ANNUAL MEAN			708	1935
LOWEST ANNUAL MEAN			29.8	1953
HIGHEST DAILY MEAN	10800	Aug 23	124000	Jun 14 1935
LOWEST DAILY MEAN	67	Jul 23	3.7	Aug 17 1956
ANNUAL SEVEN-DAY MINIMUM	70	Jul 20	4.2	Aug 11 1956
INSTANTANEOUS PEAK FLOW	53100	Aug 23	c319000	Jun 14 1935
INSTANTANEOUS PEAK STAGE	a25.18	Aug 23	a43.30	Jun 14 1935
ANNUAL RUNOFF (AC-FT)	156900		142400	
ANNUAL RUNOFF (CFSM)	.12		.11	
ANNUAL RUNOFF (INCHES)	1.59		1.44	
10 PERCENT EXCEEDS	179		221	
50 PERCENT EXCEEDS	136		98	
90 PERCENT EXCEEDS	75		42	

e Estimated
h See PERIOD OF RECORD paragraph.
c From rating curve extended above 54,000 ft^3/s on basis of slope-area measurements of 154,000 and 319,000 ft^3/s.
a From floodmark.



08150700 LLANO RIVER NEAR MASON, TX

LOCATION.--Lat 30°39'38", long 99°06'32", Mason County, Hydrologic Unit 12090204, on right bank 98 ft downstream from downstream bridge on U.S. Highway 87, 1.0 mi upstream from Beaver Creek, 9.1 mi southeast of Mason, 10.2 mi downstream from James River, and 61.1 mi upstream from mouth.

DRAINAGE AREA.--3,247 mi^2, of which 5.1 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Mar 1968 to May 1993, Oct 1997 to Sep 1998.

REVISED RECORDS.--WDR TX-75-3: 1968(P). WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,230.36 ft above sea level. Prior to Jan 19, 1971, at site 190 ft upstream at same datum. Radio telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation or diversion.

COOPERATION.--Lower Colorado River Authority provides operation and maintenance of the gage and verification of stage discharge relation at low stages. USGS maintains stage discharge relation at medium to high stages, computes and publishes streamflow record.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1875, about 46 ft Jun 14, 1935 (discharge, about 380,000 ft^3/s), from information by Texas Department of Transportation; at site 17.0 mi downstream discharge was 388,000 ft^3/s by slope-area measurement. Discharges for other floods are 258,000 ft^3/s, 1952; 218,000 ft^3/s, 1889.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 16	0900	3,220	5.37	Sep 17	1900	3,480	5.57
Aug 24	0330	49,300	a16.38				

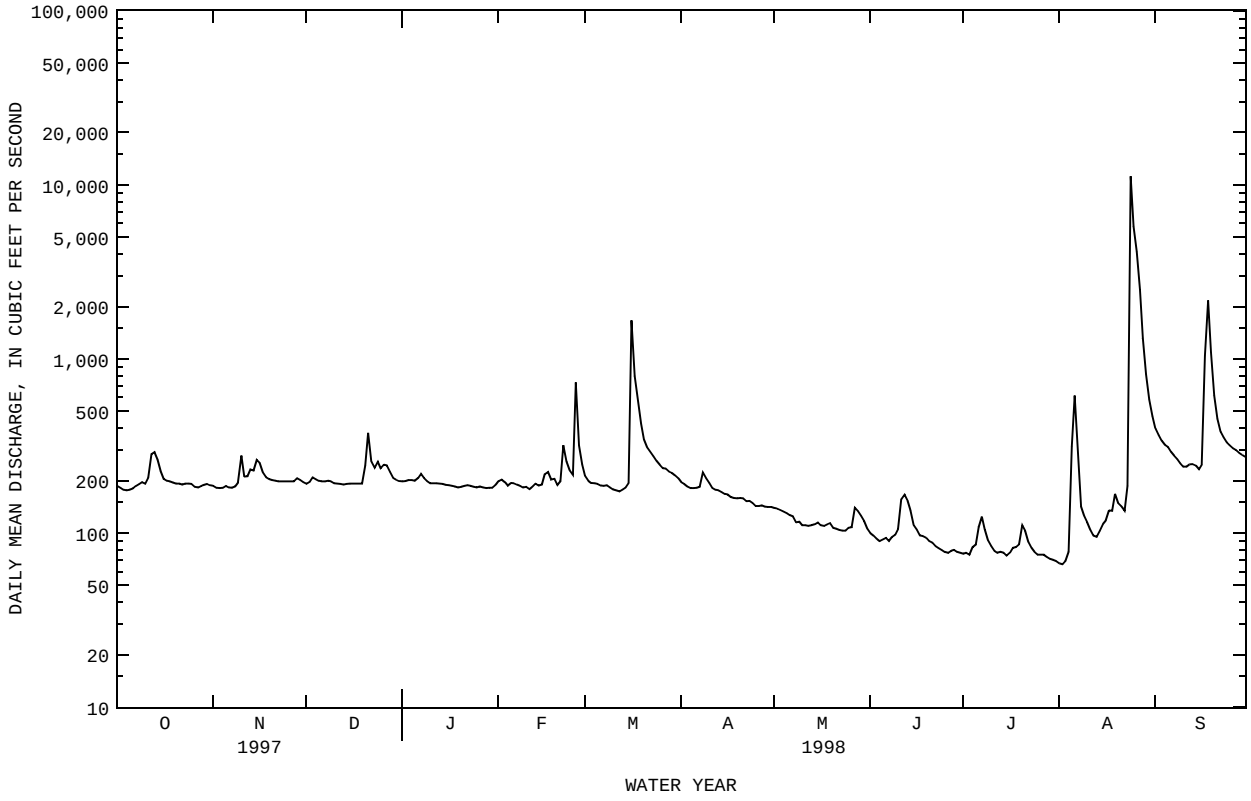
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	186	186	192	198	199	213	196	139	100	76	67	399
2	182	182	197	199	203	200	191	138	97	77	66	365
3	177	181	209	201	196	194	185	136	93	75	69	341
4	176	182	204	201	187	193	181	133	90	83	78	322
5	177	186	200	200	194	191	181	130	92	86	314	313
6	180	183	198	207	193	187	182	127	94	108	614	292
7	186	182	198	219	190	186	184	125	90	124	286	279
8	191	185	200	206	186	188	223	115	95	105	142	266
9	196	195	198	199	183	183	206	116	98	91	125	251
10	192	279	193	193	184	178	194	111	106	84	115	240
11	209	211	192	193	179	176	182	111	157	79	104	240
12	285	212	191	193	185	174	177	110	166	77	97	248
13	293	231	190	192	192	178	176	111	153	78	95	249
14	264	229	191	191	187	183	172	112	135	77	103	245
15	226	263	192	189	190	195	168	115	111	74	113	233
16	205	253	192	188	218	1670	166	111	105	77	118	248
17	200	223	192	186	225	800	161	110	97	82	135	1040
18	198	209	192	185	203	579	159	112	96	83	134	2170
19	195	204	192	183	205	425	158	114	94	86	168	1090
20	192	201	245	184	189	345	159	107	90	111	148	618
21	192	200	376	186	199	310	158	106	88	103	143	453
22	190	198	257	188	319	292	152	104	84	89	134	382
23	192	198	237	186	257	276	153	103	82	82	186	355
24	192	198	258	184	229	260	149	103	80	78	11200	332
25	191	198	236	183	215	246	143	107	78	75	5790	320
26	184	198	247	185	732	235	143	108	77	e75	4130	308
27	183	198	245	183	319	234	144	140	79	75	2510	300
28	186	206	225	181	248	226	142	134	e80	73	1320	289
29	189	202	207	182	---	222	141	126	78	71	818	282
30	191	196	202	182	---	214	141	117	77	70	586	274
31	188	---	199	188	---	206	---	106	---	69	470	---
TOTAL	6188	6169	6647	5935	6406	9359	5067	3637	2962	2593	30378	12744
MEAN	200	206	214	191	229	302	169	117	98.7	83.6	980	425
MAX	293	279	376	219	732	1670	223	140	166	124	11200	2170
MIN	176	181	190	181	179	174	141	103	77	69	66	233
AC-FT	12270	12240	13180	11770	12710	18560	10050	7210	5880	5140	60250	25280
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1998h, BY WATER YEAR (WY)												
MEAN	528	236	306	242	265	239	301	379	358	247	426	426
MAX	3222	675	1929	1053	1530	875	2097	1559	1791	1439	3331	3427
(WY)	1974	1975	1985	1985	1992	1992	1977	1990	1987	1988	1974	1980
MIN	72.9	105	108	118	98.5	89.0	71.5	66.0	49.1	38.4	31.2	38.1
(WY)	1984	1969	1984	1984	1984	1984	1984	1984	1984	1980	1980	1984

08150700 LLANO RIVER NEAR MASON, TX--Continued

SUMMARY STATISTICS	FOR 1998 WATER YEAR		WATER YEARS 1968 - 1998h	
ANNUAL TOTAL	98085			
ANNUAL MEAN	269		332	
HIGHEST ANNUAL MEAN			835	1974
LOWEST ANNUAL MEAN			77.7	1984
HIGHEST DAILY MEAN	11200	Aug 24	69200	Sep 8 1980
LOWEST DAILY MEAN	66	Aug 2	10	Jul 17 1984
ANNUAL SEVEN-DAY MINIMUM	69	Jul 28	18	Jul 12 1984
INSTANTANEOUS PEAK FLOW	49300	Aug 24	c260000	Sep 8 1980
INSTANTANEOUS PEAK STAGE	a16.38	Aug 24	a37.00	Sep 8 1980
ANNUAL RUNOFF (AC-FT)	194600		240500	
10 PERCENT EXCEEDS	296		428	
50 PERCENT EXCEEDS	187		179	
90 PERCENT EXCEEDS	86		90	

e Estimated
h See PERIOD OF RECORD paragraph.
c From rating curve extended above 151,000 ft^3/s on basis of slope-area measurement and discharge measurement of 145,000 ft^3/s.
a From floodmark.



08150800 BEAVER CREEK NEAR MASON, TX

LOCATION.--Lat 30°38'36", long 99°05'44", Mason County, Hydrologic Unit 12090204, on left bank at downstream side of downstream bridge on U.S. Highway 87, 1.8 mi upstream from Llano River, 6.4 mi downstream from Spring Creek, and 11.1 mi southeast of Mason.

DRAINAGE AREA.--215 mi^2.

PERIOD OF RECORD.--Jul 1963 to current year.

REVISED RECORDS.--WSP 2122: 1964-65. WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,253.24 ft above sea level. Prior to Aug 3, 1978, at site 300 ft upstream at same datum. 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 1,000 ft^3/s:

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

No peak greater than base discharge.

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	3.5	4.2	5.8	6.6	9.7	10	11	4.9	1.9	.15	.04	.44
2	3.5	3.9	6.2	6.7	9.0	9.9	10	4.5	1.5	.13	.04	.40
3	3.5	4.0	7.1	6.7	8.3	9.7	10	4.2	1.1	.13	.03	.38
4	3.5	4.1	6.9	6.6	8.0	9.6	10	4.2	.78	.23	.08	.38
5	3.5	4.3	6.3	6.6	8.6	9.5	9.9	4.2	.69	.18	.18	.35
6	3.8	4.3	6.1	7.4	9.0	9.3	9.7	3.7	1.2	.14	.18	.31
7	4.6	4.3	6.1	19	8.3	9.3	10	3.4	1.7	.18	.11	.28
8	4.7	4.2	6.4	13	8.0	10	13	3.0	1.8	.20	.09	.25
9	4.7	5.1	6.2	11	7.8	9.3	12	2.6	1.5	.20	.08	.23
10	5.8	8.5	5.8	9.6	8.2	8.8	9.8	2.3	1.7	.16	.22	.22
11	6.9	8.2	5.8	9.2	9.4	8.7	8.9	2.2	13	.13	.22	.35
12	7.9	8.4	5.9	9.0	9.1	8.6	8.1	2.0	11	.11	.22	3.3
13	11	9.6	5.9	8.7	11	8.6	8.1	2.0	5.0	.10	.22	3.9
14	8.7	8.2	5.9	8.4	10	9.1	8.5	2.2	3.0	.10	.28	2.3
15	6.2	9.5	6.0	8.4	9.8	9.9	8.2	2.3	2.0	.10	.23	1.4
16	5.3	8.6	6.0	8.2	11	167	8.2	2.3	1.4	.08	1.1	1.6
17	4.9	6.9	5.9	7.9	10	39	7.9	2.0	1.1	.11	1.0	42
18	4.7	6.5	5.8	7.8	9.3	24	7.6	1.9	.91	.94	.88	18
19	4.5	6.6	5.8	7.6	9.3	20	7.6	1.8	.80	1.5	.72	11
20	4.5	6.4	7.3	7.4	8.8	18	7.3	1.5	.71	.67	.74	8.5
21	4.3	6.1	10	7.2	10	17	6.8	1.3	.55	.45	.59	6.5
22	4.3	6.1	8.8	7.5	27	16	6.5	1.3	.44	.29	.75	5.3
23	4.6	6.1	8.7	7.3	18	15	6.5	1.3	.34	.20	5.1	4.5
24	4.5	6.0	10	7.2	14	14	6.0	1.4	.28	.18	7.2	3.9
25	4.3	5.9	8.5	7.2	13	14	5.1	1.5	.24	.14	3.4	3.3
26	4.1	5.8	8.9	7.1	16	13	5.1	1.7	.23	.12	2.1	2.9
27	4.0	6.0	9.2	7.2	12	13	6.8	13	.22	.11	1.3	2.6
28	4.2	6.4	7.9	7.3	11	12	6.3	10	.21	.09	.99	2.4
29	4.4	6.6	7.2	7.2	---	12	5.5	4.9	.20	.08	.79	2.2
30	4.5	5.9	6.9	7.4	---	12	5.3	3.1	.17	.06	.63	2.0
31	4.5	---	6.7	8.2	---	12	---	2.3	---	.05	.51	---
TOTAL	153.4	186.7	216.0	256.6	303.6	558.3	245.7	99.0	55.67	7.31	30.02	131.19
MEAN	4.95	6.22	6.97	8.28	10.8	18.0	8.19	3.19	1.86	.24	.97	4.37
MAX	11	9.6	10	19	27	167	13	13	13	1.5	7.2	42
MIN	3.5	3.9	5.8	6.6	7.8	8.6	5.1	1.3	.17	.05	.03	.22
AC-FT	304	370	428	509	602	1110	487	196	110	14	60	260
CFSM	.02	.03	.03	.04	.05	.08	.04	.01	.01	.00	.00	.02
IN.	.03	.03	.04	.04	.05	.10	.04	.02	.01	.00	.01	.02

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1998, BY WATER YEAR (WY)

MEAN	31.5	7.97	14.7	13.5	23.8	21.1	19.6	29.6	28.9	3.91	20.5	11.2
MAX	329	32.2	220	183	285	164	132	197	327	24.3	443	167
(WY)	1997	1970	1992	1968	1992	1997	1977	1975	1987	1997	1978	1964
MIN	.37	.91	1.44	1.84	1.41	1.29	.49	.72	.21	.003	.000	.021
(WY)	1983	1980	1983	1971	1984	1967	1984	1996	1971	1964	1985	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1963 - 1998	
ANNUAL TOTAL	22202.6		2243.49			
ANNUAL MEAN	60.8		6.15		18.9	
HIGHEST ANNUAL MEAN					91.5	1997
LOWEST ANNUAL MEAN					1.97	1967
HIGHEST DAILY MEAN	4320	Feb 20	167	Mar 16	12800	Aug 3 1978
LOWEST DAILY MEAN	3.4	Sep 19	.03	Aug 3	.00	Aug 3 1963
ANNUAL SEVEN-DAY MINIMUM	3.6	Sep 30	.05	Jul 29	.00	Aug 3 1963
INSTANTANEOUS PEAK FLOW			401	Mar 16	66900	Aug 3 1978
INSTANTANEOUS PEAK STAGE			3.25	Mar 16	24.00	Aug 3 1978
ANNUAL RUNOFF (AC-FT)	44040		4450		13690	
ANNUAL RUNOFF (CFSM)	.28		.029		.088	
ANNUAL RUNOFF (INCHES)	3.84		.39		1.19	
10 PERCENT EXCEEDS	89		11		23	
50 PERCENT EXCEEDS	14		5.8		3.1	
90 PERCENT EXCEEDS	4.5		.21		.20	

08151500 LLANO RIVER AT LLANO, TX

LOCATION.--Lat 30°45'04", long 98°40'10", Llano County, Hydrologic Unit 12090204, on right bank in Llano, 0.4 mi down-stream from bridge on State Highway 16, 7 mi upstream from Little Llano River, and 29.3 mi upstream from mouth.

DRAINAGE AREA.--4,197 mi^2, of which 5.1 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Sep 1939 to current year.
Water-quality records.--Chemical analyses: Apr 1948 to Oct 1967. Chemical and Biochemical analyses: Apr 1979 to Sep 1986. Sediment analyses: Sep 1964, Apr 1979 to Sep 1986.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 970.01 ft above sea level. Radio telemeter at station. Satellite telemeter at station.

COOPERATION.--Lower Colorado River Authority provides operation and maintenance of the gage and verification of stage discharge relation at low stages. USGS maintains stage discharge relation at medium to high stages, computes, and publishes streamflow record.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation or diversions. Part of low flow of the Llano River disappears into various formations, many of which are faulted, between this station and Llano River near Junction (station 08150000) operated by Lower Colorado River Authority.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1879, 41.5 ft Jun 14, 1935 (discharge, 380,000 ft^3/s), from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 16	1000	15,100	9.63	Aug 25	2015	9,060	7.81
Aug 24	0700	34,700	14.05				

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	250	238	250	271	250	226	280	141	110	78	52	520
2	241	236	255	270	257	197	263	137	104	76	52	497
3	231	234	257	272	259	181	253	137	110	74	40	424
4	231	234	264	272	253	174	244	131	100	100	33	395
5	235	223	265	272	252	173	240	129	e98	96	e47	357
6	235	222	259	295	250	173	238	122	96	92	e84	343
7	243	224	268	326	251	175	240	127	96	89	e254	328
8	241	227	266	331	247	237	294	135	98	104	232	304
9	249	247	269	301	243	236	300	131	95	110	144	281
10	274	273	291	283	254	215	273	123	100	96	110	268
11	263	304	284	276	234	203	252	122	138	86	100	287
12	269	306	264	274	216	202	237	121	153	78	93	288
13	310	282	247	276	275	205	227	122	173	74	89	288
14	314	283	247	274	241	214	224	120	e159	75	87	296
15	289	315	247	264	229	231	217	121	137	74	86	279
16	266	305	249	253	234	6510	212	120	129	73	90	261
17	251	299	250	251	249	2110	206	120	121	76	93	381
18	245	281	249	250	243	991	201	113	109	73	100	1730
19	241	269	249	248	228	703	201	108	101	78	107	1300
20	239	264	285	246	219	517	197	108	99	76	116	759
21	237	260	305	252	313	438	186	104	96	78	119	605
22	236	256	393	261	953	399	169	101	90	94	116	493
23	237	259	331	254	538	375	164	103	87	93	125	427
24	234	256	318	e247	327	357	162	102	84	83	13300	385
25	238	250	323	e239	262	340	157	102	82	73	6120	348
26	237	251	322	210	706	324	156	120	82	65	4990	328
27	235	253	317	234	581	315	154	131	81	61	3710	323
28	235	253	313	232	291	307	150	140	79	57	1360	306
29	237	253	291	231	---	297	148	151	81	56	897	283
30	240	258	281	230	---	295	143	128	79	53	709	277
31	241	---	274	244	---	287	---	120	---	53	638	---
TOTAL	7724	7815	8683	8139	8855	17607	6388	3790	3167	2444	34093	13361
MEAN	249	261	280	263	316	568	213	122	106	78.8	1100	445
MAX	314	315	393	331	953	6510	300	151	173	110	13300	1730
MIN	231	222	247	210	216	173	143	101	79	53	33	261
AC-FT	15320	15500	17220	16140	17560	34920	12670	7520	6280	4850	67620	26500

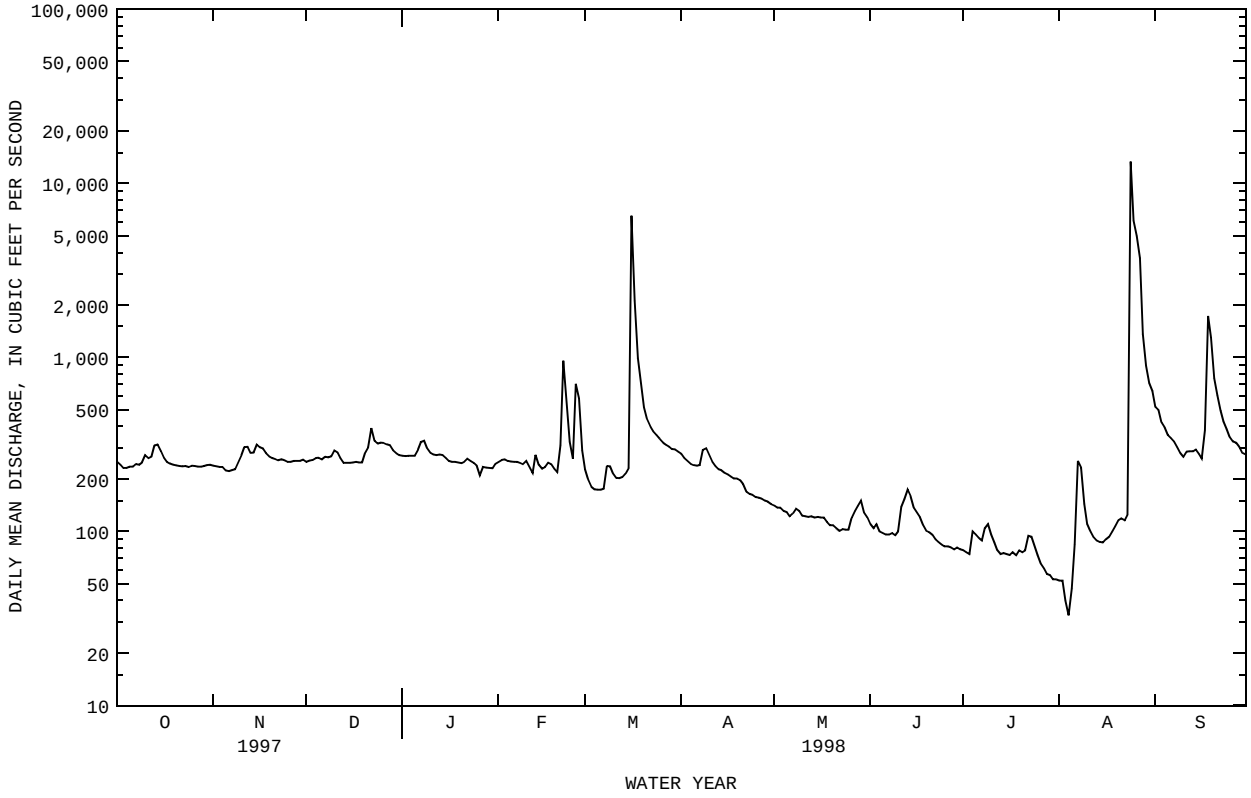
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1998, BY WATER YEAR (WY)

MEAN	533	232	295	285	390	324	382	523	580	231	325	456
MAX	3700	1005	3179	2483	3754	2798	3115	3350	4620	1796	3605	3891
(WY)	1974	1975	1992	1968	1992	1997	1977	1957	1997	1988	1974	1952
MIN	18.0	20.7	27.5	31.7	37.7	23.7	20.9	41.0	7.93	.000	.087	.56
(WY)	1952	1957	1955	1957	1954	1954	1955	1984	1953	1956	1952	1954

08151500 LLANO RIVER AT LLANO, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1940 - 1998	
ANNUAL TOTAL	387401		122066			
ANNUAL MEAN	1061		334		379	
HIGHEST ANNUAL MEAN					1308	1997
LOWEST ANNUAL MEAN					50.0	1954
HIGHEST DAILY MEAN	78100	Jun 23	13300	Aug 24	78100	Jun 23 1997
LOWEST DAILY MEAN	22	Feb 6	33	Aug 4	.00	Aug 5 1952
ANNUAL SEVEN-DAY MINIMUM	28	Jan 31	47	Jul 30	.00	Aug 27 1952
INSTANTANEOUS PEAK FLOW			34700	Aug 24	260000	Jun 23 1997
INSTANTANEOUS PEAK STAGE			14.05	Aug 24	38.86	Jun 23 1997
ANNUAL RUNOFF (AC-FT)	768400		242100		274700	
10 PERCENT EXCEEDS	1190		345		541	
50 PERCENT EXCEEDS	277		239		156	
90 PERCENT EXCEEDS	148		87		41	

e Estimated



08152000 SANDY CREEK NEAR KINGSLAND, TX

LOCATION.--Lat 30°33'27", long 98°28'18", Llano County, Hydrologic Unit 12090201, at right downstream end of bridge on State Highway 71, 6.6 mi upstream from mouth.

DRAINAGE AREA.--346 mi^2.

PERIOD OF RECORD.--Oct 1966 to Mar 1993, Oct 1997 to Sep 1998.
Water-quality records.--Sediment records: Jan 1968 to Sep 1975.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 862.31 ft above sea level. Radio telemeter at station. Satellite telemeter at station.

REMARKS.--Records fair. Some diversions above station for irrigation.

COOPERATION.--Lower Colorado River Authority provides operation and maintenance of the gage and verification of stage discharge relation at low stages. USGS maintains stage discharge relation at medium to high stages, computes, and publishes streamflow record.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of September 11, 1952, the highest since at least 1881, reached a stage of 34.2 ft (discharge, 163,000 ft^3/s), from slope-area measurement at gage site.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 6	1802	2,920	8.20	Mar 16	1002	9,530	10.88

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	2.2	4.8	7.8	17	138	102	72	16	6.1	.15	.09	1.2
2	1.7	4.2	9.9	18	77	96	60	15	4.6	.17	.08	2.6
3	1.4	4.1	14	17	49	89	55	18	3.4	.17	.08	1.4
4	1.2	4.1	11	17	38	74	50	16	2.7	7.3	.08	.62
5	1.4	4.4	10	17	37	67	48	15	2.5	2.2	.09	.28
6	3.2	4.1	9.1	787	35	58	47	14	2.6	1.0	e89	.17
7	8.3	4.3	9.3	609	34	58	48	12	2.5	.49	21	.14
8	8.7	4.7	9.5	101	32	162	59	11	2.9	.28	3.3	.10
9	16	6.9	8.4	63	31	72	58	11	2.4	.21	.65	.08
10	15	33	7.9	53	633	57	46	10	2.3	.17	.12	.07
11	19	20	7.7	44	281	58	39	9.4	23	.16	.03	3.8
12	19	31	7.6	36	97	56	36	8.5	25	.15	.00	34
13	29	31	7.6	30	78	55	36	8.4	20	.17	.00	54
14	14	23	7.6	26	93	61	35	8.4	13	.16	.00	34
15	10	21	7.6	24	191	69	34	8.2	6.5	.15	.00	17
16	9.3	16	7.6	22	120	3560	33	7.5	4.1	.16	.00	17
17	8.0	13	7.8	20	101	782	29	7.6	2.8	.17	.00	28
18	6.9	12	7.9	19	73	376	27	7.2	1.9	.16	.02	72
19	6.0	11	8.1	19	70	235	27	6.8	1.3	.15	.46	34
20	5.1	10	102	18	56	176	26	5.9	.85	.16	.09	18
21	5.5	9.4	164	19	277	153	23	5.1	.52	.15	.11	11
22	7.6	8.6	42	19	963	142	21	4.3	.36	.16	.37	6.7
23	7.0	8.2	35	18	285	134	20	3.9	.26	.15	6.5	5.0
24	10	8.0	35	18	137	120	19	3.6	.30	.14	52	3.6
25	8.7	8.2	30	17	113	107	17	3.5	.19	.14	28	3.0
26	6.4	8.8	30	17	373	95	20	4.3	.17	e.16	13	2.5
27	5.4	8.8	27	16	184	91	23	35	.15	.14	6.6	2.3
28	5.3	11	25	15	126	83	23	25	e.15	.13	4.1	1.7
29	5.4	9.2	21	15	---	76	20	18	.15	.11	3.8	1.4
30	5.9	8.0	19	15	---	74	18	12	.14	.09	1.8	1.1
31	5.6	---	18	72	---	86	---	8.1	---	.09	1.5	---
TOTAL	258.2	350.8	714.4	2198	4722	7424	1069	338.7	132.84	15.19	232.87	356.76
MEAN	8.33	11.7	23.0	70.9	169	239	35.6	10.9	4.43	.49	7.51	11.9
MAX	29	33	164	787	963	3560	72	35	25	7.3	89	72
MIN	1.2	4.1	7.6	15	31	55	17	3.5	.14	.09	.00	.07
AC-FT	512	696	1420	4360	9370	14730	2120	672	263	30	462	708
CFSM	.02	.03	.07	.20	.49	.69	.10	.03	.01	.00	.02	.03
IN.	.03	.04	.08	.24	.51	.80	.11	.04	.01	.00	.03	.04

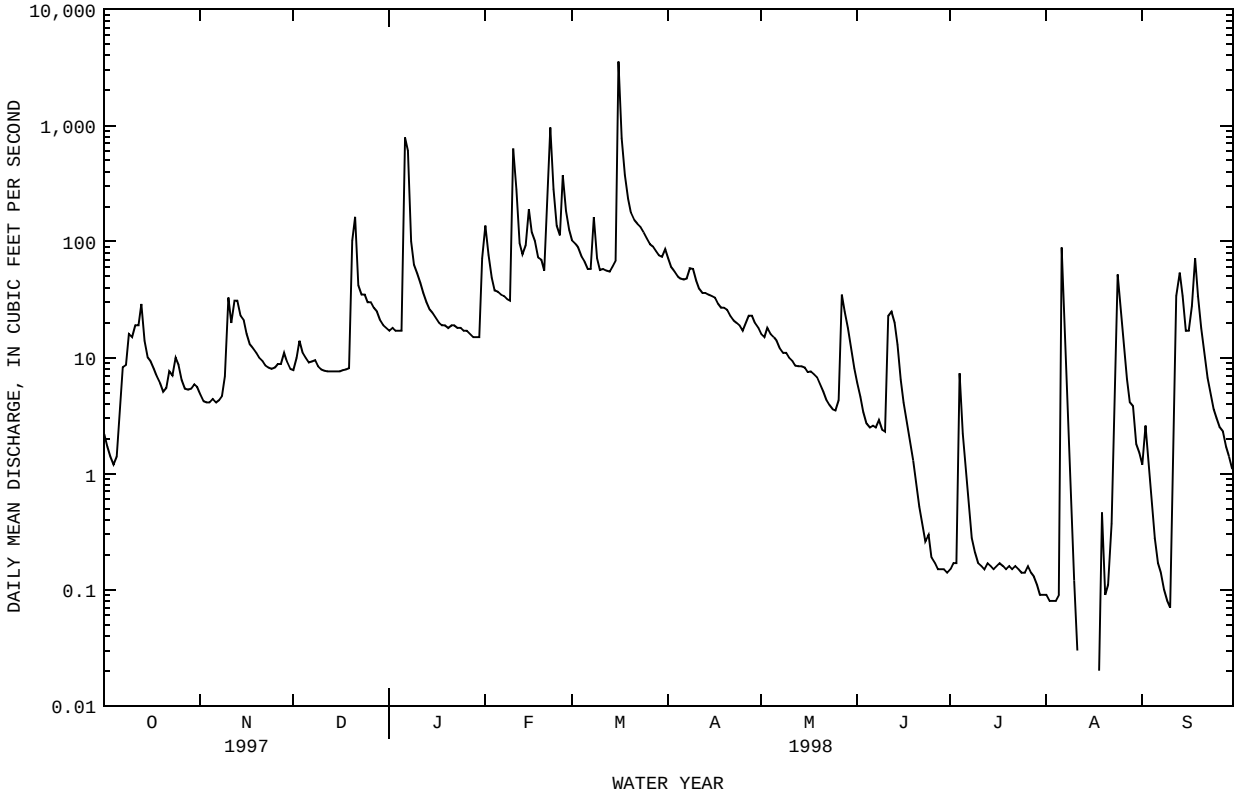
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1992, BY WATER YEAR (WY)

MEAN	68.1	31.5	81.9	58.1	93.8	74.3	61.8	130	128	25.3	25.3	30.4
MAX	306	195	1074	511	936	425	528	510	862	258	358	188
(WY)	1972	1975	1992	1968	1992	1992	1977	1975	1987	1976	1974	1976
MIN	.045	.045	1.10	1.06	4.19	1.86	1.41	.71	.055	.10	.000	.000
(WY)	1990	1989	1990	1990	1967	1967	1984	1984	1971	1980	1989	1989

08152000 SANDY CREEK NEAR KINGSLAND, TX--Continued

SUMMARY STATISTICS	FOR 1998 WATER YEAR		WATER YEARS 1967 - 1992	
ANNUAL TOTAL	17812.76			
ANNUAL MEAN	48.8		67.3	
HIGHEST ANNUAL MEAN			279	1992
LOWEST ANNUAL MEAN			3.62	1984
HIGHEST DAILY MEAN	3560	Mar 16	14200	Dec 21 1991
LOWEST DAILY MEAN	.00	Aug 12	.00	Jul 16 1967
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 12	.00	Jul 16 1967
INSTANTANEOUS PEAK FLOW	9530	Mar 16	39500	Dec 20 1991
INSTANTANEOUS PEAK STAGE	10.88	Mar 16	17.63	Jun 16 1987
ANNUAL RUNOFF (AC-FT)	35330		48720	
ANNUAL RUNOFF (CFSM)	.14		.19	
ANNUAL RUNOFF (INCHES)	1.92		2.64	
10 PERCENT EXCEEDS	90		97	
50 PERCENT EXCEEDS	11		11	
90 PERCENT EXCEEDS	.15		.13	

e Estimated



08153500 PEDERNALES RIVER NEAR JOHNSON CITY, TX

LOCATION.--Lat 30°17'30", long 98°23'57", Blanco County, Hydrologic Unit 12090206, near left downstream end of bridge on U.S. Highway 281, 0.2 mi downstream from Towhead Creek, 1.1 mi northeast of Johnson City, 3.4 mi downstream from Buffalo Creek, and 48.0 mi upstream from mouth.

DRAINAGE AREA.--901 mi^2.

PERIOD OF RECORD.--May 1939 to current year.
Water-quality records.--Chemical analyses: Apr 1948 to Sep 1950, Oct 1971 to Sep 1985.

REVISED RECORDS.--WSP 1632: 1953(M), 1957, 1958(M). WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,096.70 ft above sea level. May 4 to Sep 13, 1939, nonrecording gage, and Sep 14, 1939, to Sep 10, 1952, water-stage recorder at upstream side of bridge at same datum. Sep 11, 1952, to Jun 29, 1953, nonrecording gage, and Jun 30, 1953, to Oct 7, 1954, water-stage recorder at site 360 ft downstream at same datum. Radio telemeter at station. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. There are diversions above station for irrigation. During the year, the city of Fredericksburg discharged varying amounts of wastewater effluent into the river upstream from station. The city of Johnson City diverts varying amounts of water from the pool at gage and discharges wastewater effluent into river below the gage. Flow is affected at times by discharge from the flood-detention pools of four floodwater-retarding structures with a combined detention capacity of 4,580 acre-ft. These structures control runoff from 15.6 mi^2 in the Williamson Creek drainage basin.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jul 1869, reached a stage of 33 ft from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,100 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 16	0515	29,500	17.65	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	32	59	64	81	194	240	435	144	51	18	1.5	21
2	62	59	66	84	134	229	372	143	45	18	1.3	27
3	63	59	68	85	117	223	327	143	42	16	1.5	33
4	64	61	69	84	111	227	310	138	40	28	1.6	23
5	64	60	68	84	104	230	304	134	38	28	1.9	17
6	65	58	66	83	106	217	301	119	40	22	103	16
7	60	58	67	278	109	224	306	111	39	18	111	14
8	72	59	67	149	95	219	367	121	42	16	39	12
9	94	60	65	119	94	207	362	107	41	15	20	12
10	145	63	64	100	221	201	303	109	41	14	11	9.7
11	137	66	61	96	336	198	279	e115	89	12	5.3	33
12	125	84	62	93	174	190	274	e115	125	11	2.1	137
13	101	89	63	88	185	199	262	e115	131	9.9	1.2	101
14	99	85	63	88	327	238	243	105	97	9.8	.86	59
15	87	79	65	85	575	279	239	88	65	10	1.5	42
16	76	75	64	84	302	12400	233	82	59	15	1.8	51
17	78	72	64	81	232	2090	231	82	51	16	15	72
18	79	72	65	80	199	1190	220	81	45	15	20	57
19	73	71	65	80	194	882	192	71	39	26	9.5	48
20	72	70	257	80	176	728	193	59	37	18	6.8	34
21	66	65	254	80	451	643	182	57	31	14	4.7	29
22	64	66	133	75	1290	574	180	56	26	11	8.8	27
23	71	66	114	79	530	526	188	e57	27	8.4	502	25
24	67	66	127	79	330	460	184	e51	27	4.8	183	24
25	64	67	107	79	278	431	178	e51	26	3.5	93	23
26	56	67	104	75	641	412	183	e57	24	3.1	56	23
27	62	68	100	77	348	396	180	e64	22	3.1	35	21
28	63	64	88	76	269	388	171	74	17	2.9	27	20
29	64	63	88	76	---	363	162	78	16	2.5	23	19
30	64	62	86	76	---	406	158	72	17	1.9	20	19
31	64	---	83	142	---	820	---	62	---	1.6	18	---
TOTAL	2353	2013	2777	2916	8122	26030	7519	2861	1390	392.5	1326.36	1048.7
MEAN	75.9	67.1	89.6	94.1	290	840	251	92.3	46.3	12.7	42.8	35.0
MAX	145	89	257	278	1290	12400	435	144	131	28	502	137
MIN	32	58	61	75	94	190	158	51	16	1.6	.86	9.7
AC-FT	4670	3990	5510	5780	16110	51630	14910	5670	2760	779	2630	2080

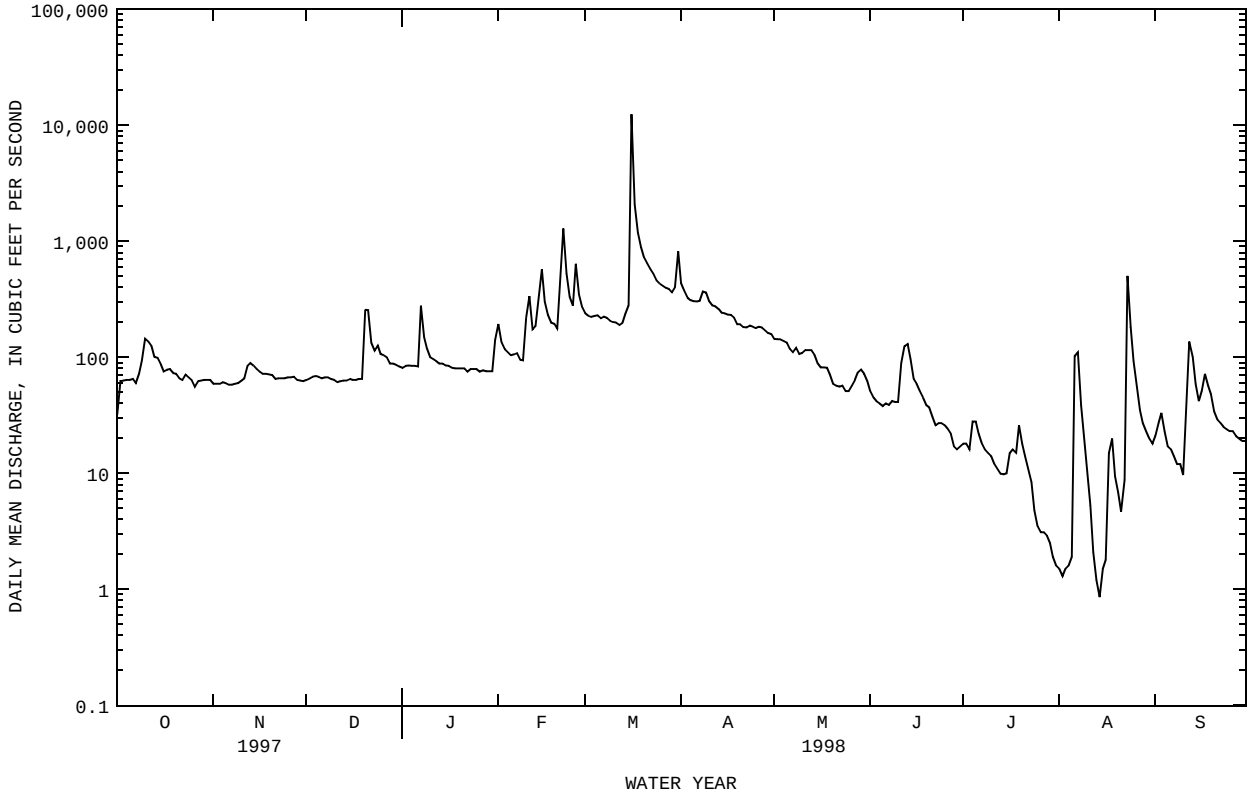
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1998, BY WATER YEAR (WY)

MEAN	225	87.8	180	128	213	181	244	340	336	102	118	200
MAX	2041	600	3161	1177	2794	1289	2369	1673	2905	872	1953	6332
(WY)	1960	1975	1992	1968	1992	1992	1977	1975	1987	1987	1978	1952
MIN	.44	2.51	2.44	1.68	4.83	2.07	.060	2.05	.52	.001	.000	.000
(WY)	1952	1952	1955	1957	1957	1956	1956	1956	1971	1971	1954	1984

08153500 PEDERNALES RIVER NEAR JOHNSON CITY, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1939 - 1998	
ANNUAL TOTAL	217331		58748.56			
ANNUAL MEAN	595		161		197	
HIGHEST ANNUAL MEAN					840	1992
LOWEST ANNUAL MEAN					4.12	1956
HIGHEST DAILY MEAN	40100	Jun 22	12400	Mar 16	129000	Sep 11 1952
LOWEST DAILY MEAN	32	Oct 1	.86	Aug 14	.00	Aug 8 1951
ANNUAL SEVEN-DAY MINIMUM	39	Sep 5	1.6	Jul 30	.00	Aug 8 1951
INSTANTANEOUS PEAK FLOW			29500	Mar 16	441000	Sep 11 1952
INSTANTANEOUS PEAK STAGE			17.65	Mar 16	42.50	Sep 11 1952
ANNUAL RUNOFF (AC-FT)	431100		116500		142400	
10 PERCENT EXCEEDS	1010		301		284	
50 PERCENT EXCEEDS	151		72		51	
90 PERCENT EXCEEDS	61		14		4.8	

e Estimated



08154700 BULL CREEK AT LOOP 360 NEAR AUSTIN, TX

LOCATION.--Lat 30°22'19", long 97°47'04", Travis County, Hydrologic Unit 12090205, on right bank at downstream side of bridge at Loop 360, 1.0 mi upstream from West Fork Bull Creek and Farm Road 2222, and 7.1 mi northwest of the State Capitol Building in Austin.

DRAINAGE AREA.--22.3 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Apr 1976 to Jul 1978 (operated as a flood-hydrograph partial-record station), Jul 1978 to current year.

GAGE.--Water-stage recorder, concrete control, and crest-stage gage. Datum of gage is 534.08 ft above sea level, (levels from city of Austin benchmark). 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 300 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 20	2215	1,590	5.89	Mar 16	0630	1,170	5.52
Jan 6	1215	2,260	6.42	Aug 29	2115	308	4.26

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	.41	2.9	11	19	24	33	32	5.0	.74	.09	.00	1.7
2	.38	2.8	13	22	19	30	28	5.8	.55	.08	.00	1.4
3	.35	2.6	47	20	16	29	25	6.6	.44	.08	.00	1.0
4	.31	2.6	22	20	16	28	23	6.6	.42	3.0	.00	.88
5	.33	2.6	17	20	17	26	22	5.9	.44	1.4	.46	.74
6	.59	2.5	15	407	15	25	21	5.5	.46	.57	.42	.83
7	5.8	2.4	15	140	14	25	20	4.8	.43	.43	.06	.85
8	14	2.4	15	79	13	25	20	3.9	.44	.28	.04	.75
9	25	4.6	12	58	12	21	17	3.2	.57	.23	.04	.63
10	13	24	11	48	22	19	16	2.5	.43	.20	.04	.54
11	59	11	9.9	42	19	18	15	2.3	3.9	.17	.04	48
12	63	37	9.2	38	17	17	14	2.2	2.0	.14	.04	33
13	32	30	8.9	34	19	18	13	2.2	.85	2.5	.04	18
14	17	18	8.7	32	26	22	11	2.3	.93	2.3	.08	22
15	13	16	7.9	30	29	26	11	2.2	1.3	.88	.04	19
16	10	13	8.1	28	30	242	10	2.0	.40	.52	.04	23
17	9.1	11	7.4	25	26	70	9.6	2.1	.32	.25	.12	13
18	7.7	10	6.9	24	23	53	9.1	1.9	.29	.19	.13	9.3
19	6.1	9.7	6.7	22	22	45	8.8	1.6	.21	.16	.13	6.9
20	5.5	9.0	212	22	20	40	8.2	1.4	.21	.13	.13	5.7
21	5.5	8.4	164	21	48	37	9.2	1.4	.20	.09	.14	4.7
22	5.1	7.7	52	19	57	35	8.2	1.3	.18	.07	.26	4.1
23	5.0	6.8	45	17	36	32	7.5	1.2	.13	.06	.46	3.7
24	4.6	6.6	37	16	32	30	6.6	1.2	.20	.05	.20	3.4
25	4.2	6.7	31	16	34	28	6.2	1.1	.20	.04	.20	3.1
26	3.6	6.6	33	15	67	27	6.6	1.1	.16	.04	.19	3.4
27	3.5	6.5	29	14	41	e26	8.1	1.8	.14	.03	.18	3.9
28	3.6	34	27	15	36	e23	6.5	1.5	.12	.03	.16	5.9
29	3.4	20	24	15	---	e20	5.8	1.1	.16	.02	23	5.4
30	3.4	13	22	13	---	e70	5.3	.90	.14	.02	16	4.7
31	3.2	---	20	29	---	e42	---	.83	---	.01	2.7	---
TOTAL	327.67	330.4	947.7	1320	750	1182	403.7	83.43	16.96	14.06	45.34	249.52
MEAN	10.6	11.0	30.6	42.6	26.8	38.1	13.5	2.69	.57	.45	1.46	8.32
MAX	63	37	212	407	67	242	32	6.6	3.9	3.0	23	48
MIN	.31	2.4	6.7	13	12	17	5.3	.83	.12	.01	.00	.54
AC-FT	650	655	1880	2620	1490	2340	801	165	34	28	90	495
CFSM	.47	.49	1.37	1.91	1.20	1.71	.60	.12	.03	.02	.07	.37
IN.	.55	.55	1.58	2.20	1.25	1.97	.67	.14	.03	.02	.08	.42

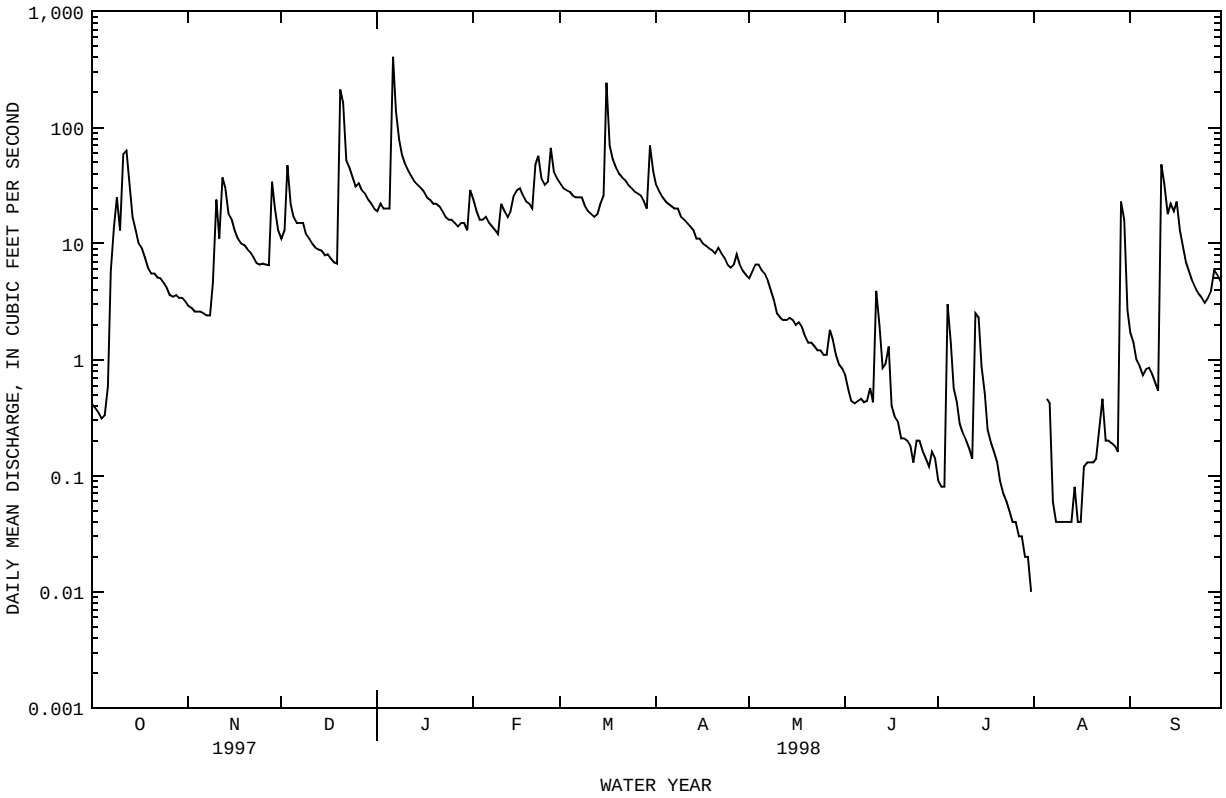
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1998, BY WATER YEAR (WY)

MEAN	12.3	9.16	16.9	13.3	18.3	16.1	12.3	26.3	28.6	4.41	4.09	4.04
MAX	70.3	43.2	130	55.9	114	64.7	69.4	58.9	141	22.6	26.3	15.3
(WY)	1995	1988	1992	1992	1992	1992	1997	1992	1987	1997	1991	1987
MIN	.27	.60	.64	1.08	1.92	2.06	1.28	.33	.57	.043	.16	.053
(WY)	1979	1989	1990	1990	1996	1996	1984	1984	1998	1994	1984	1984

08154700 BULL CREEK AT LOOP 360 NEAR AUSTIN, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1978 - 1998	
ANNUAL TOTAL	9104.53		5670.78			
ANNUAL MEAN	24.9		15.5		13.8	
HIGHEST ANNUAL MEAN					40.6	1992
LOWEST ANNUAL MEAN					1.86	1984
HIGHEST DAILY MEAN	656	Apr 4	407	Jan 6	1170	May 13 1982
LOWEST DAILY MEAN	.24	Sep 21	.00	Aug 1	.00	Jul 4 1984
ANNUAL SEVEN-DAY MINIMUM	.39	Sep 15	.01	Jul 29	.00	Jul 4 1984
INSTANTANEOUS PEAK FLOW			2260	Jan 6	13700	May 13 1982
INSTANTANEOUS PEAK STAGE			6.42	Jan 6	12.31	Oct 7 1994
ANNUAL RUNOFF (AC-FT)	18060		11250		10000	
ANNUAL RUNOFF (CFSM)	1.12		.70		.62	
ANNUAL RUNOFF (INCHES)	15.19		9.46		8.41	
10 PERCENT EXCEEDS	52		33		25	
50 PERCENT EXCEEDS	11		6.8		4.1	
90 PERCENT EXCEEDS	1.6		.14		.33	

e Estimated



08154700 BULL CREEK AT LOOP 360 NEAR AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Apr 1978 to current year. Pesticide analyses: Jun 1978 to Sep 1986, Jan 1993 to Jun 1995. Radiochemical analyses: Jan to Apr 1980.

INSTRUMENTATION.--Stage-activated automatic sampler.

REMARKS.--Base flow samples collected by USGS personnel.

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, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
OCT												
07...	1545	11	353	7.3	25.5	40	14	--	--	<10	3.4	20000
07...	1615	36	450	7.5	25.5	30	31	--	--	21	2.0	K10000
07...	1650	28	479	7.6	25.5	25	23	--	--	15	1.1	26000
07...	1815	16	449	7.6	25.5	35	14	--	--	15	1.8	17000
07...	1925	10	407	7.5	25.5	35	18	--	--	<10	3.3	48000
08...	0635	6.1	560	7.6	--	13	1.1	--	--	10	.7	8400
DEC												
20...	2005	203	556	7.8	--	18	66	--	--	41	4.1	K1600
20...	2035	329	567	7.8	--	18	65	--	--	37	3.3	K3200
20...	2135	906	401	7.7	--	22	52	--	--	31	4.4	K3600
21...	0130	474	350	7.6	--	55	45	--	--	35	2.7	13000
21...	0350	229	391	7.8	--	45	20	--	--	26	2.1	K6400
21...	0544	167	425	7.6	--	37	20	--	--	20	1.5	K5600
JAN												
26...	0945	15	661	7.7	11.5	4	.23	11.5	107	<10	.4	55
JUN												
23...	1005	.15	622	7.1	27.5	10	.20	6.4	83	<10	1.0	100

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	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, 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)
OCT												
07...	48000	95	25	10	15	.216	.011	.227	.051	.64	.36	.41
07...	40000	140	95	18	77	.241	.010	.251	.097	.82	.47	.57
07...	33000	150	27	9	18	--	<.010	.218	.039	.74	.48	.52
07...	31000	140	14	6	8	--	<.010	.217	<.015	.60	--	.38
07...	56000	130	28	11	17	.379	.012	.391	.015	.91	.50	.52
08...	5000	160	1	2	.00	--	<.010	.302	<.015	.52	--	.21
DEC												
20...	13000	170	266	30	236	.581	.014	.595	.044	1.3	.62	.66
20...	9600	170	182	20	162	--	<.010	.664	<.020	1.8	--	1.2
20...	12000	130	164	20	144	.429	.030	.459	<.020	2.0	--	1.5
21...	74000	120	96	16	80	--	<.010	.763	<.020	1.8	--	1.0
21...	64000	140	48	10	38	--	<.010	.784	<.020	2.3	--	1.5
21...	42000	150	45	9	36	--	<.010	.844	<.020	1.3	--	.47
JAN												
26...	42	260	2	<1	--	--	<.010	.733	<.020	--	--	<.10
JUN												
23...	220	190	1	4	.00	--	<.010	<.050	.081	--	.10	.19

08154700 BULL CREEK AT LOOP 360 NEAR AUSTIN, TX--Continued

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

DATE	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)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
OCT											
07...	.063	.037	.038	.12	5.5	.980	<.100	3	10	1	30
07...	.058	.018	.024	.07	6.3	6.70	.680	<1	2	8	20
07...	.044	<.010	<.010	--	5.2	3.00	.490	<1	3	2	20
07...	.027	<.010	<.010	--	4.6	1.80	.280	<1	4	2	10
07...	.049	.018	.010	.03	7.1	.970	<.100	<1	2	2	20
08...	<.010	<.010	<.010	--	4.6	1.00	<.100	<1	<1	<1	<10
DEC											
20...	.062	.011	.011	.03	14	--	--	<1	4	4	30
20...	.106	.020	.016	.05	13	--	--	<1	4	3	20
20...	.189	.046	.014	.04	17	--	--	<1	6	5	110
21...	.155	.035	.017	.05	11	--	--	<1	2	4	20
21...	.229	.075	.029	.09	9.1	--	--	<1	2	1	10
21...	.061	.020	.010	.03	7.2	--	--	<1	2	4	20
JAN											
26...	<.010	<.010	<.010	--	3.0	.180	<.100	<1	<1	<1	<10
JUN											
23...	<.010	<.010	<.010	--	3.0	.330	<.100	<1	<1	<1	<10

08154900 LAKE AUSTIN AT AUSTIN, TX

LOCATION.--Lat 30°18'53", long 97°47'10", Travis County, Hydrologic Unit 12090205, at city of Austin Waterplant No. 2 and 1.5 mi upstream from Tom Miller Dam on the Colorado River at Austin.

DRAINAGE AREA.--38,846 mi^2, of which 11,403 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: Oct 1978 to Aug 1990. Chemical and biochemical analyses: Oct 1990 to current year.

REMARKS.--Samples collected by USGS personnel.

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

301739097471601 - LAKE AUSTIN SITE AR

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
MAR							
16...	0925	1.00	538	8.1	13.5	9.3	91
16...	0927	10.0	531	8.1	13.5	9.3	91
16...	0929	20.0	530	8.1	13.5	9.4	92
16...	0931	27.0	530	8.0	13.5	9.3	91

301739097471201 - LAKE AUSTIN SITE AC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)
MAR									
16...	0940	1.00	530	8.2	13.5	5.40	2.3	9.4	200
16...	0942	10.0	529	8.2	13.5	--	--	9.4	--
16...	0944	20.0	529	8.1	13.5	--	--	9.4	--
16...	0946	30.0	531	8.1	13.0	--	--	9.4	--
16...	0948	40.0	532	8.1	12.5	--	--	9.4	--
16...	0950	50.0	532	8.1	12.5	--	3.4	9.4	--

301739097471201 - LAKE AUSTIN SITE AC

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	ALKALINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)
MAR									
16...	K380	170	313	2	<.010	.193	<.020	.44	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	160	309	4	<.010	.141	.047	.38	.20

301739097471201 - LAKE AUSTIN SITE AC

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	COPPER, DISSOLVED (UG/L AS CU) (01040)	LEAD, DISSOLVED (UG/L AS PB) (01049)
MAR								
16...	.25	<.010	<.010	<.010	--	3.6	1.3	<1.0
16...	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--
16...	.24	<.010	.030	.034	.10	5.2	1.2	<1.0

08154900 LAKE AUSTIN AT AUSTIN, TX--Continued

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

301739097470901 - LAKE AUSTIN SITE AL

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
MAR							
16...	1000	1.00	524	8.2	13.5	9.4	92
16...	1002	10.0	529	8.2	13.5	9.4	92
16...	1004	18.0	526	8.2	13.0	9.5	92

302043097472401 - LAKE AUSTIN SITE BC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
MAR									
16...	1035	1.00	498	8.2	14.0	1.10	12	9.0	89
16...	1037	10.0	519	8.2	14.0	--	--	9.0	89
16...	1039	20.0	523	8.2	14.0	--	--	9.1	90
16...	1041	30.0	528	8.2	13.5	--	2.3	9.2	90

302043097472401 - LAKE AUSTIN SITE BC

DATE	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	ALKALINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, TOTAL (MG/L AS N) (00600)
MAR									
16...	2300	K6100	160	295	12	<.010	.238	.056	.67
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	160	306	3	<.010	.160	.049	.41

302043097472401 - LAKE AUSTIN SITE BC

DATE	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	COPPER, DISSOLVED (UG/L AS CU) (01040)	LEAD, DISSOLVED (UG/L AS PB) (01049)
MAR									
16...	.38	.44	<.010	<.010	.011	.03	7.0	<1.0	<1.0
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	.20	.25	<.010	<.010	<.010	--	4.1	<1.0	<1.0

302044097472301 - LAKE AUSTIN SITE BL

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
MAR							
16...	1025	1.00	501	8.2	14.5	9.0	90
16...	1027	10.0	518	8.2	14.0	9.0	89
16...	1029	19.0	527	8.2	14.0	9.1	90

08154900 LAKE AUSTIN AT AUSTIN, TX--Continued

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

301926097502201 - LAKE AUSTIN SITE CC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
MAR									
16...	1130	1.00	522	8.1	14.5	5.60	2.8	8.9	89
16...	1132	10.0	521	8.1	14.0	--	--	8.7	86
16...	1134	22.0	518	8.1	14.0	--	3.5	8.7	86

301926097502201 - LAKE AUSTIN SITE CC

DATE	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	ALKALINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, TOTAL (MG/L AS N) (00600)
MAR									
16...	450	K1300	160	300	3	<.010	.206	.040	.45
16...	--	--	--	--	--	--	--	--	--
16...	--	--	160	301	2	<.010	.174	.037	.46

301926097502201 - LAKE AUSTIN SITE CC

DATE	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	COPPER, DISSOLVED (UG/L AS CU) (01040)	LEAD, DISSOLVED (UG/L AS PB) (01049)
MAR								
16...	.21	.25	<.010	<.010	<.010	4.2	2.4	<1.0
16...	--	--	--	--	--	--	--	--
16...	.24	.28	<.010	<.010	<.010	4.2	1.1	<1.0

302021097540001 - LAKE AUSTIN SITE DC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
MAR									
16...	1110	1.00	507	8.1	14.5	2.50	6.5	8.4	84
16...	1112	10.0	508	8.1	14.5	--	--	8.4	84
16...	1114	18.0	507	8.1	14.5	--	5.4	8.4	84

302021097540001 - LAKE AUSTIN SITE DC

DATE	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	ALKALINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, TOTAL (MG/L AS N) (00600)
MAR									
16...	K260	K1300	160	291	7	<.010	.196	.042	.47
16...	--	--	--	--	--	--	--	--	--
16...	--	--	150	295	5	<.010	.194	.040	.44

08154900 LAKE AUSTIN AT AUSTIN, TX--Continued

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

302021097540001 - LAKE AUSTIN SITE DC

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)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
MAR								
16...	.23	.27	<.010	<.010	<.010	4.7	<1.0	<1.0
16...	--	--	--	--	--	--	--	--
16...	.21	.25	<.010	<.010	<.010	4.1	<1.0	<1.0

08155200 BARTON CREEK AT STATE HIGHWAY 71 NEAR OAK HILL, TX

LOCATION.--Lat 30°17'46", long 97°55'31", Travis County, Hydrologic Unit 12090205, at upstream side of bridge on State Highway 71, 0.1 mi downstream from Little Barton Creek, and 5.8 mi northwest of Oak Hill.

DRAINAGE AREA.--89.7 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Aug 1975 to Feb 1978 (operated as a flood-hydrograph partial-record station), Feb 1978 to Sep 1982, Jan 1989 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 737.04 ft above sea level. Satellite telemeter at station.

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

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 6	1245	2,440	8.58	Feb 21	2300	1,330	6.47
Jan 6	1530	3,480	10.15	Mar 16	1015	4,100	10.70

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	.06	.78	.17	25	108	173	114	10	2.7	.25	.13	.00
2	.06	.75	.27	28	66	160	98	12	2.1	.22	.12	.00
3	.05	.76	.58	30	57	147	90	9.6	1.6	.22	.12	.00
4	.05	.77	.59	29	56	141	81	9.3	1.2	94	.11	.00
5	.05	.80	1.4	28	61	131	76	8.6	1.1	65	.11	.00
6	.06	.75	1.3	1020	102	119	71	7.7	1.1	24	.12	.00
7	.07	.71	.81	342	77	117	69	6.7	.97	12	.11	.00
8	.09	.66	.72	167	72	116	75	7.0	.90	4.1	.09	.00
9	.08	.72	.48	117	68	98	68	6.4	.84	2.4	.08	.00
10	.11	1.2	.47	96	97	90	58	4.7	.78	1.5	.07	.00
11	.16	1.0	.45	82	96	85	54	3.7	1.4	1.0	.05	.06
12	.17	1.8	.42	138	85	80	52	3.5	1.8	.81	.04	.05
13	.59	2.8	.41	122	90	80	52	3.4	2.1	.78	.03	.00
14	6.9	2.0	.44	114	117	83	54	3.5	3.7	.79	.03	.00
15	3.6	.70	.43	102	201	94	52	3.3	2.5	.64	.02	.00
16	2.2	.41	.41	95	189	1280	48	3.2	1.5	.56	.00	.11
17	1.6	.24	.39	87	175	339	40	3.1	.95	.49	.00	.05
18	1.3	.16	.42	81	158	272	38	2.8	.74	.41	.01	.01
19	1.2	.15	.43	75	150	237	36	2.6	.63	.36	.00	.00
20	1.1	.15	45	73	140	207	32	2.2	.55	.31	.00	.00
21	1.1	.14	171	70	268	192	30	2.0	.50	.26	.00	.00
22	1.0	.15	51	62	377	179	27	1.9	.45	.23	.01	.00
23	.94	.14	36	58	196	167	25	1.8	.40	.20	.07	.00
24	.89	.14	35	54	184	156	22	2.4	.36	.18	.03	.00
25	.86	.14	28	53	168	146	19	6.3	.33	.17	.00	.00
26	.80	.14	30	51	338	136	21	6.2	.30	.15	.00	.00
27	.78	.14	34	47	217	130	26	10	.28	.15	.00	.18
28	.77	.20	31	45	191	121	20	10	.26	.14	.00	.37
29	.77	.21	28	41	---	113	16	8.3	.29	.13	.00	.39
30	.83	.19	27	38	---	113	13	5.9	.29	.13	.00	.40
31	.83	---	26	70	---	172	---	3.7	---	.13	.00	---
TOTAL	29.07	18.90	552.59	3440	4104	5674	1477	171.8	32.62	211.71	1.35	1.62
MEAN	.94	.63	17.8	111	147	183	49.2	5.54	1.09	6.83	.044	.054
MAX	6.9	2.8	171	1020	377	1280	114	12	3.7	94	.13	.40
MIN	.05	.14	.17	25	56	80	13	1.8	.26	.13	.00	.00
AC-FT	58	37	1100	6820	8140	11250	2930	341	65	420	2.7	3.2
CFSM	.01	.01	.20	1.24	1.63	2.04	.55	.06	.01	.08	.00	.00
IN.	.01	.01	.23	1.43	1.70	2.35	.61	.07	.01	.09	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1998, BY WATER YEAR (WY)

MEAN	11.9	7.69	52.8	49.3	70.1	68.6	50.8	74.8	111	12.4	3.08	2.41
MAX	57.6	43.0	520	293	465	338	196	226	613	56.5	15.2	24.2
(WY)	1982	1995	1992	1992	1992	1992	1979	1992	1981	1997	1991	1991
MIN	.000	.059	.039	.046	.072	.020	.057	.001	.000	.000	.000	.004
(WY)	1991	1990	1990	1990	1990	1996	1996	1996	1996	1978	1996	1990

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1978 - 1998	
ANNUAL TOTAL	30704.31		15714.66			
ANNUAL MEAN	84.1		43.1		46.4	
HIGHEST ANNUAL MEAN					182	1992
LOWEST ANNUAL MEAN					.17	1996
HIGHEST DAILY MEAN	3300	Jun 10	1280	Mar 16	4960	Dec 21 1991
LOWEST DAILY MEAN	.05	Oct 3	.00	Aug 16	.00	Feb 7 1978
ANNUAL SEVEN-DAY MINIMUM	.06	Sep 30	.00	Aug 25	.00	Feb 7 1978
INSTANTANEOUS PEAK FLOW			4100	Mar 16	14900	Dec 20 1991
INSTANTANEOUS PEAK STAGE			10.70	Mar 16	18.10	Dec 20 1991
ANNUAL RUNOFF (AC-FT)	60900		31170		33640	
ANNUAL RUNOFF (CFSM)	.94		.48		.52	
ANNUAL RUNOFF (INCHES)	12.73		6.52		7.03	
10 PERCENT EXCEEDS	218		130		91	
50 PERCENT EXCEEDS	12		1.6		3.9	
90 PERCENT EXCEEDS	.15		.02		.02	

08155200 BARTON CREEK AT STATE HIGHWAY 71 NEAR OAK HILL, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Apr 1978 to Sep 1982, Feb 1989 to current year. Pesticide analyses: Apr 1978 to Sep 1982, Jan 1993 to current year. Radiochemical analyses: Oct 1979 to Sep 1980.

INSTRUMENTATION.--Stage-activated automatic sampler.

REMARKS.--Base flow samples collected by USGS personnel.

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, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)
JAN											
06...	1135	366	240	7.5	--	120	210	--	--	77	4.0
06...	1235	2310	263	7.5	--	130	340	--	--	140	5.5
06...	1330	1590	180	7.6	17.0	140	300	--	--	150	2.0
06...	1540	3470	220	7.6	17.0	110	270	--	--	91	3.6
06...	1723	2040	292	7.7	16.5	110	150	--	--	37	4.0
07...	0925	322	399	7.7	13.0	130	21	--	--	<10	.6
27...	0745	46	587	8.3	11.5	2	.21	11.1	104	<10	.3
FEB											
06...	0430	111	554	8.1	--	6	.40	--	--	<10	--
06...	0445	115	553	8.2	--	5	2.8	--	--	<10	--
06...	0742	127	558	8.1	13.0	5	.40	--	--	<10	--
06...	1330	106	567	8.2	13.5	6	.40	--	--	<10	--
JUN											
22...	0915	.49	491	7.8	27.5	5	.17	4.7	61	<10	.4

DATE	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	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, TOTAL (MG/L AS N) (00600)
JAN											
06...	27000	48000	82	588	124	464	.067	.014	.081	<.020	.46
06...	230000	390000	85	790	160	630	.105	.018	.123	<.020	1.5
06...	84000	100000	66	828	104	724	.181	.022	.203	<.020	1.9
06...	40000	110000	82	748	96	652	.135	.020	.155	<.020	2.6
06...	28000	46000	95	344	56	288	--	<.010	.154	<.020	.66
07...	8000	15000	--	29	7	22	.223	.015	.238	<.020	.49
27...	130	62	220	<1	1	--	--	<.010	.135	<.020	--
FEB											
06...	59	140	220	33	14	19	--	<.010	.143	<.020	.26
06...	58	220	220	15	9	6	--	<.010	.131	<.020	--
06...	82	92	220	<1	2	--	--	<.010	.134	.027	--
06...	100	80	220	<1	1	--	--	<.010	.167	<.020	--
JUN											
22...	K240	1700	130	2	1	1	--	<.010	.054	.063	--

DATE	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)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
JAN											
06...	.38	.027	<.010	<.010	--	45	--	--	3	11	30
06...	1.4	1.07	.023	.025	.08	58	--	--	7	19	70
06...	1.7	.254	<.010	<.010	--	37	--	--	3	11	30
06...	2.4	.329	<.010	<.010	--	52	--	--	4	11	40
06...	.51	.027	<.010	<.010	--	19	--	--	2	5	20
07...	.25	.025	<.010	<.010	--	4.5	--	--	2	<1	<10
27...	<.10	<.010	<.010	<.010	--	2.0	--	--	<1	<1	<10
FEB											
06...	.11	.019	<.010	.023	.07	4.9	--	--	3	<1	20
06...	<.10	<.010	<.010	.016	.05	2.7	--	--	2	<1	10
06...	<.10	.016	<.010	.023	.07	1.2	--	--	<1	<1	<10
06...	<.10	<.010	<.010	.018	.06	1.6	--	--	<1	<1	<10
JUN											
22...	<.10	.010	.024	<.010	--	1.3	<.100	<.100	<1	<1	<10

08155240 BARTON CREEK AT LOST CREEK BOULEVARD, AUSTIN, TX

LOCATION.--Lat 30°16'26", long 97°50'40", Travis County, Hydrologic Unit 12090205, 1.4 mi southwest of intersection of Lost Creek Boulevard and Loop 360, and 6.2 mi west of State Capitol Building in Austin.

DRAINAGE AREA.--107 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jan 1979 to Sep 1980 (periodic gage heights and discharge measurements only). Dec 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 600 ft above sea level, from topographic map. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions. No flow at times. Several observations of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of May 28, 1929 was probably the highest since that date (discharge 39,400 ft^3/s), based on slope-area measurement of peak flow at a site about 2.1 mi downstream.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 6	1915	3,300	6.86	Mar 16	1300	3,680	7.17
Feb 22	0230	1,080	4.75				

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

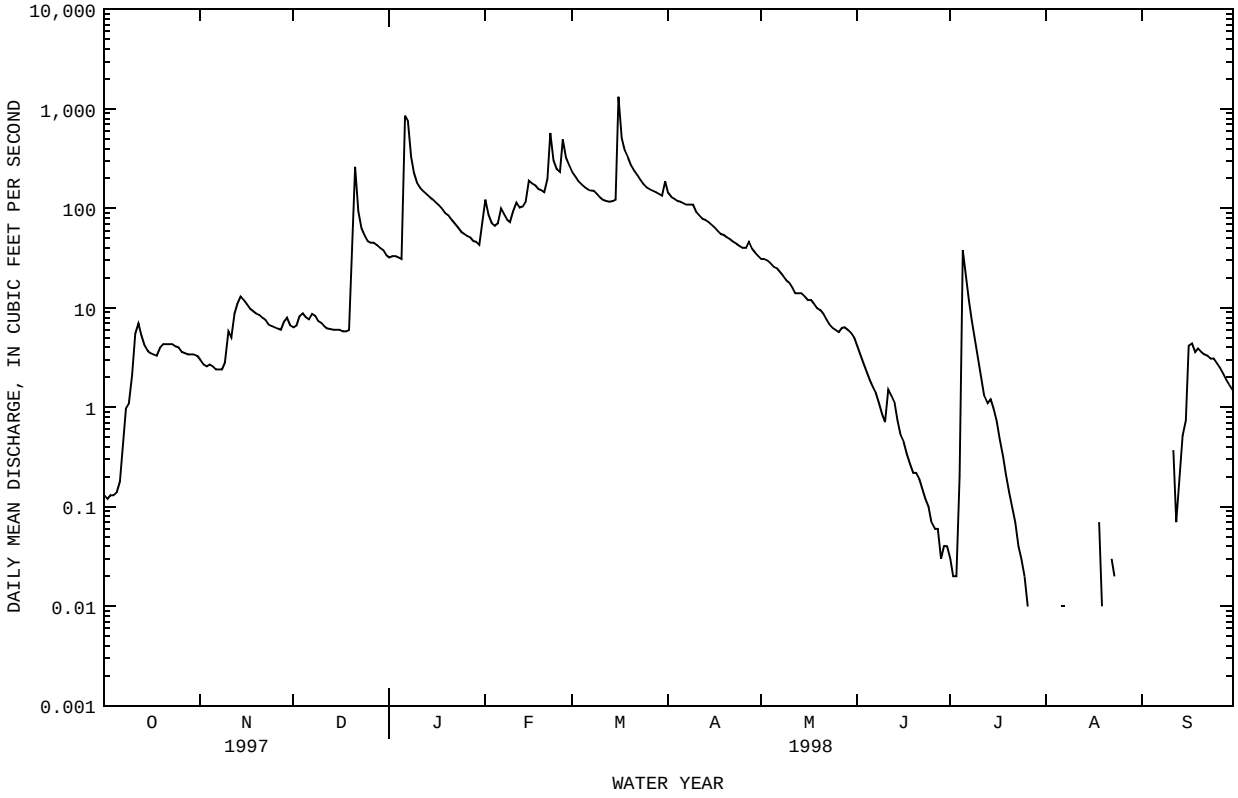
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.13	3.0	6.4	32	123	232	144	31	4.2	.03	.00	.00
2	.12	2.7	6.7	33	86	210	130	31	3.4	.02	.00	.00
3	.13	2.6	8.2	33	71	189	125	30	2.8	.02	.00	.00
4	.13	2.7	8.8	32	67	174	118	28	2.3	.20	.00	.00
5	.14	2.6	8.1	31	71	164	116	26	1.9	38	.00	.00
6	.18	2.4	7.7	854	100	155	112	25	1.6	22	.01	.00
7	.41	2.4	8.7	754	88	151	109	23	1.4	12	.01	.00
8	.99	2.4	8.3	332	77	150	109	21	1.1	7.5	.00	.00
9	1.1	2.8	7.4	226	73	139	109	19	.85	5.0	.00	.00
10	2.1	5.8	7.1	180	94	129	92	18	.71	3.2	.00	.00
11	5.5	5.0	6.5	159	114	122	85	16	1.5	2.0	.00	.37
12	7.0	8.7	6.2	149	102	118	79	14	1.3	1.3	.00	.07
13	5.3	11	6.1	139	104	116	76	14	1.1	1.1	.00	.19
14	4.2	13	6.0	130	117	118	73	14	.74	1.2	.00	.52
15	3.7	12	6.0	123	190	123	68	13	.52	.98	.00	.74
16	3.5	11	6.0	115	179	1330	64	12	.45	.73	.00	4.2
17	3.4	9.9	5.8	107	172	513	59	12	.34	.49	.00	4.4
18	3.3	9.3	5.8	100	157	379	55	11	.27	.32	.07	3.6
19	4.0	8.8	6.0	90	152	321	54	10	.22	.21	.01	3.9
20	4.3	8.5	52	85	145	271	51	9.5	.22	.14	.00	3.6
21	4.3	8.0	262	77	198	240	49	8.7	.19	.10	.00	3.4
22	4.3	7.6	94	71	572	216	46	7.6	.15	.07	.03	3.3
23	4.3	6.8	63	65	302	195	44	6.8	.12	.04	.02	3.1
24	4.1	6.6	53	59	247	176	42	6.3	.10	.03	.00	3.1
25	4.0	6.4	47	56	231	163	40	6.0	.07	.02	.00	2.8
26	3.6	6.2	45	53	495	155	40	5.7	.06	.01	.00	2.5
27	3.5	6.0	45	51	325	151	46	6.3	.06	.00	.00	2.2
28	3.4	7.3	43	47	269	146	39	6.4	.03	.00	.00	1.9
29	3.4	8.0	40	46	---	140	36	6.0	.04	.00	.00	1.7
30	3.4	6.7	38	43	---	134	33	5.6	.04	.00	.00	1.5
31	3.3	---	34	72	---	188	---	5.0	---	.00	.00	---
TOTAL	91.23	196.2	947.8	4344	4921	7008	2243	447.9	27.78	96.71	0.15	47.09
MEAN	2.94	6.54	30.6	140	176	226	74.8	14.4	.93	3.12	.005	1.57
MAX	7.0	13	262	854	572	1330	144	31	4.2	38	.07	4.4
MIN	.12	2.4	5.8	31	67	116	33	5.0	.03	.00	.00	.00
MED	3.4	6.6	8.2	77	134	163	66	12	.48	.20	.00	1.1
AC-FT	181	389	1880	8620	9760	13900	4450	888	55	192	.3	93
CFSM	.03	.06	.29	1.31	1.64	2.11	.70	.14	.01	.03	.00	.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1998, BY WATER YEAR (WY)

MEAN	7.84	7.19	85.3	72.9	110	86.6	68.5	105	129	13.5	4.09	3.58
MAX	54.3	33.8	627	307	581	381	247	264	701	67.8	23.2	25.6
(WY)	1995	1995	1992	1992	1992	1992	1997	1992	1997	1997	1991	1991
MIN	.10	.23	.22	.40	.96	.81	.84	.42	.93	.17	.005	.069
(WY)	1994	1990	1990	1990	1996	1996	1996	1996	1998	1996	1998	1993

08155240 BARTON CREEK AT LOST CREEK BOULEVARD, AUSTIN, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1989 - 1998	
ANNUAL TOTAL	41863.03		20370.86			
ANNUAL MEAN	115		55.8		60.2	
HIGHEST ANNUAL MEAN					212	1992
LOWEST ANNUAL MEAN					1.14	1996
HIGHEST DAILY MEAN	3680	Jun 10	1330	Mar 16	7000	Dec 21 1991
LOWEST DAILY MEAN	.12	Oct 2	.00	Jul 27	.00	Aug 24 1993
ANNUAL SEVEN-DAY MINIMUM	.13	Sep 28	.00	Jul 27	.00	Aug 24 1993
INSTANTANEOUS PEAK FLOW			3680	Mar 16	16400	Dec 21 1991
INSTANTANEOUS PEAK STAGE			7.17	Mar 16	12.90	Dec 21 1991
ANNUAL RUNOFF (AC-FT)	83040		40410		43640	
ANNUAL RUNOFF (CFSM)	1.07		.52		.56	
10 PERCENT EXCEEDS	298		155		127	
50 PERCENT EXCEEDS	14		6.7		5.8	
90 PERCENT EXCEEDS	.73		.00		.22	



08155240 BARTON CREEK AT LOST CREEK BLVD., AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Dec 1988 to current year. Pesticide analyses: Jan 1993 to May 1995.

INSTRUMENTATION.--Stage-activated automatic sampler.

REMARKS.--Base flow samples collected by USGS personnel.

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, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
DEC												
20...	2045	224	475	7.5	--	35	90	--	--	92	6.6	<9600
20...	2145	260	451	7.6	--	28	110	--	--	54	4.5	K4800
21...	0155	373	436	7.5	--	28	110	--	--	19	3.0	K2000
21...	0640	468	397	7.5	--	25	70	--	--	25	1.7	K2400
21...	1152	265	357	7.2	12.5	28	62	--	--	25	2.1	--
22...	0707	105	453	4.7	12.0	16	8.5	--	--	11	.9	3200
JAN												
06...	1200	87	533	7.8	--	13	6.2	--	--	<10	.7	K6200
06...	1453	768	473	7.8	--	35	100	--	--	29	2.1	K15000
06...	1757	2610	225	7.6	--	130	380	--	--	120	1.7	100000
06...	1925	3110	269	7.7	--	110	140	--	--	90	4.6	60000
07...	0835	722	381	7.7	--	45	40	--	--	14	.8	8400
07...	1514	548	488	7.5	--	30	20	--	--	13	.5	4600
27...	0815	51	572	8.4	10.9	4	.21	--	--	<10	.3	34
JUN												
22...	1005	.16	594	7.6	28.0	13	.21	5.5	72	<10	.5	110

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	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, TOTAL (MG/L AS N) (00600)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
DEC											
20...	39000	130	388	118	270	--	<.010	.081	<.020	3.8	3.7
20...	26000	130	226	54	172	--	<.010	.076	<.020	1.4	1.3
21...	16000	130	218	26	192	--	<.010	.305	<.020	.71	.41
21...	12000	140	137	21	116	--	<.010	.319	<.020	1.3	.99
21...	160000	130	127	15	112	--	<.010	.286	<.020	1.2	.87
22...	8400	150	17	6	11	--	<.010	.388	<.020	.61	.22
JAN											
06...	22000	160	13	5	8	--	<.010	.253	<.020	.62	.36
06...	50000	160	232	36	196	.224	.016	.240	<.020	2.6	2.3
06...	220000	92	832	96	736	--	<.010	.163	<.020	3.8	3.6
06...	44000	95	828	120	708	--	<.010	.181	<.020	3.9	3.7
07...	18000	140	68	14	54	--	<.010	.310	<.020	.73	.42
07...	K7700	160	31	7	24	--	<.010	.353	<.020	.74	.38
27...	88	210	<1	<1	--	--	<.010	.200	<.020	--	<.10
JUN											
22...	180	180	1	3	.00	--	.010	<.050	.099	--	<.10

DATE	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)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
DEC											
20...	.407	.059	.021	.06	32	--	--	<1	3	8	50
20...	.243	.047	.012	.04	12	--	--	<1	3	6	30
21...	.091	.029	.011	.03	11	--	--	<1	3	4	20
21...	.110	.010	<.010	--	7.6	--	--	<1	2	4	20
21...	.134	.019	.012	.04	11	--	--	<1	2	8	20
22...	.017	<.010	.013	.04	3.6	--	--	<1	6	3	20
JAN											
06...	.048	<.010	.014	.04	2.9	--	--	--	<1	2	<10
06...	.260	<.010	<.010	--	16	--	--	--	2	5	30
06...	.515	<.010	<.010	--	51	--	--	--	4	14	40
06...	.443	<.010	<.010	--	40	--	--	--	6	15	30
07...	.022	<.010	<.010	--	7.0	--	--	--	1	1	<10
07...	.031	<.010	<.010	--	6.8	--	--	--	<1	2	<10
27...	<.010	<.010	<.010	--	1.2	--	--	--	<1	<1	<10
JUN											
22...	<.010	<.010	<.010	--	2.9	.310	<.100	--	<1	<1	<10

08155300 BARTON CREEK AT LOOP 360, AUSTIN, TX

LOCATION.--Lat 30°14'40", long 97°48'07", Travis County, Hydrologic Unit 12090205, on Loop 360, 0.9 mi west of the intersection of Ben White and Lamar Boulevards, and 4.3 mi southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--116 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jun 1975 to Jan 1977 (operated as a flood-hydrograph partial-record station only), Feb 1977 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 510.32 ft above sea level (Texas Department of Transportation bench mark). Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. No known regulation or diversions. Several observations of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of May 28, 1929, was probably the highest since that date (discharge 39,400 ft^3/s), based on a slope-area measurement of peak flow at a site about 2 mi upstream.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 6	2000	3,200	8.34	Mar 16	1415	3,680	8.72
Feb 22	0400	1,230	6.06				

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

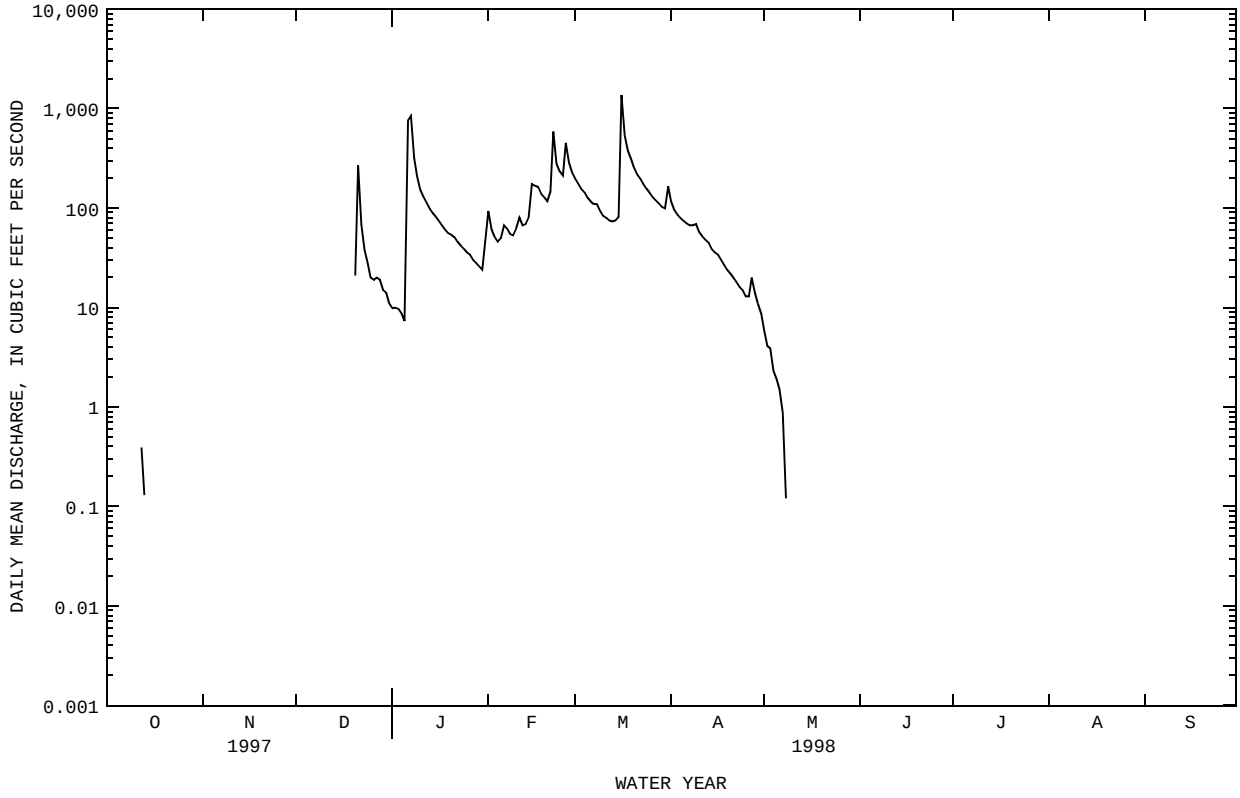
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	9.8	94	198	117	5.9	.00	.00	.00	.00
2	.00	.00	.00	10	61	174	96	4.1	.00	.00	.00	.00
3	.00	.00	.00	9.7	51	156	86	3.9	.00	.00	.00	.00
4	.00	.00	.00	8.7	46	143	79	2.3	.00	.00	.00	.00
5	.00	.00	.00	7.3	50	127	74	1.9	.00	.00	.00	.00
6	.00	.00	.00	767	67	116	70	1.5	.00	.00	.00	.00
7	.00	.00	.00	852	62	110	67	.88	.00	.00	2.9	.00
8	.00	.00	.00	322	55	109	67	.12	.00	.00	.00	.00
9	.00	.00	.00	211	53	94	69	.00	.00	.00	.00	.00
10	.00	.00	.00	154	63	84	57	.00	.00	.00	.00	.00
11	.00	.00	.00	129	80	80	52	.00	.00	.00	.00	.01
12	.39	.00	.00	114	67	75	48	.00	.00	.00	.00	.00
13	.13	.00	.00	99	69	73	45	.00	.00	.00	.00	.00
14	.00	.00	.00	89	81	75	39	.00	.00	.00	.00	.00
15	.00	.00	.00	81	174	81	36	.00	.00	.00	.00	.00
16	.00	.00	.00	74	168	1370	34	.00	.00	.00	.00	.00
17	.00	.00	.00	67	163	540	30	.00	.00	.00	.00	.00
18	.00	.00	.00	61	139	375	27	.00	.00	.00	.00	.00
19	.00	.00	.00	56	128	312	24	.00	.00	.00	.00	.00
20	.00	.00	21	54	117	254	22	.00	.00	.00	.00	.00
21	.00	.00	268	51	146	218	20	.00	.00	.00	.00	.00
22	.00	.00	69	46	590	196	18	.00	.00	.00	.00	.00
23	.00	.00	38	42	279	174	16	.00	.00	.00	.00	.00
24	.00	.00	28	39	234	156	15	.00	.00	.00	.00	.00
25	.00	.00	20	36	211	142	13	.00	.00	.00	.00	.00
26	.00	.00	19	34	453	128	13	.00	.00	.00	.00	.00
27	.00	.00	20	30	287	120	20	.00	.00	.00	.00	.00
28	.00	.00	19	28	226	111	14	.00	.00	.00	.00	.00
29	.00	.00	15	26	---	103	11	.00	.00	.00	.00	.00
30	.00	.00	14	24	---	99	8.6	.00	.00	.00	.00	.00
31	.00	---	11	45	---	166	---	.00	---	.00	.00	---
TOTAL	0.52	0.00	542.00	3576.5	4214	6159	1287.6	20.60	0.00	0.00	2.90	0.01
MEAN	.017	.000	17.5	115	151	199	42.9	.66	.000	.000	.094	.000
MAX	.39	.00	268	852	590	1370	117	5.9	.00	.00	2.9	.01
MIN	.00	.00	.00	7.3	46	73	8.6	.00	.00	.00	.00	.00
AC-FT	1.0	.00	1080	7090	8360	12220	2550	41	.00	.00	5.8	.02
CFSM	.00	.00	.15	.99	1.30	1.71	.37	.01	.00	.00	.00	.00
IN.	.00	.00	.17	1.15	1.35	1.98	.41	.01	.00	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 1998, BY WATER YEAR (WY)

MEAN	16.6	8.19	74.1	42.7	67.2	57.3	51.5	83.5	163	8.61	.79	.54
MAX	134	77.3	865	281	609	342	319	321	1142	73.1	13.9	7.57
(WY)	1985	1986	1992	1992	1992	1992	1977	1992	1987	1981	1991	1983
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1978	1978	1978	1978	1978	1978	1978	1978	1978	1977	1977	1977

08155300 BARTON CREEK AT LOOP 360, AUSTIN, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1977 - 1998	
ANNUAL TOTAL	34620.16		15803.13			
ANNUAL MEAN	94.8		43.3		47.3	
HIGHEST ANNUAL MEAN					229	1992
LOWEST ANNUAL MEAN					.000	1978
HIGHEST DAILY MEAN	3780	Jun 10	1370	Mar 16	10800	Dec 21 1991
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Apr 11 1977
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Jun 10 1977
INSTANTANEOUS PEAK FLOW			3680	Mar 16	18100	May 25 1981
INSTANTANEOUS PEAK STAGE			8.72	Mar 16	15.03	May 25 1981
ANNUAL RUNOFF (AC-FT)	68670		31350		34300	
ANNUAL RUNOFF (CFSM)	.82		.37		.41	
ANNUAL RUNOFF (INCHES)	11.10		5.07		5.55	
10 PERCENT EXCEEDS	240		127		97	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	



08155300 BARTON CREEK AT LOOP 360, AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Jan 1979 to current year. Pesticide analyses: Jan 1979 to Sep 1986. Radiochemical analyses: Apr 1980.

REMARKS.--Samples collected by USGS personnel.

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, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)
DEC											
21...	0040	318	390	7.6	13.5	60	47	--	--	22	2.9
21...	0300	277	371	7.6	--	55	36	--	--	21	2.6
21...	0454	391	436	7.5	13.0	30	68	--	--	23	2.1
21...	0648	347	435	7.4	--	28	78	--	--	23	1.8
21...	1152	295	404	7.5	13.0	27	40	--	--	16	1.4
22...	0630	81	492	7.6	--	25	15	--	--	12	1.2
JAN											
06...	1415	64	553	7.9	--	4	.65	--	--	<10	.5
06...	1615	761	497	7.7	--	12	12	--	--	<10	.9
06...	1735	2090	385	7.8	--	120	160	--	--	68	3.5
06...	2020	3180	253	7.6	16.0	110	340	--	--	100	1.6
07...	0753	845	329	7.7	--	70	68	--	--	16	1.2
07...	1436	568	397	7.7	--	110	29	--	--	<10	.9
27...	0845	31	578	8.4	10.5	3	.20	11.9	108	<10	.4

DATE	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	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, TOTAL (MG/L AS N) (00600)
DEC											
21...	15000	72000	120	95	15	80	--	<.010	<.050	<.020	--
21...	13000	72000	110	68	12	56	--	<.010	<.050	<.020	--
21...	K6800	E52000	--	127	18	109	.340	.019	.359	<.020	.99
21...	K4400	15000	130	137	18	119	--	<.010	.418	<.020	1.2
21...	--	7000	140	65	10	55	--	<.010	.341	<.020	.74
22...	K6000	13000	150	23	4	19	--	<.010	.346	<.020	.60
JAN											
06...	K90	K240	190	1	8	.00	.220	.019	.239	.037	.48
06...	1200	4300	180	33	10	23	.225	.013	.238	<.020	1.1
06...	K17000	40000	140	624	76	548	.199	.018	.217	<.020	7.9
06...	66000	54000	92	1030	120	910	.162	.017	.179	<.020	2.9
07...	18000	23000	130	126	24	102	.297	.019	.316	<.020	1.0
07...	5300	K9800	140	42	16	26	.288	.017	.305	<.020	1.3
27...	K10	28	210	1	1	.00	--	<.010	.204	<.020	--

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)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
DEC											
21...	--	.50	.083	.031	.012	.04	7.0	<1	1	2	<10
21...	--	.72	.154	.056	.012	.04	6.5	<1	1	2	<10
21...	--	.63	.140	.031	.010	.03	7.7	<1	<1	2	<10
21...	--	.75	.161	.023	.012	.04	7.2	<1	2	2	<10
21...	--	.40	.074	.016	<.010	--	5.7	<1	1	<1	<10
22...	--	.25	.028	<.010	<.010	--	4.0	<1	<1	<1	<10
JAN											
06...	.20	.24	<.010	<.010	<.010	--	2.1	--	<1	<1	<10
06...	--	.88	.064	<.010	<.010	--	6.7	--	<1	<1	<10
06...	--	7.7	.605	<.010	.016	.05	31	--	2	6	20
06...	--	2.7	.325	<.010	.010	.03	50	--	4	11	30
07...	--	.73	.061	<.010	<.010	--	10	--	1	2	10
07...	--	.95	.037	<.010	<.010	--	5.9	--	<1	1	<10
27...	--	<.10	<.010	<.010	<.010	--	1.1	--	<1	<1	<10

08155500 BARTON SPRINGS AT AUSTIN, TX

LOCATION.--Lat 30°15'48", long 97°46'16", Travis County, Hydrologic Unit 12090205, at ground-water well (YD 58-42-903), on right bank 0.4 mi upstream from Barton Springs Road bridge over Barton Creek, 0.7 mi upstream from mouth, and 1.8 mi southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--Not applicable. Only springflow is published for this station.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Nov 1894 to Apr 1917, and Oct 1918 to Feb 1978 (discharge measurements only), May 1917 to Sep 1918 (published as "Barton Creek at Austin, Texas"), Mar 1978 to 1994 (daily mean discharge), Oct 1994 to current year (discharge at 1200 hours).

GAGE.--Water-stage recorder. Datum of gage, at ground-water well (YD 58-42-903), is 462.34 ft above sea level. May 1917 to Sep 1918, nonrecording gage at site 1,000 ft downstream at different datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records poor. Only springflow from the Edwards and associated limestones in the Balcones Fault Zone is published for this station. Operation of Barton Springs pool significantly affects level recorded in well. Pool is drained at closing and allowed to fill after cleaning operations. Under normal conditions gage height is in direct relation with discharge. Determination of flow from spring is considered best when pool/well level has stabilized at 1200 hrs. Beginning 1995, daily flow has been determined using the recorded level at 1200 hrs.

EXTREMES FOR PERIOD OF RECORD (DISCHARGE MEASUREMENTS ONLY).--Maximum measured discharge, 166 ft^3/s May 10, 1941; minimum measured, 9.6 ft^3/s Mar 29, 1956.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	85	75	81	90	99	98	96	88	80	68	57
2	90	84	75	81	89	99	98	96	88	79	67	57
3	92	84	75	81	89	98	98	96	88	80	67	56
4	92	84	74	81	89	98	98	95	88	81	66	56
5	92	84	72	82	89	98	98	95	88	81	66	56
6	92	83	72	82	89	98	98	95	88	80	66	55
7	92	82	72	83	89	98	98	94	87	79	65	55
8	92	82	72	84	89	98	98	93	87	78	67	54
9	92	82	71	85	89	98	98	93	87	78	66	54
10	92	83	71	85	89	98	98	93	86	77	65	54
11	93	82	70	86	90	98	98	92	87	77	64	57
12	95	84	70	87	90	98	98	92	87	77	63	61
13	95	84	69	86	90	98	98	92	86	77	63	60
14	94	83	69	87	90	98	98	92	86	77	62	59
15	93	82	69	87	92	98	98	91	85	76	62	60
16	92	81	68	86	93	98	98	91	85	76	61	64
17	91	80	68	86	93	99	97	91	84	75	62	65
18	90	80	67	86	93	99	97	91	84	75	61	62
19	90	80	66	86	94	99	97	91	84	74	60	61
20	89	79	68	86	94	98	97	91	83	74	60	60
21	89	78	76	86	95	98	97	91	83	73	59	60
22	89	78	79	86	97	99	97	90	83	73	61	59
23	89	77	80	86	97	99	96	90	82	73	62	59
24	88	77	80	86	97	99	96	90	82	72	62	59
25	88	77	80	86	97	99	96	90	82	71	60	59
26	87	76	80	86	98	98	96	90	81	71	59	58
27	87	76	81	86	99	98	97	90	81	70	59	58
28	87	76	81	86	99	98	97	90	81	70	59	58
29	86	76	81	85	---	98	97	90	81	69	59	58
30	86	76	81	86	---	98	97	89	80	69	58	58
31	85	---	81	87	---	98	---	89	---	68	58	---
TOTAL	2799	2415	2293	2634	2589	3047	2922	2849	2542	2330	1937	1749
MEAN	90.3	80.5	74.0	85.0	92.5	98.3	97.4	91.9	84.7	75.2	62.5	58.3
MAX	95	85	81	87	99	99	98	96	88	81	68	65
MIN	85	76	66	81	89	98	96	89	80	68	58	54
AC-FT	5550	4790	4550	5220	5140	6040	5800	5650	5040	4620	3840	3470

08155500 BARTON SPRINGS AT AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Oct 1903, Jun 1941 to Feb 1959. Chemical and biochemical analyses: Dec 1978 to current year. Radiochemical analyses: Jan to Sep 1980. Organics analyses: Dec 1978 to Nov 1994.

REMARKS.--Samples collected by USGS personnel.

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, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)
JAN											
09...	1105	7.0	630	7.6	19.5	3	1.0	5.6	62	<10	.4
27...	0957	86	622	7.7	19.5	1	.45	7.4	81	<10	.1
MAR											
18...	0938	111	590	7.6	19.5	8	.70	7.2	80	<10	.3
JUN											
22...	1125	83	631	8.0	21.0	3	.25	6.4	73	<10	.6
AUG											
27...	0930	--	663	6.9	21.2	--	--	--	--	--	--
27...	1140	--	653	6.9	21.3	--	--	--	--	--	--
27...	1403	--	660	7.0	21.3	--	--	--	--	--	--
27...	1725	--	699	6.9	21.3	--	--	--	--	--	--
27...	1930	--	690	6.9	21.4	--	--	--	--	--	--
27...	2129	--	684	7.0	21.3	--	--	--	--	--	--
28...	0131	--	652	6.8	21.3	--	--	--	--	--	--
28...	0533	--	650	6.9	21.3	--	--	--	--	--	--
28...	1123	--	657	6.9	21.3	--	--	--	--	--	--
SEP											
17...	0905	--	562	6.9	21.7	--	--	--	--	--	--
17...	1343	--	569	6.9	21.7	--	--	--	--	--	--
17...	1820	--	596	6.9	21.7	--	--	--	--	--	--
17...	2315	--	572	6.9	21.7	--	--	--	--	--	--
18...	0221	--	572	6.9	21.7	--	--	--	--	--	--
18...	0509	--	574	7.0	21.7	--	--	--	--	--	--
18...	0806	--	578	7.0	21.7	--	--	--	--	--	--
18...	1012	--	581	7.0	21.8	--	--	--	--	--	--

DATE	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	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)
JAN											
09...	13000	52000	280	59	83	18	15	.4	1.2	220	30
27...	K4	K2	--	--	--	--	--	--	1.2	260	33
MAR											
18...	400	980	300	78	91	18	13	.3	1.2	220	30
JUN											
22...	K7	K17	300	55	84	21	13	.3	1.2	240	24
AUG											
27...	--	--	310	--	88	23	16	.4	1.3	--	27
27...	--	--	310	--	86	22	17	.4	1.3	--	27
27...	--	--	310	--	88	22	16	.4	1.3	--	27
27...	--	--	310	--	88	23	22	.5	1.4	--	31
27...	--	--	310	--	89	22	20	.5	1.4	--	30
27...	--	--	310	--	87	23	20	.5	1.3	--	29
28...	--	--	310	--	87	22	14	.4	1.3	--	25
28...	--	--	310	--	86	22	15	.4	1.2	--	25
28...	--	--	320	--	90	22	15	.4	1.4	--	26
SEP											
17...	--	--	270	--	80	18	12	.3	1.5	--	27
17...	--	--	270	--	79	18	13	.3	1.5	--	28
17...	--	--	280	--	81	18	17	.5	1.5	--	31
17...	--	--	280	--	82	18	13	.3	1.5	--	28
18...	--	--	280	--	81	18	13	.3	1.4	--	27
18...	--	--	280	--	81	18	13	.3	1.5	--	28
18...	--	--	270	--	80	18	13	.4	1.5	--	28
18...	--	--	280	--	81	18	14	.4	1.4	--	28

08155500 BARTON SPRINGS AT AUSTIN, TX--Continued

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

DATE	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	RESIDUE VOLATILE, SUSPENDED (MG/L) (00535)	RESIDUE FIXED NONFILTERABLE (MG/L) (00540)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)
JAN											
09...	21	.17	9.6	--	316	<1	3	--	.849	.014	.863
27...	25	.18	--	--	--	<1	<1	--	--	<.010	.856
MAR											
18...	20	.18	10	--	320	1	3	.00	--	<.010	.766
JUN											
22...	23	.20	11	--	330	9	11	.00	--	<.010	1.32
AUG											
27...	27	.26	11	373	358	--	--	--	--	--	--
27...	26	.27	11	375	350	--	--	--	--	--	--
27...	27	.26	11	373	357	--	--	--	--	--	--
27...	36	.27	11	397	367	--	--	--	--	--	--
27...	33	.26	11	389	373	--	--	--	--	--	--
27...	32	.27	11	387	369	--	--	--	--	--	--
28...	24	.26	11	366	351	--	--	--	--	--	--
28...	23	.26	11	369	349	--	--	--	--	--	--
28...	25	.26	12	368	352	--	--	--	--	--	--
SEP											
17...	20	.20	11	328	315	--	--	--	--	--	--
17...	21	.20	11	331	318	--	--	--	--	--	--
17...	28	.20	11	349	335	--	--	--	--	--	--
17...	21	.19	11	335	322	--	--	--	--	--	--
18...	21	.19	11	335	320	--	--	--	--	--	--
18...	22	.20	11	338	320	--	--	--	--	--	--
18...	22	.20	11	335	323	--	--	--	--	--	--
18...	22	.21	11	344	324	--	--	--	--	--	--

DATE	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)
JAN										
09...	<.020	<.10	.041	<.010	.014	.04	1.2	<1	46	<1.0
27...	<.020	<.10	<.010	<.010	<.010	--	.50	<1	--	--
MAR										
18...	<.020	<.10	.016	<.010	<.010	--	1.8	<1	41	<1.0
JUN										
22...	.058	<.10	<.010	<.010	<.010	--	.80	<1	52	<1.0
AUG										
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
SEP										
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--

08155500 BARTON SPRINGS AT AUSTIN, TX--Continued

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

DATE	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	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, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	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)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
JAN										
09...	<1	<8.0	<14	<12	<1	<10	<10	<1	<100	9
27...	<1	--	--	--	<1	--	--	<1	--	--
MAR										
18...	<1	<8.0	<14	<12	<1	<10	<10	<1	<100	9
JUN										
22...	<1	<8.0	<14	<12	<1	<10	<10	<1	<100	9
AUG										
27...	--	--	--	--	--	--	<10	--	--	--
27...	--	--	--	--	--	--	15	--	--	--
27...	--	--	--	--	--	--	<10	--	--	--
27...	--	--	--	--	--	--	<10	--	--	--
27...	--	--	--	--	--	--	<10	--	--	--
27...	--	--	--	--	--	--	<10	--	--	--
28...	--	--	--	--	--	--	<10	--	--	--
28...	--	--	--	--	--	--	<10	--	--	--
28...	--	--	--	--	--	--	<10	--	--	--
SEP										
17...	--	--	--	--	--	--	<30	--	--	--
17...	--	--	--	--	--	--	<10	--	--	--
17...	--	--	--	--	--	--	<10	--	--	--
17...	--	--	--	--	--	--	<10	--	--	--
18...	--	--	--	--	--	--	<10	--	--	--
18...	--	--	--	--	--	--	<10	--	--	--
18...	--	--	--	--	--	--	<10	--	--	--
18...	--	--	--	--	--	--	<10	--	--	--

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, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
JAN										
09...	<4.0	<.1	<60	<40	<1	<4.0	653	<10	<10	<20
27...	--	<.1	--	--	<1	--	--	--	<10	--
MAR										
18...	<4.0	<.1	<60	<40	<1	<4.0	576	<10	<10	<20
JUN										
22...	<4.0	<.1	<60	<40	<1	<4.0	867	<10	<10	<20
AUG										
27...	<4.0	--	--	--	--	--	--	--	--	--
27...	<4.0	--	--	--	--	--	--	--	--	--
27...	<4.0	--	--	--	--	--	--	--	--	--
27...	<4.0	--	--	--	--	--	--	--	--	--
27...	<4.0	--	--	--	--	--	--	--	--	--
27...	<4.0	--	--	--	--	--	--	--	--	--
28...	<4.0	--	--	--	--	--	--	--	--	--
28...	<4.0	--	--	--	--	--	--	--	--	--
28...	<4.0	--	--	--	--	--	--	--	--	--
SEP										
17...	<12	--	--	--	--	--	--	--	--	--
17...	<4.0	--	--	--	--	--	--	--	--	--
17...	<4.0	--	--	--	--	--	--	--	--	--
17...	<4.0	--	--	--	--	--	--	--	--	--
18...	<4.0	--	--	--	--	--	--	--	--	--
18...	<4.0	--	--	--	--	--	--	--	--	--
18...	<4.0	--	--	--	--	--	--	--	--	--
18...	<4.0	--	--	--	--	--	--	--	--	--

08156800 SHOAL CREEK AT 12TH STREET, AUSTIN, TX

LOCATION.--Lat 30°16'35", long 97°45'00", Travis County, Hydrologic Unit 12090205, on left bank at downstream side of bridge at 12th Street, and 0.6 mi west of the State Capitol Building in Austin.

DRAINAGE AREA.--12.3 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Nov 1974 to Mar 1975, periodic discharge measurement, and associated peak discharges along with annual maximum. Apr 1975 to Sep 1984, operated as a flood-hydrograph partial-record site. Oct 1984 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 455.33 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 1,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 20	2115	2,820	11.67	Feb 21	1930	1,190	8.07
Jan 6	1230	1,390	8.59	Mar 16	0515	1,550	8.99

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

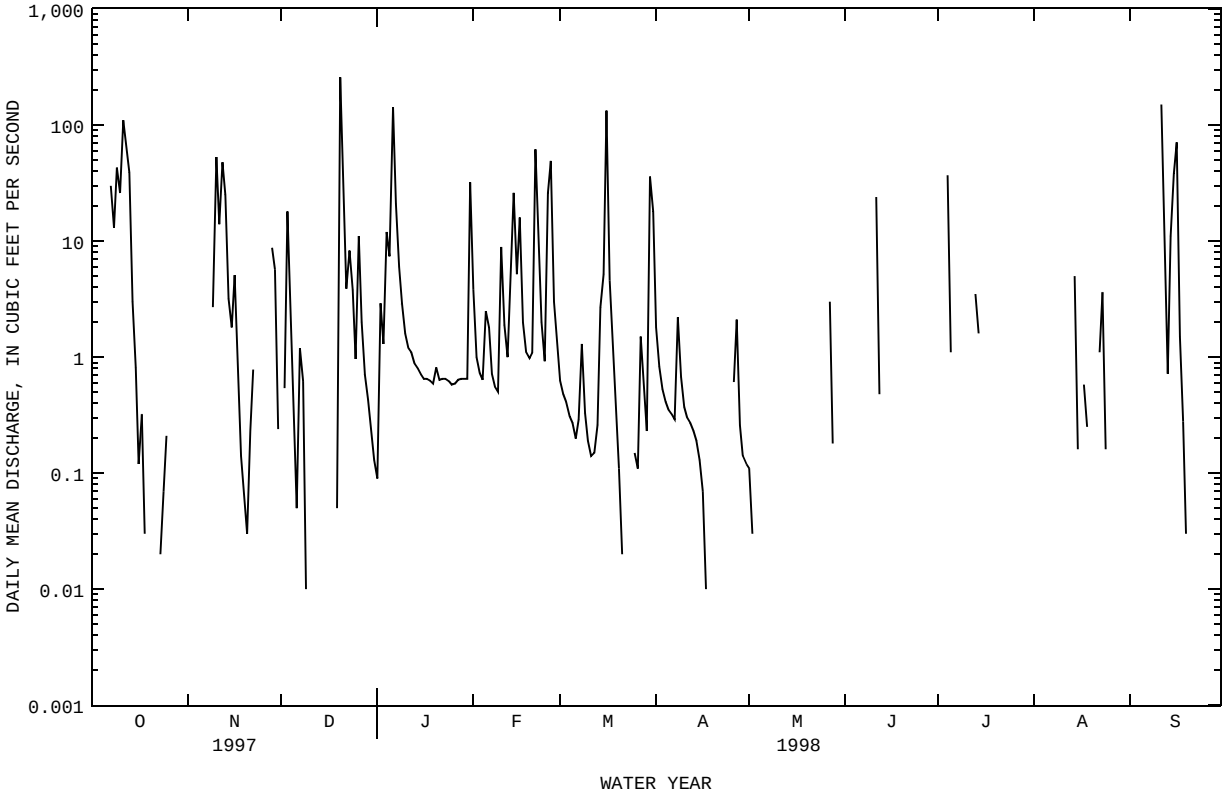
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.09	3.8	.63	1.8	.11	.00	.00	.00	.00
2	.00	.00	.54	2.9	1.0	.48	.83	.03	.00	.00	.00	.00
3	.00	.00	18	1.3	.73	.41	.53	.00	.00	.00	.00	.00
4	.00	.00	3.4	12	.64	.31	.41	.00	.00	37	.00	.00
5	.00	.00	.62	7.4	2.5	.27	.35	.00	.03	1.1	.00	.00
6	.00	.00	.05	143	1.8	.20	.32	.00	.00	.00	.00	.00
7	30	.00	1.2	21	.72	.29	.29	.00	.00	.00	.18	.00
8	13	.00	.62	6.0	.55	1.3	2.2	.00	.00	.00	.00	.00
9	43	2.7	.01	2.9	.50	.33	.68	.00	.00	.00	.00	.00
10	26	53	.00	1.6	8.9	.19	.37	.00	.00	.00	.00	.00
11	110	14	.00	1.2	1.9	.14	.30	.00	24	.00	.00	150
12	66	48	.00	1.1	1.0	.15	.27	.00	.48	.00	.00	12
13	39	25	.00	.88	3.6	.26	.23	.00	.00	3.5	.00	.72
14	3.0	3.2	.00	.80	26	2.7	.19	.00	.00	1.6	5.0	11
15	.81	1.8	.00	.71	5.2	5.2	.13	.00	.00	.00	.16	38
16	.12	5.1	.00	.65	16	133	.07	.00	.00	.00	.00	71
17	.32	1.1	.00	.65	2.0	4.6	.01	.00	.00	.00	.58	1.5
18	.03	.14	.00	.63	1.1	1.2	.00	.00	.00	.00	.25	.28
19	.00	.06	.05	.59	.98	.38	.00	.00	.00	.00	.00	.03
20	.00	.03	258	.82	1.1	.11	.00	.00	.00	.00	.00	.00
21	.00	.23	42	.64	62	.02	.10	.00	.00	.00	.00	.00
22	.00	.78	3.9	.65	14	.00	.00	.00	.00	.00	1.1	.00
23	.02	.00	8.3	.65	2.0	.00	.00	.00	.00	.00	3.6	.00
24	.07	.00	3.8	.62	.92	.00	.00	.00	.00	.00	.16	.00
25	.21	.00	.96	.58	26	.15	.00	.00	.00	.00	.00	.00
26	.00	.00	11	.59	49	.11	.61	.00	.00	.00	.00	.17
27	.00	.00	2.0	.64	3.0	1.5	2.1	3.0	.00	.00	.00	.00
28	.00	8.8	.71	.65	1.3	.56	.26	.18	.00	.00	.00	.00
29	.00	5.7	.43	.65	---	.23	.14	.00	.00	.00	.00	.00
30	.00	.24	.22	.65	---	36	.12	.00	.00	.00	.00	.00
31	.00	---	.13	32	---	18	---	.00	---	.00	.00	---
TOTAL	331.58	169.88	355.94	244.54	238.24	208.72	12.31	3.32	24.51	43.20	11.03	284.70
MEAN	10.7	5.66	11.5	7.89	8.51	6.73	.41	.11	.82	1.39	.36	9.49
MAX	110	53	258	143	62	133	2.2	3.0	24	37	5.0	150
MIN	.00	.00	.00	.09	.50	.00	.00	.00	.00	.00	.00	.00
AC-FT	658	337	706	485	473	414	24	6.6	49	86	22	565
CFSM	.87	.46	.93	.64	.69	.55	.03	.01	.07	.11	.03	.77
IN.	1.00	.51	1.08	.74	.72	.63	.04	.01	.07	.13	.03	.86

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 1998, BY WATER YEAR (WY)

MEAN	10.6	5.65	11.0	5.42	6.31	5.25	5.78	16.7	11.7	2.27	6.53	5.71
MAX	42.6	14.9	70.8	22.6	29.2	15.5	18.2	38.7	46.1	11.9	38.9	12.5
(WY)	1985	1986	1992	1991	1992	1995	1997	1995	1987	1987	1996	1986
MIN	.22	.000	.065	.000	.069	.012	.41	.11	.82	.000	.000	.033
(WY)	1997	1989	1996	1996	1996	1996	1998	1998	1998	1989	1993	1993

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1985 - 1998	
ANNUAL TOTAL	3282.21		1927.97			
ANNUAL MEAN	8.99		5.28		7.76	
HIGHEST ANNUAL MEAN					15.7	1992
LOWEST ANNUAL MEAN					3.26	1988
HIGHEST DAILY MEAN	258	Dec 20	258	Dec 20	948	Dec 20 1991
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Oct 1 1984
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 12	.00	Oct 26	.00	May 6 1985
INSTANTANEOUS PEAK FLOW			2820	Dec 20	16000	May 24 1981
INSTANTANEOUS PEAK STAGE			11.67	Dec 20	23.11	May 24 1981
ANNUAL RUNOFF (AC-FT)	6510		3820		5620	
ANNUAL RUNOFF (CFSM)	.73		.43		.63	
ANNUAL RUNOFF (INCHES)	9.93		5.83		8.57	
10 PERCENT EXCEEDS	20		8.8		13	
50 PERCENT EXCEEDS	.05		.05		.03	
90 PERCENT EXCEEDS	.00		.00		.00	

08156800 SHOAL CREEK AT 12TH STREET, AUSTIN, TX--Continued



08156800 SHOAL CREEK AT 12TH STREET, AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.-- Chemical and biochemical analyses: Feb 1943, Nov 1974 to current year. Pesticide analyses: Jan 1975 to Sep 1985, Jan 1993 to May 1996. Radiochemical analyses: Apr 1980.

INSTRUMENTATION.--Stage-activated automatic sampler.

REMARKS.--Base flow samples collected by USGS personnel.

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, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
DEC												
20...	1102	97	193	7.4	--	70	110	--	--	79	8.9	34000
20...	1117	325	173	7.6	--	100	720	--	--	18	8.5	50000
20...	1132	697	172	7.4	--	110	740	--	--	<10	9.1	55000
20...	1208	350	133	7.1	--	130	510	--	--	130	8.8	42000
20...	1225	268	126	7.3	--	150	390	--	--	120	8.8	33000
20...	1241	222	124	7.1	--	100	300	--	--	100	8.8	54000
JAN												
26...	1025	.58	817	7.9	16.0	4	.37	8.5	87	<10	.2	560
AUG												
24...	1105	.05	365	7.3	25.5	32	2.1	5.8	72	15	.4	5200

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	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, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
DEC											
20...	120000	62	404	52	352	--	<.010	<.050	<.020	--	--
20...	140000	56	1650	160	1490	--	<.010	.055	<.020	4.9	--
20...	240000	52	1900	165	1730	--	<.010	.075	<.020	2.1	--
20...	220000	43	1140	120	1020	.414	.017	.431	<.020	4.5	--
20...	140000	43	935	235	700	--	<.010	.150	<.020	2.3	--
20...	200000	39	795	100	695	--	<.010	<.050	<.020	--	--
JAN											
26...	330	240	<1	<1	--	--	<.010	2.00	<.020	--	--
AUG											
24...	4400	110	1	3	.00	.125	.015	.140	.109	.45	.20

DATE	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)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
DEC											
20...	2.4	.632	.089	.016	.05	23	--	--	13	34	100
20...	4.8	1.28	.049	.027	.08	58	--	--	29	110	240
20...	2.0	.598	.051	.019	.06	52	--	--	31	100	260
20...	4.0	1.25	.039	.014	.04	37	--	--	27	73	220
20...	2.2	.691	.274	.024	.07	37	--	--	27	48	200
20...	2.7	.843	.045	.018	.06	25	--	--	17	27	120
JAN											
26...	<.10	<.010	<.010	<.010	--	4.0	1.40	<.100	15	<1	<10
AUG											
24...	.31	.050	.023	.027	.08	6.7	1.50	.170	3	<1	<10

08157600 EAST BOULDIN CREEK AT SOUTH 1ST STREET, AUSTIN, TX

LOCATION.--Lat 30°15'07", long 97°45'14", Travis County, Hydrologic Unit 12090205, at bridge on South 1st Street, and 1.75 mi south of the State Capitol Building in Austin.

DRAINAGE AREA.--2.4 mi^2.

PERIOD OF RECORD.--Chemical and biochemical analyses: Jun 1997.

REMARKS.--Samples collected by USGS personnel.

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 DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
JAN										
31...	1030	19	325	7.6	16.0	55	30	<10	8.7	100000
31...	1057	26	225	7.4	15.5	55	31	83	8.7	60000
31...	1134	48	169	7.3	16.0	55	69	91	7.3	62000
31...	1310	18	120	7.2	--	50	38	35	6.6	23000
31...	1715	12	133	7.2	16.5	55	24	26	4.7	15000
FEB										
01...	0840	.19	520	8.0	15.6	14	1.6	<10	1.2	K7200

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	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, TOTAL (MG/L AS N) (00600)
JAN										
31...	220000	89	114	34	80	1.82	.078	1.90	.486	4.6
31...	240000	62	78	24	54	1.27	.065	1.33	.379	4.4
31...	210000	49	216	48	168	1.06	.049	1.11	.238	4.5
31...	100000	43	94	26	68	.454	.032	.486	.154	1.2
31...	59000	53	46	18	28	.379	.029	.408	.051	1.1
FEB										
01...	9200	170	1	4	.00	.975	.014	.989	.020	1.3

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)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
JAN									
31...	2.2	2.7	.436	.153	.157	.48	22	27	120
31...	2.7	3.0	.458	.136	.099	.30	23	28	110
31...	3.1	3.4	.562	.082	.070	.21	20	41	120
31...	.58	.74	.154	.087	.080	.25	10	18	60
31...	.62	.67	.136	.044	.017	.05	7.7	11	40
FEB									
01...	.26	.28	.050	.013	.028	.09	4.4	1	20

08157900 TOWN LAKE AT AUSTIN, TX

LOCATION.--Lat 30°14'56", long 97°43'03", Travis County, Hydrologic Unit 12090205, at Longhorn Dam on the Colorado River at Austin, 1.5 mi downstream from Interstate Highway 35, and 2.3 mi southeast of the State Capitol Building in Austin.

DRAINAGE AREA.--39,003 mi^2, approximately, of which 11,403 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: Feb 1975 to Aug 1990. Chemical and biochemical analyses: Oct 1990 to current year. Trace metal and Pesticide analyses of bed sediments at selected sites Feb 1991 to current year.

REMARKS.--Samples collected by USGS personnel.

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

301559097424801 - TOWN LAKE AR

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
FEB							
22...	0946	1.00	530	7.9	14.0	8.7	85
22...	0948	10.0	529	7.9	14.0	8.6	84
22...	0950	20.0	526	7.9	13.5	8.5	83
22...	0952	27.0	525	7.9	13.5	8.5	83
26...	1000	1.00	529	7.9	15.0	8.6	87
26...	1002	10.0	530	7.9	15.0	8.6	87
26...	1004	20.0	534	7.9	15.0	8.6	87
26...	1006	27.0	534	7.9	15.0	8.5	86
SEP							
11...	1352	1.00	500	7.8	25.0	5.4	67
11...	1354	10.0	498	7.8	25.0	5.4	67
11...	1356	20.0	497	7.8	25.0	5.4	67
11...	1358	26.0	497	7.8	25.0	5.4	67

301500097424801 - TOWN LAKE AC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L) (00310)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)
FEB												
22...	1000	1.00	532	8.0	14.0	4.00	3.6	8.7	85	<10	.5	K320
22...	1002	10.0	529	7.9	14.0	--	--	8.7	85	--	--	--
22...	1004	20.0	525	7.9	13.5	--	--	8.5	83	--	--	--
22...	1006	26.0	527	7.9	13.5	--	6.2	8.5	83	--	.4	--
26...	1014	1.00	519	8.0	15.0	.94	2.2	8.6	87	<10	.9	920
26...	1016	10.0	521	8.0	15.0	--	--	8.5	86	--	--	--
26...	1018	20.0	525	8.0	15.0	--	--	8.6	87	--	--	--
26...	1020	25.0	527	8.0	15.0	--	4.0	8.5	86	--	.6	--
MAY												
19...	1010	--	--	--	--	--	--	--	--	--	--	--
SEP												
11...	1410	1.00	497	7.8	25.5	1.52	1.6	4.8	60	<10	.3	2500
11...	1412	10.0	500	7.8	25.0	--	--	4.6	57	--	--	--
11...	1414	20.0	500	7.8	25.0	--	--	4.6	57	--	--	--
11...	1416	26.0	500	7.8	25.0	--	1.9	4.6	57	--	.4	--

301500097424801 - TOWN LAKE AC

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	ALKALINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)
FEB											
22...	1100	170	314	1	--	<.010	.255	<.020	.49	--	.23
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	170	303	3	--	<.010	.260	.021	.50	.22	.24
26...	1600	170	290	5	--	<.010	.257	<.020	.47	--	.21
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	170	286	6	--	<.010	.236	<.020	.46	--	.22
MAY											
19...	--	--	--	--	--	--	--	--	--	--	--
SEP											
11...	840	160	290	1	.040	.010	.050	.071	.40	.28	.35
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	170	291	2	--	<.010	<.050	.074	--	.19	.27

08157900 TOWN LAKE AT AUSTIN, TX--Continued

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

301500097424801 - TOWN LAKE AC

DATE	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)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	CADMIUM RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CD) (01028)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
FEB											
22...	<.010	<.010	.016	.05	3.0	.700	<.100	--	--	--	1.1
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	<.010	<.010	.019	.06	4.0	--	--	--	--	--	1.2
26...	<.010	<.010	.012	.04	4.1	.470	<.100	--	--	--	1.1
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	<.010	<.010	.011	.03	3.3	--	--	--	--	--	1.1
MAY											
19...	--	--	--	--	--	--	--	6	1	4	--
SEP											
11...	.050	<.010	<.010	--	3.2	1.90	.200	--	--	--	1.2
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	<.010	<.010	<.010	--	3.2	--	--	--	--	--	1.4

301500097424801 - TOWN LAKE AC

DATE	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS FE) (01170)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS PB) (01052)	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01053)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39519)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39333)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39351)	P,P'-DDD, RECOVER IN BOT-TOM MA-TERIAL (UG/KG) (39363)
FEB											
22...	--	--	<1.0	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	<1.0	--	--	--	--	--	--	--	--
26...	--	--	<1.0	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	<1.0	--	--	--	--	--	--	--	--
MAY											
19...	18	3000	--	60	54	.07	520	24.0	<.300	26.0	E11.0
SEP											
11...	--	--	<1.0	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	<1.0	--	--	--	--	--	--	--	--

301500097424801 - TOWN LAKE AC

DATE	P,P'-DDE, RECOVER IN BOT-TOM MA-TERIAL (UG/KG) (39368)	P,P'-DDT, RECOVER IN BOT-TOM MA-TERIAL (UG/KG) (39373)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39383)	ENDO-SULFAN I TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39389)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39393)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39413)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39343)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	MIREX, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39758)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39403)
FEB											
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
MAY											
19...	21.0	E12.0	1.50	<.200	<.240	<.200	<.200	<.200	<2.50	<.200	<50.0
SEP											
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--

08157900 TOWN LAKE AT AUSTIN, TX--Continued

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

301503097424701 - TOWN LAKE AL

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
FEB							
22...	1020	1.00	522	7.9	13.5	8.6	84
22...	1022	10.0	523	7.9	13.5	8.6	84
22...	1024	18.0	525	7.9	13.5	8.6	84
26...	1034	1.00	490	8.0	15.0	8.3	84
26...	1036	10.0	490	8.0	15.0	8.3	84
26...	1038	18.0	491	8.0	15.0	8.3	84
SEP							
11...	1426	1.00	497	7.8	26.5	4.4	56
11...	1428	10.0	495	7.8	25.0	4.6	57
11...	1430	18.0	494	7.8	24.5	4.5	55

301500097440801 - TOWN LAKE BR

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
FEB							
22...	1036	1.00	529	8.0	13.5	8.6	84
22...	1038	10.0	530	7.9	13.5	8.6	84
22...	1040	20.0	530	7.9	13.5	8.6	84
22...	1042	27.0	530	7.9	13.5	8.6	84
22...	1046	1.00	525	8.0	13.5	8.5	83
22...	1048	10.0	527	8.0	13.5	8.6	84
22...	1050	20.0	528	8.0	13.5	8.6	84
22...	1052	30.0	528	7.9	13.5	8.6	84
26...	1050	1.00	510	8.0	15.5	8.2	84
26...	1052	10.0	506	8.0	15.5	8.2	84
26...	1054	20.0	504	8.0	15.5	8.2	84
26...	1056	27.0	505	8.0	15.5	8.2	84
SEP							
11...	1438	1.00	444	7.8	24.0	4.9	60
11...	1440	10.0	446	7.8	24.0	4.9	60
11...	1442	20.0	441	7.8	24.0	4.8	58
11...	1444	26.0	442	7.8	24.0	4.8	58

301504097440901 - TOWN LAKE BC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	CADMIUM RECOV. FM BOTTOM MATERIAL (UG/G AS CD) (01028)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)
FEB											
26...	1100	1.00	501	8.0	15.5	8.2	84	--	--	--	--
26...	1102	10.0	512	7.9	15.5	8.2	84	--	--	--	--
26...	1104	20.0	510	8.0	15.5	8.2	84	--	--	--	--
26...	1106	30.0	511	8.0	15.5	8.2	84	--	--	--	--
MAY											
19...	0955	--	--	--	--	--	--	5	1	7	15
SEP											
11...	1450	1.00	448	7.7	24.0	4.7	57	--	--	--	--
11...	1452	10.0	448	7.7	24.0	4.6	56	--	--	--	--
11...	1454	20.0	448	7.7	24.0	4.7	57	--	--	--	--
11...	1456	29.0	448	7.7	24.0	4.6	56	--	--	--	--

08157900 TOWN LAKE AT AUSTIN, TX--Continued

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

301504097440901 - TOWN LAKE BC

DATE	IRON, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS FE) (01170)	LEAD, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS PB) (01052)	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01053)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39519)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39333)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39351)	P,P'-DDD, RECOVER IN BOT-TOM MA-TERIAL (UG/KG) (39363)	P,P'-DDE, RECOVER IN BOT-TOM MA-TERIAL (UG/KG) (39368)
FEB										
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
MAY										
19...	1800	120	40	.32	240	140	<.200	30.0	E38.0	84.0
SEP										
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--

301504097440901 - TOWN LAKE BC

DATE	P,P'-DDT, RECOVER IN BOT-TOM MA-TERIAL (UG/KG) (39373)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39383)	ENDO-SULFAN I TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39389)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39393)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39413)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39343)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	MIREX, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39758)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39403)
FEB										
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
MAY										
19...	E3.50	.890	<.200	<.370	<.200	<.200	<.200	<2.50	<.200	<50.0
SEP										
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--

301544097445201 - TOWN LAKE CR

DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
FEB							
22...	1058	1.00	523	8.0	13.5	8.7	84
22...	1100	10.0	522	8.0	13.5	8.0	78
22...	1102	19.0	524	8.0	13.5	8.7	84
26...	1116	1.00	535	8.0	15.0	8.5	86
26...	1118	10.0	534	8.0	15.0	8.5	86
26...	1120	18.0	534	8.0	15.0	8.4	85
SEP							
11...	1506	1.00	453	7.8	24.0	4.9	60
11...	1508	10.0	463	7.8	24.0	4.8	58
11...	1510	18.0	464	7.8	24.0	4.9	60

08157900 TOWN LAKE AT AUSTIN, TX--Continued

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

301546097445101 - TOWN LAKE CC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L) (00310)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)
FEB												
22...	1108	1.00	528	8.0	13.5	.64	8.0	8.6	84	<10	.5	580
22...	1110	10.0	528	8.0	13.5	--	--	8.7	85	--	--	--
22...	1112	17.0	528	8.0	13.5	--	12	8.6	84	--	.4	--
26...	1130	1.00	535	8.0	15.0	1.77	7.2	8.5	86	<10	.4	620
26...	1132	10.0	537	8.0	15.0	--	--	8.5	86	--	--	--
26...	1134	17.0	535	8.0	15.0	--	2.1	8.4	85	--	.4	--
MAY												
19...	0925	--	--	--	--	--	--	--	--	--	--	--
SEP												
11...	1514	1.00	325	7.8	24.0	.18	22	5.3	64	<10	.8	30000
11...	1516	10.0	391	7.8	24.0	--	--	4.9	60	--	--	--
11...	1518	17.0	406	7.8	24.0	--	18	4.8	58	--	.4	--

301546097445101 - TOWN LAKE CC

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	ALKALINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)
FEB											
22...	700	170	308	2	--	<.010	.256	<.020	.54	--	.28
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	170	312	14	--	<.010	.247	<.020	.51	--	.27
26...	270	160	286	11	--	<.010	.273	<.020	.47	--	.19
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	170	294	5	--	<.010	.250	<.020	.47	--	.22
MAY											
19...	--	--	--	--	--	--	--	--	--	--	--
SEP											
11...	38000	110	211	39	.152	.013	.165	.060	.43	.20	.26
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	140	245	32	.098	.012	.110	.074	.44	.26	.34

301546097445101 - TOWN LAKE CC

DATE	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	CADMIUM RECOV. FM BOTTOM MATERIAL (UG/G AS CD) (01028)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COPPER, DISSOLVED (UG/L AS CU) (01040)
FEB											
22...	.011	<.010	.018	.06	3.7	.700	<.100	--	--	--	<1.0
22...	--	--	--	--	--	--	--	--	--	--	--
22...	<.010	<.010	.020	.06	4.3	--	--	--	--	--	1.0
26...	<.010	<.010	<.010	--	2.9	.340	<.100	--	--	--	<1.0
26...	--	--	--	--	--	--	--	--	--	--	--
26...	<.010	<.010	.011	.03	3.4	--	--	--	--	--	1.0
MAY											
19...	--	--	--	--	--	--	--	7	2	5	--
SEP											
11...	.018	.043	.046	.14	6.0	.510	<.100	--	--	--	2.7
11...	--	--	--	--	--	--	--	--	--	--	--
11...	.043	.029	.027	.08	4.4	--	--	--	--	--	1.8

08157900 TOWN LAKE AT AUSTIN, TX--Continued

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

301546097445101 - TOWN LAKE CC

DATE	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, RECOV. FM BOTTOM MATERIAL (UG/G AS FE) (01170)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LEAD, RECOV. FM BOTTOM MATERIAL (UG/G AS PB) (01052)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G) (01053)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) (39519)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39333)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39351)	P,P'-DDD, RECOVER IN BOTTOM MATERIAL (UG/KG) (39363)
FEB											
22...	--	--	<1.0	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	<1.0	--	--	--	--	--	--	--	--
26...	--	--	<1.0	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	<1.0	--	--	--	--	--	--	--	--
MAY											
19...	17	3700	--	60	91	.06	290	34.0	<.900	92.0	E16.0
SEP											
11...	--	--	<1.0	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	<1.0	--	--	--	--	--	--	--	--

301546097445101 - TOWN LAKE CC

DATE	P,P'-DDE, RECOVER IN BOTTOM MATERIAL (UG/KG) (39368)	P,P'-DDT, RECOVER IN BOTTOM MATERIAL (UG/KG) (39373)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39383)	ENDOSULFAN I TOTAL IN BOTTOM MATERIAL (UG/KG) (39389)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39393)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	MIREX, TOTAL IN BOTTOM MATERIAL (UG/KG) (39758)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)
FEB											
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
MAY											
19...	E37.0	E12.0	9.60	<.200	<.600	.540	1.10	<.200	<5.90	<.200	<50.0
SEP											
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--

301556097452301 - TOWN LAKE DR

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
FEB							
22...	1132	1.00	492	8.0	13.5	9.1	88
22...	1134	13.0	489	8.0	13.5	9.1	88
26...	1148	1.00	538	8.0	15.5	8.5	87
26...	1150	13.0	538	8.0	15.5	8.5	87
SEP							
11...	1534	1.00	469	7.8	24.0	4.8	58
11...	1536	13.0	472	7.8	24.0	4.6	56

08157900 TOWN LAKE AT AUSTIN, TX--Continued

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

301558097452201 - TOWN LAKE DC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L) (00310)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)
FEB												
22...	1140	1.00	533	8.1	13.5	2.29	1.8	8.6	84	<10	.3	50
22...	1142	10.0	532	8.1	13.5	--	--	8.6	84	--	--	--
22...	1144	21.0	534	8.0	13.5	--	2.4	8.6	84	--	.3	--
26...	1154	1.00	538	8.0	15.5	.79	1.9	8.6	88	<10	.4	2700
26...	1156	10.0	540	8.0	15.5	--	--	8.6	88	--	--	--
26...	1158	20.0	536	8.0	15.5	--	1.2	8.6	88	--	.5	--
MAY												
19...	0900	--	--	--	--	--	--	--	--	--	--	--
SEP												
11...	1542	1.00	480	7.7	24.0	.91	2.9	4.7	57	<10	.0	15000
11...	1544	10.0	487	7.7	23.5	--	--	4.6	55	--	--	--
11...	1546	20.0	511	7.6	23.5	--	3.4	4.5	54	--	.0	--

301558097452201 - TOWN LAKE DC

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	ALKALINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)
FEB											
22...	92	170	308	3	--	<.010	.236	<.020	.48	--	.24
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	170	309	1	--	<.010	.235	<.020	.49	--	.25
26...	960	180	305	1	--	<.010	.222	<.020	.48	--	.26
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	170	296	3	--	<.010	.252	<.020	.48	--	.22
MAY											
19...	--	--	--	--	--	--	--	--	--	--	--
SEP											
11...	3600	160	280	3	--	<.010	.082	.063	.35	.20	.27
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	180	297	4	.277	.010	.287	.060	.55	.20	.26

301558097452201 - TOWN LAKE DC

DATE	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	CADMIUM RECOV. FM BOTTOM MATERIAL (UG/G AS CD) (01028)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)	COPPER, DISSOLVED (UG/L AS CU) (01040)
FEB											
22...	<.010	<.010	.016	.05	3.3	.280	<.100	--	--	--	1.0
22...	--	--	--	--	--	--	--	--	--	--	--
22...	<.010	<.010	.019	.06	3.5	--	--	--	--	--	<1.0
26...	<.010	<.010	<.010	--	3.3	.530	<.100	--	--	--	<1.0
26...	--	--	--	--	--	--	--	--	--	--	--
26...	<.010	<.010	.010	.03	3.3	--	--	--	--	--	<1.0
MAY											
19...	--	--	--	--	--	--	--	5	1	3	--
SEP											
11...	<.010	<.010	.011	.03	3.9	.500	<.100	--	--	--	1.7
11...	--	--	--	--	--	--	--	--	--	--	--
11...	<.010	<.010	.013	.04	2.9	--	--	--	--	--	1.5

08157900 TOWN LAKE AT AUSTIN, TX--Continued

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

301558097452201 - TOWN LAKE DC

DATE	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, RECOV. FM BOTTOM MATERIAL (UG/G AS FE) (01170)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LEAD, RECOV. FM BOTTOM MATERIAL (UG/G AS PB) (01052)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G) (01053)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) (39519)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39333)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39351)	P,P'-DDD, RECOVER IN BOTTOM MATERIAL (UG/KG) (39363)
FEB											
22...	--	--	<1.0	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	<1.0	--	--	--	--	--	--	--	--
26...	--	--	<1.0	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	<1.0	--	--	--	--	--	--	--	--
MAY											
19...	12	2900	--	60	20	.07	340	65.0	<.200	3.40	E4.40
SEP											
11...	--	--	<1.0	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	<1.0	--	--	--	--	--	--	--	--

301558097452201 - TOWN LAKE DC

DATE	P,P'-DDE, RECOVER IN BOTTOM MATERIAL (UG/KG) (39368)	P,P'-DDT, RECOVER IN BOTTOM MATERIAL (UG/KG) (39373)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39383)	ENDOSULFAN I TOTAL IN BOTTOM MATERIAL (UG/KG) (39389)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39393)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	MIREX, TOTAL IN BOTTOM MATERIAL (UG/KG) (39758)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)
FEB											
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
MAY											
19...	12.0	<.500	<.200	<.200	<.200	<.200	<.200	<.200	<2.50	<.200	<50.0
SEP											
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--

301712097470701 - TOWN LAKE EC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L) (00310)
FEB											
22...	1224	1.00	531	8.1	13.5	1.52	2.4	9.0	88	<10	.3
22...	1226	10.0	533	8.1	13.5	--	--	9.0	88	--	--
22...	1228	17.0	531	8.1	13.5	--	2.1	9.0	88	--	.4
26...	1224	1.00	538	8.2	15.0	2.26	4.0	9.1	92	10	.9
26...	1226	10.0	538	8.2	15.5	--	--	9.1	93	--	--
26...	1228	18.0	539	8.2	15.5	--	4.0	9.1	93	--	.5
SEP											
11...	1610	1.00	494	7.9	23.5	2.13	1.7	5.0	60	<10	.0
11...	1612	10.0	495	7.8	23.5	--	--	5.2	63	--	--
11...	1614	17.0	499	7.7	23.5	--	2.0	4.8	58	--	.0

08157900 TOWN LAKE AT AUSTIN, TX--Continued

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

301712097470701 - TOWN LAKE EC

DATE	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
FEB										
22...	41	88	170	310	<1	<.010	.231	<.020	.47	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	170	311	<1	<.010	.223	<.020	.47	--
26...	43	34	170	295	3	<.010	.238	<.020	.48	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	170	299	2	<.010	.212	<.020	.42	--
SEP										
11...	150	100	170	286	2	<.010	<.050	.043	--	.20
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	180	298	1	<.010	<.050	.041	--	.20

301712097470701 - TOWN LAKE EC

DATE	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)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
FEB										
22...	.24	<.010	<.010	.015	.05	3.9	.880	<.100	1.0	<1.0
22...	--	--	--	--	--	--	--	--	--	--
22...	.25	<.010	<.010	.017	.05	3.5	--	--	<1.0	<1.0
26...	.24	<.010	<.010	.011	.03	3.3	.500	<.100	<1.0	<1.0
26...	--	--	--	--	--	--	--	--	--	--
26...	.21	<.010	<.010	<.010	--	3.3	--	--	<1.0	<1.0
SEP										
11...	.25	<.010	<.010	<.010	--	3.0	1.30	<.100	1.5	<1.0
11...	--	--	--	--	--	--	--	--	--	--
11...	.24	<.010	<.010	<.010	--	2.9	--	--	1.6	<1.0

301601097454001 - TOWN LAKE 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)
FEB							
22...	1202	4.00	484	8.0	14.0	9.3	91
26...	1210	3.00	548	8.0	17.0	8.5	90
SEP							
11...	1558	3.00	542	7.3	23.0	5.4	64

08158000 COLORADO RIVER AT AUSTIN, TX

LOCATION.--Lat 30°14'40", long 97°41'39", Travis County, Hydrologic Unit 12090205, on right bank 1,000 ft upstream from upstream bridge on U.S. Highway 183 in Austin, 1.4 mi downstream from Longhorn Dam, and at mile 290.3.

DRAINAGE AREA.-39,009 mi^2, approximately, of which 11,403 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Feb 1898 to current year. Records of daily discharge for Dec 13-26, 1914, and Feb 9-17, 1915, published in WSP 408, have been found unreliable and should not be used.
Water-quality records.--Chemical analyses: Oct 1947 to Sep 1993. Specific conductance: Oct 1947 to Sep 1991. Water temperature: Oct 1947 to Sep 1991.

REVISED RECORDS.--WSP 508: 1915(m). WSP 528: 1900(M), 1918(m). WSP 548: 1901-16. WSP 1342: Drainage area. WSP 1562: 1908, 1929(M), 1936.

GAGE.--Water-stage recorder. Datum of gage is 402.27 ft above sea level. Prior to Jun 19, 1939, all records collected at or near Congress Avenue bridge 3.9 mi upstream at datum 19.6 ft higher; prior to Jun 18, 1915, nonrecording gages, recording gages thereafter; Jun 20, 1939, to Oct 16, 1963, at site 1,000 ft downstream from present site at datum 5.0 ft higher. Radio telemeter at station.

REMARKS.--Records good. Since installation of gage in 1898, at least 10% of contributing drainage area has been regulated by Town Lake, Lake Austin, Lake Travis, and other reservoirs. The city of Austin diverts water for municipal use upstream from station and returns wastewater effluent downstream. There are many other diversions above Lake Buchanan for irrigation, municipal supplies, and oil field operations.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1833, 51 ft Jul 7, 1869, present site and datum (adjusted to present site on basis of record for flood of Jun 15, 1935), determined from information concerning stage at former site furnished by Dean T.U. Taylor.

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	904	187	267	299	1610	3290	4990	1850	2190	2120	1750	1390
2	810	214	129	283	1340	3290	3990	2210	2240	2100	1700	1370
3	813	209	208	177	3220	3290	3630	2250	2280	2130	1800	1550
4	824	221	306	205	2300	3170	3710	2270	2290	2450	1760	1920
5	807	397	125	249	3250	2830	3780	1950	2320	2020	1760	2050
6	799	441	181	1710	3130	2760	3750	2060	2360	2110	1800	2110
7	931	135	201	2010	2190	2800	3740	2040	2340	2110	1890	2050
8	867	148	191	530	1440	2870	3830	2260	2330	2080	1860	2200
9	963	268	204	380	344	2760	3770	2240	2320	2110	1740	1770
10	1020	483	189	317	370	2700	3820	2190	2280	2000	1830	1790
11	1330	215	187	281	1740	1360	3820	2180	2520	2040	1740	1740
12	1530	505	164	352	1180	508	3840	2230	2370	2010	1710	1160
13	1070	339	193	321	1720	1560	3830	2360	2300	2020	1750	1330
14	840	205	171	551	2690	1220	2360	2300	2310	2040	1760	1410
15	449	227	267	937	2540	1220	1960	2320	2310	2020	1840	1710
16	410	233	127	575	2630	6100	1760	2310	2430	2040	1820	1600
17	351	219	233	320	3810	7350	2230	2290	2420	2040	1820	868
18	398	237	185	569	1710	12300	1660	2290	2410	1930	1820	812
19	385	217	126	450	1920	e10000	2250	2240	2330	1940	1760	786
20	395	269	1410	606	2150	e10000	1270	2240	2390	1950	1730	1240
21	405	151	1330	568	1600	e10000	1680	2260	2380	1790	1740	1250
22	356	286	263	574	4190	e10000	1770	2280	2380	1790	1660	1210
23	403	206	307	616	3770	e8500	2120	2400	2320	1690	1740	1230
24	373	124	326	567	2940	e7000	2060	2390	2310	1740	1660	1380
25	303	145	245	454	3260	5210	1770	2260	2320	1690	1310	1370
26	319	231	316	485	3830	5780	1970	2230	2340	1590	1360	1490
27	154	206	286	482	3980	7140	1610	2410	2380	1580	1170	1390
28	365	276	241	450	3030	6940	2070	2260	2330	1570	1230	1450
29	282	229	483	495	---	6670	1780	2380	2360	1560	1270	1190
30	303	204	635	637	---	6910	2130	2130	2060	1610	1260	1170
31	216	---	254	1860	---	7130	---	2190	---	1620	1330	---
TOTAL	19375	7427	9750	18310	67884	162658	82950	69270	69920	59490	51370	43986
MEAN	625	248	315	591	2424	5247	2765	2235	2331	1919	1657	1466
MAX	1530	505	1410	2010	4190	12300	4990	2410	2520	2450	1890	2200
MIN	154	124	125	177	344	508	1270	1850	2060	1560	1170	786
AC-FT	38430	14730	19340	36320	134600	322600	164500	137400	138700	118000	101900	87250

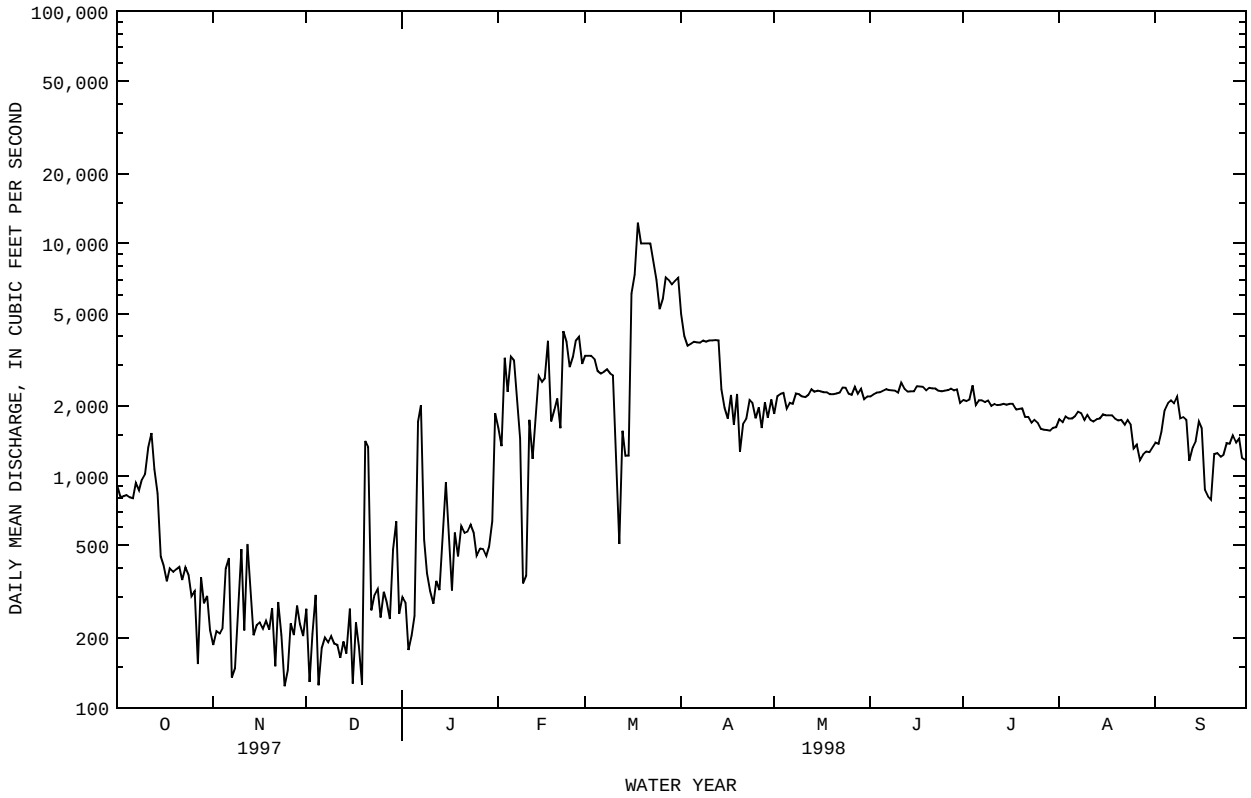
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 1998z, BY WATER YEAR (WY)

MEAN	2004	1489	1451	1233	1490	1543	2702	4199	3859	2760	1800	2589
MAX	20080	11050	23800	15080	25890	13640	21800	30710	31940	36110	12310	42630
(WY)	1931	1919	1914	1992	1992	1992	1900	1922	1935	1938	1906	1936
MIN	57.5	38.7	43.9	46.2	49.7	55.0	145	964	238	256	70.3	156
(WY)	1935	1990	1964	1967	1964	1964	1907	1921	1910	1933	1917	1907

08158000 COLORADO RIVER AT AUSTIN, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1898 - 1998z	
ANNUAL TOTAL	1532974		662390			
ANNUAL MEAN	4200		1815		2266	
HIGHEST ANNUAL MEAN					7535	1914
LOWEST ANNUAL MEAN					590	1917
HIGHEST DAILY MEAN	28500	Jun 25	12300	Mar 18	323000	Jun 15 1935
LOWEST DAILY MEAN	12	Feb 16	124	Nov 24	.00	Sep 29 1914
ANNUAL SEVEN-DAY MINIMUM	116	Feb 14	183	Dec 5	18	Oct 25 1990
INSTANTANEOUS PEAK FLOW			12700	Mar 18	481000	Jun 15 1935
INSTANTANEOUS PEAK STAGE			12.53	Mar 18	a50.00	Jun 15 1935
ANNUAL RUNOFF (AC-FT)	3041000		1314000		1641000	
10 PERCENT EXCEEDS	11700		3290		3930	
50 PERCENT EXCEEDS	1070		1740		1140	
90 PERCENT EXCEEDS	152		228		176	

e Estimated
z Period of regulated streamflow.
a From floodmark.



08158050 BOGGY CREEK AT U.S. HIGHWAY 183, AUSTIN, TX

LOCATION.--Lat 30°15'47", long 97°40'20", Travis County, Hydrologic Unit 12090205, on U.S. Highway 183, 1.6 mi south of the intersection of Webberville Road and U.S. Highway 183, and 4.1 mi east of the State Capitol Building in Austin.

DRAINAGE AREA.--13.1 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jan to Jul 1975 (periodic discharge measurements only), Aug 1975 to Jun 1977 (operated as a flood-hydrograph partial-record station only), Jun 1977 to Sep 1986, (daily mean discharge), Oct 1986 to May 1994 (annual maximum discharge). May 1994 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 411.29 ft sea level (levels from city of Austin benchmark). Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. No known regulation or diversions. Several observations of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge 4,370 ft^3/s May 17, 1989, gage height, 14.79 ft, from floodmark.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 11	2245	1,000	6.60	Feb 25	2330	1,420	7.46
Oct 12	2300	1,570	7.75	Mar 16	0515	2,330	9.23
Dec 20	2115	3,100	10.90	Sep 15	1030	1,940	8.47
Feb 21	1930	835	6.26	Sep 16	0800	1,230	7.07

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	.00	.41	1.7	1.4	6.6	3.1	2.9	.19	.00	.06	.00	.58
2	.00	1.1	1.1	2.2	2.4	2.8	3.2	.34	.00	.00	.00	.00
3	.00	.21	9.5	1.8	1.6	2.8	2.8	.14	.00	.14	.00	.00
4	.00	.07	1.6	5.9	1.7	2.9	2.5	.19	.00	27	.00	.00
5	.00	.03	1.1	2.4	6.4	3.5	3.0	.27	.00	2.7	.00	.00
6	.00	.00	1.2	110	5.4	2.7	4.1	.00	.68	.81	.00	.00
7	22	.00	3.2	12	1.9	3.1	3.6	.00	.20	.09	.00	.00
8	4.5	.00	4.5	3.4	1.5	5.8	21	.16	.00	.00	.00	.00
9	37	3.7	2.0	2.4	1.4	2.3	3.7	.00	.01	.00	.00	.00
10	43	49	1.1	2.0	24	2.1	2.4	.00	.00	.00	.00	.00
11	190	35	1.7	2.0	3.7	2.1	1.8	.00	31	.00	.00	158
12	103	74	.83	1.9	4.2	2.0	1.4	.00	1.3	.00	.00	27
13	35	30	.54	1.4	7.3	4.7	1.0	.00	.13	.00	.00	4.1
14	2.6	3.9	.54	1.3	34	16	1.0	.14	.00	.00	.00	17
15	1.5	3.3	.59	1.3	6.9	11	.78	.11	.00	.00	.00	208
16	1.4	2.5	.65	1.2	35	177	.64	.00	.00	.00	.00	154
17	.86	1.5	57	1.1	4.2	6.7	.71	.42	.00	.00	.00	13
18	.57	1.6	.65	1.3	4.0	5.4	.48	.04	.00	.00	.00	5.6
19	.47	1.3	.70	1.1	3.6	3.2	.37	.00	.00	.00	.00	3.7
20	.42	1.4	251	2.1	3.4	2.8	.35	.00	.00	.00	.00	3.2
21	.44	1.2	35	1.3	58	2.6	.42	.00	.00	.00	.00	3.2
22	.55	.86	4.0	1.2	12	2.6	.97	.00	.00	.00	11	2.8
23	.59	1.1	21	.96	3.8	2.3	.42	.00	.00	.00	15	2.0
24	1.2	1.3	5.0	1.1	3.4	2.1	.30	.00	.00	.00	3.1	3.5
25	.75	1.0	1.8	1.0	45	2.0	.20	.00	.00	.00	.25	1.3
26	.58	.83	22	1.1	57	2.3	2.0	.00	.00	.00	.00	.10
27	.47	.80	3.2	.92	4.8	9.5	9.8	15	.00	.00	.00	.00
28	.36	18	1.7	1.2	3.6	3.0	.92	.94	.00	.00	.00	.00
29	.90	2.7	1.4	1.1	---	1.9	.39	.27	1.7	.00	.00	.00
30	1.0	1.3	1.3	.79	---	28	.23	.03	2.1	.00	13	.00
31	.40	---	1.3	63	---	20	---	.00	---	.00	5.2	---
TOTAL	449.56	238.11	438.90	231.87	346.8	338.3	73.38	18.24	37.12	30.80	47.55	607.08
MEAN	14.5	7.94	14.2	7.48	12.4	10.9	2.45	.59	1.24	.99	1.53	20.2
MAX	190	74	251	110	58	177	21	15	31	27	15	208
MIN	.00	.00	.54	.79	1.4	1.9	.20	.00	.00	.00	.00	.00
AC-FT	892	472	871	460	688	671	146	36	74	61	94	1200
CFSM	1.11	.61	1.08	.57	.95	.83	.19	.04	.09	.08	.12	1.54
IN.	1.28	.68	1.25	.66	.98	.96	.21	.05	.11	.09	.14	1.72

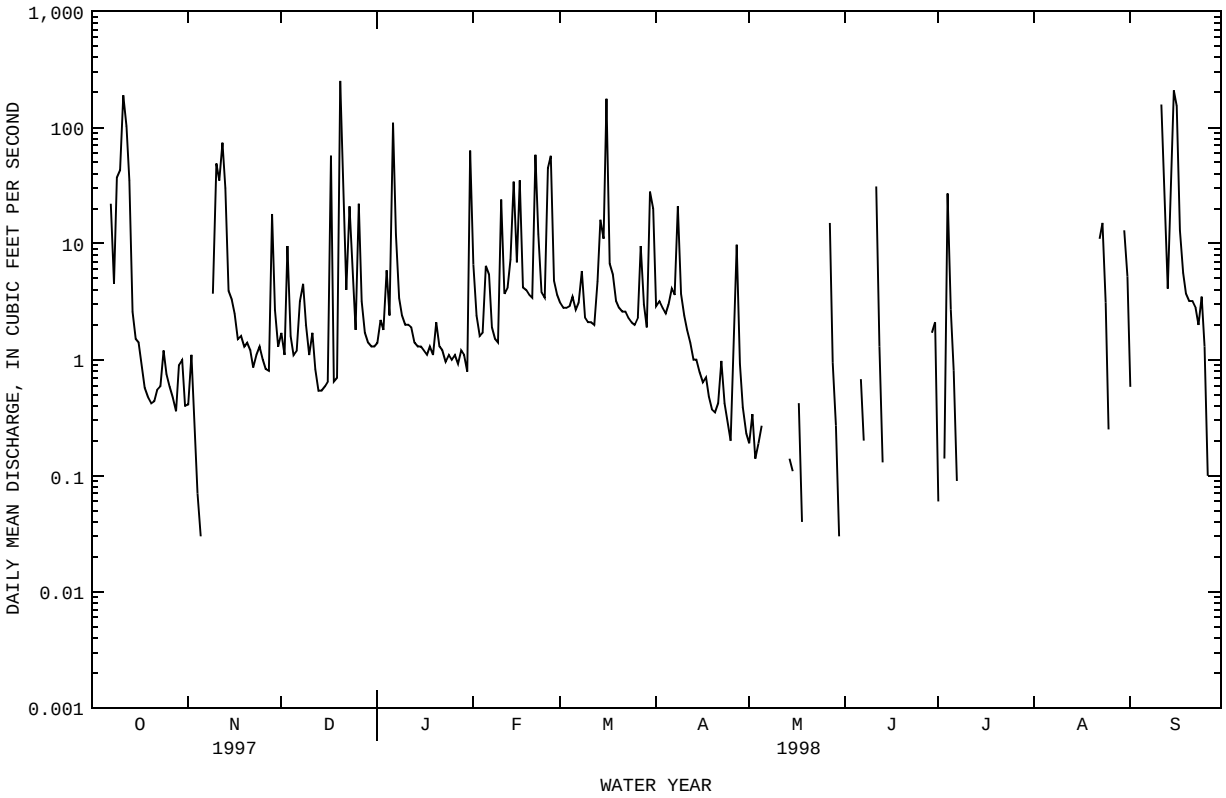
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 1998h, BY WATER YEAR (WY)

MEAN	8.39	5.88	5.06	2.44	118	6.01	4.76	16.1	11.9	5.15	6.62	7.11
MAX	31.5	16.8	14.9	7.48	1580	18.5	18.5	48.7	55.2	54.5	51.0	20.2
(WY)	1985	1986	1997	1998	1977	1983	1997	1979	1981	1979	1996	1998
MIN	.44	.10	.027	.055	.28	.31	.063	.39	.025	.025	.002	.16
(WY)	1979	1980	1978	1996	1996	1986	1984	1984	1994	1986	1984	1984

08158050 BOGGY CREEK AT U.S. HIGHWAY 183, AUSTIN, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1977 - 1998h	
ANNUAL TOTAL	4661.01		2857.71			
ANNUAL MEAN	12.8		7.83		7.18	
HIGHEST ANNUAL MEAN					15.1	1979
LOWEST ANNUAL MEAN					1.29	1984
HIGHEST DAILY MEAN	536	Jun 9	251	Dec 20	1660	Feb 11 1977
LOWEST DAILY MEAN	.00	Jun 23	.00	Oct 1	.00	Jul 13 1978
ANNUAL SEVEN-DAY MINIMUM	.00	Jun 23	.00	May 19	.00	Jul 13 1978
INSTANTANEOUS PEAK FLOW			3100	Dec 20	6100	May 23 1975
INSTANTANEOUS PEAK STAGE			10.60	Dec 20	17.03	May 23 1975
ANNUAL RUNOFF (AC-FT)	9250		5670		5200	
ANNUAL RUNOFF (CFSM)	.97		.60		.55	
ANNUAL RUNOFF (INCHES)	13.24		8.12		7.45	
10 PERCENT EXCEEDS	31		15		9.2	
50 PERCENT EXCEEDS	.90		1.0		.28	
90 PERCENT EXCEEDS	.00		.00		.00	

h See PERIOD OF RECORD paragraph.



08158050 BOGGY CREEK AT U.S. HIGHWAY 183, AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Jan 1975 to Sep 1986, Apr 1994 to current year. Pesticide analyses: Jan 1975 to Dec 1984. Radiochemical analyses: Jan 1980.

INSTRUMENTATION.--Stage-activated water sampler.

REMARKS.--Base flow samples collected by USGS personnel.

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, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)
JAN											
26...	1108	1.3	700	7.7	13.0	4	.52	--	--	<10	.5
JUL											
06...	1205	.80	391	7.6	31.0	29	.65	8.2	112	19	1.6
SEP											
11...	0715	301	220	7.2	23.5	100	230	--	--	23	2.6
11...	0743	430	170	7.8	23.5	110	300	--	--	17	2.1
11...	0802	470	149	7.8	24.0	160	130	--	--	15	2.5
11...	0900	565	120	7.7	23.5	200	200	--	--	15	1.8
11...	0950	360	110	7.8	23.5	100	150	--	--	11	1.7
11...	1355	160	103	7.8	24.0	110	71	--	--	<10	1.3

DATE	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	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, TOTAL (MG/L AS N) (00600)
JAN											
26...	30	K6	220	1	<1	--	--	<.010	.275	<.020	.41
JUL											
06...	K320	30	120	5	3	2	--	<.010	<.050	.040	--
SEP											
11...	200000	120000	49	362	40	322	.407	.026	.433	.074	1.2
11...	270000	160000	49	784	60	724	.440	.026	.466	.102	1.6
11...	200000	170000	43	260	30	230	.413	.023	.436	.097	1.9
11...	200000	160000	43	500	48	452	.389	.022	.411	.088	1.3
11...	220000	160000	39	378	42	336	.315	.020	.335	.073	1.7
11...	64000	92000	26	152	20	132	.284	.020	.304	.066	.87

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)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
JAN										
26...	--	.14	<.010	<.010	.011	.03	2.1	1	<1	<10
JUL										
06...	.52	.56	.021	.012	<.010	--	9.1	2	<1	<10
SEP										
11...	.68	.76	.198	.073	.064	.20	18	15	30	110
11...	.99	1.1	.344	.110	.101	.31	16	13	31	80
11...	1.3	1.4	.439	.123	.109	.33	12	16	28	100
11...	.77	.86	.304	.125	.113	.35	14	10	20	60
11...	1.3	1.3	.482	.110	.103	.32	8.2	12	32	90
11...	.50	.57	.222	.098	.097	.30	7.1	5	13	30

08158600 WALNUT CREEK AT WEBBERVILLE ROAD, AUSTIN, TX

LOCATION.--Lat 30°16'59", long 97°39'17", Travis County, Hydrologic Unit 12090205, on left bank 190 ft downstream from bridge on Farm Road 969, 0.8 mi downstream from Little Walnut Creek, 2.8 mi upstream from Colorado River, 5.2 mi east of the State Capitol Building in Austin, and 2.8 mi upstream from mouth.

DRAINAGE AREA.--51.3 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 425.96 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair except those above 150 ft^3/s, which are poor. No known regulation or diversions. Several observations of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jun 15, 1935, reached a stage of 24 ft, backwater from Colorado River. A flood in 1919 reached a stage of 22 ft, from information by local residents. Maximum stage since at least 1891, that of May 25, 1981.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 11	2400	1,670	11.79	Mar 16	0615	2,230	13.49
Dec 20	2215	5,150	19.64	Sep 15	0945	1,600	11.54
Jan 6	1630	1,960	12.72				

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	1.0	11	12	19	33	33	28	6.4	2.5	2.6	.19	2.1
2	.97	12	12	24	22	31	24	6.6	2.6	1.6	.13	1.4
3	1.3	13	65	22	19	29	22	6.4	2.2	3.9	.08	1.2
4	1.2	12	20	37	18	28	21	6.1	2.2	58	.07	.73
5	1.5	14	16	41	27	27	20	5.6	3.5	16	.06	.52
6	1.1	15	14	467	19	26	19	5.5	4.1	4.6	.58	.35
7	19	15	18	112	17	26	18	5.1	2.7	4.7	.71	.36
8	14	16	23	55	16	33	26	4.7	2.8	3.3	e.65	.42
9	41	27	14	42	16	25	17	4.4	e2.7	2.0	e.50	.35
10	45	115	12	38	45	24	16	3.9	e2.7	1.6	.40	.37
11	233	32	12	37	25	23	15	3.9	e22	1.3	.30	188
12	290	170	12	34	21	23	14	3.8	e5.0	1.1	.23	38
13	113	107	12	31	24	26	14	3.8	e2.5	7.7	.14	7.2
14	22	40	11	29	51	39	13	4.3	e1.5	12	18	9.0
15	13	27	11	28	35	37	13	4.6	1.3	8.5	6.3	185
16	11	19	11	26	57	463	12	4.6	1.2	2.6	1.2	109
17	9.9	16	10	25	29	50	11	4.3	2.4	1.6	6.6	15
18	8.8	15	11	24	24	36	11	3.7	1.4	1.1	4.4	4.9
19	7.7	15	11	22	23	31	11	3.5	1.3	1.3	2.1	3.8
20	7.7	13	669	23	20	29	10	3.2	1.1	.78	2.0	2.2
21	7.5	12	368	23	129	28	21	3.0	.97	.63	1.8	1.7
22	7.7	10	46	22	84	26	11	2.9	1.1	.56	14	1.5
23	9.6	9.7	62	21	36	25	9.1	2.9	1.2	.76	6.9	1.0
24	9.9	9.3	43	20	31	24	8.2	2.9	1.2	.51	6.7	.64
25	8.2	9.8	30	20	55	23	7.7	2.9	1.1	.43	4.1	.40
26	7.9	10	55	20	235	23	9.7	3.0	1.2	.52	3.7	.39
27	8.3	9.6	32	19	45	29	20	22	1.1	.40	2.5	.30
28	9.4	35	28	19	37	23	9.1	6.2	1.3	.35	2.1	.19
29	11	18	26	19	---	21	7.7	4.1	7.0	.26	2.1	.10
30	11	12	24	17	---	54	7.0	3.9	4.7	.19	43	.03
31	11	---	22	71	---	107	---	2.9	---	.19	8.2	---
TOTAL	943.67	839.4	1712	1407	1193	1422	445.5	151.1	88.57	141.08	139.74	576.15
MEAN	30.4	28.0	55.2	45.4	42.6	45.9	14.9	4.87	2.95	4.55	4.51	19.2
MAX	290	170	669	467	235	463	28	22	22	58	43	188
MIN	.97	9.3	10	17	16	21	7.0	2.9	.97	.19	.06	.03
AC-FT	1870	1660	3400	2790	2370	2820	884	300	176	280	277	1140
CFSM	.59	.55	1.08	.88	.83	.89	.29	.10	.06	.09	.09	.37
IN.	.68	.61	1.24	1.02	.87	1.03	.32	.11	.06	.10	.10	.42

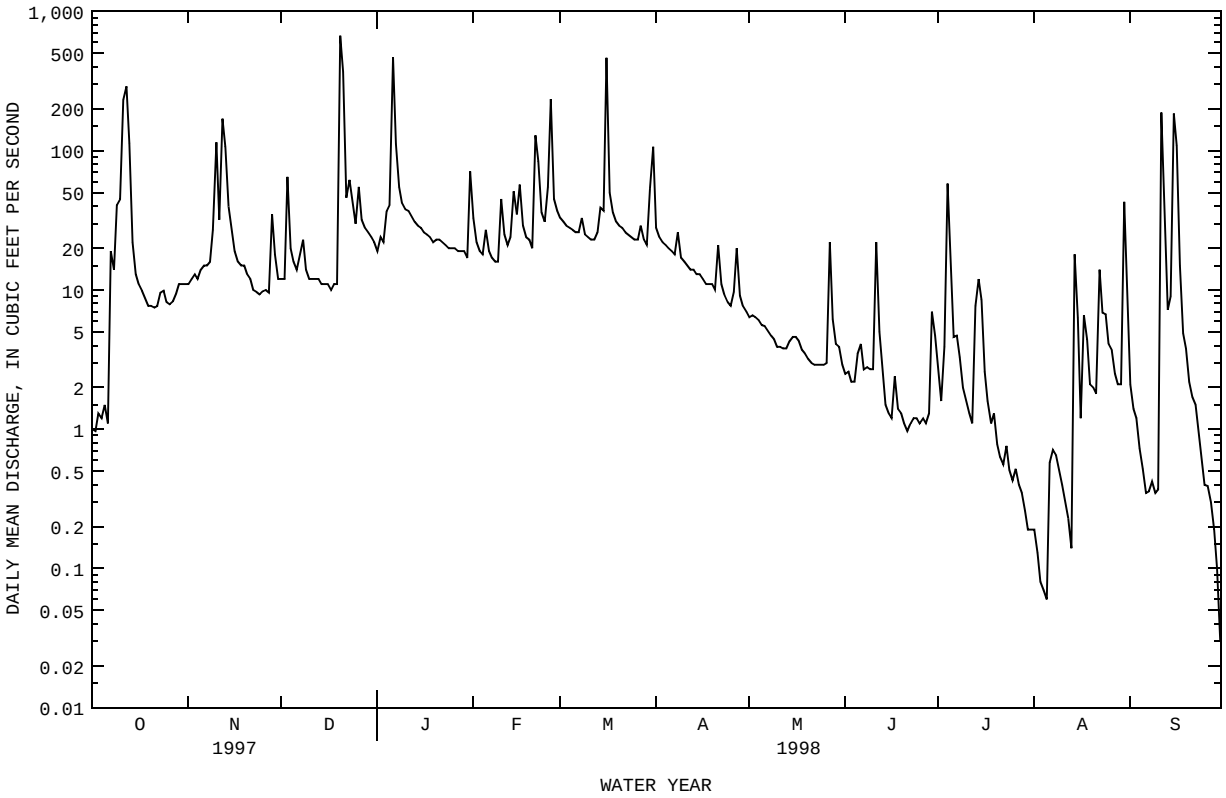
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1998, BY WATER YEAR (WY)

MEAN	28.3	20.7	34.6	30.1	32.5	27.1	25.2	58.6	43.8	11.4	11.7	13.6
MAX	175	161	367	237	203	121	90.0	170	435	55.7	77.6	51.7
(WY)	1985	1975	1992	1968	1992	1992	1977	1981	1981	1987	1996	1973
MIN	1.37	1.03	1.22	1.07	1.88	1.06	1.79	.58	.23	.052	.32	1.42
(WY)	1979	1967	1967	1967	1967	1967	1971	1971	1967	1971	1977	1972

08158600 WALNUT CREEK AT WEBBERVILLE ROAD, AUSTIN, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1966 - 1998	
ANNUAL TOTAL	16423.80		9059.21			
ANNUAL MEAN	45.0		24.8		28.2	
HIGHEST ANNUAL MEAN					94.6	1992
LOWEST ANNUAL MEAN					1.91	1967
HIGHEST DAILY MEAN	1040	Jun 9	669	Dec 20	4330	Dec 21 1991
LOWEST DAILY MEAN	.44	Sep 21	.03	Sep 30	.00	Jun 17 1967
ANNUAL SEVEN-DAY MINIMUM	1.3	Sep 30	.13	Jul 30	.00	Jun 17 1967
INSTANTANEOUS PEAK FLOW			5150	Dec 20	14300	May 25 1981
INSTANTANEOUS PEAK STAGE			19.64	Dec 20	27.24	May 25 1981
ANNUAL RUNOFF (AC-FT)	32580		17970		20460	
ANNUAL RUNOFF (CFSM)	.88		.48		.55	
ANNUAL RUNOFF (INCHES)	11.91		6.57		7.48	
10 PERCENT EXCEEDS	73		41		43	
50 PERCENT EXCEEDS	21		11		7.4	
90 PERCENT EXCEEDS	4.6		.72		1.1	

e Estimated



08158600 WALNUT CREEK AT WEBBERVILLE ROAD, AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Apr 1976 to current year. Pesticide analyses: Nov 1976 to Sep 1986. Sediment analyses: Dec 1977 to Jul 1982. Radiochemical analyses: Jan 1980.

INSTRUMENTATION.--Stage-activated water sampler.

REMARKS.--Base flow samples collected by USGS personnel.

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, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
NOV												
09...	2334	216	441	7.4	--	45	180	--	--	100	8.6	78000
10...	0004	354	352	7.5	--	55	280	--	--	66	8.5	90000
10...	0104	351	326	7.5	--	55	170	--	--	35	8.1	20000
10...	1000	86	240	7.2	--	30	30	--	--	11	4.1	11000
10...	1327	48	262	7.3	12.5	40	20	--	--	<10	3.1	9200
10...	1545	37	272	7.3	12.5	32	12	--	--	<10	3.3	8400
JAN												
26...	1140	20	656	8.4	12.0	4	.48	12.7	119	<10	.5	92
JUN												
23...	1045	1.1	556	7.0	28.0	13	.46	6.2	81	<10	1.0	80

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	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, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV											
09...	60000	130	712	72	640	.641	.073	.714	.289	5.6	4.6
10...	72000	110	700	48	652	.654	.045	.699	.154	4.3	3.4
10...	47000	100	422	34	388	.610	.041	.651	.187	2.2	1.4
10...	31000	72	64	8	56	.647	.037	.684	.189	1.2	.34
10...	23000	79	31	5	26	.490	.039	.529	.146	.90	.22
10...	12000	85	22	3	19	.486	.040	.526	<.020	.87	--
JAN											
26...	68	200	<1	3	--	--	<.010	1.42	<.020	1.6	--
JUN											
23...	160	130	2	1	1	.094	.012	.106	.092	.53	.33

DATE	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)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
NOV											
09...	4.9	1.11	<.010	.020	.06	34	--	--	18	15	80
10...	3.6	1.15	.026	<.010	--	23	--	--	9	13	60
10...	1.6	.490	.033	<.010	--	14	--	--	5	6	30
10...	.53	.123	.040	.058	.18	5.8	--	--	4	1	10
10...	.37	.091	.049	.036	.11	5.1	--	--	2	<1	<10
10...	.34	.092	.024	.035	.11	4.7	--	--	1	<1	10
JAN											
26...	.18	<.010	<.010	<.010	--	2.2	1.10	<.100	4	<1	<10
JUN											
23...	.42	.034	<.010	<.010	--	3.6	.610	<.100	<1	<1	<10

08158700 ONION CREEK NEAR DRIFTWOOD, TX

LOCATION.--Lat 30°04'58", long 98°00'27", Hays County, Hydrologic Unit 12090205, on left bank, 160 ft left of the upstream side of bridge at low-water crossing on Farm Road 150, 3.2 mi southeast of Driftwood, and 10 mi west of Buda.

DRAINAGE AREA.--124 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Apr 1958, Nov 1961 to Jun 1979 (periodic discharge measurements only), Jul 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 878.13 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair. 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 500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 6	1915	2,190	7.38	Mar 16	0930	3,050	8.67
Feb 21	2215	1,560	6.49	Jul 4	0915	2,320	7.56
Feb 26	0215	1,140	5.98				

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	1.7	1.9	13	29	181	237	164	43	8.0	2.3	1.5	4.8
2	1.5	2.2	13	30	114	225	148	41	7.1	1.9	1.4	4.5
3	1.7	2.5	14	30	95	213	137	40	6.6	2.3	1.4	4.2
4	1.8	2.8	14	29	89	205	128	40	6.4	375	1.4	3.9
5	1.7	3.1	12	28	95	194	123	38	6.0	74	1.4	3.9
6	1.6	3.0	12	798	111	177	119	36	5.5	24	2.2	3.6
7	2.0	3.2	14	341	98	177	115	34	5.1	12	2.0	3.3
8	2.3	3.2	14	202	95	184	137	31	5.0	8.2	1.9	3.2
9	2.7	3.6	14	164	92	156	117	30	4.2	7.3	1.7	3.0
10	2.6	4.6	16	141	104	137	104	25	3.7	5.9	1.6	2.9
11	2.6	3.4	16	128	104	130	99	21	4.6	5.1	1.4	7.0
12	2.6	6.1	16	115	99	126	96	20	4.3	4.4	1.3	73
13	3.0	5.3	17	103	107	126	93	19	4.1	4.2	1.3	65
14	2.8	4.4	17	97	149	135	90	18	4.1	3.9	1.1	43
15	2.5	4.8	17	92	239	145	86	19	3.7	3.5	1.4	81
16	2.1	6.7	18	83	233	1040	82	e19	3.5	3.1	1.3	142
17	2.1	7.2	17	77	220	371	76	e18	3.4	2.7	1.6	201
18	1.9	7.7	16	70	205	301	74	e17	3.3	2.7	1.8	135
19	1.7	7.9	17	66	196	280	72	17	3.2	2.8	1.9	106
20	1.5	9.3	80	65	182	258	69	16	3.0	2.6	1.5	89
21	1.6	11	171	67	364	243	65	16	2.8	2.5	1.3	76
22	1.6	10	74	63	358	231	62	e15	2.7	2.6	3.3	68
23	1.8	11	57	60	241	220	60	e14	2.4	2.5	4.5	62
24	1.7	10	49	57	224	209	57	e14	2.7	2.3	7.0	56
25	1.8	12	41	55	220	198	55	e13	2.8	2.1	14	51
26	1.5	12	41	53	477	188	56	e13	2.7	2.0	7.7	47
27	1.7	12	40	49	273	180	57	e12	2.7	2.1	6.5	44
28	2.0	13	39	47	251	170	54	12	2.6	2.0	5.9	41
29	2.2	9.8	35	47	---	161	49	11	3.0	1.9	5.3	37
30	2.2	12	33	45	---	155	46	10	3.0	1.8	5.0	34
31	2.1	---	30	127	---	223	---	9.6	---	1.6	4.9	---
TOTAL	62.6	205.7	977	3358	5216	6995	2690	681.6	122.2	571.3	96.5	1495.3
MEAN	2.02	6.86	31.5	108	186	226	89.7	22.0	4.07	18.4	3.11	49.8
MAX	3.0	13	171	798	477	1040	164	43	8.0	375	14	201
MIN	1.5	1.9	12	28	89	126	46	9.6	2.4	1.6	1.1	2.9
AC-FT	124	408	1940	6660	10350	13870	5340	1350	242	1130	191	2970
CFSM	.02	.06	.25	.87	1.50	1.82	.72	.18	.03	.15	.03	.40
IN.	.02	.06	.29	1.01	1.56	2.10	.81	.20	.04	.17	.03	.45

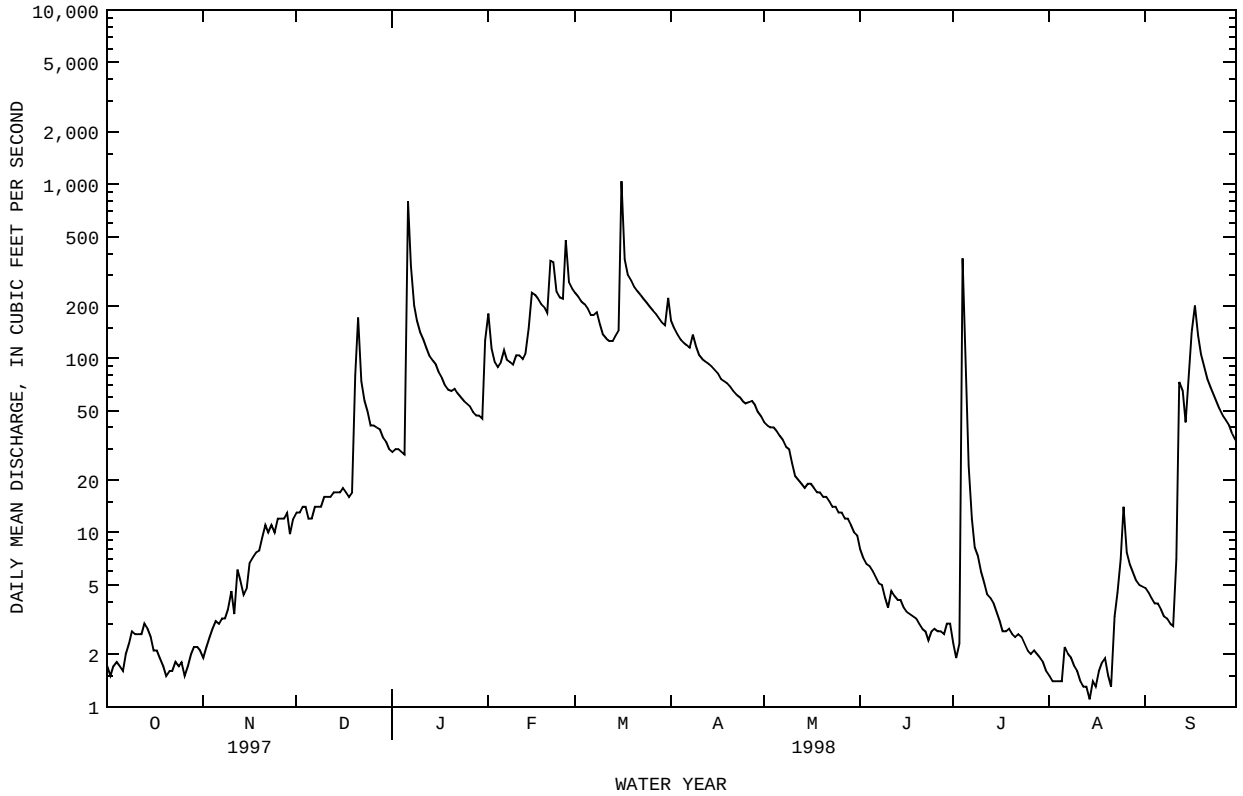
08158700 ONION CREEK NEAR DRIFTWOOD, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	18.5	16.9	69.5	56.9	74.4	76.3	55.1	76.8	159	27.2	5.81	7.85
MAX	109	85.9	548	316	506	356	231	202	792	109	22.0	49.8
(WY)	1987	1986	1992	1992	1992	1992	1997	1992	1987	1997	1987	1998
MIN	.22	.10	.10	.43	.87	2.29	1.16	.27	.089	.13	.055	.006
(WY)	1990	1989	1989	1990	1990	1989	1996	1996	1996	1996	1996	1994

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1979 - 1998	
ANNUAL TOTAL	43467.00		22471.2			
ANNUAL MEAN	119		61.6		53.5	
HIGHEST ANNUAL MEAN					196	1992
LOWEST ANNUAL MEAN					2.06	1996
HIGHEST DAILY MEAN	3610	Jun 22	1040	Mar 16	5060	Dec 21 1991
LOWEST DAILY MEAN	.48	Sep 20	1.1	Aug 14	.00	Aug 21 1984
ANNUAL SEVEN-DAY MINIMUM	.63	Sep 15	1.3	Aug 10	.00	Sep 14 1984
INSTANTANEOUS PEAK FLOW			3050	Mar 16	11000	Jun 9 1997
INSTANTANEOUS PEAK STAGE			8.67	Mar 16	17.56	Jun 9 1997
ANNUAL RUNOFF (AC-FT)	86220		44570		38780	
ANNUAL RUNOFF (CFSM)	.96		.50		.43	
ANNUAL RUNOFF (INCHES)	13.04		6.74		5.87	
10 PERCENT EXCEEDS	268		183		124	
50 PERCENT EXCEEDS	21		16		9.3	
90 PERCENT EXCEEDS	2.2		1.9		.41	

e Estimated



08158700 ONION CREEK NEAR DRIFTWOOD, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Jan 1974 to current year. Pesticide analyses: Jan 1978 to Sep 1986. Radiochemical analyses: Jan 1980.

REMARKS.--Samples are collected by USGS personnel.

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)
JAN										
26...	0845	54	533	7.5	13.5	3	.19	10.6	--	.0
MAR										
16...	0708	2150	231	7.5	15.5	55	160	--	--	2.8
16...	0817	2570	208	7.6	15.0	55	150	--	--	2.2
16...	1000	3020	242	7.6	16.0	42	200	--	--	4.1
17...	0850	383	439	7.4	15.0	22	13	9.3	96	1.0
JUN										
23...	0903	2.5	496	7.0	28.5	6	.22	7.8	104	.6

DATE	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	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)
JAN									
26...	84	160	240	<1	<1	--	<.010	.357	<.020
MAR									
16...	17000	40000	140	488	27	461	<.010	.159	.047
16...	K61000	70000	120	488	26	462	<.010	.127	.027
16...	13000	31000	150	520	37	483	<.010	.140	.032
17...	1200	4800	190	9	3	6	<.010	.209	.020
JUN									
23...	K16	1100	180	2	11	.00	<.010	<.050	.043

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
JAN									
26...	.58	--	.22	.014	<.010	<.010	1.0	<1	<10
MAR									
16...	3.4	3.2	3.3	.333	<.010	<.010	27	8	20
16...	1.9	1.8	1.8	.246	<.010	<.010	22	6	20
16...	3.1	2.9	2.9	.365	<.010	<.010	30	8	20
17...	.43	.20	.22	<.010	<.010	<.010	4.5	<1	<10
JUN									
23...	--	--	<.10	<.010	<.010	<.010	2.6	<1	<10

08158810 BEAR CREEK BELOW FARM ROAD 1826 NEAR DRIFTWOOD, TX

LOCATION.--Lat 30°09'19", long 97°56'23", Hays County, Hydrologic Unit 12090205, 0.8 mi southeast of Farm Road 1826 and 5.9 mi northeast of Driftwood.

DRAINAGE AREA.--12.2 mi^2.

PERIOD OF RECORD.--Mar 1978 to Jul 1979 (periodic discharge measurements only), Oct 1978 to Jun 1979 (peak discharges above base only), Jul 1979 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 860 ft above sea level from topographic map. Satellite telemeter at station.

REMARKS.--Records poor. No known regulation or diversions. Several observations of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jun 9, 1939 (corrected), reached a stage of 16.2 ft; discharge, 14,200 ft^3/s, and is the highest since at least 1924, from information by local resident. A flood in 1915 was purported to be 2 ft higher than the 1939 flood, from information by local resident.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 20	2000	1,340	6.95	Feb 25	1815	752	5.86
Jan 6	0700	919	6.21	Feb 25	2300	919	6.21
Jan 6	1100	864	6.10	Mar 15	2200	812	5.99
Feb 21	1530	620	5.55	Mar 16	0430	874	6.12

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	.84	.89	4.9	12	28	9.2	3.4	.49	.00	.00	.00
2	.04	.78	.87	5.3	9.7	25	8.8	3.4	.36	.00	.00	.00
3	.05	.80	.88	4.8	9.0	23	11	2.9	.36	.12	.00	.00
4	.04	.80	.74	4.6	8.2	21	11	3.1	.41	.57	.00	.00
5	.05	.82	.70	4.5	14	19	10	3.0	.58	.08	.00	.00
6	.04	.74	.70	e200	12	17	9.9	2.9	.54	.07	.00	.00
7	.05	.74	.95	30	10	19	9.6	2.5	.48	.06	.00	.00
8	.06	.74	.82	22	10	16	11	2.5	.44	.04	.00	.00
9	.23	.96	.78	19	9.7	14	8.6	2.2	.31	.03	.00	.00
10	.06	1.1	.70	17	17	12	8.1	2.0	.18	.02	.00	.00
11	.34	1.1	.70	16	14	12	7.7	1.7	.64	.00	.00	.00
12	.97	1.4	.70	14	14	11	7.5	1.7	.29	.00	.00	.00
13	1.4	1.3	.71	13	15	11	7.2	1.9	.10	.04	.00	.00
14	1.5	1.1	.69	13	39	12	6.8	1.8	.07	.06	.00	.00
15	1.5	1.1	.66	11	29	45	6.5	1.5	.05	.05	.00	.00
16	1.5	1.1	.63	9.9	37	168	5.9	1.5	.05	.04	.00	.03
17	1.5	1.1	.64	8.9	29	34	5.5	1.4	.04	.02	.00	.03
18	1.3	1.1	.66	8.4	27	30	5.4	1.3	.04	.00	.00	.02
19	1.2	1.1	.82	7.7	24	27	5.2	1.2	.03	.00	.00	.04
20	1.2	1.1	173	7.8	21	24	5.0	1.1	.03	.00	.00	.06
21	1.1	1.1	25	7.0	72	22	4.7	1.1	.03	.00	.00	.08
22	1.1	1.1	8.2	6.3	38	20	4.5	1.0	.02	.00	.00	.08
23	1.1	1.1	8.2	6.0	31	18	4.3	1.1	.02	.00	.01	.07
24	1.1	1.1	7.0	5.5	28	16	4.1	.97	.01	.00	.00	.08
25	1.0	1.1	6.3	5.4	127	15	4.1	1.0	.00	.00	.00	.07
26	1.0	1.1	7.2	4.9	75	14	4.3	.96	.00	.00	.00	.07
27	1.0	1.1	6.4	4.5	36	13	4.0	1.0	.00	.00	.00	.04
28	1.0	1.2	6.1	4.4	31	12	3.8	.77	.00	.00	.00	.04
29	1.0	1.1	5.8	4.2	---	11	3.7	.65	.00	.00	.00	.04
30	.98	1.2	5.4	4.0	---	12	3.4	.65	.00	.00	.00	.03
31	.92	---	4.7	e56	---	11	---	.58	---	.00	.00	---
TOTAL	24.37	31.02	277.54	530.0	798.6	732	200.8	52.78	5.57	1.20	0.01	0.78
MEAN	.79	1.03	8.95	17.1	28.5	23.6	6.69	1.70	.19	.039	.000	.026
MAX	1.5	1.4	173	200	127	168	11	3.4	.64	.57	.01	.08
MIN	.04	.74	.63	4.0	8.2	11	3.4	.58	.00	.00	.00	.00
AC-FT	48	62	551	1050	1580	1450	398	105	11	2.4	.02	1.5
CFSM	.06	.08	.73	1.40	2.34	1.94	.55	.14	.02	.00	.00	.00
IN.	.07	.09	.85	1.62	2.44	2.23	.61	.16	.02	.00	.00	.00

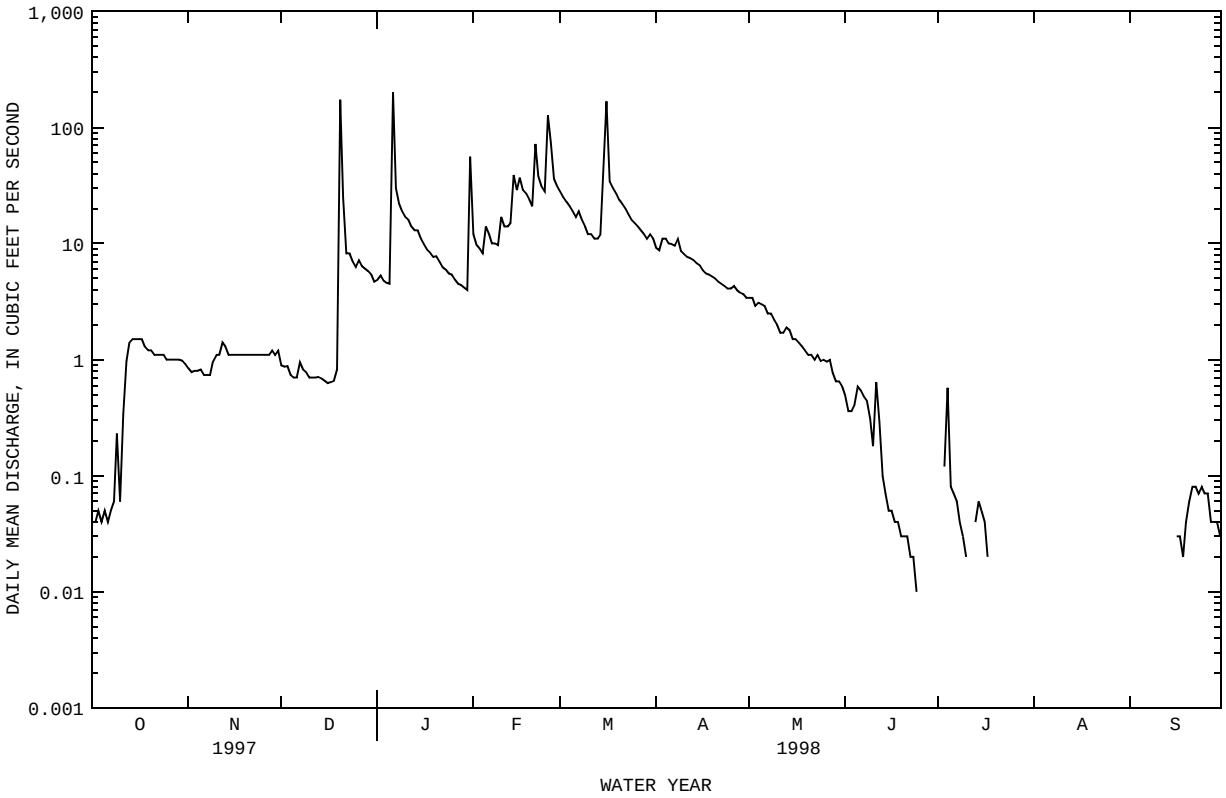
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1998, BY WATER YEAR (WY)

MEAN	2.47	1.92	9.39	6.60	8.85	8.12	6.38	8.79	19.6	2.32	.72	.58
MAX	22.5	11.6	91.8	33.3	49.4	32.3	26.2	23.7	144	8.22	3.59	2.71
(WY)	1987	1987	1992	1992	1992	1992	1991	1992	1981	1997	1979	1991
MIN	.000	.000	.000	.000	.017	.053	.048	.013	.001	.000	.000	.000
(WY)	1989	1989	1989	1989	1990	1996	1996	1996	1984	1984	1984	1984

08158810 BEAR CREEK BELOW FARM ROAD 1826 NEAR DRIFTWOOD, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1979 - 1998	
ANNUAL TOTAL	4250.55		2654.67			
ANNUAL MEAN	11.6		7.27		6.27	
HIGHEST ANNUAL MEAN					22.3	1992
LOWEST ANNUAL MEAN					.10	1996
HIGHEST DAILY MEAN	250	Jun 10	200	Jan 6	1000	Dec 20 1991
LOWEST DAILY MEAN	.04	Oct 1	.00	Jun 25	.00	Aug 28 1980
ANNUAL SEVEN-DAY MINIMUM	.04	Oct 1	.00	Jun 25	.00	Aug 28 1980
INSTANTANEOUS PEAK FLOW			1340	Dec 20	10200	Dec 20 1991
INSTANTANEOUS PEAK STAGE			6.95	Dec 20	14.23	Dec 20 1991
ANNUAL RUNOFF (AC-FT)	8430		5270		4540	
ANNUAL RUNOFF (CFSM)	.95		.60		.51	
ANNUAL RUNOFF (INCHES)	12.96		8.09		6.98	
10 PERCENT EXCEEDS	26		18		14	
50 PERCENT EXCEEDS	3.4		1.1		1.2	
90 PERCENT EXCEEDS	.26		.00		.00	

e Estimated



08158840 SLAUGHTER CREEK AT FARM ROAD 1826 NEAR AUSTIN, TX

LOCATION.--Lat 30°12'32", long 97°54'11", Travis County, Hydrologic Unit 12090205, 1.7 mi south of the intersection on U.S. Highway 290 and Farm Road 1826, and 11.9 mi southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--8.24 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jan 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 876.14 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair. No known regulation or diversions. Serveral observations of water temperature were made during year.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 20	2130	732	6.60	Mar 16	0530	605	6.39

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	16	27	13	2.8	1.1	.00	.00	.00
2	.00	.00	.00	3.3	13	24	13	2.7	1.0	.00	.00	.00
3	.00	.00	.00	3.2	11	22	e13	2.7	.95	.09	.00	.00
4	.00	.00	.00	3.2	9.7	21	e12	2.6	.92	.24	.00	.00
5	.00	.00	.00	3.2	12	20	12	2.6	.94	.00	.00	.00
6	.00	.00	.00	46	13	19	12	2.5	.92	.00	.00	.00
7	.00	.00	.00	43	11	18	11	2.3	.91	.00	.00	.00
8	.00	.00	.00	25	10	16	12	2.3	.89	.00	.00	.00
9	.00	.00	.00	17	9.6	14	10	2.2	.86	.00	.00	.00
10	.20	.07	.00	13	15	13	9.3	2.1	.81	.00	.00	.00
11	.08	.05	.00	12	13	12	9.0	2.1	.88	.00	.00	.40
12	.23	.22	.00	11	12	11	8.9	2.1	.79	.00	.00	.00
13	.11	.05	.00	8.9	13	12	8.4	2.1	.70	.30	.00	.00
14	.00	.00	.00	8.5	26	15	7.9	2.0	.59	.02	.00	.00
15	.00	.00	.00	6.6	33	18	7.4	2.0	.45	.00	.00	.00
16	.00	.00	.00	5.1	41	96	5.7	2.0	.34	.00	.00	.09
17	.00	.00	.00	4.4	32	46	4.9	1.9	.28	.00	.00	.00
18	.00	.00	.00	4.2	27	36	4.8	1.8	.22	.00	.00	.00
19	.00	.00	.00	3.8	24	30	4.5	1.7	.15	.00	.00	.00
20	.00	.00	43	4.0	21	25	4.2	1.7	.07	.00	.00	.00
21	.00	.00	23	3.9	41	23	3.9	1.6	.01	.00	.00	.00
22	.00	.00	3.3	3.6	53	21	3.7	1.5	.00	.00	.00	.00
23	.00	.00	3.7	3.5	36	19	3.5	1.5	.00	.00	.00	.00
24	.00	.00	3.8	3.3	29	18	3.3	1.5	.00	.00	.00	.00
25	.00	.00	3.2	3.3	31	16	3.2	1.5	.00	.00	.00	.00
26	.00	.00	4.1	3.2	72	16	3.5	1.5	.00	.00	.00	.00
27	.00	.00	3.9	3.0	42	15	3.5	1.4	.00	.00	.00	.00
28	.00	.00	3.6	3.0	32	14	3.1	1.4	.00	.00	.00	.00
29	.00	.00	3.2	3.1	---	14	2.9	1.3	.00	.00	.00	.00
30	.00	.00	3.1	3.1	---	17	2.8	1.2	.00	.00	.00	.00
31	.00	---	2.9	24	---	19	---	1.2	---	.00	.00	---
TOTAL	0.62	0.39	100.80	285.4	698.3	687	216.4	59.8	13.78	0.65	0.00	0.49
MEAN	.020	.013	3.25	9.21	24.9	22.2	7.21	1.93	.46	.021	.000	.016
MAX	.23	.22	43	46	72	96	13	2.8	1.1	.30	.00	.40
MIN	.00	.00	.00	3.0	9.6	11	2.8	1.2	.00	.00	.00	.00
AC-FT	1.2	.8	200	566	1390	1360	429	119	27	1.3	.00	1.0
CFSM	.00	.00	.39	1.12	3.03	2.69	.88	.23	.06	.00	.00	.00
IN.	.00	.00	.46	1.29	3.15	3.10	.98	.27	.06	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1998, BY WATER YEAR (WY)

MEAN	3.15	2.32	8.81	5.33	6.68	6.11	4.83	10.7	16.5	1.18	.38	.44
MAX	35.5	18.5	75.0	24.4	40.6	22.2	27.1	33.0	101	5.31	2.28	4.33
(WY)	1987	1986	1992	1992	1992	1998	1979	1995	1981	1979	1983	1991
MIN	.000	.000	.000	.000	.000	.000	.000	.021	.002	.000	.000	.000
(WY)	1983	1989	1989	1990	1996	1989	1996	1984	1996	1984	1980	1984

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1978 - 1998	
ANNUAL TOTAL	3270.30		2063.63			
ANNUAL MEAN	8.96		5.65		5.71	
HIGHEST ANNUAL MEAN					17.9	1992
LOWEST ANNUAL MEAN					.003	1996
HIGHEST DAILY MEAN	564	Jun 10	96	Mar 16	901	Jun 11 1981
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Jan 26 1978
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Jan 26 1978
INSTANTANEOUS PEAK FLOW			732	Dec 20	6330	Dec 20 1991
INSTANTANEOUS PEAK STAGE			6.60	Dec 20	10.79	Jun 11 1981
ANNUAL RUNOFF (AC-FT)	6490		4090		4140	
ANNUAL RUNOFF (CFSM)	1.09		.69		.69	
ANNUAL RUNOFF (INCHES)	14.76		9.32		9.42	
10 PERCENT EXCEEDS	24		18		11	
50 PERCENT EXCEEDS	1.2		.24		.34	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated

08158840 SLAUGHTER CREEK AT FARM ROAD 1826 NEAR AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Jun 1983 to current year. Pesticide analyses: Jun 1983 to Sep 1986.

REMARKS.--Samples collected by USGS personnel.

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, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)
JAN										
26...	0810	3.4	793	7.5	12.5	4	.25	9.8	95	--
31...	1455	62	629	7.7	15.5	20	5.6	--	--	14

DATE	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	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)
JAN										
26...	.4	42	53	280	<1	3	--	<.010	.289	.020
31...	1.5	2300	1100	210	8	6	2	<.010	.194	<.020

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
JAN										
26...	.43	.12	.14	<.010	<.010	.011	.03	1.4	<1	<10
31...	.47	--	.27	<.010	<.010	.016	.05	8.0	<1	10

08158922 WILLIAMSON CREEK AT BRUSH COUNTRY BOULEVARD, OAK HILL, TX

LOCATION.--Lat 30°13'34", long 97°52'28", Travis County, Hydrologic Unit 12090205, at downstream side of bridge on Brush Country Boulevard near Oak Hill, and 7.7 mi southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--6.79 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Mar 1993 to current year.

GAGE.--Water-stage recorder. Datum of gage is 740.25 ft above sea level, (levels from city of Austin benchmark). Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are 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 500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 21	1900	845	5.05	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	.00	.42	4.5	.00	.05	.00	.00	.00	.00
2	.00	.00	.02	.02	.00	3.5	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	2.5	.00	.00	.00	.01	.00	.00
4	.00	.00	.00	.03	.00	1.9	.00	.00	.00	.28	.00	.00
5	.00	.00	.00	.00	.04	.77	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	24	.00	.44	.00	.00	.00	.00	.10	.00
7	.06	.00	.00	18	.00	.81	.00	.00	.00	.00	.00	.00
8	.08	.00	.00	3.9	.00	.84	.06	.00	.00	.00	.00	.00
9	.00	.09	.00	.06	.00	.13	.00	.00	.00	.00	.00	.00
10	.21	.01	.00	.00	.53	.00	.00	.00	.00	.00	.00	.00
11	.24	.13	.00	.00	.00	.00	.00	.00	.15	.00	.00	.94
12	.11	.12	.00	.00	.02	.00	.00	.00	.00	.00	.01	.14
13	.03	.06	.00	.00	.00	.00	.00	.00	.00	.07	.00	.00
14	.00	.00	.00	.00	4.6	.86	.00	.00	.07	.00	.00	.00
15	.00	.00	.00	.00	3.3	.89	.00	.00	.00	.00	.00	.07
16	.00	.00	.00	.00	6.2	60	.00	.00	.00	.00	.03	.42
17	.00	.00	.00	.00	2.5	26	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	1.5	14	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	e1.2	9.9	.00	.00	.00	.00	.00	.00
20	.00	.00	27	.00	e1.2	7.2	.00	.00	.00	.00	.00	.00
21	.00	.00	10	.00	e184	5.3	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	e166	4.1	.00	.00	.00	.00	.27	.00
23	.00	.00	.09	.00	e12	2.7	.00	.00	.00	.00	.14	.00
24	.00	.00	.00	.00	e3.7	1.7	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	e14	.13	.00	.00	.00	.00	.00	.00
26	.00	.00	.10	.00	e28	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	9.6	.55	.00	.07	.00	.00	.00	.00
28	.00	.03	.00	.00	5.9	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.03	.00	.00	.00
30	.00	.00	.00	.00	---	.80	.00	.00	.00	.00	.00	.00
31	.00	---	.00	8.5	---	1.9	---	.00	---	.00	.00	---
TOTAL	0.73	0.44	37.21	54.51	444.71	151.42	0.06	0.12	0.25	0.36	0.55	1.57
MEAN	.024	.015	1.20	1.76	15.9	4.88	.002	.004	.008	.012	.018	.052
MAX	.24	.13	27	24	184	60	.06	.07	.15	.28	.27	.94
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	1.4	.9	74	108	882	300	.1	.2	.5	.7	1.1	3.1

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1998, BY WATER YEAR (WY)

MEAN	1.01	.048	.72	.37	3.20	1.05	.64	3.26	3.00	.002	.10	.037
MAX	4.97	.17	2.38	1.76	15.9	4.88	3.48	10.3	13.1	.012	.55	.14
(WY)	1995	1995	1995	1998	1998	1998	1997	1997	1997	1998	1994	1994
MIN	.000	.001	.000	.000	.000	.000	.001	.004	.001	.000	.001	.000
(WY)	1997	1994	1996	1994	1996	1996	1996	1998	1994	1993	1993	1993

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1993 - 1998	
ANNUAL TOTAL	861.60		691.93			
ANNUAL MEAN	2.36		1.90		1.22	
HIGHEST ANNUAL MEAN					2.26	1997
LOWEST ANNUAL MEAN					.039	1996
HIGHEST DAILY MEAN	84	May 20	184	Feb 21	184	Feb 21 1998
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Mar 11 1993
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 9	.00	Oct 14	.00	Mar 11 1993
INSTANTANEOUS PEAK FLOW			845	Feb 21	1300	Oct 7 1994
INSTANTANEOUS PEAK STAGE			a5.05	Feb 21	5.69	Oct 7 1994
ANNUAL RUNOFF (AC-FT)	1710		1370		884	
10 PERCENT EXCEEDS	3.2		.91		.02	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated
a From floodmark.

08158922 WILLIAMSON CREEK AT BRUSH COUNTRY BOULEVARD, OAK HILL, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Oct 1993 to current year.

INSTRUMENTATION.--Stage-activated water sampler.

REMARKS.--Base flow samples collected by USGS personnel.

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 DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
JAN										
31...	1256	28	383	7.8	15.5	27	7.5	24	3.2	58000
31...	1310	34	439	7.6	15.5	18	9.0	<10	3.6	18000
31...	1322	45	379	7.7	15.5	22	14	93	4.2	12000
31...	1418	40	240	7.6	15.5	30	8.6	93	2.4	5200
31...	1448	34	182	7.5	15.5	25	<.10	11	2.8	4800
SEP										
11...	1252	5.0	99	7.6	24.5	65	1.6	14	1.1	2800

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	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, TOTAL (MG/L AS N) (00600)
JAN										
31...	54000	140	13	6	7	.680	.013	.693	.092	1.2
31...	33000	160	9	6	3	.548	.013	.561	.051	1.1
31...	21000	140	20	8	12	.645	.018	.663	.023	1.3
31...	20000	84	8	6	2	.401	.010	.411	.034	.84
31...	20000	66	13	8	5	.454	.013	.467	.074	.99
SEP										
11...	7200	43	<1	2	--	.900	.015	.915	.055	1.3

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)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
JAN										
31...	.42	.51	.049	.035	.043	.13	6.0	2	2	10
31...	.48	.53	.038	.014	.016	.05	6.3	2	1	10
31...	.58	.60	.018	.023	.018	.06	6.5	3	2	20
31...	.40	.43	.030	.021	.028	.09	5.0	2	<1	10
31...	.45	.52	.042	.019	.036	.11	5.1	2	2	10
SEP										
11...	.29	.34	.050	.045	.047	.14	5.8	2	<1	<10

08159000 ONION CREEK AT U.S. HIGHWAY 183, AUSTIN, TX

LOCATION.--Lat 30°10'40", long 97°41'18", Travis County, Hydrologic Unit 12090205, on right bank at downstream side of downstream bridge on U.S. Highway 183, 2.4 mi downstream from Williamson Creek, 3.2 mi southwest of Del Valle, and 7.5 mi southeast of the State Capitol Building in Austin.

DRAINAGE AREA.--321 mi^2.

PERIOD OF RECORD.--May 1924 to Mar 1930, Mar 1976 to current year. In May 1924 to Mar 1930 station was published as "near Del Valle".
Water-quality records.--Chemical and biochemical analyses: Oct 1976 to Sep 1988. Pesticide analyses: Oct 1976 to Sep 1986. Sediment analyses: Oct 1976 to Sep 1982. Radiochemical analyses: Jan 1980.

GAGE.--Water-stage recorder. Datum of gage is 442.85 ft above sea level (Texas Department of Transportation datum). May 15, 1924 to Mar 15, 1930, nonrecording gage at highway bridge 1,700 ft upstream at 6.42 ft higher datum. Satellite telemeter at station.

REMARKS.--Records good. No known regulation or diversions. Flow is slightly affected by several small ponds on main channel and tributaries above station. Several observations of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1869 occurred about Jul 3, 1869, stage about 38 ft, from newspaper accounts, and Sep 9, 1921, stage 38.0 ft, from floodmark, present site and datum.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 16	1845	3,130	12.30	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	.93	1.5	2.9	11	166	259	132	3.0	.22	.00	.00	.00
2	.93	1.5	2.8	12	129	239	87	5.0	.07	.00	.00	.00
3	.93	1.5	4.6	12	58	218	74	3.2	.00	.00	.00	.00
4	.93	1.3	5.5	12	24	202	64	2.8	.00	3.3	.00	.00
5	.93	1.1	3.5	13	20	186	57	2.5	.00	91	.00	.00
6	.93	1.1	3.0	61	26	163	53	2.5	.00	42	.00	.00
7	2.0	1.4	3.0	774	31	148	50	2.3	.00	9.1	1.9	.00
8	15	1.5	4.0	251	31	154	63	2.1	.00	1.4	14	.00
9	19	1.5	3.2	146	27	148	63	2.0	.00	.67	.39	.00
10	57	34	2.9	112	35	86	52	1.8	.00	.26	.00	.00
11	108	5.1	2.7	86	37	69	37	1.8	.67	.01	.00	94
12	116	99	2.6	67	41	66	30	1.6	1.1	.00	.00	51
13	71	26	2.6	42	48	64	26	1.5	.29	.00	.00	19
14	16	7.2	2.7	20	83	74	24	1.6	.08	.00	.00	4.2
15	6.6	4.0	2.7	14	247	82	21	1.7	.00	.00	.00	61
16	3.0	3.4	2.7	12	333	1260	19	1.8	.00	.00	4.9	156
17	e2.6	3.2	2.7	11	280	616	14	1.9	.00	.00	5.2	40
18	e2.4	3.1	2.8	11	216	371	12	1.8	.00	.00	.27	9.4
19	e2.1	3.1	2.7	9.3	196	302	8.9	1.7	.00	.00	.03	17
20	2.1	2.9	91	9.0	172	220	6.7	1.6	.00	.00	.00	6.2
21	2.0	2.4	363	9.6	171	199	6.2	1.4	.00	.00	.00	3.7
22	2.1	2.8	69	9.7	585	183	5.8	1.2	.00	.00	.04	2.9
23	2.3	2.8	47	8.9	332	167	4.5	.95	.00	.00	16	2.7
24	2.0	2.8	33	8.5	257	151	3.7	.98	.00	.00	8.5	2.6
25	1.7	3.4	19	8.3	226	137	3.2	.60	.00	.00	.51	2.3
26	1.6	3.4	38	8.2	624	123	3.4	.52	.00	.00	.09	2.3
27	1.4	3.7	37	8.7	397	113	21	2.1	.00	.00	.00	2.3
28	1.4	6.4	21	8.1	303	105	5.7	2.2	.00	.00	.00	2.0
29	1.6	5.8	16	8.0	---	94	3.6	1.3	.00	.00	.00	1.9
30	1.8	4.2	13	8.1	---	86	3.1	1.0	.00	.00	.00	1.8
31	1.8	---	12	92	---	118	---	.76	---	.00	.00	---
TOTAL	448.08	241.1	818.6	1863.4	5095	6403	953.8	57.21	2.43	147.74	51.83	482.30
MEAN	14.5	8.04	26.4	60.1	182	207	31.8	1.85	.081	4.77	1.67	16.1
MAX	116	99	363	774	624	1260	132	5.0	1.1	91	16	156
MIN	.93	1.1	2.6	8.0	20	64	3.1	.52	.00	.00	.00	.00
AC-FT	889	478	1620	3700	10110	12700	1890	113	4.8	293	103	957
CFSM	.05	.03	.08	.19	.57	.64	.10	.01	.00	.01	.01	.05
IN.	.05	.03	.09	.22	.59	.74	.11	.01	.00	.02	.01	.06

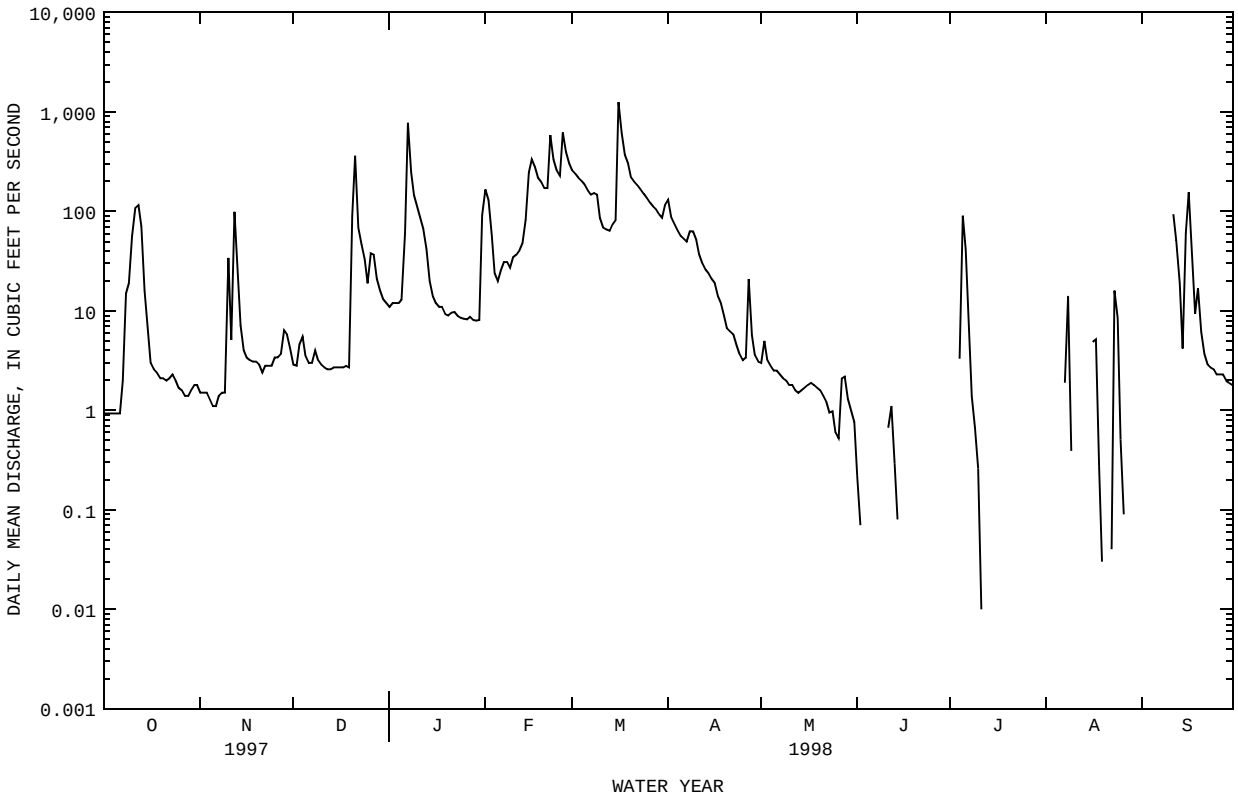
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1998h, BY WATER YEAR (WY)

MEAN	39.6	25.2	95.9	54.0	83.5	85.3	110	186	251	33.9	7.45	9.05
MAX	282	231	1526	487	908	576	847	1767	2305	133	47.6	48.0
(WY)	1926	1986	1992	1992	1992	1992	1926	1929	1981	1981	1983	1986
MIN	.000	.27	.000	.002	1.65	1.80	1.39	1.40	.010	.000	.000	.000
(WY)	1929	1994	1990	1990	1925	1996	1994	1984	1925	1925	1925	1988

08159000 ONION CREEK AT U.S. HIGHWAY 183, AUSTIN, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1924 - 1998h	
ANNUAL TOTAL	58421.02		16564.49			
ANNUAL MEAN	160		45.4		80.5	
HIGHEST ANNUAL MEAN					379	1992
LOWEST ANNUAL MEAN					1.49	1925
HIGHEST DAILY MEAN	7750	Jun 9	1260	Mar 16	30500	May 28 1929
LOWEST DAILY MEAN	.00	Sep 7	.00	Jun 3	.00	Jun 3 1925
ANNUAL SEVEN-DAY MINIMUM	.00	Sep 7	.00	Jun 3	.00	Jun 3 1925
INSTANTANEOUS PEAK FLOW			3130	Mar 16	76000	May 28 1929
INSTANTANEOUS PEAK STAGE			12.30	Mar 16	30.50	Dec 21 1991
ANNUAL RUNOFF (AC-FT)	115900		32860		58310	
ANNUAL RUNOFF (CFSM)	.50		.14		.25	
ANNUAL RUNOFF (INCHES)	6.77		1.92		3.41	
10 PERCENT EXCEEDS	325		148		128	
50 PERCENT EXCEEDS	8.7		3.1		6.2	
90 PERCENT EXCEEDS	1.2		.00		.00	

e Estimated
h See PERIOD OF RECORD paragraph.



08159200 COLORADO RIVER AT BASTROP, TX

LOCATION.--Lat 30°06'16", long 97°19'09", Bastrop County, Hydrologic Unit 12090301, at the downstream side of bridge on State Highway 71 bridge, at Bastrop, 0.3 mi upstream from Gills Branch, 1.2 mi downstream from Piney Creek, and at mile 236.6.

DRAINAGE AREA.--39,979 mi^2, approximately, of which 11,403 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Oct 1973 to Sep 1975, daily discharges estimated by hydrographic comparison with streamflow stations 08158000 and 08159500. Mar 1960 to current year.

REVISED RECORDS.--WDR TX-81-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 307.38 ft above sea level. Prior to May 10, 1960, nonrecording gage at a site 400 ft upstream from present site and at same datum. May 10, 1960 to Sep 30, 1973, Oct 1, 1975 to Oct 28, 1986, at a site 400 ft upstream from present site and at same datum. Radio telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in 1960, at least 10% of contributing drainage area has been regulated by Town Lake, Lake Austin, Lake Travis, and other reservoirs. There are many diversions above station for irrigation and for municipal supply. The city of Austin diverts water into Decker Lake (by pumpage) upstream from this station. The Lower Colorado River Authority also diverts water from the Colorado into Lake Bastrop (by pumpage) upstream from this station.

COOPERATION.--Lower Colorado River Authority provides operation and maintenance of the gage and verification of stage discharge relation at low stages. USGS maintains stage discharge relation at medium to high stages, computes, and publishes streamflow record.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1845, 60.3 ft Jul 7 or 8, 1869. Flood of Jun 16, 1935, reached a stage of 57.0 ft, and flood of Dec 4, 1913, reached a stage of 53.3 ft, from information by local resident.

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

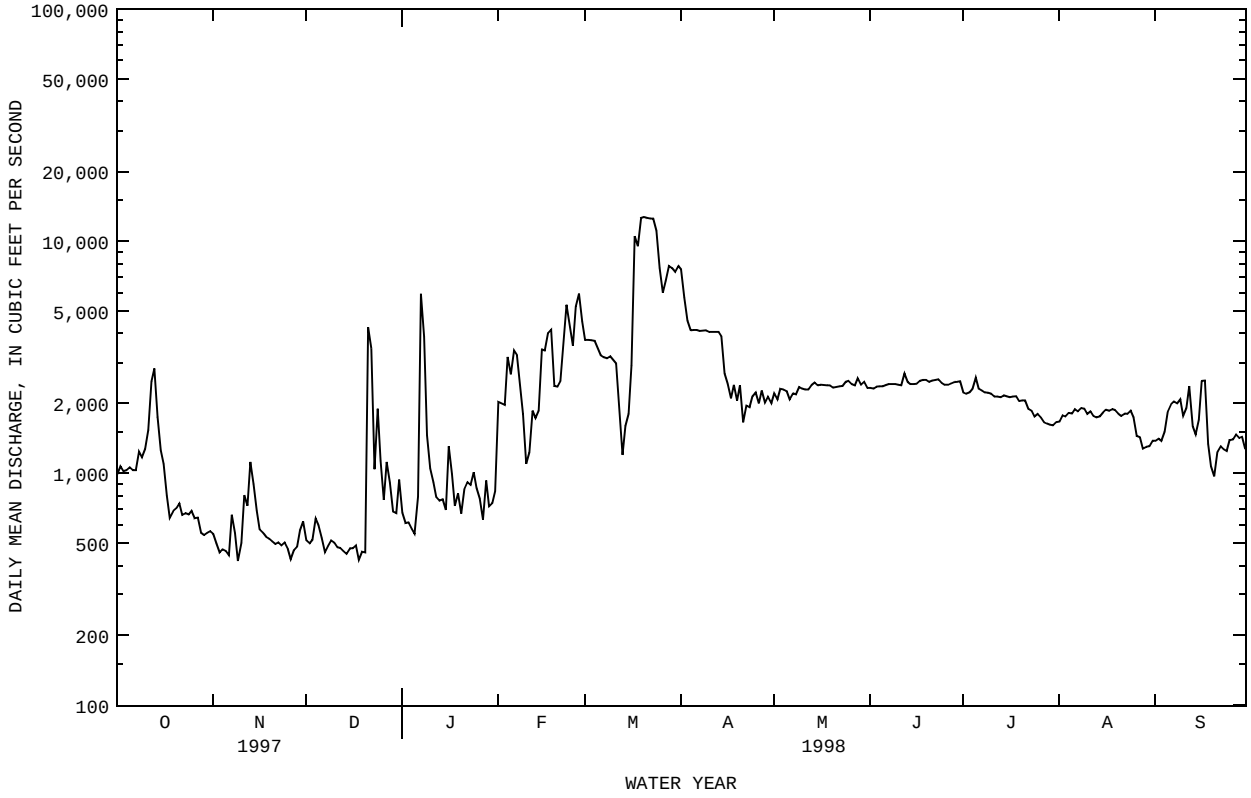
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	989	547	514	675	2030	3760	7550	2210	2330	2230	1670	1380
2	1070	498	499	611	2000	3760	5730	2080	2320	2200	1780	1410
3	1020	456	517	614	1970	3740	4550	2310	2360	2230	1760	1380
4	1030	471	638	576	3170	3720	4130	2300	2370	2320	1820	1510
5	1060	463	596	547	2670	3480	4140	2260	2370	2580	1810	1850
6	1030	443	527	793	3380	3220	4150	2090	2400	2320	1890	1980
7	1030	663	459	5930	3240	3160	4100	2210	2420	2270	1850	2040
8	1240	552	489	3880	2410	3130	4120	2190	2420	2230	1910	2000
9	1170	420	515	1460	1800	3190	4130	2350	2420	2220	1900	2090
10	1270	501	502	1050	1100	3080	4070	2320	2410	2200	1800	1770
11	1540	804	480	915	1230	2970	4070	2300	2390	2140	1850	1910
12	2490	724	476	789	1860	1980	4060	2300	2690	2140	1770	2380
13	2830	1120	462	762	1730	1200	4060	2400	2480	2130	1740	1590
14	1750	898	451	771	1860	1600	3890	2460	2420	2170	1760	1470
15	1260	691	475	696	3410	1800	2690	2390	2420	2150	1830	1700
16	1100	573	474	1310	3380	2910	2420	2410	2430	2130	1880	2500
17	803	555	489	995	4020	10500	2110	2400	2500	2140	1860	2510
18	644	533	424	725	4160	9520	2410	2390	2530	2150	1890	1340
19	689	522	459	819	2380	12600	2060	2390	2530	2050	1870	1070
20	707	510	456	671	2360	12700	2400	2340	2480	2060	1810	969
21	742	497	4260	861	2510	12600	1660	2350	2510	2060	1770	1240
22	663	504	3460	915	3620	12500	1960	2370	2530	1900	1810	1310
23	674	488	1040	891	5330	12500	1930	2380	2540	1860	1800	1270
24	666	502	1900	1010	4320	11100	2150	2480	2450	1760	1860	1250
25	689	473	1130	863	3540	7670	2230	2500	2410	1800	1740	1390
26	641	426	767	777	5230	6010	2000	2420	2410	1740	1450	1400
27	643	465	1120	632	5960	6760	2270	2390	2440	1660	1430	1470
28	555	483	914	932	4520	7820	2020	2560	2470	1640	1280	1420
29	542	568	684	720	---	7660	2140	2410	2480	1620	1300	1440
30	555	621	673	744	---	7380	2000	2480	2490	1610	1310	1270
31	564	---	940	839	---	7830	---	2330	---	1660	1380	---
TOTAL	31656	16971	26790	33773	85190	191850	97200	72770	73420	63370	53580	48309
MEAN	1021	566	864	1089	3043	6189	3240	2347	2447	2044	1728	1610
MAX	2830	1120	4260	5930	5960	12700	7550	2560	2690	2580	1910	2510
MIN	542	420	424	547	1100	1200	1660	2080	2320	1610	1280	969
AC-FT	62790	33660	53140	66990	169000	380500	192800	144300	145600	125700	106300	95820

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

MEAN	1369	1235	1486	1725	2216	2367	2568	3503	4600	2635	1913	1743
MAX	6380	11330	14770	17490	29140	16910	11080	10420	23620	12750	3705	4930
(WY)	1974	1975	1992	1992	1992	1992	1977	1975	1987	1997	1961	1974
MIN	291	94.6	111	109	138	131	565	1471	1489	1302	1182	1048
(WY)	1965	1964	1964	1964	1964	1964	1962	1962	1993	1967	1964	1971

08159200 COLORADO RIVER AT BASTROP, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1960 - 1998	
ANNUAL TOTAL	1851476		794879			
ANNUAL MEAN	5073		2178		2280	
HIGHEST ANNUAL MEAN					9073	1992
LOWEST ANNUAL MEAN					828	1964
HIGHEST DAILY MEAN	30600	Jun 25	12700	Mar 20	65800	Dec 22 1991
LOWEST DAILY MEAN	387	Jan 3	420	Nov 9	75	Apr 1 1964
ANNUAL SEVEN-DAY MINIMUM	406	Jan 1	461	Dec 14	84	Oct 19 1964
INSTANTANEOUS PEAK FLOW			12900	Mar 20	79600	Oct 29 1960
INSTANTANEOUS PEAK STAGE			12.28	Mar 20	37.48	Dec 22 1991
ANNUAL RUNOFF (AC-FT)	3672000		1577000		1652000	
10 PERCENT EXCEEDS	14100		4040		4260	
50 PERCENT EXCEEDS	1400		1870		1580	
90 PERCENT EXCEEDS	463		538		250	



08159500 COLORADO RIVER AT SMITHVILLE, TX

LOCATION.--Lat 30°00'45", long 97°09'42", Bastrop County, Hydrologic Unit 12090301, on right bank 28 ft downstream from bridge on Business State Highway 71 in Smithville, 500 ft below mouth of Gazley Creek, 3.9 mi below mouth of Alum Creek, and at mile 212.1.

DRAINAGE AREA.--to be determined.

PERIOD OF RECORD.--July 1930 to September 1975, October 1997 to September 1998. Gage-height records collected in this vicinity since 1920 are contained in reports of the National Weather Service. Water quality: Chemical and biological analysis: October 1973 to September 1975.

REVISED RECORDS.--WSP 1342: Drainage are. WSP 1562: 1934. WSP 1712: 1953, 1954(M), 1957-58.

GAGE.--Water-stage recorder. Datum of gage is 270.14 ft above sea level. Prior to April 9, 1931, nonrecording gage at same site and datum. Apr. 9, 1931 to Sept. 2, 1971, water-stage recorder at site 360 ft downstream at same datum. Rain gage at station. Radio telemeter at station. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since installation of gage in 1930, at least 10% of contributing drainage area has been regulated by Town Lake, Lake Austin, Lake Travis (08154500), and other reservoirs. At times, low-flow releases from Lake Travis are made for generation of electric power and to fulfill downstream water contracts. There are many diversions above station for irrigation and municipal supply.

COOPERATION.--Lower Colorado River Authority provides operation and maintenance of the gage and verification of stage discharge relation at low stages. USGS maintains stage discharge relation at medium to high stages, computes, and publishes streamflow record.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1860, occurred July 8, 1869, and was several feet higher than flood of December 4, 1913, which reached a stage of 47.4 ft and was the highest since 1869, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,600 ft^3/s, Mar 20 (gage height, 10.00 ft); minimum discharge, 541 ft^3/s, Dec 19 (gage height, 1.71 ft).

1 UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - TEXAS DISTRICT 02/22/1999

STATION NUMBER 08159500 COLORADO RIVER AT SMITHVILLE, TEX. STREAM SOURCE AGENCY USGS
LATITUDE 300043 LONGITUDE 0970943 DRAINAGE AREA 27000.00 DATUM 270.14 STATE 48 COUNTY 021

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	1290	724	794	1120	e1410	3870	7700	1950	2020	2180	1690	1400
2	1240	681	695	888	2190	3830	5500	1780	2000	2060	1760	1420
3	1230	625	736	865	2030	3810	4740	2030	2060	2110	1800	1420
4	1210	590	714	857	3030	3740	3730	2010	2070	2190	1800	1470
5	1200	621	854	774	2710	3660	3690	1990	2080	2320	1860	1730
6	e1200	603	789	868	3260	3370	3700	e1800	2090	2250	2010	1890
7	e1300	648	658	3620	3310	3250	3660	e1910	2140	2160	1950	2020
8	1430	875	626	5800	2820	3270	3660	1790	2130	2120	1920	1990
9	1530	644	664	2200	2150	3300	3680	1970	2130	2080	1990	2050
10	1430	596	692	1540	1840	3190	3610	1930	2130	2090	1900	1910
11	1970	837	653	e1270	1700	3100	3670	1930	2080	2020	1880	2030
12	3020	1130	631	1110	1840	2730	3600	1940	2340	2030	1870	2480
13	e5200	1370	623	1040	e2080	1730	3640	1950	2230	2020	1800	1990
14	3270	1280	602	1000	e1710	1600	3620	2190	2140	2050	1840	1540
15	1780	1070	601	922	3120	2180	2610	2030	2140	2070	1850	1670
16	1560	850	624	1190	3870	2530	2180	2030	2140	2070	1960	2330
17	1190	761	653	1340	3980	9170	2080	2030	2180	2050	1910	3860
18	1030	735	603	1130	4430	9370	2090	2030	2230	2070	1940	1980
19	881	700	584	929	3060	11500	1920	2020	2240	1990	1930	1320
20	929	684	607	1060	2520	12500	2080	2050	2210	2010	1820	1110
21	914	678	1500	996	2780	12400	1720	1980	2200	1990	1740	1200
22	936	654	5700	1120	4110	12300	1700	2010	2220	1950	1790	1410
23	869	648	1830	1180	5950	12400	1860	2030	2230	1820	1730	1380
24	849	664	2270	1120	4680	12000	1710	2070	2190	1790	1830	1360
25	880	653	2180	1130	3740	8160	2090	2120	2200	1780	1790	1450
26	868	598	1310	1090	4670	6010	1820	2150	2210	e1780	1590	1500
27	780	562	1400	973	6880	5800	2010	1990	e2260	1730	1470	1530
28	810	658	1570	1030	5050	7360	e2080	2240	e2260	1650	1400	1560
29	680	680	1120	971	---	7270	e1950	2080	e2310	1650	1320	1540
30	711	959	966	962	---	7120	1740	2080	2280	1630	1320	1470
31	712	---	1140	e1020	---	7100	---	2090	---	1700	1360	---
TOTAL	42899	22778	34389	41115	90920	189620	89840	62200	65140	61410	54820	52010
MEAN	1384	759	1109	1326	3247	6117	2995	2006	2171	1981	1768	1734
MAX	5200	1370	5700	5800	6880	12500	7700	2240	2340	2320	2010	3860
MIN	680	562	584	774	1410	1600	1700	1780	2000	1630	1320	1110
AC-FT	85090	45180	68210	81550	180300	376100	178200	123400	129200	121800	108700	103200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1998, BY WATER YEAR (WY)

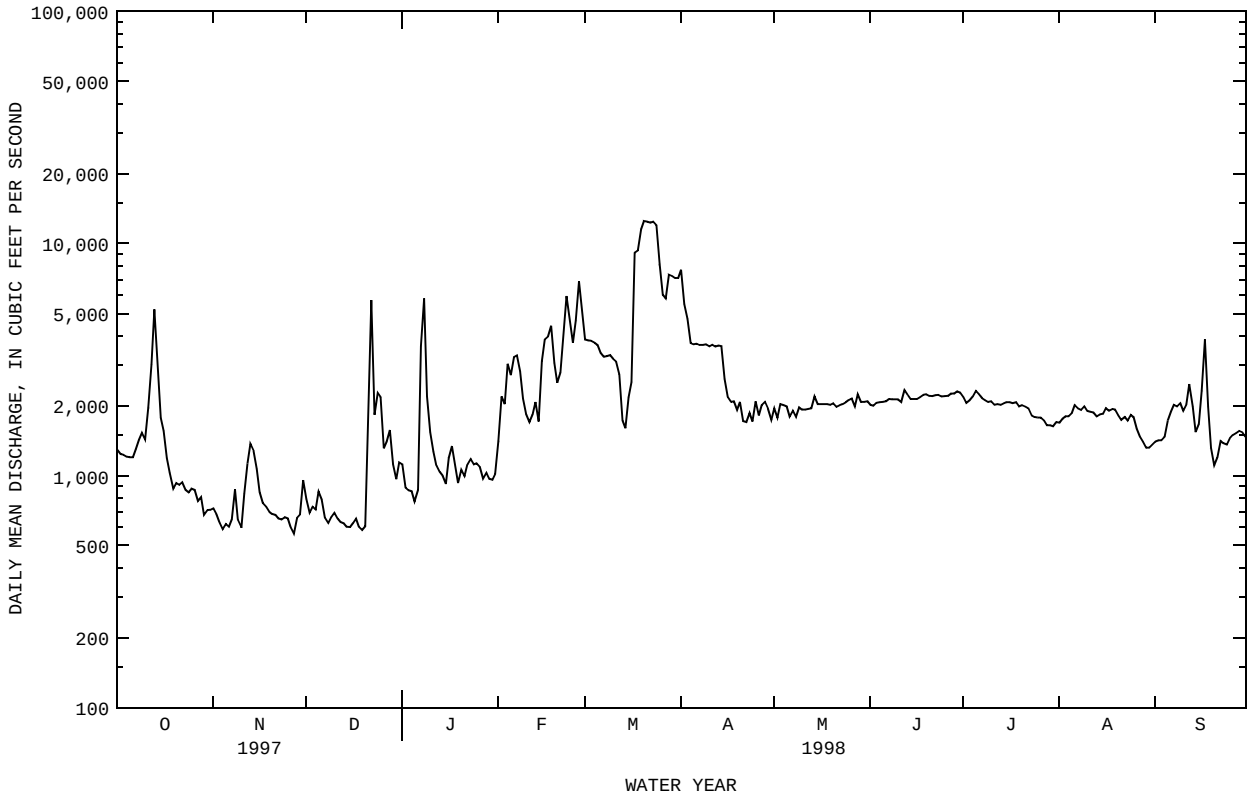
MEAN	2809	1914	1697	1915	2230	2041	2568	4567	4280	3538	1948	3057
MAX	20380	13480	5738	7823	8516	7292	11300	27980	31510	31310	7303	38090
(WY)	1931	1975	1941	1968	1958	1958	1941	1957	1935	1938	1938	1936
MIN	117	133	129	133	145	176	471	1088	391	852	240	337
(WY)	1935	1964	1964	1964	1964	1964	1952	1942	1934	1933	1930	1934

08159500 COLORADO RIVER AT SMITHVILLE, TX--Continued

SUMMARY STATISTICS	FOR 1998 WATER YEAR		WATER YEARS 1930 - 1998	
ANNUAL TOTAL	807141			
ANNUAL MEAN	2211		2722	
HIGHEST ANNUAL MEAN			6780	1935
LOWEST ANNUAL MEAN			794	1952
HIGHEST DAILY MEAN	12500	Mar 20	219000	Jun 16 1935
LOWEST DAILY MEAN	562	Nov 27	79	Nov 1 1934
ANNUAL SEVEN-DAY MINIMUM	611	Dec 14	84	Oct 27 1934
INSTANTANEOUS PEAK FLOW	12600	Mar 20	12600	Mar 20 1998
INSTANTANEOUS PEAK STAGE	10.00	Mar 20	10.00	Mar 20 1998
ANNUAL RUNOFF (AC-FT)	1601000		1972000	
10 PERCENT EXCEEDS	3730		4950	
50 PERCENT EXCEEDS	1910		1650	
90 PERCENT EXCEEDS	712		334	

STATISTICS COMPUTED BY: ceranzau DATE: 02/21/1999 AT: 07:37:55

e Estimated



08160400 COLORADO RIVER ABOVE LAGRANGE, TX

LOCATION.--Lat 29°54'44", long 96°54'13", Fayette County, Hydrologic Unit 12090301, at right downstream end of bridge on new State Highway 71, 1.4 mi upstream from Buckners Creek, and at mile 177.

DRAINAGE AREA.--40,874 mi^2, of which 11,403 mi^2 probably is noncontributing.

PERIOD OF RECORD.--1979-82 (discharge measurements only), Apr 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 210.04 ft above sea level. Dec 12, 1979 to Sep 30, 1982, discharge measurements only were made at old State Highway 71 bridge, 1.0 mi downstream and at different datum. Radio telemeter at station. Satellite telemeter at station.

REMARKS.--Records good. Since installation of gage, at least 10% of contributing drainage area has been regulated by Town Lake, Lake Austin, Lake Travis, and other reservoirs. At times, low-flow releases from Lake Travis (station 08154500) are made for generation of electric power and to fulfill downstream water contracts. There are many diversions above station for irrigation and municipal supply. One observation of water temperature was made during the year.

COOPERATION.--Lower Colorado River Authority provides operation and maintenance of the gage and verification of stage discharge relation at low stages. USGS maintains stage discharge relation at medium to high stages, computes, and publishes streamflow record.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1869, about 56.7 ft on Jul 9, 1869 (from marble high-water marker in LaGrange). Stages of other floods are as follows: Dec 5, 1913, 56.4 ft, from floodmark; Jun 17, 1935, 50.84 ft, from floodmarks (discharge 255,000 ft^3/s from rating curve extended above 200,000 ft^3/s); Jul 27, 1938, 42.95 ft (discharge, 200,000 ft^3/s). This data was collected at a site 2.6 mi downstream at streamflow station and published as Colorado River at LaGrange at datum different than at present site.

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	995	390	597	772	666	4610	7930	2140	2340	2490	1630	1390
2	931	379	444	655	1700	4000	7010	2280	2310	2200	1640	1410
3	965	346	836	521	1840	3920	6000	2220	2320	e2220	1740	1440
4	925	315	735	504	1950	3850	4750	2410	2350	e2210	1730	1420
5	927	292	490	489	2850	3800	4430	2370	2380	e2270	1810	1540
6	975	292	501	1150	2650	3510	4400	2270	2380	e2380	1950	1890
7	987	274	453	7200	3190	3280	4370	2120	2410	2210	2040	2050
8	1120	346	422	7090	3010	3220	4330	2180	2420	2250	1920	2110
9	1530	461	384	3720	2310	3180	4300	2170	2410	2200	1950	2070
10	1320	338	361	1700	5370	3180	4280	2290	2410	2200	1920	2130
11	2590	285	357	1170	5350	3040	4250	2280	2390	2160	1830	2210
12	4060	1010	328	1060	1910	2950	4210	2260	2400	2110	1870	2890
13	14500	1430	313	886	2030	1980	4200	2270	2610	2110	1790	2850
14	10000	1210	304	746	1850	1260	4200	2420	2450	2110	1770	1850
15	2520	897	292	722	2070	1600	3830	2430	2390	2160	1800	1970
16	1530	669	294	613	4560	4340	2920	2380	2380	2140	1880	2690
17	1250	501	305	1100	5000	7590	2680	2390	2380	2100	1960	3760
18	863	442	329	926	4720	10200	2370	2380	2440	e2150	1930	3490
19	693	408	295	675	4140	9750	2600	2380	2450	e2180	1950	1670
20	613	377	294	652	2560	11800	2260	2380	2430	2120	1910	1270
21	624	354	307	632	2560	12100	2530	2310	2380	2050	1830	1090
22	603	339	4170	677	6130	12000	1870	2330	2400	2060	1860	1270
23	594	330	3460	758	6420	12100	2150	2360	2420	1930	1880	1350
24	563	317	3070	779	5560	12100	2030	2370	2410	1850	1860	1310
25	532	331	2900	819	4380	10200	2260	2450	2370	1770	1930	1290
26	543	316	1470	733	7610	7520	2350	2490	2400	1790	1790	1430
27	518	278	925	654	7900	6370	2160	2430	e2490	1740	1510	1450
28	466	1060	1290	556	6210	7310	2440	2420	e2530	1660	1470	1510
29	467	1260	1030	712	---	7820	2190	2510	2460	1630	1320	1470
30	388	527	696	575	---	7700	2230	2400	2450	1610	1300	1490
31	401	---	585	584	---	7440	---	2460	---	1590	1350	---
TOTAL	54993	15774	28237	39830	106496	193720	107530	72550	72360	63650	55120	55760
MEAN	1774	526	911	1285	3803	6249	3584	2340	2412	2053	1778	1859
MAX	14500	1430	4170	7200	7900	12100	7930	2510	2610	2490	2040	3760
MIN	388	274	292	489	666	1260	1870	2120	2310	1590	1300	1090
AC-FT	109100	31290	56010	79000	211200	384200	213300	143900	143500	126200	109300	110600

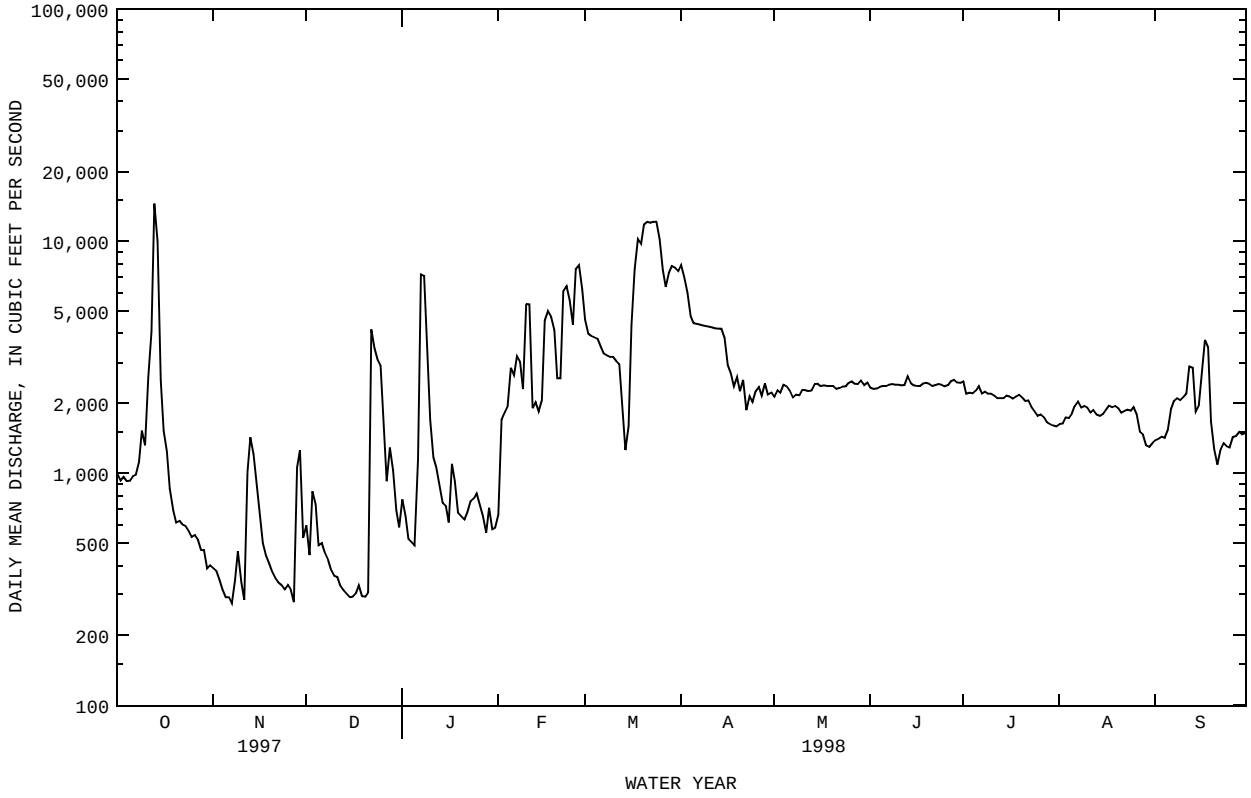
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1998, BY WATER YEAR (WY)

MEAN	1258	483	2440	3077	4445	4398	3159	3627	4981	3043	1751	1625
MAX	4341	769	16350	18640	31160	18080	7333	8290	15180	12900	2096	1902
(WY)	1995	1995	1992	1992	1992	1992	1997	1992	1997	1997	1992	1992
MIN	476	244	248	247	356	403	987	1915	1989	1543	1366	1125
(WY)	1997	1989	1990	1990	1990	1990	1990	1988	1993	1996	1995	1997

08160400 COLORADO RIVER ABOVE LAGRANGE, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1988 - 1998	
ANNUAL TOTAL	1886782		866020			
ANNUAL MEAN	5169		2373		2893	
HIGHEST ANNUAL MEAN					9913	1992
LOWEST ANNUAL MEAN					1157	1990
HIGHEST DAILY MEAN	27900	Jun 27	14500	Oct 13	84000	Dec 23 1991
LOWEST DAILY MEAN	274	Nov 7	274	Nov 7	167	Dec 21 1989
ANNUAL SEVEN-DAY MINIMUM	302	Dec 14	302	Dec 14	170	Dec 16 1989
INSTANTANEOUS PEAK FLOW			20600	Oct 13	88200	Dec 23 1991
INSTANTANEOUS PEAK STAGE			20.37	Oct 13	43.32	Dec 23 1991
ANNUAL RUNOFF (AC-FT)	3742000		1718000		2096000	
10 PERCENT EXCEEDS	14200		4410		5290	
50 PERCENT EXCEEDS	1790		2040		1510	
90 PERCENT EXCEEDS	375		443		378	

e Estimated



08160800 REDGATE CREEK NEAR COLUMBUS, TX

LOCATION.--Lat 29°47'56", long 96°31'55", Colorado County, Hydrologic Unit 12090301, on left bank at downstream side of bridge on Farm Road 109, 1.9 mi upstream from Cummins Creek, and 7.0 mi north of Columbus.

DRAINAGE AREA.--17.3 mi^2.

PERIOD OF RECORD.--Apr 1962 to current year.

REVISED RECORDS.--WSP 2122: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 210.82 ft above sea level. Prior to Oct 1, 1975, datum 10.00 ft higher. Satellite telemeter at station.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1860, about 33.4 ft in late Jun or early Jul 1940, from information by Texas Department of Transportation and local resident.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 13	0515	2,080	19.44	Feb 26	0400	2,030	19.34

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

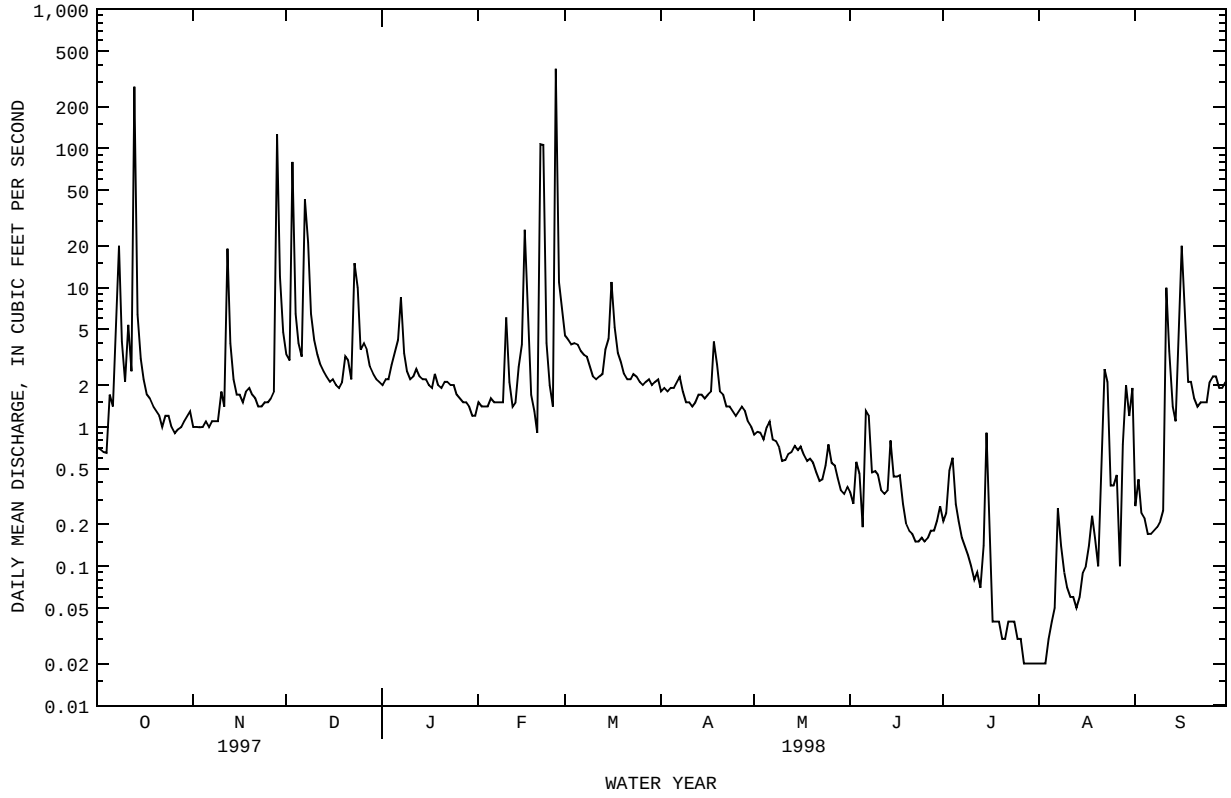
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.71	1.0	3.3	2.0	1.5	4.5	1.8	.88	.34	.21	.02	.27
2	.69	1.0	3.0	2.2	1.4	4.2	1.9	.92	.28	.24	.02	.42
3	.66	.99	80	2.2	1.4	3.9	1.8	.91	.56	.49	.02	.24
4	.65	1.0	6.5	2.8	1.4	4.0	1.9	.81	.46	.60	.03	.22
5	1.7	1.1	4.0	3.4	1.6	3.9	1.9	1.0	.19	.28	.04	.17
6	1.4	1.0	3.2	4.2	1.5	3.5	2.1	1.1	1.3	.21	.05	.17
7	4.0	1.1	43	8.5	1.5	3.3	2.3	.81	1.2	.16	.26	.18
8	20	1.1	21	3.4	1.5	3.2	1.8	.79	.47	.14	.14	.19
9	4.1	1.1	6.5	2.5	1.5	2.7	1.5	.71	.48	.12	.09	.21
10	2.1	1.8	4.2	2.2	6.1	2.3	1.5	.57	.45	.10	.07	.25
11	5.4	1.4	3.3	2.3	2.1	2.2	1.4	.58	.35	.08	.06	10
12	2.5	19	2.8	2.6	1.4	2.3	1.5	.64	.33	.09	.06	3.5
13	277	4.0	2.5	2.3	1.5	2.4	1.7	.66	.35	.07	.05	1.4
14	6.4	2.2	2.3	2.2	2.7	3.6	1.7	.73	.80	.14	.06	1.1
15	3.1	1.7	2.1	2.2	3.9	4.3	1.6	.68	.44	.91	.09	6.9
16	2.2	1.7	2.2	2.0	26	11	1.7	.72	.44	.13	.10	20
17	1.7	1.5	2.0	1.9	5.8	5.2	1.8	.63	.45	.04	.14	5.8
18	1.6	1.8	1.9	2.4	1.7	3.4	4.1	.57	.28	.04	.23	2.1
19	1.4	1.9	2.1	2.0	1.3	2.9	2.8	.59	.20	.04	.16	2.1
20	1.3	1.7	3.2	1.9	.91	2.4	1.8	.55	.18	.03	.10	1.6
21	1.2	1.6	3.0	2.1	107	2.2	1.7	.47	.17	.03	.61	1.4
22	1.0	1.4	2.2	2.1	106	2.2	1.4	.41	.15	.04	2.6	1.5
23	1.2	1.4	15	2.0	4.0	2.4	1.4	.42	.15	.04	2.1	1.5
24	1.2	1.5	10	2.0	2.0	2.3	1.3	.53	.16	.04	.38	1.5
25	1.0	1.5	3.6	1.7	1.4	2.1	1.2	.75	.15	.03	.38	2.1
26	.90	1.6	4.0	1.6	372	2.0	1.3	.55	.16	.03	.45	2.3
27	.96	1.8	3.6	1.5	11	2.1	1.4	.53	.18	.02	.10	2.3
28	1.0	126	2.7	1.5	7.0	2.2	1.3	.43	.18	.02	.75	1.9
29	1.1	12	2.4	1.4	---	2.0	1.1	.35	.21	.02	2.0	1.9
30	1.2	4.8	2.2	1.2	---	2.1	1.0	.33	.27	.02	1.2	2.1
31	1.3	---	2.1	1.2	---	2.2	---	.37	---	.02	1.9	---
TOTAL	350.67	201.69	249.9	73.5	677.11	99.0	51.7	19.99	11.33	4.43	14.26	75.32
MEAN	11.3	6.72	8.06	2.37	24.2	3.19	1.72	.64	.38	.14	.46	2.51
MAX	277	126	80	8.5	372	11	4.1	1.1	1.3	.91	2.6	20
MIN	.65	.99	1.9	1.2	.91	2.0	1.0	.33	.15	.02	.02	.17
AC-FT	696	400	496	146	1340	196	103	40	22	8.8	28	149
CFSM	.65	.39	.47	.14	1.40	.18	.10	.04	.02	.01	.03	.15
IN.	.75	.43	.54	.16	1.46	.21	.11	.04	.02	.01	.03	.16

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

MEAN	4.97	2.45	4.74	6.87	8.20	6.49	7.62	12.3	9.73	1.02	1.25	3.43
MAX	49.0	17.8	25.4	31.9	67.5	38.1	39.9	55.5	83.4	4.44	17.4	38.5
(WY)	1971	1986	1992	1974	1992	1973	1991	1979	1993	1993	1974	1974
MIN	.000	.070	.25	.24	.21	.19	.24	.33	.065	.007	.000	.040
(WY)	1964	1967	1967	1967	1967	1967	1971	1971	1990	1971	1970	1963

08160800 REDGATE CREEK NEAR COLUMBUS, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1962 - 1998	
ANNUAL TOTAL	3905.11		1828.90			
ANNUAL MEAN	10.7		5.01		5.79	
HIGHEST ANNUAL MEAN					20.7	1992
LOWEST ANNUAL MEAN					.82	1964
HIGHEST DAILY MEAN	394	Jan 21	372	Feb 26	1180	Jun 13 1973
LOWEST DAILY MEAN	.15	Aug 17	.02	Jul 27	.00	Aug 7 1962
ANNUAL SEVEN-DAY MINIMUM	.19	Aug 15	.02	Jul 27	.00	Aug 7 1962
INSTANTANEOUS PEAK FLOW			2080	Oct 13	5360	May 22 1979
INSTANTANEOUS PEAK STAGE			19.44	Oct 13	27.19	May 22 1979
ANNUAL RUNOFF (AC-FT)	7750		3630		4190	
ANNUAL RUNOFF (CFSM)	.62		.29		.33	
ANNUAL RUNOFF (INCHES)	8.40		3.93		4.54	
10 PERCENT EXCEEDS	15		4.1		5.2	
50 PERCENT EXCEEDS	2.3		1.5		.87	
90 PERCENT EXCEEDS	.41		.13		.10	



08161000 COLORADO RIVER AT COLUMBUS, TX

LOCATION.--Lat 29°42'22", long 96°32'12", Colorado County, Hydrologic Unit 12090302, near right bank at downstream side of pier of bridge on U.S. Highway 90 at eastern edge of Columbus, 340 ft downstream from Texas and New Orleans Railroad Co. bridge, 2.6 mi downstream from Cummins Creek, and at mile 135.1.

DRAINAGE AREA.--41,640 mi^2, approximately, of which 11,403 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Jan 1903 to Dec 1911 (gage heights only), May 1916 to current year. Discharge records for 1902-11, published in WSP 84, 99, 132, 174, 210, 288, and 308, have been found to be unreliable and should not be used. Records collected at site 23 mi downstream Oct 1930 to May 1939, published as "near Eagle Lake". Gage-height records collected in this vicinity since 1903 are contained in reports of the National Weather Service.
Water-quality records.--Chemical analyses: Oct 1967 to Sep 1971. Chemical and biochemical analyses: Feb 1968 to Sep 1981. Sediment records: Mar 1957 to Sep 1973.

REVISED RECORDS.-- WSP 1562: 1920-21(M), 1922. WDR TX-81-3: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 145.52 ft above sea level. Prior to May 1, 1919, various nonrecording gages at sites in the immediate vicinity at datum 7.00 ft higher. May 1, 1919 to Nov 23, 1930, water-stage recorder at site about 300 ft downstream at datum 7.00 ft higher. Sep 17, 1930 to Jun 12, 1939 (Oct 1, 1930, to May 31, 1939, used herein), water-stage recorder at site 23 mi downstream at different datum. May 17 to Nov 14, 1939, nonrecording gage at present site and datum 10.00 ft higher; Nov 15, 1939 to Dec 31, 1988, water-stage recorder at present site and at datum 10.00 ft higher. Gage-height telemeter at station. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in May 1916, at least 10% of contributing drainage area hss been regulated by Lake Austin. Flow is also affected at times by discharge from the flood-detention pools of 20 floodwater-retarding structures with a combined detention capacity of 25,570 acre-ft. These structures control runoff from a 73.1 mi^2 area in the Cummins Creek watershed. There are many other diversions above this station for irrigation and for municipal supply. Low-flow releases from Lake Travis, 251 mi upstream, are made for the generation of electric power to fulfill downstream water contracts.

COOPERATION.--Lower Colorado River Authority provides operation and maintenance of the gage and verification of stage discharge relation atlow stages. USGS maintains stage discharge relation at medium to high stages, computes, and publishes streamflow record.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1852, 51.6 ft, present datum, in Jul 1869 and Dec 6, 1913, from information by local resident. River divided each time and left Columbus on an island.

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

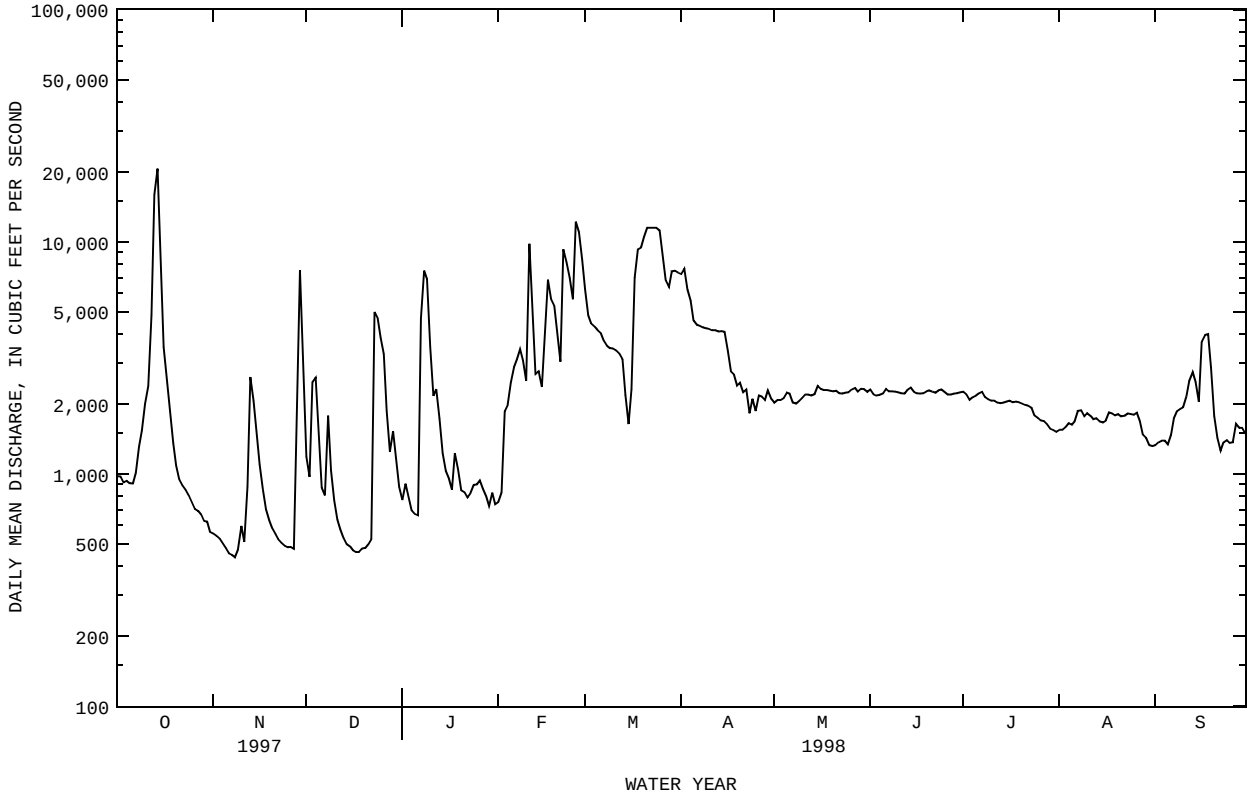
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	978	555	1190	773	758	6250	7280	2030	2310	2260	1550	1330
2	975	541	971	908	833	4820	7690	2080	2210	2210	1550	1370
3	920	526	2500	802	1870	4440	6230	2080	2180	2090	1590	1390
4	936	503	2610	697	1990	4310	5570	2120	2190	2140	1660	1390
5	912	481	1430	675	2480	4160	4580	2240	2220	2180	1630	1340
6	910	455	871	664	2890	4050	4390	2220	2330	2230	1690	1470
7	1010	449	807	4660	3120	3760	4350	2030	2270	2260	1870	1740
8	1310	438	1780	7500	3450	3570	4280	2010	2270	2150	1880	1870
9	1540	471	1040	6910	3090	3490	4240	2060	2260	2100	1770	1910
10	2010	599	771	3540	2520	3470	4220	2120	2250	2070	1830	1940
11	2390	510	635	2170	9820	3400	4160	2200	2230	2070	1780	2160
12	4820	881	577	2320	5120	3300	4160	2200	2220	2030	1720	2520
13	16000	2620	530	1740	2690	3120	4110	2180	2310	2020	1740	2750
14	20700	2070	500	1230	2770	2200	4120	2210	2360	2030	1680	2490
15	7490	1510	488	1030	2370	1640	4100	2390	2260	2050	1670	2050
16	3530	1100	470	958	3750	2310	3410	2330	2230	2070	1700	3720
17	2490	862	460	857	6870	7040	2760	2300	2220	2040	1840	3970
18	1910	704	461	1230	5650	9290	2680	2300	2230	2050	1820	4000
19	1360	630	477	1050	5280	9460	2400	2280	2270	2040	1790	2880
20	1090	585	480	852	4100	10500	2470	2270	2290	2010	1810	1780
21	946	551	498	836	3050	11500	2250	2280	2260	1990	1770	1430
22	895	523	525	794	9300	11500	2310	2230	2240	1970	1780	1260
23	857	505	4980	829	8190	11500	1830	2220	2290	1930	1820	1370
24	808	491	4690	898	7010	11500	2110	2240	2310	1790	1810	1400
25	759	483	3880	902	5660	11200	1870	2250	2260	1750	1800	1360
26	706	485	3290	938	12200	8600	2180	2310	2200	1700	1840	1370
27	695	475	1870	862	11000	6820	2160	2350	2200	1690	1680	1640
28	669	2990	1250	799	8360	6400	2080	2260	2220	1640	1480	1580
29	627	7560	1530	728	---	7480	2290	2330	2230	1570	1430	1580
30	623	2660	1160	833	---	7500	2100	2320	2250	1550	1330	1490
31	563	---	882	743	---	7360	---	2260	---	1520	1320	---
TOTAL	81429	33213	43603	49728	136191	195940	108380	68700	67570	61200	52630	58550
MEAN	2627	1107	1407	1604	4864	6321	3613	2216	2252	1974	1698	1952
MAX	20700	7560	4980	7500	12200	11500	7690	2390	2360	2260	1880	4000
MIN	563	438	460	664	758	1640	1830	2010	2180	1520	1320	1260
AC-FT	161500	65880	86490	98640	270100	388600	215000	136300	134000	121400	104400	116100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1916 - 1998, BY WATER YEAR (WY)

MEAN	2937	2259	2123	2389	2711	2565	3568	5513	5367	3316	1950	2919
MAX	25310	13360	16450	19800	33800	20220	17350	40630	30060	25710	10030	32690
(WY)	1937	1975	1992	1992	1992	1992	1922	1922	1935	1938	1938	1936
MIN	204	197	162	182	203	275	308	1257	574	569	128	347
(WY)	1935	1918	1964	1964	1967	1952	1925	1937	1934	1933	1917	1934

08161000 COLORADO RIVER AT COLUMBUS, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1916 - 1998	
ANNUAL TOTAL	2073713		957134			
ANNUAL MEAN	5681		2622		3144	
HIGHEST ANNUAL MEAN					10810	1992
LOWEST ANNUAL MEAN					653	1917
HIGHEST DAILY MEAN	28300	Jun 28	20700	Oct 14	164000	Jun 19 1935
LOWEST DAILY MEAN	438	Nov 8	438	Nov 8	93	Sep 1 1918
ANNUAL SEVEN-DAY MINIMUM	461	Jan 1	475	Nov 3	106	Aug 22 1917
INSTANTANEOUS PEAK FLOW			25000	Oct 14	190000	Jun 18 1935
INSTANTANEOUS PEAK STAGE			27.10	Oct 14	48.50	Jun 18 1935
ANNUAL RUNOFF (AC-FT)	4113000		1898000		2278000	
10 PERCENT EXCEEDS	15100		5400		5990	
50 PERCENT EXCEEDS	2790		2070		1640	
90 PERCENT EXCEEDS	522		667		400	



08162000 COLORADO RIVER AT WHARTON, TX

LOCATION.--Lat 29°18'32", long 96°06'13", Wharton County, Hydrologic Unit 12090302, near left bank at downstream side of downstream bridge on U.S. Highway 59 in Wharton, 1,100 ft downstream from Texas and New Orleans Railroad Company bridge, 12 mi upstream from Jones Creek, and at mile 66.6.

DRAINAGE AREA.--42,003 mi^2, approximately, of which 11,403 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Jul 1916 to Aug 1918 (intermittent periods), Mar 1919 to Sep 1925, Jul and Aug 1938 (flood discharge measurements only), Oct 1938 to current year. Jun to Nov 1901, May to Sep 1902, daily records published in U.S. Department of Agriculture, Office of Experiment Stations, Bulletin Nos. 119 and 133. Gage-height records collected in this vicinity since 1935 are contained in reports of the National Weather Service.
Water-quality records.--Chemical analyses: Apr 1944 to Sep 1995. Chemical and biochemical analyses: Jan 1968 to Sep 1995. Pesticide analyses: Oct 1967 to Jun 1982. Sediment analyses: Oct 1974 to Sep 1995. Radiochemical analyses: Dec 1973 to Sep 1995.

REVISED RECORDS.--WSP 878: 1938(M). WDR TX-81-3: Drainage area. WDR TX-88-3: 1985.

GAGE.--Water-stage recorder. Datum of gage is 52.42 ft above sea level. Prior to Oct 1, 1938, various types of recording and nonrecording gages 800 ft upstream at different datum. Oct 1, 1938 to Jun 1, 1956, nonrecording gage 100 ft upstream at datum 13.00 ft higher. Jun 1, 1966 to Sep 30, 1975, water-stage recorder at present site at datum 13.00 ft higher. Oct 1, 1975 to Mar 1, 1983, water-stage recorder at present site at datum 10.00 ft higher. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in Oct 1938, at least 10% of contributing drainage area has been regulated by Lake Austin. Flow is also affected at times by discharge from the flood-detention pools of 20 floodwater-retarding structures with a combined detention capacity of 25,570 acre-ft. There are many diversions above station for irrigation, municipal supply, cooling water for thermal-electric power plant, and for oil field operations.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1869, 51.9 ft Dec 8, 1913, present datum, from information by local residents; below Wharton floodwater combined with that of the Brazos River. Flood of about Jul 12, 1869, reached about same height. Flood of Jun 20, 1935, reached a stage of 51.2 ft, present datum, furnished by National Weather Service (discharge, 159,000 ft^3/s), from rating curve defined by current-meter measurements below 145,000 ft^3/s. Flood of Jul 30, 1938, reached a stage of 50.4 ft, present datum, observed by U.S. Geological Survey personnel (discharge, 145,000 ft^3/s).

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

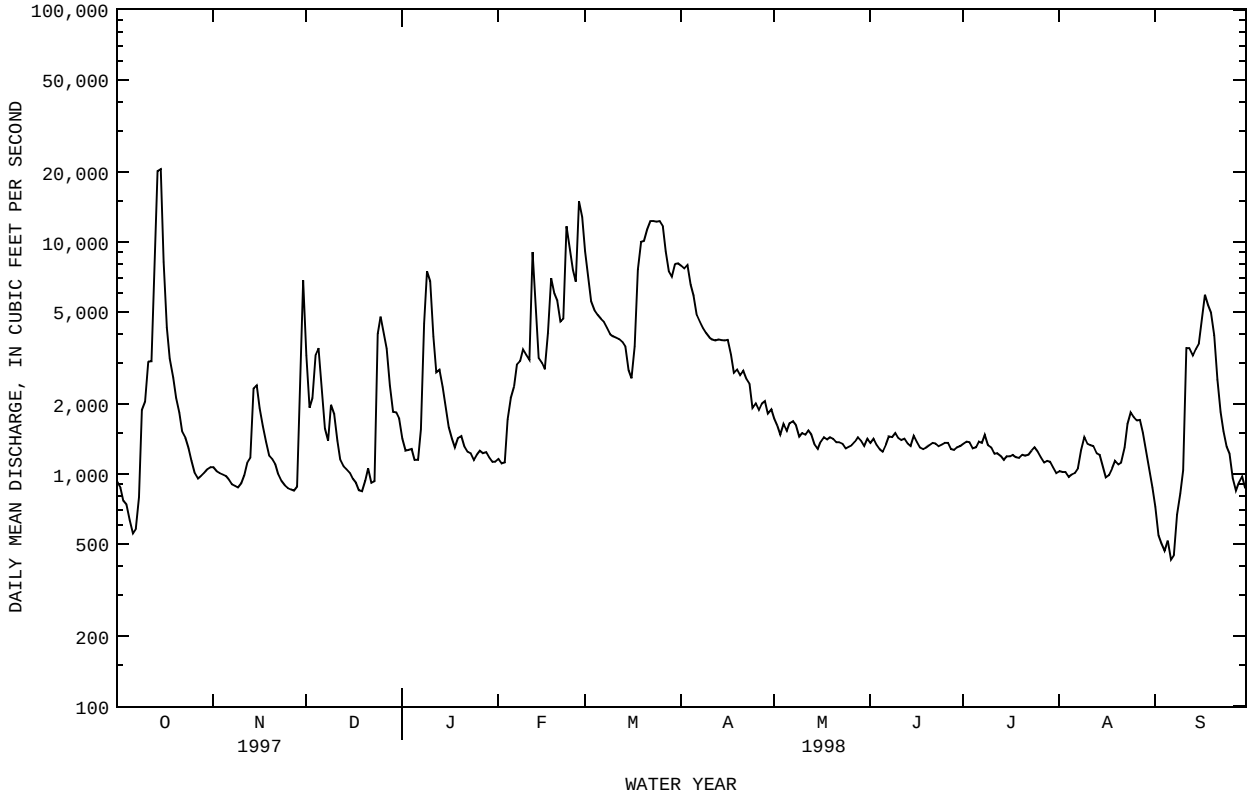
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	926	1070	3240	1420	1160	9120	7900	1730	1360	1350	1030	723
2	873	1030	1930	1260	1110	7000	7690	1610	1420	1380	1020	544
3	766	1010	2120	1270	1120	5540	7960	1480	1340	1370	1020	501
4	738	995	3270	1280	1720	5050	6540	1640	1280	1290	971	467
5	633	983	3490	1150	2130	4850	5870	1530	1250	1300	998	517
6	556	944	2350	1150	2380	4660	4830	1660	1340	1380	1010	429
7	582	904	1570	1560	2960	4530	4540	1690	1450	1360	1060	448
8	797	890	1390	4450	3070	4270	4260	1620	1440	1470	1270	670
9	1890	874	1990	7460	3440	4010	4050	1450	1500	1330	1440	824
10	2050	915	1810	6760	3260	3920	3880	1500	1430	1300	1350	1040
11	3050	988	1390	3900	3100	3870	3790	1480	1400	1220	1330	3490
12	3060	1130	1150	2750	9020	3810	3760	1540	1420	1230	1320	3490
13	8280	1180	1080	2820	5310	3700	3790	1480	1350	1200	1230	3240
14	20200	2340	1050	2370	3160	3540	3770	1340	1320	1150	1210	3450
15	20600	2410	1010	1910	3010	2800	3760	1280	1460	1190	1080	3650
16	8180	1920	952	1590	2830	2580	3780	1380	1380	1190	969	4670
17	4280	1610	915	1420	4060	3550	3270	1440	1300	1210	990	5910
18	3150	1380	852	1300	7000	7620	2730	1410	1280	1180	1060	5340
19	2600	1200	842	1430	6010	10000	2810	1440	1300	1170	1140	4950
20	2130	1160	935	1460	5590	10100	2670	1420	1330	1210	1100	3960
21	1840	1100	1060	1310	4540	11300	2790	1370	1360	1200	1120	2560
22	1520	998	917	1250	4660	12300	2570	1370	1350	1210	1300	1850
23	1430	931	931	1230	11700	12300	2440	1350	1320	1260	1640	1530
24	1290	895	4020	1150	9520	12200	1930	1290	1340	1300	1840	1310
25	1140	869	4780	1210	7580	12300	2020	1310	1360	1250	1760	1220
26	1010	859	4060	1260	6750	11700	1890	1330	1360	1180	1700	960
27	956	848	3470	1230	15000	9140	2010	1380	1280	1120	1710	847
28	983	884	2410	1240	12800	7430	2060	1440	1270	1140	1510	926
29	1010	2870	1850	1180	---	7070	1820	1390	1300	1130	1240	979
30	1050	6820	1840	1130	---	8030	1900	1320	1320	1070	1040	868
31	1070	---	1730	1130	---	8080	---	1420	---	1010	875	---
TOTAL	98640	42007	60404	62030	143990	216370	113080	45090	40610	38350	38333	61363
MEAN	3182	1400	1949	2001	5143	6980	3769	1455	1354	1237	1237	2045
MAX	20600	6820	4780	7460	15000	12300	7960	1730	1500	1470	1840	5910
MIN	556	848	842	1130	1110	2580	1820	1280	1250	1010	875	429
AC-FT	195700	83320	119800	123000	285600	429200	224300	89440	80550	76070	76030	121700

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

MEAN	2129	2286	2251	2525	3034	2808	3146	4212	4809	2552	1382	1905
MAX	12350	13870	15060	21810	35520	21550	13730	27300	30910	15010	3916	9394
(WY)	1958	1975	1992	1992	1992	1992	1977	1957	1987	1997	1945	1961
MIN	296	220	253	224	268	328	566	825	838	706	406	436
(WY)	1957	1957	1990	1964	1967	1952	1951	1962	1948	1967	1964	1954

08162000 COLORADO RIVER AT WHARTON, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1939 - 1998	
ANNUAL TOTAL	2271693		960267			
ANNUAL MEAN	6224		2631		2748	
HIGHEST ANNUAL MEAN					11120	1992
LOWEST ANNUAL MEAN					615	1964
HIGHEST DAILY MEAN	29900	Mar 18	20600	Oct 15	90600	Jul 3 1940
LOWEST DAILY MEAN	551	Jan 8	429	Sep 6	42	Aug 22 1964
ANNUAL SEVEN-DAY MINIMUM	615	Jan 3	511	Sep 2	110	Dec 11 1956
INSTANTANEOUS PEAK FLOW			25200	Oct 15	100000	Jul 3 1940
INSTANTANEOUS PEAK STAGE			28.85	Oct 15	48.99	Jul 3 1940
ANNUAL RUNOFF (AC-FT)	4506000		1905000		1991000	
10 PERCENT EXCEEDS	16900		5950		5490	
50 PERCENT EXCEEDS	2660		1420		1320	
90 PERCENT EXCEEDS	806		933		472	



08162500 COLORADO RIVER NEAR BAY CITY, TX

LOCATION.--Lat 28°58'26", long 96°00'44", Matagorda County, Hydrologic Unit 12090302, on left bank, 6,300 ft downstream from bridge on State Highway 35, 7,100 ft downstream from Texas and New Orleans Railroad Co. bridge, 2.8 mi west of Bay City, and at mile 32.5.

DRAINAGE AREA.--42,240 mi^2, approximately, of which 11,403 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Jul 1940 (WSP 1046), Apr 1948 to current year. Records of elevation collected in this vicinity since 1946 are contained in reports of the National Weather Service.
Water-quality records.--Chemical and biochemical analyses: Oct 1974 to Sep 1975.

REVISED RECORDS.--WDR TX-81-3: Drainage area. WDR TX-88-3: 1985.

GAGE.--Water-stage recorder. Datum of gage is sea level. Jul 2-6, 1940, nonrecording gage at highway bridge, 6,300 ft upstream at datum 30.60 ft lower. On Feb 19, 1992, gage was temporarily moved 6,200 ft upstream at same datum. Gage re-established on left bank 6,300 ft downstream on May 12, 1993. Radio telemeter at station. Satellite telemeter at station.

REMARKS.--Records good. Since installation of gage in Apr 1948, at least 10% of contributing drainage area has been regulated by Lake Austin. Flow is also affected at times by discharge from the flood-detention pools of 20 floodwater-retarding structures with a combined detention capacity of 25,570 acre-ft. These structures control runoff from a 73.1 mi^2 area in the Cummins Creek watershed. There are many other diversions above this station for irrigation and for municipal supply.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation since 1869, 56.1 ft Dec 10, 1913. Flood in Jul 1869 probably reached about same elevation. Elevation of other floods are as follows: May 8, 1922, 55.4 ft; Jun 1929, 55.0 ft; Jun 22, 1935, 54.6 ft; Oct 5, 1936, 52.2 ft; Aug 2, 1938, 53.4 ft; Nov 27, 1940, 47.6 ft. All above flood data from information by Texas and New Orleans Railroad Co. and adjusted to present site. 48.2 ft, present datum, Jul 4, 1940, at site 6,300 ft upstream at bridge on State Highway 35, observed by U.S. Army Corps of Engineers (elevation, 46.6 ft), adjusted to present site; no flow at times in 1951-53 and 1956.

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	1160	1140	5220	1600	1090	10900	8090	1220	462	581	e200	172
2	1210	1080	2670	1340	1560	8220	7650	947	455	595	e185	148
3	1080	1200	2000	1200	1750	6310	7920	1000	465	750	e170	124
4	1040	1160	3010	1250	1320	5200	7110	947	353	788	e155	46
5	1050	1080	3920	1170	1950	4890	5940	962	303	684	e145	49
6	935	991	3260	1060	2050	4670	4900	1080	304	572	e180	15
7	1010	886	2090	1590	2650	4510	4180	1180	408	504	400	27
8	1900	839	1780	2130	2700	4290	3980	1200	569	533	675	69
9	7030	823	1800	7570	3120	3930	3680	1030	555	560	782	273
10	9500	991	2280	7860	3320	3680	3440	1000	557	e470	780	2040
11	10000	999	1770	5470	2970	3620	3260	947	469	e395	636	20900
12	9570	1730	1390	3200	6370	e3700	3220	748	441	e315	553	18100
13	13200	2310	1170	2710	7830	3530	3270	722	384	280	497	10500
14	26000	2120	1060	2670	3940	3470	3340	613	334	244	512	5510
15	30600	2890	956	2170	2880	3110	3260	541	274	237	468	4180
16	15100	2350	891	1750	3210	2790	3260	531	397	262	386	11400
17	6750	1960	854	1480	3630	3360	3210	740	269	275	427	10800
18	4570	1650	809	1330	6310	5680	2650	706	256	308	439	6920
19	3700	1430	753	1230	8280	9380	2480	689	253	281	505	5150
20	2870	1230	760	1510	6960	10900	2540	646	259	335	500	4460
21	2320	1100	1570	1420	5670	10900	2480	558	257	392	534	2610
22	2040	1020	1490	2120	6650	12500	2380	502	253	399	1170	1560
23	1630	952	1040	1610	10300	12600	1950	559	245	447	1740	1050
24	1550	899	1900	1260	12100	12400	1860	511	245	450	2030	727
25	1220	861	5170	1150	8760	12500	1460	568	246	e435	1490	960
26	1050	837	4990	1180	8620	12400	1490	549	294	e395	1300	593
27	872	821	3920	1140	12700	10500	1280	580	291	e335	1100	369
28	921	828	3060	1120	16300	8180	1370	568	327	316	996	339
29	869	1010	2180	1080	---	6980	1390	572	478	335	696	458
30	942	6640	1790	1040	---	7670	1020	429	595	292	432	310
31	994	---	1860	1000	---	8260	---	480	---	227	260	---
TOTAL	162683	43827	67413	64410	154990	221030	104060	23325	10998	12992	20343	109859
MEAN	5248	1461	2175	2078	5535	7130	3469	752	367	419	656	3662
MAX	30600	6640	5220	7860	16300	12600	8090	1220	595	788	2030	20900
MIN	869	821	753	1000	1090	2790	1020	429	245	227	145	15
AC-FT	322700	86930	133700	127800	307400	438400	206400	46270	21810	25770	40350	217900

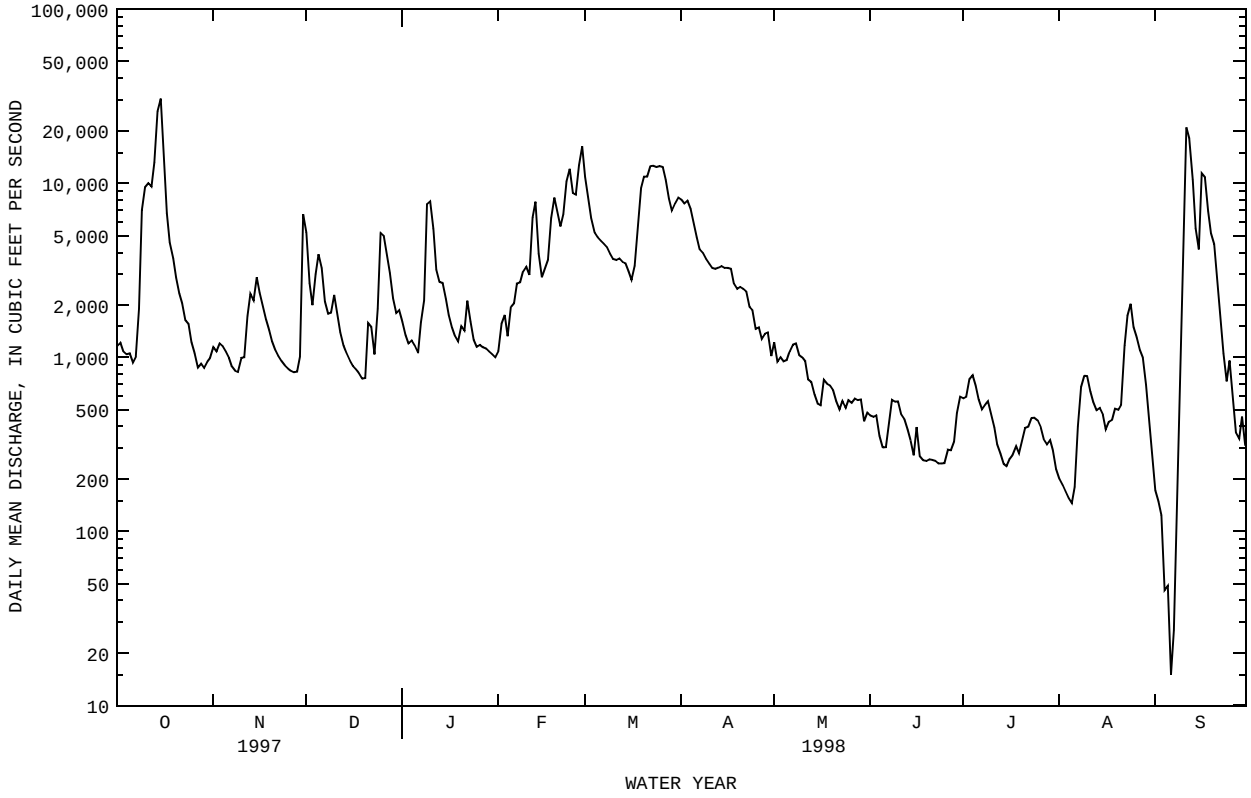
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 1998, BY WATER YEAR (WY)

MEAN	2276	2169	2247	2609	3333	2852	2901	4014	4597	1717	843	1785
MAX	12820	13470	16200	25780	42200	25780	13410	27750	30360	14240	2876	11160
(WY)	1958	1975	1992	1992	1992	1992	1977	1957	1987	1997	1961	1961
MIN	254	226	292	249	246	257	125	227	155	1.00	114	93.9
(WY)	1990	1957	1990	1957	1967	1967	1964	1964	1971	1967	1964	1966

08162500 COLORADO RIVER NEAR BAY CITY, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1948 - 1998	
ANNUAL TOTAL	2337000		995930			
ANNUAL MEAN	6403		2729		2619	
HIGHEST ANNUAL MEAN					14270	1992
LOWEST ANNUAL MEAN					375	1964
HIGHEST DAILY MEAN	35400	Mar 18	30600	Oct 15	69800	Oct 20 1994
LOWEST DAILY MEAN	188	Jan 8	15	Sep 6	.00	Jun 1 1951
ANNUAL SEVEN-DAY MINIMUM	525	Jan 4	68	Sep 2	.44	Oct 4 1969
INSTANTANEOUS PEAK FLOW			33000	Oct 15	84100	Jun 26 1960
INSTANTANEOUS PEAK STAGE			26.09	Oct 15	46.40	Jun 26 1960
ANNUAL RUNOFF (AC-FT)	4635000		1975000		1898000	
10 PERCENT EXCEEDS	17100		7730		5790	
50 PERCENT EXCEEDS	3180		1170		900	
90 PERCENT EXCEEDS	770		299		243	

e Estimated



08163500 LAVACA RIVER AT HALLETTSVILLE, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°26'35", long 96°56'41", Lavaca County, Hydrologic Unit 12100101, at downstream side of bridge on U.S. Highway 77 in Hallettsville and 0.7 mi downstream from Campbell Branch.

DRAINAGE AREA.--108 mi^2.

PERIOD OF RECORD.--Jul 1939 to Apr 1993 (daily mean discharge). Apr 1993 to current year (peak discharges).

REVISED RECORDS.--WSP 1312: 1942(M), 1944(M). WSP 1732: 1952(M). WSP 2123: Drainage area.

GAGE.--Crest-stage gage. Datum of gage is 186.72 ft above sea level. Prior to Apr 19, 1960, water-stage recorder for high stages and movable nonrecording gage for stages below about 6.2 ft, Apr 20, 1960, to Jun 2, 1961, movable nonrecording gage at same site. Jun 3, 1961 to Apr 7, 1993, water-stage recorder at site 75 ft downstream. All gages at same datum.

REMARKS.--Records good. No known regulation or diversions. The Lavaca County Flood Control District No. 3 began channel rectification 1.6 mi downstream from gage in Aug 1983. This rectification project reached the gage on Jan 26, 1984, and was completed in Jun 1984. The channel was previously rectified in 1959-60.

AVERAGE DISCHARGE.--53 years (water years 1940-92), 50.8 ft^3/s (6.39 in/yr), 36,780 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 99,500 ft^3/s Aug 31, 1981 (gage height, 41.1 ft, from floodmark), from rating curve extended above 23,000 ft^3/s on basis of slope-area measurement of peak flow; no flow at times in 1953, 1956, and 1990.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage from about 1870 to 1940, 32.8 ft Jul 16, 1936, from information by local resident. Maximum stage since at least 1840, that of Aug 31, 1981.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,300 ft^3/s:

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

No peak greater than base discharge.

08164000 LAVACA RIVER NEAR EDNA, TX

LOCATION.--Lat 28°57'35", long 96°41'10", Jackson County, Hydrologic Unit 12100101, at downstream side near center of upstream bridge of two bridges on U.S. Highway 59, 660 ft upstream from Texas and New Orleans Railroad Co. bridge, and 2.8 mi southwest of Edna.

DRAINAGE AREA.--817 mi^2.

PERIOD OF RECORD.--Aug 1938 to current year.
Water-quality records.--Chemical analyses: Aug 1945 to Sep 1977. Chemical and biochemical analyses: Feb 1971 to Aug 1993. Pesticide analyses: Jan 1968 to Aug 1981. Sediment analyses: Nov 1977 to Aug 1993.

REVISED RECORDS.--WSP 1923: 1955. WRD TX-73-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 14.10 ft above sea level. Prior to Jun 6, 1939, nonrecording gage (property of U.S. Army Corps of Engineers); Jun 6, 1939 to Apr 3, 1957, nonrecording gage at site 110 ft downstream; Apr 4, 1957, to Mar 21, 1961, nonrecording gage; all at same datum. Satellite telemetry at station.

REMARKS.--Records fair. No known regulation. Small diversions above station for irrigation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1880, 33.8 ft May 25, 1936 (discharge, 83,400 ft^3/s), from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,100 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 10	0100	6,260	20.57	Mar 17	1700	6,380	20.67
Oct 14	1700	21,100	26.52	Aug 25	0115	7,860	21.78
Feb 24	0600	8,240	22.01	Sep 12	2100	18,800	25.99
Feb 27	1300	4,150	18.20	Sep 17	1930	16,500	25.34

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	143	326	131	116	466	137	86	40	24	11	90
2	36	138	203	128	115	338	135	84	38	24	11	79
3	35	129	403	124	122	280	135	81	37	28	11	71
4	33	124	3210	124	121	246	133	79	36	27	11	64
5	34	120	2070	125	115	224	132	78	36	26	11	59
6	35	117	427	134	112	210	130	77	34	24	12	54
7	42	113	282	1190	109	200	127	75	45	23	18	53
8	920	109	234	1420	111	195	126	73	93	22	12	51
9	4900	109	287	587	112	184	123	71	68	21	26	51
10	5920	114	289	304	113	173	121	69	50	20	35	59
11	2190	118	206	227	408	167	118	67	42	19	23	4800
12	4800	355	173	197	1380	160	116	65	38	20	17	14600
13	11900	1590	156	728	429	158	114	63	36	21	16	13800
14	18300	1880	146	270	294	167	113	62	34	18	17	4060
15	15800	475	141	196	631	190	112	61	33	16	16	1990
16	7230	288	138	171	1220	1310	111	60	36	16	14	7850
17	929	220	136	154	2770	5480	108	58	65	15	64	14700
18	546	184	133	144	1620	3260	108	56	40	14	56	e12700
19	408	162	131	135	1160	652	119	55	33	14	34	e4300
20	329	151	138	128	1590	402	123	53	31	15	30	e1650
21	285	147	154	126	753	300	114	52	29	15	30	e580
22	250	140	148	126	2030	250	105	50	28	15	169	364
23	221	134	167	121	6470	219	101	49	27	14	2860	279
24	203	126	311	118	6920	200	98	48	26	15	6330	234
25	195	123	523	115	927	186	96	46	25	14	4230	202
26	181	120	310	114	1110	175	93	45	25	19	570	177
27	169	119	226	112	3520	167	93	44	24	21	307	157
28	158	121	188	110	934	160	93	43	24	15	198	145
29	154	757	173	110	---	154	91	43	25	12	155	133
30	150	1060	152	109	---	147	89	43	24	11	123	121
31	149	---	139	110	---	141	---	41	---	11	104	---
TOTAL	76538	9486	11720	7888	35312	16561	3414	1877	1122	569	15521	83473
MEAN	2469	316	378	254	1261	534	114	60.5	37.4	18.4	501	2782
MAX	18300	1880	3210	1420	6920	5480	137	86	93	28	6330	14700
MIN	33	109	131	109	109	141	89	41	24	11	11	51
AC-FT	151800	18820	23250	15650	70040	32850	6770	3720	2230	1130	30790	165600

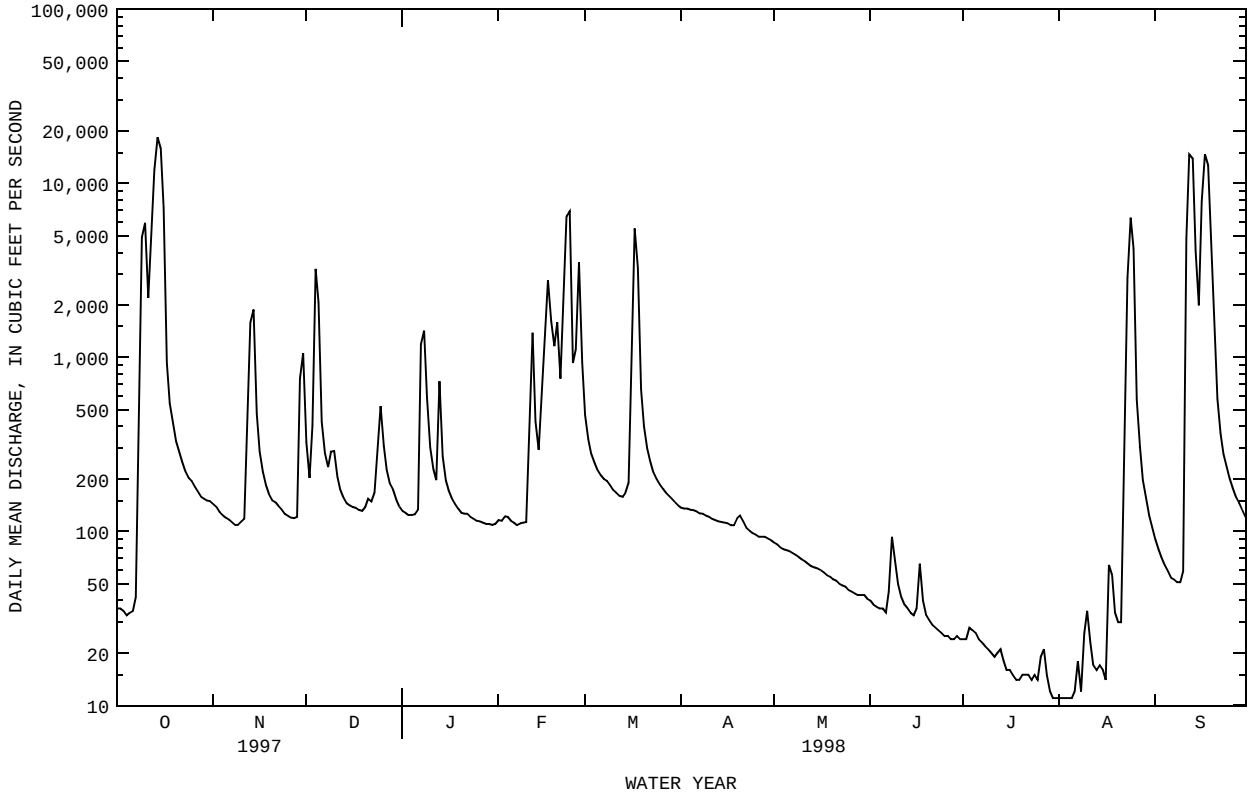
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1998, BY WATER YEAR (WY)

MEAN	408	278	245	289	402	278	508	680	654	212	89.0	360
MAX	7118	3431	2400	1564	5214	2696	5014	3239	5005	3999	713	2842
(WY)	1995	1941	1977	1979	1992	1997	1997	1982	1973	1940	1946	1978
MIN	.58	.003	.19	.055	13.5	6.58	4.43	8.16	.72	2.14	.16	.13
(WY)	1991	1957	1991	1957	1954	1956	1956	1956	1990	1954	1990	1989

08164000 LAVACA RIVER NEAR EDNA, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1938 - 1998	
ANNUAL TOTAL	554967		263481			
ANNUAL MEAN	1520		722		366	
HIGHEST ANNUAL MEAN					1385	1992
LOWEST ANNUAL MEAN					6.12	1956
HIGHEST DAILY MEAN	33700	Apr 12	18300	Oct 14	122000	Oct 19 1994
LOWEST DAILY MEAN	33	Oct 4	11	Jul 30	.00	Nov 10 1954
ANNUAL SEVEN-DAY MINIMUM	35	Sep 30	11	Jul 30	.00	Jul 2 1956
INSTANTANEOUS PEAK FLOW			21100	Oct 14	150000	Oct 19 1994
INSTANTANEOUS PEAK STAGE			26.52	Oct 14	35.49	Oct 19 1994
ANNUAL RUNOFF (AC-FT)	1101000		522600		265300	
10 PERCENT EXCEEDS	4840		1340		417	
50 PERCENT EXCEEDS	169		123		53	
90 PERCENT EXCEEDS	51		22		9.4	

e Estimated



08164300 NAVIDAD RIVER NEAR HALLETTSVILLE, TX

LOCATION.--Lat 29°28'00", long 96°48'45", Lavaca County, Hydrologic Unit 12100102, on right bank 28 ft downstream from bridge on U.S. Highway 90-A, 0.8 mi downstream from Mixons Creek, 1.2 mi southwest of Sublime, and 8 mi northeast of Hallettsville.

DRAINAGE AREA.--332 mi^2.

PERIOD OF RECORD.--Oct 1961 to current year.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 159.28 ft above sea level. Satellite telemetry at station.

REMARKS.--Records fair. No known regulation or diversion.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1860, 40 ft in Jun 1940; flood in Jul 1936 reached a stage of 39 ft, from information by local residents and Southern Pacific Railroad Company.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 11	1900	5,220	23.24	Dec 3	1700	2,610	19.76
Oct 13	1800	15,300	28.82	Feb 22	1300	5,260	23.28
Nov 29	1200	2,690	19.91	Feb 26	1900	3,220	20.85

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	4.2	55	129	58	48	128	47	29	10	8.4	1.0	2.9
2	4.0	51	99	58	45	105	47	28	9.1	7.4	.99	2.5
3	3.6	49	1170	58	44	94	47	28	8.1	7.3	.99	2.1
4	3.3	48	381	57	42	88	45	27	7.7	9.5	1.0	1.5
5	3.8	49	141	57	44	85	44	26	9.7	9.1	.99	1.3
6	4.2	48	102	60	47	79	44	26	1150	7.0	1.1	1.3
7	20	45	91	392	45	75	44	25	106	5.5	6.7	1.6
8	811	45	365	210	43	72	42	24	44	4.4	5.7	1.7
9	353	45	175	93	42	66	40	23	30	4.2	3.8	1.2
10	203	58	107	71	119	64	38	22	23	3.4	2.3	1.6
11	3600	52	83	63	1130	61	37	21	19	2.8	1.7	634
12	3680	561	73	207	201	60	36	20	17	2.6	1.5	72
13	8180	306	68	116	116	61	36	20	16	2.3	1.3	21
14	9830	115	66	76	131	63	e37	19	14	2.3	1.4	19
15	670	74	65	66	195	68	36	19	15	2.0	1.6	197
16	191	62	63	60	371	394	36	18	18	1.8	4.0	516
17	143	56	61	58	624	728	35	18	17	1.7	9.5	91
18	118	54	59	57	170	156	39	17	14	1.5	14	30
19	102	53	59	50	322	101	43	17	13	1.6	25	19
20	92	52	67	47	116	79	38	16	12	1.5	3.6	21
21	84	50	76	48	118	70	35	15	11	1.5	5.0	14
22	77	48	66	47	3190	66	34	14	9.9	1.6	35	12
23	74	46	136	48	1910	62	34	14	9.5	1.5	24	10
24	73	45	615	49	212	60	32	13	9.0	1.4	17	20
25	69	45	195	46	141	58	32	13	8.5	1.3	56	28
26	63	44	103	47	1420	56	32	13	8.1	1.2	9.3	10
27	60	44	94	45	737	55	32	13	8.3	1.2	6.4	11
28	58	402	80	45	185	54	32	12	8.3	1.1	5.3	9.6
29	58	2240	70	43	---	52	31	12	8.5	1.1	4.5	8.2
30	59	275	64	45	---	51	30	e12	9.5	1.1	3.8	10
31	59	---	60	43	---	50	---	e11	---	1.1	3.1	---
TOTAL	28750.1	5117	4983	2420	11808	3261	1135	585	1643.2	100.4	257.57	1770.5
MEAN	927	171	161	78.1	422	105	37.8	18.9	54.8	3.24	8.31	59.0
MAX	9830	2240	1170	392	3190	728	47	29	1150	9.5	56	634
MIN	3.3	44	59	43	42	50	30	11	7.7	1.1	.99	1.2
AC-FT	57030	10150	9880	4800	23420	6470	2250	1160	3260	199	511	3510
CFSM	2.79	.51	.48	.24	1.27	.32	.11	.06	.16	.01	.03	.18
IN.	3.22	.57	.56	.27	1.32	.37	.13	.07	.18	.01	.03	.20

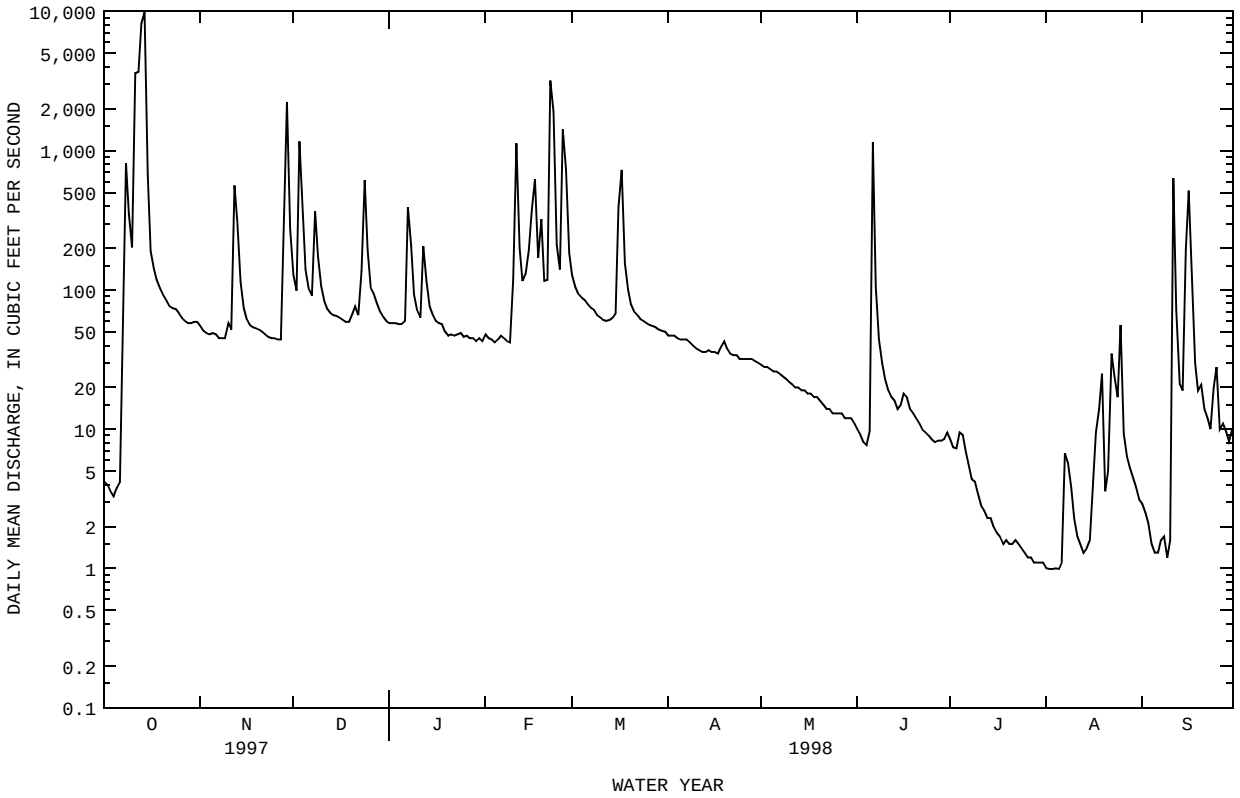
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1998, BY WATER YEAR (WY)

MEAN	120	105	121	138	174	120	208	331	259	24.3	27.2	159
MAX	1538	932	943	691	1251	611	1158	1502	1792	91.6	332	1975
(WY)	1995	1966	1977	1968	1992	1992	1973	1972	1973	1973	1971	1974
MIN	.000	.035	.97	6.38	8.46	9.87	7.17	2.39	.68	.16	.014	.014
(WY)	1991	1991	1991	1990	1996	1991	1996	1996	1990	1990	1990	1990

08164300 NAVIDAD RIVER NEAR HALLETTSVILLE, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1962 - 1998	
ANNUAL TOTAL	114878.6		61830.77			
ANNUAL MEAN	315		169		148	
HIGHEST ANNUAL MEAN					508	1992
LOWEST ANNUAL MEAN					11.5	1990
HIGHEST DAILY MEAN	9870	Jun 8	9830	Oct 14	30500	Sep 14 1974
LOWEST DAILY MEAN	1.3	Sep 1	.99	Aug 2	.00	Aug 5 1964
ANNUAL SEVEN-DAY MINIMUM	1.5	Aug 26	1.0	Jul 30	.00	Sep 2 1964
INSTANTANEOUS PEAK FLOW			15300	Oct 13	53500	Sep 13 1974
INSTANTANEOUS PEAK STAGE			28.82	Oct 13	36.05	Sep 13 1974
ANNUAL RUNOFF (AC-FT)	227900		122600		107400	
ANNUAL RUNOFF (CFSM)	.95		.51		.45	
ANNUAL RUNOFF (INCHES)	12.87		6.93		6.07	
10 PERCENT EXCEEDS	476		196		132	
50 PERCENT EXCEEDS	54		44		22	
90 PERCENT EXCEEDS	3.8		2.2		2.2	

e Estimated



08164350 NAVIDAD RIVER NEAR SPEAKS, TX

LOCATION.--Lat 29°19'18", long 96°42'32", Lavaca County, Hydrologic Unit 12100102, at right downstream end of bridge on Farm Road 530, 100 ft downstream from Ragsdale Creek, and 4.6 mi north of Speaks.

DRAINAGE AREA.--537 mi^2.

PERIOD OF RECORD.--Oct 1981 to Sep 1989, Oct 1994 to Sep 1996 (discharge measurements only), Oct 1996 to current year.
Water-quality records.--Pesticide analyses: Apr 1996 to Aug 1997.

GAGE.--Water-stage recorder. Datum of gage is 120.00 ft above sea level. Satellite telemeter at station.

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

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 14	1545	11,600	26.32	Feb 22	2400	6,110	22.36
Nov 30	0315	3,030	17.28	Feb 27	0345	4,160	19.52
Dec 4	0745	3,420	18.13	Sep 16	1930	3,290	17.86

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	e8.0	57	202	47	60	232	65	40	14	9.7	2.7	1.4
2	e7.0	50	124	48	60	182	61	39	13	8.8	6.7	1.1
3	e7.0	44	1350	52	57	162	61	38	13	8.3	5.3	1.0
4	e7.0	41	2400	50	56	156	60	38	12	8.0	4.1	.85
5	e6.0	41	274	62	62	148	56	36	12	7.8	3.3	.79
6	e7.0	40	146	407	68	141	63	35	638	7.2	3.0	.86
7	39	39	113	798	67	130	70	36	715	6.2	4.3	1.3
8	838	37	365	573	63	130	66	35	122	5.0	6.1	.92
9	1100	36	336	178	60	117	58	53	64	e4.7	6.5	.88
10	584	63	147	117	69	110	57	41	49	4.4	5.3	2.9
11	2610	68	101	97	948	110	64	28	30	4.1	4.4	1930
12	5090	648	77	673	859	108	65	26	24	3.1	3.6	1070
13	7250	948	65	365	194	103	49	26	22	2.7	3.0	114
14	10600	242	59	139	189	117	43	26	20	2.8	2.6	68
15	7210	131	56	109	458	120	44	26	22	2.5	2.4	129
16	729	90	51	97	761	865	44	25	21	2.1	2.6	2020
17	266	71	47	87	1390	1450	42	25	20	1.9	3.1	1330
18	202	60	44	81	408	403	56	25	25	1.9	5.0	144
19	167	57	42	79	509	204	98	23	22	1.6	16	61
20	150	53	60	68	278	140	75	22	15	1.4	19	43
21	125	49	85	70	158	118	53	22	14	1.3	6.0	36
22	101	46	78	70	4130	108	44	21	13	1.1	23	29
23	91	40	144	62	5260	104	39	20	12	1.0	167	26
24	86	36	1150	61	1240	96	39	19	11	.78	59	22
25	81	34	504	63	281	96	38	19	10	3.9	59	68
26	73	33	176	66	1690	95	49	18	9.3	4.2	36	39
27	66	33	132	60	3340	94	54	17	8.9	4.5	8.7	28
28	62	146	104	54	427	84	54	17	8.3	4.9	4.6	25
29	59	2130	80	53	---	85	48	17	8.4	3.8	3.3	25
30	58	1780	65	54	---	78	43	17	8.0	3.5	2.5	25
31	59	---	55	56	---	70	---	16	---	3.1	1.7	---
TOTAL	37738.0	7143	8632	4796	23142	6156	1658	846	1975.9	126.28	479.8	7244.00
MEAN	1217	238	278	155	827	199	55.3	27.3	65.9	4.07	15.5	241
MAX	10600	2130	2400	798	5260	1450	98	53	715	9.7	167	2020
MIN	6.0	33	42	47	56	70	38	16	8.0	.78	1.7	.79
AC-FT	74850	14170	17120	9510	45900	12210	3290	1680	3920	250	952	14370

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1998h, BY WATER YEAR (WY)

MEAN	176	247	161	154	265	204	188	284	301	28.9	9.40	69.4
MAX	1217	905	744	518	827	670	1295	833	1445	146	38.1	324
(WY)	1998	1986	1987	1997	1998	1997	1997	1982	1987	1983	1983	1996
MIN	1.01	1.62	3.63	35.4	22.8	34.9	12.1	24.3	18.5	4.07	.56	.70
(WY)	1989	1989	1989	1988	1988	1986	1989	1984	1985	1998	1989	1989

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1982 - 1998h	
ANNUAL TOTAL	191275.80		99936.98			
ANNUAL MEAN	524		274		171	
HIGHEST ANNUAL MEAN					386	1997
LOWEST ANNUAL MEAN					38.6	1988
HIGHEST DAILY MEAN	10600	Oct 14	10600	Oct 14	13000	Nov 1 1981
LOWEST DAILY MEAN	3.6	Sep 20	.78	Jul 24	.00	Sep 1 1989
ANNUAL SEVEN-DAY MINIMUM	4.2	Sep 15	.94	Sep 3	.00	Sep 1 1989
INSTANTANEOUS PEAK FLOW			11600	Oct 14	10300	Jun 8 1997
INSTANTANEOUS PEAK STAGE			26.32	Oct 14	25.62	Jun 8 1997
ANNUAL RUNOFF (AC-FT)	379400		198200		123900	
10 PERCENT EXCEEDS	1220		535		189	
50 PERCENT EXCEEDS	73		54		27	
90 PERCENT EXCEEDS	8.0		3.6		2.7	

e Estimated
h See PERIOD OF RECORD paragraph.

08164370 NAVIDAD RIVER AT MORALES, TX

LOCATION.--Lat 29°08'07", long 96°44'39", Jackson County, Hydrologic Unit 12100102, on County Road 283, 1.2 mi northeast of Morales.

DRAINAGE AREA.--549 mi^2.

PERIOD OF RECORD.--Oct 1994 to Sep 1995 (discharge measurements only), Oct 1996 to current.

GAGE.--Water-stage recorder. Datum of gage is 65.44 ft above sea level. Satellite telemeter at station.

REMARKS.--Records poor. No known regulation. Much of low flow during the irrigation season (Apr to Sep) comes from drainage from rice fields irrigated by diversions originating from the Colorado River.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 15	1415	7,970	31.20	Sep 11	2400	4,790	27.16
Feb 24	0115	4,930	26.66	Sep 17	0600	5,710	28.01

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	65	457	77	78	339	69	39	e17	e10	e7.6	9.6
2	13	57	185	74	85	226	65	37	e15	e24	e6.1	e8.1
3	15	51	818	81	75	174	64	39	e14	e23	e5.0	e7.0
4	13	49	2250	80	69	146	61	34	e14	e22	e4.2	e6.2
5	12	49	856	80	66	134	57	33	e14	e18	e3.6	e5.8
6	13	49	260	304	66	128	54	33	e14	e15	e3.4	e5.8
7	14	46	181	1840	69	119	54	32	e940	e12	e7.0	e5.3
8	279	44	215	951	66	120	55	35	e230	12	e12	e5.2
9	1110	43	542	384	60	110	53	35	e76	9.6	e11	e5.7
10	771	51	248	204	69	98	49	31	e48	8.2	e8.7	10
11	1850	82	154	138	408	93	46	29	e33	7.9	e7.1	3280
12	3180	361	117	604	1200	91	44	27	e27	7.2	e6.0	3680
13	5540	1200	99	568	349	91	45	27	e25	6.6	e5.7	764
14	7190	472	91	206	266	98	49	27	e22	6.7	e5.3	401
15	7840	209	87	125	596	113	50	27	e20	7.4	5.6	867
16	6160	135	84	97	915	1380	48	27	e39	e7.0	5.4	3940
17	609	101	80	84	1760	1810	46	26	e37	e6.8	5.9	4990
18	294	81	76	78	935	923	52	25	26	e7.2	7.1	1030
19	211	72	72	73	766	316	104	24	20	e6.8	6.9	390
20	166	68	82	69	647	196	101	23	16	e6.6	13	232
21	137	64	113	71	307	142	69	21	14	e7.0	22	147
22	118	60	127	73	1960	118	48	e21	e12	e9.0	153	102
23	104	56	157	71	4130	104	44	e20	11	e7.2	755	74
24	95	52	1040	68	3660	97	42	e20	e9.6	7.1	378	59
25	89	52	939	67	448	91	41	e21	e8.8	7.4	127	49
26	80	51	314	68	1170	87	41	e20	e8.2	7.9	108	111
27	70	51	219	68	2680	82	44	e18	e7.9	8.8	48	54
28	63	53	166	67	1470	79	45	e17	e7.8	e7.3	23	35
29	64	1020	126	70	---	77	43	e16	e8.0	e8.7	16	26
30	63	2180	100	74	---	75	45	e17	e8.2	e10	13	21
31	63	---	86	75	---	72	---	e17	---	e9.0	11	---
TOTAL	36240	6924	10341	6889	24370	7729	1628	818	1742.5	313.4	1790.6	20320.7
MEAN	1169	231	334	222	870	249	54.3	26.4	58.1	10.1	57.8	677
MAX	7840	2180	2250	1840	4130	1810	104	39	940	24	755	4990
MIN	12	43	72	67	60	72	41	16	7.8	6.6	3.4	5.2
AC-FT	71880	13730	20510	13660	48340	15330	3230	1620	3460	622	3550	40310

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

MEAN	589	142	195	427	599	782	868	500	725	22.3	43.5	340
MAX	1169	231	334	631	870	1314	1682	973	1392	49.5	57.8	677
(WY)	1998	1998	1998	1997	1998	1997	1997	1997	1997	1997	1998	1998
MIN	9.95	53.5	56.4	222	327	249	54.3	26.4	58.1	7.30	21.1	15.9
(WY)	1997	1997	1997	1998	1997	1998	1998	1998	1998	1996	1997	1997

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1996 - 1998	
ANNUAL TOTAL	248040.1		119106.2			
ANNUAL MEAN	680		326		435	
HIGHEST ANNUAL MEAN					543	1997
LOWEST ANNUAL MEAN					326	1998
HIGHEST DAILY MEAN	8140	Jun 22	7840	Oct 15	8140	Jun 22 1997
LOWEST DAILY MEAN	4.0	Sep 19	3.4	Aug 6	.00	Aug 1 1996
ANNUAL SEVEN-DAY MINIMUM	5.4	Sep 15	5.3	Aug 1	.00	Aug 1 1996
INSTANTANEOUS PEAK FLOW			7970	Oct 15	7970	Oct 15 1997
INSTANTANEOUS PEAK STAGE			31.20	Oct 15	31.20	Oct 15 1997
INSTANTANEOUS LOW FLOW			1.9	Aug 5	1.9	Aug 5 1998
ANNUAL RUNOFF (AC-FT)	492000		236200		314900	
10 PERCENT EXCEEDS	2110		833		884	
50 PERCENT EXCEEDS	100		64		51	
90 PERCENT EXCEEDS	13		7.5		6.1	

e Estimated

08164390 NAVIDAD RIVER AT STRANE PARK NEAR EDNA, TX

LOCATION.--Lat 29°03'55", long 96°40'26", Jackson County, Hydrologic Unit 12100102, on County Road 401, 6.3 mi north of Edna.

DRAINAGE AREA.--549 mi^2.

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--Jun 1996 to current. Discharge measurements only prior to Oct 1996.

GAGE.--Water-stage recorder. Datum of gage is 42.53 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair. No known regulation or diversions. Much of low flow during the irrigation season (Apr to Sep) comes from drainage from rice fields irrigated by diversions originating from the Colorado River.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 16	0430	10,800	27.25	Sep 12	0645	5,640	24.64
Feb 24	0830	5,090	24.06	Sep 17	1545	6,390	25.34

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	13	68	842	78	69	422	77	46	17	15	8.7	8.9
2	12	64	226	73	72	276	73	39	17	35	7.2	7.4
3	12	57	525	75	70	211	71	41	16	34	5.8	6.4
4	11	53	2070	75	67	174	68	36	16	32	4.7	6.1
5	12	51	1290	73	65	154	65	32	16	29	4.1	5.7
6	13	51	295	103	66	143	61	31	16	24	6.1	5.1
7	14	48	196	1820	70	132	59	30	957	20	12	5.1
8	79	45	171	1100	68	126	58	32	252	16	15	4.9
9	1110	44	533	490	66	120	56	35	89	13	14	5.3
10	e1300	48	294	239	71	106	53	30	55	11	12	9.4
11	e800	62	179	159	209	101	48	28	40	10	9.5	3520
12	e2500	259	130	420	1290	99	45	29	31	9.6	7.6	5170
13	e4200	1240	106	727	412	98	44	28	27	9.2	7.2	1510
14	e7100	653	94	262	254	100	48	27	24	9.2	6.8	483
15	9000	283	86	146	511	111	50	28	22	8.8	6.9	697
16	9920	179	82	114	772	994	49	28	46	8.4	6.5	4070
17	2450	128	77	95	1880	2060	48	27	43	7.9	8.9	6180
18	444	99	73	86	1210	1220	51	27	29	9.5	13	2350
19	276	85	72	80	925	395	82	26	23	8.4	11	505
20	203	80	74	76	823	255	108	26	19	7.9	14	265
21	161	74	91	77	370	183	79	25	17	8.8	33	153
22	134	68	111	77	1550	147	56	24	15	12	135	97
23	117	64	123	75	3690	129	50	22	14	10	792	67
24	106	59	836	70	4570	117	48	22	12	10	529	50
25	99	55	1170	68	754	108	47	23	12	9.3	213	40
26	91	52	375	67	870	102	47	22	11	8.5	161	80
27	80	51	236	68	2520	96	50	20	11	10	97	52
28	74	52	179	66	2020	91	52	19	12	7.9	44	33
29	72	656	131	66	---	88	51	18	13	9.4	23	27
30	72	2090	104	66	---	84	49	19	14	11	15	24
31	70	---	88	67	---	79	---	19	---	10	11	---
TOTAL	40545	6818	10859	7058	25314	8521	1743	859	1886	424.8	2234.0	25437.3
MEAN	1308	227	350	228	904	275	58.1	27.7	62.9	13.7	72.1	848
MAX	9920	2090	2070	1820	4570	2060	108	46	957	35	792	6180
MIN	11	44	72	66	65	79	44	18	11	7.9	4.1	4.9
AC-FT	80420	13520	21540	14000	50210	16900	3460	1700	3740	843	4430	50450

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

MEAN	661	143	211	459	622	907	1044	533	848	33.0	52.6	434
MAX	1308	227	350	690	904	1540	2030	1038	1632	77.3	72.1	848
(WY)	1998	1998	1998	1997	1998	1997	1997	1997	1997	1997	1998	1998
MIN	13.7	59.6	70.9	228	340	275	58.1	27.7	62.9	8.11	23.1	18.8
(WY)	1997	1997	1997	1998	1997	1998	1998	1998	1998	1996	1997	1997

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1996 - 1998	
ANNUAL TOTAL	282607.0		131699.1			
ANNUAL MEAN	774		361		494	
HIGHEST ANNUAL MEAN					627	1997
LOWEST ANNUAL MEAN					361	1998
HIGHEST DAILY MEAN	10300	Jun 23	9920	Oct 16	10300	Jun 23 1997
LOWEST DAILY MEAN	7.1	Sep 20	4.1	Aug 5	1.2	Jul 24 1996
ANNUAL SEVEN-DAY MINIMUM	8.3	Sep 15	5.5	Sep 3	1.3	Jul 29 1996
INSTANTANEOUS PEAK FLOW			10800	Oct 16	13200	Jun 22 0000
INSTANTANEOUS PEAK STAGE			27.25	Oct 16	27.89	Jun 22 1997
ANNUAL RUNOFF (AC-FT)	560600		261200		357800	
10 PERCENT EXCEEDS	2470		838		958	
50 PERCENT EXCEEDS	110		67		60	
90 PERCENT EXCEEDS	16		9.6		7.0	

e Estimated

08164390 NAVIDAD RIVER AT STRANE PARK NEAR EDNA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Pesticide analysis: June 1998 to September 1998.

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 (PER-CENT SATUR-ATION) (00301)	2,4,5-T TOTAL (UG/L) (39740)	2,4-D, TOTAL (UG/L) (39730)
JUN									
03...	1135	16	771	8.1	28.0	8.0	101	<.010	<.010
JUL									
29...	1020	10	777	8.0	28.0	7.1	90	<.010	<.010
AUG									
11...	1215	10	757	7.8	29.0	7.6	98	<.010	<.010
SEP									
10...	1235	6.6	587	7.5	27.0	6.8	86	<.010	<.010

DATE	SILVEX, TOTAL (UG/L) (39760)	DICAMBA TOTAL (UG/L) (82052)	2,4-DP TOTAL (UG/L) (82183)	PIC-LORAM UNFILT RECOVER (UG/L) (39720)	TOTAL TRI-THION (UG/L) (39786)	CHLOR-PYRIFOS TOTAL RECOVER (UG/L) (38932)	DI-AZINON, TOTAL (UG/L) (39570)	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)	ETHION, TOTAL (UG/L) (39398)
JUN									
03...	<.010	<.010	<.010	.020	<.010	<.010	<.010	<.010	<.010
JUL									
29...	<.010	<.010	<.010	.040	<.010	<.010	<.010	<.010	<.010
AUG									
11...	<.010	<.010	<.010	.024	<.010	<.010	<.010	<.010	<.010
SEP									
10...	<.010	<.010	<.010	.040	<.010	<.010	<.010	<.010	<.010

DATE	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L) (82614)	MALA-THION, TOTAL (UG/L) (39530)	PARA-THION, TOTAL (UG/L) (39540)	METHYL PARA-THION, TOTAL (UG/L) (39600)	PHORATE TOTAL (UG/L) (39023)	DEF TOTAL (UG/L) (39040)	SAMPLE VOLUME SCHED-ULE 1319 (ML) (99868)	SET NUMBER SCHED-ULE 1319 (NO.) (99804)
JUN								
03...	<.010	<.020	<.010	<.010	<.010	<.010	911	8161.00
JUL								
29...	<.010	<.010	<.010	<.010	<.010	<.010	909	8215.00
AUG								
11...	<.010	<.010	<.010	<.010	<.010	<.010	910	8229.00
SEP								
10...	<.010	<.010	<.010	<.010	<.010	<.010	886	8259.00

08164450 SANDY CREEK NEAR GANADO, TX

LOCATION.--Lat 29°09'36", long 96°32'46", Jackson County, Hydrologic Unit 12100102, on left bank at downstream end of bridge on Farm Road 710, 0.9 mi upstream from Goldenrod Creek, and 10.1 mi northwest of Ganado.

DRAINAGE AREA.--289 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1977 to current year. Prior to Oct 1997, published as "near Louise, Tx."

GAGE.--Water-stage recorder. Datum of gage is 59.72 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Much of the low flow during the irrigation season (Apr to Sep) is drainage from rice fields irrigated by water originally diverted from the Colorado River. No known regulation or diversions.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 14	1500	8,760	20.03	Feb 23	0500	3,760	15.54
Dec 4	0500	2,500	13.50	Feb 27	1000	3,190	14.66
Jan 7	1700	2,080	12.56	Mar 17	0600	2,350	13.17
Feb 17	1000	2,050	12.50	Sep 17	1100	3,520	15.18

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	82	102	38	22	486	1.2	e19	e.00	e80	e24	e5.5
2	47	82	52	32	22	253	7.0	e13	e.00	e164	e18	e4.5
3	37	53	591	27	22	146	11	e9.4	e.00	e165	e13	e4.6
4	18	51	1950	27	18	105	1.6	e7.8	e.00	e145	e12	e5.0
5	17	54	963	30	21	77	1.4	e3.1	e.00	e116	e20	e5.4
6	23	61	355	43	21	59	1.4	e6.5	e.47	e82	e22	e6.4
7	83	53	165	1350	18	47	1.4	e12	e8.5	e62	e50	e12
8	518	59	179	1170	16	42	1.4	e7.6	e5.4	e42	e86	e16
9	1310	64	392	471	14	42	1.4	e5.3	e2.1	e32	e83	e18
10	2510	66	220	172	15	37	1.7	e3.5	e.49	e33	e71	e31
11	3680	99	123	93	20	31	3.4	e1.7	e.05	e32	e58	e987
12	5190	397	74	216	54	30	11	e.82	e.00	e38	e29	e1500
13	4970	983	50	633	78	28	21	e.20	e.00	e43	e12	e1590
14	7970	627	37	540	100	28	e24	e.03	e.00	e48	e4.8	e1660
15	5030	295	30	196	244	31	e29	e.00	e.03	e61	e2.4	e2120
16	2600	177	25	109	571	628	e34	e.00	e.00	e86	e.36	e2720
17	1540	118	21	70	1760	1940	e30	e.00	e.29	e99	e.53	e3280
18	851	80	18	50	1010	1190	e26	e.00	e.48	e101	e.02	2350
19	448	63	17	37	832	527	e51	e.00	e.14	e110	e4.9	1480
20	294	54	32	43	645	212	e53	e.00	e.00	e103	e15	804
21	186	40	209	58	259	110	e31	e.00	e.00	e102	e21	407
22	130	30	187	274	2140	64	e19	e.00	e.00	e114	e123	240
23	93	27	186	155	2890	39	e11	e.00	e.00	e119	e204	130
24	92	19	713	83	1010	26	e7.0	e.00	e.00	e113	e151	73
25	82	17	747	54	481	21	e6.2	e.00	e.00	e102	e110	72
26	60	15	328	40	926	15	e7.7	e.00	e.01	e89	e79	167
27	43	13	219	28	2600	9.7	e8.4	e.00	e.74	e80	e46	106
28	40	15	168	24	1060	3.1	e13	e.00	e3.7	e67	e30	91
29	41	572	105	23	---	2.5	e25	e.00	e28	e49	e22	92
30	68	260	70	20	---	1.2	e19	e.00	e61	e39	e14	97
31	78	---	51	19	---	1.2	---	e.00	---	e30	e7.9	---
TOTAL	38114	4526	8379	6125	16869	6231.7	459.2	89.95	111.40	2546	1333.91	20074.4
MEAN	1229	151	270	198	602	201	15.3	2.90	3.71	82.1	43.0	669
MAX	7970	983	1950	1350	2890	1940	53	19	61	165	204	3280
MIN	17	13	17	19	14	1.2	1.2	.00	.00	30	.02	4.5
AC-FT	75600	8980	16620	12150	33460	12360	911	178	221	5050	2650	39820

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1998, BY WATER YEAR (WY)

MEAN	269	143	134	297	310	190	240	337	379	129	31.2	255
MAX	2101	964	746	956	2331	1406	1316	1150	1866	475	92.2	1364
(WY)	1995	1986	1992	1992	1992	1997	1997	1993	1993	1983	1994	1978
MIN	19.4	3.93	.008	1.36	.28	1.53	3.14	2.48	.030	7.25	3.21	11.8
(WY)	1980	1992	1991	1982	1988	1981	1980	1978	1990	1997	1991	1988

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1978 - 1998	
ANNUAL TOTAL	218985.80		104859.56			
ANNUAL MEAN	600		287		225	
HIGHEST ANNUAL MEAN					606	1992
LOWEST ANNUAL MEAN					51.2	1990
HIGHEST DAILY MEAN	7970	Oct 14	7970	Oct 14	22500	Oct 19 1994
LOWEST DAILY MEAN	.60	Sep 12	.00	May 15	.00	Apr 5 1978
ANNUAL SEVEN-DAY MINIMUM	1.4	Jul 5	.00	May 15	.00	Mar 10 1980
INSTANTANEOUS PEAK FLOW			8760	Oct 14	24900	Oct 19 1994
INSTANTANEOUS PEAK STAGE			20.03	Oct 14	28.45	Oct 19 1994
ANNUAL RUNOFF (AC-FT)	434400		208000		163200	
10 PERCENT EXCEEDS	1940		770		481	
50 PERCENT EXCEEDS	83		41		22	
90 PERCENT EXCEEDS	6.4		.04		.08	

e Estimated

08164450 SANDY CREEK NEAR GANADO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Oct 1977 to Aug 1996. Pesticide analyses: Nov 1977 to Jul 1981, Apr 1996 to current year. Sediment analyses: Sep 1978 to Apr 1979.

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 (PER-CENT SATUR-ATION) (00301)	2,4,5-T TOTAL (UG/L) (39740)	2,4-D, TOTAL (UG/L) (39730)
JUL									
29...	1120	49	635	8.0	28.5	7.2	95	<.010	<.010
AUG									
11...	1320	60	578	7.6	30.0	5.6	73	<.010	7.58
SEP									
10...	1325	22	540	7.4	25.0	7.5	91	<.010	.480

DATE	SILVEX, TOTAL (UG/L) (39760)	DICAMBA TOTAL (UG/L) (82052)	2,4-DP TOTAL (UG/L) (82183)	PIC-LORAM UNFILT RECOVER (UG/L) (39720)	TOTAL TRI-THION (UG/L) (39786)	CHLOR-PYRIFOS TOTAL RECOVER (UG/L) (38932)	DI-AZINON, TOTAL (UG/L) (39570)	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)	ETHION, TOTAL (UG/L) (39398)
JUL									
29...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
AUG									
11...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
SEP									
10...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010

DATE	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L) (82614)	MALA-THION, TOTAL (UG/L) (39530)	PARA-THION, TOTAL (UG/L) (39540)	METHYL PARA-THION, TOTAL (UG/L) (39600)	PHORATE TOTAL (UG/L) (39023)	DEF TOTAL (UG/L) (39040)	SAMPLE VOLUME SCHED-ULE 1319 (ML) (99868)	SET NUMBER SCHED-ULE 1319 (NO.) (99804)
JUL								
29...	<.010	<.010	<.010	<.010	<.010	<.010	914	8215.00
AUG								
11...	<.010	<.010	<.010	<.010	<.010	<.010	903	8229.00
SEP								
10...	<.010	<.010	<.010	<.010	<.010	<.010	897	8259.00

08164503 WEST MUSTANG CREEK NEAR GANADO, TX

LOCATION.--Lat 29°04'17", long 96°28'01", Jackson County, Hydrologic Unit 12100102, on right bank at downstream end of downstream bridge on U.S. Highway 59, 2.1 mi upstream from Middle Mustang Creek, and 3.6 mi east of Ganado.

DRAINAGE AREA.--178 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is 40.12 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. No known regulation. Much of low flow during the irrigation season (Apr to Sep) comes from drainage from rice fields irrigated by diversions originating from the Colorado River.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 14	1000	5,860	18.58	Sep 17	0430	5,140	17.93
Sep 12	0545	6,270	18.96				

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	35	27	91	11	3.1	133	7.1	33	2.1	37	22	19
2	24	24	41	7.2	3.8	75	10	22	1.3	33	15	9.9
3	17	14	119	5.3	3.8	48	11	15	2.4	54	18	6.2
4	14	9.1	782	4.9	3.0	28	11	16	5.8	84	16	4.3
5	10	12	449	4.9	2.9	19	11	13	5.7	94	19	6.4
6	19	17	181	14	3.7	12	16	24	4.5	73	35	7.9
7	26	15	89	716	3.6	7.7	17	34	48	42	124	8.1
8	203	18	75	652	2.9	15	18	26	36	23	198	16
9	1060	21	109	167	3.2	13	21	23	24	18	111	16
10	2790	25	76	75	3.5	6.1	20	19	17	16	59	57
11	4190	31	53	42	3.9	3.6	24	19	9.6	25	34	4560
12	4560	480	41	26	3.3	2.7	22	22	4.6	45	22	5670
13	4560	586	26	49	8.6	2.9	17	28	2.7	37	22	3370
14	5510	330	20	121	53	3.0	12	12	3.4	41	13	1760
15	4000	129	15	88	57	2.8	16	9.5	2.4	32	17	1370
16	2160	84	11	45	158	413	22	14	14	36	29	3450
17	1340	63	8.1	27	656	1330	29	20	26	36	34	4640
18	531	37	5.7	19	296	565	26	21	16	28	24	2800
19	292	24	4.9	16	730	188	42	14	13	34	9.6	1040
20	174	19	24	9.7	547	81	45	6.9	12	37	44	407
21	122	15	414	6.5	159	41	29	5.3	14	28	40	210
22	98	13	319	128	470	20	22	5.5	8.6	47	716	105
23	84	9.0	113	176	612	8.7	18	4.6	6.9	62	1310	68
24	74	6.9	340	66	212	3.9	16	3.7	9.0	76	841	47
25	58	5.0	286	31	104	1.8	17	2.1	6.6	70	545	36
26	45	4.1	113	18	330	.80	21	4.7	4.1	53	298	48
27	29	3.6	70	16	899	.51	24	2.9	4.1	55	157	56
28	21	6.4	65	16	323	.30	34	2.0	5.8	39	90	57
29	17	488	40	13	---	1.3	45	2.1	16	34	53	38
30	21	299	26	6.8	---	.90	37	2.4	29	27	34	33
31	22	---	18	4.2	---	3.1	---	3.3	---	30	27	---
TOTAL	32106	2815.1	4024.7	2581.5	5655.3	3031.11	660.1	430.0	354.6	1346	4976.6	29915.8
MEAN	1036	93.8	130	83.3	202	97.8	22.0	13.9	11.8	43.4	161	997
MAX	5510	586	782	716	899	1330	45	34	48	94	1310	5670
MIN	10	3.6	4.9	4.2	2.9	.30	7.1	2.0	1.3	16	9.6	4.3
AC-FT	63680	5580	7980	5120	11220	6010	1310	853	703	2670	9870	59340
CFSM	5.82	.53	.73	.47	1.13	.55	.12	.08	.07	.24	.90	5.60
IN.	6.71	.59	.84	.54	1.18	.63	.14	.09	.07	.28	1.04	6.25

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1998, BY WATER YEAR (WY)

MEAN	242	116	117	196	170	118	174	213	208	107	55.4	229
MAX	1746	399	587	881	1243	988	1107	702	958	412	161	1063
(WY)	1995	1986	1992	1980	1992	1997	1997	1993	1993	1983	1998	1979
MIN	14.2	7.29	.17	.72	.87	.81	12.3	11.2	5.56	38.1	24.2	5.33
(WY)	1988	1981	1991	1982	1986	1986	1983	1978	1990	1986	1982	1988

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1978 - 1998	
ANNUAL TOTAL	151235.5		87896.81			
ANNUAL MEAN	414		241		162	
HIGHEST ANNUAL MEAN					325	1997
LOWEST ANNUAL MEAN					45.2	1990
HIGHEST DAILY MEAN	6220	Apr 5	5670	Sep 12	18700	Oct 19 1994
LOWEST DAILY MEAN	2.6	Feb 6	.30	Mar 28	.00	Dec 19 1990
ANNUAL SEVEN-DAY MINIMUM	4.0	Feb 4	1.2	Mar 25	.01	Dec 19 1990
INSTANTANEOUS PEAK FLOW			6270	Sep 12	20000	Oct 19 1994
INSTANTANEOUS PEAK STAGE			18.96	Sep 12	28.39	Oct 19 1994
ANNUAL RUNOFF (AC-FT)	300000		174300		117300	
ANNUAL RUNOFF (CFSM)	2.33		1.35		.91	
ANNUAL RUNOFF (INCHES)	31.61		18.37		12.36	
10 PERCENT EXCEEDS	1340		474		306	
50 PERCENT EXCEEDS	56		24		23	
90 PERCENT EXCEEDS	9.7		3.8		1.5	

08164503 WEST MUSTANG CREEK NEAR GANADO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Oct 1977 to Aug 1996. Pesticide analyses: Nov 1977 to Jul 1981, Apr 1996 to current year. Sediment analyses: Sep 1978 to Apr 1979.

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 (PER-CENT SATUR-ATION) (00301)	2,4,5-T TOTAL (UG/L) (39740)	2,4-D, TOTAL (UG/L) (39730)
JUN									
03...	1305	2.1	915	7.9	29.0	7.0	91	<.010	<.010
SEP									
01...	1240	19	578	7.5	28.0	3.5	45	<.010	<.010
10...	1410	20	697	6.9	25.5	5.6	69	<.010	<.010

DATE	SILVEX, TOTAL (UG/L) (39760)	DICAMBA TOTAL (UG/L) (82052)	2,4-DP TOTAL (UG/L) (82183)	PIC-LORAM UNFILT RECOVER (UG/L) (39720)	TOTAL TRI-THION (UG/L) (39786)	CHLOR-PYRIFOS TOTAL RECOVER (UG/L) (38932)	DI-AZINON, TOTAL (UG/L) (39570)	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)	ETHION, TOTAL (UG/L) (39398)
JUN									
03...	<.010	<.010	<.010	.029	<.010	<.010	<.010	<.010	<.010
SEP									
01...	<.010	<.010	<.010	.072	<.010	<.010	<.010	<.010	<.010
10...	<.010	<.010	<.010	.030	<.010	<.010	<.010	<.010	<.010

DATE	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L) (82614)	MALA-THION, TOTAL (UG/L) (39530)	PARA-THION, TOTAL (UG/L) (39540)	METHYL PARA-THION, TOTAL (UG/L) (39600)	PHORATE TOTAL (UG/L) (39023)	DEF TOTAL (UG/L) (39040)	SAMPLE VOLUME SCHED-ULE 1319 (ML) (99868)	SET NUMBER SCHED-ULE 1319 (NO.) (99804)
JUN								
03...	<.010	<.020	<.010	<.010	<.010	<.010	914	8161.00
SEP								
01...	<.010	<.010	<.010	<.010	<.010	<.010	888	8253.00
10...	<.010	<.010	<.010	<.010	<.010	<.010	885	8259.00

08164504 EAST MUSTANG CREEK AT FM 647 NEAR GANADO, TX

LOCATION.--Lat 29°04'14", long 96°25'01", Wharton County, Hydrologic Unit 12100102, on right bank, 50 ft downstream from right end of bridge on Farm Road 647, 2.7 mi south of Ganado.

DRAINAGE AREA.--90.8 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jun 1996 to current year. Prior to Oct 1996, discharge measurements only..

GAGE.--Water-stage recorder. Datum of gage is 43.02 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Much of the low flow during the irrigation season (Apr to Sep) is drainage from rice fields irrigated by water originally diverted from the Colorado River and ground-water wells. No known regulation or diversions.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Sep 11	1545	4,100	22.16	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	4.3	2.1	23	e1.1	e.78	8.7	.50	3.7	1.1	2.9	1.2	2.2
2	3.6	1.7	9.2	e1.0	e.74	4.2	.53	3.3	1.0	3.0	1.4	1.5
3	3.1	e1.3	14	e.96	e.70	2.7	.61	2.2	1.0	3.0	1.5	1.4
4	2.6	e1.2	48	e.92	e.67	1.9	.67	1.9	1.3	3.7	3.9	1.3
5	2.4	e1.0	19	e1.5	.64	1.5	.86	1.4	1.2	2.7	5.2	1.4
6	2.2	e.89	8.0	e60	.60	1.3	1.1	1.5	1.1	3.5	12	1.4
7	2.8	e.89	4.6	620	.56	1.1	1.2	1.4	1.4	3.3	59	1.8
8	82	e.90	4.1	121	.54	.88	1.4	1.5	1.3	3.0	53	1.6
9	1240	e1.1	5.4	37	.71	.68	.96	2.1	1.0	2.8	19	1.9
10	1530	e1.4	4.7	17	.63	.58	1.0	3.4	1.1	2.6	7.9	86
11	1860	1.8	3.7	9.4	.52	.47	1.3	3.9	1.1	2.7	6.1	3640
12	1760	162	2.4	6.5	.46	.38	1.2	3.1	1.8	2.4	3.2	2730
13	1660	178	e1.7	4.8	5.8	.34	1.2	4.2	1.3	2.3	2.4	1180
14	1780	74	e1.4	4.2	2.8	.42	3.8	5.6	1.2	2.3	2.6	359
15	1030	25	e1.0	9.3	2.1	.45	3.0	3.2	1.1	2.1	4.7	124
16	251	11	e.80	4.6	63	509	2.3	4.1	2.7	2.9	3.9	1400
17	104	6.7	e.77	e3.0	101	340	2.3	2.3	1.9	2.8	18	1050
18	58	5.0	e.70	e2.3	23	56	6.0	1.7	1.6	2.5	21	252
19	38	4.8	e.69	e1.9	580	12	5.7	1.3	.93	2.5	28	84
20	25	4.3	13	e1.8	171	4.1	2.8	1.3	.84	2.4	32	46
21	17	3.4	161	e1.7	39	2.1	2.2	1.1	.77	2.6	15	27
22	12	2.6	53	e1.6	181	1.3	1.8	1.8	.70	3.6	1040	16
23	8.9	1.6	17	e1.5	66	.99	1.1	1.8	.58	8.2	828	12
24	7.4	e1.3	25	e1.4	18	.85	1.5	1.9	.46	5.8	249	9.0
25	6.2	e1.1	22	e1.2	6.7	.73	1.4	1.9	.41	8.0	83	6.5
26	4.9	e1.1	9.3	e1.1	263	.66	1.6	2.0	.70	3.0	37	4.9
27	4.1	e1.1	5.3	e.98	134	.62	2.0	1.5	1.4	2.3	23	3.8
28	3.6	70	3.6	e.92	28	.58	3.9	1.9	1.8	1.9	13	3.0
29	3.1	312	2.4	e.88	---	.54	4.0	1.8	1.8	2.3	7.6	2.4
30	2.7	74	e1.8	e.85	---	.52	3.7	1.4	2.4	1.4	4.9	2.0
31	2.4	---	e1.5	e.81	---	.50	---	1.6	---	1.2	3.1	---
TOTAL	11511.3	953.28	468.06	921.22	1691.95	956.09	61.63	71.8	36.99	95.7	2589.6	11052.1
MEAN	371	31.8	15.1	29.7	60.4	30.8	2.05	2.32	1.23	3.09	83.5	368
MAX	1860	312	161	620	580	509	6.0	5.6	2.7	8.2	1040	3640
MIN	2.2	.89	.69	.81	.46	.34	.50	1.1	.41	1.2	1.2	1.3
AC-FT	22830	1890	928	1830	3360	1900	122	142	73	190	5140	21920

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

MEAN	187	30.7	38.4	95.2	61.9	170	188	66.8	9.98	5.30	56.6	207
MAX	371	31.8	61.6	161	63.3	310	374	131	18.7	7.82	83.5	368
(WY)	1998	1998	1997	1997	1997	1997	1997	1997	1997	1996	1998	1998
MIN	1.73	29.7	15.1	29.7	60.4	30.8	2.05	2.32	1.23	3.09	5.27	90.7
(WY)	1997	1997	1998	1998	1998	1998	1998	1998	1998	1998	1997	1997

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1996 - 1998	
ANNUAL TOTAL	48183.63		30409.72			
ANNUAL MEAN	132		83.3		93.9	
HIGHEST ANNUAL MEAN					104	1997
LOWEST ANNUAL MEAN					83.3	1998
HIGHEST DAILY MEAN	1910	Mar 17	3640	Sep 11	3640	Sep 11 1998
LOWEST DAILY MEAN	.52	Feb 9	.34	Mar 13	.19	Nov 18 1996
ANNUAL SEVEN-DAY MINIMUM	.62	Feb 5	.47	Mar 9	.20	Nov 13 1996
INSTANTANEOUS PEAK FLOW			4100	Sep 11	4100	Sep 11 1998
INSTANTANEOUS PEAK STAGE			22.16	Sep 11	22.16	Sep 11 1998
ANNUAL RUNOFF (AC-FT)	95570		60320		68000	
10 PERCENT EXCEEDS	306		83		182	
50 PERCENT EXCEEDS	6.5		2.4		4.3	
90 PERCENT EXCEEDS	1.6		.76		.81	

e Estimated

08164504 EAST MUSTANG CREEK AT FM 647 NEAR GANADO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Pesticide analyses: Apr 1996 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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	2,4,5-T TOTAL (UG/L) (39740)	2,4-D, TOTAL (UG/L) (39730)
JUN									
03...	1330	1.2	905	8.1	32.0	7.9	108	<.010	<.010
JUL									
29...	1240	2.4	785	7.8	31.5	6.3	85	<.010	<.010
AUG									
11...	1430	5.3	655	7.6	31.5	5.7	77	<.010	<.010
SEP									
10...	1440	6.0	562	6.7	24.5	6.2	75	<.010	<.010

DATE	SILVEX, TOTAL (UG/L) (39760)	DICAMBA TOTAL (UG/L) (82052)	2,4-DP TOTAL (UG/L) (82183)	PIC-LORAM UNFILT RECOVER (UG/L) (39720)	TOTAL TRI-THION (UG/L) (39786)	CHLOR-PYRIFOS TOTAL RECOVER (UG/L) (38932)	DI-AZINON, TOTAL (UG/L) (39570)	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)	ETHION, TOTAL (UG/L) (39398)
JUN									
03...	<.010	.178	<.010	.027	<.010	<.010	<.010	<.010	<.010
JUL									
29...	<.010	.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
AUG									
11...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
SEP									
10...	<.010	<.010	<.010	.010	<.010	<.010	<.010	<.010	<.010

DATE	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L) (82614)	MALA-THION, TOTAL (UG/L) (39530)	PARA-THION, TOTAL (UG/L) (39540)	METHYL PARA-THION, TOTAL (UG/L) (39600)	PHORATE TOTAL (UG/L) (39023)	DEF TOTAL (UG/L) (39040)	SAMPLE VOLUME SCHED-ULE 1319 (ML) (99868)	SET NUMBER SCHED-ULE 1319 (NO.) (99804)
JUN								
03...	<.010	<.020	<.010	<.010	<.010	<.010	914	8161.00
JUL								
29...	<.010	<.010	<.010	.018	<.010	<.010	898	8215.00
AUG								
11...	<.010	<.010	<.010	<.010	<.010	<.010	901	8229.00
SEP								
10...	<.010	<.010	<.010	<.010	<.010	<.010	910	8259.00

08164525 LAKE TEXANA NEAR EDNA, TX

LOCATION.--Lat 28°53'30", long 96°34'00", Jackson County, Hydrologic Unit 12100101, at upstream side of dam at old river channel on the Navidad River, 4.9 mi upstream from confluence with Lavaca River, 4.0 mi north of Lolita, and 7.2 mi southeast of Edna.

DRAINAGE AREA.--1,370 mi^2.

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: Jan 1988 to current year. Pesticide analyses of bottom sediments: May 1994 to current year.

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

285331096343501 - LAKE TEXANA SITE AC

DATE	TIME	RESER-VOIR STORAGE (AC-FT) (00054)	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
FEB											
19...	1007	164000	1.00	177	7.8	15.5	.60	8.9	89	66	14
19...	1009	--	10.0	177	7.8	15.0	--	8.7	86	--	--
19...	1011	--	20.0	177	7.8	15.0	--	8.7	86	--	--
19...	1013	--	30.0	177	7.8	15.0	--	8.7	86	--	--
19...	1015	--	40.0	177	7.8	15.0	--	8.7	86	--	--
19...	1017	--	50.0	177	7.8	15.0	--	8.7	86	--	--
19...	1019	--	59.0	177	7.8	15.0	--	8.6	85	65	6
APR											
29...	1040	160000	1.00	178	7.8	20.5	.12	7.7	85	66	17
29...	1042	--	10.0	178	7.8	20.5	--	7.7	85	--	--
29...	1044	--	20.0	179	7.8	20.5	--	7.6	84	--	--
29...	1046	--	30.0	179	7.8	20.5	--	7.6	84	--	--
29...	1048	--	40.0	178	7.8	20.5	--	7.7	85	--	--
29...	1050	--	50.0	178	7.8	20.5	--	7.7	85	--	--
29...	1052	--	60.0	179	7.8	20.5	--	7.7	85	--	--
29...	1054	--	66.0	179	7.7	20.5	--	7.3	80	64	12
AUG											
12...	0808	145000	1.00	234	8.1	29.5	.21	6.5	84	90	12
12...	0810	--	10.0	237	8.1	29.5	--	6.4	83	--	--
12...	0812	--	20.0	237	8.0	29.5	--	6.1	79	--	--
12...	0814	--	30.0	235	7.9	29.0	--	5.6	72	--	--
12...	0816	--	40.0	236	7.7	29.0	--	4.8	62	--	--
12...	0818	--	50.0	219	7.2	26.0	--	.9	11	--	--
12...	0820	--	58.0	206	7.0	22.5	--	.9	10	82	7

285331096343501 - LAKE TEXANA 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)
FEB										
19...	22	2.5	8.8	.5	3.8	52	5.6	13	<.10	11
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	22	2.5	8.7	.5	3.8	59	5.7	13	<.10	11
APR										
29...	23	2.3	8.9	.5	3.6	49	6.1	12	.15	9.4
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	22	2.3	9.1	.5	3.6	52	6.0	12	.13	9.4
AUG										
12...	31	3.3	12	.6	2.4	79	7.7	17	.15	12
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	28	3.0	9.0	.4	3.4	75	5.8	12	.13	13

08164525 LAKE TEXANA NEAR EDNA, TX--Continued

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

285331096343501 - LAKE TEXANA SITE AC

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	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)
FEB										
19...	98	2	76	<1.0	<8.0	<14	<12	<10	17	<100
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	102	2	75	<1.0	<8.0	<14	<12	<10	15	<100
APR										
29...	95	2	81	<1.0	<8.0	<14	<12	<10	16	<100
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	96	1	83	<1.0	<8.0	<14	<12	<10	24	<100
AUG										
12...	133	2	94	<1.0	<8.0	<14	<12	<10	<10	<100
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	121	6	107	<1.0	<8.0	<14	<12	<10	150	<100

285331096343501 - LAKE TEXANA SITE AC

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...	<4	<4.0	<.1	<60	<40	<1	<4.0	72	<10	<20
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	<4	<4.0	<.1	<60	<40	<1	<4.0	71	<10	<20
APR										
29...	<4	<4.0	<.1	<60	<40	<1	<4.0	73	<10	<20
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	<4	107	<.1	<60	<40	<1	<4.0	72	<10	<20
AUG										
12...	<4	4.0	<.1	<60	<40	<1	<4.0	95	<10	<20
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	<4	1090	.1	<60	<40	<1	<4.0	86	<10	<20

08164525 LAKE TEXANA NEAR EDNA, TX--Continued

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

285326096342101 - LAKE TEXANA SITE AL

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
FEB							
19...	1050	1.00	177	7.8	15.0	8.8	87
19...	1052	10.0	177	7.8	15.0	8.8	87
19...	1054	20.0	177	7.8	15.0	8.8	87
19...	1056	30.0	177	7.8	15.0	8.8	87
19...	1058	36.0	177	7.8	15.0	9.0	89
APR							
29...	1120	1.00	179	7.9	20.5	7.8	86
29...	1122	10.0	179	7.9	20.0	7.8	85
29...	1124	20.0	179	7.9	20.0	7.7	84
29...	1126	30.0	178	7.9	20.0	7.7	84
AUG							
12...	0842	1.00	243	8.1	29.5	6.4	83
12...	0844	10.0	239	8.1	29.5	6.3	82
12...	0846	20.0	240	8.0	29.5	6.3	82
12...	0848	30.0	241	8.0	29.0	6.2	80

285534096322301 - LAKE TEXANA SITE BC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
FEB							
19...	1110	1.00	213	7.8	15.5	8.5	85
19...	1112	10.0	211	7.7	15.0	8.4	83
19...	1114	20.0	200	7.7	15.0	8.4	83
19...	1116	30.0	200	7.7	15.0	8.5	84
19...	1118	43.0	211	7.7	15.0	8.4	83
APR							
29...	1150	1.00	178	7.9	20.5	7.5	82
29...	1152	10.0	179	7.8	20.5	7.6	84
29...	1154	20.0	179	7.8	20.5	7.6	84
29...	1156	30.0	180	7.8	20.5	7.6	84
29...	1158	41.0	178	7.9	20.5	7.5	82
AUG							
12...	0902	1.00	252	8.2	30.5	6.5	86
12...	0904	10.0	252	8.1	30.5	6.4	85
12...	0906	20.0	260	8.0	30.0	5.8	76
12...	0908	30.0	256	7.9	29.5	5.7	74
12...	0910	43.0	248	7.9	29.5	5.6	73

285816096320201 - LAKE TEXANA SITE CC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	DIAZINON, TOTAL (UG/L) (39570)
FEB									
19...	0800	1.00	293	7.5	15.0	.60	7.9	--	--
19...	0802	10.0	281	7.5	15.0	--	7.9	--	--
19...	0804	--	--	--	--	--	--	--	<.010
19...	0806	20.0	272	7.6	15.0	--	7.9	--	--
19...	0808	30.0	229	7.6	14.5	--	7.8	--	--
19...	0810	37.0	224	7.7	14.5	--	7.7	--	<.010
APR									
29...	0825	1.00	210	7.9	20.5	.09	7.1	78	--
29...	0827	10.0	210	7.9	20.5	--	3.6	40	--
29...	0829	18.0	--	--	--	--	--	--	<.010
29...	0831	20.0	212	7.9	20.5	--	3.7	41	--
29...	0833	30.0	210	7.9	20.5	--	3.8	42	--
29...	0835	36.0	210	7.9	20.5	--	3.9	43	<.010
AUG									
12...	0926	1.00	346	7.9	30.5	.60	5.8	77	--
12...	0928	10.0	347	7.9	30.0	--	5.8	76	--
12...	0930	16.0	391	7.7	30.0	--	4.5	59	<.010
12...	0932	20.0	401	7.6	30.0	--	4.0	52	--
12...	0934	32.0	390	7.5	29.5	--	3.4	44	<.010

08164525 LAKE TEXANA NEAR EDNA, TX--Continued

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

285816096320201 - LAKE TEXANA SITE CC

DATE	DI-AZINON, TOTAL IN BOTTOM MATERIAL (UG/KG) (39571)	DISULFOTON UNFILT RECOVER (UG/L) (39011)	ETHION, TOTAL (UG/L) (39398)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39399)	MALATHION, TOTAL (UG/L) (39530)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39531)	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	PARATHION, TOTAL (UG/L) (39540)
FEB									
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	<.010	<.010	--	<.010	--	<.010	--	<.010
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	<.010	<.010	--	<.010	--	<.010	--	<.010
APR									
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	--	<.010	<.010	--	<.010	--	<.010	--	<.010
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	<2.00	<.010	<.010	<.200	<.010	<.200	<.010	<2.00	<.010
AUG									
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	--	<.010	<.010	--	<.010	--	<.010	--	<.010
12...	--	--	--	--	--	--	--	--	--
12...	--	<.010	<.010	--	<.010	--	<.010	--	<.010

285816096320201 - LAKE TEXANA SITE CC

DATE	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)	PHORATE TOTAL (UG/L) (39023)	SILVEX, TOTAL (UG/L) (39760)	TOTAL TRITHION (UG/L) (39786)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39787)	2,4-D, TOTAL (UG/L) (39730)	2, 4-DP TOTAL (UG/L) (82183)	2,4,5-T TOTAL (UG/L) (39740)
FEB								
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	--	<.010	<.010	<.010	--	.076	<.010	<.010
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	--	<.010	<.010	<.010	--	.163	<.010	<.010
APR								
29...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--
29...	--	<.010	<.010	<.010	--	<.010	<.010	<.010
29...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--
29...	<.200	<.010	<.010	<.010	<.200	<.010	<.010	<.010
AUG								
12...	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--
12...	--	<.010	--	<.010	--	--	--	--
12...	--	--	--	--	--	--	--	--
12...	--	<.010	--	<.010	--	--	--	--

290042096331401 - LAKE TEXANA SITE DC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	DIAZINON, TOTAL (UG/L) (39570)
FEB									
19...	0903	1.00	89	6.4	14.5	.50	7.8	76	--
19...	0905	7.00	95	7.0	14.0	--	7.7	74	<.010
19...	0907	10.0	97	7.0	14.0	--	7.7	74	--
19...	0909	14.0	99	7.0	14.0	--	7.8	75	<.010
APR									
29...	0930	1.00	357	7.8	20.5	--	6.7	74	--
29...	0932	10.0	361	7.8	20.5	--	6.7	74	--
29...	0934	12.0	--	--	--	--	--	--	<.010
29...	0936	23.0	354	7.8	20.0	--	6.6	72	<.010
AUG									
12...	1034	1.00	474	7.9	31.0	.70	5.4	72	--
12...	1036	8.00	475	7.9	30.5	--	5.0	66	<.010
12...	1038	16.0	481	7.7	30.5	--	4.3	57	<.010

08164525 LAKE TEXANA NEAR EDNA, TX--Continued

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

290042096331401 - LAKE TEXANA SITE DC

DATE	DI-AZINON, TOTAL IN BOTTOM MATERIAL (UG/KG) (39571)	DISULFOTON UNFILT RECOVER (UG/L) (39011)	ETHION, TOTAL (UG/L) (39398)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39399)	MALATHION, TOTAL (UG/L) (39530)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39531)	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	PARATHION, TOTAL (UG/L) (39540)
FEB									
19...	--	--	--	--	--	--	--	--	--
19...	--	<.010	<.010	--	<.010	--	<.010	--	<.010
19...	--	--	--	--	--	--	--	--	--
19...	--	<.010	<.010	--	<.010	--	<.010	--	<.010
APR									
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	--	<.010	<.010	--	<.010	--	<.010	--	<.010
29...	<2.00	<.010	<.010	<.200	<.010	<.200	<.010	<2.00	<.010
AUG									
12...	--	--	--	--	--	--	--	--	--
12...	--	<.010	<.010	--	<.010	--	E.008	--	<.010
12...	--	<.010	<.010	--	<.010	--	E.009	--	<.010

290042096331401 - LAKE TEXANA SITE DC

DATE	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)	PHORATE TOTAL (UG/L) (39023)	SILVEX, TOTAL (UG/L) (39760)	TOTAL TRITHION (UG/L) (39786)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39787)	2,4-D, TOTAL (UG/L) (39730)	2, 4-DP TOTAL (UG/L) (82183)	2,4,5-T TOTAL (UG/L) (39740)
FEB								
19...	--	--	--	--	--	--	--	--
19...	--	<.010	<.010	<.010	--	.014	<.010	<.010
19...	--	--	--	--	--	--	--	--
19...	--	<.010	<.010	<.010	--	.036	<.010	<.010
APR								
29...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--
29...	--	<.010	<.010	<.010	--	<.010	<.010	<.010
29...	<.200	<.010	<.010	<.010	<.200	<.010	<.010	<.010
AUG								
12...	--	--	--	--	--	--	--	--
12...	--	<.010	--	<.010	--	--	--	--
12...	--	<.010	--	<.010	--	--	--	--

285940096312101 - LAKE TEXANA SITE EC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	DIAZINON, TOTAL (UG/L) (39570)
FEB									
19...	0840	1.00	147	7.0	15.0	.40	7.4	73	--
19...	0842	10.0	147	7.1	15.0	--	7.3	72	--
19...	0844	13.0	148	7.1	15.0	--	7.4	73	<.010
19...	0846	20.0	147	7.1	15.0	--	7.5	74	--
19...	0848	28.0	148	7.2	15.0	--	7.4	73	<.010
APR									
29...	0850	1.00	177	7.5	21.0	.09	5.6	62	--
29...	0852	10.0	177	7.5	21.0	--	5.7	63	--
29...	0854	13.0	--	--	--	--	--	--	<.010
29...	0856	20.0	177	7.5	21.0	--	5.7	63	--
29...	0858	26.0	176	7.4	21.0	--	5.6	62	<.010
AUG									
12...	0948	1.00	398	8.2	32.0	1.00	6.6	90	--
12...	0950	13.0	572	7.4	30.0	--	2.4	31	<.010
12...	0952	20.0	622	7.2	29.5	--	.8	10	--
12...	0954	26.0	621	7.2	29.5	--	.7	9	<.010

08164525 LAKE TEXANA NEAR EDNA, TX--Continued

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

285940096312101 - LAKE TEXANA SITE EC

DATE	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39571)	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)	ETHION, TOTAL (UG/L) (39398)	ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39399)	MALA-THION, TOTAL (UG/L) (39530)	MALA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39531)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL PARA-THION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	PARA-THION, TOTAL (UG/L) (39540)
FEB									
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	<.010	<.010	--	<.010	--	<.010	--	<.010
19...	--	--	--	--	--	--	--	--	--
19...	--	<.010	<.010	--	<.010	--	<.010	--	<.010
APR									
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	--	<.010	<.010	--	<.010	--	<.010	--	<.010
29...	--	--	--	--	--	--	--	--	--
29...	<2.00	<.010	<.010	<.200	<.010	<.200	<.010	<2.00	<.010
AUG									
12...	--	--	--	--	--	--	--	--	--
12...	--	<.010	<.010	--	<.010	--	<.010	--	<.010
12...	--	--	--	--	--	--	--	--	--
12...	--	<.010	<.010	--	<.010	--	<.010	--	<.010

285940096312101 - LAKE TEXANA SITE EC

DATE	PARA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39541)	PHORATE TOTAL (UG/L) (39023)	SILVEX, TOTAL (UG/L) (39760)	TOTAL TRI-THION (UG/L) (39786)	TRI-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39787)	2,4-D, TOTAL (UG/L) (39730)	2, 4-DP TOTAL (UG/L) (82183)	2,4,5-T TOTAL (UG/L) (39740)
FEB								
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	--	<.010	<.010	<.010	--	<.010	<.010	<.010
19...	--	--	--	--	--	--	--	--
19...	--	<.010	<.010	<.010	--	<.010	<.010	<.010
APR								
29...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--
29...	--	<.010	<.010	<.010	--	<.010	<.010	<.010
29...	--	--	--	--	--	--	--	--
29...	<.200	<.010	<.010	<.010	<.200	<.010	<.010	<.010
AUG								
12...	--	--	--	--	--	--	--	--
12...	--	<.010	<.010	<.010	--	.010	<.010	<.010
12...	--	--	--	--	--	--	--	--
12...	--	<.010	<.010	<.010	--	.018	<.010	<.010

08164600 GARCITAS CREEK NEAR INEZ, TX

LOCATION.--Lat 28°53'28", long 96°49'08", Victoria County, Hydrologic Unit 12100402, at right downstream end of bridge on U.S. Highway 59 access road, 0.3 mi upstream from Southern Pacific Railroad bridge, 2.0 mi southwest of Inez, and 3.6 mi upstream from Casa Blanca Creek.

DRAINAGE AREA.--91.7 mi^2.

PERIOD OF RECORD.--Jun 1970 to current year.
Water-quality records.--Chemical and biochemical analyses: Apr 1965 to Aug 1988. Pesticide analyses: Jul 1970 to Jul 1981.

REVISED RECORDS.--WDR TX-94-3: 1992-93.

GAGE.--Water-stage recorder. Datum of gage is 29.16 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair. No known regulation or diversions. An undetermined amount of return water from irrigation enters the stream above this station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage during period 1903-70, 24.5 ft Oct 26, 1960. In 1929, a flood nearly as high as the 1960 flood occurred, and a flood in Sep 1967 reached a stage of 23.4 ft, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 12	1515	4,050	20.86	Sep 12	0245	7,510	25.15
Oct 14	0445	3,990	20.76	Sep 17	0400	2,860	18.81

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	7.9	9.7	14	3.1	7.4	25	4.6	2.6	.49	.00	.00	9.3
2	5.7	8.8	9.8	2.8	12	19	4.8	2.1	.49	.00	.00	7.3
3	4.2	7.5	7.9	2.6	9.6	16	4.3	1.9	.45	.03	.00	6.3
4	3.2	7.1	6.5	2.5	6.7	13	3.8	1.8	.40	.10	.00	5.2
5	3.0	7.0	7.3	2.3	4.9	10	3.6	1.9	.41	.05	.00	4.4
6	4.2	6.9	10	3.2	4.0	8.4	3.7	1.9	.42	.00	.02	4.0
7	9.3	6.3	7.8	97	3.5	7.1	3.6	1.7	.38	.00	.02	14
8	275	5.7	6.3	119	3.3	6.1	3.5	1.5	.39	.00	.02	11
9	733	5.5	5.3	45	3.2	5.1	5.5	1.6	.35	.00	.03	5.5
10	858	6.1	4.6	28	3.4	4.4	4.7	1.2	.29	.00	.03	9.9
11	466	6.9	3.8	21	3.2	4.1	3.4	1.0	.28	.00	.04	2820
12	3370	249	3.1	17	25	3.9	3.0	1.4	.25	.00	.05	5060
13	2700	334	2.8	15	17	4.6	3.0	1.8	.16	.00	.05	697
14	2990	179	2.4	43	14	6.0	3.0	1.8	.00	.00	.06	220
15	443	105	2.3	28	14	6.6	2.9	1.6	.00	.00	.06	360
16	136	65	2.2	20	82	312	3.1	1.5	.00	.00	.06	1700
17	79	42	2.3	15	284	1120	2.5	1.3	.00	.00	.08	2370
18	51	34	2.1	11	96	167	3.3	1.1	.00	.00	.08	552
19	36	28	2.3	8.7	133	73	3.6	1.0	.00	e.00	.08	148
20	28	22	3.4	7.1	157	38	3.8	.94	.00	e.00	.09	90
21	22	20	3.3	6.4	62	27	2.8	.87	.00	e.00	.09	59
22	18	17	2.5	5.8	219	21	2.2	.85	.00	.00	9.1	43
23	16	13	11	5.0	272	17	1.9	.82	.00	.00	474	36
24	15	9.7	8.6	4.5	81	15	1.7	.81	.00	.00	1150	28
25	13	7.7	14	4.1	42	12	1.7	.81	.00	.00	187	22
26	12	6.5	15	3.9	56	9.6	2.0	.88	.00	.00	64	17
27	10	5.7	11	3.7	62	8.4	2.3	.83	.00	.00	31	13
28	9.7	5.6	8.6	3.6	36	7.3	2.7	.75	.00	.00	24	9.6
29	9.5	5.3	6.5	3.4	---	6.5	3.9	.73	.00	.00	20	7.1
30	9.1	13	5.4	3.4	---	5.9	4.1	.69	.00	.00	16	5.5
31	9.1	---	4.1	4.9	---	5.4	---	.58	---	.00	12	---
TOTAL	12345.9	1239.0	196.2	540.0	1713.2	1984.4	99.0	40.26	4.76	0.18	1987.96	14334.1
MEAN	398	41.3	6.33	17.4	61.2	64.0	3.30	1.30	.16	.006	64.1	478
MAX	3370	334	15	119	284	1120	5.5	2.6	.49	.10	1150	5060
MIN	3.0	5.3	2.1	2.3	3.2	3.9	1.7	.58	.00	.00	.00	4.0
AC-FT	24490	2460	389	1070	3400	3940	196	80	9.4	.4	3940	28430
CFSM	4.34	.45	.07	.19	.67	.70	.04	.01	.00	.00	.70	5.21
IN.	5.01	.50	.08	.22	.69	.81	.04	.02	.00	.00	.81	5.81

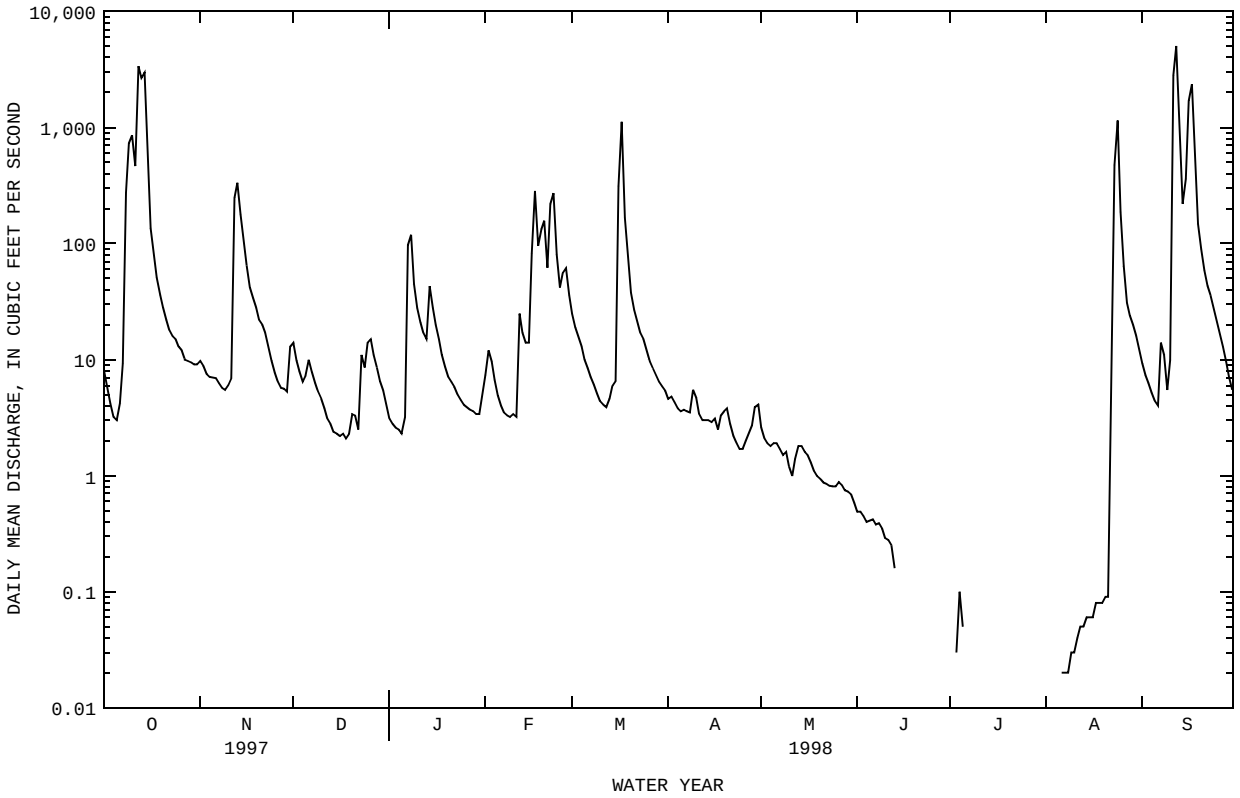
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1998, BY WATER YEAR (WY)

MEAN	67.0	27.9	37.8	42.7	54.4	47.1	86.6	118	122	21.6	7.00	80.1
MAX	695	291	263	220	558	578	658	503	745	218	64.1	789
(WY)	1995	1983	1977	1992	1992	1997	1991	1979	1981	1983	1998	1978
MIN	.000	.000	.006	.022	.14	.48	.25	.045	.000	.006	.056	.000
(WY)	1990	1990	1990	1990	1990	1996	1996	1996	1990	1998	1988	1988

08164600 GARCITAS CREEK NEAR INEZ, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1970 - 1998	
ANNUAL TOTAL	65568.58		34484.96			
ANNUAL MEAN	180		94.5		59.3	
HIGHEST ANNUAL MEAN					144	1992
LOWEST ANNUAL MEAN					2.65	1989
HIGHEST DAILY MEAN	6700	Apr 4	5060	Sep 12	13100	Oct 19 1994
LOWEST DAILY MEAN	.38	Sep 17	.00	Jun 14	.00	May 22 1971
ANNUAL SEVEN-DAY MINIMUM	.49	Sep 14	.00	Jun 14	.00	May 26 1971
INSTANTANEOUS PEAK FLOW			7510	Sep 12	19700	Jun 12 1981
INSTANTANEOUS PEAK STAGE			25.15	Sep 12	33.43	Oct 19 1994
ANNUAL RUNOFF (AC-FT)	130100		68400		42970	
ANNUAL RUNOFF (CFSM)	1.96		1.03		.65	
ANNUAL RUNOFF (INCHES)	26.60		13.99		8.79	
10 PERCENT EXCEEDS	299		92		57	
50 PERCENT EXCEEDS	7.9		4.6		3.2	
90 PERCENT EXCEEDS	1.1		.00		.29	

e Estimated



08164800 PLACEDO CREEK NEAR PLACEDO, TX

LOCATION.--Lat 28°43'30", long 96°46'07", Victoria County, Hydrologic Unit 12100401, on right bank at downstream end of bridge on Farm Road 616, 0.1 mi downstream from confluence of Lone Tree Creek and Arroyo Palo Alto, 1.2 mi upstream from Ninemile Creek, and 4.4 mi northeast of Placedo.

DRAINAGE AREA.--68.3 mi^2.

PERIOD OF RECORD.--Jun 1970 to current year.
Water-quality records.--Chemical, biochemical, and pesticide analyses: Oct 1968 to Sep 1979.

GAGE.--Water-stage recorder. Datum of gage is 5.58 ft above sea level. Satellite telemeter at station.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1930, 31.9 ft in Sep 1967 and 30.4 ft in 1960 (probably Oct), from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 12	0030	4,810	24.83	Sep 11	1115	3,340	23.59
Mar 16	1645	1,530	19.40	Sep 16	2115	3,820	24.26

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	.63	1.5	1.3	.99	54	18	1.7	.91	.28	.23	.04	.35
2	.55	1.4	1.3	1.1	32	8.3	1.7	.90	.27	.18	.05	.53
3	.51	1.3	1.6	1.3	15	4.2	1.6	.88	.26	.25	.05	1.6
4	.55	1.3	1.4	1.5	5.7	2.7	1.5	.83	.25	.29	.05	.33
5	.63	1.5	1.3	1.6	2.7	2.2	1.5	.80	.24	.25	.06	.25
6	2.0	1.3	1.2	1.6	1.8	1.9	1.5	.80	.27	.21	.10	.32
7	16	1.2	1.3	2.2	1.4	1.8	1.6	.76	.26	.18	.31	.31
8	96	1.2	1.4	9.1	1.3	1.6	1.5	.75	.27	.14	.36	.38
9	589	1.2	1.3	5.2	1.2	1.5	1.3	.70	.25	.13	.22	.30
10	719	2.2	1.2	2.4	1.2	1.4	1.3	.63	.22	.13	.15	114
11	1220	1.6	1.2	1.6	1.1	1.4	1.3	.61	.25	.12	.13	2370
12	2640	125	1.1	1.1	1.1	1.4	1.3	.59	.23	.11	.12	551
13	2570	142	1.1	1.0	1.1	1.5	1.4	.61	.23	.10	.12	93
14	920	61	1.1	.95	1.2	1.9	1.4	.63	.22	.10	.60	35
15	130	22	1.2	.93	1.3	1.7	1.3	.63	.21	.10	.51	131
16	48	11	1.2	.90	417	702	1.2	.62	.24	.10	.28	2120
17	19	5.1	1.1	.89	278	311	1.1	.57	.24	.10	.21	1530
18	9.7	3.1	1.1	.91	55	59	1.3	.52	.21	.09	.35	186
19	5.2	2.7	1.1	.89	85	23	1.3	.47	.18	.10	.28	56
20	3.5	2.1	1.7	.88	86	11	1.2	.47	.17	.11	.22	20
21	2.8	1.8	1.4	1.1	27	6.0	1.1	1.5	.16	.10	.21	14
22	2.5	1.5	1.1	4.1	17	3.7	1.1	.47	.17	.09	1.3	7.3
23	2.4	1.5	3.5	2.2	31	2.9	1.0	.43	.16	.08	68	3.7
24	2.4	1.4	9.5	1.6	13	2.4	.98	.44	.14	.07	68	2.6
25	2.3	1.4	4.4	1.2	6.1	2.3	.96	.41	.14	.06	19	2.1
26	2.1	1.4	1.8	1.0	503	2.2	.98	.40	.14	.06	5.7	1.9
27	1.9	1.4	1.2	.91	138	2.1	1.1	.38	.15	.06	2.1	1.7
28	1.8	1.5	1.0	.87	40	2.1	1.0	.35	.15	.05	.91	1.5
29	1.8	1.6	1.0	.88	---	2.0	.93	.33	.24	.05	.59	1.2
30	1.8	1.3	1.0	.89	---	1.9	.91	.33	.26	.05	.45	1.1
31	1.7	---	.99	8.7	---	1.8	---	.30	---	.05	.41	---
TOTAL	9013.77	404.5	52.09	60.49	1818.2	1186.9	38.06	19.02	6.46	3.74	170.88	7247.47
MEAN	291	13.5	1.68	1.95	64.9	38.3	1.27	.61	.22	.12	5.51	242
MAX	2640	142	9.5	9.1	503	702	1.7	1.5	.28	.29	68	2370
MIN	.51	1.2	.99	.87	1.1	1.4	.91	.30	.14	.05	.04	.25
AC-FT	17880	802	103	120	3610	2350	75	38	13	7.4	339	14380

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1998, BY WATER YEAR (WY)

MEAN	73.2	53.9	44.8	43.8	58.0	49.3	65.5	97.7	92.8	61.3	12.7	117
MAX	291	465	389	262	455	516	541	354	510	559	107	913
(WY)	1998	1982	1992	1991	1992	1997	1991	1972	1973	1990	1972	1978
MIN	.004	.021	.015	.052	.002	.086	.019	.17	.000	.031	.012	.013
(WY)	1990	1989	1990	1990	1994	1989	1989	1996	1989	1989	1988	1988

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1970 - 1998	
ANNUAL TOTAL	41555.42		20021.58			
ANNUAL MEAN	114		54.9		64.0	
HIGHEST ANNUAL MEAN					154	1992
LOWEST ANNUAL MEAN					1.20	1989
HIGHEST DAILY MEAN	7930	Mar 17	2640	Oct 12	11400	Nov 1 1981
LOWEST DAILY MEAN	.30	Sep 19	.04	Aug 1	.00	Aug 12 1981
ANNUAL SEVEN-DAY MINIMUM	.34	Sep 14	.05	Jul 28	.00	Jul 27 1982
INSTANTANEOUS PEAK FLOW			4810	Oct 12	18300	Oct 31 1981
INSTANTANEOUS PEAK STAGE			24.83	Oct 12	30.80	Oct 31 1981
ANNUAL RUNOFF (AC-FT)	82430		39710		46340	
10 PERCENT EXCEEDS	107		33		48	
50 PERCENT EXCEEDS	1.5		1.2		1.6	
90 PERCENT EXCEEDS	.53		.15		.13	

08165300 NORTH FORK GUADALUPE RIVER NEAR HUNT, TX

LOCATION.--Lat 30°03'50", long 99°23'12", Kerr County, Hydrologic Unit 12100201, on right bank, 1,000 ft upstream from Ranch Road 1340, 1.9 mi downstream from Bear Creek, 3.1 mi west of Hunt, and 3.5 mi upstream from Honey Creek.

DRAINAGE AREA.--169.0 mi^2.

PERIOD OF RECORD.--Aug 1967 to current year. Low-flow records not equivalent prior to Jun 7, 1989, because of undetermined channel flow loss between sites.

REVISED RECORDS.--WRD TX-74-1: 1971(P).

GAGE.--Water-stage recorder. Datum of gage is 1,800.10 ft above sea level. Prior to Jun 7, 1989, at site 0.58 mi upstream at same datum.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900 occurred Jul 1, 1932 (gage height, 37.3 ft, at site 0.58 mi upstream), discharge, 140,000 ft^3/s, by slope-area measurements, combined flow of North Fork Guadalupe River 5 mi upstream and Bear Creek 2 mi upstream from mouth, and adjusted for difference in drainage area.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 23	0930	556	4.81	Aug 23	1200	16,600	11.39

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	33	33	32	38	33	33	27	25	20	16	37
2	37	32	33	32	34	33	33	27	25	20	16	36
3	35	32	35	32	33	33	33	28	22	20	16	35
4	34	32	35	32	32	33	32	28	20	20	16	35
5	35	32	34	32	33	34	32	27	23	20	18	34
6	38	32	34	60	33	e34	31	26	23	19	18	33
7	37	32	33	43	32	e33	31	26	23	19	19	32
8	37	31	33	38	32	33	32	25	23	18	18	32
9	34	31	33	37	32	32	32	25	23	18	18	32
10	34	33	33	36	33	31	31	25	24	18	17	31
11	38	32	33	36	33	31	31	25	36	18	17	31
12	43	33	32	35	32	28	30	24	31	18	17	31
13	39	33	33	35	32	30	30	24	28	18	17	32
14	36	34	34	34	32	31	30	23	26	18	20	32
15	34	34	32	34	33	32	30	23	25	18	21	32
16	34	35	31	33	33	64	30	24	24	18	21	32
17	33	35	31	33	32	42	30	24	24	18	20	32
18	32	35	31	33	32	40	29	24	23	18	20	33
19	32	35	31	34	32	38	29	27	23	18	20	33
20	33	35	36	34	31	37	29	21	23	18	19	33
21	33	35	38	34	34	36	28	22	22	18	20	33
22	32	35	34	33	37	36	28	23	22	17	21	33
23	33	34	34	33	35	36	27	24	21	16	3110	32
24	33	34	36	33	34	37	27	24	21	16	102	31
25	33	35	34	32	34	37	27	25	20	17	51	31
26	33	35	34	32	35	36	27	28	20	17	46	30
27	33	35	33	32	35	35	27	30	20	16	42	30
28	34	35	33	32	34	35	27	28	20	14	39	30
29	34	34	32	32	---	35	27	25	20	15	37	31
30	33	34	32	32	---	35	28	25	20	16	35	31
31	33	---	32	37	---	35	---	25	---	16	35	---
TOTAL	1075	1007	1032	1077	932	1095	891	782	700	550	3902	970
MEAN	34.7	33.6	33.3	34.7	33.3	35.3	29.7	25.2	23.3	17.7	126	32.3
MAX	43	35	38	60	38	64	33	30	36	20	3110	37
MIN	32	31	31	32	31	28	27	21	20	14	16	30
AC-FT	2130	2000	2050	2140	1850	2170	1770	1550	1390	1090	7740	1920
CFSM	.21	.20	.20	.21	.20	.21	.18	.15	.14	.10	.74	.19
IN.	.24	.22	.23	.24	.21	.24	.20	.17	.15	.12	.86	.21

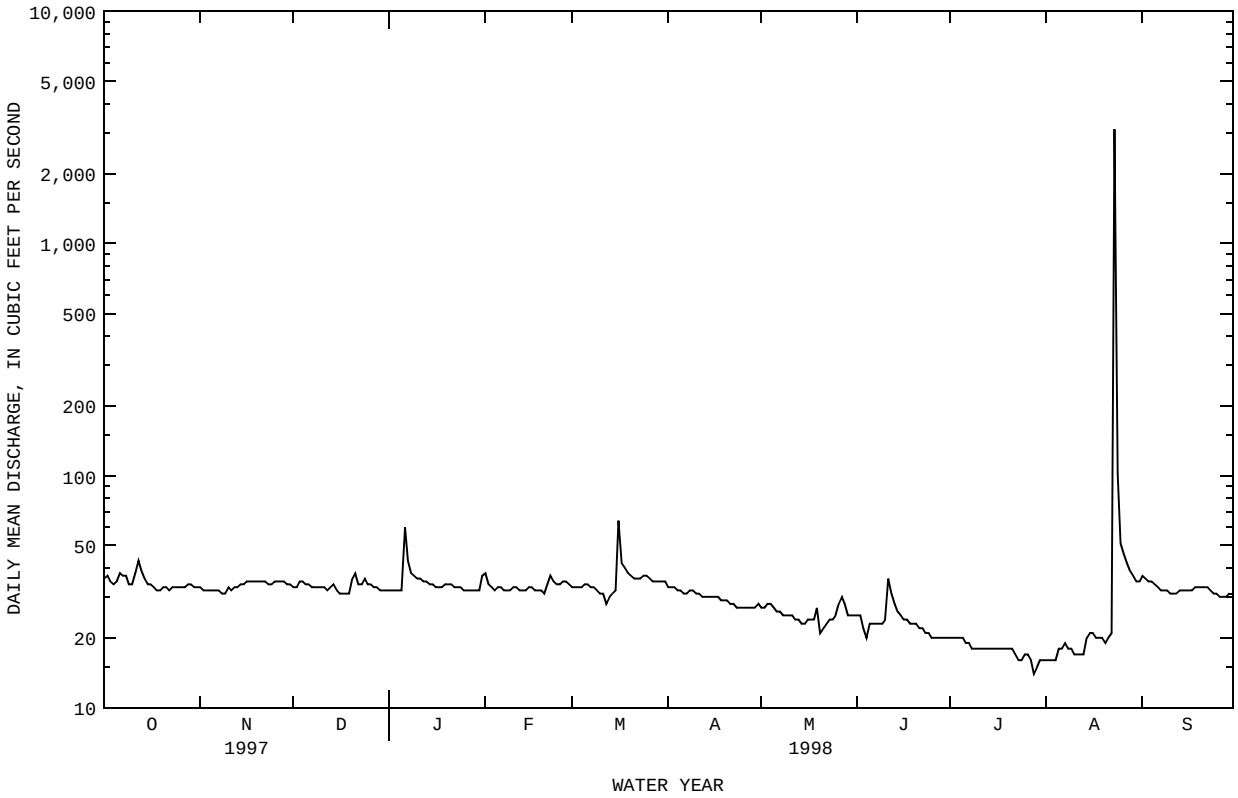
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1998, BY WATER YEAR (WY)

MEAN	67.5	31.4	43.0	31.8	30.7	29.9	40.8	43.6	44.2	40.4	55.2	40.0
MAX	529	54.4	296	113	108	144	351	149	278	465	452	198
(WY)	1986	1975	1985	1968	1992	1992	1977	1990	1981	1987	1978	1986
MIN	12.5	14.8	16.2	15.2	13.3	13.6	13.6	11.8	10.8	11.0	10.6	10.8
(WY)	1984	1984	1990	1990	1984	1971	1971	1971	1971	1971	1984	1984

08165300 NORTH FORK GUADALUPE RIVER NEAR HUNT, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1967 - 1998	
ANNUAL TOTAL	19021		14013			
ANNUAL MEAN	52.1		38.4		41.8	
HIGHEST ANNUAL MEAN					103	1987
LOWEST ANNUAL MEAN					13.4	1984
HIGHEST DAILY MEAN	1920	Jun 22	3110	Aug 23	14900	Oct 19 1985
LOWEST DAILY MEAN	31	Nov 8	14	Jul 28	6.6	May 30 1969
ANNUAL SEVEN-DAY MINIMUM	32	Nov 3	16	Jul 27	8.3	Jun 7 1971
INSTANTANEOUS PEAK FLOW			16600	Aug 23	57000	Oct 19 1985
INSTANTANEOUS PEAK STAGE			11.39	Aug 23	29.81	Oct 19 1985
ANNUAL RUNOFF (AC-FT)	37730		27790		30300	
ANNUAL RUNOFF (CFSM)	.31		.23		.25	
ANNUAL RUNOFF (INCHES)	4.19		3.08		3.36	
10 PERCENT EXCEEDS	63		36		48	
50 PERCENT EXCEEDS	40		32		24	
90 PERCENT EXCEEDS	33		19		15	

e Estimated



08165500 GUADALUPE RIVER AT HUNT, TX

LOCATION.--Lat 30°04'11", long 99°19'17", Kerr County, Hydrologic Unit 12100201, on left bank, 56 ft upstream and 252 ft to left of left end of bridge on State Highway 39, 0.6 mi downstream from confluence of North and South Forks, 0.8 mi east of Hunt, and at mile 430.9.

DRAINAGE AREA.--288 mi^2.

PERIOD OF RECORD.--Oct 1941 to Sep 1949, discharge not computed above 600 ft^3/s, and Apr 1965 to current year. Occasional discharge measurements made 1950-64.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 1,722.7 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good except those above 300 ft^3/s, which are fair. No known regulation. There are numerous diversions for irrigation above station, but amounts are unknown.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1900, 36.6 ft Jul 2, 1932, from information by local resident (discharge, 206,000 ft^3/s, determined by slope-area measurement 4.5 mi downstream from gage).

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 16	0345	1,240	9.81	Aug 23	1245	24,300	17.57

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

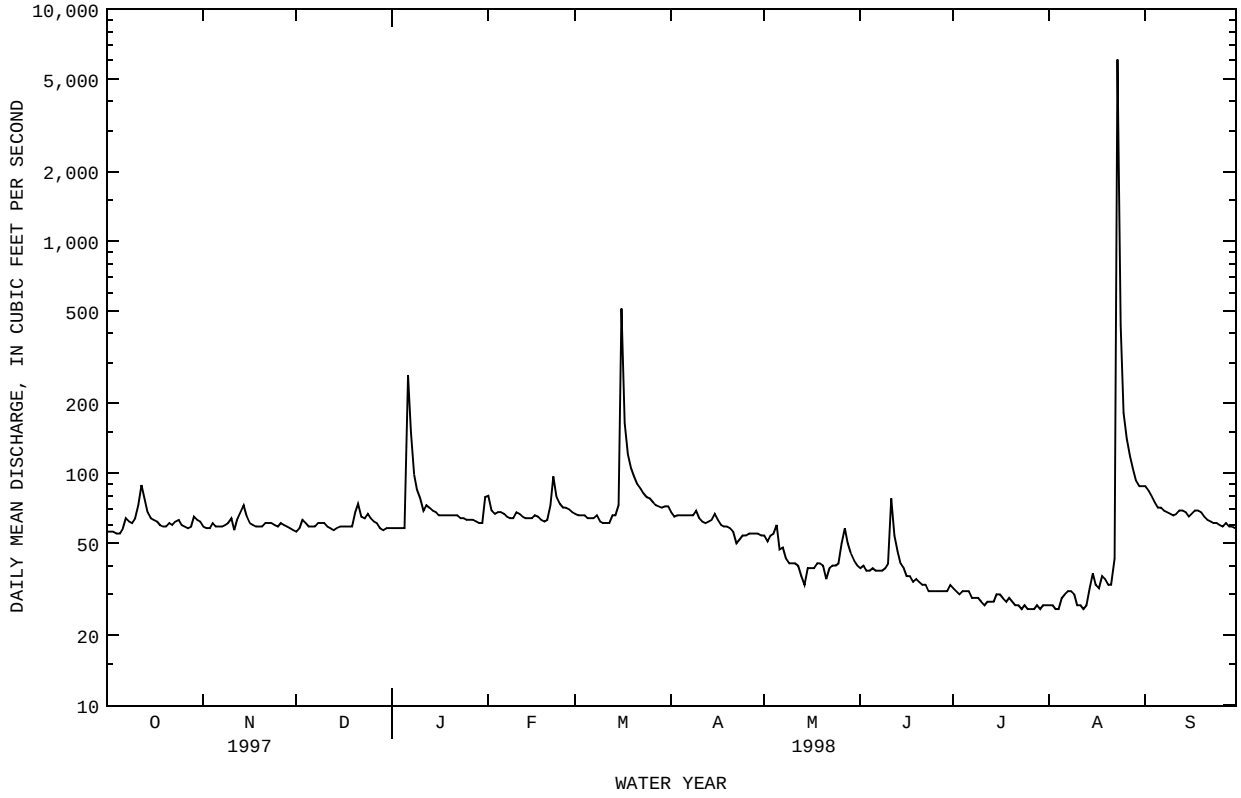
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	59	56	58	80	67	68	54	39	32	27	88
2	56	58	58	58	69	66	65	51	40	31	27	84
3	56	58	63	58	67	66	66	54	38	30	26	80
4	55	61	61	58	68	66	66	55	38	31	26	75
5	55	59	59	58	68	64	66	60	39	31	29	71
6	58	59	59	265	67	64	66	47	38	31	30	71
7	64	59	59	151	65	64	66	48	38	29	31	69
8	62	60	61	99	64	66	66	43	38	29	31	68
9	61	61	61	85	64	62	69	41	39	29	30	67
10	64	64	61	78	68	61	64	41	41	28	27	66
11	73	57	59	69	67	61	62	41	78	27	27	67
12	89	64	58	73	65	61	61	40	54	28	26	69
13	78	68	57	71	64	66	62	36	46	28	27	69
14	68	73	58	69	64	66	63	33	41	28	32	68
15	64	65	59	68	64	73	67	39	39	30	37	65
16	63	61	59	66	66	513	63	39	36	30	33	67
17	62	60	59	66	65	165	60	39	36	29	32	69
18	60	59	59	66	63	121	59	41	34	28	36	69
19	59	59	59	66	62	105	59	41	35	29	35	68
20	59	59	68	66	63	97	58	40	34	28	33	65
21	61	61	74	66	73	90	56	35	33	27	33	63
22	60	61	65	66	97	86	50	39	33	27	43	62
23	62	61	64	64	79	82	52	40	31	26	6070	61
24	63	60	67	64	74	79	54	40	31	27	433	61
25	60	59	64	63	71	78	54	41	31	26	183	60
26	59	61	62	63	71	75	55	50	31	26	141	59
27	58	60	61	63	70	73	55	58	31	26	119	61
28	59	59	58	62	68	72	55	50	31	27	105	59
29	65	58	57	61	---	71	55	45	31	26	93	59
30	63	57	58	61	---	72	54	42	33	27	88	58
31	62	---	58	79	---	72	---	40	---	27	88	---
TOTAL	1934	1820	1881	2360	1926	2824	1816	1363	1137	878	7998	2018
MEAN	62.4	60.7	60.7	76.1	68.8	91.1	60.5	44.0	37.9	28.3	258	67.3
MAX	89	73	74	265	97	513	69	60	78	32	6070	88
MIN	55	57	56	58	62	61	50	33	31	26	26	58
AC-FT	3840	3610	3730	4680	3820	5600	3600	2700	2260	1740	15860	4000
CFSM	.22	.21	.21	.26	.24	.32	.21	.15	.13	.10	.90	.23
IN.	.25	.24	.24	.30	.25	.36	.23	.18	.15	.11	1.03	.26

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1998, BY WATER YEAR (WY)

MEAN	105	60.8	72.6	61.1	62.9	63.8	77.1	87.8	83.9	79.9	112	72.3
MAX	677	114	322	151	213	257	570	286	551	956	992	312
(WY)	1986	1975	1985	1968	1992	1992	1977	1994	1987	1987	1978	1980
MIN	33.4	34.0	35.3	31.1	30.4	28.8	28.6	21.1	17.0	14.9	14.6	17.1
(WY)	1966	1966	1966	1966	1966	1966	1984	1984	1984	1984	1984	1984

08165500 GUADALUPE RIVER AT HUNT, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1965 - 1998	
ANNUAL TOTAL	37216		27955			
ANNUAL MEAN	102		76.6		78.9	
HIGHEST ANNUAL MEAN					223	1987
LOWEST ANNUAL MEAN					27.6	1984
HIGHEST DAILY MEAN	4770	Jun 22	6070	Aug 23	22200	Jul 17 1987
LOWEST DAILY MEAN	35	Feb 19	26	Jul 23	8.2	Jul 17 1984
ANNUAL SEVEN-DAY MINIMUM	39	Feb 4	26	Jul 23	9.4	Jul 12 1984
INSTANTANEOUS PEAK FLOW			24300	Aug 23	108000	Jul 17 1987
INSTANTANEOUS PEAK STAGE			17.57	Aug 23	28.38	Jul 17 1987
ANNUAL RUNOFF (AC-FT)	73820		55450		57130	
ANNUAL RUNOFF (CFSM)	.35		.27		.27	
ANNUAL RUNOFF (INCHES)	4.81		3.61		3.72	
10 PERCENT EXCEEDS	122		74		97	
50 PERCENT EXCEEDS	69		60		48	
90 PERCENT EXCEEDS	43		30		28	



08166200 GUADALUPE RIVER AT KERRVILLE, TX

LOCATION.--Lat 30°03'11", long 99°09'47", Kerr County, Hydrologic Unit 12100201, on left bank 300 ft below left end of Kerrville Dam, 1.0 mi upstream from mouth of Town Creek, and 1.4 mi upstream from State Highway 16 on Guadalupe Street at Guadalupe Park in Kerrville, Texas.

DRAINAGE AREA.--510 mi^2.

PERIOD OF RECORD.--Jul 1986 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,601.00 ft above sea level. Prior to Apr 4, 1989, at site 300 ft upstream, and on opposite bank at datum 1.0 ft lower. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in 1986, at least 10% of contibuting drainage area has been regulated by Kerrville Dam. Numerous diversions for irrigation above station, amounts unknown.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum estimated discharge, 196,000 ft^3/s Jul 2, 1932 (estimated gage height, 39 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	107	106	114	124	191	139	161	100	88	57	42	146
2	99	103	123	124	157	137	155	101	86	55	44	134
3	91	104	123	125	144	134	153	96	87	53	46	127
4	87	104	122	127	137	136	153	102	80	56	45	121
5	86	108	124	127	141	132	149	102	79	59	50	114
6	101	109	124	651	135	131	148	105	77	56	63	110
7	107	106	124	421	131	132	150	103	76	53	62	107
8	108	105	126	232	128	126	154	97	79	50	61	102
9	117	107	114	186	127	122	149	87	76	50	59	100
10	116	119	53	166	151	120	148	90	78	51	54	96
11	157	117	44	156	140	122	139	88	206	49	49	100
12	167	127	90	150	133	124	136	86	164	45	48	107
13	147	130	108	149	131	127	134	85	116	45	47	108
14	136	124	111	146	132	140	132	79	98	48	59	103
15	129	124	114	137	133	152	139	79	85	52	73	96
16	124	124	115	133	137	1740	142	83	79	57	72	101
17	121	121	114	135	132	477	132	87	76	56	70	115
18	117	117	113	132	128	321	124	86	72	53	76	108
19	118	116	114	129	129	266	123	88	71	54	76	110
20	116	116	160	128	128	230	123	87	70	47	70	101
21	114	114	180	129	154	213	121	80	64	47	69	96
22	113	114	151	128	227	204	113	75	62	44	112	93
23	111	116	147	126	181	197	107	80	60	44	3960	89
24	111	116	147	124	162	191	108	81	58	44	901	89
25	110	116	141	124	156	184	108	83	57	43	311	86
26	102	116	139	123	152	180	111	106	56	40	234	89
27	103	115	135	121	146	180	112	138	56	39	194	90
28	104	115	127	119	142	172	108	129	55	41	173	86
29	105	118	122	122	---	169	107	108	54	43	156	83
30	108	114	124	124	---	170	104	96	57	41	143	83
31	109	---	125	181	---	167	---	90	---	42	145	---
TOTAL	3541	3441	3768	5099	4085	7035	3943	2897	2422	1514	7564	3090
MEAN	114	115	122	164	146	227	131	93.5	80.7	48.8	244	103
MAX	167	130	180	651	227	1740	161	138	206	59	3960	146
MIN	86	103	44	119	127	120	104	75	54	39	42	83
AC-FT	7020	6830	7470	10110	8100	13950	7820	5750	4800	3000	15000	6130
CFSM	.22	.22	.24	.32	.29	.44	.26	.18	.16	.10	.48	.20
IN.	.26	.25	.27	.37	.30	.51	.29	.21	.18	.11	.55	.23

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

MEAN	137	110	150	126	162	170	132	181	240	237	118	123
MAX	442	180	572	282	555	547	329	313	1089	1572	281	256
(WY)	1997	1987	1992	1992	1992	1992	1992	1994	1987	1987	1987	1986
MIN	64.8	74.1	64.1	56.6	59.4	68.6	66.6	55.6	40.1	27.3	34.1	38.5
(WY)	1990	1994	1990	1996	1996	1996	1991	1996	1996	1996	1996	1989

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1986 - 1998	
ANNUAL TOTAL	87318		48399			
ANNUAL MEAN	239		133		158	
HIGHEST ANNUAL MEAN					399	1987
LOWEST ANNUAL MEAN					63.6	1996
HIGHEST DAILY MEAN	11300	Jun 22	3960	Aug 23	36100	Jul 17 1987
LOWEST DAILY MEAN	44	Dec 11	39	Jul 27	17	Aug 7 1996
ANNUAL SEVEN-DAY MINIMUM	82	Jan 27	41	Jul 26	19	Aug 4 1996
INSTANTANEOUS PEAK FLOW			15700	Aug 23	141000	Jul 17 1987
INSTANTANEOUS PEAK STAGE			9.81	Aug 23	37.72	Jul 17 1987
ANNUAL RUNOFF (AC-FT)	173200		96000		114500	
ANNUAL RUNOFF (CFSM)	.47		.26		.31	
ANNUAL RUNOFF (INCHES)	6.37		3.53		4.21	
10 PERCENT EXCEEDS	306		161		236	
50 PERCENT EXCEEDS	155		114		94	
90 PERCENT EXCEEDS	91		55		48	

08167000 GUADALUPE RIVER AT COMFORT, TX

LOCATION.--Lat 29°58'10", long 98°53'33", Kendall County, Hydrologic Unit 12100201, on right bank at downstream side of southbound bridge on Interstate Highway 10 at Comfort, 0.5 mi downstream from Cypress Creek, and at mile 396.2.

DRAINAGE AREA.--839 mi^2.

PERIOD OF RECORD.--May 1939 to current year.

REVISED RECORDS.--WSP 1632: 1958. WSP 1732: 1939(M). WSP 2123: Drainage area, 1944(M), 1952(M), 1957(M), 1960(M).

GAGE.--Water-stage recorder. Datum of gage is 1,369.83 ft above sea level. Prior to Nov 27, 1939, nonrecording gage. Nov 27, 1939, to Jun 2, 1980, water-stage recorder at site 0.4 mi upstream at datum 2.22 ft higher. Jun 2, 1980, to Sep 30, 1986, at present site at datum 2.00 ft higher. Satellite telemeter at station.

REMARKS.--Records fair. Since 1956, at least 10% of contributing drainage area has been regulated by Kerrville Dam. There are many small diversions above station for irrigation.

AVERAGE DISCHARGE PRIOR TO REGULATION:--17 years (water years 1939-55) prior to regulation by Kerrville Dam, 127 ft^3/s (92,340 arce-ft/yr).

EXYREMES FOR PERIOD PRIOR TO REGULATION (water years 1939-1955).-- Maximum discharge 74,200 ft^3/s May 26, 1944 (gage height 29.40 ft); no flow at times 1952-55.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jul 1869 reached a stage of 42.3 ft, present datum, from report by U.S. Army Corps of Engineers. Flood of Jul 1, 1932, reached a stage of 38.4 ft, from floodmark, and from information by Texas Department of Transportation. Flood of Jul 16, 1900, reached about the same stage as that of Jul 1, 1932, from information by local residents. All stages are at site and datum then in use. Maximum stage since at least 1848, that of Aug 2, 1978.

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	187	184	161	165	364	253	345	182	120	82	45	179
2	184	175	161	165	282	251	336	178	114	80	46	161
3	183	175	174	168	246	247	324	178	109	79	48	151
4	183	174	170	169	230	246	315	175	106	76	48	145
5	180	172	169	169	230	247	310	177	107	81	48	142
6	182	175	162	335	231	246	304	178	105	79	69	132
7	211	173	161	841	218	246	307	176	104	75	66	129
8	220	170	164	411	211	249	296	167	105	73	65	128
9	227	169	161	316	207	233	283	162	104	68	64	127
10	264	184	150	270	242	228	279	153	104	67	62	120
11	287	184	119	247	244	227	274	151	233	67	59	123
12	365	200	110	231	224	227	262	147	270	66	54	133
13	329	209	133	226	213	233	259	144	188	63	53	134
14	273	201	143	221	220	259	254	146	154	60	56	133
15	250	191	145	214	223	284	251	147	132	63	66	127
16	234	187	147	207	235	3920	255	143	116	63	71	116
17	225	186	148	198	234	1360	246	146	111	65	74	128
18	218	183	147	196	217	830	237	147	107	62	74	133
19	212	177	146	196	213	691	230	142	102	60	76	129
20	205	176	166	192	212	581	228	141	99	60	74	128
21	203	175	244	193	215	529	223	138	97	57	75	122
22	201	173	207	192	354	493	216	132	93	55	152	118
23	200	170	197	190	325	465	208	129	91	52	e3600	115
24	201	170	226	187	278	452	198	128	88	53	e2550	112
25	198	166	195	186	261	426	193	124	85	47	556	111
26	191	167	187	187	362	408	199	133	84	49	360	110
27	185	167	185	183	277	403	202	162	82	51	272	111
28	184	167	179	182	261	388	196	188	82	51	227	111
29	181	164	172	181	---	383	190	156	82	48	198	109
30	182	162	164	181	---	381	187	141	82	49	179	106
31	184	---	164	296	---	376	---	126	---	46	165	---
TOTAL	6729	5326	5157	7295	7029	15762	7607	4737	3456	1947	9552	3823
MEAN	217	178	166	235	251	508	254	153	115	62.8	308	127
MAX	365	209	244	841	364	3920	345	188	270	82	3600	179
MIN	180	162	110	165	207	227	187	124	82	46	45	106
AC-FT	13350	10560	10230	14470	13940	31260	15090	9400	6850	3860	18950	7580

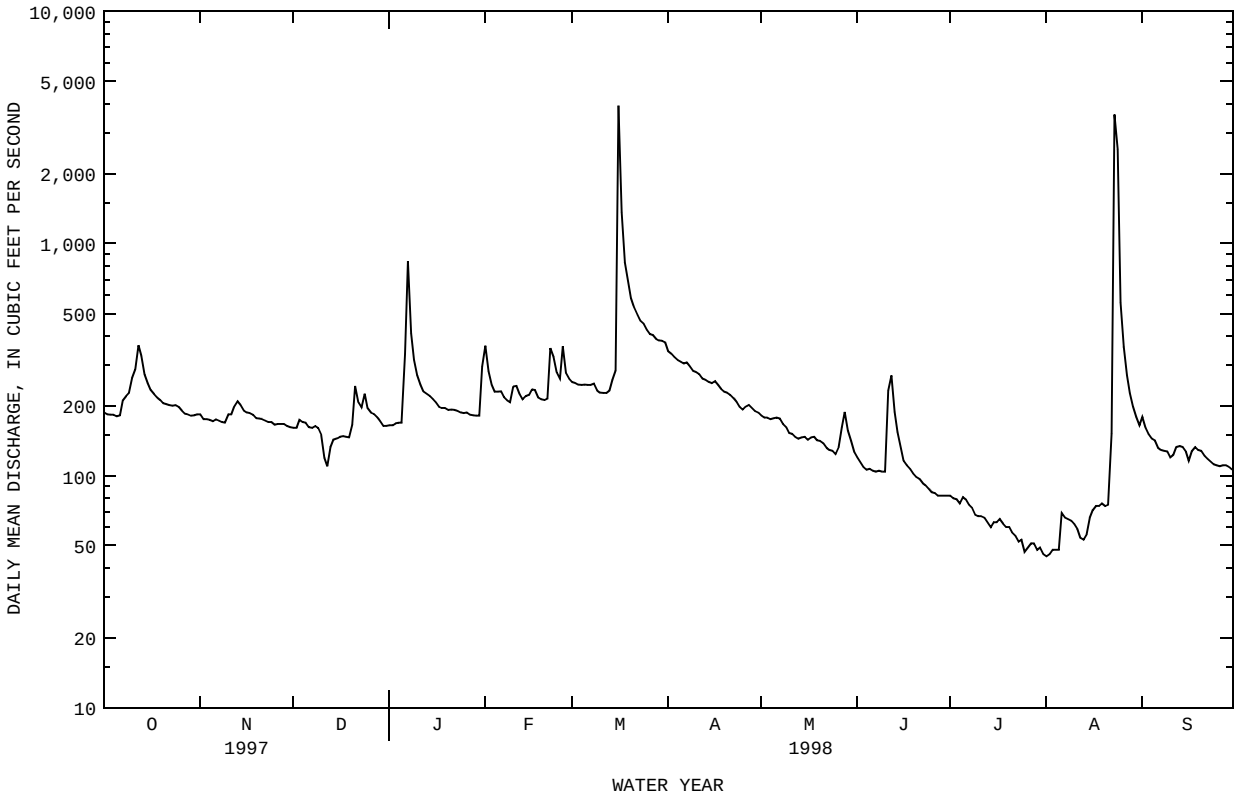
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1998z, BY WATER YEAR (WY)

MEAN	330	174	236	200	248	243	256	306	349	201	294	177
MAX	2417	518	2700	987	1728	1559	1598	1122	2820	1974	4782	575
(WY)	1986	1975	1992	1992	1992	1992	1977	1975	1987	1987	1978	1978
MIN	.000	3.63	10.5	16.8	24.4	16.6	15.5	14.9	.097	.000	2.66	5.90
(WY)	1957	1957	1957	1957	1957	1956	1956	1956	1956	1956	1963	1956

08167000 GUADALUPE RIVER AT COMFORT, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1956 - 1998z	
ANNUAL TOTAL	212089		78420			
ANNUAL MEAN	581		215		251	
HIGHEST ANNUAL MEAN					894	1992
LOWEST ANNUAL MEAN					14.5	1956
HIGHEST DAILY MEAN	37500	Jun 22	3920	Mar 16	74200	Aug 2 1978
LOWEST DAILY MEAN	110	Dec 12	45	Aug 1	.00	Jun 5 1956
ANNUAL SEVEN-DAY MINIMUM	135	Dec 11	47	Jul 29	.00	Jun 5 1956
INSTANTANEOUS PEAK FLOW			20000	Aug 23	240000	Aug 2 1978
INSTANTANEOUS PEAK STAGE			16.64	Aug 23	40.90	Aug 2 1978
ANNUAL RUNOFF (AC-FT)	420700		155500		182100	
10 PERCENT EXCEEDS	765		305		408	
50 PERCENT EXCEEDS	283		177		130	
90 PERCENT EXCEEDS	148		68		33	

e Estimated
z Period of regulated streamflow.



08167500 GUADALUPE RIVER NEAR SPRING BRANCH, TX
(Hydrologic index station)

LOCATION.--Lat 29°51'37", long 98°23'00", Comal County, Hydrologic Unit 12100201, at downstream side of bridge on Ranch Road 311, 1.9 mi southeast of Spring Branch Post Office, 7.5 mi downstream from Curry Creek, and at mile 334.4.

DRAINAGE AREA.--1,315 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jun 1922 to current year.
Water-quality records.--Chemical and biochemical analyses: Oct 1980 to Sep 1982, Oct 1989 to Aug 1995.

REVISED RECORDS.--WSP 1562: 1923-24, 1926, 1927-28(M), 1929, 1930(M). WSP 2123: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 948.10 ft above sea level. Prior to Jan 14, 1981, at site 220 ft downstream at same datum. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since 1956, at least 10% of contributing drainage area has been regulated by Kerrville Dam. Several small diversions above station for irrigation.

AVERAGE DISCHARGE PRIOR TO REGULATION:--34 years (water years 1922-55) prior to regulation by Kerrville Dam, 249 ft^3/s (180,400 arce-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1922-55).--Maximum discharge 121,000 ft^3/s July 3, 1932 (gage height 42.10 ft); no flow at times 1951-52, 1954-55.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1859, about 53 ft in 1869; flood in Jul 1900 reached a stage of about 49 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	e215	221	210	233	1110	535	963	358	196	115	48	219
2	e210	215	209	235	617	517	869	346	185	112	46	214
3	e204	210	212	234	501	500	826	336	174	109	45	197
4	e204	210	221	236	439	494	781	329	166	124	46	182
5	e207	210	219	237	408	490	758	326	162	118	47	180
6	e207	208	217	263	387	479	741	325	163	109	53	167
7	e229	209	214	430	368	470	739	319	160	111	100	154
8	e246	209	214	665	348	461	727	310	156	105	83	145
9	e282	209	215	460	335	440	705	296	157	100	75	140
10	e356	210	211	374	336	417	654	280	153	96	71	138
11	e454	219	204	329	360	403	636	265	189	90	69	143
12	e413	252	169	305	369	392	622	259	309	83	66	153
13	e332	266	150	286	338	395	608	253	369	79	61	172
14	e300	265	156	275	352	418	589	248	287	78	58	185
15	e290	257	185	266	503	454	573	245	235	76	57	190
16	e280	240	187	258	488	11000	567	234	204	73	59	186
17	e270	236	188	244	494	5610	546	227	179	75	74	167
18	e260	234	189	234	457	2560	526	226	165	76	81	160
19	e260	232	189	229	436	1950	506	225	157	74	83	173
20	e250	228	224	229	416	1650	485	218	149	72	81	166
21	e249	225	438	227	446	1450	470	212	141	69	85	163
22	e243	223	359	228	927	1330	453	205	138	66	135	155
23	239	218	315	224	678	1220	440	200	133	62	501	148
24	240	217	292	220	619	1130	422	193	126	59	4130	141
25	242	215	313	216	578	1060	402	194	121	55	1440	137
26	230	215	287	216	627	979	398	194	119	54	655	133
27	222	216	279	215	652	925	411	214	114	52	461	131
28	220	214	272	223	573	895	396	238	112	50	353	130
29	221	208	260	221	---	859	382	276	115	51	294	130
30	222	208	252	220	---	843	369	246	116	51	258	132
31	224	---	239	1090	---	1600	---	221	---	49	231	---
TOTAL	8021	6699	7289	9322	14162	41926	17564	8018	5150	2493	9846	4831
MEAN	259	223	235	301	506	1352	585	259	172	80.4	318	161
MAX	454	266	438	1090	1110	11000	963	358	369	124	4130	219
MIN	204	208	150	215	335	392	369	193	112	49	45	130
AC-FT	15910	13290	14460	18490	28090	83160	34840	15900	10220	4940	19530	9580

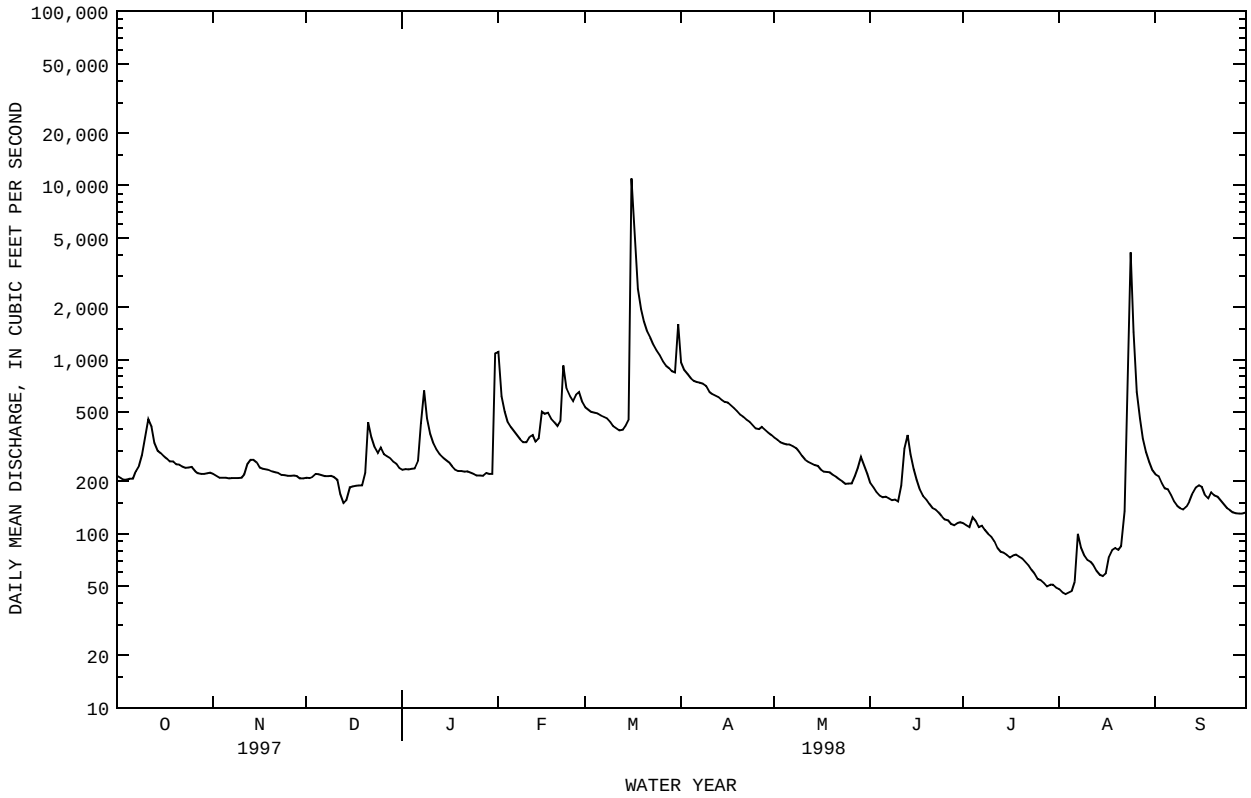
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1998z, BY WATER YEAR (WY)

MEAN	454	284	398	362	464	452	464	586	751	357	368	266
MAX	1584	939	4927	1903	4164	3306	2417	2216	6329	2626	4980	941
(WY)	1982	1975	1992	1992	1992	1992	1977	1992	1987	1987	1978	1978
MIN	6.77	11.1	6.48	10.9	29.3	16.8	6.11	19.3	.000	.000	3.24	6.85
(WY)	1957	1957	1957	1957	1956	1956	1956	1956	1956	1956	1963	1956

08167500 GUADALUPE RIVER NEAR SPRING BRANCH, TX--Continued
(Hydrologic index station)

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1956 - 1998z	
ANNUAL TOTAL	396463		135321			
ANNUAL MEAN	1086		371		434	
HIGHEST ANNUAL MEAN					1819	1992
LOWEST ANNUAL MEAN					13.3	1956
HIGHEST DAILY MEAN	69400	Jun 22	11000	Mar 16	76500	Aug 3 1978
LOWEST DAILY MEAN	150	Dec 13	45	Aug 3	.00	May 29 1956
ANNUAL SEVEN-DAY MINIMUM	161	Jan 29	47	Jul 30	.00	May 29 1956
INSTANTANEOUS PEAK FLOW			15500	Mar 16	160000	Aug 3 1978
INSTANTANEOUS PEAK STAGE			18.18	Mar 16	45.25	Aug 3 1978
ANNUAL RUNOFF (AC-FT)	786400		268400		314200	
10 PERCENT EXCEEDS	1730		631		771	
50 PERCENT EXCEEDS	413		228		198	
90 PERCENT EXCEEDS	188		82		48	

e Estimated
z Period of regulated streamflow.



08167500 GUADALUPE RIVER NEAR SPRING BRANCH, TX

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1980 to September 1982, October 1989 to August 1995, April 1996 to April 1998. Sediment analyses: April 1996 to April 1998.

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 (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)
OCT										
24...	0945	243	500	8.2	19.0	7.8	88	230	22	61
NOV										
18...	1000	234	500	8.4	12.0	10.4	100	240	17	62
DEC										
11...	0930	210	500	8.6	10.0	10.1	92	240	20	64
JAN										
15...	0845	267	482	8.3	12.0	9.4	91	240	15	66
FEB										
25...	1000	575	495	8.0	19.0	8.7	99	240	25	69
MAR										
16-17	0345	12200	--	--	--	--	--	110	12	34
27...	0930	923	520	8.1	19.0	8.6	97	250	17	71
APR										
20...	1100	484	520	8.1	20.0	8.6	98	250	23	69

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS 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)
OCT										
24...	19	11	.3	10	1.5	210	20	18	.3	9.6
NOV										
18...	20	12	.3	10	1.5	220	19	18	.2	11
DEC										
11...	20	12	.3	10	1.5	220	20	19	.2	11
JAN										
15...	19	9.8	.3	8	1.5	230	18	16	.3	11
FEB										
25...	18	9.4	.3	8	1.3	220	19	14	.3	9.5
MAR										
16-17	6.0	3.2	.1	6	2.3	99	6.8	5.0	.1	7.5
27...	18	8.5	.2	7	1.5	240	19	13	.3	10
APR										
20...	20	10	.3	8	1.4	230	20	16	.3	10

DATE	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,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)
OCT										
24...	287	268	--	<.01	.79	<.02	--	<.2	<.2	.02
NOV										
18...	299	276	--	<.01	.85	.02	--	<.1	<.1	<.01
DEC										
11...	286	303	--	<.01	.85	<.02	--	<.1	<.1	<.01
JAN										
15...	278	273	--	<.01	.88	<.02	--	<.1	<.1	<.01
FEB										
25...	290	278	--	<.01	.57	<.02	.68	<.1	.1	<.01
MAR										
16-17	140	492	.239	.03	.27	<.02	7.6	.2	7.3	1.4
27...	304	289	--	<.01	.79	<.02	--	<.1	<.1	<.01
APR										
20...	302	282	--	<.01	.56	.33	--	<.1	<.1	.02

08167500 GUADALUPE RIVER NEAR SPRING BRANCH, TX--Continued

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

DATE	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT									
24...	<.01	<.01	--	1.4	.2	17	26	<3	<1
NOV									
18...	<.01	<.01	--	1.2	<.2	9.5	15	<3	<1
DEC									
11...	<.01	.01	.04	1.2	<.2	12	22	<3	<1
JAN									
15...	<.01	<.01	--	1.5	.2	32	44	<10	<4
FEB									
25...	<.01	.02	.07	1.4	.5	79	51	<10	<4
MAR									
16-17	<.01	.01	.03	5.2	>5.0	53900	1640	<10	<4
27...	<.01	.01	.03	1.5	.2	52	21	<10	<4
APR									
20...	<.01	.01	.03	1.2	.2	7.8	6	18	<4

08167700 CANYON LAKE NEAR NEW BRAUNFELS, TX

LOCATION.--Lat 29°52'07", long 98°11'55", Comal County, Hydrologic Unit 12100201, in intake structure of Canyon Dam on Guadalupe River, 12 mi northwest of New Braunfels, and at mile 303.0.

DRAINAGE AREA.--1,432 mi^2.

PERIOD OF RECORD.--Jul 1962 to current year. Prior to Oct 1970, published as Canyon Reservoir.
Water-quality records.--Chemical and biochemical analyses: Oct 1980 to Sep 1982, Oct 1989 to Aug 1995.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by U.S. Army Corps of Engineers). Prior to Sep 24, 1964, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 6,830 ft long, consisting of the main dam 4,410 ft long, an earthen dike 210 ft long, a 1,260-foot-long uncontrolled broad-crested-type spillway, and a 950-foot concrete and earthen nonoverflow section. Deliberate impoundment began Jun 16, 1964, and main part of dam was completed in Aug 1964. The flood-control outlet works consist of a 10.0-foot-diameter conduit controlled by two 5.7 by 10.0-foot hydraulically operated slide gates. The lake was built for water conservation and flood control. Capacity table beginning Oct 1, 1974, is based on a sedimentation survey of Aug 1972. Small diversions above the lake for irrigation. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	974.0
Crest of spillway	943.0
Top of conservation pool	909.0
Lowest gated outlet (invert)	775.0

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, 732,600 acre-ft, Jun 19, 1987 (elevation, 942.68 ft); minimum observed since conservation pool first reached in Apr 1968, 311,200 acre-ft, Nov 24, 1984 (elevation, 899.85 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 411,400 acre-ft, Mar 18 (elevation, 912.48 ft); minimum daily contents, 365,000 acre-ft, Aug 16 (elevation, 906.91 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	378700	382200	382200	383300	388800	383800	382500	381200	379500	372800	367400	379000
2	378600	382000	382200	383200	389700	383100	382200	381300	379000	372500	367300	378900
3	378600	381900	382200	383200	389800	382200	382700	381500	378600	373100	367000	378600
4	378600	381800	382000	383200	389600	381800	382700	381400	378200	374400	366800	378600
5	378600	381800	381900	383200	389300	382000	382700	381500	378400	374000	366800	378600
6	378800	381700	381700	385100	388100	382000	382800	381700	377800	373800	366900	378200
7	378900	381600	381800	385100	387000	382300	383000	381800	377300	373700	366800	377900
8	379800	381500	381600	385100	385700	382200	383000	381800	376900	373500	366600	377600
9	380500	381700	381500	384100	384500	381800	382800	381800	376600	373300	366300	377100
10	381400	381600	381400	383000	384000	381500	382600	381700	376300	373200	366200	376800
11	382200	381900	381200	381800	383600	381200	382600	381500	376800	373000	365900	377600
12	383000	382300	380900	381200	383600	380900	382700	381300	376600	372900	365700	377300
13	383200	382500	380700	380700	383100	380800	382800	381300	376800	372800	365500	376900
14	383400	382700	380400	380700	383500	381200	382800	381300	376800	372500	365400	376900
15	383600	382700	380300	380800	383600	381800	382800	381400	376600	372400	365200	376700
16	383700	382700	380200	380900	384200	403000	382700	381400	376300	372200	365000	378700
17	383800	382700	380200	381100	384400	411000	382400	381400	376200	372000	365500	378600
18	384000	382700	380100	381300	384400	411400	382200	381300	376000	371700	365400	378400
19	384000	382700	380100	381300	383900	410600	382100	381300	375800	371400	365300	378200
20	384100	382800	382100	381500	383000	409100	381800	381300	375500	371200	365100	378100
21	384200	382800	382700	381800	384100	407000	381500	381200	375200	370900	365000	377900
22	384200	382900	383100	381800	385200	404900	381300	380900	375000	370600	367400	377600
23	384400	382900	383600	381800	385400	402400	381300	380700	374700	370300	368500	377200
24	384200	382800	383700	381800	384900	399900	381100	380400	374400	370100	375500	376900
25	384100	382800	384100	381900	384900	397300	381100	380100	374200	369800	378100	376600
26	383400	382800	384500	382000	384700	395100	381200	380000	374000	369500	378800	376300
27	383000	382800	384200	382000	384400	393300	381300	380300	373700	369100	379100	376000
28	382600	382800	384100	382100	383800	390600	381300	380200	373300	368800	379300	375600
29	382300	382700	383800	382200	---	388100	381300	380200	373300	368500	379400	375300
30	382200	382500	383700	382300	---	386100	381300	379900	373100	368100	379200	375000
31	382300	---	383500	386100	---	384700	---	379800	---	367900	379200	---
MAX	384400	382900	384500	386100	389800	411400	383000	381800	379500	374400	379400	379000
MIN	378600	381500	380100	380700	383000	380800	381100	379800	373100	367900	365000	375000
(+)	909.04	909.06	909.18	909.50	909.22	909.33	908.92	908.73	907.91	907.27	908.66	908.14
(@)	+3700	+200	+1000	+2600	-2300	+900	-3400	-1500	-6700	-5200	+11300	-4200

CAL YR 1997 MAX 668900 MIN 378600 (@) 0
WTR YR 1998 MAX 411400 MIN 365000 (@) -3600

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

08167800 GUADALUPE RIVER AT SATTLER, TX

LOCATION.--Lat 29°51'32", long 98°10'47", Comal County, Hydrologic Unit 12100202, on right bank 200 ft upstream from Horseshoe Falls, 0.8 mi north of Sattler, 1.8 mi downstream from Canyon Dam, 2.3 mi upstream from Heiser Hollow, 11.2 mi north of New Braunfels, and at mile 301.2.

DRAINAGE AREA.--1,436 mi^2, of which 1,432 mi^2 is above Canyon Dam.

PERIOD OF RECORD.--Mar 1960 to current year.
Water-quality records.--Chemical and biochemical analyses: Oct 1980 to Sep 1982, Oct 1989 to Aug 1995. Water temperature: Jun 1984 to Sep 1987.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 742.24 ft above sea level (U.S. Army Corps of Engineers bench mark). Satellite telemeter at station.

REMARKS.--Records good. Since 1960, at least 10% of contributing drainage area has been regulated by Kerrville Dam. Since Jul 21, 1962, flow completely regulated by Canyon Lake (station 08167700) 1.8 mi upstream. Small diversions above station for irrigation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Jul 1869 (stage unknown) has not been exceeded since that date; flood in Jul 1900 (stage unknown) exceeded 39 ft; maximum stage since at least 1904, 39 ft in Jul 1932 and Jun 1935, 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	183	207	269	345	223	642	1920	338	320	204	120	296
2	179	207	270	345	318	944	1000	335	316	203	120	295
3	179	208	271	346	555	931	635	336	321	306	120	295
4	180	209	271	345	555	764	693	328	322	317	120	291
5	180	209	271	345	770	550	722	309	323	309	121	294
6	182	209	271	351	936	551	670	287	322	161	121	291
7	182	202	271	465	936	554	655	285	322	134	121	290
8	177	184	270	747	936	554	699	284	320	131	120	294
9	179	184	260	912	936	551	720	300	316	128	120	296
10	180	183	240	933	742	550	679	300	305	126	120	296
11	180	185	237	933	549	550	555	301	296	126	117	301
12	180	185	237	692	549	550	556	291	298	126	118	299
13	179	184	237	542	549	554	556	266	303	127	118	298
14	180	184	237	321	553	555	558	240	304	127	118	295
15	181	184	237	210	555	557	560	228	269	126	118	292
16	181	184	214	209	556	767	558	229	232	125	118	322
17	181	185	192	209	555	1980	558	230	233	125	119	314
18	181	187	188	209	555	2370	558	231	223	125	118	306
19	180	187	189	211	753	2370	559	222	209	125	118	301
20	180	187	196	209	825	2350	559	208	208	123	118	299
21	180	187	191	209	553	2350	559	213	208	120	118	288
22	182	e189	189	209	554	2330	515	284	206	120	127	302
23	183	e189	187	209	767	2330	428	322	204	120	120	302
24	265	217	188	209	944	2330	415	322	205	121	278	296
25	345	267	188	209	946	2330	416	314	204	121	542	297
26	345	268	275	210	947	2090	416	258	200	123	404	296
27	345	268	341	209	946	1860	414	263	200	120	286	296
28	345	268	345	209	946	2110	379	259	200	120	301	293
29	345	268	345	138	---	2110	345	286	202	121	301	288
30	265	267	345	209	---	2120	341	322	204	121	300	289
31	208	---	345	236	---	2220	---	322	---	121	299	---
TOTAL	6612	6242	7767	11135	19509	43374	18198	8713	7795	4602	5459	8912
MEAN	213	208	251	359	697	1399	607	281	260	148	176	297
MAX	345	268	345	933	947	2370	1920	338	323	317	542	322
MIN	177	183	187	138	223	550	341	208	200	120	117	288
AC-FT	13110	12380	15410	22090	38700	86030	36100	17280	15460	9130	10830	17680

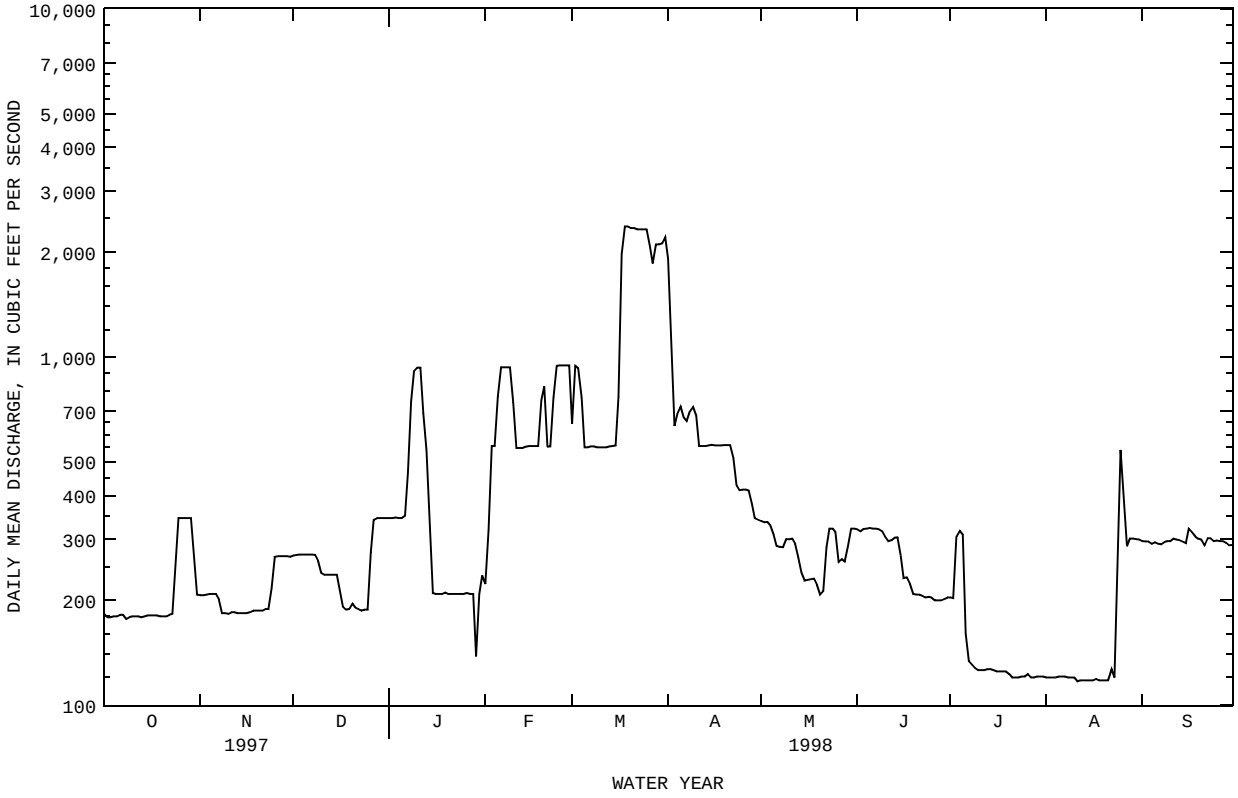
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1998, BY WATER YEAR (WY)

MEAN	337	333	299	444	440	506	515	493	639	619	475	294
MAX	1463	1177	1138	4437	2089	3949	3705	2318	2783	5309	3854	1306
(WY)	1961	1974	1987	1992	1992	1992	1992	1992	1992	1997	1978	1987
MIN	43.1	66.2	41.4	60.4	13.4	71.7	45.6	47.1	36.1	22.1	7.32	10.5
(WY)	1964	1976	1966	1964	1965	1988	1971	1971	1963	1963	1962	1963

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1960 - 1998	
ANNUAL TOTAL	421411		148318			
ANNUAL MEAN	1155		406		453	
HIGHEST ANNUAL MEAN					1900	1992
LOWEST ANNUAL MEAN					69.4	1963
HIGHEST DAILY MEAN	5600	Jun 28	2370	Mar 18	10000	Oct 29 1960
LOWEST DAILY MEAN	121	Feb 5	117	Aug 11	.00	Jul 31 1962
ANNUAL SEVEN-DAY MINIMUM	129	Feb 5	118	Aug 11	.00	Jul 31 1962
INSTANTANEOUS PEAK FLOW			2380	Mar 17	20800	Oct 29 1960
INSTANTANEOUS PEAK STAGE			7.10	Mar 17	12.20	Oct 29 1960
ANNUAL RUNOFF (AC-FT)	835900		294200		327900	
10 PERCENT EXCEEDS	5030		757		800	
50 PERCENT EXCEEDS	467		285		215	
90 PERCENT EXCEEDS	179		125		70	

e Estimated

08167800 GUADALUPE RIVER AT SATTLER, TX--Continued



08168500 GUADALUPE RIVER ABOVE COMAL RIVER AT NEW BRAUNFELS, TX

LOCATION.--Lat 29°42'53", long 98°06'35", Comal County, Hydrologic Unit 12100202, on right bank at New Braunfels, 1.1 mi upstream from Comal River, 21.9 mi downstream from Canyon Lake, and at mile 281.1.

DRAINAGE AREA.--1,518 mi^2, of which 1,432 mi^2 is above Canyon Dam.

PERIOD OF RECORD.--Jan 1928 to current year.

REVISED RECORDS.--WSP 898: 1935. WSP 1562: 1932. WSP 2123: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 586.65 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since 1956, at least 10% of contributing drainage area has been regulated by Kerrville Dam. Since Jul 21, 1962, flow completely regulated by Canyon Lake 21.9 mi upstream. Small diversions for irrigation below above this station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--28 years (water years 1928-55) prior to regulation by Kerrville Dam, 344 ft^3/s (249,300 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1928-55).--Maximum discharge, 101,000 ft^3/s Jun 15, 1935 (gage height, 32.95 ft); minimum, 2.2 ft^3/s Sep 27-29, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1845, 38 ft Jul 8, 1869, and in Dec 1913, 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	236	250	276	379	453	875	2130	400	327	210	135	329
2	230	246	276	377	389	1100	1390	400	326	211	133	313
3	230	250	284	371	732	1130	854	391	322	275	133	313
4	230	249	276	371	748	1070	872	385	327	409	134	310
5	230	250	276	371	849	744	927	377	327	338	141	309
6	232	241	276	454	1120	739	908	335	329	260	141	307
7	239	241	278	590	1120	741	832	327	327	166	146	306
8	236	224	271	822	1110	736	883	320	327	158	139	301
9	242	220	270	1080	1110	730	911	330	320	154	136	307
10	260	226	250	1090	1020	724	927	327	317	151	134	307
11	257	222	241	1090	712	721	755	329	301	148	133	344
12	259	238	241	956	708	721	740	332	300	148	132	341
13	253	230	241	685	710	729	733	302	302	146	133	333
14	242	226	241	557	722	739	730	293	309	146	136	332
15	241	227	241	279	740	740	728	258	302	144	139	314
16	241	221	238	273	778	894	720	260	246	143	133	528
17	241	220	208	270	783	1970	711	261	242	142	138	649
18	238	220	201	267	769	2430	711	258	240	142	141	510
19	235	220	201	264	852	2390	711	258	225	142	138	459
20	235	220	262	259	1130	2380	711	240	220	139	136	424
21	235	220	337	257	777	2360	711	240	219	139	135	393
22	235	216	275	252	802	2350	690	261	215	139	184	377
23	237	215	261	251	888	2350	557	344	211	139	264	371
24	249	215	248	252	1170	2350	515	342	210	139	220	358
25	397	270	242	248	1170	2340	511	343	211	137	629	363
26	388	281	270	246	1180	2240	511	296	209	137	600	360
27	388	282	379	246	1170	1890	501	286	208	139	335	352
28	387	282	386	246	1160	2150	487	277	206	134	349	346
29	387	282	387	232	---	2150	416	276	213	135	347	339
30	364	277	382	198	---	2140	411	328	211	135	342	334
31	256	---	379	418	---	2190	---	334	---	134	341	---
TOTAL	8330	7181	8594	13651	24872	46813	23194	9710	8049	5279	6477	10929
MEAN	269	239	277	440	888	1510	773	313	268	170	209	364
MAX	397	282	387	1090	1180	2430	2130	400	329	409	629	649
MIN	230	215	201	198	389	721	411	240	206	134	132	301
AC-FT	16520	14240	17050	27080	49330	92850	46010	19260	15970	10470	12850	21680

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1998z, BY WATER YEAR (WY)

MEAN	452	406	370	510	528	587	612	635	743	646	499	354
MAX	1821	1307	1302	4704	2379	4254	3826	2450	2948	5236	3866	1484
(WY)	1961	1974	1987	1992	1992	1992	1992	1992	1992	1997	1978	1987
MIN	9.99	11.8	21.8	12.3	31.2	19.6	9.35	13.7	.67	.055	6.64	4.87
(WY)	1957	1956	1957	1957	1956	1956	1956	1956	1956	1956	1956	1956

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1956 - 1998z	
ANNUAL TOTAL	437270		173079			
ANNUAL MEAN	1198		474		528	
HIGHEST ANNUAL MEAN					2057	1992
LOWEST ANNUAL MEAN					13.8	1956
HIGHEST DAILY MEAN	5850	Jun 28	2430	Mar 18	29800	May 3 1958
LOWEST DAILY MEAN	145	Feb 6	132	Aug 12	.00	Jul 8 1956
ANNUAL SEVEN-DAY MINIMUM	151	Feb 5	134	Jul 28	.00	Jul 17 1956
INSTANTANEOUS PEAK FLOW			2460	Mar 17	92600	May 12 1972
INSTANTANEOUS PEAK STAGE			4.51	Mar 17	31.65	May 12 1972
ANNUAL RUNOFF (AC-FT)	867300		343300		382800	
10 PERCENT EXCEEDS	4840		927		979	
50 PERCENT EXCEEDS	567		302		287	
90 PERCENT EXCEEDS	205		144		75	

z Period of regulated streamflow.

08168710 COMAL SPRINGS AT NEW BRAUNFELS, TX

LOCATION.--Lat 29°42'21", long 98°07'20", Comal County, Hydrologic Unit 12100202, on right bank 200 ft upstream from San Antonio Street viaduct in New Braunfels, and 1.1 mi upstream from mouth.

DRAINAGE AREA.--Not applicable. This is a springflow station.

PERIOD OF RECORD.--Oct 1929 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 582.80 ft above sea level.

REMARKS.--No estimated daily discharges. The flow from Comal Springs emerges from the Edwards and associated limestones in the Balcones Fault Zone. Flow is mainly from Comal Springs except during local runoff events. Springflow is separated from runoff using computer techniques. Flow is affected at times by cleanup operations by the city of New Braunfels at Landa Park Lake.

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	265	280	290	299	315	329	331	305	236	198	176	247
2	265	280	289	302	319	328	332	305	234	201	173	247
3	267	280	289	303	316	328	331	302	231	207	173	246
4	265	279	289	301	316	330	332	299	228	206	168	248
5	265	279	291	300	319	331	332	296	224	208	175	248
6	265	277	291	305	317	330	330	295	226	210	182	252
7	269	278	294	310	317	332	328	291	224	213	189	249
8	269	277	293	315	319	330	330	287	224	211	191	248
9	272	280	293	314	319	326	330	288	221	208	197	246
10	276	280	296	314	321	323	326	285	218	205	194	244
11	281	284	295	315	318	325	324	277	219	203	191	252
12	280	286	295	312	322	327	327	273	218	203	193	252
13	280	287	296	309	318	327	327	262	222	199	191	256
14	278	283	297	309	321	333	329	264	225	202	195	258
15	277	284	296	308	324	333	322	267	221	202	199	260
16	277	283	296	309	325	337	316	266	217	200	203	263
17	280	284	295	309	326	340	322	265	216	197	206	265
18	281	284	294	311	324	337	322	264	213	196	210	268
19	280	284	295	311	323	338	323	261	210	192	212	267
20	280	284	297	309	323	336	325	258	207	189	215	269
21	279	285	300	308	325	339	322	258	204	189	214	267
22	280	286	302	308	327	336	322	253	204	187	224	267
23	281	286	301	307	329	341	318	253	198	185	228	265
24	281	286	299	311	325	336	315	254	200	183	235	265
25	281	286	299	311	326	337	318	249	196	183	242	266
26	280	286	301	312	330	335	319	245	192	183	243	264
27	282	287	302	310	334	335	319	248	196	181	245	264
28	281	289	301	310	330	336	314	246	194	179	245	264
29	279	289	298	310	---	335	314	242	197	178	247	262
30	279	289	301	309	---	332	308	244	200	180	248	260
31	281	---	296	312	---	328	---	240	---	178	247	---
TOTAL	8556	8502	9171	9573	9028	10310	9708	8342	6415	6056	6451	7729
MEAN	276	283	296	309	322	333	324	269	214	195	208	258
MAX	282	289	302	315	334	341	332	305	236	213	248	269
MIN	265	277	289	299	315	323	308	240	192	178	168	244
AC-FT	16970	16860	18190	18990	17910	20450	19260	16550	12720	12010	12800	15330

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1998, BY WATER YEAR (WY)

MEAN	274	283	292	298	300	299	293	292	285	268	256	260
MAX	465	450	437	430	446	477	474	456	481	465	465	427
(WY)	1974	1974	1974	1974	1992	1992	1992	1992	1992	1992	1992	1992
MIN	.000	21.5	35.6	51.1	49.5	65.4	41.5	27.8	3.67	.000	.000	.000
(WY)	1957	1957	1957	1957	1957	1957	1956	1956	1956	1956	1956	1956

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1930 - 1998	
ANNUAL TOTAL	95268		99841			
ANNUAL MEAN	261		274		283	
HIGHEST ANNUAL MEAN					402	1993
LOWEST ANNUAL MEAN					45.5	1956
HIGHEST DAILY MEAN	322	Jun 26	341	Mar 23	534	Oct 14 1973
LOWEST DAILY MEAN	192	Jan 30	168	Aug 4	.00	Jun 13 1956
ANNUAL SEVEN-DAY MINIMUM	194	Jan 16	175	Jul 30	.00	Jun 13 1956
ANNUAL RUNOFF (AC-FT)	189000		198000		204800	
10 PERCENT EXCEEDS	301		328		376	
50 PERCENT EXCEEDS	269		281		301	
90 PERCENT EXCEEDS	198		199		169	

08169000 COMAL RIVER AT NEW BRAUNFELS, TX

LOCATION.--Lat 29°42'21", long 98°07'20", Comal County, Hydrologic Unit 12100202, on right bank 200 ft upstream from San Antonio Street viaduct in New Braunfels and 1.1 mi upstream from mouth.

DRAINAGE AREA.--130 mi^2. Normal flow of river comes from springs.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1882 to Sep 1932 (discharge measurements and fragmentary daily discharge record), Oct 1932 to current year.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder and concrete control since Oct 1, 1955. Datum of gage is 582.80 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. Since water year 1974 at least 10% of contributing drainage area has been regulated by Landa Park Lake. The flow from Comal Springs emerges from the Edwards and associated limestones in the Balcones Fault Zone. Except during periods of rainfall, flow of river is primarily from Comal Springs about 1.0 mi upstream. No flow from Comal Springs from Jun 13 to Nov 3, 1956. Flow is affected at times by cleanup operations by the city of New Braunfels at Landa Park Lake and at times by discharge from the flood-detention pools of five floodwater-retarding structures with a combined detention capacity of 17,580 acre-ft. These structures control runoff from 74.6 mi^2 above station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--41 years (water years 1933-73), 286 ft^3/s (207,200 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION.--Maximum discharge, 60,800 ft^3/s May 11, 1972 (gage height, 36.55 ft, from floodmark), from rating curve extended above 13,000 ft^3/s on basis of conctracted-opening measurements on Blieders and Dry Comal Creeks and unit rainfall-runoff studies; no flow from Comal Springs from Jun 13 to Nov 3, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood information begins with flood of Jul 8, 1869, which reached a stage of 36.91 ft, from painted and dated marks in old Remmert Brewery 0.5 mi downstream; the flood of Oct 17, 1870, reached a stage of 37.65 ft at same site (probably some backwater from Guadalupe River).

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	265	280	290	299	332	329	331	305	236	198	177	247
2	265	280	289	302	319	328	332	305	234	201	173	247
3	267	280	289	303	316	328	331	302	231	214	173	246
4	265	279	289	301	316	330	332	299	230	310	168	248
5	265	279	291	300	319	331	332	296	224	220	177	248
6	265	277	291	337	317	330	336	295	226	218	190	252
7	269	278	294	344	317	332	328	296	224	213	196	249
8	269	277	293	315	319	330	330	287	224	211	196	248
9	272	280	293	314	319	341	330	288	221	211	197	246
10	286	280	296	314	321	323	326	285	218	205	197	244
11	281	284	295	315	318	338	324	284	219	203	191	284
12	280	291	295	312	322	327	327	279	218	203	193	260
13	280	287	296	309	318	327	327	262	223	199	191	256
14	278	283	297	309	328	333	329	271	225	202	195	289
15	277	284	296	308	324	333	326	267	222	202	199	260
16	277	283	296	309	332	504	316	266	217	202	203	310
17	280	284	295	309	326	358	322	270	216	197	211	288
18	281	284	294	311	324	344	322	264	216	196	210	268
19	280	284	295	311	323	338	323	261	210	196	212	267
20	280	284	340	309	323	336	325	258	213	189	215	269
21	279	285	322	308	340	339	322	258	210	189	214	267
22	280	286	302	308	345	336	322	253	207	187	320	267
23	281	286	301	307	329	341	322	253	198	190	255	265
24	281	286	299	311	325	336	315	254	200	183	244	265
25	281	286	299	311	326	337	318	249	196	187	242	266
26	280	286	309	312	341	335	319	245	192	183	243	264
27	282	287	302	310	334	335	319	248	196	183	245	264
28	281	289	301	310	330	336	314	246	194	179	245	264
29	279	289	298	310	---	335	314	242	205	178	247	262
30	279	289	301	309	---	346	308	244	200	180	248	260
31	281	---	296	337	---	328	---	244	---	178	247	---
TOTAL	8566	8507	9244	9664	9103	10544	9722	8376	6445	6207	6614	7870
MEAN	276	284	298	312	325	340	324	270	215	200	213	262
MAX	286	291	340	344	345	504	336	305	236	310	320	310
MIN	265	277	289	299	316	323	308	242	192	178	168	244
AC-FT	16990	16870	18340	19170	18060	20910	19280	16610	12780	12310	13120	15610

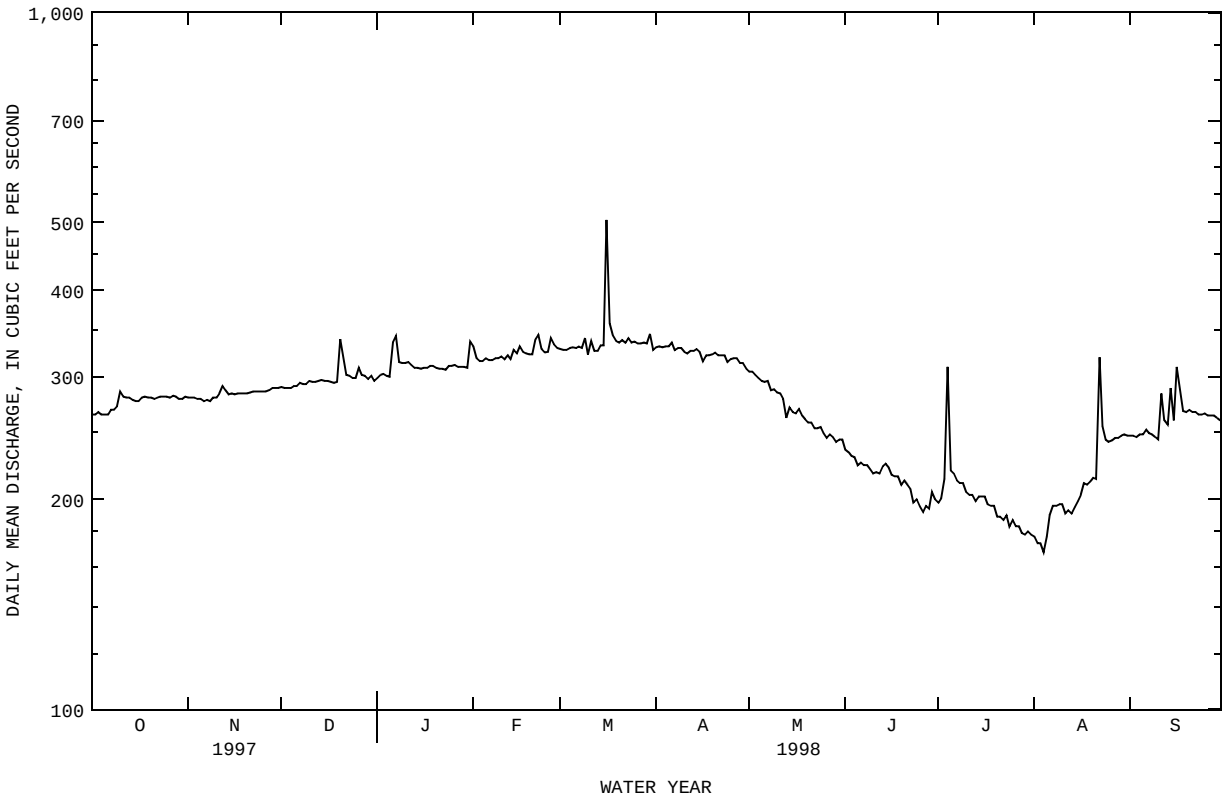
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 1998z, BY WATER YEAR (WY)

MEAN	290	308	322	324	329	319	318	328	312	279	262	267
MAX	490	486	437	443	527	536	531	547	520	466	466	428
(WY)	1974	1975	1992	1977	1992	1992	1977	1975	1987	1992	1992	1992
MIN	100	144	166	174	175	199	146	101	78.5	35.4	36.4	43.7
(WY)	1990	1990	1990	1990	1990	1990	1984	1984	1984	1984	1984	1984

08169000 COMAL RIVER AT NEW BRAUNFELS, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1974 - 1998z	
ANNUAL TOTAL	97380		100862			
ANNUAL MEAN	267		276		305	
HIGHEST ANNUAL MEAN					431	1992
LOWEST ANNUAL MEAN					145	1984
HIGHEST DAILY MEAN	885	Jun 22	504	Mar 16	2890	Nov 24 1974
LOWEST DAILY MEAN	192	Jan 30	168	Aug 4	26	Jul 18 1984
ANNUAL SEVEN-DAY MINIMUM	194	Jan 16	175	Jul 30	28	Jul 18 1984
INSTANTANEOUS PEAK FLOW			815	Jul 4	9540	May 23 1975
INSTANTANEOUS PEAK STAGE			a5.29	Jul 4	16.54	May 23 1975
ANNUAL RUNOFF (AC-FT)	193200		200100		220700	
10 PERCENT EXCEEDS	303		331		418	
50 PERCENT EXCEEDS	273		284		305	
90 PERCENT EXCEEDS	198		199		183	

a From floodmark.
z Period of regulated streamflow.



08169000 COMAL RIVER AT NEW BRAUNFELS, TX

WATER QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: April 1996 to April 1998. Sediment analyses: April 1996 to April 1998.

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 (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)
OCT										
21...	0930	280	548	7.8	23.0	7.9	94	260	26	76
NOV										
24...	0915	288	537	7.8	18.0	7.9	85	260	33	78
DEC										
29...	0915	309	523	7.8	14.0	8.5	84	260	64	77
JAN										
13...	0900	309	538	7.8	20.0	7.9	89	250	20	73
FEB										
17...	0945	325	540	7.8	19.0	8.1	90	250	34	76
MAR										
25...	0900	338	545	7.6	22.0	8.9	104	260	30	77
APR										
23...	0845	321	545	7.6	22.0	8.2	96	260	24	76

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS 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)
OCT									
21...	16	9.7	.3	8	1.3	230	24	17	.2
NOV									
24...	16	10	.3	8	1.4	230	23	18	.3
DEC									
29...	16	10	.3	8	1.3	190	23	17	.2
JAN									
13...	16	9.9	.3	8	1.3	230	23	17	.3
FEB									
17...	16	11	.3	8	1.5	220	24	17	.2
MAR									
25...	16	10	.3	8	1.4	230	23	16	.2
APR									
23...	16	10	.3	8	1.3	230	23	17	.2

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, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)
OCT									
21...	12	316	280	<.01	1.7	.05	<.2	<.2	<.01
NOV									
24...	12	315	299	<.01	1.8	<.02	<.1	<.1	<.01
DEC									
29...	12	321	292	<.01	1.8	<.02	<.1	<.1	.02
JAN									
13...	12	314	302	<.01	1.8	<.02	<.1	<.1	.02
FEB									
17...	11	317	301	<.01	1.7	.03	<.1	<.1	<.01
MAR									
25...	12	314	297	<.01	1.7	.09	<.1	<.1	<.01
APR									
23...	12	314	306	<.01	1.7	.03	<.1	<.1	<.01

08169000 COMAL RIVER AT NEW BRAUNFELS, TX--Continued

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

DATE	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT									
21...	<.01	<.01	--	.4	<.2	4.5	6	<3	<1
NOV									
24...	<.01	.03	.08	.3	<.2	2.3	3	<3	<1
DEC									
29...	.02	.02	.06	.4	<.2	4.2	5	<10	<4
JAN									
13...	.01	.01	.04	.4	<.2	3.3	4	<10	<4
FEB									
17...	<.01	.02	.06	.4	<.2	3.5	4	<10	<4
MAR									
25...	<.01	.01	.04	.4	<.2	26	28	<10	<4
APR									
23...	.02	<.01	--	.3	<.2	6.9	8	<10	<4

08170000 SAN MARCOS SPRINGS AT SAN MARCOS, TX

LOCATION.--Lat 29°53'20", long 97°56'02", Hays County, Hydrologic Unit 12100203, on left bank at downstream side of bridge on Aquarena Springs Drive (Loop 82), 500 ft downstream from Spring Lake, and 4.2 mi upstream from Blanco River.

DRAINAGE AREA.--Not applicable. This is a springflow station.

PERIOD OF RECORD.--May 1956 to current year. May 1956 to Sep 1988, at site 0.7 mi downstream from bridge on Interstate Highway 35 and 2.1 mi upstream from Blanco River. Oct 1988 to Sep 1994, at site of ground-water well No. LR-67-09-110, 0.2 mi southwest of intersection of FM 2439 and McCarty Lane and 3.7 mi south of San Marcos. Water-level data and measurements of springflow were used to compute springflow. Records prior to Oct 1956 published as San Marcos River at San Marcos (station 08170500).

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 557.67 ft above sea level. May 1956 to Sep 1988, water-stage recorder 0.7 mi downstream from Interstate Highway 35 and 2.1 mi upstream from Blanco River, datum 536.82 ft above sea level. Oct 1988 to Sep 1994, water-stage recorder at ground-water well No. LR-67-09-110, 0.2 mi southwest of intersection of FM 2439 and McCarty Lane and 3.7 mi south of San Marcos, datum 678.50 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharge. Records fair. Entire flow of river is from San Marcos Springs, located about 1.1 mi upstream from Interstate Highway 35, except during periods of local runoff. San Marcos Springs emerge from the Edwards and associated limestones in the Balcones Fault Zone. Springflow is separated from runoff using computer techniques.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily spring discharge, 451 ft^3/s Mar 12, 1992; minimum daily, 46 ft^3/s Aug 15, 16, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum daily spring discharge, 219 ft^3/s Apr 2; minimum daily, 143 ft^3/s Aug 17.

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	205	188	171	168	172	200	216	190	167	158	150	170
2	203	185	170	169	174	199	219	189	165	155	150	170
3	203	184	173	170	175	199	216	187	163	159	148	169
4	201	185	172	171	176	201	216	187	164	159	148	169
5	200	187	170	172	178	201	217	186	164	160	147	170
6	199	184	169	172	176	200	216	185	164	162	149	171
7	202	184	169	170	176	203	216	183	165	164	149	170
8	202	184	168	171	177	201	215	182	164	165	150	169
9	206	184	168	172	179	199	215	184	167	164	149	169
10	205	181	165	170	180	199	211	180	170	163	148	170
11	204	183	163	171	179	199	210	177	170	163	148	173
12	202	186	163	172	181	196	210	175	171	162	146	177
13	204	185	163	171	179	200	210	175	170	163	145	177
14	200	182	162	171	180	202	208	176	171	161	145	178
15	199	179	162	173	181	204	208	175	170	160	146	180
16	201	177	162	173	183	209	205	175	169	159	144	195
17	203	176	160	170	185	214	203	175	168	159	143	202
18	202	179	160	171	187	214	203	175	168	159	144	214
19	198	178	160	171	190	211	203	175	168	157	146	215
20	194	178	163	170	190	211	201	174	167	154	146	211
21	198	176	167	168	193	212	199	175	164	155	146	206
22	196	174	166	166	196	214	197	176	161	153	153	206
23	198	173	168	167	195	215	196	174	158	152	159	205
24	195	172	167	168	195	216	198	172	158	151	167	204
25	192	172	165	168	198	215	200	170	157	153	174	204
26	190	172	166	169	202	215	197	169	155	152	182	205
27	189	172	168	168	200	217	198	171	156	150	179	205
28	188	172	168	168	198	217	194	169	155	150	176	205
29	188	173	168	168	---	215	193	172	155	151	175	205
30	189	172	169	168	---	216	191	169	158	150	173	206
31	191	---	168	170	---	215	---	167	---	149	171	---
TOTAL	6147	5377	5153	5266	5175	6429	6181	5489	4922	4872	4796	5670
MEAN	198	179	166	170	185	207	206	177	164	157	155	189
MAX	206	188	173	173	202	217	219	190	171	165	182	215
MIN	188	172	160	166	172	196	191	167	155	149	143	169
AC-FT	12190	10670	10220	10450	10260	12750	12260	10890	9760	9660	9510	11250

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1998, BY WATER YEAR (WY)

MEAN	153	155	160	163	167	170	170	181	190	179	164	155
MAX	262	281	282	382	418	445	427	407	415	381	315	269
(WY)	1974	1977	1977	1992	1992	1992	1992	1992	1992	1992	1992	1987
MIN	64.6	70.3	72.0	74.3	72.4	89.3	98.1	99.3	63.6	54.5	53.5	59.1
(WY)	1957	1957	1957	1957	1957	1964	1964	1984	1956	1956	1956	1956

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1956 - 1998	
ANNUAL TOTAL	68646		65477			
ANNUAL MEAN	188		179		168	
HIGHEST ANNUAL MEAN					331	1992
LOWEST ANNUAL MEAN					92.0	1964
HIGHEST DAILY MEAN	338	Jun 25	219	Apr 2	451	Mar 12 1992
LOWEST DAILY MEAN	94	Feb 4	143	Aug 17	46	Aug 15 1956
ANNUAL SEVEN-DAY MINIMUM	94	Feb 3	145	Aug 12	50	Aug 10 1956
ANNUAL RUNOFF (AC-FT)	136200		129900		121700	
10 PERCENT EXCEEDS	294		206		241	
50 PERCENT EXCEEDS	178		175		157	
90 PERCENT EXCEEDS	100		155		101	

08170500 SAN MARCOS RIVER AT SAN MARCOS, TX

LOCATION.--Lat 29°53'20", long 97°56'02", Hays County, Hydrologic Unit 12100203, on left bank at downstream side of bridge on Aquarena Springs Drive (Loop 82), 500 ft downstream from Spring Lake, and 4.2 mi upstream from Blanco River.

DRAINAGE AREA.--47mi^2 of contributing surface drainage, however, most of the time flow is solely from San Marcos springs.

PERIOD OF RECORD.--Jul 1915 to Sep 1921 (partial-record site), May to Sep 1956, Oct 1994 to current year. Periodic measurements were made outside period of record since Nov 14, 1894, and are published as miscellaneous measurements.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 557.67 ft above sea level. Jul 1915 to Jan 1916, nonrecording gage at site 0.5 mi upstream from Interstate Highway 35, and Mar 1916 to Sep 1921, water-stage recorder about 0.7 mi downstream from Interstate Highway 35; datum relations unknown. May to Septembr 1956, water-stage recorder 0.7 mi downstream from Interstate Highway 35 and 2.1 mi upstream from Blanco River, at datum 536.82 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. Entire flow of river is from San Marcos Springs, located about 1.1 mi upstream from Interstate Highway 35, except during periods of local runoff. San Marcos Springs emerge from the Edwards and associated limestones in the Balcones Fault Zone.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 449 ft^3/s, Sep 16 (gage height, 6.59 ft); minimum daily, 143 ft^3/s, Aug 17.

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	205	189	171	168	172	200	216	190	167	158	150	170
2	203	185	170	169	174	199	219	189	165	155	150	170
3	203	184	173	170	175	199	216	187	163	163	148	169
4	201	189	172	171	176	201	216	187	164	170	148	169
5	200	187	170	172	178	201	217	186	164	167	147	170
6	199	184	169	172	176	200	216	185	164	166	149	171
7	202	184	169	170	176	203	216	183	165	164	149	170
8	202	184	168	171	177	201	215	182	164	165	150	169
9	206	184	168	172	179	199	215	184	168	164	149	169
10	212	181	165	170	180	199	211	181	170	163	148	170
11	212	183	163	171	179	199	210	177	170	163	148	194
12	209	186	163	172	181	196	210	175	171	162	146	177
13	204	185	163	171	179	200	210	175	170	163	145	177
14	200	182	162	171	183	202	208	176	171	161	145	178
15	199	179	162	173	181	204	208	175	170	160	146	180
16	205	177	162	173	188	218	208	175	169	159	151	279
17	203	176	160	170	185	214	203	175	168	159	143	255
18	202	179	160	171	189	214	203	175	168	159	144	214
19	199	178	160	171	190	211	203	175	168	157	146	215
20	194	178	180	170	190	211	201	174	167	154	146	211
21	198	176	167	168	200	212	199	175	165	155	146	206
22	196	174	166	166	196	214	197	176	161	153	188	206
23	198	173	168	167	195	215	196	174	158	152	198	205
24	195	172	167	168	195	216	201	174	158	151	182	204
25	192	172	165	168	201	215	200	170	157	153	187	204
26	190	172	170	169	202	215	197	169	155	152	182	205
27	189	172	168	168	200	217	198	173	156	150	179	205
28	188	180	168	168	198	217	194	173	155	150	176	205
29	188	173	168	168	---	215	193	172	155	151	175	205
30	189	172	169	168	---	216	191	169	158	150	173	206
31	191	---	168	177	---	215	---	167	---	149	171	---
TOTAL	6174	5390	5174	5273	5195	6438	6187	5498	4924	4898	4905	5828
MEAN	199	180	167	170	186	208	206	177	164	158	158	194
MAX	212	189	180	177	202	218	219	190	171	170	198	279
MIN	188	172	160	166	172	196	191	167	155	149	143	169
AC-FT	12250	10690	10260	10460	10300	12770	12270	10910	9770	9720	9730	11560

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 1998, BY WATER YEAR (WY)

MEAN	145	141	135	136	134	146	153	153	194	184	170	172
MAX	199	180	167	170	186	208	206	183	308	307	267	227
(WY)	1998	1998	1998	1998	1998	1998	1998	1997	1997	1997	1997	1997
MIN	107	93.1	91.5	99.0	98.2	108	101	99.6	94.4	84.4	84.2	109
(WY)	1997	1997	1997	1997	1997	1996	1996	1996	1996	1996	1996	1996

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1995 - 1998	
ANNUAL TOTAL	69857		65884			
ANNUAL MEAN	191		181		155	
HIGHEST ANNUAL MEAN					181	1998
LOWEST ANNUAL MEAN					110	1996
HIGHEST DAILY MEAN	541	Jun 22	279	Sep 16	541	Jun 22 1997
LOWEST DAILY MEAN	94	Feb 4	143	Aug 17	76	Aug 15 1996
ANNUAL SEVEN-DAY MINIMUM	94	Feb 3	146	Aug 12	77	Aug 15 1996
INSTANTANEOUS PEAK FLOW			449	Sep 16	787	Jun 21 1997
INSTANTANEOUS PEAK STAGE			6.59	Sep 16	7.73	Jun 21 1997
INSTANTANEOUS LOW FLOW			140	Aug 17	71	Nov 18 1996
ANNUAL RUNOFF (AC-FT)	138600		130700		112500	
10 PERCENT EXCEEDS	300		209		214	
50 PERCENT EXCEEDS	179		175		150	
90 PERCENT EXCEEDS	100		155		96	

08171000 BLANCO RIVER AT WIMBERLEY, TX

LOCATION.--Lat 29°59'39", long 98°05'19", Hays County, Hydrologic Unit 12100203, on left bank at downstream side of highway, near left end of bridge on Ranch Road 12, 0.3 mi southeast of Wimberley, 2,200 ft downstream from Cypress Creek, and at mile 29.0.

DRAINAGE AREA.--355 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Aug 1924 to Sep 1926, Jun 1928 to current year.

REVISED RECORDS.--WSP 1562: 1929, 1930-31(M), 1935-36(M), 1938(M), 1941-42(M), 1947(M), 1949(M). WSP 2123: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 797.23 ft above sea level. Aug 6, 1924, to Sep 30, 1926, nonrecording gage at site 1,030 ft upstream at datum 5.00 ft higher. Recording gage from Jun 6, 1928, to Jun 12, 1975, at site 1,000 ft upstream at datum 5.00 ft higher. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation. There are many small diversions above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Jul 1869 reached a stage of 25 ft, from information by local residents. Maximum stage since at least 1869, that of May 28, 1929.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 31	2045	3,040	7.65	Mar 16	1115	23,300	a17.14

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	63	60	53	69	847	437	493	143	78	64	47	62
2	62	59	53	72	358	412	417	140	77	62	46	60
3	62	58	56	72	273	388	381	135	75	62	45	58
4	61	58	53	70	245	372	353	131	75	319	45	56
5	60	59	53	70	238	362	339	128	75	138	45	54
6	62	58	52	281	242	339	330	127	75	94	51	54
7	62	58	53	238	216	329	324	123	73	83	46	52
8	62	58	53	158	206	320	334	119	73	78	45	52
9	74	59	52	137	197	291	349	115	72	74	44	51
10	78	63	52	125	198	272	294	110	71	72	43	51
11	78	60	51	118	202	260	272	107	77	69	42	68
12	83	66	50	114	204	252	266	105	73	67	41	69
13	81	64	49	108	194	251	260	104	75	66	41	65
14	73	62	50	104	232	268	249	102	75	67	41	65
15	69	58	50	101	420	286	240	100	72	63	42	66
16	67	57	50	99	426	5290	232	99	69	63	41	155
17	66	56	50	96	418	1370	218	98	68	61	74	148
18	65	56	50	92	365	997	211	96	67	60	46	123
19	65	56	50	93	342	836	205	95	65	59	44	112
20	65	56	72	94	320	709	200	93	64	58	42	103
21	65	55	92	91	405	644	194	91	63	58	41	95
22	65	56	131	88	763	591	186	90	63	56	87	90
23	65	56	94	86	504	545	179	88	63	56	323	86
24	65	56	81	86	432	504	172	87	63	54	156	81
25	65	55	78	84	418	469	167	86	62	53	111	79
26	62	54	79	83	865	445	164	85	61	52	93	77
27	61	54	74	82	542	419	164	87	61	51	80	75
28	62	56	75	82	474	396	154	84	61	50	73	72
29	62	55	72	82	---	377	151	83	63	50	69	71
30	62	53	71	82	---	366	147	84	64	48	65	69
31	61	---	70	699	---	781	---	80	---	48	63	---
TOTAL	2053	1731	1969	3856	10546	19578	7645	3215	2073	2255	2072	2319
MEAN	66.2	57.7	63.5	124	377	632	255	104	69.1	72.7	66.8	77.3
MAX	83	66	131	699	865	5290	493	143	78	319	323	155
MIN	60	53	49	69	194	251	147	80	61	48	41	51
AC-FT	4070	3430	3910	7650	20920	38830	15160	6380	4110	4470	4110	4600

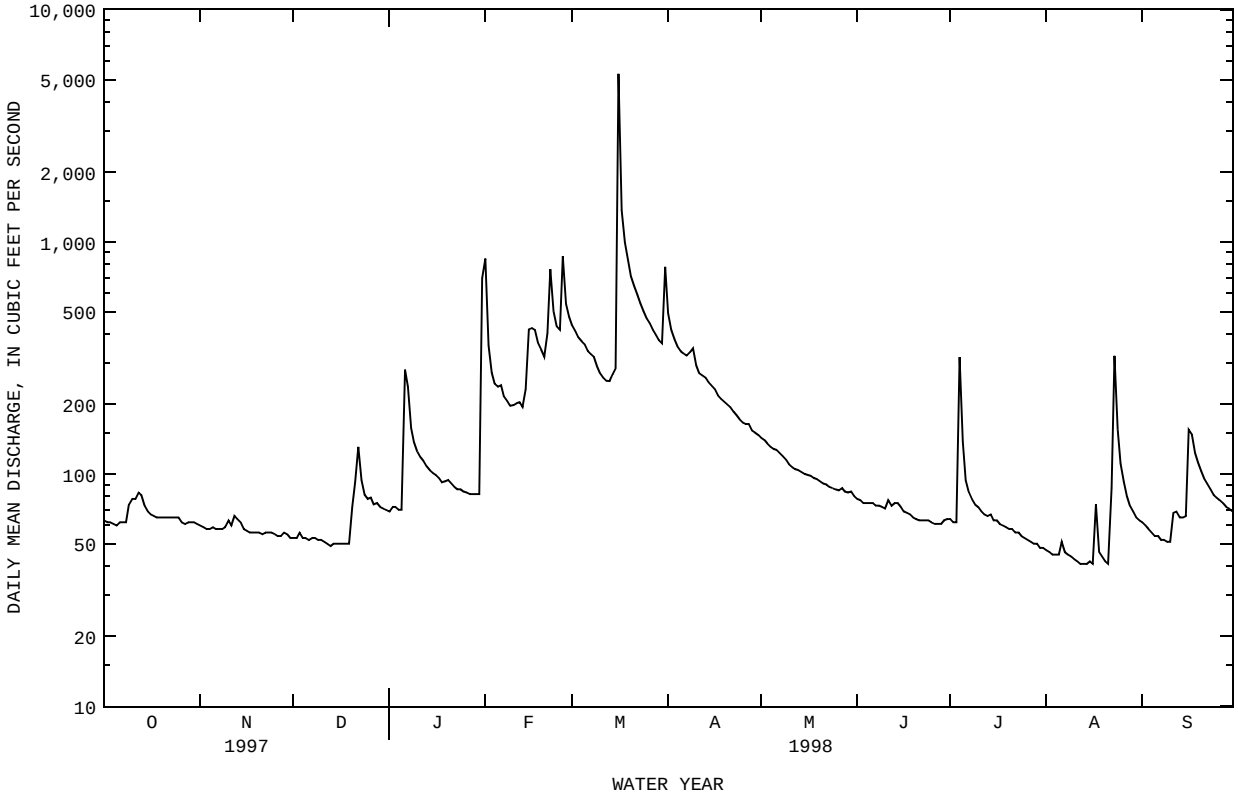
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1998h, BY WATER YEAR (WY)

MEAN	99.8	81.6	116	123	164	155	181	221	235	103	50.2	88.8
MAX	872	509	1364	1134	1401	977	953	1470	2308	935	201	1413
(WY)	1974	1947	1992	1968	1992	1992	1957	1929	1997	1973	1973	1952
MIN	6.24	7.41	7.87	6.66	8.13	5.93	5.19	12.5	3.44	1.70	2.89	6.93
(WY)	1941	1956	1956	1956	1956	1956	1956	1956	1956	1956	1956	1928

08171000 BLANCO RIVER AT WIMBERLEY, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1924 - 1998h	
ANNUAL TOTAL	133214		59312			
ANNUAL MEAN	365		162		134	
HIGHEST ANNUAL MEAN					566	1992
LOWEST ANNUAL MEAN					6.45	1956
HIGHEST DAILY MEAN	22100	Jun 22	5290	Mar 16	36900	Sep 11 1952
LOWEST DAILY MEAN	28	Jan 31	41	Aug 12	.70	Jul 17 1956
ANNUAL SEVEN-DAY MINIMUM	29	Feb 5	42	Aug 10	.79	Aug 12 1956
INSTANTANEOUS PEAK FLOW			23300	Mar 16	113000	May 28 1929
INSTANTANEOUS PEAK STAGE			a17.14	Mar 16	33.30	May 28 1929
ANNUAL RUNOFF (AC-FT)	264200		117600		97290	
10 PERCENT EXCEEDS	724		365		276	
50 PERCENT EXCEEDS	93		75		53	
90 PERCENT EXCEEDS	35		52		12	

a From floodmark.
h See PERIOD OF RECORD paragraph.



08171000 BLANCO RIVER AT WIMBERLEY, TX

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: April 1962 to December 1973. Chemical and biochemical analyses: January 1974 to September 1979, February 1988 to September 1993, April 1996 to April 1998. Pesticide analyses: Janurary 1974 to September 1979, Feburary 1988 to September 1993. Sediment analyses: November 1965 to April 1966, April 1996 to April 1998.

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 (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)
OCT											
21...	1215	67	490	8.2	23.0	9.0	108	230	32	66	16
NOV											
24...	1145	58	509	8.3	16.0	9.8	102	250	30	71	18
DEC											
29...	1230	71	503	8.3	14.5	9.7	98	240	24	68	17
JAN											
13...	1130	109	532	8.3	15.0	9.6	98	240	12	72	15
FEB											
17...	1300	420	495	8.3	17.0	9.8	105	240	24	73	13
MAR											
16...	0800	3100	404	7.9	15.5	9.1	--	220	4	69	11
APR											
03...	0945	389	475	8.1	22.0	8.9	106	230	22	72	14
22...	0930	190	487	8.1	18.0	9.4	102	240	30	72	16

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
OCT										
21...	7.5	.2	7	1.3	200	31	12	.2	10	257
NOV										
24...	7.9	.2	6	1.3	220	33	12	.2	9.2	271
DEC										
29...	7.8	.2	7	1.1	220	29	13	.2	8.1	282
JAN										
13...	7.2	.2	6	1.1	230	22	13	.2	8.5	283
FEB										
17...	6.1	.2	5	1.1	210	17	10	.1	7.3	274
MAR										
16...	6.4	.2	6	1.3	210	15	10	.2	7.8	264
APR										
03...	6.1	.2	5	1.2	210	17	9.3	.2	8.5	267
22...	7.3	.2	6	1.0	210	20	11	.2	8.1	263

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, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT										
21...	259	--	<.01	.43	.03	--	--	--	<.2	<.2
NOV										
24...	276	--	<.01	.43	<.02	--	--	--	<.1	<.1
DEC										
29...	268	--	<.01	.45	<.02	--	--	--	<.1	<.1
JAN										
13...	263	--	<.01	.42	<.02	--	--	--	<.1	<.1
FEB										
17...	249	--	<.01	.26	<.02	--	--	--	.1	<.1
MAR										
16...	241	.294	.04	.34	<.02	1.4	--	--	<.1	1.1
APR										
03...	252	--	<.01	.38	.03	.50	.08	.07	.1	.1
22...	258	.883	.01	.89	.06	--	--	--	<.1	<.1

08171000 BLANCO RIVER AT WIMBERLEY, TX--Continued

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

DATE	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)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT										
21...	<.01	<.01	<.01	--	.8	<.2	.90	5	<3	<1
NOV										
24...	<.01	<.01	.03	.08	.8	<.2	.31	2	<3	<1
DEC										
29...	<.01	<.01	.01	.04	1	<.2	.96	5	<10	<4
JAN										
13...	<.01	<.01	.01	.04	1.2	<.2	1.2	4	<10	<4
FEB										
17...	<.01	<.01	.01	.04	1.5	<.2	7.9	7	<10	<4
MAR										
16...	.09	<.01	<.01	--	1.9	>5.0	3260	389	<10	<4
APR										
03...	<.01	<.01	.01	.04	1.7	.2	21	20	<10	<4
22...	<.01	<.01	.02	.07	1.1	<.2	3.6	7	<10	<4

08171300 BLANCO RIVER NEAR KYLE, TX

LOCATION.--Lat 29°58'45", long 97°54'35", Hays County, Hydrologic Unit 12100203, on left bank 800 ft downstream from Tarbutton Ranch House (Hatchett Ranch), 2.2 mi southwest of Kyle, 4.2 mi downstream from Halifax Creek, and 6.3 mi upstream from bridge on U.S. Highway 81.

DRAINAGE AREA.--412 mi^2.

PERIOD OF RECORD.--May 1956 to current year.

REVISED RECORDS.--WSP 1923: 1957-58, 1960(M). WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 620.12 ft above sea level (levels by U.S. Army Corps of Engineers).

REMARKS.--Records fair. No known regulation. Small diversions above station for irrigation. Most of the low flow of the Blanco River enters the Edwards and associated limestones in the Balcones Fault Zone which crosses the basin upstream from this station and below the station at Wimberley.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1882, about 40 ft in May 1929, from information by local residents (discharge, 139,000 ft^3/s). Flood of Sep 11, 1952, reached a stage of 38.0 ft (discharge, 115,000 ft^3/s).

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 1	0030	2,530	10.72	Mar 16	1400	21,100	22.20

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	39	37	37	67	1180	452	e563	133	58	38	19	36
2	39	36	37	68	431	426	463	129	56	37	19	35
3	38	34	43	67	326	406	419	124	55	36	18	33
4	37	34	40	66	284	390	388	120	54	279	17	31
5	37	34	39	65	269	378	369	116	56	178	17	29
6	38	34	39	155	279	361	360	115	58	83	25	27
7	42	34	39	400	252	347	353	110	52	60	24	27
8	46	34	40	209	234	341	349	105	52	51	20	24
9	48	34	39	168	222	316	377	102	52	47	18	24
10	52	43	39	147	222	294	327	95	51	44	16	22
11	53	40	37	136	219	280	299	92	52	41	15	39
12	54	50	37	129	220	269	285	90	57	39	15	59
13	54	51	37	122	214	269	282	88	e53	41	14	44
14	54	49	37	115	233	283	269	87	e51	42	14	41
15	54	46	37	110	419	300	258	85	51	36	17	42
16	52	44	37	106	462	4940	247	82	51	35	12	168
17	50	42	37	102	461	1510	229	82	48	33	15	261
18	48	42	36	96	408	1040	217	79	46	32	49	145
19	46	41	36	92	382	877	211	77	44	31	22	116
20	44	41	55	92	358	762	204	75	43	30	17	99
21	44	41	115	92	353	695	195	75	42	29	15	88
22	43	38	133	91	771	647	184	73	41	28	23	79
23	43	39	113	88	550	602	176	71	40	27	344	71
24	43	39	92	86	461	563	170	69	40	26	224	66
25	43	39	80	84	436	525	164	68	39	25	104	63
26	41	39	86	83	786	491	160	67	38	22	76	58
27	39	38	84	80	576	469	161	71	38	23	60	56
28	39	40	80	79	492	450	150	68	37	23	52	52
29	39	39	77	79	---	427	145	65	38	22	46	50
30	39	38	73	79	---	415	138	64	41	20	42	47
31	39	---	71	257	---	e723	---	62	---	19	39	---
TOTAL	1377	1190	1782	3610	11500	20248	8112	2739	1434	1477	1408	1932
MEAN	44.4	39.7	57.5	116	411	653	270	88.4	47.8	47.6	45.4	64.4
MAX	54	51	133	400	1180	4940	563	133	58	279	344	261
MIN	37	34	36	65	214	269	138	62	37	19	12	22
AC-FT	2730	2360	3530	7160	22810	40160	16090	5430	2840	2930	2790	3830
CFSM	.11	.10	.14	.28	1.00	1.59	.66	.21	.12	.12	.11	.16
IN.	.12	.11	.16	.33	1.04	1.83	.73	.25	.13	.13	.13	.17

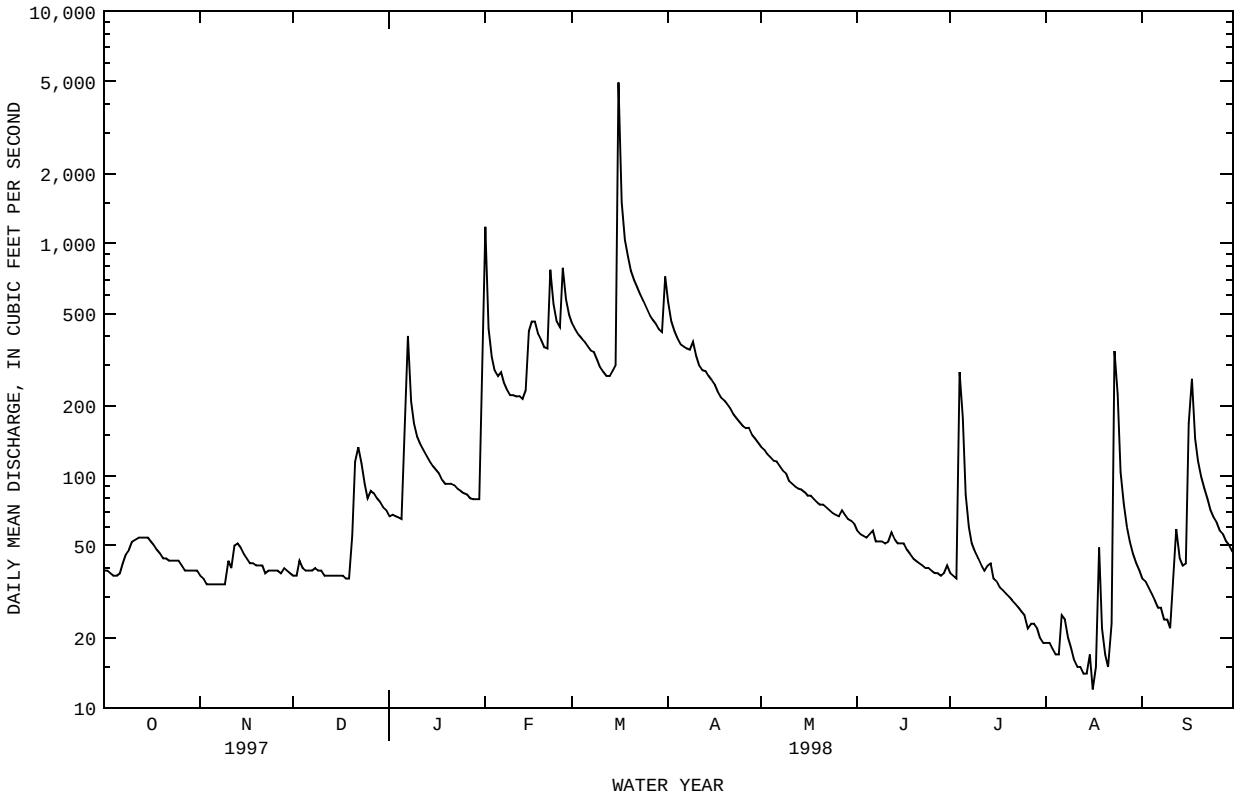
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1998, BY WATER YEAR (WY)

MEAN	123	98.5	151	154	205	179	194	249	327	110	44.7	55.1
MAX	1078	387	1775	1319	1511	1078	906	1148	2459	828	196	348
(WY)	1974	1958	1992	1968	1992	1992	1977	1958	1997	1973	1973	1986
MIN	.000	.000	.000	.000	.000	10.0	9.04	1.96	.000	.000	.000	.000
(WY)	1964	1964	1964	1957	1990	1967	1996	1964	1956	1956	1956	1956

08171300 BLANCO RIVER NEAR KYLE, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1956 - 1998	
ANNUAL TOTAL	134003.0		56809			
ANNUAL MEAN	367		156		158	
HIGHEST ANNUAL MEAN					625	1992
LOWEST ANNUAL MEAN					4.65	1964
HIGHEST DAILY MEAN	19600	Jun 22	4940	Mar 16	19600	Jun 22 1997
LOWEST DAILY MEAN	8.8	Feb 6	12	Aug 16	.00	Jun 1 1956
ANNUAL SEVEN-DAY MINIMUM	11	Jan 31	15	Aug 11	.00	Jun 1 1956
INSTANTANEOUS PEAK FLOW			21100	Mar 16	98000	May 2 1958
INSTANTANEOUS PEAK STAGE			22.20	Mar 16	36.30	May 2 1958
ANNUAL RUNOFF (AC-FT)	265800		112700		114500	
ANNUAL RUNOFF (CFSM)	.89		.38		.38	
ANNUAL RUNOFF (INCHES)	12.10		5.13		5.21	
10 PERCENT EXCEEDS	724		394		330	
50 PERCENT EXCEEDS	83		58		52	
90 PERCENT EXCEEDS	19		29		3.3	

e Estimated



08172000 SAN MARCOS RIVER AT LULING, TX

LOCATION.--Lat 29°39'58", long 97°39'02", Caldwell County line, Hydrologic Unit 12100203, at downstream side of bridge on State Highway 80, 0.9 mi south of U.S. Post Office at Luling, and 9.5 mi upstream from Plum Creek.

DRAINAGE AREA.--838 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Apr 1939 to current year.

REVISED RECORDS.--WSP 958: 1940. WSP 1312: 1940(M), 1945(M), 1947(M). WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 322.05 ft above sea level. Prior to Oct 21, 1988, at site 390 ft downstream at same datum. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since water year 1984, at least 10% of contributing drainage area has been regulated by upstream reservoirs. Flow is affected at times by discharge from the flood-detention pools of 18 floodwater-retarding structures with a combined detention capacity of 26,830 acre-ft. These structures control runoff from 105 mi^2 in the Town and York Creeks drainage basins.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--44 years (water years 1940-83), 370 ft^3/s (268,100 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1940-83).--Maximum discharge, 57,000 ft^3/s Sep 12, 1952 (gage height, 34.95 ft); minimum daily, 43 ft^3/s Aug 12, 1951.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1859, 40.4 ft in 1869 or 1870, from information by State Department of Highways and Public Transportation. Flood of May 29, 1929, reached a stage of 37.1 ft and is the second highest known.

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	233	214	270	660	860	1010	402	e218	171	154	205
2	243	222	214	266	1160	808	897	391	e216	170	153	196
3	235	218	220	265	758	771	819	369	e214	176	155	191
4	235	219	215	267	630	744	767	361	e212	245	149	188
5	235	225	214	267	578	731	740	361	e210	369	135	181
6	239	222	209	272	582	710	722	352	208	398	151	180
7	260	211	211	384	553	694	711	343	209	296	165	181
8	295	207	217	723	507	689	697	331	208	257	158	183
9	294	214	216	507	474	668	684	323	201	221	149	182
10	335	235	207	422	475	629	704	313	196	200	143	174
11	503	229	202	378	522	592	664	305	197	190	138	223
12	643	376	194	357	486	566	633	301	201	189	132	471
13	650	310	195	333	512	553	608	292	198	184	124	406
14	355	263	195	317	496	587	605	279	198	211	124	284
15	303	240	195	305	668	599	594	273	195	217	132	254
16	282	233	194	295	936	1630	579	271	196	203	128	662
17	275	222	188	290	981	4690	555	261	194	196	161	3290
18	264	221	190	286	843	1880	527	254	191	190	152	960
19	254	220	191	282	783	1430	518	256	187	176	137	673
20	252	221	208	278	724	1270	534	254	181	168	156	570
21	245	218	479	277	693	1150	524	248	177	156	143	495
22	246	211	618	272	1410	1070	495	244	177	154	204	443
23	246	209	500	265	1230	1010	489	239	174	156	852	411
24	246	206	765	256	964	970	476	236	167	153	827	391
25	243	208	396	256	851	929	475	226	164	156	520	375
26	233	214	319	258	931	894	469	230	164	157	336	357
27	223	214	398	252	1150	860	467	e228	163	159	278	346
28	220	223	344	249	947	834	482	e226	162	159	247	337
29	225	262	297	247	---	812	445	e224	164	158	228	322
30	237	223	277	247	---	785	417	e222	172	159	214	299
31	238	---	275	268	---	770	---	e220	---	155	208	---
TOTAL	9003	6929	8757	9611	21504	31185	18307	8835	5714	6149	6953	13430
MEAN	290	231	282	310	768	1006	610	285	190	198	224	448
MAX	650	376	765	723	1410	4690	1010	402	218	398	852	3290
MIN	220	206	188	247	474	553	417	220	162	153	124	174
AC-FT	17860	13740	17370	19060	42650	61860	36310	17520	11330	12200	13790	26640

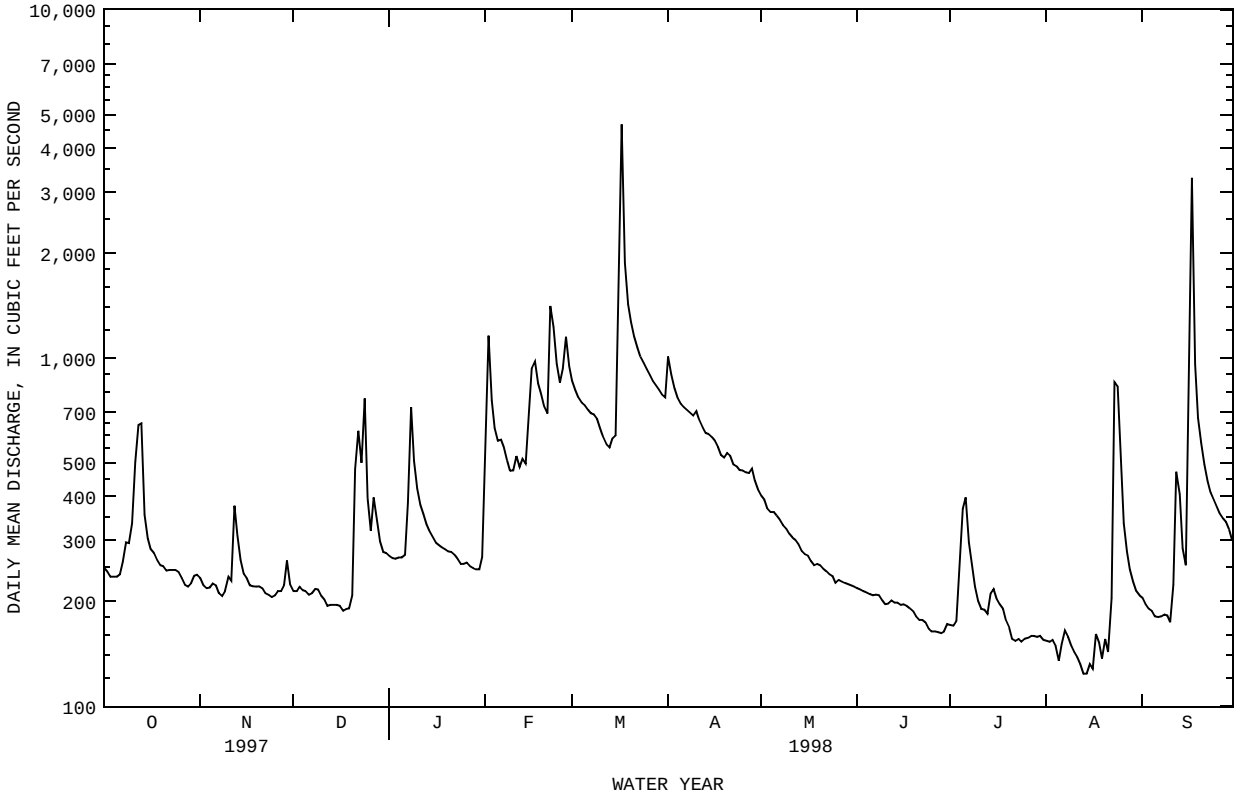
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1998z, BY WATER YEAR (WY)

MEAN	234	265	555	446	568	501	423	513	992	353	221	241
MAX	685	991	3520	1948	3358	2438	1170	1519	4850	884	515	471
(WY)	1987	1986	1992	1992	1992	1992	1992	1992	1987	1997	1992	1986
MIN	80.7	90.4	87.1	91.3	95.8	114	103	84.5	83.7	68.4	63.7	64.4
(WY)	1990	1990	1990	1990	1990	1996	1996	1996	1984	1984	1984	1984

08172000 SAN MARCOS RIVER AT LULING, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1984 - 1998z	
ANNUAL TOTAL	235733		146377			
ANNUAL MEAN	646		401		441	
HIGHEST ANNUAL MEAN					1482	1992
LOWEST ANNUAL MEAN					119	1984
HIGHEST DAILY MEAN	18900	Jun 23	4690	Mar 17	34800	Dec 22 1991
LOWEST DAILY MEAN	101	Jan 30	124	Aug 13	56	Sep 1 1984
ANNUAL SEVEN-DAY MINIMUM	104	Jan 30	132	Aug 10	59	Aug 26 1984
INSTANTANEOUS PEAK FLOW			7400	Mar 17	39500	Dec 22 1991
INSTANTANEOUS PEAK STAGE			25.33	Mar 17	33.65	Dec 22 1991
ANNUAL RUNOFF (AC-FT)	467600		290300		319800	
10 PERCENT EXCEEDS	1160		776		768	
50 PERCENT EXCEEDS	282		260		226	
90 PERCENT EXCEEDS	114		165		96	

e Estimated
z Period of regulated streamflow



08172000 SAN MARCOS RIVER AT LULING, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Feb 1944 to Feb 1959, Sep 1961 to Apr 1966, Nov 1968 to current year. Pesticide analyses: Jun 1986 to current year. Sediment analyses: Oct 1960 to Apr 1966.

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 (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
NOV												
12...	1131	357	563	8.2	14.0	9.7	95	260	30	76	17	14
APR												
06...	0845	724	490	8.0	21.0	9.5	107	240	42	68	16	11
MAY												
28...	1630	226	497	8.0	27.0	8.2	103	230	36	65	18	14
AUG												
04...	0915	146	469	8.1	29.5	7.3	96	210	19	55	18	15
21...	1435	140	483	8.1	29.0	7.9	103	210	31	56	16	14
SEP												
30...	1400	295	513	8.1	28.0	7.1	94	240	17	67	16	14

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	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)	2,4,5-T TOTAL (UG/L) (39740)	2,4-D, TOTAL (UG/L) (39730)	SILVEX, TOTAL (UG/L) (39760)
NOV												
12...	.4	10	1.6	230	25	23	.21	8.5	305	--	--	--
APR												
06...	.3	9	1.4	190	23	23	.19	7.3	266	--	--	--
MAY												
28...	.4	11	1.6	200	26	22	.18	11	276	<.010	<.010	<.010
AUG												
04...	.5	13	1.8	190	25	23	.28	5.5	261	--	--	--
21...	.4	13	1.7	180	24	23	.22	6.5	247	--	--	--
SEP												
30...	.4	11	1.8	220	24	20	.18	11	285	--	--	--

DATE	2, 4-DP TOTAL (UG/L) (82183)	ALDRIN, TOTAL (UG/L) (39330)	TOTAL TRI-THION (UG/L) (39786)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLOR-PYRIFOS TOTAL RECOVER (UG/L) (38932)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L) (82614)
NOV											
12...	--	--	--	--	--	--	--	--	--	--	--
APR											
06...	--	--	--	--	--	--	--	--	--	--	--
MAY											
28...	<.010	<.010	<.010	<.100	<.010	<.010	<.010	<.010	<.010	<.010	<.010
AUG											
04...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
30...	--	--	--	--	--	--	--	--	--	--	--

DATE	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)	PARA-THION, TOTAL (UG/L) (39540)	METHYL PARA-THION, TOTAL (UG/L) (39600)	PHORATE TOTAL (UG/L) (39023)	DEF TOTAL (UG/L) (39040)	SAMPLE VOLUME SCHED-ULE 1319 (ML) (99868)	SET NUMBER SCHED-ULE 1319 (NO.) (99804)	TOX-APHENE, TOTAL (UG/L) (39400)
NOV											
12...	--	--	--	--	--	--	--	--	--	--	--
APR											
06...	--	--	--	--	--	--	--	--	--	--	--
MAY											
28...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	931	8153.10	<1.00
AUG											
04...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
30...	--	--	--	--	--	--	--	--	--	--	--

08172400 PLUM CREEK AT LOCKHART, TX

LOCATION.--Lat 29°55'22", long 97°40'44", Caldwell County, Hydrologic Unit 12100203, on right bank 548 ft upstream from bridge on U.S. Highway 183, 2.7 mi north of Lockhart, 3.7 mi upstream from Town Creek, 5.0 mi downstream from Brushy Creek, and 30.4 mi upstream from mouth.

DRAINAGE AREA.--112 mi^2.

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

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 431.19 ft above sea level. Apr 30, 1959, to Jul 25, 1968, at site 548 ft downstream at present datum.

REMARKS.--Records fair. Since water year 1963, at least 10% of contributing drainage area has been regulated by upstream reservoirs. No known diversions above station. Flow is affected at times by discharge from the flood-detention pools of 17 floodwater-retarding structures with a combined capacity of 24,850 acre-ft. These structures control runoff from 67.8 mi^2 above this station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--3 years (water years 1960-62), 60.2 ft^3/s (43,610 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1960-62).--Maximum discharge, 26,600 ft^3/s Oct 29, 1960 (gage height, 20.62 ft); no flow for several days in each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1905, 22 ft in Jun 1936 at present site; flood in 1951 reached a stage of 20 ft at present site, 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	.00	.00	15	15	67	51	6.3	.90	.00	.00	.00	.00
2	.00	.00	8.7	12	50	38	5.7	.77	.00	.00	.00	.00
3	.00	.00	5.2	11	31	30	5.0	.43	.00	.00	.00	.00
4	.00	.00	3.1	11	21	24	4.4	.14	.00	.00	.00	.00
5	.00	.00	2.7	9.9	17	21	3.8	.02	.00	.00	.00	.00
6	.00	.00	2.0	18	37	18	3.5	.01	.00	.00	.00	.00
7	.00	.00	1.5	66	19	e16	3.5	.00	.00	.00	.00	.00
8	.00	.00	1.3	38	13	e14	3.4	.00	.00	.00	.00	.00
9	.00	.00	.97	25	11	13	2.8	.00	.00	.00	.00	.00
10	.00	.00	1.0	18	53	11	2.8	.00	.00	.00	.00	.00
11	1.4	.00	.80	14	98	9.8	2.3	.00	.00	.00	.00	.00
12	36	1.4	.39	12	56	8.9	2.1	.00	.00	.00	.00	.00
13	81	3.5	.27	10	57	9.1	2.2	.00	.00	.00	.00	.00
14	32	1.5	.23	8.9	75	13	2.1	.00	.00	.00	.00	.00
15	19	2.2	.09	7.9	204	17	2.0	.00	.00	.00	.00	.00
16	7.8	1.7	.04	6.8	178	433	2.0	.00	.00	.00	.00	275
17	5.0	1.1	.04	5.9	180	276	1.5	.00	.00	.00	.00	327
18	3.1	.82	.11	5.1	114	159	1.4	.00	.00	.00	.00	66
19	2.0	.67	.09	4.5	212	93	1.1	.00	.00	.00	.00	38
20	.92	.43	2.1	4.0	86	56	.79	.00	.00	.00	.00	21
21	.42	.45	288	4.1	209	39	.75	.00	.00	.00	.00	11
22	.14	.37	126	4.1	676	29	.75	.00	.00	.00	.00	7.4
23	.00	.18	141	3.7	212	23	.63	.00	.00	.00	.00	5.5
24	.00	.15	177	3.6	137	18	.52	.00	.00	.00	.00	5.8
25	.00	.10	94	3.2	84	15	.49	.00	.00	.00	.00	5.0
26	.00	.06	103	3.1	185	12	.45	.00	.00	.00	.00	4.1
27	.00	.06	127	2.8	128	10	.60	.00	.00	.00	.00	3.2
28	.00	60	67	2.7	77	9.0	1.2	.00	.00	.00	.00	2.4
29	.00	70	42	2.8	---	8.0	1.9	.00	.00	.00	e.00	1.9
30	.00	33	28	2.9	---	7.3	1.3	.00	.00	.00	e.00	1.4
31	.00	---	20	3.4	---	6.8	---	.00	---	.00	.00	---
TOTAL	188.78	177.69	1258.63	339.4	3287	1487.9	67.28	2.27	0.00	0.00	0.00	774.70
MEAN	6.09	5.92	40.6	10.9	117	48.0	2.24	.073	.000	.000	.000	25.8
MAX	81	70	288	66	676	433	6.3	.90	.00	.00	.00	327
MIN	.00	.00	.04	2.7	11	6.8	.45	.00	.00	.00	.00	.00
AC-FT	374	352	2500	673	6520	2950	133	4.5	.00	.00	.00	1540

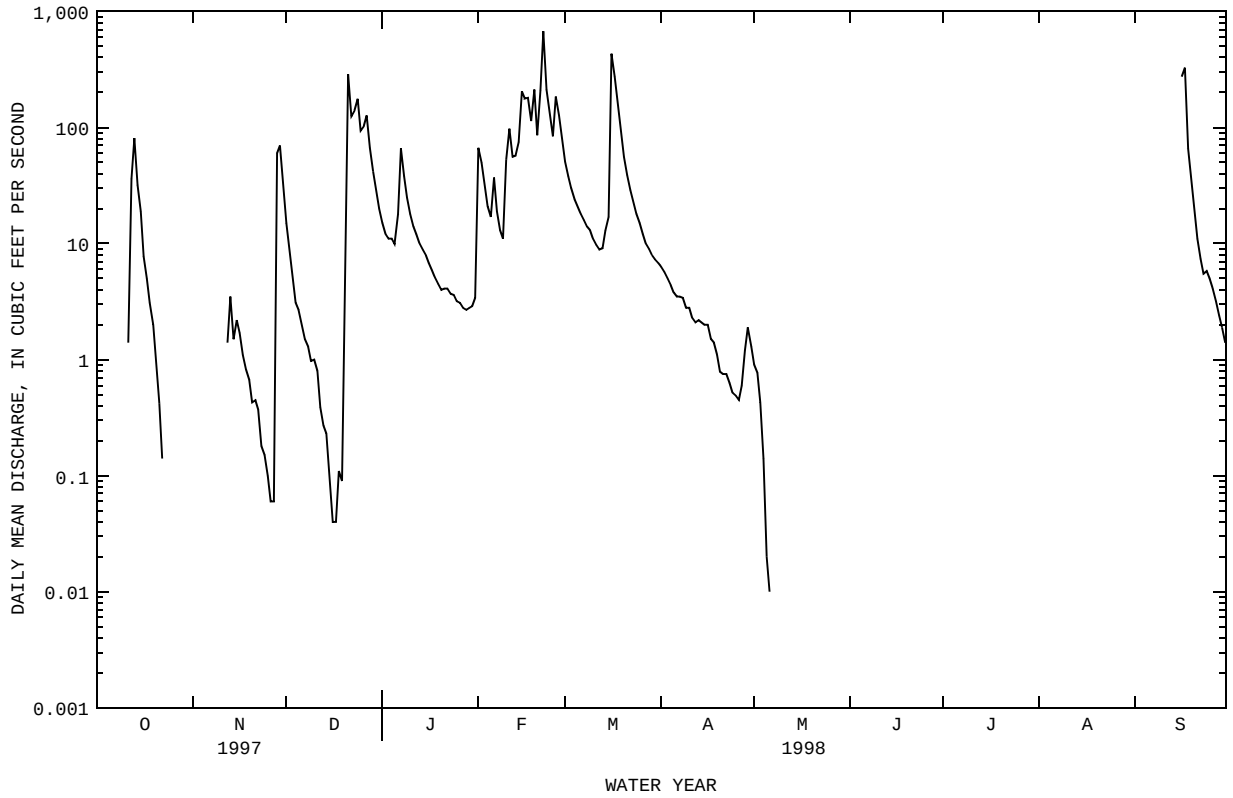
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1998z, BY WATER YEAR (WY)

MEAN	24.9	41.4	56.1	45.1	68.9	39.4	43.1	113	108	11.8	3.61	8.71
MAX	394	590	605	416	815	332	343	595	905	151	118	142
(WY)	1974	1986	1992	1968	1992	1992	1976	1975	1981	1985	1974	1974
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1964	1964	1964	1964	1989	1964	1967	1971	1963	1963	1963	1963

08172400 PLUM CREEK AT LOCKHART, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1963 - 1998z	
ANNUAL TOTAL	26499.96		7583.65			
ANNUAL MEAN	72.6		20.8		46.8	
HIGHEST ANNUAL MEAN					238	1992
LOWEST ANNUAL MEAN					.10	1978
HIGHEST DAILY MEAN	3000	Jun 22	676	Feb 22	9700	Nov 24 1985
LOWEST DAILY MEAN	.00	Aug 5	.00	Oct 1	.00	Oct 11 1962
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 20	.00	Oct 1	.00	Nov 9 1962
INSTANTANEOUS PEAK FLOW			1580	Feb 22	27700	Nov 24 1985
INSTANTANEOUS PEAK STAGE			13.96	Feb 22	20.89	Nov 24 1985
ANNUAL RUNOFF (AC-FT)	52560		15040		33900	
10 PERCENT EXCEEDS	137		58		62	
50 PERCENT EXCEEDS	1.7		.43		.30	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated
z Period of regulated streamflow



08173900 GUADALUPE RIVER AT GONZALES, TX

LOCATION.--Lat 29°29'03", long 97°27'00", Gonzales County, Hydrologic Unit 12100202, in City Park on left bank 0.2 mi upstream from U.S. Highway 183 bridge, and 4.4 mi downstream from San Marcos River.

DRAINAGE AREA.--3,490 mi^2.

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--Jul 1915 to Sep 1922. Records published in WSP's 408, 438, 458, 478, 528, and 548 later discredited and not to be used. Oct 1951 to Sep 1952. Discharge measurements only at site 0.2 mi downstream published in WSP 1312. Mar 1977 to Sep 1996. (peak stage). Oct 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is 231.80 ft above sea level. Jul 1915 to Sep 1922, 0.2 mi downstream, datum not known. Mar 1977 to Sep 1996, 1.2 mi upstream at Gonzales hydroelectric plant at National Weather Service datum. Satellite telemeter at station.

REMARKS.--Records fair. Since water year 1964, at least 10% of contributing drainage area has been regulated by Canyon Lake (station 08167700) and a series of small power dams. Some water is diverted for irrigation and municipal use (amounts unknown).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 29, 1929, reached a stage of 38.3 ft, to National Weather Service 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	693	796	946	1030	907	2710	3590	1170	767	513	341	774
2	785	735	749	1140	1830	2490	3920	1130	850	625	457	776
3	718	879	1160	922	1740	2230	3150	1230	792	585	384	791
4	560	731	833	963	1500	2170	2340	1130	768	644	381	750
5	650	819	833	1100	1640	2180	2100	1120	746	1200	360	656
6	786	801	827	1050	1700	1950	2010	1140	755	957	329	742
7	737	737	763	1250	1750	1810	2000	1120	698	801	668	825
8	957	752	985	1410	1990	1790	2010	1060	892	717	660	802
9	1010	637	905	1790	2290	1710	1920	1010	695	615	520	843
10	786	979	900	1800	2190	1700	1810	1030	752	554	430	612
11	1080	747	794	1750	2250	1620	1790	951	744	528	422	932
12	1710	995	835	1900	2160	1540	1640	974	758	512	417	1080
13	2860	1070	725	1850	1760	1590	1620	975	719	499	396	1260
14	1850	1060	763	1720	1710	1550	1500	844	704	532	331	1140
15	1090	839	739	1440	1900	1700	1560	973	649	528	457	2370
16	949	840	811	1060	2380	2270	1620	887	628	587	374	1400
17	688	806	750	1070	3040	5550	1590	860	802	515	470	3870
18	873	805	862	878	2750	6710	1500	754	635	494	484	4960
19	917	786	785	1100	2170	5230	1570	861	556	468	432	2040
20	992	822	760	721	2050	4620	1520	820	668	453	566	1620
21	902	762	888	1170	2230	4350	1540	806	562	428	462	1370
22	729	770	1810	975	3060	4230	1480	785	591	385	809	1240
23	619	764	1380	844	4240	4170	1500	785	534	485	3450	1130
24	802	768	1480	893	3090	4090	1450	749	544	298	e1950	1100
25	836	731	1760	881	2470	4040	1290	837	501	392	1480	1050
26	730	857	1290	912	2630	3970	1200	792	555	383	e972	1080
27	1000	770	1130	845	3180	3900	1470	927	527	447	e1190	1120
28	914	835	1380	908	3110	3420	1310	805	481	408	1100	1060
29	942	973	1160	901	---	3560	1210	830	567	349	828	928
30	888	967	1150	891	---	3600	1280	774	559	430	832	1110
31	937	---	1200	870	---	3580	---	756	---	335	731	---
TOTAL	29990	24833	31353	36034	63717	96030	54490	28885	19999	16667	22683	39431
MEAN	967	828	1011	1162	2276	3098	1816	932	667	538	732	1314
MAX	2860	1070	1810	1900	4240	6710	3920	1230	892	1200	3450	4960
MIN	560	637	725	721	907	1540	1200	749	481	298	329	612
AC-FT	59490	49260	62190	71470	126400	190500	108100	57290	39670	33060	44990	78210

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

MEAN	660	629	760	841	1513	2305	2543	1569	3145	3345	1531	1196
MAX	967	828	1011	1162	2276	3098	3269	2206	5623	6153	2331	1314
(WY)	1998	1998	1998	1998	1998	1998	1997	1997	1997	1997	1997	1998
MIN	352	430	508	520	750	1513	1816	932	667	538	732	1078
(WY)	1997	1997	1997	1997	1997	1997	1998	1998	1998	1998	1998	1997

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1997 - 1998z	
ANNUAL TOTAL	800667		464112			
ANNUAL MEAN	2194		1272		1669	
HIGHEST ANNUAL MEAN					2066	1997
LOWEST ANNUAL MEAN					1272	1998
HIGHEST DAILY MEAN	17400	Jun 24	6710	Mar 18	17400	Jun 24 1997
LOWEST DAILY MEAN	458	Jan 11	298	Jul 24	205	Oct 20 1996
ANNUAL SEVEN-DAY MINIMUM	489	Jan 9	370	Jul 31	264	Oct 15 1996
INSTANTANEOUS PEAK FLOW			7150	Mar 18	18500	Jun 24 1997
INSTANTANEOUS PEAK STAGE			24.00	Mar 18	38.80	Jun 24 1997
ANNUAL RUNOFF (AC-FT)	1588000		920600		1209000	
10 PERCENT EXCEEDS	5700		2310		4460	
50 PERCENT EXCEEDS	1320		917		1030	
90 PERCENT EXCEEDS	548		514		442	

e Estimated
z Period of regulated streamflow.

08173900 GUADALUPE RIVER AT GONZALES, TX

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: April 1996 to April 1998. Sediment analyses: April 1996 to April 1998.

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 (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)
OCT											
27...	1030	1330	552	8.2	19.0	7.9	85	250	36	73	16
NOV											
17...	1100	949	538	8.2	12.0	8.8	82	230	24	68	16
DEC											
16...	1030	758	558	8.2	11.0	10.7	98	250	19	72	17
JAN											
21...	1030	1440	535	8.2	17.0	10.0	105	240	32	68	17
FEB											
20...	1015	2070	483	8.2	15.0	9.5	95	220	29	64	14
MAR											
30...	1100	3590	477	8.2	25.0	10.4	130	210	8	57	15
APR											
21...	1030	1530	503	8.2	20.0	8.4	93	230	18	65	16

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
OCT										
27...	18	.5	14	2.2	220	25	23	.2	12	315
NOV										
17...	21	.6	16	2.5	210	28	28	.2	10	324
DEC										
16...	21	.6	16	2.1	230	28	28	.2	9.6	338
JAN										
21...	18	.5	14	1.9	210	26	24	.3	10	310
FEB										
20...	16	.5	14	2.8	190	26	23	.2	10	298
MAR										
30...	11	.3	11	1.9	200	21	18	.2	9.8	273
APR										
21...	14	.4	12	1.8	210	23	22	.3	8.4	293

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, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT										
27...	309	--	<.01	.97	.02	1.2	.17	--	<.1	.2
NOV										
17...	308	--	<.01	1.0	<.02	1.2	--	--	.1	.2
DEC										
16...	325	.901	.08	.98	<.02	1.1	--	--	<.1	.1
JAN										
21...	304	.981	.02	1.0	<.02	1.2	--	--	<.1	.2
FEB										
20...	281	--	<.01	.68	<.02	1.0	--	--	.2	.3
MAR										
30...	254	.493	.01	.50	.04	.79	.25	.17	.2	.3
APR										
21...	284	.634	.08	.71	.07	.90	.12	.03	.1	.2

08173900 GUADALUPE RIVER AT GONZALES, TX--Continued

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

DATE	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)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT										
27...	.05	.02	.03	.10	1.6	.7	93	26	<3	3
NOV										
17...	.06	.04	.03	.10	2.0	.4	108	42	<3	2
DEC										
16...	.03	.02	.01	.03	1.5	.2	68	33	<10	5
JAN										
21...	.04	.04	.04	.12	1.7	.3	198	51	<10	<4
FEB										
20...	.08	.06	.05	.17	3.2	.8	358	64	<10	<4
MAR										
30...	.07	.03	.03	.08	2.1	.9	950	98	<10	<4
APR										
21...	.05	.03	.02	.07	1.5	.5	128	31	<10	<4

08175000 SANDIES CREEK NEAR WESTHOFF, TX

LOCATION.--Lat 29°12'54", long 97°26'57", De Witt County, Hydrologic Unit 12100202, on left bank 100 ft downstream from bridge on county highway, 1.9 mi upstream from Birds Creek, 2.0 mi northeast of Westhoff, and 20.4 mi upstream from mouth.

DRAINAGE AREA.--549 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Mar 1930 to Nov 1934, Aug 1959 to current year.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 178.27 ft above sea level. Prior to Nov 9, 1934, water-stage recorder at site 150 ft upstream at datum 0.86 ft higher. Aug 10, 1959, to Feb 2, 1960, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation or diversions.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1864, 92,700 ft^3/s Jul 2, 1936 (gage height, 33.1 ft, from floodmarks), on basis of computation of peak flow, at present site and datum. Flood in Oct 1913 reached a stage of 26.0 ft, present site and datum, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 24	1315	2,490	19.80	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	4.9	5.8	9.0	9.1	16	42	11	6.6	3.2	1.6	1.4	18
2	4.8	5.7	10	9.7	19	32	9.7	6.5	3.2	1.5	1.4	13
3	4.9	5.6	198	8.9	22	25	9.6	6.1	3.0	1.9	1.2	9.4
4	4.8	5.0	277	8.9	23	22	9.1	5.7	3.0	2.3	1.2	7.5
5	4.4	4.7	236	9.9	18	19	8.9	5.6	2.7	2.3	1.2	6.0
6	4.3	4.9	114	113	16	17	8.8	5.6	2.8	2.5	1.4	4.5
7	4.7	5.8	47	790	14	16	9.9	5.6	2.7	3.1	4.4	4.3
8	17	5.6	28	953	13	15	10	5.6	3.2	2.8	35	4.3
9	54	5.6	21	538	12	14	9.9	5.6	3.0	2.4	50	4.2
10	e55	7.3	18	181	125	13	9.9	5.5	2.7	2.1	36	4.0
11	e250	8.6	15	75	552	13	9.3	5.1	2.4	1.8	19	1240
12	e850	183	13	43	503	12	9.0	4.9	2.3	1.6	9.8	1450
13	e1000	380	11	29	263	12	9.1	4.6	2.3	1.5	5.5	1130
14	e500	234	10	23	132	14	8.7	4.3	2.3	1.6	3.8	934
15	170	97	9.6	20	317	14	8.7	4.3	2.2	1.7	3.2	359
16	54	46	9.0	17	331	349	9.4	4.5	2.1	1.7	7.2	279
17	25	26	9.1	15	433	569	9.0	4.4	2.0	4.4	73	475
18	15	20	9.4	14	357	313	11	4.3	2.0	4.2	144	682
19	12	17	9.1	14	380	180	11	4.3	1.8	4.0	75	445
20	9.3	14	9.4	13	678	97	9.5	4.5	1.8	3.1	24	124
21	7.6	13	11	12	618	55	9.2	4.3	1.8	2.3	16	50
22	6.7	12	14	12	1410	36	8.7	4.3	1.8	2.0	422	30
23	6.5	10	16	12	1670	26	8.4	4.3	1.8	1.7	1320	21
24	6.5	9.7	16	12	1360	21	8.3	4.3	1.8	1.6	2360	17
25	6.2	9.3	13	11	676	18	7.6	4.2	1.5	1.6	1870	14
26	5.7	9.5	12	11	180	16	7.2	4.0	1.4	1.5	837	11
27	5.3	10	13	10	91	14	6.9	4.0	1.5	1.5	351	10
28	5.4	11	12	11	59	13	6.9	3.9	1.5	1.4	196	10
29	5.6	9.4	11	12	---	13	6.6	3.8	1.6	1.4	134	9.7
30	5.6	8.4	10	12	---	12	6.3	3.7	1.7	1.4	57	9.2
31	5.8	---	9.5	13	---	12	---	3.5	---	1.4	28	---
TOTAL	3111.0	1183.9	1200.1	3012.5	10288	2024	267.6	147.9	67.1	65.9	8088.7	7375.1
MEAN	100	39.5	38.7	97.2	367	65.3	8.92	4.77	2.24	2.13	261	246
MAX	1000	380	277	953	1670	569	11	6.6	3.2	4.4	2360	1450
MIN	4.3	4.7	9.0	8.9	12	12	6.3	3.5	1.4	1.4	1.2	4.0
AC-FT	6170	2350	2380	5980	20410	4010	531	293	133	131	16040	14630
CFSM	.18	.07	.07	.18	.67	.12	.02	.01	.00	.00	.48	.45
IN.	.21	.08	.08	.20	.70	.14	.02	.01	.00	.00	.55	.50

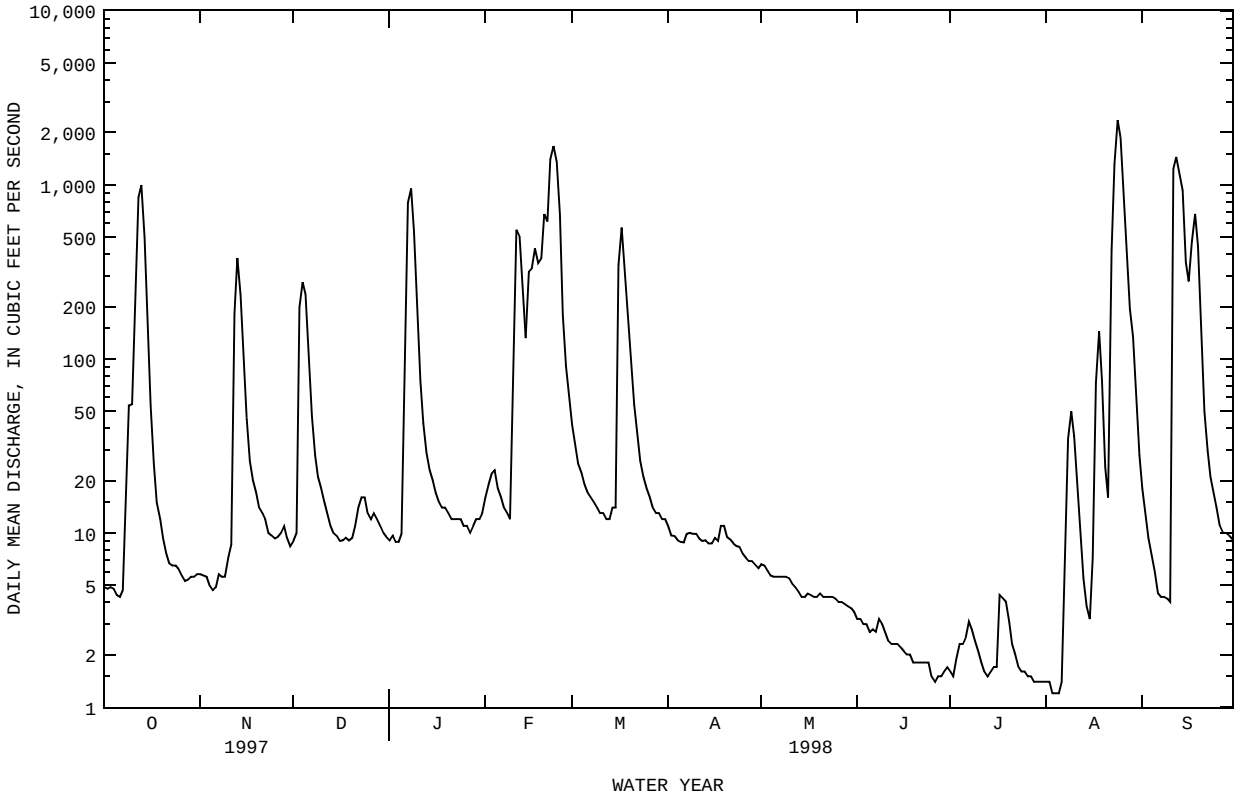
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1998h, BY WATER YEAR (WY)

MEAN	106	64.3	62.1	120	149	69.6	164	256	288	29.5	27.7	207
MAX	1719	470	969	778	1485	418	1361	2062	2820	139	261	4060
(WY)	1961	1961	1977	1974	1992	1969	1977	1972	1987	1961	1998	1967
MIN	.26	1.19	1.85	4.08	4.05	2.66	3.26	.88	.32	.23	.071	.26
(WY)	1964	1932	1989	1967	1967	1967	1963	1963	1934	1964	1962	1959

08175000 SANDIES CREEK NEAR WESTHOFF, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1930 - 1998h	
ANNUAL TOTAL	64948.9		36831.8			
ANNUAL MEAN	178		101		130	
HIGHEST ANNUAL MEAN					532	1992
LOWEST ANNUAL MEAN					8.71	1988
HIGHEST DAILY MEAN	5920	Apr 12	2360	Aug 24	67900	Sep 22 1967
LOWEST DAILY MEAN	2.9	Sep 17	1.2	Aug 3	.00	Aug 11 1932
ANNUAL SEVEN-DAY MINIMUM	3.1	Sep 14	1.3	Jul 30	.00	Aug 18 1959
INSTANTANEOUS PEAK FLOW					c79700	Sep 22 1967
INSTANTANEOUS PEAK STAGE					32.34	Sep 22 1967
ANNUAL RUNOFF (AC-FT)	128800		73060		94330	
ANNUAL RUNOFF (CFSM)	.32		.18		.24	
ANNUAL RUNOFF (INCHES)	4.40		2.50		3.22	
10 PERCENT EXCEEDS	497		315		122	
50 PERCENT EXCEEDS	12		9.7		9.0	
90 PERCENT EXCEEDS	4.1		2.0		1.4	

e Estimated
c From rating curve extended above 21,000 ft^3/s on basis of slope-area measurement of 92,700 ft^3/s.
h See PERIOD OF RECORD paragraph.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Apr 1962 to current year. Sediment analyses: Nov 1965 to May 1966. Pesticide analyses Oct 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 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)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)
NOV												
10...	1600	8.0	1550	8.0	14.0	6.4	63	130	41	7.0	259	10
APR												
06...	1100	8.9	1240	7.7	18.5	6.7	72	170	53	10	183	6
MAY												
28...	1430	3.7	1780	8.2	27.5	5.6	71	150	44	8.5	309	11
AUG												
04...	1040	1.2	2840	8.3	28.0	1.1	14	120	36	6.6	602	24
21...	1315	15	764	7.6	27.5	4.7	59	51	16	2.8	136	8
SEP												
30...	1230	9.4	623	7.5	28.0	3.6	47	100	32	5.6	79	3

DATE	SODIUM PERCENT (00932)	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)	2,4,5-T TOTAL (UG/L) (39740)	2,4-D, TOTAL (UG/L) (39730)	SILVEX, TOTAL (UG/L) (39760)
NOV											
10...	79	13	310	43	260	.80	19	830	--	--	--
APR											
06...	68	11	240	75	180	.47	18	675	--	--	--
MAY											
28...	81	12	320	49	310	.80	14	943	<.010	<.010	<.010
AUG											
04...	91	15	650	26	540	1.5	18	1630	--	--	--
21...	83	8.4	180	24	100	.48	17	419	--	--	--
SEP											
30...	60	11	150	34	81	.20	25	356	--	--	--

DATE	2,4-DP TOTAL (UG/L) (82183)	ALDRIN, TOTAL (UG/L) (39330)	TOTAL TRI-THION (UG/L) (39786)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLOR-PYRIFOS TOTAL RECOVER (UG/L) (38932)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L) (82614)
NOV											
10...	--	--	--	--	--	--	--	--	--	--	--
APR											
06...	--	--	--	--	--	--	--	--	--	--	--
MAY											
28...	<.010	<.010	<.010	<.100	<.010	<.010	<.010	<.010	<.010	<.010	<.010
AUG											
04...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
30...	--	--	--	--	--	--	--	--	--	--	--

DATE	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)	PARA-THION, TOTAL (UG/L) (39540)	METHYL PARA-THION, TOTAL (UG/L) (39600)	PHORATE TOTAL (UG/L) (39023)	DEF TOTAL (UG/L) (39040)	SAMPLE VOLUME SCHED-ULE 1319 (ML) (99868)	SET NUMBER SCHED-ULE 1319 (NO.) (99804)	TOX-APHENE, TOTAL (UG/L) (39400)
NOV											
10...	--	--	--	--	--	--	--	--	--	--	--
APR											
06...	--	--	--	--	--	--	--	--	--	--	--
MAY											
28...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	925	8153.10	<1.00
AUG											
04...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
30...	--	--	--	--	--	--	--	--	--	--	--

08175800 GUADALUPE RIVER AT CUERO, TX

LOCATION.--Lat 29°03'57", long 97°19'16", De Witt County, Hydrologic Unit 12100204, on left bank at downstream side of bridge on U.S. Highways 77A, 87, and 183, 2.1 mi upstream from Gohlke Creek, 2.4 mi southwest of Cuero, 4.2 mi downstream from mouth of Sandies Creek, and at mile 100.6.

DRAINAGE AREA.--4,934 mi^2 of which 1,432 mi^2 is above Canyon Dam.

PERIOD OF RECORD.--Jan 1903 to Dec 1906, Sep 1916 to Apr 1919, Sep 1920 to Nov 1935, and Jan 1964 to current year. Published in WSP 1312 as "near Cuero" Jan 1903 to Dec 1906, and as "below Cuero" Sep 1920 to Apr 1935. Records from 1903 to 1935 not used in statistical computation. Gage-height records collected 7.1 mi upstream from 1941 to 1966 and published in National Weather Service reports.
Water-quality records.--Chemical analyses: Mar 1968 to Sep 1985.

REVISED RECORDS.--WRD TX-68-1, TX-69-1: Drainage areas at all sites.

GAGE.--Water-stage recorder. Datum of gage is 128.64 ft above sea level. From Dec 26, 1902, to Jun 1903, nonrecording gage at site 7.1 mi upstream at different datum (gage heights adjusted to site 3.3 mi upstream from present site before computation); from Jul 1903 to Dec 1906, nonrecording gage 3.3 mi upstream at different datum; and Aug 19, 1916, to Dec 16, 1935, water-stage recorder at site 5.0 mi downstream at datum 3.19 ft lower. Satellite telemeter at station.

REMARKS.--Records fair. Since water year 1928, at least 10% of contributing drainage area has been regulated by Lake Dunlap and Lake McQueeny (combined capacity of 10,950 acre-ft). Additional regulation since Jul 21, 1962, by Canyon Lake (storage capacity of 386,200 acre-ft) 202.4 mi upstream. Flow below New Braunfels is partly regulated by a series of small power dams, combined capacity of six largest dams 33,550 acre-ft. Flow is affected at times by discharge from the flood-detention pools of 53 floodwater-retarding structures with a combined detention capacity of 87,200 acre-ft. These structures control runoff from 302 mi^2 in the Comal, San Marcos, and Plum Creek drainage basins. Many small diversions above station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--10 years (water years 1904-6, 1917-18, 1921-27) 1,220 ft^3/s (839,900 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1904-6, 1917-18, 1921-27).--Maximum stage since at least 1900 probably occurred on Mar 1, 1903, at 43.0 ft (at different site and datum), but discharge was not determined.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900 probably occurred Jul 2, 1936, 44.33 ft, present site and datum, from information by State Department of Highways and Public Transportation. Other floods at this station occurred Oct 4, 1913, 37.57 ft, at different site and datum; Dec 6, 1913, 34.57 ft (at different site and datum); Oct 20, 1919, 32.2 ft (site and datum then in use), and Jun 21, 1961, 37.0 ft at 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	1030	893	1240	1260	970	3410	3510	1210	e770	594	372	705
2	872	868	998	1210	999	2830	3530	1210	e810	576	340	748
3	762	768	1340	1050	1600	2580	3750	1100	e825	609	351	798
4	778	875	2030	1110	1820	2390	3150	1160	860	632	572	724
5	764	837	1770	976	1570	2320	2510	1120	710	637	480	905
6	527	798	1450	1210	1630	2290	2240	e1070	778	982	331	615
7	843	859	1270	2410	1720	2130	2130	e1020	803	969	334	612
8	1860	917	579	3170	1750	1960	2120	e1100	852	836	358	727
9	4130	887	1050	3050	1980	1870	2090	1080	868	691	825	767
10	3480	729	1110	2490	2310	1880	2020	989	757	655	456	961
11	2920	847	985	2030	4090	1810	1910	964	835	535	413	9360
12	5800	1220	915	2000	4670	1770	1850	918	697	537	467	7760
13	8920	2650	909	2020	4050	1650	1780	913	837	513	432	3720
14	10500	2270	908	2040	2680	1720	1650	985	721	431	443	2880
15	8290	1840	797	1860	2720	1700	1650	1000	722	498	441	2300
16	4210	1380	746	1540	3110	2730	1550	894	700	567	419	3090
17	1820	951	856	1290	4110	5060	1660	910	808	571	394	5440
18	1100	896	759	1090	4540	6910	1690	900	684	527	489	5960
19	938	893	989	963	4330	8040	1580	814	808	471	650	5810
20	902	855	898	1130	3600	6130	1620	885	603	472	538	2740
21	1240	853	860	1050	3040	4850	1550	923	560	471	583	1910
22	935	886	875	1010	6880	4410	1570	822	699	461	908	1590
23	912	878	1550	1120	8470	4220	1510	805	612	450	4560	1410
24	874	799	1600	993	7970	4120	1510	772	534	404	7250	1240
25	878	792	1510	860	5620	4030	1480	800	550	402	5520	1150
26	835	836	1850	896	3230	3980	1350	807	660	375	3840	1180
27	707	812	1490	901	2990	3910	1280	837	450	355	2000	1150
28	954	850	1220	1010	3610	3830	1340	915	665	334	1530	1250
29	943	874	1370	872	---	3470	1330	830	475	446	1360	1160
30	988	1030	1310	916	---	3490	1260	e850	530	433	1080	974
31	952	---	1110	938	---	3540	---	e830	---	423	618	---
TOTAL	70664	30843	36344	44465	96059	105030	58170	29433	21183	16857	38354	69636
MEAN	2279	1028	1172	1434	3431	3388	1939	949	706	544	1237	2321
MAX	10500	2650	2030	3170	8470	8040	3750	1210	868	982	7250	9360
MIN	527	729	579	860	970	1650	1260	772	450	334	331	612
AC-FT	140200	61180	72090	88200	190500	208300	115400	58380	42020	33440	76080	138100

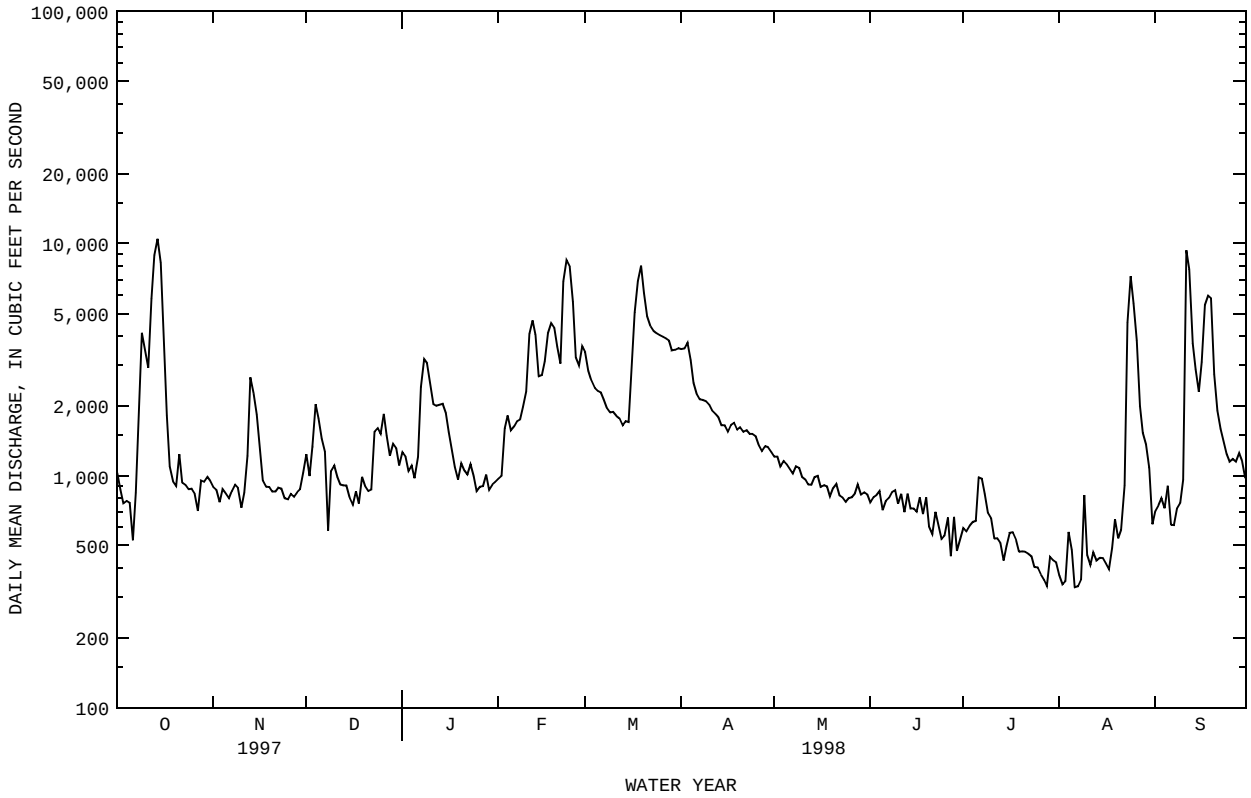
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1998hz, BY WATER YEAR (WY)

MEAN	1451	1515	1719	1883	2203	1872	2308	3111	3394	1541	1181	1746
MAX	9585	5023	10500	10830	16740	10370	11100	12270	21470	6559	4149	11210
(WY)	1974	1977	1992	1992	1992	1992	1977	1972	1987	1997	1987	1981
MIN	242	411	432	397	403	504	381	309	242	95.7	112	124
(WY)	1990	1990	1990	1990	1990	1967	1971	1984	1984	1984	1984	1984

08175800 GUADALUPE RIVER AT CUERO, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1964 - 1998hz	
ANNUAL TOTAL	1138299		617038			
ANNUAL MEAN	3119		1691		2023	
HIGHEST ANNUAL MEAN					6885	1992
LOWEST ANNUAL MEAN					435	1984
HIGHEST DAILY MEAN	18900	Apr 12	10500	Oct 14	112000	Sep 1 1981
LOWEST DAILY MEAN	394	Feb 14	331	Aug 6	28	Jul 22 1984
ANNUAL SEVEN-DAY MINIMUM	492	Feb 8	386	Jul 28	45	Jul 18 1984
INSTANTANEOUS PEAK FLOW			14300	Sep 11	132000	Sep 1 1981
INSTANTANEOUS PEAK STAGE			20.14	Sep 11	41.83	Sep 1 1981
ANNUAL RUNOFF (AC-FT)	2258000		1224000		1466000	
10 PERCENT EXCEEDS	7200		3830		3670	
50 PERCENT EXCEEDS	1460		999		1050	
90 PERCENT EXCEEDS	646		529		460	

e Estimated
h See PERIOD OF RECORDS paragraph.
z Period of regulated streamflow.



08176500 GUADALUPE RIVER AT VICTORIA, TX

LOCATION.--Lat 28°47'34", long 97°00'46", Victoria County, Hydrologic Unit 12100204, on left bank near left downstream corner of downstream bridge of two bridges on U.S. Highway 59 in Victoria, 1,200 ft upstream from Southern Pacific Railroad Co. bridge, 15 mi upstream from Coleto Creek, and at mile 50.7.

DRAINAGE AREA.--5,198 mi^2, of which 1,432 mi^2 is above Canyon Dam.

PERIOD OF RECORD.--Nov 1934 to current year. Gage-height records collected in this vicinity since 1904 are contained in reports of the National Weather Service.
Water-quality records.--Chemical analyses: Aug 1945 to Aug 1994. Chemical and biochemical analyses: Jan 1968 to Aug 1994. Pesticide analyses: Feb 1974 to Aug 1981. Sediment analyses: Apr 1959, Aug 1973 to Aug 1994. Specific conductance: Oct 1945 to Sep 1981. Water temperature: Nov 1950 to Sep 1981.

REVISED RECORDS.--WSP 2123: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 29.15 ft above sea level. Nov 1, 1934, to Jul 27, 1992, at site just upstream from pier on left bank of upstream bridge at same datum. Satellite telemeter at station.

REMARKS.--Records good. Since installation of gage in Nov 1934, at least 10% of contributing drainage area has been regulated by Lake Dunlap and Lake McQueeny (combined capacity of 10,950 acre-ft). Flow is also partially regulated by Canyon Lake (capacity 386,200 acre-ft) 252.3 mi upstream. There are many diversions above station. Records provided by the city of Victoria show that during the current year about 7,920 acre-ft of wastewater effluent was released into the river below this station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jun 1, 1929, reached a stage of 30.2 ft, present site and datum, maximum stage since at least 1833, that of Jul 3, 1936..

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	1080	1060	1190	1140	1070	3920	3690	1240	870	577	453	757
2	1150	999	1220	1340	1090	3430	3660	1240	767	622	411	731
3	980	963	1110	1220	1080	2940	3770	1210	828	603	389	813
4	923	903	1580	1110	1740	2670	3750	1100	842	679	389	831
5	931	998	2000	1090	1660	2500	3110	1210	913	657	569	775
6	901	914	1610	1200	1530	2400	2510	1190	764	666	515	928
7	736	928	1430	1620	1630	2350	2300	1140	814	1000	387	660
8	1130	953	1190	2880	1670	2120	2190	1050	822	924	386	695
9	3230	1010	749	3030	1750	1960	2150	1130	863	819	455	780
10	3940	1000	1140	2820	2060	1960	2110	1100	878	707	717	854
11	4840	847	1180	2260	2500	1860	2020	1040	758	688	485	8660
12	7160	1280	1010	1990	4320	1850	1900	997	848	572	448	16200
13	13100	1910	986	1960	4240	1730	1890	938	727	588	485	7500
14	14500	2560	983	2020	3380	1750	1690	966	806	561	481	3990
15	10200	2170	969	1940	2600	1790	1690	1050	778	491	e500	3110
16	6960	1720	884	1740	3090	2940	1570	979	728	554	e490	4770
17	3440	1360	814	1500	3690	4890	1590	942	752	605	474	7080
18	1930	1050	988	1250	4280	5510	1680	946	779	599	447	6110
19	1360	1020	856	1150	4600	6910	1720	938	709	568	545	6170
20	1230	1010	1070	1050	4220	6970	1580	851	802	520	645	4820
21	1260	953	968	1250	3290	5430	1590	958	629	523	558	2570
22	1340	971	937	1010	4450	4710	1550	911	619	522	771	1910
23	1100	978	1060	1170	7930	4410	1550	866	692	516	2620	1570
24	1090	961	1660	1120	7760	4290	1490	845	652	503	6650	1390
25	1070	897	1520	1010	7060	4180	1500	827	576	468	6230	1240
26	1020	895	1620	956	5120	4110	1450	848	587	465	4900	1200
27	987	940	1740	966	3540	4060	1350	863	672	443	3460	1110
28	865	929	1420	1020	3590	4000	1300	861	518	428	1930	1210
29	1120	954	1270	1010	---	3880	1350	957	681	412	1460	1180
30	1090	970	1390	961	---	3580	1300	848	532	485	1340	1160
31	1110	---	1310	1030	---	3680	---	864	---	453	944	---
TOTAL	91823	34103	37854	45813	94940	108780	61000	30905	22206	18218	40534	90774
MEAN	2962	1137	1221	1478	3391	3509	2033	997	740	588	1308	3026
MAX	14500	2560	2000	3030	7930	6970	3770	1240	913	1000	6650	16200
MIN	736	847	749	956	1070	1730	1300	827	518	412	386	660
AC-FT	182100	67640	75080	90870	188300	215800	121000	61300	44050	36140	80400	180100

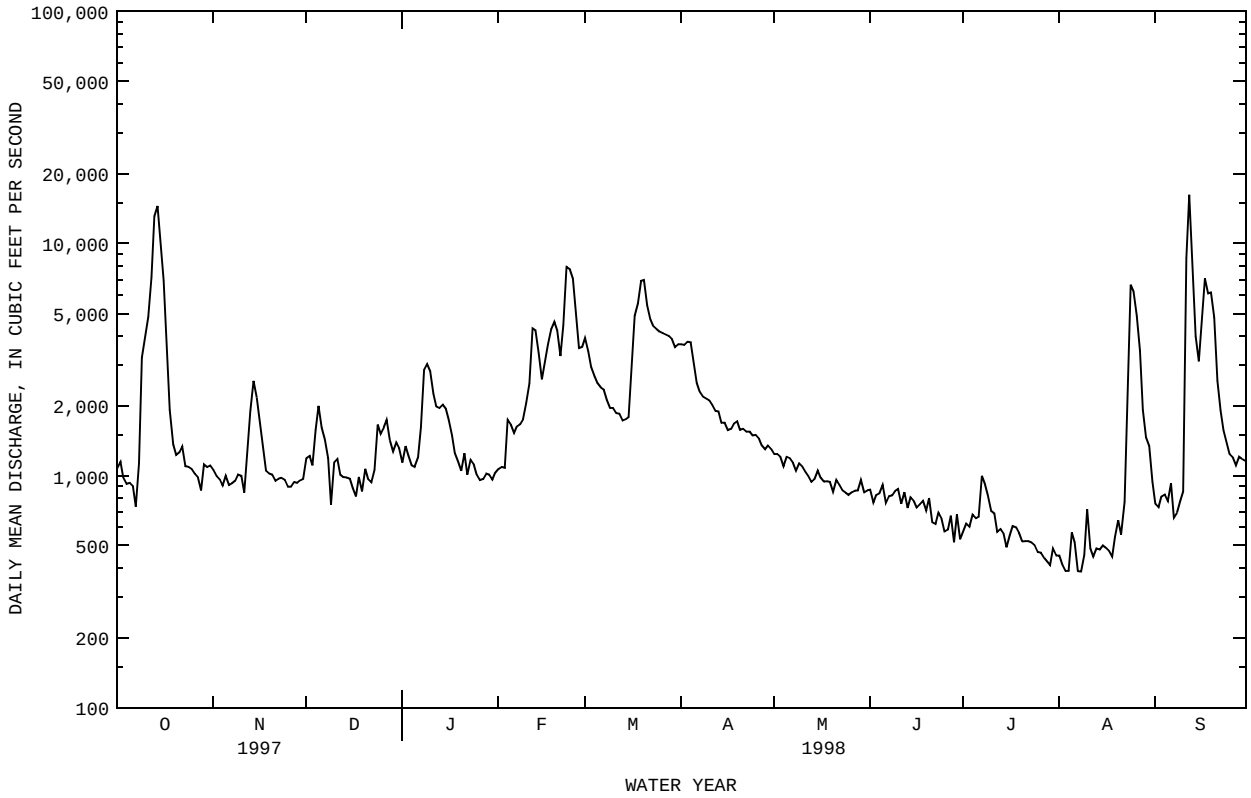
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 1998, BY WATER YEAR (WY)

MEAN	1665	1547	1548	1692	1984	1741	2145	2920	2914	1788	983	1688
MAX	10550	7761	9753	10650	17250	10600	10320	12990	23750	18430	4473	11340
(WY)	1974	1961	1992	1992	1992	1992	1977	1941	1987	1936	1987	1981
MIN	100	59.6	183	118	255	158	157	224	59.7	53.9	37.6	51.6
(WY)	1956	1957	1956	1957	1956	1956	1956	1956	1956	1956	1956	1956

08176500 GUADALUPE RIVER AT VICTORIA, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1935 - 1998	
ANNUAL TOTAL	1222069		676950			
ANNUAL MEAN	3348		1855		1867	
HIGHEST ANNUAL MEAN					6993	1992
LOWEST ANNUAL MEAN					132	1956
HIGHEST DAILY MEAN	22500	Apr 4	16200	Sep 12	129000	Jul 3 1936
LOWEST DAILY MEAN	475	Feb 15	386	Aug 8	14	Aug 20 1956
ANNUAL SEVEN-DAY MINIMUM	567	Feb 9	427	Jul 29	22	Sep 29 1956
INSTANTANEOUS PEAK FLOW			20600	Oct 13	179000	Jul 3 1936
INSTANTANEOUS PEAK STAGE			28.30	Oct 13	31.22	Jul 3 1936
INSTANTANEOUS LOW FLOW					36	Aug 21 1996
ANNUAL RUNOFF (AC-FT)	2424000		1343000		1352000	
10 PERCENT EXCEEDS	7340		4140		3510	
50 PERCENT EXCEEDS	1550		1110		981	
90 PERCENT EXCEEDS	748		569		362	

e Estimated



08176550 FIFTEENMILE CREEK NEAR WESER, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 28°53'51", long 97°21'17", De Witt County, Hydrologic Unit 12100204, at DeWitt-Goliad County line, on right downstream end of bridge on U.S. Highway 183, and 2.4 mi northeast of Weser.

DRAINAGE AREA.--167 mi^2.

PERIOD OF RECORD.--Oct 1984 to Sep 1989 (daily mean discharge), Oct 1989 to current year (peak discharges greater than base discharge).

GAGE.--Water-stage recorder. Datum of gage is 158.40 ft above sea level.

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

AVERAGE DISCHARGE.--5 years (water years 1985-89), 18.7 ft^3/s (13,550 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,400 ft^3/s Jun 22, 1997 (gage height, 26.68 ft), from rating curve extended above 2,840 ft^3/s; minimum daily, no flow for several days in 1989.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 12	1100	3,110	15.11	Sep 16	1315	6,550	a18.94
Jan 7	1300	1,150	11.34				

a From floodmark.

08176900 COLETO CREEK AT ARNOLD ROAD CROSSING NEAR SCHROEDER, TX

LOCATION.--Lat 28°51'41", long 97°13'34", Goliad County, Hydrologic Unit 12100204, on right bank at downstream side of Arnold Road Crossing, 0.7 mi downstream from confluence of Twelvemile and Fifteenmile Creeks, 3.2 mi north of Schroeder, 12.8 mi upstream from Coleto Creek Reservoir, and 26.0 mi upstream from mouth.

DRAINAGE AREA.--357 mi^2.

PERIOD OF RECORD.--Oct 1978 to current year. Records equivalent for Jan 1930 to Dec 1933 and Oct 1952 to Sep 1979, published as "near Schroeder" (station 08177000).

GAGE.--Water-stage recorder. Datum of gage is 100.43 ft above sea level. Satellite telemeter at station.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharges since at least 1872 at site 3.5 mi downstream, 122,000 ft^3/s Sep 21, 1967 (slope-area measurement of peak flow), 63,700 ft^3/s Oct 16, 1946, and 46,700 ft^3/s in Oct 1925, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 13	0800	14,900	21.13	Sep 16	2030	5,220	14.82
Sep 11	1630	22,700	24.46				

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	17	24	16	15	29	49	26	e14	4.9	1.7	.00	5.6
2	16	22	16	15	41	42	25	e14	4.6	1.7	.00	4.6
3	16	22	17	15	38	39	25	e13	4.4	1.6	.00	4.0
4	15	21	16	16	29	37	24	12	4.3	1.8	.00	3.6
5	15	21	16	16	26	36	23	12	4.2	1.6	.00	3.4
6	15	20	17	23	24	34	23	12	4.1	1.4	.00	3.2
7	15	19	17	82	23	33	23	11	4.0	1.3	.00	3.1
8	20	19	17	404	22	31	23	11	3.9	1.2	.00	3.0
9	148	18	17	101	21	29	22	10	3.7	1.1	.00	2.9
10	87	19	16	58	22	28	21	9.7	3.5	1.1	.00	3.4
11	557	20	16	43	25	27	20	9.3	3.3	.98	.00	12600
12	3030	31	15	36	35	27	20	9.1	3.2	.93	.00	6210
13	7440	35	15	32	36	27	20	9.0	3.1	.88	.00	928
14	610	34	15	30	30	31	20	9.0	2.9	.87	.00	414
15	221	28	15	27	36	31	20	9.0	2.8	.83	.00	662
16	130	24	15	25	191	736	20	8.5	3.0	.79	.00	3190
17	90	22	15	24	237	665	19	8.7	2.9	.75	.42	2140
18	70	21	15	23	96	266	21	8.4	2.6	.72	3.4	461
19	58	20	15	22	343	113	23	8.1	2.4	.66	2.9	212
20	49	20	15	22	279	68	24	7.8	2.2	.55	2.4	139
21	43	20	16	22	107	52	23	7.5	2.0	.43	2.5	103
22	39	18	16	21	990	44	20	7.2	2.0	.26	8.1	84
23	37	18	17	21	384	40	18	7.0	1.8	.11	968	74
24	34	18	19	21	180	38	18	6.7	1.7	.01	442	66
25	32	18	18	21	92	36	17	6.4	1.6	.00	78	57
26	29	18	17	21	161	34	17	6.3	1.5	.00	27	50
27	28	17	17	20	123	32	17	6.1	1.5	.00	43	46
28	26	17	16	20	65	31	17	5.9	1.7	.00	16	42
29	26	17	15	18	---	30	16	5.7	2.7	.00	9.3	38
30	26	16	15	18	---	29	15	5.4	2.2	.00	6.8	35
31	25	---	15	20	---	28	---	5.1	---	.00	5.9	---
TOTAL	12964	637	497	1252	3685	2743	620	274.9	88.7	23.27	1615.72	27587.8
MEAN	418	21.2	16.0	40.4	132	88.5	20.7	8.87	2.96	.75	52.1	920
MAX	7440	35	19	404	990	736	26	14	4.9	1.8	968	12600
MIN	15	16	15	15	21	27	15	5.1	1.5	.00	.00	2.9
AC-FT	25710	1260	986	2480	7310	5440	1230	545	176	46	3200	54720

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1998, BY WATER YEAR (WY)

MEAN	83.1	40.1	40.5	56.2	75.2	61.1	144	127	188	27.7	25.1	70.9
MAX	648	357	301	400	486	265	1021	608	1191	114	309	920
(WY)	1995	1983	1987	1979	1992	1997	1997	1979	1997	1990	1981	1998
MIN	.046	.049	.94	2.62	2.71	2.78	1.56	.29	.73	.14	.000	.000
(WY)	1989	1990	1990	1990	1996	1996	1996	1996	1990	1989	1996	1989

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1979 - 1998	
ANNUAL TOTAL	94932.6		51988.39			
ANNUAL MEAN	260		142		77.9	
HIGHEST ANNUAL MEAN					222	1997
LOWEST ANNUAL MEAN					2.47	1989
HIGHEST DAILY MEAN	24600	Jun 22	12600	Sep 11	24600	Jun 22 1997
LOWEST DAILY MEAN	1.7	Jan 1	.00	Jul 25	.00	Aug 20 1989
ANNUAL SEVEN-DAY MINIMUM	1.8	Jan 13	.00	Jul 25	.00	Aug 20 1989
INSTANTANEOUS PEAK FLOW			22700	Sep 11	44500	Jun 22 1997
INSTANTANEOUS PEAK STAGE			24.46	Sep 11	31.17	Jun 22 1997
ANNUAL RUNOFF (AC-FT)	188300		103100		56420	
10 PERCENT EXCEEDS	206		98		63	
50 PERCENT EXCEEDS	20		18		12	
90 PERCENT EXCEEDS	3.1		.91		.90	

e Estimated

08177300 PERDIDO CREEK AT FARM ROAD 622 NEAR FANNIN, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 28°45'05", long 97°19'01", Goliad County, Hydrologic Unit 12100204, at right downstream end of bridge on Farm Road 622, 1.2 mi downstream from Farmer Creek, 3.1 mi upstream from Kilgore Creek, and 6.1 mi northwest of Fannin.

DRAINAGE AREA.--28.0 mi^2.

PERIOD OF RECORD.--Jun 1978 to Sep 1991 (daily mean discharge); Oct 1991 to current year (peak discharges greater than base discharge).

GAGE.--Water-stage recorder. Datum of gage is 134.66 ft above sea level. Radio telemeter at station.

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

AVERAGE DISCHARGE.--13 years (water years 1979-91), 5.05 ft^3/s (2.45 in/yr), 3,660 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,510 ft^3/s Apr 4, 1997 (gage height, 17.89 ft), from rating curve extended above 22,700 ft^3/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr 20, 1976, reached a stage of 26.28 ft, and flood of Sep 15, 16, 1967, reached a stage of 26.08 ft, from information by the State Department of Highways and Public Transportation.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 11	2130	5,060	11.24	Mar 16	0800	762	7.38
Oct 13	0500	8,630	12.90	Sep 11	Unknown	2,210	a9.22

a From floodmark.

08177400 COLETO CREEK RESERVOIR NEAR VICTORIA, TX

LOCATION.--Lat 28°43'51", long 97°09'53", Victoria County, Hydrologic Unit 12100204, on right bank 175 ft upstream from right end of spillway of dam on Coleto Creek, 1.6 mi upstream from U.S. Highway 59, 11.6 mi west of Victoria, and 12.8 mi upstream from mouth.

DRAINAGE AREA.--494 mi^2.

PERIOD OF RECORD.--Feb 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 80.00 ft above sea level.
Supplementary gage (Turkey Creek Arm).--Water-stage recorder 2.7 mi upstream at datum 90.00 ft above sea level.
Coleto Creek Reservoir (Turkey Creek Arm) near Schroeder (station 08177240) is locally known as Dike No. 2.
Supplementary gage (Sulphur Creek Arm).--Water-stage recorder 2.8 mi upstream at datum 90.00 ft above sea level.
Coleto Creek Reservoir (Sulphur Creek Arm) near Fannin (station 08177380) is locally known as Dike No. 1.

REMARKS.--The reservoir system consists of the main reservoir (station 08177400), Turkey Creek Arm (station 08177240), and Sulphur Creek Arm (station 08177380). Figures shown below are the combined contents of the three stations. Cooling water is diverted from the main reservoir through the Central Power and Light coal-fired generating plant, through a canal to the Sulphur Creek Arm, and then through a canal to Turkey Creek Arm where it is released back into the main reservoir. The system was built for the Guadalupe-Blanco River Authority, and storage began in Feb 1980.

The main reservoir is formed by a compacted earthfill dam 20,800 ft long, including a 2,000-foot uncontrolled spillway and a 403-foot wide concrete outlet structure with seven 40- x 28-foot spillway gates. Low-flow releases are made through the dam by a controlled 8-inch pipe. Turkey Creek Arm is formed by a compacted earthfill dam 2,250 ft long, including a 186-foot wide concrete outlet structure with two 40- x 11-foot spillway gates. Sulphur Creek Arm is formed by a compacted earthfill dam 1,030 ft long, including a 186-foot wide concrete outlet structure with two 40- by 11-foot spillway gates. Data regarding the dams are given in the following table:

	Coleto Creek Reservoir Gage height (feet)	Turkey Creek Arm Gage height (feet)	Sulphur Creek Arm Gage height (feet)
Top of dam	39.0	17.0	17.0
Spillway	27.3	--	--
Top of spillway gates	19.0	12.9	12.9
Crest of spillway	-9.0	1.89	1.91

COOPERATION.--Elevations and capacity tables were provided by Forrest and Cotton Engineers, Consulting Engineers for the Guadalupe-Blanco River Authority.

EXTREMES (AT 2400 HOURS) FOR PERIOD OF RECORD.--Maximum contents, 40,550 acre-ft, May 5, 1993; minimum since reservoir was first filled in May 1980, 22,790 acre-ft, Aug 20, 21, 1996.

EXTREMES (AT 2400 HOURS) FOR CURRENT YEAR.--Maximum contents, 39,330 acre-ft, Sep 11; minimum contents, 27,500 acre-ft, Aug 12

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	35530	37140	37070	36820	37160	36960	35630	35300	33380	30510	27650	31860
2	35460	37110	37070	36820	36310	36700	35680	35260	33420	30440	27610	31760
3	35360	37110	37120	36910	36390	36740	35680	35250	33290	30470	27640	31680
4	35340	37070	37040	36950	36440	36790	35650	35130	33180	30370	27600	31560
5	35280	37100	37030	36960	36410	36850	35630	35140	33120	30270	27690	31460
6	35280	37000	36980	36960	36410	36870	35790	35170	32970	30140	27680	31420
7	35350	36930	36990	37210	36380	36970	35870	35100	32890	30100	27670	31360
8	35610	36950	37020	37080	36430	36500	35880	35050	32810	30010	27650	31250
9	36250	36960	37050	37020	36440	36020	35870	35010	32720	29900	27630	31120
10	36480	37020	36970	36750	36520	35010	35820	34930	32620	29780	27600	31640
11	38240	37350	36860	36770	36510	34890	35760	34820	32540	29670	27550	39330
12	37540	37240	36790	36850	36520	34890	35720	34730	32430	29600	27500	37220
13	36570	37380	36740	36870	36560	35170	35750	34700	32320	29510	27540	36620
14	36510	37480	36730	36910	36750	34890	35750	34670	32240	29400	27780	36770
15	36560	37430	36770	36900	36770	35030	35750	34610	31970	29250	27790	37290
16	36390	37440	36720	36920	37130	35340	35740	34540	31850	29130	27760	38400
17	36530	37420	36700	36930	36830	34980	35640	34490	31790	29060	27800	36900
18	36620	36950	36720	36950	37250	35210	35710	34410	31650	28890	27860	36770
19	36740	36990	36780	36870	36960	34890	35730	34360	31580	28850	27840	36930
20	36800	37050	36860	36920	36850	35010	35670	34300	31420	28750	27840	36760
21	36970	37080	36820	36950	37030	35080	35660	34220	31340	28640	27900	36930
22	36990	37060	36840	36980	37000	35170	35640	34120	31250	28540	28560	36600
23	37040	37060	37010	36930	36880	35250	35590	34050	31170	28420	30860	36740
24	37110	37090	37010	36920	36760	35300	35500	33960	31040	28290	31780	36820
25	37060	37090	37010	36920	36980	35370	35460	33920	30920	28210	31970	36830
26	36970	37090	36970	36920	37080	35400	35470	33820	30820	28110	32120	36960
27	37210	37110	36910	36890	36770	35530	35500	33760	30720	27960	32180	37040
28	37160	37210	36920	36890	36870	35520	35460	33690	30790	27930	32170	37040
29	37130	37190	36860	36890	---	35570	35400	33650	30770	27780	32070	37030
30	37150	37110	36820	36890	---	35710	35360	33530	30650	27650	32020	37020
31	37170	---	36790	37050	---	35600	---	33450	---	27660	31930	---
MAX	38240	37480	37120	37210	37250	36970	35880	35300	33420	30510	32180	39330
MIN	35280	36930	36700	36750	36310	34890	35360	33450	30650	27650	27500	31120
(@)	+1600	-60	-320	+260	-180	-1270	-240	-1910	-2800	-2990	+4270	+5090

CAL YR 1997 MAX 38240 MIN 25960 (@) +10,250
WTR YR 1998 MAX 39330 MIN 27500 (@) +1,450

(@) Change in contents, in arce-feet.

08177500 COLETO CREEK NEAR VICTORIA, TX

LOCATION.--Lat 28°43'51", long 97°08'18", Victoria County, Hydrologic Unit 12100204, on left bank at downstream side of westbound bridge on U.S. Highway 59, 1.6 mi downstream from Coleto Creek dam, 9.0 mi southwest of Victoria, and 11.2 mi upstream from mouth.

DRAINAGE AREA.--514 mi^2.

PERIOD OF RECORD.--Jun 1939 to Sep 1954, Jun 1978 to current year.

REVISED RECORDS.--WSP 1562: 1939-40. WSP 1732: 1941.

GAGE.--Water-stage recorder. Datum of gage is 44.18 ft above sea level. Prior to Jan 17, 1955, at datum 5.0 ft higher. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. Since Feb 21, 1980 at least 10% of contributing drainage area has been regulated by Coleto Creek Reservoir, 1.6 mi upstream. Beginning on Mar 6, 1980, water is diverted from the Guadalupe River basin to the Coleto Creek basin upstream from Coleto Creek Reservoir. There are no other large diversions above station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--16 years (water years 1940-54, 1979) prior to regulation by Coleto Creek Reservoir, 92.7 ft^3/s (67,160 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1940-54, 1979-80).--Maximum discharge, 89,000 ft^3/s Oct 16, 1946 (gage height, 36.64 ft, present datum, from floodmark), on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1875, 236,000 ft^3/s Sep 22, 1967 (gage height, 42.0 ft, from floodmark), present site and datum, on basis of slope-area measurement of peak flow. Flood of Apr 20, 1976, reached a stage of 37.85 ft, at site 0.2 mi upstream at present datum. Flood of Jul 1, 1936, reached a stage of 32.2 ft, present site and datum, from information by railroad company.

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	6.8	4.5	7.5	5.2	4.9	12	5.6	4.7	4.5	4.4	3.4	3.3
2	6.9	4.4	5.9	5.2	217	145	5.5	4.7	6.5	4.2	3.2	3.2
3	7.0	5.3	5.7	5.2	15	13	5.3	4.7	4.6	4.4	3.8	3.2
4	7.1	4.5	5.6	5.2	7.1	9.7	5.2	4.7	4.5	4.4	3.6	3.2
5	7.3	4.3	5.7	5.1	6.5	9.3	5.2	4.7	4.4	4.2	3.3	3.2
6	7.6	4.2	5.7	280	6.4	9.0	5.1	4.6	4.4	4.1	3.2	3.2
7	8.1	4.2	5.6	42	6.1	8.8	5.1	4.5	4.4	4.3	3.2	3.2
8	8.8	4.2	5.6	226	5.5	135	5.1	4.5	4.5	5.1	3.2	3.2
9	13	4.2	5.5	77	7.9	135	5.0	4.5	4.5	4.5	3.1	3.2
10	11	4.5	5.4	112	6.1	373	4.9	4.4	4.4	4.2	3.1	3.9
11	1070	4.4	5.4	18	5.3	99	4.9	4.5	4.4	4.1	3.1	9240
12	4190	116	5.4	6.0	5.2	8.6	4.9	4.6	4.4	4.1	3.1	8220
13	13400	6.7	5.4	5.6	5.2	7.8	4.9	4.6	4.3	4.1	3.1	1520
14	1190	5.2	5.3	5.5	5.4	200	4.9	4.6	4.2	4.1	3.4	338
15	161	4.8	5.3	5.4	5.3	8.7	4.8	4.6	4.2	4.0	3.8	349
16	174	4.7	5.3	5.3	466	1750	4.8	4.7	4.2	4.1	3.4	5380
17	28	4.7	5.3	5.2	266	1150	4.7	4.6	4.2	4.0	3.4	3600
18	12	143	5.3	5.2	20	214	5.1	4.6	4.2	4.1	3.6	553
19	8.3	7.0	5.3	5.1	1040	250	4.9	4.6	4.3	4.0	3.4	112
20	6.5	5.7	5.4	5.1	180	13	4.9	4.7	4.3	4.0	3.3	170
21	6.1	5.7	5.3	5.1	84	9.2	4.8	4.6	4.3	4.0	3.4	9.9
22	5.9	5.7	5.3	5.1	1250	8.3	4.8	4.6	4.3	4.1	5.2	126
23	5.8	5.7	5.7	5.0	591	7.6	4.8	4.7	4.3	4.1	4.9	9.3
24	5.5	5.7	5.7	4.9	214	7.5	4.8	4.7	4.2	4.1	3.9	5.3
25	5.4	5.7	5.3	4.9	56	7.1	4.8	4.8	4.2	4.0	3.5	5.0
26	5.2	5.7	5.3	4.8	539	6.9	4.9	4.8	4.2	4.0	3.5	4.7
27	5.0	5.7	5.3	4.8	331	6.6	6.7	4.8	4.2	4.0	3.4	4.6
28	5.0	5.9	5.2	4.8	18	6.4	5.0	4.7	4.6	4.0	3.3	4.6
29	4.9	5.7	6.9	4.9	---	6.2	4.6	4.5	4.5	4.0	3.2	4.5
30	4.8	5.7	5.6	4.8	---	6.1	4.7	4.5	4.6	4.0	3.2	4.5
31	4.8	---	5.2	5.0	---	5.8	---	4.5	---	3.8	3.4	---
TOTAL	20381.8	403.7	172.4	883.4	5363.9	4628.6	150.7	143.3	132.8	128.5	107.6	29693.2
MEAN	657	13.5	5.56	28.5	192	149	5.02	4.62	4.43	4.15	3.47	990
MAX	13400	143	7.5	280	1250	1750	6.7	4.8	6.5	5.1	5.2	9240
MIN	4.8	4.2	5.2	4.8	4.9	5.8	4.6	4.4	4.2	3.8	3.1	3.2
AC-FT	40430	801	342	1750	10640	9180	299	284	263	255	213	58900

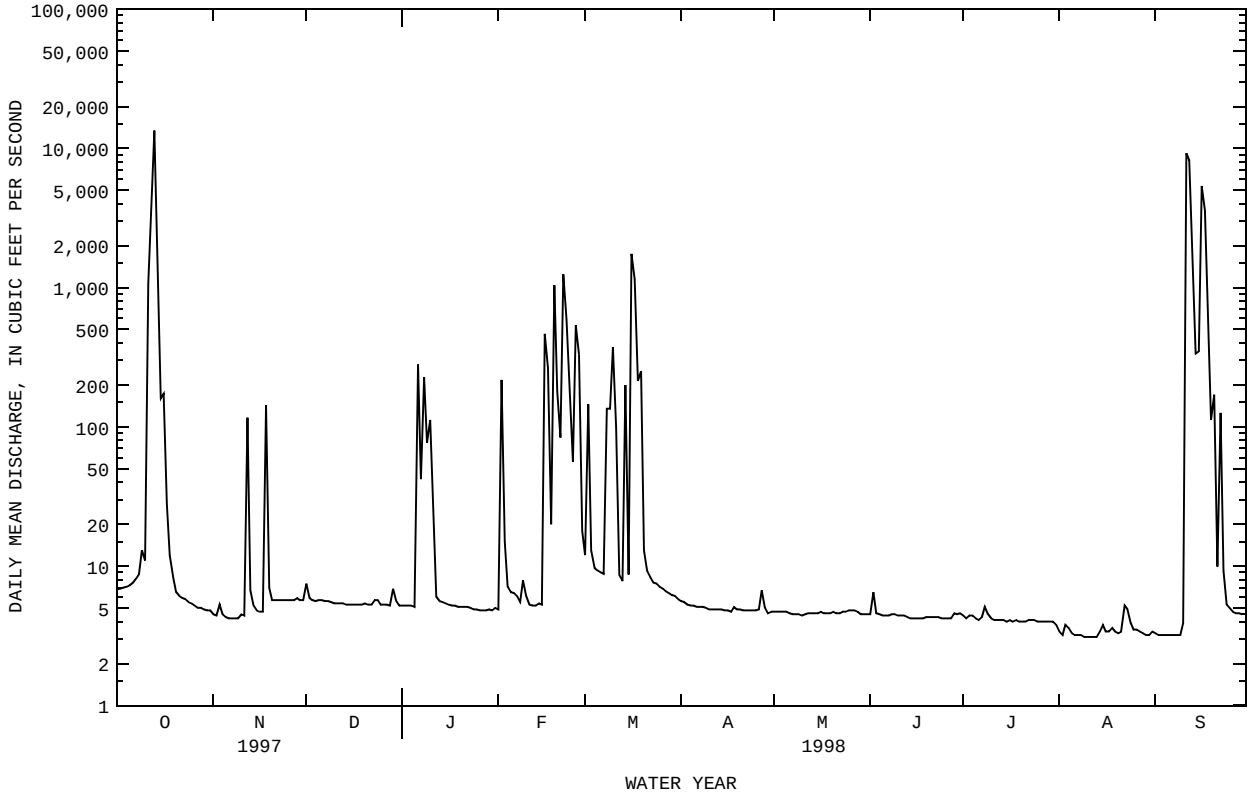
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1998z, BY WATER YEAR (WY)

MEAN	153	48.0	46.6	37.8	123	105	223	155	286	59.4	9.78	72.2
MAX	1074	338	434	347	961	545	1817	940	1426	397	89.3	990
(WY)	1995	1983	1992	1992	1992	1997	1997	1993	1993	1990	1981	1998
MIN	1.61	1.90	2.01	1.93	1.98	2.05	2.07	2.09	1.82	1.31	1.06	1.56
(WY)	1996	1997	1997	1996	1996	1996	1996	1996	1990	1996	1989	1989

08177500 COLETO CREEK NEAR VICTORIA, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1981 - 1998z	
ANNUAL TOTAL	130929.4		62189.9			
ANNUAL MEAN	359		170		109	
HIGHEST ANNUAL MEAN					302	1997
LOWEST ANNUAL MEAN					1.98	1996
HIGHEST DAILY MEAN	27500	Apr 4	13400	Oct 13	27500	Apr 4 1997
LOWEST DAILY MEAN	2.3	Feb 19	3.1	Aug 9	.00	May 6 1981
ANNUAL SEVEN-DAY MINIMUM	2.6	Feb 17	3.1	Aug 7	.66	Mar 3 1994
INSTANTANEOUS PEAK FLOW			28500	Oct 13	50100	Apr 4 1997
INSTANTANEOUS PEAK STAGE			26.03	Oct 13	32.05	Apr 4 1997
ANNUAL RUNOFF (AC-FT)	259700		123400		79160	
10 PERCENT EXCEEDS	200		135		26	
50 PERCENT EXCEEDS	6.0		5.0		5.0	
90 PERCENT EXCEEDS	3.1		3.8		2.0	

z Period of requlated streamflow.



08177700 OLMOS CREEK AT DRESDEN DRIVE, SAN ANTONIO, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°29'56", long 98°30'36", Bexar County, Hydrologic Unit 12100301, on right bank 30 ft downstream from low-water bridge on Dresden Drive at San Antonio, 0.15 mi west of intersection of Blanco Road and Dresden Drive, and 4.0 mi upstream from Olmos Dam.

DRAINAGE AREA.--21.2 mi^2.

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--Jun 1968 to Sep 1981 (daily mean discharge), Oct 1982 to current year (peak discharges greater than base discharge).
Water-quality records.--Chemical, biochemical, and pesticide analyses: Nov 1968 to Apr 1995. Sediment analyses: Oct 1972 to Sep 1973. Water temperatures: Nov 1968 to Apr 1995. Bacteria analyses: Apr 1976 to Apr 1995.

GAGE.--Water-stage recorder. Datum of gage is 720.00 ft above sea level. Satellite telemetry at station.

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

AVERAGE DISCHARGE.--13 years (water years 1968-81), 4.34 ft^3/s (2.78 in/yr), 3,140 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,700 ft^3/s Apr 5, 1991 (gage height, 14.38 ft, from floodmark); maximum gage height, 14.82 ft (from floodmark) Sep 13, 1978 (at datum then in use); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in Sep and Nov 1947 reached a stage of 8.5 ft, from information by local resident. Maximum stage since 1935, that of Sep 13, 1978.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 20	0845	1,398	5.60	Jun 29	1845	1,770	5.95
Dec 20	1920	2,050	6.19	Jul 4	1530	1,160	5.34
Jan 6	1245	3,170	7.13	Aug 14	1530	2,490	6.59
Jan 31	1300	752	4.77	Aug 16	1415	2,060	6.20
Feb 21	1700	2,430	6.54	Aug 22	2045	1,970	6.12
Feb 25	2200	2,470	6.57	Aug 23	0800	707	4.71
Mar 16	0230	4,280	7.89				

08177700 OLMOS CREEK AT DRESDEN DRIVE, SAN ANTONIO, TX--Continued

(Flood-hydrograph partia;-record station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analysis: November 1968 to April 1995; October 1997 to August 1998. Sediment analysis: October 1972 to September 1973. Water Temperatures: November 1968 to April 1995. Bacteria analyses: April 1976 to April 1995; October 1997 to August 1998.

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 (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT											
10...	1200	409	131	7.4	23.0	7.9	92	37	5.1	44000	11000
JAN											
06...	1415	1950	76	8.1	15.5	10.2	103	36	--	61000	K350000
JUN											
11...	0828	620	126	8.2	24.5	4.2	52	30	S8.5	K130000	65000
AUG											
06...	0805	666	95	8.0	25.5	7.8	97	<10	5.9	98000	55000

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	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)
OCT											
10...	42	--	15	.82	2.9	.2	12	1.9	42	5.0	2.4
JAN											
06...	28	--	10	.54	.85	.1	5	2.8	30	1.9	.78
JUN											
11...	45	5	16	.98	3.2	.2	12	4.0	40	7.8	3.5
AUG											
06...	36	2	13	.78	2.2	.2	11	1.8	34	3.6	1.6

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, 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, 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)
OCT											
10...	71	86	217	.153	.062	.89	.67	.20	.26	.74	.279
JAN											
06...	43	70	200	.187	.053	1.6	1.4	.22	.28	1.4	.490
JUN											
11...	82	93	1260	.655	.454	2.6	1.5	.69	1.1	2.0	1.11
AUG											
06...	92	93	<1	.316	.078	1.4	1.0	.32	.40	1.1	.331

DATE	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L) (00556)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)
OCT											
10...	.083	11	<.010	1	2	2	<10	<1	5	6	12
JAN											
06...	.116	18	<.010	4	1	3	<10	<1	5	5	19
JUN											
11...	.122	33	<.010	2	4	6	<10	<1	17	16	45
AUG											
06...	.216	11	<.010	2	2	3	<10	<1	7	8	20

08177700 OLMOS CREEK AT DRESDEN DRIVE, SAN ANTONIO, TX--Continued

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

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ALDRIN, TOTAL (UG/L) (39330)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)
OCT											
10...	<.10	3	<1	<1	50	<.040	<.100	<.030	<.100	<1.00	<.100
JAN											
06...	<.10	4	<1	<1	50	<.040	<.100	<.030	<.100	<1.00	<.100
JUN											
11...	<.10	13	<1	<1	170	<.040	<.100	<.030	<.100	<1.00	<.100
AUG											
06...	<.10	4	<1	<1	70	<.040	<.100	<.030	<.100	<1.00	<.100

DATE	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)
OCT											
10...	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600
JAN											
06...	<.100	<.100	<.200	<.300	<.040	<.030	<.100	<.100	<.090	<.020	<.600
JUN											
11...	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600
AUG											
06...	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600

DATE	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	ISODRIN SUR SCD 1608 WTR, UNFLTRD PERCENT (90570)	LINDANE TOTAL (UG/L) (39340)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	TOX-APHENE, TOTAL (UG/L) (39400)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT											
10...	<.200	<.060	<.030	<.800	--	<.030	<.100	<.040	<.100	<2.00	<.100
JAN											
06...	<.200	<.060	<.030	<.800	--	<.030	<.100	<.040	<.100	<2.00	<.100
JUN											
11...	<.200	<.060	<.030	<.800	58.0	<.030	<.100	<.040	<.100	<2.00	<.100
AUG											
06...	<.200	<.060	<.030	<.800	70.0	<.030	<.100	<.040	<.100	<2.00	<.100

08178050 SAN ANTONIO RIVER AT MITCHELL ST., SAN ANTONIO, TX

LOCATION.--Lat 29°23'34", long 98°29'40", Bexar County, Hydrologic Unit 12100301, on left bank 15 ft upstream from Mitchell Street Bridge in San Antonio, 0.2 mi upstream from San Pedro Creek, and 228.7 mi upstream from mouth.

DRAINAGE AREA.--42.4 mi^2. At low-flow, flow of river comes from intermittent spring flow and from artesian wells.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1992 to current year. Ground-water discharge into river is discussed by Petit and George, Texas Board of Water Engineers Bull. 5608, vol. 1 (1956, p. 45).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 585.07 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. Since installation of gage in Oct 1992, at least 10% of contributing drainage area has been regulated by Olmos flood-control reservoir (capacity, 14,240 acre-ft), about 10.6 mi upstream. Olmos Dam was completed in 1926 and rebuilt in 1980. Springs emerge intermittently from the Edwards and associated limestones along the Balcones Fault Zone upstream from station. No flow at times due to regulation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jul 5, 1819, equaled or exceeded that of Sep 10, 1921.

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	8.2	11	14	23	124	51	59	9.5	8.7	11	7.3	23
2	6.1	10	16	20	28	51	55	8.8	9.2	9.0	7.3	9.4
3	10	8.3	15	17	28	51	51	8.5	7.7	8.3	7.9	10
4	8.0	11	12	68	28	51	52	9.2	8.8	19	6.8	9.9
5	7.7	11	12	21	47	50	52	8.8	8.5	18	76	9.7
6	9.9	8.2	15	411	43	48	51	8.8	8.7	10	259	9.4
7	13	2.7	20	509	30	49	50	9.0	9.4	9.5	53	9.3
8	100	.61	13	36	30	54	46	8.7	9.4	8.9	11	9.3
9	130	26	15	27	30	46	42	8.5	11	8.4	8.9	9.1
10	346	34	14	27	58	45	41	8.3	10	8.4	9.3	9.9
11	92	17	18	27	36	47	40	8.4	82	8.4	9.0	181
12	95	127	16	26	33	44	40	8.3	13	8.4	9.5	28
13	219	68	14	26	31	118	41	8.2	9.0	8.5	91	14
14	14	14	13	23	195	197	37	8.4	8.9	9.9	310	8.1
15	19	20	13	24	49	82	39	8.6	9.5	8.3	56	23
16	29	13	13	27	197	914	36	7.6	9.2	8.0	177	116
17	24	17	15	23	43	225	35	7.4	11	8.4	60	58
18	25	11	13	23	41	65	40	7.0	9.6	8.2	28	3.6
19	18	8.7	15	22	41	67	36	7.8	9.6	8.2	6.7	8.0
20	19	11	532	21	39	65	32	7.3	9.1	9.0	17	7.8
21	28	12	382	22	382	66	28	5.6	8.4	7.8	9.1	7.8
22	20	14	31	20	249	66	24	6.1	9.5	7.8	898	10
23	9.4	14	43	20	29	65	20	6.6	9.5	7.2	874	10
24	10	12	28	19	43	65	19	6.6	7.4	7.6	79	10
25	12	14	25	19	153	69	16	6.6	8.5	7.7	10	9.7
26	11	15	131	20	374	63	16	4.6	7.3	7.8	36	10
27	8.5	11	33	17	51	58	15	36	7.5	7.6	3.5	9.8
28	12	12	27	16	50	64	13	11	7.2	8.4	9.8	9.4
29	12	11	26	15	---	63	11	16	14	7.6	7.7	9.2
30	11	11	25	16	---	61	10	3.4	18	7.6	7.0	8.8
31	9.4	---	23	528	---	61	---	8.3	---	7.3	44	---
TOTAL	1336.2	555.51	1582	2113	2482	3021	1047	277.9	359.6	280.2	3188.8	651.2
MEAN	43.1	18.5	51.0	68.2	88.6	97.5	34.9	8.96	12.0	9.04	103	21.7
MAX	346	127	532	528	382	914	59	36	82	19	898	181
MIN	6.1	.61	12	15	28	44	10	3.4	7.2	7.2	3.5	3.6
AC-FT	2650	1100	3140	4190	4920	5990	2080	551	713	556	6320	1290

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1998, BY WATER YEAR (WY)

MEAN	73.8	60.3	66.9	62.9	70.4	74.9	58.9	110	79.3	31.1	32.1	36.9
MAX	157	203	209	185	209	172	149	369	228	115	103	58.5
(WY)	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1998	1994
MIN	4.96	17.0	13.5	6.41	19.0	12.8	14.0	8.96	12.0	9.04	5.82	19.2
(WY)	1997	1996	1997	1997	1996	1996	1996	1998	1998	1998	1997	1997

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1993 - 1998	
ANNUAL TOTAL	13371.43		16894.41			
ANNUAL MEAN	36.6		46.3		63.1	
HIGHEST ANNUAL MEAN					172	1993
LOWEST ANNUAL MEAN					16.4	1996
HIGHEST DAILY MEAN	1010	Jun 22	914	Mar 16	1900	May 6 1993
LOWEST DAILY MEAN	.61	Nov 8	.61	Nov 8	.61	Nov 8 1997
ANNUAL SEVEN-DAY MINIMUM	3.0	Jan 1	6.2	May 20	3.0	Jan 1 1997
INSTANTANEOUS PEAK FLOW			3150	Feb 21	5090	Oct 8 1994
INSTANTANEOUS PEAK STAGE			5.94	Feb 21	7.98	Oct 8 1994
ANNUAL RUNOFF (AC-FT)	26520		33510		45700	
10 PERCENT EXCEEDS	67		72		168	
50 PERCENT EXCEEDS	8.8		15		20	
90 PERCENT EXCEEDS	4.5		7.8		6.1	

08178050 SAN ANTONIO RIVER AT MITCHELL ST. AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: Dec 1991 to current year. Bacteria analyses: Dec 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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
JUN											
11...	0950	180	479	7.7	26.5	7.4	93	<10	5.1	41000	9500
AUG											
06...	1005	284	438	7.7	26.5	6.3	79	15	5.0	89000	20000
22...	0930	178	362	7.5	27.0	6.5	83	12	7.1	15000	14000
SEP											
11...	1120	305	402	7.5	25.5	6.9	86	<10	5.8	57000	46000

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	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)
JUN											
11...	200	32	56	15	19	.6	16	2.8	170	29	30
AUG											
06...	200	27	59	13	13	.4	13	2.8	170	23	21
22...	130	23	40	6.7	11	.4	16	2.5	100	24	15
SEP											
11...	160	23	48	9.2	14	.5	16	2.8	140	20	20

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, 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, 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)
JUN											
11...	294	259	41	.728	.093	1.6	.80	.29	.38	.89	.138
AUG											
06...	274	248	59	1.15	.053	2.0	.75	.30	.36	.80	.121
22...	195	189	166	.985	.062	2.3	1.2	.34	.40	1.3	.264
SEP											
11...	229	202	18	.968	<.020	1.5	--	--	.21	.53	.102

DATE	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L) (00556)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)
JUN											
11...	.061	6.6	<.010	<1	1	2	<10	<1	1	4	7
AUG											
06...	.031	7.5	<.010	<1	2	2	<10	<1	2	7	12
22...	.070	13	<.010	<1	1	1	<10	<1	4	17	40
SEP											
11...	.048	5.7	<.010	<1	2	2	<10	<1	1	4	6

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ALDRIN, TOTAL (UG/L) (39330)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)
JUN											
11...	<.10	2	<1	<1	30	<.040	<.100	<.030	<.100	<1.00	<.100
AUG											
06...	<.10	2	<1	<1	30	<.040	<.100	<.030	<.100	<1.00	<.100
22...	<.10	4	<1	<1	90	<.040	<.100	<.030	<.100	<1.00	<.100
SEP											
11...	<.10	2	<1	<1	30	<.040	<.100	<.030	<.100	<1.00	<.100

08178050 SAN ANTONIO RIVER AT MITCHELL ST. AT SAN ANTONIO, TX--Continued

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

DATE	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)
JUN											
11...	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600
AUG											
06...	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600
22...	.110	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600
SEP											
11...	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600

DATE	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	ISODRIN SUR SCD 1608 WTR, UNFLTRD PERCENT (90570)	LINDANE TOTAL (UG/L) (39340)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	TOX-APHENE, TOTAL (UG/L) (39400)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
JUN											
11...	<.200	<.060	<.030	<.800	--	<.030	<.100	<.040	<.100	<2.00	<.100
AUG											
06...	<.200	<.060	<.030	<.800	--	<.030	<.100	<.040	<.100	<2.00	<.100
22...	<.200	<.060	<.030	<.800	44.0	<.030	<.100	<.040	<.100	<2.00	<.100
SEP											
11...	<.200	<.060	<.030	<.800	--	<.030	<.100	<.040	<.100	<2.00	<.100

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, TX

LOCATION.--Lat 29°19'19", long 98°27'00", Bexar County, Hydrologic Unit 12100301, on right bank between westbound bridges on Interstate Highway 410 in San Antonio, 4.5 mi upstream from Salado Creek, and 222.3 mi upstream from mouth.

DRAINAGE AREA.--125 mi^2. At low-flow, flow of river comes from intermittent springflow and from artesian wells.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1986 to current year.

GAGE.--Water-stage recorder. Datum of gage is 488.11 ft above sea level. Dec 20, 1986, to Aug 15, 1989, at site 0.2 mi downstream at Camino Coahuilteca crossing at same datum. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since installation of gage in water year 1987, at least 10% of contributing drainage area has been regulated by Olmos Reservoir.

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	24	24	42	149	60	55	21	e10	12	e9.0	84
2	10	23	34	43	55	59	53	19	e10	e10	e9.2	34
3	8.8	21	28	39	49	58	50	19	e8.5	e9.5	e9.8	28
4	11	23	26	69	51	59	49	17	e9.5	e54	e9.0	26
5	11	26	27	50	93	60	49	18	e9.0	46	e51	23
6	19	24	30	759	79	53	48	19	e9.8	11	458	22
7	29	16	39	328	52	53	47	16	e10	e10	266	21
8	185	11	40	66	52	64	46	13	e10	e9.5	25	18
9	214	11	26	48	49	51	43	11	e13	e9.0	19	17
10	515	128	30	49	130	47	44	12	e11	e9.0	19	19
11	168	44	34	48	65	49	43	12	113	e9.0	22	223
12	104	285	33	47	54	48	43	10	21	e9.0	24	83
13	395	152	31	45	54	114	44	10	e10	8.5	169	68
14	40	43	29	38	272	230	44	9.8	e9.5	13	548	28
15	31	45	29	43	87	71	45	e9.0	e10	e10	126	42
16	44	40	27	45	267	1060	44	e8.5	e10	8.7	231	226
17	39	33	35	39	63	168	44	7.9	e13	e9.0	150	151
18	42	31	33	41	56	71	57	e7.5	e11	e8.7	86	27
19	33	30	37	38	52	72	50	e8.5	e11	e8.7	34	25
20	30	26	834	38	47	65	46	e8.0	e10	e10	29	25
21	40	30	353	40	491	65	40	e6.5	e9.5	e8.5	43	24
22	40	30	56	31	225	65	39	e7.0	e10	e8.5	1940	27
23	24	31	82	34	57	65	35	e7.5	e10	e8.0	900	23
24	22	30	56	32	54	64	36	e7.5	e8.8	e8.5	123	23
25	28	30	46	32	91	67	33	e7.5	e9.5	e8.7	55	25
26	24	33	194	35	537	67	28	e6.0	e8.5	e8.9	53	28
27	21	26	67	31	66	64	21	e45	e8.8	e9.5	38	30
28	21	26	49	31	58	66	21	13	e8.5	e10	29	32
29	27	25	46	30	---	63	19	e17	23	e9.5	28	39
30	27	24	43	30	---	59	23	e5.0	51	e9.5	27	38
31	22	---	43	761	---	62	---	e9.5	---	e9.0	284	---
TOTAL	2235.8	1321	2461	3002	3355	3219	1239	387.7	466.9	373.2	5814.0	1479
MEAN	72.1	44.0	79.4	96.8	120	104	41.3	12.5	15.6	12.0	188	49.3
MAX	515	285	834	761	537	1060	57	45	113	54	1940	226
MIN	8.8	11	24	30	47	47	19	5.0	8.5	8.0	9.0	17
AC-FT	4430	2620	4880	5950	6650	6380	2460	769	926	740	11530	2930

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1998, BY WATER YEAR (WY)

MEAN	98.5	87.8	146	111	146	130	123	242	192	139	79.5	90.6
MAX	232	294	479	263	483	420	345	937	622	692	263	262
(WY)	1987	1993	1992	1993	1992	1992	1992	1992	1987	1990	1992	1992
MIN	10.5	21.7	19.6	12.2	29.3	18.2	25.8	12.5	15.6	12.0	18.0	25.6
(WY)	1997	1992	1991	1997	1996	1996	1996	1998	1998	1998	1989	1989

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1987 - 1998	
ANNUAL TOTAL	23391.3		25353.6			
ANNUAL MEAN	64.1		69.5		132	
HIGHEST ANNUAL MEAN					353	1992
LOWEST ANNUAL MEAN					30.6	1996
HIGHEST DAILY MEAN	1450	Jun 22	1940	Aug 22	12100	Jul 16 1990
LOWEST DAILY MEAN	2.2	Mar 30	5.0	May 30	2.2	Mar 30 1997
ANNUAL SEVEN-DAY MINIMUM	8.5	Jan 11	7.1	May 20	4.8	Jul 16 1996
INSTANTANEOUS PEAK FLOW			7120	Aug 22	c64300	Jul 15 1990
INSTANTANEOUS PEAK STAGE			17.62	Aug 22	a32.20	Jul 15 1990
ANNUAL RUNOFF (AC-FT)	46400		50290		95670	
10 PERCENT EXCEEDS	134		127		265	
50 PERCENT EXCEEDS	23		33		40	
90 PERCENT EXCEEDS	10		9.0		13	

e Estimated
c From rating curve extended above 8,400 ft^3/s.
a From floodmark.

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Mar 1987 to current year. Pesticide analyses: Dec 1992 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Dec 1986 to Aug 1988, Mar 1993 to current year.
PH: Dec 1986 to Aug 1988, Mar 1993 to current year.
WATER TEMPERATURE: Dec 1986 to Aug 1988, Mar 1993 to current year.
DISSOLVED OXYGEN: Dec 1986 to Aug 1988, Mar 1993 to current year.

INSTRUMENTATION.--From Dec 1986 to Aug 1988 and from Mar 1993 to current year, a four-parameter water-quality monitor continuously records specific conductance, pH, water temperature, and dissolved oxygen.

REMARKS.--Interruptions in the record were due to malfunctions of the instruments or probe fouling. 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 ofice upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,870 microsiemens, Aug 20, 1996; minimum, 107 microsiemens, Jun 29, 1995
PH: Maximum, 9.2 units, May 27, 1996; minimum, 7.0 units, Jun 30, Jul 1, 1995.
WATER TEMPERATURE: Maximum, 36.5°C, Aug 12, 1996; minimum, 2.0°C, Jan14, 1997.
DISSOLVED OXYGEN: Maximum, 20.1 mg/L, Feb 3, 1996; minimum, 0.5 mg/L, May 21, Jul 21, 1988.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,790 microsiemens, Jan 21; minimum, 74 microsiemens, Jan 6.
PH: Maximum, 9.1 units, Aug 14, 22; minimum, 7.2 units, Aug 14.
WATER TEMPERATURE: Maximum, 36.4°C, Jul 12; minimum, 5.2°C, Dec 11.
DISSOLVED OXYGEN: Maximum, 18.1 mg/L, Dec 18; minimum, 0.9 mg/L, Jul 7.

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)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)
DEC												
20-20	0930	940	344	85	12	130	27	42	6.7	14	.5	18
AUG												
22-22	1130	3650	162	<10	10	63	4	22	2.0	4.7	.3	13
SEP												
11-11	1030	417	340	15	7.7	130	26	39	6.7	16	.6	21

DATE	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)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, 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,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
DEC												
20-20	4.0	110	31	19	198	280	624	.690	<.020	3.6	.27	2.9
AUG												
22-22	2.9	59	8.9	5.6	100	200	748	.369	<.020	2.8	.23	2.5
SEP												
11-11	3.0	100	28	20	204	183	82	.518	<.020	1.4	.41	.85

DATE	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L) (00556)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
DEC											
20-20	.759	.050	28	<.010	<1	2	3	<10	<1	13	17
AUG											
22-22	1.09	.079	23	<.010	<1	5	7	<10	<1	13	25
SEP											
11-11	.176	.055	9.4	<.010	<1	3	2	<10	<1	4	9

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, TX--Continued

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

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ALDRIN, TOTAL (UG/L) (39330)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)
DEC											
20-20	67	<.10	9	<1	<1	190	<.040	<.100	<.030	<.100	<1.00
AUG											
22-22	79	<.10	16	<1	<1	220	--	--	--	--	--
SEP											
11-11	10	<.10	3	<1	<1	40	<.040	<.100	<.030	<.100	<1.00

DATE	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	DI-ELDRIN TOTAL (UG/L) (39380)
DEC											
20-20	<.100	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020
AUG											
22-22	--	--	--	--	--	--	--	--	--	--	--
SEP											
11-11	<.100	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020

DATE	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	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)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	TOX-APHENE, TOTAL (UG/L) (39400)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
DEC											
20-20	<.600	<.200	<.060	<.030	<.800	<.030	<.100	<.040	<.100	<2.00	<.100
AUG											
22-22	--	--	--	--	--	--	--	--	--	--	--
SEP											
11-11	<.600	<.200	<.060	<.030	<.800	<.030	<.100	<.040	<.100	<2.00	<.100

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	470	443	458	615	584	600	597	566	581	529	494	510
2	476	440	458	609	577	594	586	576	582	548	529	539
3	485	459	475	603	572	588	617	580	592	566	548	556
4	504	480	491	604	580	593	627	607	618	602	538	576
5	521	499	507	617	595	606	658	624	635	644	602	630
6	1440	496	605	620	595	608	---	---	e661	967	74	497
7	549	523	531	614	589	604	---	---	e570	319	178	203
8	597	363	434	613	595	605	---	---	e575	308	215	266
9	400	258	330	623	595	614	---	---	e585	385	308	346
10	351	85	203	687	379	424	---	---	e630	424	383	403
11	150	116	130	692	406	445	646	625	640	530	424	467
12	181	143	157	421	234	284	642	618	629	587	530	563
13	272	140	205	365	246	292	634	618	626	598	578	588
14	310	271	292	353	305	325	649	623	635	605	582	590
15	378	343	351	428	353	383	664	628	649	607	579	594
16	433	372	404	464	428	454	667	619	646	616	588	596
17	481	433	456	464	452	456	656	602	633	621	590	605
18	500	478	484	506	461	488	651	598	629	608	576	594
19	502	481	494	519	501	507	642	597	626	591	552	575
20	514	487	502	553	519	540	647	113	432	581	563	574
21	538	514	521	564	551	555	226	169	189	1790	573	734
22	553	537	545	572	548	561	302	226	255	585	555	574
23	568	549	557	571	550	559	496	300	353	583	549	569
24	591	557	573	591	566	575	343	318	323	575	531	558
25	616	591	607	618	591	604	361	331	344	569	554	560
26	621	603	614	638	615	623	529	245	316	579	550	569
27	626	602	615	647	622	636	393	303	353	581	535	562
28	630	603	617	643	617	632	435	393	419	568	544	559
29	624	593	610	636	596	616	446	429	436	572	543	561
30	623	586	608	612	579	595	467	446	452	574	554	565
31	623	580	603	---	---	---	494	467	478	611	179	391
MONTH	1440	85	466	692	234	532	---	---	519	1790	74	531

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, 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	276	186	223	413	335	360	604	563	577	605	574	590
2	345	276	307	472	413	427	574	548	561	626	592	613
3	380	344	362	532	472	494	601	550	569	650	614	631
4	446	380	402	574	532	550	595	563	576	646	612	631
5	658	435	482	574	557	568	589	560	574	631	603	618
6	444	304	370	---	---	e563	601	553	573	648	602	625
7	519	407	465	596	536	569	602	568	588	630	595	612
8	548	519	533	611	572	589	589	546	568	633	598	616
9	560	545	552	607	535	570	588	533	560	634	604	620
10	586	279	430	585	508	553	599	542	561	636	604	621
11	504	337	427	605	514	559	609	480	554	633	599	617
12	543	503	524	604	534	568	583	533	563	634	604	620
13	580	542	560	1180	439	597	575	527	558	---	---	e625
14	814	304	487	493	358	437	577	536	553	---	---	e630
15	503	318	397	462	375	413	579	528	559	648	612	630
16	539	291	393	477	179	258	587	534	564	638	620	630
17	529	390	457	354	219	272	591	530	565	639	615	628
18	625	502	527	409	354	380	807	550	620	638	607	623
19	633	516	556	469	409	427	807	577	635	628	596	613
20	652	602	624	560	469	520	635	562	602	612	578	598
21	655	108	563	608	560	578	593	542	573	612	566	588
22	324	230	277	612	592	602	587	549	568	604	549	575
23	435	324	379	608	590	597	589	548	570	579	554	569
24	532	424	461	600	577	585	596	552	582	578	550	566
25	584	172	530	597	567	581	603	586	595	578	560	571
26	367	198	243	665	561	598	595	585	589	614	575	594
27	313	223	277	653	578	593	614	588	602	841	551	630
28	336	312	322	609	568	586	611	581	599	554	534	539
29	---	---	---	591	567	578	607	567	590	611	548	583
30	---	---	---	583	569	576	603	571	589	619	589	607
31	---	---	---	873	567	638	---	---	---	610	574	595
MONTH	814	108	433	---	---	522	807	480	578	---	---	607

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	592	556	578	500	453	480	570	519	550	394	224	299
2	597	567	583	488	447	470	557	503	540	423	394	415
3	601	564	588	560	472	489	567	536	554	445	420	432
4	599	559	583	669	387	603	570	528	554	463	437	451
5	589	561	577	539	402	489	598	523	563	481	440	462
6	581	551	570	486	443	470	554	302	395	472	438	457
7	587	573	579	476	431	459	460	177	322	489	459	475
8	595	566	584	474	419	452	441	345	397	520	483	502
9	604	566	590	472	433	455	464	360	403	518	482	507
10	609	584	600	484	429	461	426	399	414	535	510	528
11	883	375	531	488	452	473	420	378	403	957	251	420
12	506	477	494	507	451	485	418	379	400	380	271	320
13	516	495	506	503	455	485	810	210	385	434	346	376
14	513	467	496	640	434	487	453	213	345	368	345	354
15	528	473	502	655	514	602	430	291	387	741	368	408
16	540	483	517	549	485	518	555	213	357	481	156	295
17	523	486	509	531	458	501	497	266	345	333	240	294
18	513	472	499	504	452	484	413	320	367	387	333	366
19	510	468	495	517	466	499	494	408	439	465	387	421
20	509	460	494	539	507	524	457	418	432	544	465	499
21	506	465	494	544	488	521	633	453	564	545	520	533
22	528	494	510	548	494	531	628	154	317	544	501	522
23	538	494	524	558	527	546	242	165	207	529	498	512
24	545	512	532	578	510	554	360	242	303	543	515	526
25	543	514	530	582	503	556	400	360	383	560	528	541
26	537	504	525	566	524	549	469	399	419	598	560	576
27	537	505	526	562	526	547	499	427	465	599	572	587
28	538	516	529	558	527	548	437	382	417	595	537	573
29	575	535	544	577	541	560	429	386	402	636	572	608
30	562	433	478	580	542	565	460	419	442	641	583	614
31	---	---	---	579	533	561	473	202	397	---	---	---
MONTH	883	375	536	669	387	514	810	154	415	957	156	462

e Estimated

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, 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	8.5	7.7	8.1	8.5	8.2	8.3	8.1	7.7	7.9	8.3	8.1	8.2
2	8.6	7.8	8.1	8.5	8.2	8.3	7.9	7.7	7.8	8.4	8.1	8.2
3	8.6	7.8	8.1	8.5	8.1	8.3	8.4	7.8	8.1	8.4	8.1	8.2
4	8.5	7.8	8.1	8.5	8.1	8.3	8.5	8.0	8.2	8.3	7.9	8.1
5	8.6	7.8	8.2	8.4	8.1	8.2	8.3	7.8	8.1	8.2	7.9	8.0
6	8.6	8.0	8.1	8.5	8.2	8.3	8.6	8.1	8.3	8.2	7.4	7.9
7	8.5	8.0	8.2	8.5	8.2	8.3	8.5	8.3	8.3	7.8	7.7	7.8
8	8.4	8.0	8.2	8.5	8.1	8.3	8.6	8.2	8.4	7.8	7.7	7.7
9	8.2	8.0	8.1	8.4	8.1	8.2	---	---	---	7.9	7.7	7.8
10	8.2	7.9	8.0	8.4	7.8	8.1	---	---	---	8.0	7.8	7.9
11	8.1	8.0	8.0	8.0	7.8	7.9	8.4	8.2	8.3	8.0	7.9	7.9
12	8.1	8.0	8.0	8.2	8.0	8.1	8.7	8.3	8.5	8.1	7.9	8.0
13	8.2	7.9	8.0	8.1	8.0	8.0	8.7	8.4	8.5	8.1	7.9	8.0
14	8.1	7.9	8.0	8.2	7.4	7.9	8.7	8.3	8.5	8.0	7.9	7.9
15	8.0	7.8	7.9	7.7	7.4	7.6	8.7	8.3	8.4	8.1	7.9	8.0
16	8.1	7.8	7.9	7.9	7.6	7.7	8.6	8.1	8.3	8.2	7.9	8.0
17	8.3	8.0	8.1	7.9	7.6	7.7	8.6	8.1	8.3	8.2	7.9	8.0
18	8.4	8.1	8.2	8.0	7.7	7.8	8.6	8.1	8.3	8.2	7.9	8.0
19	8.5	8.0	8.2	8.0	7.7	7.8	8.5	8.0	8.2	8.2	7.9	8.0
20	8.6	8.0	8.2	8.0	7.7	7.8	8.5	7.7	8.1	8.1	7.9	8.0
21	8.6	8.1	8.3	8.1	7.8	7.9	8.2	7.6	7.8	8.1	7.7	7.9
22	8.4	8.2	8.3	8.0	7.7	7.8	7.8	7.5	7.6	8.1	7.7	7.9
23	8.5	8.1	8.3	8.1	7.7	7.9	8.0	7.8	7.9	8.1	7.7	7.9
24	8.5	8.1	8.3	8.2	7.7	7.9	8.1	7.9	8.0	8.1	7.7	7.9
25	8.5	8.2	8.3	8.0	7.6	7.8	8.1	7.9	8.0	8.0	7.7	7.8
26	8.5	8.2	8.3	7.9	7.5	7.7	8.2	8.0	8.0	8.0	7.7	7.8
27	8.5	8.1	8.3	7.8	7.4	7.6	8.2	8.0	8.1	8.0	7.7	7.8
28	8.6	8.2	8.3	7.7	7.3	7.5	8.4	8.1	8.2	8.1	7.7	7.9
29	8.6	8.2	8.4	8.1	7.4	7.8	8.3	8.1	8.2	8.1	7.7	7.9
30	8.5	8.2	8.3	8.2	7.7	8.0	8.3	8.1	8.2	8.1	7.7	7.9
31	8.5	8.2	8.3	---	---	---	8.4	8.1	8.2	8.8	7.7	8.0
MONTH	8.6	7.7	8.2	8.5	7.3	8.0	---	---	---	8.8	7.4	7.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.1	7.9	8.0	8.1	7.9	8.0	8.3	8.1	8.2	8.2	7.7	8.0
2	8.2	7.9	8.0	8.2	8.0	8.1	8.3	8.1	8.2	8.2	7.8	8.0
3	8.3	7.9	8.1	8.2	8.0	8.1	8.3	8.1	8.2	8.2	7.7	8.0
4	8.4	7.8	8.1	8.3	8.1	8.2	8.3	8.1	8.2	8.2	7.7	7.9
5	8.4	7.7	8.1	8.4	8.1	8.3	8.3	8.1	8.2	8.2	7.7	7.9
6	8.1	7.9	7.9	---	---	---	8.2	8.1	8.2	8.1	7.7	7.9
7	8.3	7.9	8.1	8.1	7.9	8.0	8.3	8.1	8.2	8.3	7.7	8.0
8	8.4	8.0	8.2	8.1	7.9	8.0	8.3	8.1	8.2	8.5	7.9	8.2
9	8.5	8.0	8.2	8.3	7.9	8.1	8.4	8.1	8.2	8.5	7.9	8.2
10	8.2	7.8	8.0	8.3	7.8	8.0	8.4	7.9	8.2	8.5	8.0	8.2
11	8.0	7.7	7.9	8.2	7.8	7.9	8.1	7.8	8.0	8.6	8.0	8.3
12	8.3	7.9	8.1	8.1	7.8	7.9	8.1	7.9	8.0	8.6	8.1	8.3
13	8.3	7.8	8.1	8.1	7.7	7.9	8.1	7.8	8.0	8.4	8.0	8.2
14	8.0	7.7	7.8	7.8	7.6	7.7	8.1	7.8	7.9	8.6	8.1	8.3
15	7.9	7.6	7.7	7.7	7.6	7.6	8.1	7.8	7.9	8.6	8.2	8.3
16	7.8	7.6	7.7	8.9	7.7	8.1	8.1	7.8	7.9	8.5	8.1	8.2
17	8.0	7.6	7.8	8.0	7.8	7.9	8.1	7.8	8.0	8.7	8.2	8.4
18	8.0	7.7	7.8	8.0	7.8	7.9	8.1	7.8	8.0	8.7	8.2	8.5
19	8.1	7.7	7.8	8.1	7.9	8.0	8.0	7.7	7.8	8.7	8.2	8.4
20	8.1	7.8	7.9	8.2	8.0	8.1	8.1	7.8	7.9	8.7	8.2	8.4
21	8.8	7.9	8.0	8.3	8.1	8.2	8.1	7.8	7.9	8.7	8.2	8.4
22	8.2	7.7	7.9	8.3	8.1	8.2	8.1	7.8	7.9	8.7	8.2	8.4
23	7.8	7.6	7.7	8.3	8.1	8.2	8.1	7.8	7.9	8.7	8.1	8.4
24	7.9	7.6	7.8	8.3	8.1	8.2	8.2	7.8	8.0	8.7	8.1	8.4
25	8.3	7.8	7.9	8.3	8.1	8.2	8.2	7.8	8.0	8.7	8.1	8.3
26	8.8	7.7	7.9	8.3	8.1	8.2	8.1	7.8	7.9	8.6	8.1	8.3
27	7.9	7.7	7.8	8.3	8.0	8.2	8.1	7.7	7.9	8.3	7.3	7.8
28	8.0	7.8	7.9	8.3	8.0	8.1	8.1	7.8	7.9	8.0	7.3	7.5
29	---	---	---	8.3	8.1	8.2	8.2	7.8	7.9	8.1	7.3	7.7
30	---	---	---	8.2	8.1	8.1	8.2	7.8	7.9	8.1	7.4	7.7
31	---	---	---	8.2	8.0	8.1	---	---	---	8.3	7.4	7.8
MONTH	8.8	7.6	7.9	---	---	---	8.4	7.7	8.0	8.7	7.3	8.1

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, 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	8.4	7.6	8.0	8.3	7.5	7.7	8.4	7.5	7.9	7.8	7.5	7.6
2	8.5	7.7	8.0	8.0	7.5	7.7	8.4	7.5	7.9	8.1	7.6	7.8
3	8.5	7.7	8.1	7.7	7.5	7.6	8.4	7.5	7.9	8.3	7.6	8.0
4	8.5	7.7	8.1	8.3	7.5	7.7	8.4	7.5	7.9	8.4	7.7	8.0
5	8.4	7.7	8.0	7.8	7.5	7.6	7.9	7.5	7.7	8.5	7.7	8.0
6	8.5	7.8	8.1	7.9	7.5	7.6	8.4	7.5	7.7	8.4	7.7	8.0
7	8.2	7.7	7.9	8.1	7.5	7.7	8.2	7.5	7.7	8.4	7.8	8.0
8	8.5	7.8	8.1	8.2	7.5	7.8	7.7	7.4	7.6	8.5	7.8	8.1
9	8.5	7.8	8.1	8.2	7.6	7.8	7.9	7.4	7.6	8.4	7.9	8.1
10	8.4	7.8	8.1	8.3	7.6	7.9	8.3	7.5	7.9	8.3	7.9	8.1
11	8.0	7.6	7.8	8.4	7.6	8.0	8.6	7.5	8.0	8.1	7.8	8.0
12	8.0	7.7	7.8	8.6	7.6	8.0	8.6	7.5	8.0	7.9	7.5	7.7
13	8.0	7.6	7.8	8.5	7.6	7.9	8.6	7.5	8.0	8.1	7.8	7.9
14	8.2	7.6	7.9	8.5	7.6	8.0	9.1	7.2	7.8	8.0	7.7	7.8
15	8.2	7.6	7.8	8.6	7.6	8.0	8.0	7.4	7.6	8.3	7.8	8.0
16	8.6	7.6	8.0	8.7	7.7	8.1	8.1	7.4	7.6	8.0	7.5	7.8
17	8.5	7.7	8.0	8.9	7.7	8.2	8.0	7.7	7.8	7.9	7.7	7.8
18	8.6	7.7	8.1	9.0	7.7	8.3	7.8	7.5	7.6	8.1	7.7	7.9
19	8.6	7.7	8.1	9.0	7.7	8.3	7.8	7.4	7.6	8.4	7.8	8.0
20	8.5	7.6	8.0	8.9	7.7	8.3	8.2	7.5	7.8	8.4	7.9	8.1
21	8.5	7.6	8.0	8.7	7.8	8.2	8.4	7.6	8.0	8.4	7.9	8.1
22	8.5	7.5	8.0	8.7	7.5	8.1	9.1	7.6	8.2	8.4	7.9	8.1
23	8.5	7.5	8.0	8.5	7.5	8.0	8.9	8.2	8.4	8.4	7.8	8.1
24	8.5	7.5	8.0	8.6	7.5	8.1	8.2	7.8	8.0	8.4	7.9	8.1
25	8.3	7.5	7.9	8.5	7.4	7.9	8.1	7.9	8.0	8.4	7.9	8.1
26	8.1	7.5	7.8	8.4	7.4	7.9	8.4	7.7	8.0	8.3	7.9	8.0
27	8.3	7.5	7.9	8.3	7.4	7.9	8.4	7.9	8.1	8.3	7.9	8.0
28	8.5	7.5	7.9	8.4	7.4	7.9	8.6	7.8	8.2	8.2	7.7	8.0
29	8.3	7.6	7.9	8.5	7.5	8.0	8.6	7.8	8.2	8.2	7.6	7.8
30	8.1	7.6	7.8	8.5	7.5	8.0	8.5	7.7	8.0	8.2	7.6	7.9
31	---	---	---	8.4	7.5	8.0	8.5	7.6	8.0	---	---	---
MONTH	8.6	7.5	8.0	9.0	7.4	7.9	9.1	7.2	7.9	8.5	7.5	8.0

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	31.0	24.6	27.6	23.0	19.1	20.9	17.6	14.3	15.8	14.8	12.3	13.5
2	30.3	25.0	27.5	22.1	17.4	19.6	15.6	14.7	15.2	17.2	14.6	16.0
3	30.2	25.9	27.6	21.3	16.0	18.6	18.4	15.2	16.4	18.8	16.8	17.7
4	30.8	26.0	27.8	21.0	16.7	18.8	17.3	13.5	15.3	19.1	18.0	18.5
5	28.7	25.5	26.9	22.0	19.3	20.4	16.6	13.0	14.5	19.4	18.0	18.7
6	27.4	25.2	26.0	21.2	17.4	19.2	13.8	11.6	12.8	19.2	16.6	18.3
7	28.2	24.8	26.2	19.4	15.8	17.5	12.9	12.1	12.4	17.1	14.2	15.7
8	27.1	25.4	26.2	19.0	15.0	17.2	16.2	12.1	13.9	15.2	12.7	13.7
9	26.8	25.5	26.2	19.5	17.8	18.5	---	---	---	15.7	11.8	13.6
10	26.1	23.7	24.8	18.4	14.8	16.6	---	---	---	15.9	13.5	14.5
11	24.3	23.3	23.8	14.8	12.8	13.7	13.6	5.2	9.8	16.3	14.5	15.2
12	24.7	24.0	24.4	14.3	12.8	13.7	10.9	7.9	9.5	18.9	15.8	17.3
13	24.8	21.7	22.8	15.1	14.0	14.5	10.5	6.3	8.3	17.9	16.1	17.5
14	23.3	19.8	21.5	17.7	13.9	15.4	11.6	6.6	8.9	17.5	15.3	16.2
15	23.1	18.5	20.3	15.1	12.0	13.4	12.7	7.7	10.0	16.8	13.6	15.1
16	23.0	18.9	20.7	13.8	10.7	12.2	14.1	8.8	11.2	16.4	12.6	14.4
17	23.7	19.1	21.2	12.4	11.6	11.9	14.5	9.9	12.0	16.7	13.2	14.8
18	24.2	19.9	21.9	13.7	11.7	12.4	14.8	10.1	12.3	18.4	14.7	16.3
19	24.4	19.5	22.0	14.4	11.8	12.9	15.9	11.8	13.9	17.5	14.0	15.5
20	25.0	20.5	22.5	14.9	12.9	13.9	18.5	14.7	16.7	16.3	14.6	15.4
21	25.0	21.4	23.0	18.2	14.4	15.9	17.9	16.2	16.9	18.8	15.7	17.2
22	22.7	20.4	21.3	18.2	14.0	15.9	16.9	14.9	15.9	17.8	14.2	16.0
23	23.3	20.0	21.3	18.3	14.2	16.0	15.9	14.5	15.4	16.0	12.3	14.1
24	25.5	19.5	22.3	18.3	14.4	16.3	16.2	13.1	14.4	16.1	12.0	13.9
25	25.3	21.7	23.4	19.2	17.1	18.1	13.8	12.4	13.2	15.0	13.0	14.0
26	21.7	17.2	19.0	20.8	18.6	19.5	12.8	11.7	12.4	16.7	13.3	14.8
27	19.7	14.9	17.3	21.7	19.6	20.5	13.7	11.1	12.2	17.0	12.2	14.4
28	17.8	15.9	16.9	22.4	19.3	20.7	12.8	9.9	11.1	17.0	12.6	14.7
29	20.7	16.4	18.5	21.0	17.6	19.2	12.8	9.0	10.7	17.5	14.1	15.5
30	22.5	19.0	20.5	19.0	15.5	17.1	13.1	9.5	11.3	18.2	15.7	16.7
31	25.2	21.0	22.6	---	---	---	13.8	11.0	12.3	17.3	16.3	16.7
MONTH	31.0	14.9	23.0	23.0	10.7	16.7	---	---	---	19.4	11.8	15.7

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, 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	17.2	16.1	16.6	18.4	14.6	16.3	23.2	20.1	21.5	28.3	21.0	24.6
2	18.2	15.3	16.4	18.6	14.9	16.7	23.8	20.4	22.1	29.6	22.3	25.8
3	18.3	14.1	16.0	18.0	16.3	16.8	25.0	21.9	23.1	29.9	24.2	26.9
4	17.6	14.3	15.7	18.9	16.5	17.6	24.0	20.9	22.2	29.0	25.1	26.8
5	17.5	15.0	15.9	21.4	18.6	20.1	23.8	20.4	22.0	29.2	24.5	26.4
6	15.7	11.7	13.5	---	---	---	22.0	21.0	21.6	30.6	25.3	27.4
7	16.2	12.0	13.9	19.8	17.3	18.3	25.6	21.0	23.0	32.2	25.5	28.6
8	18.2	13.1	15.4	18.5	15.7	17.3	26.1	22.3	24.4	30.2	26.7	28.3
9	18.8	14.7	16.5	18.2	14.1	15.9	24.8	20.8	22.7	30.4	25.5	27.7
10	17.5	15.2	16.9	18.3	14.0	15.7	25.3	20.7	22.7	30.3	23.9	26.7
11	19.1	15.0	16.8	16.9	14.0	15.3	25.0	20.9	22.6	28.2	23.7	26.1
12	17.7	15.4	16.6	15.1	12.9	14.1	24.6	21.2	22.5	28.6	23.9	26.0
13	18.5	15.2	16.6	15.5	12.4	13.3	26.1	22.0	23.7	27.8	24.9	26.1
14	16.6	14.8	15.8	17.3	15.5	16.4	27.6	23.8	25.3	29.1	25.1	26.8
15	16.8	14.5	15.5	17.7	16.5	17.0	26.6	24.4	25.1	29.6	25.6	27.2
16	16.9	13.9	15.7	18.1	15.5	16.9	27.0	23.7	25.0	27.7	26.0	26.8
17	17.8	14.7	16.0	20.0	15.6	17.6	24.4	21.1	22.6	29.5	24.9	26.7
18	17.2	14.6	15.7	21.3	17.8	19.5	22.3	19.6	20.7	29.7	24.1	26.6
19	18.6	14.5	16.3	20.8	18.2	19.9	24.9	19.0	21.7	30.0	24.1	26.6
20	19.6	15.2	17.0	19.6	16.7	18.0	25.6	20.5	22.9	30.5	25.0	27.2
21	17.0	15.1	16.4	20.4	17.6	18.9	25.3	21.1	22.9	31.1	25.2	27.6
22	17.9	14.1	15.9	21.3	18.1	19.6	25.4	19.9	22.5	31.6	25.4	27.8
23	19.7	15.6	17.3	22.0	19.2	20.4	26.3	20.2	23.1	29.7	25.5	27.1
24	20.0	15.6	17.7	23.4	20.2	21.7	26.3	21.1	23.5	30.1	25.7	27.5
25	21.1	18.2	19.4	23.7	21.6	22.3	23.8	21.3	22.5	29.8	25.7	27.1
26	19.2	17.1	18.0	22.9	21.5	22.1	25.0	21.6	22.8	29.5	26.0	27.2
27	18.0	15.9	16.8	24.4	21.1	22.5	24.6	22.4	23.5	27.9	24.4	26.5
28	18.5	15.7	16.7	25.1	22.3	23.5	25.7	20.4	22.9	32.2	25.9	28.6
29	---	---	---	24.6	23.1	23.6	26.3	20.6	23.3	32.8	26.8	29.5
30	---	---	---	25.2	22.7	23.6	27.2	20.3	23.6	34.8	27.5	30.5
31	---	---	---	23.8	21.2	22.6	---	---	---	34.8	27.4	30.7
MONTH	21.1	11.7	16.3	---	---	---	27.6	19.0	22.9	34.8	21.0	27.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	34.8	28.3	31.0	33.8	28.3	30.8	34.5	26.7	30.2	30.9	27.1	28.9
2	34.8	28.0	30.7	34.6	28.6	31.2	35.4	27.8	31.1	32.7	27.8	30.1
3	33.8	28.0	30.2	31.3	29.0	29.8	35.4	28.0	31.3	33.7	28.4	30.8
4	34.0	28.3	30.3	30.2	27.6	28.8	35.2	28.5	31.4	34.3	29.0	31.5
5	32.2	27.2	29.6	31.6	27.6	29.2	32.4	28.9	30.7	33.7	28.7	31.1
6	31.2	24.4	27.5	34.3	27.5	30.3	30.2	26.7	27.9	33.7	28.3	30.7
7	27.1	25.4	26.1	35.0	28.5	31.2	28.6	25.1	27.2	33.6	28.3	30.7
8	30.8	25.1	27.4	34.1	28.6	30.6	32.9	27.2	29.6	31.9	28.3	30.0
9	32.4	26.5	28.6	34.8	28.6	30.8	34.3	28.1	30.8	32.1	27.7	29.9
10	31.4	27.1	28.7	34.7	28.5	30.9	34.9	28.7	31.4	29.7	25.6	27.1
11	29.2	26.5	27.6	35.4	28.6	31.4	35.2	29.0	31.8	25.6	24.2	25.0
12	31.1	27.5	29.0	36.4	29.1	32.1	35.4	29.2	32.0	25.7	24.8	25.2
13	32.6	27.6	29.7	35.6	29.8	32.1	35.4	25.3	30.9	28.4	24.8	26.5
14	34.8	27.6	30.8	35.4	29.4	31.9	29.1	25.7	27.0	29.2	26.7	27.8
15	33.8	27.7	30.4	35.3	29.0	31.6	29.9	25.5	27.4	30.0	26.9	28.1
16	34.1	28.5	30.7	35.5	28.9	31.7	29.0	26.5	27.8	28.4	25.8	26.8
17	32.9	27.7	29.6	35.6	29.0	32.0	28.3	26.1	27.0	27.3	25.3	26.3
18	33.7	28.0	30.2	35.4	28.9	31.6	29.2	26.4	27.8	30.0	25.9	27.6
19	34.8	28.4	31.0	35.3	28.3	31.2	32.8	27.4	29.5	31.2	26.5	28.8
20	34.6	28.6	30.9	34.2	28.3	30.6	34.1	27.9	30.6	32.1	27.1	29.5
21	34.4	27.9	30.4	34.6	28.6	30.9	32.8	28.9	30.8	32.8	28.0	30.3
22	34.3	28.2	30.5	35.0	27.9	30.7	29.9	25.1	26.9	33.6	28.8	30.8
23	34.0	28.1	30.2	33.8	27.9	30.2	26.8	25.1	25.9	32.8	28.8	30.7
24	34.1	27.5	30.1	34.9	27.6	30.5	28.8	25.8	27.1	32.8	28.4	30.4
25	33.9	27.8	30.2	34.8	28.0	30.6	31.9	27.7	29.4	32.6	28.4	30.2
26	35.7	28.3	31.4	34.4	27.6	30.3	32.2	28.2	30.0	32.0	28.3	30.0
27	36.0	29.0	31.9	33.5	27.6	30.1	33.6	29.1	31.0	32.7	28.1	30.3
28	34.5	29.1	31.0	34.4	27.6	30.2	33.2	28.3	30.9	33.6	27.9	30.5
29	32.0	29.0	29.9	33.6	27.0	29.8	34.4	28.7	31.3	33.5	28.5	31.0
30	32.5	28.5	30.2	33.2	26.8	29.4	34.0	28.4	31.1	33.5	28.3	30.7
31	---	---	---	34.0	27.0	29.7	34.0	27.2	30.4	---	---	---
MONTH	36.0	24.4	29.9	36.4	26.8	30.7	35.4	25.1	29.6	34.3	24.2	29.2

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, 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
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.5	1.5	3.5	10.4	5.2	7.4	14.1	7.9	10.3	9.9	6.8	8.8
2	7.4	1.4	3.7	11.3	5.9	7.9	9.8	6.6	8.5	10.8	8.6	9.5
3	7.8	1.7	3.7	11.0	6.0	8.1	13.0	7.0	10.0	11.1	7.6	9.0
4	8.1	1.7	3.9	10.1	6.1	7.9	13.8	8.1	10.5	9.9	7.7	8.7
5	8.3	2.3	4.3	9.9	5.9	7.3	14.7	8.3	11.0	10.4	7.7	8.6
6	7.5	2.2	3.8	10.0	5.9	7.7	---	---	---	11.0	7.6	9.0
7	7.9	2.4	4.2	11.7	5.9	8.3	---	---	---	10.9	8.5	10.0
8	5.9	4.1	4.7	10.9	5.9	8.2	---	---	---	10.6	7.1	9.3
9	5.2	3.8	4.6	9.1	5.1	7.3	---	---	---	10.4	6.7	9.0
10	6.6	3.2	5.2	8.8	5.2	7.0	---	---	---	10.4	6.2	9.0
11	6.6	5.0	5.6	9.4	4.4	6.7	16.5	11.0	14.4	10.6	7.0	9.2
12	6.4	5.0	5.6	9.8	7.1	8.7	14.2	9.5	11.8	10.1	8.6	9.5
13	8.1	5.7	7.0	9.1	7.2	8.1	17.2	8.9	13.4	9.9	8.2	9.1
14	7.5	4.9	6.5	10.3	6.2	8.5	17.8	7.8	13.1	10.4	8.6	9.3
15	9.3	7.8	8.4	11.5	8.4	10.2	17.2	9.1	13.0	11.0	8.7	9.6
16	9.3	6.4	7.8	12.4	9.9	11.6	17.5	7.1	12.5	10.8	8.3	9.5
17	9.7	6.9	7.9	12.3	9.6	11.1	17.3	7.3	12.0	11.5	7.4	9.3
18	9.7	6.5	7.9	12.5	9.5	11.2	18.1	7.1	12.1	11.5	7.0	9.1
19	11.1	6.2	8.1	12.7	9.6	11.1	16.5	7.5	11.7	12.8	6.6	9.2
20	12.1	5.8	8.1	12.5	8.9	10.6	10.4	7.5	9.3	11.1	6.3	8.6
21	10.9	5.9	7.7	12.8	7.7	10.1	10.1	8.6	9.4	11.9	6.4	8.7
22	8.4	5.4	6.5	13.0	7.4	10.2	9.1	8.2	8.7	11.9	6.3	8.7
23	8.9	4.7	6.3	13.3	8.4	10.4	9.4	8.0	8.8	12.7	6.2	9.4
24	9.5	4.5	6.4	13.7	8.3	10.3	9.5	7.5	8.9	13.3	6.9	9.6
25	8.9	4.6	6.3	11.8	7.0	9.1	9.8	6.8	9.3	11.2	6.3	8.7
26	10.2	5.8	7.5	12.5	7.2	9.6	11.0	8.0	10.2	13.3	7.1	9.7
27	11.1	6.2	8.4	12.7	7.6	9.4	10.5	8.9	10.1	13.8	6.6	9.5
28	11.3	6.3	8.5	12.7	6.8	8.9	11.3	8.9	10.4	13.0	6.6	9.5
29	11.3	6.9	8.6	13.1	6.9	9.3	11.1	6.6	9.9	12.0	5.9	8.3
30	11.0	6.2	7.8	13.4	7.6	9.8	10.3	6.4	9.2	10.0	5.2	7.6
31	10.5	5.4	7.2	---	---	---	10.3	6.5	9.0	8.8	5.9	7.7
MONTH	12.1	1.4	6.3	13.7	4.4	9.1	---	---	---	13.8	5.2	9.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.6	6.0	7.4	9.5	3.3	7.0	9.5	4.9	7.3	11.9	4.5	7.7
2	7.8	6.5	7.3	9.5	4.8	8.1	9.2	5.3	7.2	11.6	4.0	7.3
3	9.1	6.4	7.5	9.0	3.7	7.2	9.5	5.2	7.5	11.1	3.7	7.0
4	8.4	5.7	7.3	9.9	5.6	8.2	9.4	5.7	7.8	11.1	3.3	6.5
5	8.6	5.3	7.3	11.2	5.4	8.6	9.5	5.8	8.0	11.2	3.7	6.8
6	7.9	5.4	7.3	---	---	---	8.6	6.3	7.6	10.7	3.9	6.6
7	9.1	5.6	7.7	11.3	7.7	9.1	9.0	6.1	7.8	12.2	4.2	7.4
8	9.6	6.0	7.7	11.4	7.2	9.2	8.5	4.5	6.5	11.3	3.8	6.7
9	8.7	6.3	7.4	12.3	6.8	9.4	8.7	4.9	6.6	12.0	3.7	7.3
10	---	---	---	12.2	6.8	9.2	9.9	4.9	7.4	11.5	4.0	7.3
11	---	---	---	11.6	5.3	8.7	9.5	4.6	7.2	10.9	3.8	6.8
12	---	---	---	10.8	6.0	7.9	9.6	4.7	6.9	10.5	3.2	6.3
13	12.1	9.1	10.7	10.7	6.2	8.9	9.8	4.9	7.0	9.9	2.4	5.7
14	10.9	8.4	9.9	9.3	8.0	8.8	9.8	5.1	6.8	9.4	2.7	5.4
15	10.4	8.2	9.6	9.1	7.3	7.9	9.3	4.7	6.3	9.4	2.5	5.0
16	10.8	7.2	9.2	10.5	7.5	9.6	9.8	5.0	6.9	7.5	2.3	4.4
17	10.2	7.8	8.9	9.8	6.5	8.3	9.9	4.9	6.8	9.7	2.9	5.7
18	10.2	7.3	8.9	7.8	6.1	7.1	10.0	4.3	6.9	10.1	2.4	6.0
19	10.5	8.1	9.1	7.6	5.7	6.8	9.6	4.1	6.7	10.5	3.3	6.5
20	9.9	6.3	8.3	8.6	5.2	7.1	9.9	4.1	6.5	10.8	3.2	6.7
21	11.0	6.2	8.3	8.8	4.8	7.1	9.6	3.1	6.0	10.8	3.2	6.9
22	11.6	6.5	9.6	9.5	5.0	7.5	11.5	5.7	8.4	11.2	2.7	7.0
23	9.6	6.1	8.1	10.2	4.7	7.7	11.7	6.0	8.2	11.2	3.8	7.1
24	9.4	6.2	8.1	11.9	5.7	8.1	11.6	5.5	8.2	10.8	3.8	7.1
25	10.4	6.2	8.0	10.8	5.8	8.0	10.9	5.5	7.9	10.7	4.0	6.8
26	11.0	6.0	9.3	9.9	5.6	7.6	10.5	6.0	7.5	10.5	4.3	7.1
27	9.3	3.6	7.6	9.9	5.4	7.4	10.2	3.8	6.5	7.8	3.3	5.4
28	8.5	4.0	6.9	10.1	5.2	6.9	9.9	3.0	6.1	7.6	1.5	4.3
29	---	---	---	8.7	5.0	6.6	10.1	5.7	7.6	9.1	1.6	4.6
30	---	---	---	9.4	4.8	6.5	11.2	5.2	7.9	10.2	1.1	4.9
31	---	---	---	9.0	4.9	7.4	---	---	---	10.6	1.1	5.2
MONTH	---	---	---	---	---	---	11.7	3.0	7.2	12.2	1.1	6.3

08178565 SAN ANTONIO RIVER AT LOOP 410 AT SAN ANTONIO, 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
		JUNE			JULY			AUGUST			SEPTEMBER	
1	11.0	1.7	5.8	8.4	1.7	4.7	11.3	2.5	6.7	5.6	2.8	4.6
2	10.2	1.7	5.0	7.5	1.2	4.0	11.3	2.1	6.3	6.1	2.8	4.2
3	9.2	1.0	4.4	5.6	1.2	2.9	11.0	1.8	6.1	7.5	3.4	5.1
4	8.4	1.6	4.2	6.6	1.4	3.8	11.2	1.7	6.0	8.0	3.6	5.3
5	7.2	1.5	3.8	6.6	2.4	4.4	6.8	1.9	4.5	8.4	3.6	5.6
6	8.7	2.5	5.3	6.7	1.1	3.3	6.5	4.8	5.9	8.1	3.7	5.5
7	6.5	2.1	3.9	6.7	.9	3.2	7.3	4.6	5.8	8.0	3.9	5.5
8	7.9	3.0	5.0	6.2	1.2	3.0	5.3	3.8	4.6	8.2	4.0	5.8
9	7.9	2.5	4.8	6.6	1.2	3.5	6.4	3.3	4.6	8.1	4.0	5.8
10	7.4	2.4	4.6	8.2	1.3	3.6	8.5	1.2	4.7	7.0	4.2	5.6
11	4.7	2.4	3.3	7.8	1.4	3.8	10.0	2.8	6.0	7.0	5.5	6.4
12	4.7	2.4	3.5	6.1	1.5	3.3	10.6	2.9	6.3	6.9	5.8	6.3
13	6.0	1.5	3.6	5.6	1.5	2.7	10.8	3.0	6.5	7.5	5.1	6.5
14	7.2	1.6	4.1	8.4	1.5	3.4	7.2	5.3	6.1	7.5	4.8	5.8
15	7.6	1.7	3.7	9.4	1.7	4.7	7.1	4.5	6.1	7.9	4.7	5.9
16	9.1	1.6	4.9	9.4	1.7	4.7	6.9	4.1	5.4	7.2	5.3	6.5
17	8.3	1.8	4.6	9.7	1.8	5.0	7.0	6.0	6.5	7.5	5.7	6.7
18	8.3	2.1	4.7	10.1	1.9	5.2	6.8	5.7	6.4	7.2	4.9	6.0
19	7.8	1.3	4.4	10.7	2.2	5.8	6.9	5.0	5.9	8.4	4.7	6.4
20	7.8	1.5	4.4	11.5	2.2	6.8	9.0	4.6	6.5	9.2	4.6	6.6
21	7.7	1.8	4.5	---	---	---	9.9	5.4	7.3	9.4	4.9	6.8
22	7.2	1.8	4.3	---	---	---	8.2	4.9	6.8	9.1	4.6	6.4
23	7.4	1.8	4.4	---	---	---	8.2	7.6	7.9	9.0	4.3	6.1
24	7.5	1.8	4.7	---	---	---	7.7	5.9	6.9	9.4	4.5	6.5
25	7.7	2.0	4.6	13.2	3.8	8.4	6.7	5.2	5.9	9.8	5.0	6.8
26	8.1	2.1	4.7	12.0	4.1	7.8	7.4	5.0	6.0	9.9	5.2	7.0
27	8.0	1.9	4.6	11.4	3.1	7.3	9.0	5.2	6.7	9.8	5.3	7.1
28	7.8	1.8	4.3	12.1	2.9	7.4	9.3	4.7	6.8	11.0	4.9	7.4
29	6.6	2.2	3.9	12.5	3.2	7.6	10.5	4.9	7.0	10.6	4.1	6.5
30	6.7	2.8	4.4	12.4	3.4	7.5	9.9	3.7	6.1	11.4	4.4	6.9
31	---	---	---	12.2	3.2	7.3	8.8	2.7	5.5	---	---	---
MONTH	11.0	1.0	4.4	---	---	---	11.3	1.2	6.1	11.4	2.8	6.1

08178700 SALADO CREEK (UPPER STATION) AT SAN ANTONIO, TX

LOCATION.-Lat 29°30'57", long 98°25'51", Bexar County, Hydrologic Unit 12100301, on right bank at downstream side of eastbound bridge on Interstate Highway 410 in San Antonio, 1.0 mi west of Northeast School, 1.1 mi upstream from Perrin-Beitel Creek, and 2.7 mi east of San Antonio International Airport.

DRAINAGE AREA.--137 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 684.60 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair. Some diversions for irrigation upstream from gage. Since water year 1973, at least 10% of contributing drainage area has been affected at times by discharge from the flood-detention pools of eleven floodwater-retarding structures with a combined detention capacity of 26,770 acre-ft. These structures control runoff from 74.6 mi^2 above this station. Recording rain gage at station with two additional recording rain gages in the watershed.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--12 years (water years 1961-72), 7.21 ft^3/s (5,220 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1961-72).--Maximum discharge, 24,900 ft^3/s May 12, 1972 (gage height, 15.22 ft), from rating curve extended above 8,000 ft^3/s on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1853, 23 to 24 ft in Oct 1913. Flood in Sep 1921 reached a stage of 18 ft, and flood of Sep 27, 1946, reached a stage of 18.2 ft, and are the second and third highest since 1899.

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	.00	22	.15	.01	.00	.00	.00	.00	.09
2	.00	.00	.00	.00	7.5	.09	.02	.00	.00	.00	.03	e.09
3	.00	.00	.00	.00	10	.06	.00	.00	.00	.00	.02	.07
4	.00	.00	.00	e.00	10	.05	.00	.00	.00	.00	.00	.06
5	.00	.00	.00	e5.0	14	.03	.00	.00	.00	.00	.03	.04
6	.00	.00	.00	e30	11	2.9	.01	.00	.00	.00	.18	.04
7	.15	.00	.01	e27	.89	.62	1.8	.00	.00	.00	3.5	.03
8	4.9	.00	.00	e2.0	.12	.10	.35	.00	.00	.00	.25	.05
9	4.8	.21	.00	e.10	.06	.12	.02	.00	.00	.00	.01	.01
10	16	6.8	.00	e.03	.10	.07	.00	.00	.00	.00	.00	e8.0
11	11	.90	.00	e.00	.25	3.8	.00	.00	.13	.00	.00	e13
12	5.2	12	.00	e.00	.07	4.6	.00	.00	.01	.00	.00	2.8
13	27	4.8	.00	e.00	.02	6.8	.00	.00	.00	.00	.01	.84
14	2.3	.70	.00	e.00	7.8	7.3	.00	.00	.01	.00	.27	.18
15	.29	.16	.00	e.00	3.0	3.4	.00	.00	.00	.00	.06	.09
16	.05	.07	.00	e.00	9.0	332	1.6	.00	.00	.00	.72	.08
17	.01	.05	.00	e.00	2.9	29	3.8	.01	e.00	.00	2.7	1.3
18	.00	.03	.00	e.00	5.3	8.8	.66	.00	e.00	.00	2.7	.20
19	.00	.00	.00	e.00	5.4	4.6	.03	.00	e.00	.00	.21	.11
20	.00	.00	141	e.00	5.0	5.0	.00	.00	e.00	.00	.06	.08
21	.00	.00	129	e.00	28	8.4	1.5	.00	e.00	.00	.03	.07
22	.00	.00	3.0	e.00	33	8.3	3.3	.00	e.00	.00	e200	.05
23	.00	.00	12	e.00	2.7	7.7	3.5	.00	.00	.00	e100	.02
24	.00	.00	9.9	e.00	5.2	4.7	3.1	.00	.00	.00	52	.00
25	.00	.00	.98	e.00	1.5	4.6	.46	.00	.00	.00	6.0	.00
26	.00	.00	7.0	e.00	65	6.2	.07	.00	.00	.00	1.8	.00
27	.00	.00	1.7	e.00	4.0	7.6	.00	.17	.00	.00	.91	.00
28	.00	.00	.23	.00	.66	.95	.00	.00	.00	.00	.53	.00
29	.00	.00	.01	.00	---	.14	.00	.00	.20	.00	.30	.00
30	.00	.00	.00	.00	---	.06	.00	.00	.00	.00	.18	.00
31	.00	---	.00	116	---	.00	---	.00	---	.00	e.11	---
TOTAL	71.70	25.72	304.83	180.13	254.47	458.14	20.23	0.18	0.35	0.00	372.61	27.30
MEAN	2.31	.86	9.83	5.81	9.09	14.8	.67	.006	.012	.000	12.0	.91
MAX	27	12	141	116	65	332	3.8	.17	.20	.00	200	13
MIN	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
AC-FT	142	51	605	357	505	909	40	.4	.7	.00	739	54

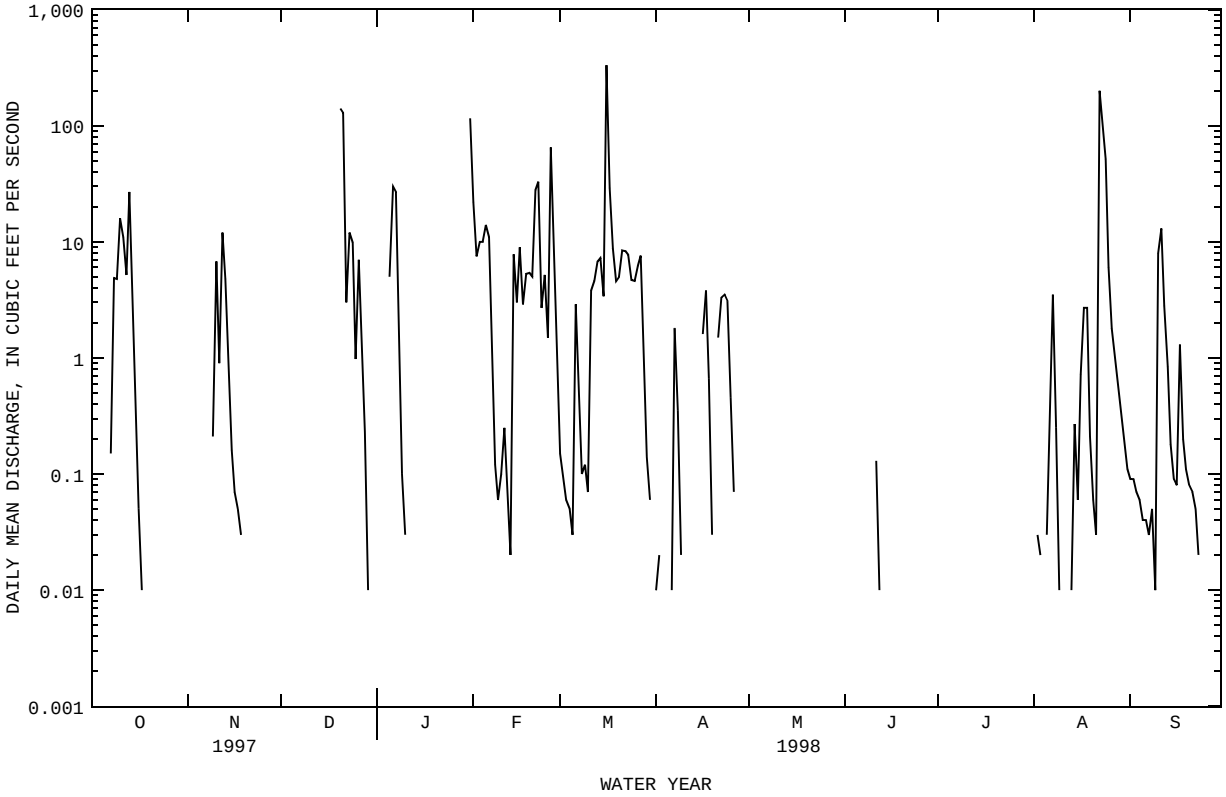
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1998z, BY WATER YEAR (WY)

MEAN	8.13	6.75	8.88	4.39	7.28	7.54	13.4	38.1	28.3	11.8	3.30	16.4
MAX	40.7	74.7	155	38.8	71.0	93.7	116	576	151	153	36.6	187
(WY)	1995	1978	1992	1992	1992	1992	1991	1993	1987	1973	1974	1973
MIN	.001	.008	.006	.000	.013	.044	.000	.006	.006	.000	.000	.041
(WY)	1992	1992	1996	1996	1996	1996	1984	1998	1984	1984	1986	1997

08178700 SALADO CREEK (UPPER STATION) AT SAN ANTONIO, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1973 - 1998z	
ANNUAL TOTAL	3373.06		1715.66			
ANNUAL MEAN	9.24		4.70		12.9	
HIGHEST ANNUAL MEAN					57.1	1993
LOWEST ANNUAL MEAN					.52	1984
HIGHEST DAILY MEAN	1380	Jun 22	332	Mar 16	8680	May 5 1993
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	May 30 1973
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 18	.00	Mar 12 1976
INSTANTANEOUS PEAK FLOW			1260	Mar 16	28100	May 5 1993
INSTANTANEOUS PEAK STAGE			6.21	Mar 16	15.91	May 5 1993
ANNUAL RUNOFF (AC-FT)	6690		3400		9320	
10 PERCENT EXCEEDS	7.4		6.9		10	
50 PERCENT EXCEEDS	.03		.00		.83	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated
z Period of requlated flow.



08178700 SALADO CREEK (UPPER STATION) AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Nov 1968 to current year. Sediment analyses: Nov 1971 to Sep 1973. Water temperature: Nov 1968 to current year. Bacteria analyses: May 1976 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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT											
10...	1310	11	161	7.5	24.0	10.1	120	24	2.5	5000	17000
JAN											
06...	1510	31	440	7.4	17.0	8.3	86	<10	--	8000	21000
JUN											
11...	0805	1.0	80	7.7	24.5	7.5	91	23	5.1	6200	13000
AUG											
22...	1050	6.6	165	7.7	25.0	7.5	92	<10	4.0	K18000	8000

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	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)
OCT											
10...	64	9	23	1.8	5.3	.3	14	3.3	55	15	5.6
JAN											
06...	180	69	65	5.5	20	.6	18	7.6	120	91	21
JUN											
11...	39	4	14	.86	1.7	.1	8	1.9	35	4.8	1.8
AUG											
22...	61	10	21	2.1	4.3	.2	13	2.3	51	17	4.9

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, 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, 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)
OCT											
10...	104	97	52	.199	.068	.93	.66	.39	.46	.73	.276
JAN											
06...	306	289	94	.167	<.020	.55	--	--	.27	.38	.077
JUN											
11...	68	59	40	.504	.345	1.7	.89	.54	.88	1.2	.222
AUG											
22...	96	84	8	.061	.025	.40	.31	.18	.21	.34	.066

DATE	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L) (00556)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)
OCT											
10...	.175	8.1	<.010	<1	1	2	<10	<1	2	3	5
JAN											
06...	.019	8.7	<.010	<1	<1	<1	<10	<1	2	2	2
JUN											
11...	.132	15	<.010	1	3	<1	<10	<1	4	10	12
AUG											
22...	.039	4.5	<.010	<1	<1	<1	<10	<1	<1	3	2

08178700 SALADO CREEK (UPPER STATION) AT SAN ANTONIO, TX--Continued

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

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ALDRIN, TOTAL (UG/L) (39330)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)
OCT											
10...	<.10	2	<1	<1	20	<.040	<.100	<.030	<.100	<1.00	<.100
JAN											
06...	<.10	2	<1	<1	10	<.040	<.100	<.030	<.100	<1.00	<.100
JUN											
11...	<.10	3	<1	<1	90	<.040	<.100	<.030	<.100	<1.00	<.100
AUG											
22...	<.10	<1	<1	<1	20	<.040	<.100	<.030	<.100	<1.00	<.100

DATE	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)
OCT											
10...	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600
JAN											
06...	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600
JUN											
11...	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600
AUG											
22...	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600

DATE	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	ISODRIN SUR SCD 1608 WTR, UNFLTRD PERCENT (90570)	LINDANE TOTAL (UG/L) (39340)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	TOX-APHENE, TOTAL (UG/L) (39400)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT											
10...	<.200	<.060	<.030	<.800	--	<.030	<.100	<.040	<.100	<2.00	<.100
JAN											
06...	<.200	<.060	<.030	<.800	--	<.030	<.100	<.040	<.100	<2.00	<.100
JUN											
11...	<.200	<.060	<.030	<.800	--	<.030	<.100	<.040	<.100	<2.00	<.100
AUG											
22...	<.200	<.060	<.030	<.800	55.0	<.030	<.100	<.040	<.100	<2.00	<.100

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX

LOCATION.--Lat 29°21'25", long 98°24'45", Bexar County, Hydrologic Unit 12100301, on right bank at upstream side of bridge on Loop 13 at San Antonio, 1.4 mi east of Brooks Air Force Base, and 3.3 mi upstream from Rosillo Creek.

DRAINAGE AREA.--189 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 526.95 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair. Since water year 1973, at least 10% of contributing drainage area has been regulated by eleven Soil Conservation floodwater-retarding structures (combined capacity of 26,770 acre-ft). Several small diversions above station. A recording rain gage is located in watershed above station. Most of low flow comes from artesian wells and springs within the city of San Antonio.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--12 years (water years 1961-72) prior to regulation by Soil Conservation Service flood retarding structures, 30.6 ft^3/s (22,170 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1961-72).--Maximum discharge, 7,120 ft^3/s May 12, 1972 (gage height, 24.53 ft); no flow Aug 13, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of Sep 27, 1946, and Aug 15, 1960, were about equal magnitude. Flood of Aug 15, 1960, reached a stage of 26.8 ft, from floodmarks. Maximum stage since at least 1941, that of Sep 27, 1973.

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	22	33	367	16	13	5.2	1.9	4.2	.02	38
2	11	15	21	33	42	14	12	6.2	1.4	1.8	.03	7.7
3	11	15	21	31	27	12	12	6.0	1.2	1.7	.04	6.2
4	11	17	20	28	25	12	11	7.2	1.4	1.3	.04	5.8
5	6.3	19	20	33	28	12	12	4.9	1.3	.74	.06	5.0
6	8.9	17	20	83	65	11	10	4.5	1.6	.80	50	5.0
7	19	19	21	389	33	11	9.6	4.2	1.2	.60	84	4.9
8	36	18	24	64	19	15	10	3.9	1.4	.57	23	5.0
9	78	e35	22	38	13	12	12	4.0	1.1	.46	3.5	4.6
10	120	78	21	30	33	10	10	3.4	1.3	.39	1.4	4.9
11	149	51	20	26	25	9.7	11	3.3	3.5	.52	.81	82
12	87	150	20	24	15	9.7	11	3.0	7.1	.53	.57	133
13	164	105	16	23	11	18	11	3.5	3.2	.37	2.6	31
14	56	50	13	23	44	96	14	3.1	2.1	.21	120	15
15	27	35	14	23	85	83	13	3.0	1.1	.68	88	12
16	21	33	14	23	102	985	13	2.9	.95	.67	16	60
17	19	29	14	23	65	224	13	3.0	.67	.30	36	107
18	18	28	14	23	22	69	13	3.0	.66	.22	81	23
19	16	27	14	22	18	46	14	2.7	.43	.19	9.0	14
20	16	27	103	23	16	34	9.5	2.2	.69	.14	2.9	8.6
21	17	26	711	23	37	30	7.9	2.0	.51	.13	1.7	7.7
22	20	25	66	23	424	33	7.6	2.1	.45	.11	616	9.5
23	22	23	31	24	52	31	19	1.8	.40	.05	1100	8.8
24	19	22	39	25	34	29	10	2.1	.63	.05	540	7.6
25	20	24	28	24	38	23	8.8	1.9	.61	.07	181	5.5
26	16	24	49	24	202	22	8.9	2.0	.43	.09	30	4.3
27	16	22	67	24	82	23	8.8	9.0	.32	.15	25	5.5
28	20	23	25	25	25	25	8.1	11	.59	.06	10	4.6
29	20	24	18	24	---	17	5.6	3.8	.70	.02	7.7	5.5
30	18	22	21	25	---	14	5.5	2.8	11	.03	6.3	4.7
31	18	---	29	305	---	15	---	2.5	---	.03	16	---
TOTAL	1091.2	1020	1538	1541	1949	1961.4	324.3	120.2	49.84	17.18	3052.67	636.4
MEAN	35.2	34.0	49.6	49.7	69.6	63.3	10.8	3.88	1.66	.55	98.5	21.2
MAX	164	150	711	389	424	985	19	11	11	4.2	1100	133
MIN	6.3	15	13	22	11	9.7	5.5	1.8	.32	.02	.02	4.3
AC-FT	2160	2020	3050	3060	3870	3890	643	238	99	34	6050	1260

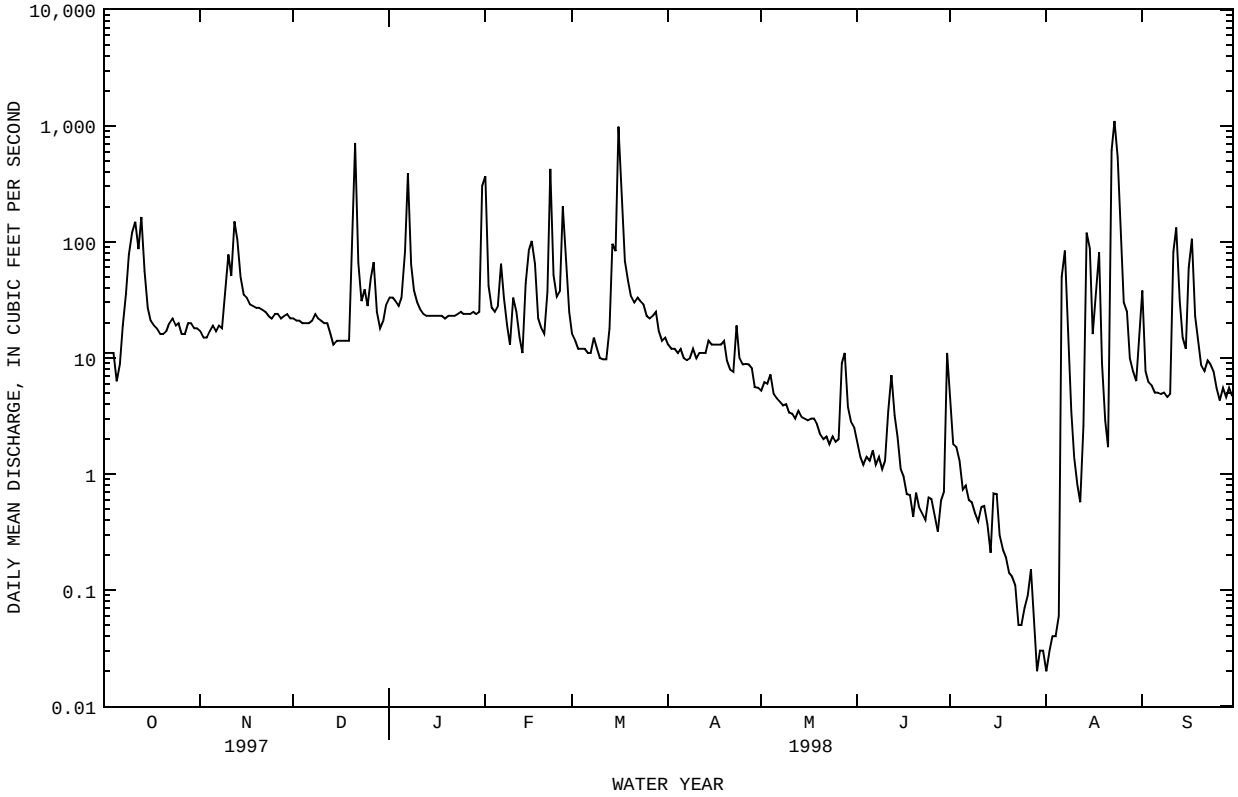
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1998z, BY WATER YEAR (WY)

MEAN	43.8	40.8	47.7	37.9	46.6	40.9	52.8	83.3	89.4	42.9	30.4	52.8
MAX	154	146	376	136	285	206	188	337	349	234	176	400
(WY)	1995	1978	1992	1992	1992	1992	1977	1993	1987	1973	1974	1973
MIN	2.86	6.35	8.16	3.88	5.27	7.70	7.80	3.88	1.66	.55	4.31	6.44
(WY)	1997	1992	1997	1997	1996	1996	1984	1998	1998	1998	1984	1984

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1973 - 1998z	
ANNUAL TOTAL	16224.5		13301.19			
ANNUAL MEAN	44.5		36.4		50.7	
HIGHEST ANNUAL MEAN					149	1992
LOWEST ANNUAL MEAN					9.96	1996
HIGHEST DAILY MEAN	1700	Jun 22	1100	Aug 23	8080	Sep 27 1973
LOWEST DAILY MEAN	2.6	Jan 15	.02	Jul 29	.02	Jul 29 1998
ANNUAL SEVEN-DAY MINIMUM	2.7	Jan 13	.03	Jul 29	.03	Jul 29 1998
INSTANTANEOUS PEAK FLOW			2250	Aug 23	13100	Sep 27 1973
INSTANTANEOUS PEAK STAGE			15.23	Aug 23	28.83	Sep 27 1973
ANNUAL RUNOFF (AC-FT)	32180		26380		36740	
10 PERCENT EXCEEDS	73		66		65	
50 PERCENT EXCEEDS	17		14		23	
90 PERCENT EXCEEDS	3.7		.61		6.7	

e Estimated
z Period of regulated streamflow.



08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: Nov 1968 to current year. Sediment analyses: Oct 1968 to Sep 1973, Apr 1996 to Sep 1997. Biological analyses: May 1989 to Sep 1995.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Jan 1987 to current year.
PH: Jan 1987 to current year.
WATER TEMPERATURE: Jan 1987 to current year.
DISSOLVED OXYGEN: Jan 1987 to current year.

INSTRUMENTATION.--Beginning Jan 1987, 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 malfunction of the instrument, probe fouling or probe being out of the water and these days were deleted from the record.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,290 microsiemens, Aug 23, 1994; minimum, 39 microsiemens, Nov 9, 1990.
PH: Maximum, 9.0 units, Apr 26, 27, 1997; minimum, 7.2 units, Dec 21, 1997.
WATER TEMPERATURE: Maximum, 31.0°C, Jul 17-20, 1988, Jul 30, 1993, Jul 17, 19, 1996; minimum, 0.0°C, Dec 24, 1989.
DISSOLVED OXYGEN: Maximum, 16.7 mg/L, Jan 27, 1988, Mar 11, 1996; minimum, 0.6 mg/L, Jul 27, 1996.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 998 microsiemens, Jun 30; minimum, 130 microsiemens, Aug 22.
PH: Maximum, 8.4 units, Jan 24, 26-27; minimum, 7.2 units, Dec 21.
WATER TEMPERATURE: Maximum, 29.7°C, Jul 12; minimum, 9.1°C, Dec 14.
DISSOLVED OXYGEN: Maximum, 14.6 mg/L, Mar 11; minimum, 2.0 mg/L, May 27.

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 (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT												
10-11	1845	263	260	--	--	--	--	33	4.0	110	14	35
22...	0945	21	583	8.2	20.0	7.2	81	--	--	250	40	75
28...	0900	22	590	8.2	17.0	8.4	89	--	--	260	39	79
NOV												
06...	0900	18	590	8.2	18.0	7.1	76	--	--	260	38	78
19...	1000	26	563	8.0	15.0	8.2	83	--	--	220	19	66
DEC												
10...	0900	21	609	8.0	13.0	7.7	75	--	--	250	6	75
17...	0900	14	665	8.2	13.0	9.0	87	--	--	270	18	80
DEC												
20-21	1900	1230	--	--	--	--	--	--	--	110	11	37
DEC												
20-21	1916	730	295	--	--	--	--	54	6.2	120	10	37
JAN												
06-07	1930	1180	--	--	--	--	--	--	--	130	13	41
12...	0930	25	545	7.9	18.5	7.7	84	--	--	220	26	69
22...	0845	22	626	8.2	17.0	7.7	82	--	--	260	30	77
JAN 31-												
FEB 01	1600	1190	--	--	--	--	--	--	--	110	15	35
19...	0945	18	490	7.9	17.0	8.2	87	--	--	170	27	56
FEB												
21-22	2245	1210	--	--	--	--	--	--	--	110	19	38
MAR												
16-17	0330	1070	--	--	--	--	--	--	--	93	11	32
23...	0930	31	705	8.0	17.0	8.1	86	--	--	270	33	88
APR												
27...	1000	9.8	840	8.0	22.0	6.1	72	--	--	300	22	90
JUN												
26...	1000	.26	870	7.8	29.0	4.0	53	--	--	250	--	76
JUL												
30...	0900	.04	890	7.8	28.0	3.7	49	--	--	210	--	63
SEP												
11-12	1830	190	438	--	--	--	--	13	6.1	170	15	55

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

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

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
OCT												
10-11	5.1	8.1	.3	14	2.8	95	15	11	--	--	146	137
22...	15	22	.6	16	2.1	210	32	31	.23	13	339	328
28...	16	25	.7	17	2.0	220	33	32	.28	13	353	344
NOV												
06...	16	25	.7	17	2.1	220	32	33	.28	13	352	343
19...	13	23	.7	19	2.2	200	30	28	.26	12	319	304
DEC												
10...	16	26	.7	18	2.1	250	38	36	.26	10	365	352
17...	16	33	.9	21	1.8	250	41	40	.31	9.1	393	373
DEC												
20-21	5.5	9.1	.4	14	4.9	100	18	13	.16	6.3	177	209
DEC												
20-21	5.6	11	.4	16	4.8	110	19	13	--	--	168	214
JAN												
06-07	5.9	11	.4	16	4.1	110	27	13	.21	7.4	184	212
12...	13	25	.7	19	2.7	200	38	31	.24	12	329	321
22...	16	29	.8	20	1.9	230	41	37	.34	10	373	361
JAN 31-												
FEB 01	4.7	11	.5	17	3.7	92	21	12	.16	6.3	174	192
19...	7.6	31	1	28	3.2	150	45	32	.19	7.2	300	277
FEB												
21-22	4.5	14	.6	20	3.6	94	25	14	.18	5.8	181	203
MAR												
16-17	3.0	8.5	.4	16	3.9	82	16	9.3	.12	6.8	144	177
23...	12	40	1	24	5.2	240	66	40	.33	12	434	406
APR												
27...	17	56	1	29	3.5	270	69	59	.33	12	498	477
JUN												
26...	14	86	2	43	3.5	270	66	73	.31	19	514	504
JUL												
30...	13	97	3	49	3.5	250	73	88	.29	18	528	508
SEP												
11-12	7.5	22	.7	22	3.4	150	32	23	--	--	264	242

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)
OCT												
10-11	276	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	<.010	1.16	<.015	--	--	--	<.20	<.20	.034	.027
28...	--	--	<.010	1.12	<.020	1.2	--	--	<.10	.13	.035	.010
NOV												
06...	--	1.10	.039	1.14	<.020	1.2	--	--	<.10	.10	.021	<.010
19...	--	--	<.010	1.11	.362	1.3	--	--	.14	.16	.054	.029
DEC												
10...	--	--	<.010	.904	<.020	--	--	--	<.10	<.10	.031	<.010
17...	--	.800	.034	.834	<.020	.97	--	--	<.10	.14	.066	.061
DEC												
20-21	--	.608	.021	.629	<.020	2.0	--	--	.26	1.4	.456	.085
DEC												
20-21	444	--	--	.569	<.020	2.2	--	--	.25	1.6	.486	.064
JAN												
06-07	--	--	<.010	.565	<.020	1.0	--	--	.26	.44	.114	.041
12...	--	--	<.010	1.05	<.020	1.3	--	--	.17	.25	.079	.058
22...	--	1.08	.015	1.10	<.020	1.2	--	--	<.10	.13	.032	.010
JAN 31-												
FEB 01	--	.715	.011	.726	.036	2.1	1.3	.31	.35	1.4	.371	.057
19...	--	--	<.010	.406	<.020	.74	--	--	.22	.33	.059	.035
FEB												
21-22	--	--	<.010	.443	.052	1.9	1.4	.22	.27	1.4	.436	.075
MAR												
16-17	--	.403	.056	.459	.036	2.4	1.9	.32	.36	2.0	.545	.079
23...	--	--	<.010	.517	.040	.82	.27	.14	.19	.31	.040	.023
APR												
27...	--	--	<.010	<.050	.033	--	.22	.22	.26	.26	.038	.026
JUN												
26...	--	--	<.010	.098	.025	.41	.29	.27	.30	.32	.068	.040
JUL												
30...	--	--	<.010	.054	.033	.35	.26	.21	.24	.29	.052	.029
SEP												
11-12	122	--	--	.301	.039	.99	.65	.27	.31	.69	.183	.060

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, 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)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L) (00556)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)
OCT												
10-11	--	--	13	--	--	<.010	<1	<1	--	--	4	<10
22...	.027	.08	--	1.3	.50	--	--	--	1.4	25	--	--
28...	.023	.07	--	1.1	.70	--	--	--	1.1	19	--	--
NOV												
06...	.016	.05	--	.90	.40	--	--	--	.97	20	--	--
19...	.042	.13	--	1.9	.20	--	--	--	.56	8	--	--
DEC												
10...	.018	.06	--	1.4	.30	--	--	--	.28	5	--	--
17...	.038	.12	--	1.4	.30	--	--	--	.26	7	--	--
DEC												
20-21	.072	.22	--	5.0	>5.0	--	--	--	1460	441	--	--
DEC												
20-21	--	--	16	--	--	<.010	<1	<1	--	--	4	<10
JAN												
06-07	.064	.20	--	3.8	>5.0	--	--	--	870	273	--	--
12...	.053	.16	--	2.1	.40	--	--	--	1.1	17	--	--
22...	.028	.09	--	1.2	.20	--	--	--	1.2	20	--	--
JAN 31-												
FEB 01	.052	.16	--	5.0	>5.0	--	--	--	1180	368	--	--
19...	.039	.12	--	3.7	.40	--	--	--	.97	20	--	--
FEB												
21-22	.069	.21	--	4.0	>5.0	--	--	--	1240	381	--	--
MAR												
16-17	.083	.25	--	4.8	5.0	--	--	--	1270	440	--	--
23...	.027	.08	--	3.3	.40	--	--	--	2.3	27	--	--
APR												
27...	<.010	--	--	2.8	.30	--	--	--	.69	26	--	--
JUN												
26...	.045	.14	--	--	--	--	--	--	.05	67	--	--
JUL												
30...	.056	.17	--	--	--	--	--	--	.00	27	--	--
SEP												
11-12	--	--	8.3	--	--	<.010	<1	2	--	--	3	<10

DATE	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	1-NAPH THOL, WATER, FLTRD, GF 0.7U REC (UG/L) (49295)
OCT												
10-11	2	5	7	--	14	--	<.10	4	<1	<1	110	--
22...	--	--	--	<3.0	--	4.1	--	--	--	--	--	<.0070
28...	--	--	--	<3.0	--	4.2	--	--	--	--	--	--
NOV												
06...	--	--	--	<3.0	--	4.6	--	--	--	--	--	--
19...	--	--	--	<3.0	--	5.3	--	--	--	--	--	--
DEC												
10...	--	--	--	<10	--	11	--	--	--	--	--	--
17...	--	--	--	<10	--	9.7	--	--	--	--	--	--
DEC												
20-21	--	--	--	32	--	<4.0	--	--	--	--	--	--
DEC												
20-21	<1	8	9	--	21	--	<.10	7	<1	<1	60	--
JAN												
06-07	--	--	--	11	--	<4.0	--	--	--	--	--	--
12...	--	--	--	<10	--	11	--	--	--	--	--	--
22...	--	--	--	<10	--	<4.0	--	--	--	--	--	--
JAN 31-												
FEB 01	--	--	--	<10	--	<4.0	--	--	--	--	--	--
19...	--	--	--	<10	--	20	--	--	--	--	--	--
FEB												
21-22	--	--	--	<10	--	<4.0	--	--	--	--	--	--
MAR												
16-17	--	--	--	12	--	<4.0	--	--	--	--	--	--
23...	--	--	--	<10	--	15	--	--	--	--	--	--
APR												
27...	--	--	--	<10	--	13	--	--	--	--	--	--
JUN												
26...	--	--	--	<10	--	19	--	--	--	--	--	--
JUL												
30...	--	--	--	<10	--	24	--	--	--	--	--	--
SEP												
11-12	<1	3	4	--	6	--	<.10	3	<1	<1	20	--

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

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

DATE	2,4,5-T DIS-SOLVED (UG/L) (39742)	2,4-D, DIS-SOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	SILVEX, DIS-SOLVED (UG/L) (39762)	3HYDRXY CARBO-FURAN WAT,FLT GF 0.7U REC (UG/L) (49308)	DNOC WAT,FLT GF 0.7U REC (UG/L) (49299)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ACIFL-UORFEN WATER, FLTRD, GF 0.7U REC (UG/L) (49315)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALDI-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)	ALDI-CARB SULFONE WAT,FLT GF 0.7U REC (UG/L) (49313)
OCT												
10-11	--	--	--	--	--	--	--	--	--	--	--	--
22...	<.0350	<.035	<.0350	<.0030	<.0210	<.0140	<.0350	<.0020	<.0350	<.002	<.0160	<.0160
28...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
06...	--	--	--	--	--	--	--	--	--	--	--	--
19...	<.0350	<.150	<.240	<.0030	<.0210	<.0140	<.420	<.0020	<.0350	<.002	<.550	<.100
DEC												
10...	--	--	--	--	--	--	--	--	--	--	--	--
17...	<.0350	<.150	<.240	<.0030	<.0210	<.0140	<.420	<.0020	<.0350	<.002	<.550	<.100
DEC												
20-21	<.0350	<.150	<.240	<.0030	<.0210	<.0140	<.420	<.0020	<.0350	<.002	<.550	<.100
DEC												
20-21	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
06-07	<.0350	<.150	<.240	<.0030	<.0210	<.0140	<.420	<.0020	<.0350	<.002	<.550	<.100
12...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 31-												
FEB 01	<.0350	<.150	<.240	<.0030	<.0210	<.0140	<.420	<.0020	<.0350	<.002	<.550	<.100
19...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
21-22	<.0350	<.150	<.240	<.0030	<.0210	<.0140	<.420	<.0020	<.0350	<.002	<.550	<.100
MAR												
16-17	--	--	--	--	--	--	--	--	--	--	--	--
23...	<.0350	<.150	<.240	<.0030	<.0210	<.0140	<.420	<.0020	<.0350	<.002	<.550	<.100
APR												
27...	<.0350	<.150	<.240	<.0030	<.0210	<.0140	<.420	<.0020	<.0350	<.002	<.550	<.100
JUN												
26...	--	--	--	<.0030	--	--	--	<.0020	--	<.002	--	--
JUL												
30...	--	--	--	<.0030	--	--	--	<.0020	--	<.002	--	--
SEP												
11-12	--	--	--	--	--	--	--	--	--	--	--	--

DATE	ALDICA-RB SUL-FOXIDE, WAT,FLT GF 0.7U REC (UG/L) (49314)	ALDRIN, TOTAL (UG/L) (39330)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ALPHA BHC TOTAL (UG/L) (39337)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)
OCT												
10-11	--	<.040	<.100	--	<.030	<.100	<1.00	<.100	<.100	<.100	<.100	<.100
22...	<.0210	--	--	<.0020	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
06...	--	--	--	--	--	--	--	--	--	--	--	--
19...	<.0210	--	--	<.0020	--	--	--	--	--	--	--	--
DEC												
10...	--	--	--	--	--	--	--	--	--	--	--	--
17...	<.0210	--	--	<.0020	--	--	--	--	--	--	--	--
DEC												
20-21	<.0210	--	--	<.0020	--	--	--	--	--	--	--	--
DEC												
20-21	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
06-07	<.0210	--	--	<.0020	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 31-												
FEB 01	<.0210	--	--	<.0020	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
21-22	<.0210	--	--	<.0020	--	--	--	--	--	--	--	--
MAR												
16-17	--	--	--	--	--	--	--	--	--	--	--	--
23...	<.0210	--	--	<.0020	--	--	--	--	--	--	--	--
APR												
27...	<.0210	--	--	<.0020	--	--	--	--	--	--	--	--
JUN												
26...	--	--	--	<.0020	--	--	--	--	--	--	--	--
JUL												
30...	--	--	--	<.0020	--	--	--	--	--	--	--	--
SEP												
11-12	--	<.040	<.100	--	<.030	<.100	<1.00	<.100	<.100	<.100	<.100	<.100

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

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

DATE	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BENTA-ZON, WATER, FLTRD, GF 0.7U REC (UG/L) (38711)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	BRO-MACIL, WATER, DISS, REC (UG/L) (04029)	BRO-MOXYNIL WATER, FLTRD, GF 0.7U REC (UG/L) (49311)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN, WATER, FLTRD, GF 0.7U REC (UG/L) (49309)
OCT												
10-11	--	--	--	--	<.040	<.030	--	--	--	--	--	--
22...	.006	<.0010	<.0020	<.0140	--	--	<.0350	<.0350	<.0020	<.0080	<.0030	<.0280
28...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
06...	--	--	--	--	--	--	--	--	--	--	--	--
19...	.007	<.0010	<.0020	<.0140	--	--	<.0350	<.0350	<.0020	<.0080	E.0160	<.120
DEC												
10...	--	--	--	--	--	--	--	--	--	--	--	--
17...	.004	<.0010	<.0020	<.0140	--	--	<.0350	<.0350	<.0020	<.0080	<.0030	<.120
DEC												
20-21	.038	<.0010	.0047	<.0140	--	--	<.0350	<.0350	<.0020	<.0080	E.0629	<.120
DEC												
20-21	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
06-07	.026	<.0010	<.0020	<.0140	--	--	.0600	<.0350	<.0020	<.0080	E.0918	<.120
12...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 31-												
FEB 01	.205	<.0010	<.0020	<.0140	--	--	<.0350	<.0350	<.0020	<.0080	E.155	<.120
19...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
21-22	.316	<.0010	<.0020	<.0140	--	--	<.0350	<.0350	<.0020	<.0080	E.334	<.120
MAR												
16-17	--	--	--	--	--	--	--	--	--	--	--	--
23...	.560	<.0010	E.0036	<.0140	--	--	<.0350	<.0350	<.0020	<.0080	E.0090	<.120
APR												
27...	.041	<.0010	<.0020	E.0200	--	--	<.0350	<.0350	<.0020	<.0080	<.0090	<.120
JUN												
26...	.023	<.0010	<.0020	--	--	--	--	--	<.0020	--	<.0030	--
JUL												
30...	.009	<.0010	<.0020	--	--	--	--	--	<.0020	--	<.0030	--
SEP												
11-12	--	--	--	--	<.040	<.030	--	--	--	--	--	--

DATE	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-AMBEN, WATER, FLTRD, GF 0.7U REC (UG/L) (49307)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLORO-THALO-NIL, WAT,FLT GF 0.7U REC (UG/L) (49306)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CLOPYR-ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DACTHAL MONO-ACID, WAT,FLT GF 0.7U REC (UG/L) (49304)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)
OCT												
10-11	--	--	<.100	--	--	<.100	--	--	--	--	--	--
22...	<.0030	<.0110	--	<.0350	<.0040	--	<.0050	<.0500	<.0040	<.0170	<.0020	E.0046
28...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
06...	--	--	--	--	--	--	--	--	--	--	--	--
19...	<.0030	<.420	--	<.480	.0056	--	<.0050	<.230	<.0040	<.0170	<.0020	E.0036
DEC												
10...	--	--	--	--	--	--	--	--	--	--	--	--
17...	<.0030	<.420	--	<.480	<.0040	--	<.0050	<.230	<.0040	<.0170	<.0020	E.0071
DEC												
20-21	<.0030	<.420	--	<.480	.0098	--	<.0050	<.230	<.0040	<.0170	E.0031	E.0044
DEC												
20-21	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
06-07	<.0030	<.420	--	<.480	.0066	--	<.0050	<.230	<.0040	<.0170	E.0022	E.0075
12...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 31-												
FEB 01	<.0030	<.420	--	<.480	.0108	--	<.0050	<.230	<.0040	<.0170	E.0006	E.0045
19...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
21-22	<.0030	<.420	--	<.480	.0104	--	<.0050	<.230	<.0040	<.0170	E.0008	E.0089
MAR												
16-17	--	--	--	--	--	--	--	--	--	--	--	--
23...	<.0030	<.420	--	<.480	E.0027	--	<.0050	<.230	<.0040	<.0170	<.0020	E.0196
APR												
27...	<.0030	<.420	--	<.480	.0042	--	<.0050	<.230	<.0040	<.0170	<.0020	E.0114
JUN												
26...	<.0030	--	--	--	<.0040	--	<.0050	--	<.0040	--	<.0020	E.0189
JUL												
30...	<.0030	--	--	--	<.0040	--	<.0050	--	<.0040	--	<.0020	E.0109
SEP												
11-12	--	--	<.100	--	--	<.100	--	--	--	--	--	--

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

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

DATE	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	DICHLO-BENIL, WATER, FLTRD, GF 0.7U REC (UG/L) (49303)	DICHLOR PROP, WATER, FLTRD, GF 0.7U REC (UG/L) (49302)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)
OCT											
10-11	<.090	--	--	--	--	<.020	--	--	--	--	<.600
22...	--	E.004	<.0350	<.0200	<.0320	--	<.001	<.0350	<.0170	<.0200	--
28...	--	--	--	--	--	--	--	--	--	--	--
NOV											
06...	--	--	--	--	--	--	--	--	--	--	--
19...	--	.020	<.0350	<1.20	<.0320	--	<.001	<.0350	<.0170	E.0500	--
DEC											
10...	--	--	--	--	--	--	--	--	--	--	--
17...	--	<.002	<.0350	<1.20	<.0320	--	<.001	<.0350	<.0170	<.0200	--
DEC											
20-21	--	.076	<.0350	<1.20	<.0320	--	<.001	<.0350	<.0170	<.0200	--
DEC											
20-21	--	--	--	--	--	--	--	--	--	--	--
JAN											
06-07	--	.032	<.0350	<1.20	<.0320	--	<.001	<.0350	<.0170	<.0200	--
12...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
JAN 31-											
FEB 01	--	.096	<.0350	<1.20	<.0320	--	<.001	<.0350	<.0170	<.0200	--
19...	--	--	--	--	--	--	--	--	--	--	--
FEB											
21-22	--	.322	<.0350	<1.20	<.0320	--	<.001	<.0350	<.0170	<.0200	--
MAR											
16-17	--	--	--	--	--	--	--	--	--	--	--
23...	--	.063	<.0350	<1.20	<.0320	--	<.001	<.0350	<.0170	E.0300	--
APR											
27...	--	.013	<.0350	<1.20	<.0320	--	<.001	<.0350	<.0170	<.0200	--
JUN											
26...	--	.005	--	--	--	--	<.001	--	<.0170	--	--
JUL											
30...	--	<.002	--	--	--	--	<.001	--	<.0170	--	--
SEP											
11-12	<.090	--	--	--	--	<.020	--	--	--	--	<.600

DATE	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ESFEN-VAL-ERATE, WAT,FLT GF 0.7U REC (UG/L) (49298)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FEN-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)	FLUO-METURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)	FONOFOS WATER DISS REC (UG/L) (04095)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)
OCT											
10-11	<.200	<.060	--	--	--	--	--	--	--	<.030	<.800
22...	--	--	<.0020	<.0190	<.0040	<.0030	<.0130	<.0350	<.0030	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
NOV											
06...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	<.0020	--	<.0040	<.0030	<.0130	<.0350	<.0030	--	--
DEC											
10...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	<.0020	--	<.0040	<.0030	<.0130	<.0350	<.0030	--	--
DEC											
20-21	--	--	<.0020	--	<.0040	<.0030	<.0130	<.0350	<.0030	--	--
DEC											
20-21	--	--	--	--	--	--	--	--	--	--	--
JAN											
06-07	--	--	<.0020	--	<.0040	<.0030	<.0130	<.0350	<.0030	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
JAN 31-											
FEB 01	--	--	<.0020	--	<.0040	<.0030	<.0130	<.0350	<.0030	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
FEB											
21-22	--	--	<.0020	--	<.0040	<.0030	<.0130	<.0350	<.0030	--	--
MAR											
16-17	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	<.0020	--	<.0040	<.0030	<.0130	<.0350	<.0030	--	--
APR											
27...	--	--	<.0020	--	<.0040	<.0030	<.0130	<.0350	<.0030	--	--
JUN											
26...	--	--	<.0020	--	<.0040	<.0030	--	--	<.0030	--	--
JUL											
30...	--	--	<.0020	--	<.0040	<.0030	--	--	<.0030	--	--
SEP											
11-12	<.200	<.060	--	--	--	--	--	--	--	<.030	<.800

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

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

DATE	LINDANE TOTAL (UG/L) (39340)	LINDANE DIS-SOLVED (UG/L) (39341)	LINURON WATER, FLTRD, GF 0.7U REC (UG/L) (38478)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	MCPA, WATER, FLTRD, GF 0.7U REC (UG/L) (38482)	MCPB, WATER, FLTRD, GF 0.7U REC (UG/L) (38487)	METHIO-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (38501)	METH-OMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49296)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)
OCT											
10-11	<.030	--	--	--	--	--	--	--	--	--	--
22...	--	<.004	<.0180	<.0020	<.005	<.0500	<.0350	<.0260	<.0170	<.002	<.004
28...	--	--	--	--	--	--	--	--	--	--	--
NOV											
06...	--	--	--	--	--	--	--	--	--	--	--
19...	--	<.004	<.0180	<.0020	<.005	<.170	<.140	<.0260	<.0170	E.003	<.004
DEC											
10...	--	--	--	--	--	--	--	--	--	--	--
17...	--	<.004	<.0180	<.0020	<.005	<.170	<.140	<.0260	<.0170	<.002	<.004
DEC											
20-21	--	<.004	<.0180	<.0020	.013	<.170	<.140	<.0260	<.0170	<.002	<.004
DEC											
20-21	--	--	--	--	--	--	--	--	--	--	--
JAN											
06-07	--	<.004	<.0180	<.0020	<.005	<.170	<.140	<.0260	<.0170	E.004	<.004
12...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
JAN 31-											
FEB 01	--	<.004	<.0180	<.0020	.011	<.170	<.140	<.0260	<.0170	.005	<.004
19...	--	--	--	--	--	--	--	--	--	--	--
FEB											
21-22	--	<.004	<.0180	<.0020	.016	.0800	<.140	<.0260	<.0170	.004	<.004
MAR											
16-17	--	--	--	--	--	--	--	--	--	--	--
23...	--	<.004	<.0180	<.0020	.020	<.170	<.140	<.0260	<.0170	.005	<.004
APR											
27...	--	<.004	<.0180	<.0020	<.005	<.170	<.140	<.0260	<.0170	<.002	<.004
JUN											
26...	--	<.004	--	<.0020	<.005	--	--	--	--	<.002	<.004
JUL											
30...	--	<.004	--	<.0020	<.005	--	--	--	--	<.002	<.004
SEP											
11-12	<.030	--	--	--	--	--	--	--	--	--	--

DATE	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	NEB-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49294)	NORFLUR AZON, WATER, FLTRD, GF 0.7U REC (UG/L) (49293)	ORY-ZALIN, WATER, FLTRD, GF 0.7U REC (UG/L) (49292)	OXAMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (38866)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE DISSOLV (UG/L) (34653)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	PARA-THION, DIS-SOLVED (UG/L) (39542)
OCT											
10-11	--	--	--	--	--	--	<.100	--	<.040	<.100	--
22...	<.0040	<.0030	<.0150	<.0240	<.0190	<.0180	--	<.0060	--	--	<.004
28...	--	--	--	--	--	--	--	--	--	--	--
NOV											
06...	--	--	--	--	--	--	--	--	--	--	--
19...	<.0040	<.0030	<.0150	<.0240	E.0300	<.0180	--	<.0060	--	--	<.004
DEC											
10...	--	--	--	--	--	--	--	--	--	--	--
17...	<.0040	<.0030	<.0150	<.0240	<.310	<.0180	--	<.0060	--	--	<.004
DEC											
20-21	<.0040	<.0030	<.0150	<.0240	<.310	<.0180	--	<.0060	--	--	<.004
DEC											
20-21	--	--	--	--	--	--	--	--	--	--	--
JAN											
06-07	<.0040	<.0030	<.0150	<.0240	<.310	<.0180	--	<.0060	--	--	<.004
12...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
JAN 31-											
FEB 01	<.0040	<.0030	<.0150	<.0240	<.310	<.0180	--	E.0046	--	--	<.004
19...	--	--	--	--	--	--	--	--	--	--	--
FEB											
21-22	<.0040	<.0030	<.0150	<.0240	<.310	<.0180	--	<.0060	--	--	<.004
MAR											
16-17	--	--	--	--	--	--	--	--	--	--	--
23...	<.0040	<.0030	<.0150	<.0240	<.310	<.0180	--	E.0038	--	--	<.004
APR											
27...	<.0040	<.0030	<.0150	<.0240	<.310	<.0180	--	<.0060	--	--	<.004
JUN											
26...	<.0040	<.0030	--	--	--	--	--	<.0060	--	--	<.004
JUL											
30...	<.0040	<.0030	--	--	--	--	--	<.0060	--	--	<.004
SEP											
11-12	--	--	--	--	--	--	<.100	--	<.040	<.100	--

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TX--Continued

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

DATE	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PIC-LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PROP-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRO-PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PRO-POXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)
OCT											
10-11	--	--	--	--	--	--	--	--	--	--	--
22...	<.0060	<.0040	<.0040	<.0020	<.0500	.0215	<.0070	<.0040	<.0130	<.0350	<.0350
28...	--	--	--	--	--	--	--	--	--	--	--
NOV											
06...	--	--	--	--	--	--	--	--	--	--	--
19...	<.0060	<.0040	<.0040	<.0020	<.0500	.0355	<.0070	<.0040	<.0130	<.0350	<.0350
DEC											
10...	--	--	--	--	--	--	--	--	--	--	--
17...	<.0060	<.0040	<.0040	<.0020	<.0500	.0334	<.0070	<.0040	<.0130	<.0350	<.0350
DEC											
20-21	<.0060	<.0040	<.0040	<.0020	<.0500	.0293	<.0070	<.0040	<.0130	<.0350	<.0350
DEC											
20-21	--	--	--	--	--	--	--	--	--	--	--
JAN											
06-07	<.0060	<.0040	<.0040	<.0020	<.0500	.0606	<.0070	.0078	<.0130	<.0350	<.0350
12...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
JAN 31-											
FEB 01	<.0060	<.0040	<.0040	<.0020	<.0500	.241	<.0070	<.0040	<.0400	<.0350	<.0350
19...	--	--	--	--	--	--	--	--	--	--	--
FEB											
21-22	<.0060	<.0040	<.0040	<.0020	<.0500	.0456	<.0070	<.0040	<.0130	<.0350	<.0350
MAR											
16-17	--	--	--	--	--	--	--	--	--	--	--
23...	<.0060	<.0040	<.0040	<.0020	<.0500	.0375	<.0070	<.0040	<.0130	<.0350	<.0350
APR											
27...	<.0060	<.0040	<.0040	<.0020	<.0500	.0405	<.0070	<.0040	<.0130	<.0350	<.0350
JUN											
26...	<.0060	<.0040	<.0040	<.0020	--	.0744	<.0070	<.0040	<.0130	--	--
JUL											
30...	<.0060	<.0040	<.0040	<.0020	--	.0593	<.0070	<.0040	<.0130	--	--
SEP											
11-12	--	--	--	--	--	--	--	--	--	--	--

DATE	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TOX-APHENE, TOTAL (UG/L) (39400)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
OCT											
10-11	--	--	--	--	--	--	<2.00	<.100	--	--	--
22...	<.0030	.0060	E.0807	<.0070	<.0130	<.0020	--	--	<.0010	<.0500	<.0020
28...	--	--	--	--	--	--	--	--	--	--	--
NOV											
06...	--	--	--	--	--	--	--	--	--	--	--
19...	<.0030	.0182	.0542	<.0070	<.0130	<.0020	--	--	<.0010	<.250	<.0020
DEC											
10...	--	--	--	--	--	--	--	--	--	--	--
17...	<.0030	E.0047	.0915	<.0070	<.0130	<.0020	--	--	<.0010	<.250	<.0020
DEC											
20-21	<.0030	.253	E.0544	<.0070	<.0130	<.0020	--	--	<.0010	<.250	<.0020
DEC											
20-21	--	--	--	--	--	--	--	--	--	--	--
JAN											
06-07	<.0030	.151	.0892	<.0070	<.0130	<.0020	--	--	<.0010	<.250	<.0020
12...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
JAN 31-											
FEB 01	<.0030	.198	<.0100	<.0070	<.0130	<.0020	--	--	<.0010	<.250	<.0020
19...	--	--	--	--	--	--	--	--	--	--	--
FEB											
21-22	<.0030	.0625	.0549	<.0070	<.0130	<.0020	--	--	<.0010	<.250	<.0020
MAR											
16-17	--	--	--	--	--	--	--	--	--	--	--
23...	<.0030	.0181	.102	<.0070	<.0130	<.0020	--	--	<.0010	<.250	<.0020
APR											
27...	<.0030	.0067	.150	<.0070	<.0130	<.0020	--	--	<.0010	<.250	<.0020
JUN											
26...	<.0030	.0095	.296	<.0070	<.0130	<.0020	--	--	<.0010	--	<.0020
JUL											
30...	<.0030	<.0050	.327	<.0070	<.0130	<.0020	--	--	<.0010	--	<.0020
SEP											
11-12	--	--	--	--	--	--	<2.00	<.100	--	--	--

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, 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	576	548	564	617	600	608	635	630	632	566	541	557
2	586	550	573	610	601	607	640	634	638	584	565	575
3	599	564	583	610	602	608	640	634	637	605	583	590
4	601	564	586	607	598	603	640	634	637	721	554	614
5	597	569	581	612	591	603	636	629	632	606	581	592
6	639	597	623	600	591	596	635	631	632	597	260	529
7	637	574	609	602	589	596	662	632	636	467	204	282
8	610	567	589	610	593	601	661	624	636	355	276	319
9	567	468	526	---	---	e575	636	626	630	422	355	388
10	477	257	360	---	---	e540	667	627	644	488	422	455
11	284	237	257	---	---	e500	655	643	646	538	488	514
12	325	245	283	701	313	448	644	638	640	572	538	556
13	357	227	299	328	260	295	641	638	640	588	572	581
14	300	248	276	365	283	329	663	641	654	602	588	595
15	378	300	333	435	365	399	662	655	658	611	602	607
16	471	378	418	488	435	460	664	657	660	616	609	612
17	508	470	481	527	488	504	679	660	673	620	613	618
18	533	508	524	547	522	532	681	675	678	628	618	622
19	557	533	549	557	531	542	685	677	681	628	625	627
20	569	554	564	577	557	566	723	298	590	637	628	632
21	577	569	574	589	577	582	467	189	253	639	634	636
22	580	566	573	591	581	587	366	266	318	640	634	637
23	586	576	581	598	590	595	471	366	399	637	630	634
24	593	581	587	606	598	601	466	415	439	635	629	632
25	600	585	591	613	604	608	518	461	500	645	633	637
26	600	591	597	618	610	615	544	473	509	649	641	645
27	600	595	597	629	615	620	513	414	472	646	636	640
28	601	585	593	643	622	630	590	486	548	641	631	635
29	599	584	591	643	634	637	591	552	573	640	637	639
30	607	589	601	635	632	633	552	527	541	642	633	637
31	612	603	606	---	---	---	541	525	530	672	235	520
MONTH	639	227	518	---	---	554	723	189	579	721	204	573

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	350	190	259	522	469	498	827	815	822	827	795	813
2	429	350	398	562	522	545	847	822	837	849	826	839
3	450	429	438	607	561	579	854	842	849	859	848	852
4	468	449	459	631	600	613	851	843	847	867	855	860
5	545	463	494	703	626	666	858	843	850	873	831	860
6	575	450	509	714	694	704	868	853	859	846	826	832
7	612	521	560	751	712	738	898	867	878	881	846	869
8	639	612	626	872	710	763	898	881	887	891	880	887
9	697	639	669	760	709	731	897	870	885	902	887	896
10	711	284	592	790	717	765	871	853	864	908	899	902
11	615	517	567	811	782	796	870	775	826	907	897	902
12	640	564	607	826	807	815	779	769	773	911	900	905
13	664	574	633	906	666	819	790	777	784	915	907	911
14	685	420	612	766	519	660	828	789	807	924	912	918
15	556	458	511	581	441	505	830	779	806	930	920	924
16	536	311	446	446	171	250	838	804	824	922	908	915
17	463	298	386	334	203	265	841	808	823	920	906	912
18	470	461	464	465	334	405	830	781	799	936	918	928
19	525	468	489	548	465	511	831	767	789	932	927	929
20	504	472	486	604	548	574	782	764	771	930	921	926
21	586	398	512	661	604	634	792	775	782	932	920	926
22	501	182	261	689	660	676	793	787	790	930	923	926
23	408	306	358	724	689	708	791	730	776	929	919	924
24	447	403	423	763	724	754	750	725	736	927	920	924
25	520	419	480	798	758	781	818	750	782	931	922	926
26	485	285	390	812	798	806	824	811	818	938	926	933
27	419	285	357	815	793	808	833	779	805	985	879	931
28	469	416	440	793	780	785	780	744	761	953	724	771
29	---	---	---	807	784	800	773	742	754	789	742	769
30	---	---	---	973	803	848	795	773	785	805	789	798
31	---	---	---	882	811	835	---	---	---	865	805	832
MONTH	711	182	480	973	171	666	898	725	812	985	724	885

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, 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	817	808	812	791	774	781	---	---	e860	542	316	445
2	819	807	811	809	791	801	---	---	e860	563	529	546
3	851	818	831	876	809	850	862	831	853	644	530	581
4	880	850	864	845	819	830	857	821	849	693	644	671
5	885	877	881	829	795	812	893	820	850	694	679	687
6	900	885	894	850	791	817	981	346	639	680	670	675
7	909	900	904	868	821	857	493	196	357	675	670	672
8	913	909	911	880	867	871	472	340	408	683	674	676
9	920	909	913	891	878	882	475	393	439	699	683	690
10	920	918	919	898	891	893	535	474	510	722	699	712
11	920	850	900	905	897	901	549	526	536	846	330	630
12	965	757	882	906	902	904	562	549	554	485	332	400
13	758	695	717	908	903	905	638	254	571	348	334	341
14	748	704	729	909	906	908	602	155	307	399	347	379
15	765	747	754	919	900	910	365	197	275	558	399	432
16	781	765	771	913	905	910	397	279	360	499	207	382
17	799	780	788	911	904	907	416	291	347	397	332	362
18	825	799	811	918	910	913	397	285	319	428	365	382
19	830	822	825	920	914	917	351	298	325	490	428	476
20	847	830	836	926	919	922	396	351	379	558	489	528
21	857	846	851	935	925	930	437	396	412	582	558	574
22	870	855	860	938	883	919	610	130	317	612	581	599
23	880	869	873	926	841	896	233	150	197	632	555	594
24	899	879	888	938	863	902	235	184	220	653	590	617
25	899	861	883	940	861	920	336	182	252	660	633	645
26	892	859	867	934	867	926	418	336	385	717	644	678
27	910	889	897	933	921	926	412	381	400	779	717	738
28	941	910	926	922	852	902	483	412	458	812	773	790
29	959	941	951	---	---	e855	523	483	510	787	757	770
30	998	787	921	---	---	e857	580	523	553	792	778	784
31	---	---	---	---	---	e859	740	489	599	---	---	---
MONTH	998	695	856	---	---	883	---	---	481	846	207	582

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	8.1	7.9	8.0	8.2	8.1	8.1	8.0	7.9	7.9	7.9	7.8	7.8
2	8.1	8.0	8.1	8.2	8.1	8.1	8.0	7.9	7.9	7.9	7.9	7.9
3	8.1	8.0	8.1	8.2	8.1	8.2	8.1	7.9	8.0	7.9	7.9	7.9
4	8.1	8.0	8.1	8.2	8.1	8.2	8.1	8.0	8.0	7.9	7.8	7.9
5	8.1	8.1	8.1	8.2	8.1	8.1	8.1	8.0	8.1	7.9	7.8	7.8
6	8.1	8.1	8.1	8.2	8.1	8.1	8.2	8.0	8.1	7.9	7.7	7.8
7	8.1	8.1	8.1	8.1	8.0	8.1	8.1	8.1	8.1	7.8	7.5	7.7
8	8.1	7.9	8.1	8.1	8.0	8.1	8.2	8.1	8.1	7.8	7.7	7.8
9	7.9	7.8	7.9	---	---	---	8.2	8.1	8.1	7.9	7.7	7.9
10	7.8	7.8	7.8	---	---	---	8.2	8.1	8.2	8.0	7.9	8.0
11	---	---	---	---	---	---	---	---	---	8.1	7.9	8.1
12	---	---	---	8.0	7.6	7.8	---	---	---	8.1	8.0	8.1
13	---	---	---	8.0	7.9	7.9	---	---	---	8.2	8.1	8.1
14	---	---	---	8.0	7.9	7.9	---	---	---	8.2	8.0	8.1
15	---	---	---	7.9	7.9	7.9	---	---	---	8.2	8.1	8.1
16	7.9	7.8	7.8	8.1	7.9	8.0	8.2	8.0	8.1	8.2	8.0	8.1
17	8.0	7.9	7.9	8.1	8.0	8.1	8.0	7.9	7.9	8.2	8.1	8.2
18	8.0	8.0	8.0	8.1	8.0	8.1	8.0	7.8	7.9	8.2	8.1	8.2
19	8.0	8.0	8.0	8.1	8.0	8.0	8.0	7.8	7.9	8.2	8.1	8.2
20	8.0	8.0	8.0	8.1	7.9	8.0	7.9	7.3	7.7	8.2	8.1	8.2
21	8.1	8.0	8.0	8.0	7.9	7.9	7.5	7.2	7.4	8.2	8.1	8.2
22	8.1	8.0	8.0	8.0	7.9	8.0	7.5	7.5	7.5	8.3	8.1	8.2
23	8.1	8.0	8.0	8.0	7.9	8.0	7.6	7.5	7.5	8.3	8.1	8.2
24	8.1	8.0	8.0	8.0	8.0	8.0	7.6	7.6	7.6	8.4	8.1	8.3
25	8.1	8.0	8.1	8.0	7.9	8.0	7.7	7.6	7.7	8.3	8.2	8.3
26	8.1	8.1	8.1	8.0	7.9	7.9	7.7	7.6	7.7	8.4	8.2	8.3
27	8.2	8.1	8.1	7.9	7.9	7.9	7.7	7.6	7.7	8.4	8.2	8.3
28	8.2	8.1	8.1	7.9	7.8	7.9	7.8	7.6	7.7	8.3	8.1	8.2
29	8.2	8.1	8.1	7.9	7.8	7.9	7.7	7.7	7.7	8.3	8.1	8.2
30	8.2	8.1	8.1	8.0	7.9	7.9	7.8	7.7	7.7	8.3	8.1	8.2
31	8.1	8.1	8.1	---	---	---	7.8	7.7	7.8	8.2	7.8	8.0
MONTH	---	---	---	---	---	---	---	---	---	8.4	7.5	8.1

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, 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	8.0	7.7	7.8	7.6	7.5	7.5	8.0	7.9	8.0	7.8	7.8	7.8
2	7.8	7.6	7.7	7.6	7.6	7.6	8.0	7.9	7.9	7.8	7.8	7.8
3	7.8	7.6	7.7	7.7	7.6	7.6	7.9	7.9	7.9	7.8	7.8	7.8
4	7.7	7.6	7.6	7.7	7.6	7.7	7.9	7.9	7.9	7.8	7.8	7.8
5	7.7	7.6	7.6	7.7	7.6	7.7	8.0	7.9	7.9	7.8	7.8	7.8
6	7.7	7.6	7.7	7.7	7.6	7.7	8.0	7.9	7.9	7.8	7.8	7.8
7	7.8	7.6	7.7	7.8	7.7	7.7	7.9	7.8	7.9	7.8	7.7	7.8
8	7.8	7.8	7.8	7.9	7.7	7.8	7.8	7.7	7.8	7.8	7.8	7.8
9	7.8	7.7	7.8	7.9	7.7	7.8	7.9	7.8	7.9	7.9	7.8	7.8
10	7.8	7.6	7.8	8.0	7.8	7.9	7.9	7.9	7.9	7.9	7.8	7.8
11	7.7	7.6	7.6	8.0	7.9	8.0	7.9	7.9	7.9	7.9	7.8	7.9
12	7.8	7.7	7.7	8.0	7.8	7.9	7.9	7.9	7.9	7.9	7.8	7.9
13	7.9	7.7	7.8	8.1	7.9	8.0	7.9	7.8	7.9	8.1	7.8	8.0
14	7.9	7.6	7.7	7.9	7.7	7.8	7.8	7.8	7.8	8.0	7.9	8.0
15	7.7	7.6	7.6	7.8	7.7	7.7	7.8	7.8	7.8	8.0	7.9	8.0
16	7.7	7.5	7.6	7.9	7.5	7.7	8.0	7.8	7.8	8.0	7.9	7.9
17	7.7	7.5	7.6	7.7	7.5	7.6	7.8	7.8	7.8	8.0	7.9	7.9
18	7.7	7.6	7.6	7.7	7.6	7.6	7.8	7.8	7.8	8.0	8.0	8.0
19	7.7	7.6	7.6	7.8	7.6	7.7	7.8	7.8	7.8	8.1	8.0	8.0
20	7.8	7.7	7.7	7.8	7.7	7.8	7.8	7.7	7.8	8.1	8.0	8.0
21	7.8	7.5	7.7	7.9	7.8	7.9	7.8	7.7	7.8	8.0	8.0	8.0
22	7.7	7.5	7.6	7.9	7.9	7.9	7.8	7.8	7.8	8.0	8.0	8.0
23	7.6	7.5	7.6	8.0	7.9	7.9	7.8	7.8	7.8	8.0	7.9	8.0
24	7.7	7.6	7.6	8.0	7.8	7.9	7.8	7.7	7.8	8.0	7.9	8.0
25	7.7	7.6	7.7	8.0	7.9	7.9	7.8	7.8	7.8	8.0	8.0	8.0
26	7.7	7.6	7.6	8.1	7.9	8.0	7.8	7.7	7.8	8.0	8.0	8.0
27	7.6	7.5	7.6	8.0	7.9	8.0	7.8	7.7	7.7	8.1	7.7	8.0
28	7.6	7.4	7.5	8.0	7.9	7.9	7.8	7.8	7.8	8.0	7.8	7.9
29	---	---	---	8.0	7.9	7.9	7.8	7.8	7.8	8.0	7.9	7.9
30	---	---	---	8.0	7.8	7.9	7.8	7.7	7.8	8.0	7.9	8.0
31	---	---	---	8.0	7.8	7.9	---	---	---	8.0	7.9	8.0
MONTH	8.0	7.4	7.7	8.1	7.5	7.8	8.0	7.7	7.8	8.1	7.7	7.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.1	7.9	8.0	7.8	7.7	7.8	---	---	---	7.6	7.3	7.5
2	8.0	8.0	8.0	7.9	7.7	7.9	---	---	---	7.6	7.5	7.6
3	8.0	8.0	8.0	7.9	7.8	7.9	8.0	7.8	7.9	7.7	7.6	7.6
4	8.1	8.0	8.0	7.9	7.8	7.9	8.1	7.8	7.9	7.7	7.6	7.7
5	8.1	7.7	7.9	7.8	7.6	7.7	8.0	7.8	7.9	7.7	7.7	7.7
6	7.8	7.7	7.7	8.0	7.8	7.9	8.2	7.7	7.9	7.8	7.7	7.7
7	7.8	7.7	7.8	8.0	7.9	8.0	7.9	7.6	7.7	7.7	7.7	7.7
8	7.8	7.7	7.8	8.0	8.0	8.0	7.7	7.6	7.7	7.8	7.7	7.7
9	7.8	7.8	7.8	8.1	8.0	8.0	7.8	7.7	7.7	7.8	7.7	7.8
10	7.8	7.7	7.8	8.1	8.0	8.0	7.8	7.7	7.8	7.8	7.8	7.8
11	7.9	7.6	7.7	8.1	8.0	8.0	7.9	7.7	7.8	7.9	7.5	7.8
12	8.0	7.6	7.9	8.1	8.0	8.1	7.7	7.7	7.7	7.6	7.5	7.6
13	7.9	7.8	7.8	8.1	8.0	8.1	7.8	7.6	7.7	7.5	7.5	7.5
14	7.9	7.8	7.8	8.1	8.0	8.0	7.9	7.5	7.7	7.6	7.5	7.5
15	7.9	7.8	7.8	8.0	7.9	8.0	7.7	7.6	7.6	7.6	7.5	7.6
16	7.9	7.8	7.9	8.1	8.0	8.0	7.8	7.6	7.7	7.7	7.5	7.6
17	7.9	7.8	7.9	8.1	8.0	8.0	7.7	7.6	7.6	7.6	7.5	7.5
18	7.9	7.8	7.9	8.0	7.9	8.0	7.6	7.5	7.5	7.6	7.5	7.6
19	7.9	7.8	7.9	8.0	7.9	8.0	7.6	7.5	7.5	7.7	7.6	7.7
20	7.9	7.8	7.8	8.0	7.9	8.0	7.6	7.6	7.6	7.8	7.7	7.7
21	7.9	7.8	7.8	8.0	7.9	7.9	7.6	7.5	7.6	7.8	7.7	7.8
22	7.9	7.8	7.8	8.1	7.9	7.9	7.7	7.4	7.6	7.8	7.8	7.8
23	7.9	7.8	7.8	8.1	7.9	8.0	7.6	7.5	7.5	7.9	7.8	7.8
24	7.9	7.8	7.9	8.1	7.9	8.0	7.6	7.4	7.5	7.9	7.8	7.8
25	7.9	7.8	7.9	8.1	7.9	8.0	7.6	7.4	7.5	7.9	7.8	7.8
26	7.9	7.7	7.8	8.0	7.9	8.0	7.7	7.5	7.6	7.9	7.8	7.9
27	7.9	7.7	7.8	8.0	7.9	8.0	7.6	7.5	7.6	7.9	7.9	7.9
28	7.8	7.8	7.8	8.1	7.9	8.0	7.7	7.6	7.6	7.9	7.9	7.9
29	7.9	7.8	7.8	---	---	---	7.7	7.7	7.7	8.0	7.9	7.9
30	8.0	7.8	7.9	---	---	---	7.8	7.7	7.8	8.0	7.9	7.9
31	---	---	---	---	---	---	7.8	7.5	7.8	---	---	---
MONTH	8.1	7.6	7.8	---	---	---	---	---	---	8.0	7.3	7.7

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, 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	
1	24.9	23.4	24.3	21.3	19.9	20.3	17.2	16.0	16.5	15.8	12.8	14.2
2	25.0	23.6	24.4	19.9	18.2	18.8	16.7	16.1	16.3	17.3	15.8	16.5
3	25.5	24.3	24.8	18.5	16.9	17.6	17.6	16.6	17.1	18.5	17.3	17.8
4	25.7	24.8	25.3	18.7	16.7	17.5	17.1	15.3	15.9	19.3	18.5	18.8
5	25.7	24.9	25.2	20.5	18.6	19.6	15.3	14.3	14.7	20.1	19.2	19.6
6	25.0	24.5	24.7	20.2	18.8	19.3	14.7	13.6	14.0	20.3	18.1	19.8
7	25.0	24.0	24.5	18.8	17.4	17.8	14.4	13.7	14.0	19.7	14.8	16.2
8	25.6	24.5	25.0	17.6	16.3	17.0	16.1	14.4	15.1	14.8	13.7	14.3
9	25.7	25.2	25.5	---	---	---	16.1	15.0	15.6	14.6	12.9	13.8
10	25.3	24.0	24.7	---	---	---	15.8	14.7	15.1	15.4	14.3	14.8
11	24.3	23.7	23.9	---	---	---	14.7	13.1	13.7	16.8	15.4	15.9
12	24.3	23.7	24.1	16.1	14.1	15.0	13.1	11.2	12.2	18.7	16.8	17.9
13	24.3	22.3	23.3	14.4	13.9	14.2	11.2	9.7	10.4	18.6	17.2	18.1
14	22.6	20.7	21.5	15.4	14.2	14.7	10.6	9.1	9.9	17.5	16.6	17.0
15	20.7	19.2	19.9	15.1	13.0	14.1	11.2	9.5	10.4	17.3	15.5	16.4
16	19.8	18.8	19.3	13.2	12.2	12.7	11.7	10.0	10.9	15.5	14.0	14.8
17	19.8	18.4	19.1	13.3	13.1	13.2	11.9	10.5	11.2	16.0	14.8	15.4
18	20.2	18.7	19.4	13.9	13.2	13.5	12.0	10.4	11.2	17.1	15.5	16.3
19	20.6	18.9	19.7	14.7	13.5	14.0	14.4	11.4	12.6	16.8	15.4	16.0
20	21.1	19.6	20.3	15.8	14.6	15.1	18.4	14.4	16.0	16.7	15.3	15.9
21	21.6	20.2	20.9	17.2	15.8	16.5	17.6	15.4	16.2	18.9	16.7	17.9
22	21.4	20.0	20.5	16.8	15.9	16.3	15.5	14.5	15.1	18.7	15.6	17.2
23	21.5	19.9	20.6	16.4	15.3	15.9	15.4	14.7	15.2	15.6	14.2	15.0
24	21.9	20.7	21.3	17.0	15.1	15.9	15.0	13.7	14.4	15.3	14.5	14.9
25	22.6	21.6	22.1	18.9	17.0	17.9	14.6	13.6	13.9	15.2	14.1	14.7
26	22.0	18.3	19.9	20.3	18.9	19.6	13.6	12.1	12.9	16.2	14.9	15.5
27	18.3	16.4	17.1	21.1	20.3	20.7	13.0	11.4	12.4	15.5	14.0	14.8
28	17.5	16.5	17.0	21.6	20.8	21.2	11.4	9.9	10.6	15.7	14.0	14.8
29	19.3	17.5	18.2	20.8	18.7	19.7	10.8	9.7	10.3	16.7	15.3	16.0
30	20.9	19.3	20.1	18.7	17.2	17.7	11.5	9.9	10.7	18.1	16.4	17.2
31	22.2	20.8	21.5	---	---	---	12.8	11.3	11.9	18.5	15.9	17.3
MONTH	25.7	16.4	21.9	---	---	---	18.4	9.1	13.4	20.3	12.8	16.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	16.4	15.7	16.0	15.9	14.0	15.1	20.3	18.1	19.0	21.1	19.4	20.1
2	16.2	15.2	15.7	15.6	13.5	14.6	19.4	17.6	18.5	22.2	20.5	21.2
3	15.7	14.1	14.9	15.5	14.4	15.0	20.1	18.9	19.6	23.3	22.2	22.7
4	15.3	14.2	14.8	17.0	15.2	15.9	19.7	18.4	19.1	23.8	23.1	23.4
5	15.5	13.7	14.9	19.1	17.0	18.0	19.1	17.9	18.6	23.5	22.8	23.2
6	14.7	13.8	14.4	19.1	17.3	18.1	19.3	19.0	19.1	24.4	23.2	23.6
7	13.9	12.3	13.2	17.3	16.3	16.8	20.7	19.1	19.8	25.1	23.5	24.2
8	14.4	12.7	13.6	17.1	15.4	16.2	21.7	20.6	21.1	25.2	24.4	24.8
9	15.0	13.2	14.0	15.4	13.6	14.4	20.9	19.0	19.8	25.2	24.4	24.8
10	16.2	14.4	15.3	14.3	12.7	13.5	19.8	18.3	19.1	24.7	23.3	23.9
11	15.1	13.3	14.3	13.4	12.1	12.8	19.7	18.1	19.0	23.7	22.5	23.0
12	14.9	13.7	14.4	13.1	11.5	12.3	20.4	19.4	19.9	23.5	22.8	23.1
13	15.0	13.8	14.4	12.8	11.4	11.7	21.7	20.4	21.0	24.2	23.3	23.6
14	15.1	13.8	14.5	14.3	12.8	13.5	22.6	21.7	22.2	24.8	23.9	24.3
15	15.3	13.7	14.4	15.7	14.3	14.9	22.8	22.4	22.6	25.1	24.6	24.8
16	15.2	13.4	14.5	16.3	15.2	15.8	22.8	22.1	22.5	25.1	24.6	24.8
17	14.9	13.1	14.0	18.0	15.4	16.5	22.2	20.0	20.9	24.8	24.3	24.6
18	14.5	13.2	13.9	19.3	16.5	17.8	20.0	18.9	19.4	24.7	23.9	24.3
19	15.5	13.4	14.4	19.5	18.3	18.9	19.6	17.9	18.8	24.4	23.6	24.0
20	15.3	13.5	14.6	18.3	16.3	17.3	19.7	18.5	19.2	24.8	24.2	24.4
21	14.9	14.2	14.6	17.4	15.5	16.6	19.8	19.4	19.6	25.1	24.5	24.8
22	15.3	13.6	14.4	17.6	15.4	16.6	19.4	18.1	18.7	25.5	24.9	25.1
23	15.9	13.4	14.6	18.4	16.1	17.3	20.1	17.7	18.8	25.6	25.1	25.3
24	16.7	14.5	15.5	20.1	17.5	18.8	20.3	18.4	19.3	25.6	25.2	25.4
25	18.8	16.7	17.6	20.9	19.1	20.0	20.5	20.0	20.2	25.7	25.4	25.5
26	18.7	17.4	18.3	21.2	19.9	20.6	21.0	20.2	20.6	25.8	25.4	25.6
27	17.4	15.8	16.6	21.8	20.2	21.0	21.5	20.9	21.2	26.3	24.9	25.4
28	16.6	15.4	16.0	22.2	20.5	21.3	20.9	19.6	20.1	26.4	25.0	25.5
29	---	---	---	22.5	21.4	21.9	20.1	19.7	19.9	26.7	26.0	26.4
30	---	---	---	22.8	21.8	22.4	20.2	18.7	19.5	27.3	26.1	26.6
31	---	---	---	22.7	20.2	21.0	---	---	---	27.9	26.6	27.2
MONTH	18.8	12.3	14.9	22.8	11.4	17.0	22.8	17.6	19.9	27.9	19.4	24.4

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, 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	27.8	26.9	27.4	28.9	28.0	28.5	28.8	26.8	27.6	28.2	26.8	27.5
2	27.6	27.1	27.4	28.7	28.0	28.4	28.5	27.1	27.8	28.1	27.0	27.5
3	27.8	27.2	27.5	28.6	27.9	28.4	28.7	27.1	27.9	27.8	27.0	27.5
4	28.4	27.6	27.9	27.9	27.6	27.7	28.7	27.3	27.9	28.0	27.2	27.6
5	28.3	27.3	28.0	28.1	27.4	27.7	28.9	27.5	27.9	27.8	27.2	27.5
6	27.3	25.4	26.3	28.6	27.5	28.0	28.1	25.7	27.0	27.4	26.7	27.0
7	25.4	24.8	25.0	28.8	27.8	28.3	27.0	24.8	26.3	27.3	26.8	27.0
8	25.8	24.6	25.0	28.8	28.0	28.4	27.9	26.3	27.0	27.1	26.8	26.9
9	26.7	25.8	26.1	28.7	28.0	28.4	28.2	27.0	27.6	26.8	26.3	26.6
10	27.0	26.5	26.7	28.9	28.1	28.5	28.6	27.9	28.2	26.8	25.2	26.1
11	27.1	26.5	26.7	29.2	28.2	28.6	28.6	28.1	28.4	25.2	23.8	24.6
12	27.7	26.6	27.1	29.7	28.4	28.9	28.9	27.9	28.4	24.5	24.2	24.3
13	27.9	27.4	27.7	29.6	28.7	29.0	29.2	27.9	28.4	25.3	23.9	24.5
14	28.6	27.4	27.9	29.5	28.1	28.6	28.9	25.2	26.5	25.8	24.9	25.2
15	28.0	27.0	27.4	28.7	27.6	27.8	27.0	25.3	26.1	26.4	25.3	25.7
16	27.7	26.8	27.3	28.3	27.2	27.6	26.7	26.0	26.3	26.4	25.3	25.6
17	28.0	27.2	27.6	28.5	27.2	27.8	26.5	25.7	26.2	25.9	25.3	25.6
18	28.5	27.6	28.0	28.2	27.2	27.7	27.0	26.1	26.5	26.2	25.0	25.5
19	28.7	27.9	28.4	28.3	27.3	27.8	28.1	26.5	27.1	26.4	25.2	25.8
20	28.9	28.2	28.6	28.5	27.6	28.0	28.1	26.9	27.5	26.5	25.6	26.1
21	28.9	28.1	28.5	28.6	27.7	28.1	27.8	27.3	27.6	27.0	26.1	26.5
22	28.7	28.1	28.4	28.8	27.7	28.0	27.6	24.6	26.2	27.3	26.6	27.0
23	28.4	27.9	28.2	28.7	27.3	27.8	25.9	25.0	25.4	27.4	26.6	27.0
24	28.3	27.8	28.1	28.8	27.3	27.9	27.4	25.9	26.5	27.2	26.5	26.9
25	28.5	27.7	28.1	28.6	27.5	27.9	28.0	26.6	27.2	26.9	26.3	26.6
26	28.5	27.6	28.1	28.4	27.4	27.8	28.4	27.2	27.7	27.1	26.5	26.7
27	28.7	27.8	28.2	28.3	27.6	27.9	29.2	27.4	28.1	26.9	26.4	26.6
28	28.6	28.2	28.4	28.5	27.4	27.8	29.0	27.4	28.1	26.7	26.0	26.3
29	28.5	28.1	28.3	28.4	26.8	27.5	28.5	27.3	27.9	27.2	26.3	26.6
30	28.9	27.8	28.1	28.3	26.9	27.4	28.3	27.1	27.7	27.0	26.3	26.7
31	---	---	---	28.4	26.3	27.3	28.5	27.6	27.9	---	---	---
MONTH	28.9	24.6	27.5	29.7	26.3	28.0	29.2	24.6	27.3	28.2	23.8	26.4

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	6.8	6.3	6.5	7.9	6.3	7.4	8.4	6.6	7.3	8.9	8.1	8.5
2	6.7	6.1	6.5	8.4	6.4	7.9	7.4	6.9	7.1	8.2	7.6	7.9
3	6.5	6.0	6.3	8.6	7.9	8.2	8.3	7.0	7.5	7.9	4.3	7.5
4	6.5	5.9	6.2	8.7	8.1	8.3	8.8	7.1	7.8	7.7	6.8	7.2
5	6.1	5.4	5.8	8.5	7.6	7.9	9.4	4.7	8.2	7.1	6.8	7.0
6	6.4	5.7	6.0	8.4	7.7	8.0	9.8	3.2	8.5	7.7	6.3	6.9
7	6.6	6.0	6.3	8.7	7.9	8.3	8.6	4.1	8.1	8.5	7.1	7.9
8	7.0	6.0	6.6	8.8	8.2	8.5	9.3	7.6	8.3	9.3	8.3	8.8
9	6.5	5.8	6.1	---	---	---	9.0	7.5	8.1	9.6	8.8	9.1
10	6.5	5.6	6.0	---	---	---	9.7	7.5	8.4	9.3	8.8	9.0
11	6.4	6.0	6.3	---	---	---	10.1	7.8	8.8	9.3	8.5	8.8
12	6.4	6.0	6.2	9.5	8.4	9.0	9.7	8.3	8.9	8.7	8.1	8.5
13	7.0	5.9	6.7	10.1	9.0	9.5	11.2	8.1	9.7	8.8	7.8	8.3
14	7.6	7.0	7.2	9.6	7.7	9.0	11.6	9.0	10.1	9.2	8.3	8.7
15	7.6	7.0	7.3	9.3	8.1	8.8	11.4	9.0	10.1	9.5	5.7	8.9
16	7.8	7.5	7.6	9.6	7.6	9.3	11.6	8.9	10.1	10.3	4.9	9.4
17	7.8	7.6	7.6	9.6	7.9	9.1	11.4	8.5	10.0	10.4	4.9	9.5
18	7.8	6.8	7.7	9.6	7.3	9.0	11.8	8.6	10.0	9.9	5.8	9.3
19	7.7	6.4	7.6	9.2	7.9	8.9	11.5	8.5	9.9	10.4	8.9	9.5
20	7.7	7.5	7.6	9.0	8.3	8.8	9.4	6.6	7.9	10.0	8.6	9.4
21	7.6	7.4	7.5	8.7	8.2	8.5	8.0	6.3	6.9	9.9	8.4	9.1
22	7.8	7.4	7.5	8.8	8.0	8.4	8.0	5.8	7.6	10.0	3.4	9.0
23	7.8	7.4	7.6	8.8	6.1	8.3	7.7	4.8	7.3	11.2	9.1	10.0
24	7.7	7.2	7.4	9.0	6.1	8.5	8.1	3.5	7.5	11.5	9.5	10.3
25	7.4	7.0	7.2	8.4	7.4	7.9	8.5	6.2	7.7	11.1	9.3	10.0
26	8.3	6.2	7.6	7.5	6.8	7.1	8.8	3.7	8.1	11.6	9.1	10.1
27	9.2	8.1	8.7	6.9	3.6	6.4	9.0	5.3	8.5	12.4	8.2	10.4
28	9.0	8.2	8.8	6.4	3.4	5.9	9.5	8.5	9.0	12.3	9.3	10.5
29	8.8	8.4	8.5	6.8	5.7	6.2	9.5	8.9	9.1	11.5	8.9	10.0
30	8.4	7.0	8.0	7.6	6.0	6.7	9.3	8.8	9.0	11.0	8.5	9.6
31	7.7	6.7	7.5	---	---	---	9.2	8.5	8.9	9.2	8.2	8.6
MONTH	9.2	5.4	7.1	---	---	---	11.8	3.2	8.5	12.4	3.4	9.0

08178800 SALADO CREEK (LOWER STATION) AT SAN ANTONIO, 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	9.2	8.2	8.5	9.3	8.1	8.9	8.3	7.2	7.8	7.8	6.8	7.1
2	8.5	7.8	8.2	9.7	8.9	9.3	8.3	7.2	7.7	7.3	5.1	6.9
3	9.0	8.1	8.5	9.8	8.9	9.3	8.1	6.5	7.1	6.8	5.6	6.2
4	9.0	8.3	8.6	9.5	8.8	9.1	7.3	6.5	7.0	6.8	5.4	6.0
5	9.2	8.2	8.7	9.4	8.2	8.8	7.4	6.4	6.9	5.5	4.6	4.9
6	9.1	8.7	8.9	9.5	7.9	8.7	7.2	6.0	6.6	5.0	4.3	4.5
7	9.7	8.5	9.1	10.2	8.3	9.1	6.2	5.6	6.0	4.7	3.9	4.3
8	10.0	8.8	9.3	11.3	8.4	9.7	6.2	5.2	5.5	4.3	3.5	4.2
9	9.9	8.5	9.2	12.5	9.2	10.7	6.7	5.8	6.3	4.6	3.3	3.8
10	9.2	7.1	8.5	13.6	9.9	11.6	7.5	4.6	6.7	5.2	3.9	4.4
11	9.2	7.9	8.5	14.6	10.4	12.3	7.3	4.6	6.9	5.6	4.1	4.9
12	9.2	8.2	8.8	13.1	10.2	11.5	7.1	5.3	6.6	5.6	4.7	5.2
13	10.1	8.1	9.0	11.6	10.1	10.9	6.4	4.1	5.8	7.0	4.9	5.6
14	9.5	8.1	8.6	10.6	9.7	10.0	6.2	4.1	5.4	5.8	4.9	5.3
15	8.8	8.2	8.5	9.8	8.7	9.3	7.1	5.2	6.1	5.3	4.6	4.9
16	8.8	8.2	8.4	9.6	8.3	8.7	6.8	4.6	6.5	5.2	4.3	4.7
17	8.7	8.3	8.5	9.4	8.6	9.0	7.1	6.4	6.8	5.5	4.5	4.9
18	9.0	7.9	8.4	8.7	7.9	8.3	7.4	4.4	7.1	6.0	4.8	5.4
19	9.1	8.0	8.6	8.4	7.6	8.0	8.0	4.8	7.6	6.1	5.1	5.7
20	9.7	8.0	8.8	9.0	7.1	8.5	7.8	7.3	7.5	6.1	5.0	5.6
21	9.1	7.9	8.4	9.4	8.5	8.9	7.6	7.0	7.2	5.9	4.8	5.4
22	8.8	8.1	8.4	9.6	8.6	9.0	8.0	3.6	7.5	5.7	3.3	4.4
23	8.6	7.7	8.1	9.7	8.5	9.0	8.3	3.6	7.9	4.0	3.1	3.7
24	8.2	7.7	8.0	9.6	8.2	8.8	7.9	7.3	7.5	4.0	2.7	3.6
25	8.0	7.4	7.7	9.7	7.3	8.5	8.1	7.0	7.2	4.1	3.3	3.7
26	8.9	7.3	8.1	9.7	7.3	8.3	7.4	6.8	7.1	4.1	3.2	3.6
27	9.0	8.2	8.7	9.6	7.4	8.4	7.4	6.8	7.0	5.1	2.0	3.8
28	8.9	8.2	8.6	9.4	6.8	8.2	7.9	4.5	7.3	4.8	3.9	4.3
29	---	---	---	8.3	7.0	7.7	7.6	7.0	7.3	4.5	3.7	4.0
30	---	---	---	8.0	6.5	7.2	7.8	6.9	7.2	4.6	3.4	3.9
31	---	---	---	8.1	6.2	7.0	---	---	---	4.5	3.4	4.0
MONTH	10.1	7.1	8.6	14.6	6.2	9.1	8.3	3.6	6.9	7.8	2.0	4.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	4.5	3.4	3.9	---	---	---	---	---	---	5.7	4.5	5.0
2	4.5	3.1	3.8	---	---	---	---	---	---	5.0	4.5	4.8
3	4.1	3.5	3.8	---	---	---	---	---	---	4.8	4.6	4.7
4	4.1	3.6	3.9	---	---	---	---	---	---	5.0	4.7	4.8
5	4.4	2.9	3.8	---	---	---	---	---	---	4.9	4.5	4.7
6	3.7	2.2	3.0	---	---	---	---	---	---	5.0	4.7	4.8
7	4.1	3.4	3.6	---	---	---	6.7	3.8	5.4	5.0	4.7	4.8
8	4.2	3.1	3.7	---	---	---	5.7	4.6	5.3	5.1	4.7	4.9
9	4.2	3.6	3.9	---	---	---	4.6	3.9	4.1	5.1	4.7	4.9
10	3.8	2.4	3.0	---	---	---	3.9	2.3	2.9	5.0	4.3	4.6
11	---	---	---	---	---	---	---	---	---	6.9	4.4	5.8
12	---	---	---	---	---	---	---	---	---	7.1	6.6	6.9
13	---	---	---	---	---	---	---	---	---	6.6	5.8	6.2
14	---	---	---	---	---	---	8.6	5.4	6.7	5.9	5.7	5.8
15	---	---	---	---	---	---	7.7	6.4	7.2	5.9	5.0	5.6
16	---	---	---	---	---	---	7.2	5.7	6.3	6.6	5.7	6.3
17	---	---	---	---	---	---	7.2	6.2	6.6	6.8	6.3	6.5
18	---	---	---	---	---	---	7.2	6.1	6.9	6.3	5.8	6.0
19	---	---	---	---	---	---	6.3	4.7	5.3	6.1	5.8	5.9
20	---	---	---	---	---	---	4.9	4.4	4.6	5.8	5.4	5.6
21	---	---	---	---	---	---	4.5	3.7	4.1	5.7	5.3	5.5
22	---	---	---	---	---	---	8.0	3.1	5.3	5.9	5.4	5.6
23	---	---	---	---	---	---	6.7	5.7	6.3	5.8	5.3	5.5
24	---	---	---	---	---	---	7.0	6.3	6.6	5.5	5.3	5.4
25	---	---	---	---	---	---	6.8	5.5	6.3	5.3	4.4	5.1
26	---	---	---	---	---	---	5.5	5.0	5.3	5.0	4.1	4.5
27	---	---	---	---	---	---	5.5	4.8	5.1	5.2	4.6	4.8
28	---	---	---	---	---	---	5.3	4.8	5.1	5.0	4.2	4.6
29	---	---	---	---	---	---	5.2	4.8	5.0	5.2	4.3	4.7
30	---	---	---	---	---	---	5.0	4.6	4.8	4.9	4.3	4.5
31	---	---	---	---	---	---	6.2	4.5	4.9	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	7.1	4.1	5.3

08178880 MEDINA RIVER AT BANDERA, TX

LOCATION.--Lat 29°43'25", long 99°04'11", Bandera County, Hydrologic Unit 12100302, on left bank, 40 ft downstream from centerline of State Highway 173 at Bandera, 1.9 mi upstream from Bandera Creek, and 5.6 mi downstream from Indian Creek.

DRAINAGE AREA.--427 mi^2.

PERIOD OF RECORD.--Oct 1982 to current year.
Water-quality records.--Chemical, biochemical, and pesticide analyses: Jan 1983 to Sep 1993.

GAGE.--Water-stage recorder. Datum of gage is 1,189.46 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation. There are several small diversions upstream from station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1880, 46.62 ft Aug 2, 1978.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 16	0300	5,310	12.53	Aug 23	1900	10,400	15.85
Mar 16	1130	3,080	10.26				

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	38	53	49	56	444	118	222	93	44	32	13	134
2	38	51	50	56	246	116	214	89	41	30	14	124
3	37	50	53	55	184	113	207	86	39	29	15	115
4	37	50	53	55	155	111	200	86	38	31	13	107
5	37	50	53	55	146	111	195	86	37	33	13	103
6	39	50	52	66	138	109	191	84	36	31	30	102
7	61	49	52	150	126	109	189	81	35	29	22	97
8	69	48	53	127	119	106	181	77	37	27	27	91
9	69	48	51	104	113	100	172	73	35	25	19	86
10	67	49	50	91	112	98	164	68	35	23	19	83
11	80	50	48	83	109	97	160	65	113	21	18	84
12	109	63	48	79	107	96	156	64	155	21	16	90
13	148	63	48	74	104	100	153	63	131	19	15	91
14	121	63	48	71	113	114	149	63	104	19	22	87
15	100	59	47	67	113	133	146	62	88	28	33	82
16	88	56	46	64	120	2530	141	61	72	20	31	79
17	79	55	46	63	124	1040	135	59	64	19	54	78
18	74	54	45	61	117	641	131	56	59	18	49	79
19	69	53	45	59	112	513	129	54	60	17	52	77
20	66	53	53	58	108	429	126	52	61	18	46	73
21	64	52	74	58	109	383	122	50	49	17	49	70
22	63	50	74	58	137	354	118	48	43	16	122	66
23	64	50	75	56	142	330	115	47	40	16	3140	64
24	64	49	81	55	132	311	111	46	38	15	1260	61
25	62	49	78	55	149	294	108	45	35	16	498	59
26	59	49	77	54	162	281	107	46	33	16	330	60
27	58	49	70	52	131	271	106	63	32	15	254	61
28	57	49	67	51	123	261	102	67	30	15	206	58
29	55	49	63	51	---	251	100	62	33	14	176	56
30	56	49	59	51	---	253	97	53	34	14	154	54
31	55	---	57	573	---	242	---	47	---	13	149	---
TOTAL	2083	1562	1765	2608	3995	10015	4447	1996	1651	657	6859	2471
MEAN	67.2	52.1	56.9	84.1	143	323	148	64.4	55.0	21.2	221	82.4
MAX	148	63	81	573	444	2530	222	93	155	33	3140	134
MIN	37	48	45	51	104	96	97	45	30	13	13	54
AC-FT	4130	3100	3500	5170	7920	19860	8820	3960	3270	1300	13600	4900

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1998, BY WATER YEAR (WY)

MEAN	94.3	83.6	167	134	141	171	135	175	359	131	62.7	73.4
MAX	630	373	1278	638	922	985	547	696	2785	440	221	249
(WY)	1987	1987	1992	1992	1992	1992	1992	1987	1987	1988	1998	1986
MIN	25.7	27.3	27.0	28.4	35.8	32.7	28.6	14.6	8.77	2.36	2.00	6.80
(WY)	1985	1994	1994	1990	1996	1996	1996	1996	1996	1996	1996	1984

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1983 - 1998	
ANNUAL TOTAL	81799		40109			
ANNUAL MEAN	224		110		144	
HIGHEST ANNUAL MEAN					560	1987
LOWEST ANNUAL MEAN					33.7	1996
HIGHEST DAILY MEAN	16800	Jun 22	3140	Aug 23	16800	Jun 22 1997
LOWEST DAILY MEAN	27	Feb 6	13	Jul 31	.00	Aug 4 1996
ANNUAL SEVEN-DAY MINIMUM	29	Feb 3	14	Jul 30	.00	Aug 4 1996
INSTANTANEOUS PEAK FLOW			10400	Aug 23	55800	Jun 3 1987
INSTANTANEOUS PEAK STAGE			15.85	Aug 23	24.90	Jun 3 1987
ANNUAL RUNOFF (AC-FT)	162200		79560		104100	
10 PERCENT EXCEEDS	336		167		266	
50 PERCENT EXCEEDS	88		63		61	
90 PERCENT EXCEEDS	38		28		20	

08179500 MEDINA LAKE NEAR SAN ANTONIO, TX

LOCATION.--Lat 29°32'24", long 98°56'01", Medina County, Hydrologic Unit 12100302, at gate-operating platform, 576 ft from the left end of Medina Dam on Medina River, 4.2 mi upstream from Medina diversion dam, 13 mi north of Castroville, 28 mi west of San Antonio, and 70.4 mi from mouth.

DRAINAGE AREA.--634 mi^2.

PERIOD OF RECORD.--May 1913 to Sep 1994, Aug 1997 to current year. Prior to Oct 1965, monthend contents only from records provided by Bexar Medina Atascosa Water Improvement District No. 1.
Water-quality records.-- Chemical analysis: Oct 1969 to Sep 1984.

REVISED RECORDS.--WSP 1923: 1953(M), Drainage area.

GAGE.--Water stage recorder. Datum of the gage is 7.80 ft below mean sea level. Satellite telemeter at station.

REMARKS.--The lake is formed by a gravity-type concrete dam, 1580 ft long. The dam was completed and storage began May 7, 1913. The uncontrolled spillway is a cut through natural rock 880 ft long, with a 3-foot wide cutoff wall, located near right end of dam. The dam and lake are owned and operated by Bexar Medina Atascosa Counties Water Improvement District No. 1, which has a permit (from the Texas Department of Water Resources) to irrigate 150,000 acres annually. An undetermined amount of water from the lake enters the Edwards and associated limestone in the Balcones Fault Zone, part of which is above and part below the dam. Water is released downstream to Medina Diversion contents. Capacity table based on survey made prior to June 1912. Data regarding the dam are given in the following table:

	Gage height (feet)
Top of dam	1,084.0
Crest of spillways	1,072.0
Water-supply outlet pipe (invert)	966.5
Lowest gated outlet (invert)	920.0

EXTREMES (AT 0800 HOURS) FOR PERIOD OF RECORD.--Maximum daily contents, 289,900 acre-ft May 29, 1987 (gage height, 1078.2 ft); minimum, 780 acre-feet Apr 11, 1948 (gage height, 944.0 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 258,500 acre-ft, Mar 19 (elevation, 1,072.64 ft); minimum contents, unknown.

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	237000	231000	225900	220900	220800	226800	257000	254500	241400	228400	212700	231200
2	237000	231700	225700	220800	221400	226900	256700	254300	240800	228000	212100	232100
3	236400	231500	225600	220700	221800	227000	256600	254000	240100	227600	211500	232100
4	235800	231100	225300	220600	222000	227100	256500	253800	239500	227100	210800	232000
5	235800	230900	225200	220500	222100	227300	256300	253400	239100	226800	210600	232000
6	235200	230700	224900	220400	222300	227200	256300	253200	238300	226400	211800	232000
7	235200	230400	224700	218900	222100	226800	256300	253100	237500	225900	212200	232000
8	235200	230100	224800	220400	222300	---	256200	252800	237100	225400	212100	232000
9	235200	229900	224400	220400	222300	227600	256200	252400	236500	225000	211000	231900
10	235200	229300	224200	220300	222400	227600	256000	251900	235900	224500	210300	231900
11	235800	229500	223300	220200	222300	227500	256000	251400	236800	224100	209800	231300
12	235800	229600	223400	220200	222400	227500	255800	250900	236900	223700	209000	231600
13	235800	229600	223200	220000	222400	227600	255900	250400	236700	223200	208400	231600
14	235800	229500	223000	220000	222600	228000	255800	250100	236600	222900	208200	231800
15	235800	228600	222800	219800	223200	228300	255700	249700	236300	222500	---	231900
16	235800	228900	222600	219600	223400	247500	255700	249200	235900	222000	---	231900
17	235200	228700	222300	219600	223700	255200	255600	248700	235500	221500	208000	231900
18	235200	228500	222100	219300	223700	257600	255400	248400	235000	221000	208100	231800
19	235200	228400	222000	219100	223900	258500	255300	248000	234700	220300	---	231700
20	234600	228100	222000	219000	223900	258400	255200	247500	234400	219800	---	231600
21	234600	228100	222300	218800	223900	258100	255200	246900	233800	219300	---	231500
22	234100	227700	222200	218200	224400	257900	255100	246300	233300	218700	---	231400
23	234100	227600	222100	218500	224600	257800	255100	245400	232700	218200	217000	231300
24	234100	227300	222100	218300	224800	257600	255000	245300	232100	217600	225500	231200
25	233500	227100	222000	218200	224900	257400	254800	244700	231500	217000	228000	230900
26	232900	227000	220900	218000	226000	257300	254800	244200	230900	216400	229100	230800
27	232900	226900	221500	217800	226400	257100	254900	243900	230400	215900	229800	230700
28	232800	226700	221600	217600	226600	257100	254800	243400	229700	215300	230300	230800
29	232500	226500	221400	217500	---	257100	254700	242900	229200	214700	---	230500
30	232400	226300	221200	217300	---	257000	254600	242400	228800	214100	---	230300
31	232200	---	221000	217300	---	257300	---	241900	---	213400	231200	---
TOTAL	7279100	6867200	6915700	6798200	6252600	---	7669500	7715000	7057400	6866700	---	6945700
MEAN	234800	228900	223100	219300	223300	---	255700	248900	235200	221500	---	231500
MAX	237000	231700	225900	220900	226600	---	257000	254500	241400	228400	---	232100
MIN	232200	226300	220900	217300	220800	---	254600	241900	228800	213400	---	230300

08180640 MEDINA RIVER AT LA COSTE, TX

LOCATION.--Lat 29°19'26", long 98°48'46", Medina County, Hydrologic Unit 12100302, at downstream side of bridge on Farm Road 471, 1.0 mi north of La Coste, 5.0 mi upstream from Sherer Creek, and 27.4 mi upstream from mouth.

DRAINAGE AREA.--805 mi^2, of which 634 mi^2 is above dam forming Medina Lake.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Dec 1986 to current year.

GAGE.--Water-stage recorder. Datum of gage is 667.15 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good. Since installation of gage in water year 1987, at least 10% of contributing drainage area has been regulated by Medina Lake and by Medina Diversion Lake. A large part of the streamflow is lost into the Edwards and associated limestones where the Balcones Fault crosses the basin between the upstream end of Medina Lake and about 5 mi downstream from Medina Dam, or 0.9 mi downstream from the diversion dam. There are several small diversions below Medina Diversion Dam.

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	48	48	57	75	79	99	506	52	51	46	37	91
2	47	52	57	77	83	97	440	51	51	45	38	87
3	47	51	59	77	82	97	395	51	50	44	38	82
4	48	52	59	77	79	97	359	51	50	50	38	62
5	48	49	56	79	79	103	316	51	50	49	38	57
6	49	48	57	100	79	77	288	52	49	46	44	55
7	50	47	57	102	77	81	280	52	50	45	45	54
8	59	48	60	84	76	90	277	51	52	44	43	53
9	56	50	61	82	76	85	263	52	51	44	42	52
10	65	51	59	80	77	77	229	51	51	43	41	52
11	64	50	60	79	77	71	210	50	71	43	40	54
12	57	56	61	78	75	73	194	51	67	43	40	65
13	49	82	57	76	76	88	182	52	54	42	40	83
14	45	81	57	71	84	96	175	52	51	45	66	84
15	43	78	58	60	93	102	155	53	50	48	54	88
16	43	77	58	59	97	1100	148	53	48	44	46	76
17	43	77	52	57	96	637	140	53	48	42	62	58
18	47	78	51	58	91	573	116	53	48	41	71	54
19	68	78	50	58	89	822	97	52	49	41	49	53
20	73	78	65	58	87	886	86	52	46	40	44	52
21	67	78	112	59	112	828	78	52	45	40	43	51
22	51	78	95	60	229	768	74	51	45	39	90	51
23	51	77	93	62	121	716	67	52	45	39	305	50
24	52	76	93	57	112	668	62	53	45	37	216	50
25	53	73	86	59	108	627	60	53	44	37	148	50
26	51	64	85	59	116	573	59	56	45	37	134	50
27	51	58	83	59	106	538	58	56	45	37	126	50
28	52	57	77	50	102	526	56	55	45	36	108	50
29	53	57	77	48	---	492	55	54	45	36	90	50
30	52	57	75	49	---	465	53	53	47	36	90	49
31	51	---	76	68	---	489	---	52	---	36	89	---
TOTAL	1633	1906	2103	2117	2658	12041	5478	1622	1488	1295	2355	1813
MEAN	52.7	63.5	67.8	68.3	94.9	388	183	52.3	49.6	41.8	76.0	60.4
MAX	73	82	112	102	229	1100	506	56	71	50	305	91
MIN	43	47	50	48	75	71	53	50	44	36	37	49
AC-FT	3240	3780	4170	4200	5270	23880	10870	3220	2950	2570	4670	3600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1998, BY WATER YEAR (WY)

MEAN	43.9	51.9	76.0	146	261	261	154	262	704	162	66.1	50.0
MAX	84.8	138	319	647	2256	1943	1052	1335	4718	702	213	125
(WY)	1988	1993	1992	1992	1992	1992	1992	1992	1987	1987	1987	1987
MIN	23.5	21.4	21.6	20.5	24.9	24.3	26.4	25.5	17.7	22.7	21.9	18.8
(WY)	1992	1990	1990	1997	1991	1990	1996	1990	1990	1989	1989	1989

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1987 - 1998	
ANNUAL TOTAL	70669		36509			
ANNUAL MEAN	194		100		137	
HIGHEST ANNUAL MEAN					836	1992
LOWEST ANNUAL MEAN					29.1	1989
HIGHEST DAILY MEAN	10400	Jun 23	1100	Mar 16	18900	May 30 1987
LOWEST DAILY MEAN	15	Jan 18	36	Jul 28	12	Dec 12 1989
ANNUAL SEVEN-DAY MINIMUM	15	Jan 16	36	Jul 25	13	Dec 9 1989
INSTANTANEOUS PEAK FLOW			2320	Mar 16	24600	May 30 1987
INSTANTANEOUS PEAK STAGE			13.03	Mar 16	24.05	May 30 1987
ANNUAL RUNOFF (AC-FT)	140200		72420		98950	
10 PERCENT EXCEEDS	144		143		302	
50 PERCENT EXCEEDS	49		57		40	
90 PERCENT EXCEEDS	24		44		24	

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Feb 1987 to Aug 1995, Apr 1996 to current year. Pesticide analyses: Apr 1971 to Sep 1981, Apr 1996 to current year. Sediment analyses: Apr 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Jan 1987 to Sep 1995.
PH: Jan 1987 to Sep 1995.
WATER TEMPERATURE: Jan 1987 to Sep 1995.
DISSOLVED OXYGEN: Jan 1987 to Sep 1995.

INSTRUMENTATION.--Beginning Jan 1987, a four-parameter water-quality monitor continuously recorded specific conductance, pH, water temperature, and dissolved oxygen at this station. The monitor was removed Sep 30, 1995. In Mar 1996, the monitor was reinstalled for the South Central Texas NAWQA program.

REMARKS.--Interruptions in the record were due to malfunction of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 720 microsiemens, Sep 3, 4, 1987; minimum, 135 microsiemens, May 6, 1993.
PH: Maximum, 8.7 units, Jun 20, 1989; minimum, 6.8 units, Aug 4, 5, 1989.
WATER TEMPERATURE: Maximum, 30.5°C, Jun 24, 26, 27, 1990; minimum, 2.5°C, Dec 24, 1989.
DISSOLVED OXYGEN: Maximum, 13.1 mg/L, Jan 10, 11, 1988; minimum, 3.7 mg/L, May 23, 1992.

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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
OCT												
23...	1030	51	515	8.1	21.0	--	7.5	87	--	--	240	46
NOV												
25...	1000	74	460	8.0	18.0	--	8.3	90	--	--	220	36
DEC												
22...	1000	94	465	8.2	13.0	--	8.8	86	--	--	230	43
JAN												
20...	0930	57	480	8.0	13.5	--	8.9	88	--	--	240	56
FEB												
26...	1000	118	440	8.1	17.0	--	7.8	84	--	--	200	40
MAR												
16...	1200	959	373	7.9	15.0	--	10.4	--	--	--	190	35
24...	0930	670	405	8.2	19.0	--	8.8	98	--	--	200	41
APR												
24...	1000	63	507	8.0	20.0	--	7.5	85	--	--	230	36
JUN												
10...	1045	51	505	7.9	27.0	--	6.0	78	--	--	230	38
JUL												
14...	1010	45	490	7.9	29.0	13	6.2	83	190	130	220	32
14...	1045	45	490	7.9	29.0	--	6.2	83	--	--	--	--
29...	1200	37	495	7.8	28.0	--	7.5	--	--	--	210	32
AUG												
19...	1015	49	473	6.9	26.5	--	7.3	89	1000	K410	--	--
SEP												
03...	1120	85	453	8.2	26.5	12	6.8	86	K480	K330	210	39
03...	1125	85	453	8.2	26.5	--	6.8	86	--	--	--	--

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

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

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	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)
OCT												
23...	70	16	13	.4	10	1.9	--	--	--	190	40	13
NOV												
25...	64	14	10	.3	9	2.0	--	--	--	180	39	12
DEC												
22...	67	15	10	.3	9	2.0	--	--	--	190	41	13
JAN												
20...	70	15	12	.4	10	1.8	--	--	--	180	40	13
FEB												
26...	62	12	9.9	.3	9	2.2	--	--	--	170	39	12
MAR												
16...	56	12	9.1	.3	9	2.4	--	--	--	160	36	11
24...	59	12	6.2	.2	6	1.9	--	--	--	160	32	8.7
APR												
24...	67	15	12	.4	10	2.0	--	--	--	200	42	14
JUN												
10...	66	15	14	.4	11	1.9	--	--	--	190	40	12
JUL												
14...	65	15	14	.4	12	2.0	0	235	193	--	37	12
14...	--	--	--	--	--	--	--	--	--	--	--	--
29...	61	15	14	.4	13	2.1	--	--	--	180	38	13
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
03...	64	13	10	.3	9	2.0	0	214	175	--	33	11
03...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	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, ORGANIC DIS-SOLVED (MG/L AS N) (00607)
OCT												
23...	.19	9.8	307	296	--	--	<.010	2.70	<.015	--	--	--
NOV												
25...	.22	9.2	273	272	--	--	<.010	1.93	<.020	2.0	--	--
DEC												
22...	.17	9.9	297	285	--	--	<.010	2.59	<.020	2.7	--	--
JAN												
20...	.26	9.7	284	289	--	--	<.010	2.27	<.020	2.4	--	--
FEB												
26...	.20	9.6	272	257	--	--	<.010	1.25	<.020	1.5	--	--
MAR												
16...	.19	9.0	254	310	--	1.34	.037	1.38	.037	3.3	1.9	.37
24...	.18	8.9	235	228	--	--	<.010	.295	.032	.49	.16	.08
APR												
24...	.20	11	306	296	--	2.43	.011	2.44	.033	2.6	.09	.09
JUN												
10...	.17	9.4	298	288	--	2.71	.020	2.73	.058	2.9	.08	.10
JUL												
14...	.23	12	302	287	13	3.26	.011	3.27	.045	3.5	.18	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
29...	.24	12	302	282	--	--	<.010	3.47	.024	3.8	.32	.09
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
03...	.19	11	274	260	25	--	<.010	2.20	<.020	2.5	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

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

DATE	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)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)
OCT												
23...	<.20	<.20	<.010	<.010	<.010	--	1.7	.40	1.7	12	--	--
NOV												
25...	<.10	.11	<.010	<.010	.019	.06	1.8	.40	7.6	38	--	--
DEC												
22...	.11	.15	<.010	.013	.011	.03	2.0	.30	9.1	36	--	--
JAN												
20...	<.10	.12	<.010	<.010	.010	.03	1.6	.20	4.8	31	--	--
FEB												
26...	.12	.23	<.010	<.010	.019	.06	1.9	.40	15	46	--	--
MAR												
16...	.40	1.9	.466	.012	.011	.03	2.2	>5.0	1880	726	--	--
24...	.11	.19	<.010	<.010	<.010	--	2.5	.70	49	27	--	--
APR												
24...	.12	.12	.013	.016	<.010	--	1.7	.30	3.6	21	--	--
JUN												
10...	.16	.14	.018	<.010	.012	.04	--	--	4.1	30	--	--
JUL												
14...	<.10	.22	.044	<.010	.017	.05	1.5	.40	2.8	23	4.5	<1.0
14...	--	--	--	--	--	--	--	--	--	--	--	--
29...	.11	.35	.031	<.010	<.010	--	--	--	97	975	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
03...	.18	.26	.024	<.010	<.010	--	2.2	.60	13	57	<4.6	<1.0
03...	--	--	--	--	--	--	--	--	--	--	--	--

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)	BORON, DIS-SOLVED (UG/L AS B) (01020)	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)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT												
23...	--	--	--	--	--	--	--	--	<3.0	--	--	<1.0
NOV												
25...	--	--	--	--	--	--	--	--	<3.0	--	--	<1.0
DEC												
22...	--	--	--	--	--	--	--	--	<10	--	--	<4.0
JAN												
20...	--	--	--	--	--	--	--	--	<10	--	--	<4.0
FEB												
26...	--	--	--	--	--	--	--	--	<10	--	--	<4.0
MAR												
16...	--	--	--	--	--	--	--	--	<10	--	--	<4.0
24...	--	--	--	--	--	--	--	--	<10	--	--	<4.0
APR												
24...	--	--	--	--	--	--	--	--	<10	--	--	<4.0
JUN												
10...	--	--	--	--	--	--	--	--	<10	--	--	<4.0
JUL												
14...	<1	42	<1.0	111	<1.0	1.7	<1.0	<1.0	<10	<1.0	8	<1.0
14...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	<10	--	--	<4.0
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
03...	1	37	<1.0	88	<1.0	1.3	<1.0	<1.0	<10	<1.0	6	1.2
03...	--	--	--	--	--	--	--	--	--	--	--	--

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

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

DATE	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)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	BENZENE TOTAL (UG/L) (34030)	1-NAPH THOL, WATER, FLTRD, GF 0.7U REC (UG/L) (49295)	2,4,5-T DIS-SOLVED (UG/L) (39742)
OCT												
23...	--	--	--	--	--	--	--	--	--	--	<.0070	<.0350
NOV												
25...	--	--	--	--	--	--	--	--	--	--	--	<.0350
DEC												
22...	--	--	--	--	--	--	--	--	--	--	--	<.0350
JAN												
20...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
16...	--	--	--	--	--	--	--	--	--	--	--	<.0350
24...	--	--	--	--	--	--	--	--	--	--	--	<.0350
APR												
24...	--	--	--	--	--	--	--	--	--	--	--	<.0350
JUN												
10...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
14...	<.1	1.3	<1.0	<1	<1.0	530	<10	11	<1.0	<.200	--	<.0350
14...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
03...	<.1	1.1	<1.0	<1	<1.0	469	<10	<13	<1.0	<.200	--	<.0350
03...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	2,4-D, DIS-SOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	SILVEX, DIS-SOLVED (UG/L) (39762)	3HYDRXY CARBO-FURAN WAT,FLT GF 0.7U REC (UG/L) (49308)	DNOC WAT,FLT GF 0.7U REC (UG/L) (49299)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ACIFL-UORFEN WATER, FLTRD, GF 0.7U REC (UG/L) (49315)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALDI-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)	ALDI-CARB SULFONE WAT,FLT GF 0.7U REC (UG/L) (49313)	ALDICA-RB SUL-FOXIDE, WAT,FLT GF 0.7U REC (UG/L) (49314)
OCT												
23...	<.035	<.0350	<.0030	<.0210	<.0140	<.0350	<.0020	<.0350	<.002	<.0160	<.0160	<.0210
NOV												
25...	<.150	<.240	<.0030	<.0210	<.0140	<.420	<.0020	<.0350	<.002	<.550	<.100	<.0210
DEC												
22...	<.150	<.240	<.0030	<.0210	<.0140	<.420	<.0020	<.0350	<.002	<.550	<.100	<.0210
JAN												
20...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
16...	<.150	<.240	<.0030	<.0210	<.0140	<.420	<.0020	<.0350	<.002	<.550	<.100	<.0210
24...	<.150	<.240	<.0030	<.0210	<.0140	<.420	<.0020	<.0350	<.002	<.550	<.100	<.0210
APR												
24...	<.150	<.240	<.0030	<.0210	<.0140	<.420	<.0020	<.0350	<.002	<.550	<.100	<.0210
JUN												
10...	--	--	<.0030	--	--	--	<.0020	--	<.002	--	--	--
JUL												
14...	<.150	<.240	<.0030	<.0210	<.0140	<.420	<.0020	<.0350	<.002	<.550	<.100	<.0210
14...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	<.0030	--	--	--	<.0020	--	<.002	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
03...	<.150	<.240	<.0030	<.0210	<.0140	<.420	<.0020	<.0350	<.002	<.550	<.100	<.0210
03...	--	--	--	--	--	--	--	--	--	--	--	--

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

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

DATE	ALDRIN, TOTAL (UG/L) (39330)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ALPHA BHC TOTAL (UG/L) (39337)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)
OCT												
23...	--	--	<.0020	--	--	--	--	--	--	--	--	.019
NOV												
25...	--	--	<.0020	--	--	--	--	--	--	--	--	.013
DEC												
22...	--	--	<.0020	--	--	--	--	--	--	--	--	.017
JAN												
20...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
16...	--	--	<.0020	--	--	--	--	--	--	--	--	.109
24...	--	--	<.0020	--	--	--	--	--	--	--	--	.010
APR												
24...	--	--	<.0020	--	--	--	--	--	--	--	--	.020
JUN												
10...	--	--	<.0020	--	--	--	--	--	--	--	--	.026
JUL												
14...	<.040	<.100	<.0020	<.030	<.100	<1.00	<.100	<.100	<.100	<.100	<.100	.035
14...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	<.0020	--	--	--	--	--	--	--	--	.032
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
03...	<.040	<.100	<.0020	<.030	<.100	<1.00	<.100	<.100	<.100	<.100	<.100	.018
03...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BENTA-ZON, WATER, FLTRD, GF 0.7U REC (UG/L) (38711)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	BRO-MACIL, WATER, DISS, REC (UG/L) (04029)	BRO-MOXYNIL WATER, FLTRD, GF 0.7U REC (UG/L) (49311)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN, WATER, FLTRD, GF 0.7U REC (UG/L) (49309)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)
OCT												
23...	<.0010	<.0020	<.0140	--	--	<.0350	<.0350	<.0020	<.0080	<.0030	<.0280	<.0030
NOV												
25...	<.0010	<.0020	<.0140	--	--	<.0350	<.0350	<.0020	<.0080	<.0030	<.120	<.0030
DEC												
22...	<.0010	.0047	<.0140	--	--	<.0350	<.0350	<.0020	<.0080	<.0030	<.120	<.0030
JAN												
20...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
16...	<.0010	<.0020	<.0140	--	--	<.0350	<.0350	<.0020	<.0080	E.0073	<.120	<.0200
24...	<.0010	E.0035	<.0140	--	--	<.0350	<.0350	<.0020	<.0080	<.0030	<.120	<.0030
APR												
24...	<.0010	<.0020	<.0140	--	--	<.0350	<.0350	<.0020	<.0080	<.0030	<.120	<.0030
JUN												
10...	<.0010	<.0020	--	--	--	--	--	<.0020	--	<.0030	--	<.0030
JUL												
14...	<.0010	<.0020	<.0140	<.040	<.030	<.0350	<.0350	<.0020	<.0080	<.0030	<.120	<.0030
14...	--	--	--	--	--	--	--	--	--	--	--	--
29...	<.0010	<.0020	--	--	--	--	--	<.0020	--	<.0030	--	<.0030
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
03...	<.0010	<.0020	<.0140	<.040	<.030	<.0350	<.0350	<.0020	<.0080	<.0030	<.120	<.0030
03...	--	--	--	--	--	--	--	--	--	--	--	--

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

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

DATE	CHLOR-AMBEN, WATER, FLTRD, GF 0.7U REC (UG/L) (49307)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLORO-THALO-NIL, WAT,FLT GF 0.7U REC (UG/L) (49306)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CLOPYR-ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DACTHAL MONO-ACID, WAT,FLT GF 0.7U REC (UG/L) (49304)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)
OCT												
23...	<.0110	--	<.0350	<.0040	--	<.0050	<.0500	<.0040	<.0170	<.0020	E.0175	--
NOV												
25...	<.420	--	<.480	<.0040	--	<.0050	<.230	<.0040	<.0170	<.0020	E.0100	--
DEC												
22...	<.420	--	<.480	<.0040	--	<.0050	<.230	<.0040	<.0170	<.0020	E.0333	--
JAN												
20...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
16...	<.420	--	<.480	<.0040	--	<.0050	<.230	<.0040	<.0170	<.0020	E.0261	--
24...	<.420	--	<.480	<.0040	--	<.0050	<.230	<.0040	<.0170	<.0020	E.0044	--
APR												
24...	<.420	--	<.480	<.0040	--	<.0050	<.230	<.0040	<.0170	<.0020	E.0142	--
JUN												
10...	--	--	--	<.0040	--	<.0050	--	<.0040	--	<.0020	E.0379	--
JUL												
14...	<.420	<.100	<.480	<.0040	<.100	<.0050	<.230	<.0040	<.0170	<.0020	E.0586	<.090
14...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	<.0040	--	<.0050	--	<.0040	--	<.0020	E.0532	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
03...	<.420	<.100	<.480	<.0040	<.100	<.0050	<.230	<.0040	<.0170	<.0020	E.0275	<.090
03...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	DICHLO-BENIL, WATER, FLTRD, GF 0.7U REC (UG/L) (49303)	DICHLOR PROP, WATER, FLTRD, GF 0.7U REC (UG/L) (49302)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)
OCT												
23...	<.002	<.0350	<.0200	<.0320	--	<.001	<.0350	<.0170	<.0200	--	--	--
NOV												
25...	.005	<.0350	<1.20	<.0320	--	<.001	<.0350	<.0170	<.0200	--	--	--
DEC												
22...	.008	<.0350	<1.20	<.0320	--	<.001	<.0350	<.0170	<.0200	--	--	--
JAN												
20...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
16...	.012	<.0350	<1.20	<.0320	--	<.001	<.0350	<.0170	<.0200	--	--	--
24...	E.001	<.0350	<1.20	<.0320	--	<.001	<.0350	<.0170	<.0200	--	--	--
APR												
24...	E.001	<.0350	<1.20	<.0320	--	<.001	<.0350	<.0170	<.0200	--	--	--
JUN												
10...	<.002	--	--	--	--	<.001	--	<.0170	--	--	--	--
JUL												
14...	<.002	<.0350	<1.20	<.0320	<.020	<.001	<.0350	<.0170	<.0200	<.600	<.200	<.060
14...	--	--	--	--	--	--	--	--	--	--	--	--
29...	.004	--	--	--	--	<.001	--	<.0170	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
03...	<.002	<.0350	<1.20	<.0320	<.020	<.001	<.0350	<.0170	<.0200	<.600	<.200	<.060
03...	--	--	--	--	--	--	--	--	--	--	--	--

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

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

DATE	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ESFEN-VAL-ERATE, WAT,FLT GF 0.7U REC (UG/L) (49298)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FEN-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)	FLUO-METURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)	FONOFOS WATER DISS REC (UG/L) (04095)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	ISODRIN SUR SCD 1608 WTR, UNFLTRD PERCENT (90570)	LINDANE TOTAL (UG/L) (39340)	LINDANE DIS-SOLVED (UG/L) (39341)
OCT												
23...	<.0020	<.0190	<.0040	<.0030	<.0130	<.0350	<.0030	--	--	--	--	<.004
NOV												
25...	<.0020	--	<.0040	<.0030	<.0130	<.0350	<.0030	--	--	--	--	<.004
DEC												
22...	<.0020	--	<.0040	<.0030	<.0130	<.0350	<.0030	--	--	--	--	<.004
JAN												
20...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
16...	<.0020	--	<.0040	<.0030	<.0130	<.0350	<.0030	--	--	--	--	<.004
24...	<.0020	--	<.0040	<.0030	<.0130	<.0350	<.0030	--	--	--	--	<.004
APR												
24...	<.0020	--	<.0040	<.0030	<.0130	<.0350	<.0030	--	--	--	--	<.004
JUN												
10...	<.0020	--	<.0040	<.0030	--	--	<.0030	--	--	--	--	<.004
JUL												
14...	<.0020	--	<.0040	<.0030	<.0130	<.0350	<.0030	<.030	<.800	--	<.030	<.004
14...	--	--	--	--	--	--	--	--	--	--	--	--
29...	<.0020	--	<.0040	<.0030	--	--	<.0030	--	--	--	--	<.004
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
03...	<.0020	--	<.0040	<.0030	<.0130	<.0350	<.0030	<.030	<.800	60.0	<.030	<.004
03...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	LINURON WATER, FLTRD, GF 0.7U REC (UG/L) (38478)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	MCPA, WATER, FLTRD, GF 0.7U REC (UG/L) (38482)	MCPB, WATER, FLTRD, GF 0.7U REC (UG/L) (38487)	METHIO-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (38501)	METH-OMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49296)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	NEB-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49294)
OCT												
23...	<.0180	<.0020	<.005	<.0500	<.0350	<.0260	<.0170	<.002	<.004	<.0040	<.0030	<.0150
NOV												
25...	<.0180	<.0020	<.005	<.170	<.140	<.0260	<.0170	<.002	<.004	<.0040	<.0030	<.0150
DEC												
22...	<.0180	<.0020	<.005	<.170	<.140	<.0260	<.0170	<.002	<.004	<.0040	<.0030	<.0150
JAN												
20...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
16...	<.0180	<.0020	<.005	<.170	<.140	<.0260	<.0170	.006	<.004	<.0040	<.0030	<.0150
24...	<.0180	<.0020	<.005	<.170	<.140	<.0260	<.0170	<.002	<.004	<.0040	<.0030	<.0150
APR												
24...	<.0180	<.0020	<.005	<.170	<.140	<.0260	<.0170	<.002	<.004	<.0040	<.0030	<.0150
JUN												
10...	--	<.0020	<.005	--	--	--	--	<.002	<.004	<.0040	<.0030	--
JUL												
14...	<.0180	<.0020	.007	<.170	<.140	<.0260	<.0170	<.002	<.004	<.0040	<.0030	<.0150
14...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	<.0020	<.005	--	--	--	--	<.002	<.004	<.0040	<.0030	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
03...	<.0180	<.0020	<.005	<.170	<.140	<.0260	<.0170	<.002	<.004	<.0040	<.0030	<.0150
03...	--	--	--	--	--	--	--	--	--	--	--	--

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

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

DATE	NORFLURAZON, WATER, FLTRD, GF 0.7U REC (UG/L) (49293)	ORYZALIN, WATER, FLTRD, GF 0.7U REC (UG/L) (49292)	OXAMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (38866)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE DISSOLV (UG/L) (34653)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	PARATHION, DISSOLVED (UG/L) (39542)	METHYL PARATHION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEBULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDIMETHALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)
OCT												
23...	<.0240	<.0190	<.0180	--	<.0060	--	--	<.004	<.0060	<.0040	<.0040	<.0020
NOV												
25...	<.0240	<.310	<.0180	--	<.0060	--	--	<.004	<.0060	<.0040	<.0040	<.0020
DEC												
22...	<.0240	<.310	<.0180	--	<.0060	--	--	<.004	<.0060	<.0040	<.0040	<.0020
JAN												
20...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
16...	<.0240	<.310	<.0180	--	<.0060	--	--	<.004	<.0060	<.0040	<.0040	<.0020
24...	<.0240	<.310	<.0180	--	E.0030	--	--	<.004	<.0060	<.0040	<.0040	<.0020
APR												
24...	<.0240	<.310	<.0180	--	<.0060	--	--	<.004	<.0060	<.0040	<.0040	<.0020
JUN												
10...	--	--	--	--	<.0060	--	--	<.004	<.0060	<.0040	<.0040	<.0020
JUL												
14...	<.0240	<.810	<.0180	<.100	<.0060	<.040	<.100	<.004	<.0060	<.0040	<.0040	<.0020
14...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	<.0060	--	--	<.004	<.0060	<.0040	<.0040	<.0020
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
03...	<.0240	<.580	<.0180	<.100	<.0060	<.040	<.100	<.004	<.0060	<.0040	<.0040	<.0020
03...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	PICLORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PROMETON, WATER, DISS, REC (UG/L) (04037)	PROPCHLOR, WATER, DISS, REC (UG/L) (04024)	PROPANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PROPARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PROPHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PROPOXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)	PRONAMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SIMAZINE, WATER, DISS, REC (UG/L) (04035)	TEBUTHIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TERBACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TERBUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)
OCT												
23...	<.0500	<.0180	<.0070	<.0040	<.0130	<.0350	<.0350	<.0030	<.0050	<.0100	<.0070	<.0130
NOV												
25...	<.0500	E.0042	<.0070	<.0040	<.0130	<.0350	<.0350	<.0030	<.0050	<.0100	<.0070	<.0130
DEC												
22...	<.0500	E.0043	<.0070	<.0040	<.0130	<.0350	<.0350	<.0030	<.0050	<.0100	<.0070	<.0130
JAN												
20...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
16...	<.0500	<.0180	<.0070	<.0040	<.0500	<.0350	<.0350	<.0030	<.0050	<.0100	<.0070	E.0080
24...	<.0500	<.0180	<.0070	<.0040	<.0130	<.0350	<.0350	<.0030	<.0050	<.0100	<.0070	<.0130
APR												
24...	<.0500	E.0040	<.0070	<.0040	<.0130	<.0350	<.0350	<.0030	E.0026	<.0100	<.0070	<.0130
JUN												
10...	--	<.0180	<.0070	<.0040	<.0130	--	--	<.0030	<.0050	<.0100	<.0070	<.0130
JUL												
14...	<.0500	E.0042	<.0070	<.0040	<.0130	<.0350	<.0350	<.0030	<.0050	<.0100	<.0070	<.0130
14...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	E.0058	<.0070	<.0040	<.0130	--	--	<.0030	<.0050	<.0100	<.0070	<.0130
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
03...	<.0500	<.0180	<.0070	<.0040	<.0130	<.0350	<.0350	<.0030	<.0050	<.0100	<.0070	<.0130
03...	--	--	--	--	--	--	--	--	--	--	--	--

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

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

DATE	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TOX-APHENE, TOTAL (UG/L) (39400)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS) (70950)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
OCT											
23...	<.0020	--	--	<.0010	<.0500	<.0020	--	--	--	--	--
NOV											
25...	<.0020	--	--	<.0010	<.250	<.0020	--	--	--	--	--
DEC											
22...	<.0020	--	--	<.0010	<.250	.0052	--	--	--	--	--
JAN											
20...	--	--	--	--	--	--	--	--	--	--	--
FEB											
26...	--	--	--	--	--	--	--	--	--	--	--
MAR											
16...	<.0020	--	--	<.0010	<.250	<.0020	--	--	--	--	--
24...	<.0020	--	--	<.0010	<.250	<.0020	--	--	--	--	--
APR											
24...	<.0020	--	--	<.0010	<.250	<.0020	--	--	--	--	--
JUN											
10...	<.0020	--	--	<.0010	--	<.0020	--	--	--	--	--
JUL											
14...	<.0020	<2.00	<.100	<.0010	<.250	<.0020	--	--	--	--	--
14...	--	--	--	--	--	--	4.20	<.100	2050	145.6	137.0
29...	<.0020	--	--	<.0010	--	<.0020	--	--	--	--	--
AUG											
19...	--	--	--	--	--	--	--	--	--	--	--
SEP											
03...	<.0020	<2.00	<.100	<.0010	<.250	<.0020	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--

DATE	THORIUM BOT MAT <63U WS FIELD (UG/G) (34980)	URANIUM BOT MAT <63U WS FIELD (UG/G) (35000)	ARSENIC BOT MAT <63U WS FIELD (UG/G) (34800)	CADMIUM BOT MAT <63U WS FIELD (UG/G) (34825)	SILVER BOT MAT <63U WS FIELD (UG/G) (34955)	ZINC BOT MAT <63U WS FIELD (UG/G) (35020)	YTTER-BIUM BOT MAT <63U WS FIELD (UG/G) (35015)	YTTRIUM BOT MAT <63U WS FIELD (UG/G) (35010)	VANA-DIUM BOT MAT <63U WS FIELD (UG/G) (35005)	TANTA-LUM BOT MAT <63U WS FIELD (UG/G) (34975)	STRON-TIUM BOT MAT <63U WS FIELD (UG/G) (34965)	TIN BOT MAT <63U WS FIELD (UG/G) (34985)
OCT												
23...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
25...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
22...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
20...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
16...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
24...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
10...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	5	<100	<10	<2	<2	59	2	15	72	<40	260	<5

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

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

DATE	SCAN-DIUM BOT MAT <63U WS FIELD (UG/G) (34945)	LEAD BOT MAT <63U WS FIELD (UG/G) (34890)	NICKEL BOT MAT <63U WS FIELD (UG/G) (34925)	NEODYM-IUM BOT MAT <63U WS FIELD (UG/G) (34920)	NIOBIUM BOT MAT <63U WS FIELD (UG/G) (34930)	MOLYB-DENUM BOT MAT <63U WS FIELD (UG/G) (34915)	MANGA-NESE BOT MAT <63U WS FIELD (UG/G) (34905)	LITHIUM BOT MAT <63U WS FIELD (UG/G) (34895)	LANTHA-NUM BOT MAT <63U WS FIELD (UG/G) (34885)	HOLMIUM BOT MAT <63U WS FIELD (UG/G) (34875)	GALLIUM BOT MAT <63U WS FIELD (UG/G) (34860)	EURO-PIUM BOT MAT <63U WS FIELD (UG/G) (34855)
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03...	7	11	17	22	<4	<2	300	30	23	<4	10	<2

DATE	COPPER BOT MAT <63U WS FIELD (UG/G) (34850)	CHRO-MIUM BOT MAT <63U WS FIELD (UG/G) (34840)	COBALT BOT MAT <63U WS FIELD (UG/G) (34845)	CERIUM BOT MAT <63U WS FIELD (UG/G) (34835)	BISMUTH BOT MAT <180UWS FIELD (UG/G) (34816)	BERYL-LIUM BOT MAT <63U WS FIELD (UG/G) (34810)	BARIUM BOT MAT <63U WS FIELD (UG/G) (34805)	GOLD BOT MAT <63U WS FIELD (UG/G) (34870)	TITA-NIUM, SED, BM WS,<63U DRY WGT REC PERCENT (49274)	PHOS-PHORUS BOT MAT <63U WS FIELD PERCENT (34935)	SODIUM BOT MAT <63U WS FIELD PERCENT (34960)	MAGNE-SIUM BOT MAT <63U WS FIELD PERCENT (34900)
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03...	8	41	8	41	<10	1	210	<8	.24	.07	.34	.99

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

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

DATE	POTAS-SIUM BOT MAT <63U WS FIELD PERCENT (34940)	IRON BOT MAT <63U WS FIELD PERCENT (34880)	CALCIUM BOT MAT <63U WS FIELD PERCENT (34830)	ALUM-INUM BOT MAT <63U WS FIELD PERCENT (34790)	CARBON, ORGANIC SED, BM WS,<2MM DW, REC (G/KG) (49271)	OCTCHLR BIPHENL SURROGT SED, BM WS,<2MM DW, REC PERCENT (49276)	BIPHENL 35DICHR SURROGT SED, BM WS,<2MM DW, REC PERCENT (49277)	ALDRIN, SED, BM WS,<2MM DW, REC (UG/KG) (49319)	CHLORO-NEB, SED, BM WS,<2MM DW, REC (UG/KG) (49322)	DCPA, SED, BM WS,<2MM DW, REC (UG/KG) (49324)	DIEL-DRIN, SED, BM WS,<2MM DW, REC (UG/KG) (49331)
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03...	1.3	2.0	18	5.0	28	90	65	<1.0	<5.0	<5.0	<1.0

DATE	ENDRIN, SED, BM WS,<2MM DW, REC (UG/KG) (49335)	HEPTA-CHLOR, SED, BM WS,<2MM DW, REC (UG/KG) (49341)	HEPTA-CHLOR EPOXIDE SED, BM WS,<2MM DW, REC (UG/KG) (49342)	BENZENE HEXA-CHLORO-SED, BM WS,<2MM DW, REC (UG/KG) (49343)	ISODRIN SED, BM WS,<2MM DW, REC (UG/KG) (49344)	LINDANE SED, BM WS,<2MM DW, REC (UG/KG) (49345)	MIREX, SED, BM WS,<2MM DW, REC (UG/KG) (49348)	OXY-CHLOR-DANE, SED, BM WS,<2MM DW, REC (UG/KG) (49318)	PENTA-CHLORO-ANISOLE SED, BM WS,<2MM DW, REC (UG/KG) (49460)	PCB, SED, BM WS,<2MM DW, REC (UG/KG) (49459)	TOXA-PHENE SED, BM WS,<2MM DW, REC (UG/KG) (49351)
OCT											
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03...	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<50	<200

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

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

DATE	ENDO-SULFAN I, SED, BM WS,<2MM DW, REC (UG/KG) (49332)	ALPHA-BHC, SED, BM WS,<2MM DW, REC (UG/KG) (49338)	ALPHA-BHC, D6 SURROGT SED, BM WS,<2MM DW, REC PERCENT (49275)	BETA-BHC, SED, BM WS,<2MM DW, REC (UG/KG) (49339)	CIS-CHLOR-DANE, SED, BM WS,<2MM DW, REC (UG/KG) (49320)	CIS-NONA-CHLOR, SED, BM WS,<2MM DW, REC (UG/KG) (49316)	CIS-PER-METHRIN SED, BM WS,<2MM DW, REC (UG/KG) (49349)	O, P'-DDD, SED, BM WS,<2MM DW, REC (UG/KG) (49325)	O, P'-DDE, SED, BM WS,<2MM DW, REC (UG/KG) (49327)	O, P'-DDT, SED, BM WS,<2MM DW, REC (UG/KG) (49329)	METHOXY CHLOR, O,P'-, SED, BM WS,<2MM DW, REC (UG/KG) (49347)
OCT											
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SEP											
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03...	<1.0	<1.0	120	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<2.0	<5.0

DATE	P, P'-DDD, SED, BM WS,<2MM DW, REC (UG/KG) (49326)	P, P'-DDE, SED, BM WS,<2MM DW, REC (UG/KG) (49328)	P, P'-DDT, SED, BM WS,<2MM DW, REC (UG/KG) (49330)	METHOXY CHLOR P,P'-, SED, BM WS,<2MM DW, REC (UG/KG) (49346)	TRANS-CHLOR-DANE, SED, BM WS,<2MM DW, REC (UG/KG) (49321)	TRANS-NONA-CHLOR, SED, BM WS,<2MM DW, REC (UG/KG) (49317)	TRANS-PER-METHRIN SED, BM WS,<2MM DW, REC (UG/KG) (49350)	CARBON, ORG + INORG SED, BM WS,<2MM DW, REC (G/KG) (49272)	CARBON, INORG, SED, BM WS,<2MM DW, REC (G/KG) (49270)	BENZENE 124TRI-CHLORO-SED, BM WS,<2MM DW, REC (UG/KG) (49438)	BENZENE O-DI-CHLORO-SED, BM WS,<2MM DW, REC (UG/KG) (49439)
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03...	<1.0	<1.0	<2.0	<5.0	<1.0	<1.0	<5.0	82	54	<50	<50

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

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

DATE	NAPTHALENE, 12 DIMETHL SED, BM WS,<2MM DW, REC (UG/KG) (49403)	BENZENE M-DI-CHLORO-SED, BM WS,<2MM DW, REC (UG/KG) (49441)	BENZENE P-DI-CHLORO-SED, BM WS,<2MM DW, REC (UG/KG) (49442)	NAPTHALENE, 16 DIMETHL SED, BM WS,<2MM DW, REC (UG/KG) (49404)	9H-FLUORENE, 1METHYL SED, BM WS,<2MM DW, REC (UG/KG) (49398)	PHENANTHRENE 1METHYL SED, BM WS,<2MM DW, REC (UG/KG) (49410)	PYRENE, 1-METHYL, SED, BM WS,<2MM DW, REC (UG/KG) (49388)	2,2'-BIQUINOLINE, SED, BM WS,<2MM DW, REC (UG/KG) (49391)	NAPTHALENE,236 TRIMETH SED, BM WS,<2MM DW, REC (UG/KG) (49405)	PHENOL, 246TRI-CHLORO-SED, BM WS,<2MM DW, REC (UG/KG) (49415)	TOLUENE 2,4-DI-NITRO-SED, BM WS,<2MM DW, REC (UG/KG) (49395)
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AUG											
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03...	<50	<50	<50	<50	<50	<50	<50	<50	<50	E520	<50

DATE	NAPTHALENE, 26 DIMETHL SED, BM WS,<2MM DW, REC (UG/KG) (49406)	TOLUENE 2,6-DI-NITRO-SED, BM WS,<2MM DW, REC (UG/KG) (49396)	NAPTHALENE, 2-CHLORO-SED, BM WS,<2MM DW, REC (UG/KG) (49407)	PHENOL, 2CHLORO BED MAT WS <2MM DRY WGT REC (UG/KG) (49467)	NAPTHALENE, 2-ETHYL-SED BM WS <2MM DW REC (UG/KG) (49948)	BIPHENL 2FLUORO SURROGT SED, BM WS,<2MM DW, REC PERCENT (49279)	ANTHRACENE,2-METHYL-SED, BM WS,<2MM DW, REC (UG/KG) (49435)	3,5-XYLENOL SED, BM WS,<2MM DW, REC (UG/KG) (49421)	4-BROMO PHNPHNL ETHER SED, BM WS,<2MM DW, REC (UG/KG) (49454)	M-CRESOL, 4-CHLORO-SED, BM WS,<2MM DW, REC (UG/KG) (49422)	4CHLORO PHNPHNLETHER SED, BM WS,<2MM DW, REC (UG/KG) (49455)
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DEC											
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FEB											
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AUG											
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SEP											
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03...	E32	<50	<50	<50	<50	52	<50	<50	<50	<50	<50

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

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

DATE	PHENOL M-NITRO- SED, BM WS,<2MM DW, REC (UG/KG) (49423)	4HCYPEN PHENAN THRENE SED, BM WS,<2MM DW, REC (UG/KG) (49411)	ACENAPH THENE SED, BM WS,<2MM DW, REC (UG/KG) (49429)	ACENAPH THYLENE SED, BM WS,<2MM DW, REC (UG/KG) (49428)	ACRI- DINE SED, BM WS,<2MM DW, REC (UG/KG) (49430)	ANTHRA- CENE SED, BM WS,<2MM DW, REC (UG/KG) (49434)	9,10- ANTHRA- QUINONE SED, BM WS,<2MM DW, REC (UG/KG) (49437)	AZO- BENZENE SED, BM WS,<2MM DW, REC (UG/KG) (49443)	BENZ(A) ANTHRA- CENE SED, BM WS,<2MM DW, REC (UG/KG) (49436)	BENZO (A) PYRENE SED, BM WS,<2MM DW, REC (UG/KG) (49389)	BENZOB FLUOR- ANTHENE SED, BM WS,<2MM DW, REC (UG/KG) (49458)
OCT											
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DEC											
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JAN											
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MAR											
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AUG											
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SEP											
03...	--	--	--	--	--	--	--	--	--	--	--
03...	E190	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50

DATE	BENZOCI NNOLINE BED MAT WS <2MM DRY WGT REC (UG/KG) (49468)	BENZO(G HI)PERY LENE SED, BM WS,<2MM DW, REC (UG/KG) (49408)	BENZO K FLUOR- ANTHENE SED, BM WS,<2MM DW, REC (UG/KG) (49397)	PHTHALA TE,BIS2 ETHHEXL SED, BM WS,<2MM DW, REC (UG/KG) (49426)	PHTHALA TEBUTYL BENZYL- SED, BM WS,<2MM DW, REC (UG/KG) (49427)	PHENOL C8- ALKYL- SED, BM WS,<2MM DW, REC (UG/KG) (49424)	CARBA- ZOLE SED, BM WS,<2MM DW, REC (UG/KG) (49449)	CHRY- SENE SED, BM WS,<2MM DW, REC (UG/KG) (49450)	PHTHAL- ATE, DIBUTYL SED, BM WS,<2MM DW, REC (UG/KG) (49381)	PHTHAL ATE, D IOCTYL SED, BM WS,<2MM DW, REC (UG/KG) (49382)	DIBENZ (AH),AN THRACEN SED, BM WS,<2MM DW, REC (UG/KG) (49461)
OCT											
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NOV											
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DEC											
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JAN											
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FEB											
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MAR											
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APR											
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JUN											
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JUL											
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AUG											
19...	--	--	--	--	--	--	--	--	--	--	--
SEP											
03...	--	--	--	--	--	--	--	--	--	--	--
03...	<50	E22	<50	82	1600	<50	<50	<50	<50	<50	<50

08180640 MEDINA RIVER AT LA COSTE, TX--Continued

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

DATE	THIOPHENE,DI-BENZO-SED, BM WS,<2MM DW, REC (UG/KG) (49452)	PHTHAL-ATE, DIETHYL SED, BM WS,<2MM DW, REC (UG/KG) (49383)	PHTHAL-ATE,DI-METHYL SED, BM WS,<2MM DW, REC (UG/KG) (49384)	FLUOR-ANTHENE BED MAT WS <2MM DRY WGT REC (UG/KG) (49466)	9H-FLU-ORENE SED, BM WS,<2MM DW, REC (UG/KG) (49399)	INDENO 123-CD PYRENE SED, BM WS,<2MM DW, REC (UG/KG) (49390)	ISOPHORONE SED, BM WS,<2MM DW, REC (UG/KG) (49400)	ISO-QUINO-LINE, SED, BM WS,<2MM DW, REC (UG/KG) (49394)	DPROPYLAMINE,N NITROSO SED, BM WS,<2MM DW, REC (UG/KG) (49431)	DIPHNYLAMINE,N NITROSO SED, BM WS,<2MM DW, REC (UG/KG) (49433)	NAPHTH-ALENE, SED, BM WS,<2MM DW, REC (UG/KG) (49402)
OCT											
23...	--	--	--	--	--	--	--	--	--	--	--
NOV											
25...	--	--	--	--	--	--	--	--	--	--	--
DEC											
22...	--	--	--	--	--	--	--	--	--	--	--
JAN											
20...	--	--	--	--	--	--	--	--	--	--	--
FEB											
26...	--	--	--	--	--	--	--	--	--	--	--
MAR											
16...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
APR											
24...	--	--	--	--	--	--	--	--	--	--	--
JUN											
10...	--	--	--	--	--	--	--	--	--	--	--
JUL											
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
AUG											
19...	--	--	--	--	--	--	--	--	--	--	--
SEP											
03...	--	--	--	--	--	--	--	--	--	--	--
03...	<50	E11	<50	<50	<50	<50	<50	<50	<50	<50	<50

DATE	BENZENE NITRO-SED, BM WS,<2MM DW, REC (UG/KG) (49444)	BENZENE NITROD5 SURROGT SED, BM WS,<2MM DW, REC PERCENT (49280)	BENZENE PNTCHLR NITRO-SED, BM WS,<2MM DW, REC (UG/KG) (49446)	PHENAN THRENE SED, BM WS,<2MM DW, REC (UG/KG) (49409)	PHENAN-THRI-DINE SED, BM WS,<2MM DW, REC (UG/KG) (49393)	PHENOL SED, BM WS,<2MM DW, REC (UG/KG) (49413)	PYRENE, SED, BM WS,<2MM DW, REC (UG/KG) (49387)	QUINO-LINE, SED, BM WS,<2MM DW, REC (UG/KG) (49392)	TERPHENYL D14-SURROGT SED, BM WS,<2MM DW, REC PERCENT (49278)	METHANE 2CHLORO ETHOXY SED, BM WS,<2MM DW, REC (UG/KG) (49401)	P-CRESOL SED, BM WS,<2MM DW, REC (UG/KG) (49451)
OCT											
23...	--	--	--	--	--	--	--	--	--	--	--
NOV											
25...	--	--	--	--	--	--	--	--	--	--	--
DEC											
22...	--	--	--	--	--	--	--	--	--	--	--
JAN											
20...	--	--	--	--	--	--	--	--	--	--	--
FEB											
26...	--	--	--	--	--	--	--	--	--	--	--
MAR											
16...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
APR											
24...	--	--	--	--	--	--	--	--	--	--	--
JUN											
10...	--	--	--	--	--	--	--	--	--	--	--
JUL											
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
AUG											
19...	--	--	--	--	--	--	--	--	--	--	--
SEP											
03...	--	--	--	--	--	--	--	--	--	--	--
03...	<50	55	<50	<50	<50	<50	<50	<50	64	<50	<50

08180700 MEDINA RIVER NEAR MACDONA, TX

LOCATION.--Lat 29°20'05", long 98°41'22", Bexar County, Hydrologic Unit 12100302, at downstream side of Loop 1604 bridge, 0.1 mi downstream from Polecat Creek, 0.7 mi north of Macdona, 2.2 mi downstream from Potranca Creek, and 21.2 mi upstream from mouth.

DRAINAGE AREA.--885 mi^2, of which 634 mi^2 is above dam forming Medina Lake.

PERIOD OF RECORD.--Jan 1981 to Sep 1995, May 1997 to current year.

WATER-DISCHARGE RECORDS

GAGE.--Water-stage recorder. Datum of gage is 589.86 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good. Since installation of gage in water year 1981, at least 10% of contributing drainage area has been regulated by Medina Lake (08179500) and by Medina Diversion Lake. A large part of the streamflow is lost into the Edwards and associated limestones where the Balcones Fault crosses the basin between the upstream end of Medina Lake and about 5 mi downstream from Medina Dam, or 0.9 mi downstream from the diversion dam. There are several small diversions below Medina Diversion Dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,680 ft^3/s, Oct 8 (gage height, 10.66 ft); minimum discharge, 36 ft^3/s, Jul 31, Aug 1 (gage height, 2.71 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	46	50	63	84	88	139	472	75	65	56	37	103
2	45	48	63	84	88	136	440	74	61	54	38	102
3	44	52	64	85	87	135	396	74	61	53	38	98
4	45	50	66	85	87	134	366	73	63	54	38	80
5	46	49	65	85	86	134	337	72	63	60	39	65
6	45	47	63	133	85	120	308	73	63	55	43	61
7	83	46	64	136	84	115	294	73	64	52	49	59
8	750	45	65	102	83	122	289	71	64	51	45	58
9	94	46	67	90	82	125	283	68	63	50	43	55
10	92	51	65	90	83	118	259	71	64	49	42	53
11	128	48	66	88	83	112	241	70	78	48	41	53
12	110	56	68	87	81	112	226	69	91	48	40	57
13	90	69	71	86	80	125	212	69	76	48	39	77
14	67	80	67	84	85	137	207	70	70	50	52	87
15	54	77	69	73	94	146	190	72	68	52	74	92
16	50	77	68	69	103	587	180	72	64	49	50	95
17	49	75	64	65	104	1040	176	72	61	46	52	73
18	48	76	59	65	98	472	160	71	60	45	80	60
19	61	77	57	65	94	635	142	66	61	44	59	55
20	75	77	67	65	92	785	128	67	59	44	48	53
21	75	77	101	65	118	771	118	69	58	42	45	53
22	63	77	106	65	281	719	110	67	55	41	72	52
23	55	76	99	67	186	664	104	68	55	40	194	50
24	55	76	99	64	155	613	97	68	56	40	244	48
25	56	77	96	64	148	579	94	68	55	39	164	48
26	54	67	97	64	154	539	91	71	54	40	148	48
27	53	62	94	64	150	505	89	74	53	39	142	47
28	53	60	88	59	141	492	86	72	52	38	132	48
29	54	60	86	52	---	473	81	66	52	38	112	47
30	54	62	85	50	---	447	78	65	57	38	105	46
31	52	---	84	70	---	438	---	66	---	37	104	---
TOTAL	2646	1890	2336	2405	3100	11669	6254	2176	1866	1440	2409	1923
MEAN	85.4	63.0	75.4	77.6	111	376	208	70.2	62.2	46.5	77.7	64.1
MAX	750	80	106	136	281	1040	472	75	91	60	244	103
MIN	44	45	57	50	80	112	78	65	52	37	37	46
AC-FT	5250	3750	4630	4770	6150	23150	12400	4320	3700	2860	4780	3810

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1998, BY WATER YEAR (WY)

MEAN	103	71.5	108	140	227	231	155	262	734	190	75.8	60.4
MAX	485	178	432	698	2333	2097	1302	1636	5726	765	280	165
(WY)	1982	1993	1992	1992	1992	1992	1992	1992	1987	1987	1992	1992
MIN	32.3	25.7	18.0	22.1	34.2	39.0	34.1	29.6	25.1	27.4	25.1	27.8
(WY)	1992	1985	1985	1985	1985	1990	1986	1989	1990	1989	1989	1989

SUMMARY STATISTICS	FOR 1998 WATER YEAR		WATER YEARS 1981 - 1998	
ANNUAL TOTAL	40114			
ANNUAL MEAN	110		183	
HIGHEST ANNUAL MEAN			954	1992
LOWEST ANNUAL MEAN			38.1	1989
HIGHEST DAILY MEAN	1040	Mar 17	22300	Jun 5 1987
LOWEST DAILY MEAN	37	Jul 31	14	Jan 11 1985
ANNUAL SEVEN-DAY MINIMUM	38	Jul 28	16	Jan 7 1985
INSTANTANEOUS PEAK FLOW	2680	Oct 8	36800	May 30 1987
INSTANTANEOUS PEAK STAGE	10.66	Oct 8	20.58	May 30 1987
ANNUAL RUNOFF (AC-FT)	79570		132400	
10 PERCENT EXCEEDS	182		285	
50 PERCENT EXCEEDS	69		52	
90 PERCENT EXCEEDS	46		32	

08180700 MEDINA RIVER NEAR MACDONA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Jul to Sep 1998. Pesticide analyses: Jul to Sep 1998. Bacteria analyses: Jul to Sep 1998.

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)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)
JUL												
15...	0940	51	597	8.0	27.5	13	3.8	5.9	77	300	330	430
15...	1025	51	597	8.0	27.5	--	--	5.9	77	--	--	--
AUG												
19...	1110	59	540	7.7	26.5	--	--	7.0	86	500	400	K320
SEP												
04...	1210	79	515	8.2	27.0	13	16	6.8	86	K400	K610	K200
04...	1215	79	515	8.2	27.0	--	--	6.8	86	--	--	--

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
JUL												
15...	260	51	74	17	23	.6	16	3.1	.000	249	204	49
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	230	42	69	15	17	.5	14	2.7	.000	231	190	41
04...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	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)
JUL												
15...	24	.2	12	370	349	17	5.36	.04	5.4	.07	5.7	.19
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	18	.2	12	318	304	27	3.51	.02	3.5	.06	3.8	.25
04...	--	--	--	--	--	--	--	--	--	--	--	--

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)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)
JUL												
15...	.14	.2	.3	<.01	.01	.03	.08	1.9	--	4.7	34	5
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	.09	.2	.3	.03	<.01	.02	.07	<2.2	.4	15	68	5
04...	--	--	--	--	--	--	--	--	--	--	--	--

08180700 MEDINA RIVER NEAR MACDONA, TX--Continued

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

DATE	ANTIMONY, DISSOLVED (UG/L AS SB) (01095)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BORON, DISSOLVED (UG/L AS B) (01020)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)
JUL												
15...	<1	1	50	<1	149	<1	2	<1	<1	<10	<1	10
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	<1	1	43	<1	112	<1	3	<1	<1	<10	<1	7
04...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, DISSOLVED (UG/L AS AG) (01075)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DISSOLVED (UG/L AS U) (22703)	BENZENE TOTAL (UG/L) (34030)	2,4,5-T DISSOLVED (UG/L) (39742)
JUL												
15...	4	<.1	1	1	<1	<1	600	<10	17	<1	<.2	<.035
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	3	<.1	1	<1	<1	<1	510	<10	6	<1	<.2	<.035
04...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	2,4-D, DISSOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)	2,6-DIETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	SILVEX, DISSOLVED (UG/L) (39762)	3HYDRXY CARBOFURAN WAT,FLT GF 0.7U REC (UG/L) (49308)	DNOC WAT,FLT GF 0.7U REC (UG/L) (49299)	ACETOCHLOR, WATER FLTRD REC (UG/L) (49260)	ACIFLUORFEN WATER, FLTRD, GF 0.7U REC (UG/L) (49315)	ALACHLOR, WATER, DISS, REC, (UG/L) (46342)	ALDICARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)	ALDICARB SULFONE WAT,FLT GF 0.7U REC (UG/L) (49313)	ALDICARB SULFOXIDE, WAT,FLT GF 0.7U REC (UG/L) (49314)
JUL												
15...	<.15	<.24	<.003	<.021	<.014	<.42	<.002	<.035	<.002	<.55	<.1	<.021
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	<.15	<.24	<.003	<.021	<.014	<.42	<.002	<.035	<.002	<.55	<.1	<.021
04...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	ALDRIN, TOTAL (UG/L) (39330)	ENDOSULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC DISSOLVED (UG/L) (34253)	ALPHA BHC TOTAL (UG/L) (39337)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	ATRAZINE, WATER, DISS, REC (UG/L) (39632)
JUL												
15...	<.04	<.1	<.002	<.03	<.1	<1	<.1	<.1	<.1	<.1	<.1	.0316
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	<.040	<.1	<.002	<.030	<.1	<1	<.1	<.1	<.1	<.1	<.1	.0164
04...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	METHYL AZINPHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BENFLURALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BENTAZON, WATER, FLTRD, GF 0.7U REC (UG/L) (38711)	ENDOSULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXACHLORIDE TOTAL (UG/L) (39338)	BROMACIL, WATER, DISS, REC (UG/L) (04029)	BROMOXYNIL WATER, FLTRD, GF 0.7U REC (UG/L) (49311)	BUTYLATE, WATER, DISS, REC (UG/L) (04028)	CARBARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)	CARBARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBOFURAN, WATER, FLTRD, GF 0.7U REC (UG/L) (49309)	CARBOFURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)
JUL												
15...	<.001	<.002	<.014	<.04	<.03	<.035	<.035	<.002	<.008	<.003	<.12	<.003
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	<.001	<.002	<.014	<.040	<.030	<.035	<.035	<.002	<.008	<.003	<.12	<.003
04...	--	--	--	--	--	--	--	--	--	--	--	--

08180700 MEDINA RIVER NEAR MACDONA, TX--Continued

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

DATE	CHLOR-AMBEN, WATER, FLTRD, GF 0.7U REC (UG/L) (49307)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLORO-THALO-NIL, WAT,FLT GF 0.7U REC (UG/L) (49306)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CLOPYR-ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DACTHAL MONO-ACID, WAT,FLT GF 0.7U REC (UG/L) (49304)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)
JUL												
15...	<.42	<.1	<.48	<.004	<.1	<.005	<.23	<.004	<.017	<.002	E.0610	<.09
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	<.42	<.1	<.48	<.004	<.1	<.005	<.23	<.004	<.017	<.002	E.0394	<.090
04...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	DICHLO-BENIL, WATER, FLTRD, GF 0.7U REC (UG/L) (49303)	DICHLOR PROP, WATER, FLTRD, GF 0.7U REC (UG/L) (49302)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)
JUL												
15...	<.002	<.035	<1.2	<.032	<.02	<.001	<.035	<.017	.26	<.6	<.2	<.06
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	<.002	<.035	<1.2	<.032	<.020	<.001	<.035	<.017	.32	<.6	<.2	<.060
04...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FEN-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)	FLUO-METURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)	FONOFOS WATER DISS REC (UG/L) (04095)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	LINDANE DIS-SOLVED (UG/L) (39341)	LINURON WATER, FLTRD, GF 0.7U REC (UG/L) (38478)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)
JUL												
15...	<.002	<.004	<.003	<.013	<.035	<.003	<.03	<.8	<.03	<.004	<.018	<.002
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	<.002	<.004	<.003	<.013	<.035	<.003	<.030	<.8	<.030	<.004	<.018	<.002
04...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	MALA-THION, DIS-SOLVED (UG/L) (39532)	MCPA, WATER, FLTRD, GF 0.7U REC (UG/L) (38482)	MCPB, WATER, FLTRD, GF 0.7U REC (UG/L) (38487)	METHIO-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (38501)	METH-OMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49296)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	NEB-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49294)	NORFLUR AZON, WATER, FLTRD, GF 0.7U REC (UG/L) (49293)	ORY-ZALIN, WATER, FLTRD, GF 0.7U REC (UG/L) (49292)
JUL												
15...	<.005	<.17	<.14	<.026	<.017	.0102	<.004	<.004	<.003	<.015	<.024	<.70
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	<.005	<.17	<.14	<.026	<.017	<.002	<.004	<.004	<.003	<.015	<.024	<.61
04...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	OXAMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (38866)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE DISSOLV (UG/L) (34653)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	PARA-THION, DIS-SOLVED (UG/L) (39542)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PIC-LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)
JUL											
15...	<.018	<.1	<.006	<.04	<.1	<.004	<.006	<.004	<.004	<.002	<.05
15...	--	--	--	--	--	--	--	--	--	--	--
AUG											
19...	--	--	--	--	--	--	--	--	--	--	--
SEP											
04...	<.018	<.1	<.006	<.040	<.1	<.004	<.006	<.004	<.004	<.002	<.05
04...	--	--	--	--	--	--	--	--	--	--	--

08180700 MEDINA RIVER NEAR MACDONA, TX--Continued

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

DATE	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PROP-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRO-PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PRO-POXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)
JUL											
15...	<.018	<.007	<.004	<.023	<.035	<.035	<.003	<.005	<.010	<.007	<.013
15...	--	--	--	--	--	--	--	--	--	--	--
AUG											
19...	--	--	--	--	--	--	--	--	--	--	--
SEP											
04...	<.018	<.007	<.004	<.013	<.035	<.035	<.003	<.005	<.010	<.007	<.013
04...	--	--	--	--	--	--	--	--	--	--	--

DATE	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TOX-APHENE, TOTAL (UG/L) (39400)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS) (70950)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
JUL											
15...	<.002	<2	<.1	<.001	<.25	<.002	--	--	--	--	--
15...	--	--	--	--	--	--	3.8	.2	500	42.5	40.6
AUG											
19...	--	--	--	--	--	--	--	--	--	--	--
SEP											
04...	<.002	<2	<.1	<.001	<.25	<.002	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--

DATE	THORIUM BOT MAT <63U WS FIELD (UG/G) (34980)	URANIUM BOT MAT <63U WS FIELD (UG/G) (35000)	ARSENIC BOT MAT <63U WS FIELD (UG/G) (34800)	CADMIUM BOT MAT <63U WS FIELD (UG/G) (34825)	SILVER BOT MAT <63U WS FIELD (UG/G) (34955)	ZINC BOT MAT <63U WS FIELD (UG/G) (35020)	YTTER-BIUM BOT MAT <63U WS FIELD (UG/G) (35015)	YTTRIUM BOT MAT <63U WS FIELD (UG/G) (35010)	VANA-DIUM BOT MAT <63U WS FIELD (UG/G) (35005)	TANTA-LUM BOT MAT <63U WS FIELD (UG/G) (34975)	STRON-TIUM BOT MAT <63U WS FIELD (UG/G) (34965)	TIN BOT MAT <63U WS FIELD (UG/G) (34985)
JUL												
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	6	<100	<10	<2	<2	57	1	15	60	<40	270	<5

DATE	SCAN-DIUM BOT MAT <63U WS FIELD (UG/G) (34945)	LEAD BOT MAT <63U WS FIELD (UG/G) (34890)	NICKEL BOT MAT <63U WS FIELD (UG/G) (34925)	NEODYM-IUM BOT MAT <63U WS FIELD (UG/G) (34920)	NIOBIUM BOT MAT <63U WS FIELD (UG/G) (34930)	MOLYB-DENUM BOT MAT <63U WS FIELD (UG/G) (34915)	MANGA-NESE BOT MAT <63U WS FIELD (UG/G) (34905)	LITHIUM BOT MAT <63U WS FIELD (UG/G) (34895)	LANTHA-NUM BOT MAT <63U WS FIELD (UG/G) (34885)	HOLMIUM BOT MAT <63U WS FIELD (UG/G) (34875)	GALLIUM BOT MAT <63U WS FIELD (UG/G) (34860)	EURO-PIUM BOT MAT <63U WS FIELD (UG/G) (34855)
JUL												
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	7	11	16	23	<4	<2	330	30	25	<4	10	<2

DATE	COPPER BOT MAT <63U WS FIELD (UG/G) (34850)	CHRO-MIUM BOT MAT <63U WS FIELD (UG/G) (34840)	COBALT BOT MAT <63U WS FIELD (UG/G) (34845)	CERIUM BOT MAT <63U WS FIELD (UG/G) (34835)	BISMUTH BOT MAT <180UWS FIELD (UG/G) (34816)	BERYL-LIUM BOT MAT <63U WS FIELD (UG/G) (34810)	BARIUM BOT MAT <63U WS FIELD (UG/G) (34805)	GOLD BOT MAT <63U WS FIELD (UG/G) (34870)	TITA-NIUM, SED, BM WS,<63U DRY WGT REC PERCENT (49274)	PHOS-PHORUS BOT MAT <63U WS FIELD PERCENT (34935)	SODIUM BOT MAT <63U WS FIELD PERCENT (34960)	MAGNE-SIUM BOT MAT <63U WS FIELD PERCENT (34900)
JUL												
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	8	45	7	43	<10	1	220	<8	.23	.08	.28	.92

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

DATE	POTASSIUM BOT MAT <63U WS FIELD PERCENT (34940)	IRON BOT MAT <63U WS FIELD PERCENT (34880)	CALCIUM BOT MAT <63U WS FIELD PERCENT (34830)	ALUMINUM BOT MAT <63U WS FIELD PERCENT (34790)	CARBON, ORGANIC SED, BM WS,<2MM DW, REC (G/KG) (49271)	OCTCHLR BIPHENL SURROGT SED, BM WS,<2MM DW, REC PERCENT (49276)	BIPHENL 35DICHR SURROGT SED, BM WS,<2MM DW, REC PERCENT (49277)	ALDRIN, SED, BM WS,<2MM DW, REC (UG/KG) (49319)	CHLORONEB, SED, BM WS,<2MM DW, REC (UG/KG) (49322)	DCPA, SED, BM WS,<2MM DW, REC (UG/KG) (49324)	DIELDRIN, SED, BM WS,<2MM DW, REC (UG/KG) (49331)	ENDRIN, SED, BM WS,<2MM DW, REC (UG/KG) (49335)
JUL												
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	1.2	1.9	18	4.8	13	88	78	<1.0	<5.0	<5.0	<1.0	<2.0

DATE	HEPTACHLOR, SED, BM WS,<2MM DW, REC (UG/KG) (49341)	HEPTACHLOR EPOXIDE SED, BM WS,<2MM DW, REC (UG/KG) (49342)	BENZENE HEXACHLORO- SED, BM WS,<2MM DW, REC (UG/KG) (49343)	ISODRIN SED, BM WS,<2MM DW, REC (UG/KG) (49344)	LINDANE SED, BM WS,<2MM DW, REC (UG/KG) (49345)	MIREX, SED, BM WS,<2MM DW, REC (UG/KG) (49348)	OXYCHLORDANE, SED, BM WS,<2MM DW, REC (UG/KG) (49318)	PENTACHLOROANISOLE SED, BM WS,<2MM DW, REC (UG/KG) (49460)	PCB, SED, BM WS,<2MM DW, REC (UG/KG) (49459)	TOXAPHENE SED, BM WS,<2MM DW, REC (UG/KG) (49351)	ENDOSULFAN I, SED, BM WS,<2MM DW, REC (UG/KG) (49332)	ALPHABHC, SED, BM WS,<2MM DW, REC (UG/KG) (49338)
JUL												
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<50	<200	<1.0	<1.0

DATE	ALPHABHC, D6 SURROGT SED, BM WS,<2MM DW, REC PERCENT (49275)	BETABHC, SED, BM WS,<2MM DW, REC (UG/KG) (49339)	CIS-CHLORDANE, SED, BM WS,<2MM DW, REC (UG/KG) (49320)	CIS-NONACHLOR, SED, BM WS,<2MM DW, REC (UG/KG) (49316)	CIS-PERMETHRIN SED, BM WS,<2MM DW, REC (G/KG) (49349)	O, P'-DDD, SED, BM WS,<2MM DW, REC (UG/KG) (49325)	O, P'-DDE, SED, BM WS,<2MM DW, REC (UG/KG) (49327)	O, P'-DDT, SED, BM WS,<2MM DW, REC (UG/KG) (49329)	METHOXYCHLOR, O,P'-, SED, BM WS,<2MM DW, REC (UG/KG) (49347)	P, P'-DDD, SED, BM WS,<2MM DW, REC (UG/KG) (49326)	P, P'-DDE, SED, BM WS,<2MM DW, REC (UG/KG) (49328)	P, P'-DDT, SED, BM WS,<2MM DW, REC (UG/KG) (49330)
JUL												
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	120	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<2.0	<5.0	<1.0	1.2	<2.0

DATE	METHOXYCHLOR P,P'-, SED, BM WS,<2MM DW, REC (UG/KG) (49346)	TRANSCHLORDANE, SED, BM WS,<2MM DW, REC (UG/KG) (49321)	TRANSNONACHLOR, SED, BM WS,<2MM DW, REC (UG/KG) (49317)	TRANSPERMETHRIN SED, BM WS,<2MM DW, REC (UG/KG) (49350)	CARBON, ORG + INORG SED, BM WS,<2MM DW, REC (G/KG) (49272)	CARBON, INORG, SED, BM WS,<2MM DW, REC (G/KG) (49270)	BENZENE 124TRICHLORO- SED, BM WS,<2MM DW, REC (UG/KG) (49438)	BENZENE O-DICHLORO- SED, BM WS,<2MM DW, REC (UG/KG) (49439)	NAPTHALENE, 12 DIMETHL SED, BM WS,<2MM DW, REC (UG/KG) (49403)	BENZENE M-DICHLORO- SED, BM WS,<2MM DW, REC (UG/KG) (49441)	BENZENE P-DICHLORO- SED, BM WS,<2MM DW, REC (UG/KG) (49442)	NAPTHALENE, 16 DIMETHL SED, BM WS,<2MM DW, REC (UG/KG) (49404)
JUL												
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	<5.0	<1.0	<1.0	<5.0	78	65	<50	<50	<50	<50	<50	<50

DATE	9H-FLUORENE, 1METHYL SED, BM WS,<2MM DW, REC (UG/KG) (49398)	PHENANTHRENE 1METHYL SED, BM WS,<2MM DW, REC (UG/KG) (49410)	PYRENE, 1-METHYL, SED, BM WS,<2MM DW, REC (UG/KG) (49388)	2,2'-BIQUINOLINE, SED, BM WS,<2MM DW, REC (UG/KG) (49391)	NAPTHALENE,236 TRIMETH SED, BM WS,<2MM DW, REC (UG/KG) (49405)	TOLUENE 2,4-DINITRO- SED, BM WS,<2MM DW, REC (UG/KG) (49395)	NAPTHALENE, 26 DIMETHL SED, BM WS,<2MM DW, REC (UG/KG) (49406)	TOLUENE 2,6-DINITRO- SED, BM WS,<2MM DW, REC (UG/KG) (49396)	NAPTHALENE, 2-CHLORO- SED, BM WS,<2MM DW, REC (UG/KG) (49407)	PHENOL, 2CHLORO BED MAT WS <2MM DRY WGT REC (UG/KG) (49467)	NAPTHALENE, 2-ETHYL- SED BM WS <2MM DW REC (UG/KG) (49948)	BIPHENL 2FLUORO SURROGT SED, BM WS,<2MM DW, REC PERCENT (49279)
JUL												
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	<50	<50	<50	<50	<50	<50	E37	<50	<50	<50	<50	56

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

DATE	ANTHRACENE,2-METHYL- SED, BM WS,<2MM DW, REC (UG/KG) (49435)	3,5-XYLENOL SED, BM WS,<2MM DW, REC (UG/KG) (49421)	4-BROMOPHNPHNL ETHER SED, BM WS,<2MM DW, REC (UG/KG) (49454)	M-CRESOL, 4-CHLORO- SED, BM WS,<2MM DW, REC (UG/KG) (49422)	4CHLOROPHNPHNLETHER SED, BM WS,<2MM DW, REC (UG/KG) (49455)	4HCYPENPHENANTHRENE SED, BM WS,<2MM DW, REC (UG/KG) (49411)	ACENAPHTHENE SED, BM WS,<2MM DW, REC (UG/KG) (49429)	ACENAPHTHYLENE SED, BM WS,<2MM DW, REC (UG/KG) (49428)	ACRIDINE SED, BM WS,<2MM DW, REC (UG/KG) (49430)	ANTHRACENE SED, BM WS,<2MM DW, REC (UG/KG) (49434)	9,10-ANTHRAQUINONE SED, BM WS,<2MM DW, REC (UG/KG) (49437)	AZOBENZENE SED, BM WS,<2MM DW, REC (UG/KG) (49443)
JUL												
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50

DATE	BENZ(A)ANTHRACENE SED, BM WS,<2MM DW, REC (UG/KG) (49436)	BENZO(A)PYRENE SED, BM WS,<2MM DW, REC (UG/KG) (49389)	BENZOBFLUORANTHENE SED, BM WS,<2MM DW, REC (UG/KG) (49458)	BENZOCINNOLINE BED MAT WS <2MM DRY WGT REC (UG/KG) (49468)	BENZO(GHI)PERYLENE SED, BM WS,<2MM DW, REC (UG/KG) (49408)	BENZO K FLUORANTHENE SED, BM WS,<2MM DW, REC (UG/KG) (49397)	PHTHALATE,BIS2ETHHEXL SED, BM WS,<2MM DW, REC (UG/KG) (49426)	PHTHALATEBUTYLBENZYL- SED, BM WS,<2MM DW, REC (UG/KG) (49427)	PHENOL C8-ALKYL- SED, BM WS,<2MM DW, REC (UG/KG) (49424)	CARBAZOLE SED, BM WS,<2MM DW, REC (UG/KG) (49449)	CHRYSENE SED, BM WS,<2MM DW, REC (UG/KG) (49450)	PHTHALATE, DIBUTYL SED, BM WS,<2MM DW, REC (UG/KG) (49381)
JUL												
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	<50	<50	<50	<50	<50	<50	E37	<50	<50	<50	<50	E45

DATE	PHTHALATE, DIOCTYL SED, BM WS,<2MM DW, REC (UG/KG) (49382)	DIBENZ(AH),ANTHRACEN SED, BM WS,<2MM DW, REC (UG/KG) (49461)	THIOPHENE,DI-BENZO- SED, BM WS,<2MM DW, REC (UG/KG) (49452)	PHTHALATE, DIETHYL SED, BM WS,<2MM DW, REC (UG/KG) (49383)	PHTHALATE,DIMETHYL SED, BM WS,<2MM DW, REC (UG/KG) (49384)	FLUORANTHENE BED MAT WS <2MM DRY WGT REC (UG/KG) (49466)	9H-FLUORENE SED, BM WS,<2MM DW, REC (UG/KG) (49399)	INDENO123-CD PYRENE SED, BM WS,<2MM DW, REC (UG/KG) (49390)	ISOPHORONE SED, BM WS,<2MM DW, REC (UG/KG) (49400)	ISOQUINOLINE, SED, BM WS,<2MM DW, REC (UG/KG) (49394)	DPROPYLAMINE,NNITROSO SED, BM WS,<2MM DW, REC (UG/KG) (49431)	DIPHNYLAMINE,NNITROSO SED, BM WS,<2MM DW, REC (UG/KG) (49433)
JUL												
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50

DATE	NAPHTHALENE, SED, BM WS,<2MM DW, REC (UG/KG) (49402)	BENZENE NITRO- SED, BM WS,<2MM DW, REC (UG/KG) (49444)	BENZENE NITROD5 SURROGT SED, BM WS,<2MM DW, REC PERCENT (49280)	BENZENE PNTCHLR NITRO- SED, BM WS,<2MM DW, REC (UG/KG) (49446)	PHENANTHRENE SED, BM WS,<2MM DW, REC (UG/KG) (49409)	PHENANTHRIDINE SED, BM WS,<2MM DW, REC (UG/KG) (49393)	PHENOL SED, BM WS,<2MM DW, REC (UG/KG) (49413)	PYRENE, SED, BM WS,<2MM DW, REC (UG/KG) (49387)	QUINOLINE, SED, BM WS,<2MM DW, REC (UG/KG) (49392)	TERPHENYL D14-SURROGT SED, BM WS,<2MM DW, REC PERCENT (49278)	METHANE2CHLOROETHOXY SED, BM WS,<2MM DW, REC (UG/KG) (49401)	P-CRESOL SED, BM WS,<2MM DW, REC (UG/KG) (49451)
JUL												
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	<50	<50	64	<50	<50	<50	E9	<50	<50	68	<50	<50

08180800 MEDINA RIVER NEAR SOMERSET, TX

LOCATION.--Lat 29°15'43", long 98°34'52", Bexar County, Hydrologic Unit 12100302, on left bank at downstream side of downstream bridge on State Highway 16, 2.0 mi upstream from Elm Creek, 5.0 mi downstream from Medio Creek, 5.2 mi northeast of Somerset, and 14.0 mi upstream from mouth.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--967 mi^2, of which 634 mi^2 is above dam forming Medina Lake.

PERIOD OF RECORD.--Oct 1970 to Sep 1995, Sep 1997 to current year.

GAGE.--Water-stage recorder. Datum of gage is 493.56 ft above sea level. Prior to Jun 16, 1993, at site 300 ft upstream at same datum. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since installation of gage in water year 1971, at least 10% of contributing drainage area has been regulated by Medina Lake and by Medina Diversion Lake. A large part of the streamflow is lost into the Edwards and associated limestones where the Balcones Fault crosses the basin between the upstream end of Medina Lake and about 5 mi downstream from Medina Dam, or 0.9 mi downstream from the diversion dam. There are several small diversions below Medina Diversion Dam.

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	e57	69	72	89	131	121	470	81	64	60	e37	103
2	e56	67	72	90	107	116	467	78	61	55	e38	105
3	e55	65	72	90	101	114	426	77	59	54	e38	101
4	e57	63	72	90	99	113	395	78	60	55	e38	95
5	e60	63	72	91	97	114	369	75	61	56	e40	78
6	e62	60	70	105	95	109	339	76	63	56	e43	71
7	e62	58	70	207	93	100	320	75	62	52	e49	68
8	521	58	71	132	93	101	312	73	63	50	50	66
9	186	58	73	109	94	105	306	70	61	48	44	65
10	125	67	72	103	100	102	288	69	60	45	42	63
11	153	64	70	101	95	96	263	70	69	45	40	66
12	150	74	72	99	95	93	247	70	83	44	39	66
13	126	82	73	96	93	96	232	69	80	42	38	72
14	119	96	73	95	97	110	222	69	70	44	54	88
15	94	94	72	90	108	122	212	70	65	46	84	90
16	83	90	72	81	121	423	197	70	62	49	69	99
17	79	90	72	79	127	e941	190	71	58	e48	70	95
18	76	89	68	76	120	536	179	72	57	e46	103	78
19	75	89	66	75	112	564	161	67	58	e44	89	71
20	89	90	77	75	108	720	144	64	56	e43	65	66
21	94	89	99	75	110	745	133	65	53	e42	56	64
22	91	88	117	74	279	708	124	66	54	e41	78	63
23	79	87	106	74	209	665	117	65	51	e41	278	60
24	76	86	102	75	141	629	109	67	52	e39	227	61
25	76	87	101	73	129	596	102	68	52	e38	161	61
26	74	85	100	73	142	561	99	63	51	e39	140	59
27	71	76	102	73	140	527	96	70	50	e40	131	58
28	72	74	99	73	126	505	91	73	51	e38	126	58
29	73	72	94	66	---	492	86	67	50	e38	116	57
30	72	71	92	63	---	469	82	63	55	e38	104	56
31	71	---	89	76	---	448	---	64	---	e37	104	---
TOTAL	3134	2301	2532	2768	3362	11141	6778	2175	1791	1413	2591	2203
MEAN	101	76.7	81.7	89.3	120	359	226	70.2	59.7	45.6	83.6	73.4
MAX	521	96	117	207	279	941	470	81	83	60	278	105
MIN	55	58	66	63	93	93	82	63	50	37	37	56
AC-FT	6220	4560	5020	5490	6670	22100	13440	4310	3550	2800	5140	4370

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1998, BY WATER YEAR (WY)

MEAN	188	156	144	169	254	238	210	294	634	287	171	133
MAX	1284	648	549	751	2449	2326	1480	1663	6432	2875	1222	868
(WY)	1974	1977	1977	1992	1992	1992	1992	1992	1987	1973	1978	1973
MIN	41.2	40.2	33.5	37.2	33.4	34.4	35.6	31.1	27.4	22.3	24.5	22.7
(WY)	1989	1985	1985	1985	1971	1971	1971	1971	1990	1984	1984	1984

SUMMARY STATISTICS	FOR 1998 WATER YEAR		WATER YEARS 1971 - 1998	
ANNUAL TOTAL	42189			
ANNUAL MEAN	116		238	
HIGHEST ANNUAL MEAN			1033	1992
LOWEST ANNUAL MEAN			40.0	1984
HIGHEST DAILY MEAN	941	Mar 17	24800	Jul 17 1973
LOWEST DAILY MEAN	37	Jul 31	16	Sep 19 1984
ANNUAL SEVEN-DAY MINIMUM	38	Jul 28	19	Sep 17 1984
INSTANTANEOUS PEAK FLOW	1390	Mar 17	30500	Jul 17 1973
INSTANTANEOUS PEAK STAGE	a12.05	Mar 17	29.39	Jul 17 1973
ANNUAL RUNOFF (AC-FT)	83680		172500	
10 PERCENT EXCEEDS	208		476	
50 PERCENT EXCEEDS	75		75	
90 PERCENT EXCEEDS	50		40	

e Estimated
a From floodmark.

08180800 MEDINA RIVER NEAR SOMERSET, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Jul to Sep 1998. Pesticide analyses: Jul to Sep 1998. Bacteria analyses: Jul to Sep 1998.

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)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)
JUL												
16...	0910	52	707	8.1	28.0	13	12	6.6	86	680	360	880
16...	0945	52	707	8.1	28.0	--	--	6.6	86	--	--	--
AUG												
19...	1145	89	684	7.9	27.0	--	--	7.4	92	700	600	K300
SEP												
09...	1020	66	650	8.1	26.5	12	3.4	6.6	83	600	350	>1600
09...	1025	66	650	8.1	26.5	--	--	6.6	83	--	--	--

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
JUL												
16...	280	63	80	20	39	1	23	3.9	0	268	220	66
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	260	52	74	17	30	.8	20	3.1	0	250	205	61
09...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	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)
JUL												
16...	43	.26	12	434	418	30	4.53	.018	4.55	.051	4.8	.22
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	34	.27	13	428	374	48	3.93	.010	3.94	.033	4.3	.28
09...	--	--	--	--	--	--	--	--	--	--	--	--

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)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)
JUL												
16...	.14	.19	.27	.138	.110	.097	.30	2.1	.30	4.5	32	4.5
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	.16	.19	.31	.094	.045	.048	.15	20	.70	15	82	4.4
09...	--	--	--	--	--	--	--	--	--	--	--	--

08180800 MEDINA RIVER NEAR SOMERSET, TX--Continued

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

DATE	ANTIMONY, DISSOLVED (UG/L AS SB) (01095)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BORON, DISSOLVED (UG/L AS B) (01020)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)
JUL												
16...	<1.0	1	57	<1.0	202	<1.0	2.2	<1.0	<1.0	<10	<1.0	13
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	<1.0	1	52	<1.0	176	<1.0	3.8	<1.0	<1.0	<10	<1.0	10
09...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, DISSOLVED (UG/L AS AG) (01075)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DISSOLVED (UG/L AS U) (22703)	BENZENE TOTAL (UG/L) (34030)	2,4,5-T DISSOLVED (UG/L) (39742)
JUL												
16...	1.4	<.1	1.9	1.4	<1	<1.0	722	<10	5.4	1.1	<.200	<.0350
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	1.8	<.1	1.6	<1.0	<1	<1.0	632	<10	7.8	<1.0	<.200	<.0350
09...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	2,4-D, DISSOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)	2,6-DIETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	SILVEX, DISSOLVED (UG/L) (39762)	3HYDRXY CARBOFURAN WAT,FLT GF 0.7U REC (UG/L) (49308)	DNOC WAT,FLT GF 0.7U REC (UG/L) (49299)	ACETOCHLOR, WATER FLTRD REC (UG/L) (49260)	ACIFLUORFEN WATER, FLTRD, GF 0.7U REC (UG/L) (49315)	ALACHLOR, WATER, DISS, REC, (UG/L) (46342)	ALDICARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)	ALDICARB SULFONE WAT,FLT GF 0.7U REC (UG/L) (49313)	ALDICARB SULFOXIDE, WAT,FLT GF 0.7U REC (UG/L) (49314)
JUL												
16...	<.150	<.240	<.0030	<.0210	<.0140	<.420	<.0020	<.0350	<.002	<.550	<.100	<.0210
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	<.150	<.240	<.0030	<.0210	<.0140	<.420	<.0020	<.0350	<.002	<.550	<.100	<.0210
09...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	ALDRIN, TOTAL (UG/L) (39330)	ENDOSULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC DISSOLVED (UG/L) (34253)	ALPHA BHC TOTAL (UG/L) (39337)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	ATRAZINE, WATER, DISS, REC (UG/L) (39632)
JUL												
16...	<.040	<.100	<.0020	<.030	<.100	<1.00	<.100	<.100	<.100	<.100	<.100	.036
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	<.040	<.100	<.0020	<.030	<.100	<1.00	<.100	<.100	<.100	<.100	<.100	.024
09...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	METHYL AZINPHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BENFLURALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BENTAZON, WATER, FLTRD, GF 0.7U REC (UG/L) (38711)	ENDOSULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXACHLORIDE TOTAL (UG/L) (39338)	BROMACIL, WATER, DISS, REC (UG/L) (04029)	BROMOXYNIL WATER, FLTRD, GF 0.7U REC (UG/L) (49311)	BUTYLATE, WATER, DISS, REC (UG/L) (04028)	CARBARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)	CARBARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBOFURAN, WATER, FLTRD, GF 0.7U REC (UG/L) (49309)	CARBOFURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)
JUL												
16...	<.0010	<.0020	<.0140	<.040	<.030	<.0350	<.0350	<.0020	<.0080	<.0030	<.120	<.0030
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	<.0010	<.0020	<.0140	<.040	<.030	<.0350	<.0350	<.0020	<.0080	E.0244	<.120	<.0030
09...	--	--	--	--	--	--	--	--	--	--	--	--

08180800 MEDINA RIVER NEAR SOMERSET, TX--Continued

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

DATE	CHLOR-AMBEN, WATER, FLTRD, GF 0.7U REC (UG/L) (49307)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLORO-THALO-NIL, WAT,FLT GF 0.7U REC (UG/L) (49306)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CLOPYR-ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DACTHAL MONO-ACID, WAT,FLT GF 0.7U REC (UG/L) (49304)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)
JUL												
16...	<.420	<.100	<.480	<.0040	<.100	<.0050	<.230	<.0040	<.0170	<.0020	E.0357	<.090
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	<.420	<.100	<.480	<.0040	<.100	<.0050	<.230	<.0040	<.0170	<.0020	E.0485	<.090
09...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	DICHLO-BENIL, WATER, FLTRD, GF 0.7U REC (UG/L) (49303)	DICHLOR PROP, WATER, FLTRD, GF 0.7U REC (UG/L) (49302)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)
JUL												
16...	<.002	<.0350	<1.20	<.0320	<.020	<.001	<.0350	<.0170	.140	<.600	<.200	<.060
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	<.002	<.0350	<1.20	<.0320	<.020	<.001	<.0350	<.0170	E.240	<.600	<.200	<.060
09...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FEN-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)	FLUO-METURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)	FONOFOS WATER DISS REC (UG/L) (04095)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	LINDANE DIS-SOLVED (UG/L) (39341)	LINURON WATER, FLTRD, GF 0.7U REC (UG/L) (38478)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)
JUL												
16...	<.0020	<.0040	<.0030	<.0130	<.0350	<.0030	<.030	<.800	<.030	<.004	<.0180	<.0020
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	<.0020	<.0040	<.0030	<.0130	<.0350	<.0030	<.030	<.800	<.030	<.004	<.0180	<.0020
09...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	MALA-THION, DIS-SOLVED (UG/L) (39532)	MCPA, WATER, FLTRD, GF 0.7U REC (UG/L) (38482)	MCPB, WATER, FLTRD, GF 0.7U REC (UG/L) (38487)	METHIO-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (38501)	METH-OMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49296)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	NEB-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49294)	NORFLUR AZON, WATER, FLTRD, GF 0.7U REC (UG/L) (49293)	ORY-ZALIN, WATER, FLTRD, GF 0.7U REC (UG/L) (49292)
JUL												
16...	<.005	<.170	<.140	<.0260	<.0170	.007	<.004	<.0040	<.0030	<.0150	<.0240	<.670
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	<.005	<.170	<.140	<.0260	<.270	.004	<.004	<.0040	<.0030	<.0150	<.0240	<.310
09...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	OXAMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (38866)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE DISSOLV (UG/L) (34653)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	PARA-THION, DIS-SOLVED (UG/L) (39542)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PIC-LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)
JUL											
16...	<.0180	<.100	<.0060	<.040	<.100	<.004	<.0060	<.0040	<.0040	<.0020	<.0500
16...	--	--	--	--	--	--	--	--	--	--	--
AUG											
19...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	<.0180	<.100	<.0060	<.040	<.100	<.004	<.0060	<.0040	<.0040	<.0020	<.0500
09...	--	--	--	--	--	--	--	--	--	--	--

08180800 MEDINA RIVER NEAR SOMERSET, TX--Continued

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

DATE	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PROP-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRO-PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PRO-POXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)
JUL											
16...	<.0180	<.0070	<.0040	<.0330	<.0350	<.0350	<.0030	<.0050	<.0100	<.0070	<.0130
16...	--	--	--	--	--	--	--	--	--	--	--
AUG											
19...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	<.0180	<.0070	<.0040	<.0130	<.0350	<.0350	<.0030	<.0050	<.0100	<.0070	<.0130
09...	--	--	--	--	--	--	--	--	--	--	--

DATE	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TOX-APHENE, TOTAL (UG/L) (39400)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS) (70950)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)
JUL											
16...	<.0020	<2.00	<.100	<.0010	<.250	<.0020	--	--	--	--	--
16...	--	--	--	--	--	--	4.00	<.100	450	44.8	43.0
AUG											
19...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	<.0020	<2.00	<.100	<.0010	<.250	<.0020	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--

DATE	THORIUM BOT MAT <63U WS FIELD (UG/G) (34980)	URANIUM BOT MAT <63U WS FIELD (UG/G) (35000)	ARSENIC BOT MAT <63U WS FIELD (UG/G) (34800)	CADMIUM BOT MAT <63U WS FIELD (UG/G) (34825)	SILVER BOT MAT <63U WS FIELD (UG/G) (34955)	ZINC BOT MAT <63U WS FIELD (UG/G) (35020)	YTTER-BIUM BOT MAT <63U WS FIELD (UG/G) (35015)	YTTRIUM BOT MAT <63U WS FIELD (UG/G) (35010)	VANA-DIUM BOT MAT <63U WS FIELD (UG/G) (35005)	TANTA-LUM BOT MAT <63U WS FIELD (UG/G) (34975)	STRON-TIUM BOT MAT <63U WS FIELD (UG/G) (34965)	TIN BOT MAT <63U WS FIELD (UG/G) (34985)
JUL												
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	7	<100	<10	<2	<2	53	1	15	57	<40	240	<5

DATE	SCAN-DIUM BOT MAT <63U WS FIELD (UG/G) (34945)	LEAD BOT MAT <63U WS FIELD (UG/G) (34890)	NICKEL BOT MAT <63U WS FIELD (UG/G) (34925)	NEODYM-IUM BOT MAT <63U WS FIELD (UG/G) (34920)	NIOBIUM BOT MAT <63U WS FIELD (UG/G) (34930)	MOLYB-DENUM BOT MAT <63U WS FIELD (UG/G) (34915)	MANGA-NESE BOT MAT <63U WS FIELD (UG/G) (34905)	LITHIUM BOT MAT <63U WS FIELD (UG/G) (34895)	LANTHA-NUM BOT MAT <63U WS FIELD (UG/G) (34885)	HOLMIUM BOT MAT <63U WS FIELD (UG/G) (34875)	GALLIUM BOT MAT <63U WS FIELD (UG/G) (34860)	EURO-PIUM BOT MAT <63U WS FIELD (UG/G) (34855)
JUL												
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	6	11	15	24	4	<2	320	30	27	<4	9	<2

DATE	COPPER BOT MAT <63U WS FIELD (UG/G) (34850)	CHRO-MIUM BOT MAT <63U WS FIELD (UG/G) (34840)	COBALT BOT MAT <63U WS FIELD (UG/G) (34845)	CERIUM BOT MAT <63U WS FIELD (UG/G) (34835)	BISMUTH BOT MAT <180UWS FIELD (UG/G) (34816)	BERYL-LIUM BOT MAT <63U WS FIELD (UG/G) (34810)	BARIUM BOT MAT <63U WS FIELD (UG/G) (34805)	GOLD BOT MAT <63U WS FIELD (UG/G) (34870)	TITA-NIUM, SED, BM WS,<63U DRY WGT REC PERCENT (49274)	PHOS-PHORUS BOT MAT <63U WS FIELD PERCENT (34935)	SODIUM BOT MAT <63U WS FIELD PERCENT (34960)	MAGNE-SIUM BOT MAT <63U WS FIELD PERCENT (34900)
JUL												
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	6	40	8	47	<10	1	240	<8	.24	.07	.30	.92

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

DATE	POTASSIUM BOT MAT <63U WS FIELD PERCENT (34940)	IRON BOT MAT <63U WS FIELD PERCENT (34880)	CALCIUM BOT MAT <63U WS FIELD PERCENT (34830)	ALUMINUM BOT MAT <63U WS FIELD PERCENT (34790)	CARBON, ORGANIC SED, BM WS,<2MM DW, REC (G/KG) (49271)	OCTCHLR BIPHENL SURROGT SED, BM WS,<2MM DW, REC PERCENT (49276)	BIPHENL 35DICHR SURROGT SED, BM WS,<2MM DW, REC PERCENT (49277)	ALDRIN, SED, BM WS,<2MM DW, REC (UG/KG) (49319)	CHLORONEB, SED, BM WS,<2MM DW, REC (UG/KG) (49322)	DCPA, SED, BM WS,<2MM DW, REC (UG/KG) (49324)	DIELDRIN, SED, BM WS,<2MM DW, REC (UG/KG) (49331)	ENDRIN, SED, BM WS,<2MM DW, REC (UG/KG) (49335)
JUL												
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	1.3	1.8	17	4.6	24	49	50	<1.0	<5.0	<5.0	<1.0	<2.0

DATE	HEPTACHLOR, SED, BM WS,<2MM DW, REC (UG/KG) (49341)	HEPTACHLOR EPOXIDE SED, BM WS,<2MM DW, REC (UG/KG) (49342)	BENZENE HEXACHLORO- SED, BM WS,<2MM DW, REC (UG/KG) (49343)	ISODRIN SED, BM WS,<2MM DW, REC (UG/KG) (49344)	LINDANE SED, BM WS,<2MM DW, REC (UG/KG) (49345)	MIREX, SED, BM WS,<2MM DW, REC (UG/KG) (49348)	OXYCHLORDANE, SED, BM WS,<2MM DW, REC (UG/KG) (49318)	PENTACHLOROANISOLE SED, BM WS,<2MM DW, REC (UG/KG) (49460)	PCB, SED, BM WS,<2MM DW, REC (UG/KG) (49459)	TOXAPHENE SED, BM WS,<2MM DW, REC (UG/KG) (49351)	ENDOSULFAN I, SED, BM WS,<2MM DW, REC (UG/KG) (49332)	ALPHABHC, SED, BM WS,<2MM DW, REC (UG/KG) (49338)
JUL												
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<50	<200	<1.0	<1.0

DATE	ALPHABHC, D6 SURROGT SED, BM WS,<2MM DW, REC PERCENT (49275)	BETABHC, SED, BM WS,<2MM DW, REC (UG/KG) (49339)	CIS-CHLORDANE, SED, BM WS,<2MM DW, REC (UG/KG) (49320)	CIS-NONACHLOR, SED, BM WS,<2MM DW, REC (UG/KG) (49316)	CIS-PERMETHRIN SED, BM WS,<2MM DW, REC (UG/KG) (49349)	O, P'-DDD, SED, BM WS,<2MM DW, REC (UG/KG) (49325)	O, P'-DDE, SED, BM WS,<2MM DW, REC (UG/KG) (49327)	O, P'-DDT, SED, BM WS,<2MM DW, REC (UG/KG) (49329)	METHOXYCHLOR, O,P'-, SED, BM WS,<2MM DW, REC (UG/KG) (49347)	P, P'-DDD, SED, BM WS,<2MM DW, REC (UG/KG) (49326)	P, P'-DDE, SED, BM WS,<2MM DW, REC (UG/KG) (49328)	P, P'-DDT, SED, BM WS,<2MM DW, REC (UG/KG) (49330)
JUL												
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	64	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<2.0	<5.0	<1.0	<1.0	<2.0

DATE	METHOXYCHLOR P,P'-, SED, BM WS,<2MM DW, REC (UG/KG) (49346)	TRANSCHLORDANE, SED, BM WS,<2MM DW, REC (UG/KG) (49321)	TRANSNONACHLOR, SED, BM WS,<2MM DW, REC (UG/KG) (49317)	TRANSPERMETHRIN SED, BM WS,<2MM DW, REC (UG/KG) (49350)	CARBON, ORG + INORG SED, BM WS,<2MM DW, REC (G/KG) (49272)	CARBON, INORG, SED, BM WS,<2MM DW, REC (G/KG) (49270)	BENZENE 124TRICHLORO- SED, BM WS,<2MM DW, REC (UG/KG) (49438)	BENZENE O-DICHLORO- SED, BM WS,<2MM DW, REC (UG/KG) (49439)	NAPTHALENE, 12 DIMETHL SED, BM WS,<2MM DW, REC (UG/KG) (49403)	BENZENE M-DICHLORO- SED, BM WS,<2MM DW, REC (UG/KG) (49441)	BENZENE P-DICHLORO- SED, BM WS,<2MM DW, REC (UG/KG) (49442)	NAPTHALENE, 16 DIMETHL SED, BM WS,<2MM DW, REC (UG/KG) (49404)
JUL												
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	<5.0	<1.0	<1.0	<5.0	69	45	<50	<50	<50	<50	<50	<50

DATE	9H-FLUORENE, 1METHYL SED, BM WS,<2MM DW, REC (UG/KG) (49398)	PHENANTHRENE 1METHYL SED, BM WS,<2MM DW, REC (UG/KG) (49410)	PYRENE, 1-METHYL, SED, BM WS,<2MM DW, REC (UG/KG) (49388)	2,2'-BIQUINOLINE, SED, BM WS,<2MM DW, REC (UG/KG) (49391)	NAPTHALENE,236 TRIMETH SED, BM WS,<2MM DW, REC (UG/KG) (49405)	TOLUENE 2,4-DINITRO- SED, BM WS,<2MM DW, REC (UG/KG) (49395)	NAPTHALENE, 26 DIMETHL SED, BM WS,<2MM DW, REC (UG/KG) (49406)	TOLUENE 2,6-DINITRO- SED, BM WS,<2MM DW, REC (UG/KG) (49396)	NAPTHALENE, 2-CHLORO- SED, BM WS,<2MM DW, REC (UG/KG) (49407)	PHENOL, 2CHLORO BED MAT WS <2MM DRY WGT REC (UG/KG) (49467)	NAPTHALENE, 2-ETHYL- SED BM WS <2MM DW REC (UG/KG) (49948)	BIPHENL 2FLUORO SURROGT SED, BM WS,<2MM DW, REC PERCENT (49279)
JUL												
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	<50	<50	<50	<50	<50	<50	E25	<50	<50	<50	<50	52

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

DATE	ANTHRACENE,2-METHYL- SED, BM WS,<2MM DW, REC (UG/KG) (49435)	3,5-XYLENOL SED, BM WS,<2MM DW, REC (UG/KG) (49421)	4-BROMOPHNPHNL ETHER SED, BM WS,<2MM DW, REC (UG/KG) (49454)	M-CRESOL, 4-CHLORO- SED, BM WS,<2MM DW, REC (UG/KG) (49422)	4CHLOROPHNPHNLETHER SED, BM WS,<2MM DW, REC (UG/KG) (49455)	4HCYPENPHENANTHRENE SED, BM WS,<2MM DW, REC (UG/KG) (49411)	ACENAPHTHENE SED, BM WS,<2MM DW, REC (UG/KG) (49429)	ACENAPHTHYLENE SED, BM WS,<2MM DW, REC (UG/KG) (49428)	ACRIDINE SED, BM WS,<2MM DW, REC (UG/KG) (49430)	ANTHRACENE SED, BM WS,<2MM DW, REC (UG/KG) (49434)	9,10-ANTHRAQUINONE SED, BM WS,<2MM DW, REC (UG/KG) (49437)	AZOBENZENE SED, BM WS,<2MM DW, REC (UG/KG) (49443)
JUL												
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50

DATE	BENZ(A)ANTHRACENE SED, BM WS,<2MM DW, REC (UG/KG) (49436)	BENZO(A)PYRENE SED, BM WS,<2MM DW, REC (UG/KG) (49389)	BENZOBFLUORANTHENE SED, BM WS,<2MM DW, REC (UG/KG) (49458)	BENZOCINNOLINE BED MAT WS <2MM DRY WGT REC (UG/KG) (49468)	BENZO(GHI)PERYLENE SED, BM WS,<2MM DW, REC (UG/KG) (49408)	BENZO K FLUORANTHENE SED, BM WS,<2MM DW, REC (UG/KG) (49397)	PHTHALATE,BIS2ETHHEXL SED, BM WS,<2MM DW, REC (UG/KG) (49426)	PHTHALATEBUTYLBENZYL- SED, BM WS,<2MM DW, REC (UG/KG) (49427)	PHENOL C8-ALKYL- SED, BM WS,<2MM DW, REC (UG/KG) (49424)	CARBAZOLE SED, BM WS,<2MM DW, REC (UG/KG) (49449)	CHRYSENE SED, BM WS,<2MM DW, REC (UG/KG) (49450)	PHTHALATE, DIBUTYL SED, BM WS,<2MM DW, REC (UG/KG) (49381)
JUL												
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	<50	<50	<50	<50	<50	<50	E22	<50	<50	<50	<50	E25

DATE	PHTHALATE, DIOCTYL SED, BM WS,<2MM DW, REC (UG/KG) (49382)	DIBENZ(AH),ANTHRACEN SED, BM WS,<2MM DW, REC (UG/KG) (49461)	THIOPHENE,DI-BENZO- SED, BM WS,<2MM DW, REC (UG/KG) (49452)	PHTHALATE, DIETHYL SED, BM WS,<2MM DW, REC (UG/KG) (49383)	PHTHALATE,DIMETHYL SED, BM WS,<2MM DW, REC (UG/KG) (49384)	FLUORANTHENE BED MAT WS <2MM DRY WGT REC (UG/KG) (49466)	9H-FLUORENE SED, BM WS,<2MM DW, REC (UG/KG) (49399)	INDENO123-CD PYRENE SED, BM WS,<2MM DW, REC (UG/KG) (49390)	ISOPHORONE SED, BM WS,<2MM DW, REC (UG/KG) (49400)	ISOQUINOLINE, SED, BM WS,<2MM DW, REC (UG/KG) (49394)	DPROPYLAMINE,NNITROSO SED, BM WS,<2MM DW, REC (UG/KG) (49431)	DIPHNYLAMINE,NNITROSO SED, BM WS,<2MM DW, REC (UG/KG) (49433)
JUL												
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	<50	<50	<50	<50	<50	E9	<50	<50	<50	<50	<50	<50

DATE	NAPHTHALENE, SED, BM WS,<2MM DW, REC (UG/KG) (49402)	BENZENENITRO- SED, BM WS,<2MM DW, REC (UG/KG) (49444)	BENZENENITROD5SURROGT SED, BM WS,<2MM DW, REC PERCENT (49280)	BENZENEPNTCHLRNITRO- SED, BM WS,<2MM DW, REC (UG/KG) (49446)	PHENANTHRENE SED, BM WS,<2MM DW, REC (UG/KG) (49409)	PHENANTHRIDINE SED, BM WS,<2MM DW, REC (UG/KG) (49393)	PHENOL SED, BM WS,<2MM DW, REC (UG/KG) (49413)	PYRENE, SED, BM WS,<2MM DW, REC (UG/KG) (49387)	QUINOLINE, SED, BM WS,<2MM DW, REC (UG/KG) (49392)	TERPHENYL D14-SURROGT SED, BM WS,<2MM DW, REC PERCENT (49278)	METHANE2CHLOROETHOXY SED, BM WS,<2MM DW, REC (UG/KG) (49401)	P-CRESOL SED, BM WS,<2MM DW, REC (UG/KG) (49451)
JUL												
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	<50	<50	53	<50	<50	<50	<50	<50	<50	63	<50	E30

08181400 HELOTES CREEK AT HELOTES, TX

LOCATION.--Lat 29°34'42", long 98°41'29", Bexar County, Hydrologic Unit 12100302, 42 ft to left and 44 ft downstream from centerline of bridge on State Highway 16, 0.1 mi northwest of Helotes, and 8.6 mi upstream from mouth.

DRAINAGE AREA.--15.0 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jun 1968 to current year.

REVISED RECORDS.--WRD TX-73-1: 1972(M).

GAGE.--Water-stage recorder. Datum of gage is 1,014.82 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation. An undetermined amount of flow is diverted for domestic use above station, and some streamflow enters the Edwards and associated limestones through the Balcones Fault Zone in the vicinity of the gage.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1923, 13.7 ft in 1927, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 140 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 16	0415	944	4.38	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	.00	.59	5.9	2.7	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.21	4.0	2.3	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.01	2.8	1.8	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	2.2	1.5	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	1.6	1.3	.00	.00	.00	.00	.00
6	.00	.00	.00	.08	.00	1.0	1.2	.00	.00	.00	.02	.00
7	.01	.00	.00	.00	.00	.80	1.0	.00	.00	.00	.00	.00
8	.02	.00	.00	.00	.00	.56	.78	.00	.00	.00	.00	.00
9	.01	.01	.00	.00	.00	.33	.67	.00	.00	.00	.00	.00
10	.07	.00	.00	.00	.00	.21	.53	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.14	.40	.00	.06	.00	.00	.00
12	.00	.01	.00	.00	.00	.13	.33	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.32	.26	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.01	1.6	.16	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	2.8	.11	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.01	168	.04	.00	.00	.00	.02	.00
17	.00	.00	.00	.00	.02	94	.01	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.01	69	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.01	49	.00	.00	.00	.00	.00	.00
20	.00	.00	.11	.00	.01	34	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	4.2	26	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	5.5	21	.00	.00	.00	.00	1.1	.00
23	.00	.00	.00	.00	4.4	17	.00	.00	.00	.00	6.1	.00
24	.00	.00	.00	.00	3.2	14	.00	.00	.00	.00	3.0	.00
25	.00	.00	.00	.00	4.3	12	.00	.00	.00	.00	.39	.00
26	.00	.00	.00	.00	17	9.5	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	13	7.4	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	8.5	6.1	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	5.1	.00	.00	.11	.00	.00	.00
30	.00	.00	.00	.00	---	4.0	.00	.00	.00	.00	.00	.00
31	.00	---	.00	1.3	---	3.1	---	.00	---	.00	.02	---
TOTAL	0.11	0.02	0.11	1.38	60.98	563.59	15.09	0.00	0.17	0.00	10.65	0.00
MEAN	.004	.001	.004	.045	2.18	18.2	.50	.000	.006	.000	.34	.000
MAX	.07	.01	.11	1.3	17	168	2.7	.00	.11	.00	6.1	.00
MIN	.00	.00	.00	.00	.00	.13	.00	.00	.00	.00	.00	.00
AC-FT	.2	.04	.2	2.7	121	1120	30	.00	.3	.00	21	.00
CFSM	.00	.00	.00	.00	.15	1.21	.03	.00	.00	.00	.02	.00
IN.	.00	.00	.00	.00	.15	1.40	.04	.00	.00	.00	.03	.00

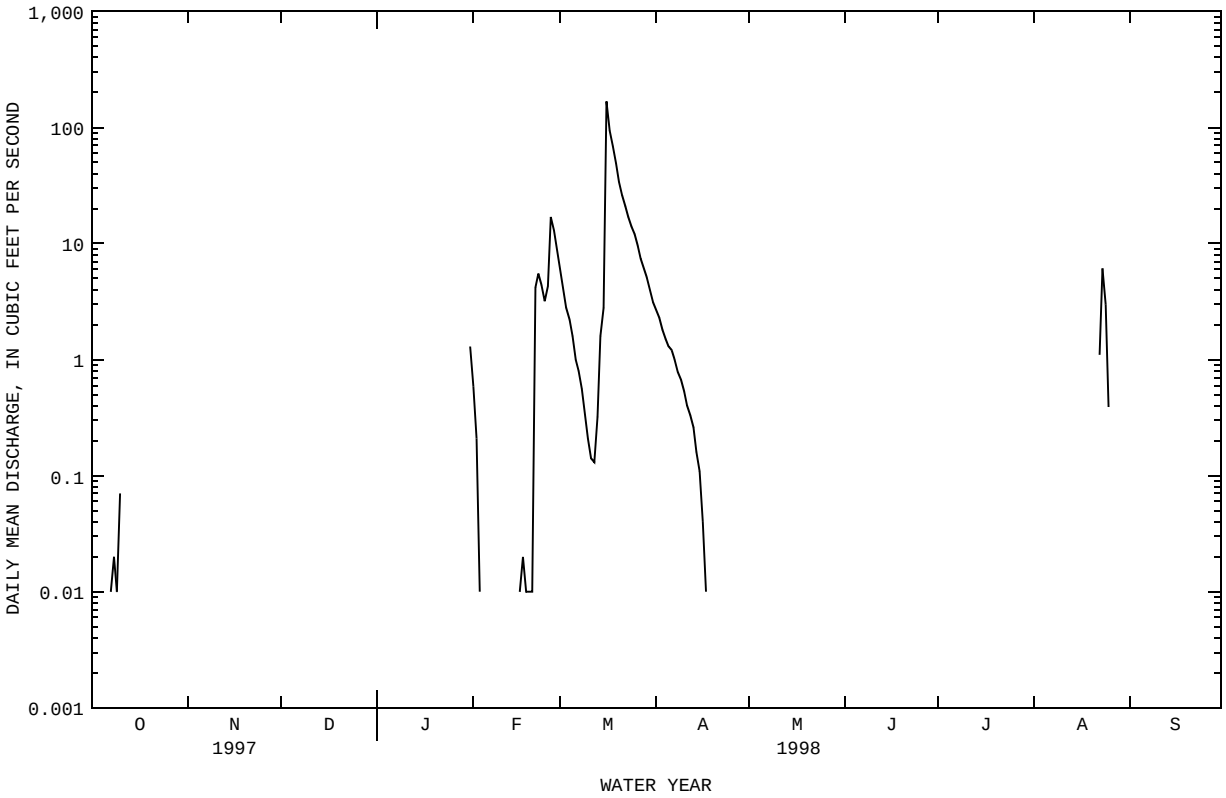
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1998, BY WATER YEAR (WY)

MEAN	4.52	1.94	3.98	1.90	3.76	3.90	3.38	7.38	16.0	4.03	.90	1.74
MAX	66.7	16.4	79.0	31.0	66.3	32.3	40.0	66.6	142	84.4	13.5	36.1
(WY)	1974	1977	1992	1992	1992	1985	1973	1992	1987	1973	1971	1973
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1979	1971	1971	1969	1971	1971	1983	1989	1980	1969	1968	1969

08181400 HELOTES CREEK AT HELOTES, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1968 - 1998	
ANNUAL TOTAL	2987.35		652.10			
ANNUAL MEAN	8.18		1.79		4.50	
HIGHEST ANNUAL MEAN					28.3	1992
LOWEST ANNUAL MEAN					.003	1984
HIGHEST DAILY MEAN	1020	Jun 22	168	Mar 16	1020	Jun 22 1997
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Jun 30 1968
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 11	.00	Jul 4 1968
INSTANTANEOUS PEAK FLOW			944	Mar 16	7680	Jul 16 1973
INSTANTANEOUS PEAK STAGE			4.38	Mar 16	a10.80	Jul 16 1973
ANNUAL RUNOFF (AC-FT)	5930		1290		3260	
ANNUAL RUNOFF (CFSM)	.55		.12		.30	
ANNUAL RUNOFF (INCHES)	7.41		1.62		4.07	
10 PERCENT EXCEEDS	9.5		1.5		6.6	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

a From floodmark.



08181400 HELOTES CREEK AT HELOTES, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: May 1969 to current year. Pesticide analyses: May 1969 to Jun 1981, Oct 1984 to current year. Sediment analyses: Oct 1968 to Sep 1973. Bacteria analyses: May 1969 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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
JAN											
06...	1315	20	92	8.5	16.5	9.3	95	33	--	26000	79000
06...	1445	.43	95	8.4	14.5	9.7	95	22	--	K3400	57000
AUG											
22...	1205	.13	64	7.6	25.0	7.6	94	<10	3.7	13000	K26000

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	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)
JAN											
06...	37	3	13	.82	1.0	.1	5	2.1	34	2.3	1.1
06...	38	--	14	.83	.97	.1	5	1.9	39	1.9	.79
AUG											
22...	34	--	12	.67	.57	.0	3	1.5	34	.72	.34

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, 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, 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)
JAN											
06...	57	66	106	.170	<.020	1.2	--	--	.37	.99	.179
06...	56	66	92	.149	.031	.87	.69	.24	.27	.73	.133
AUG											
22...	50	44	9	.091	<.020	.46	--	--	.18	.37	.058

DATE	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L) (00556)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)
JAN											
06...	.048	14	<.010	3	1	1	<10	<1	2	2	2
06...	.048	11	<.010	2	2	2	<10	<1	2	3	11
AUG											
22...	.026	6.4	<.010	<1	<1	1	<10	<1	<1	3	4

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ALDRIN, TOTAL (UG/L) (39330)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)
JAN											
06...	<.10	2	<1	<1	20	<.040	<.100	<.030	<.100	<1.00	<.100
06...	<.10	2	<1	<1	30	<.040	<.100	<.030	<.100	<1.00	<.100
AUG											
22...	<.10	<1	<1	<1	<10	<.040	<.100	<.030	<.100	<1.00	<.100

08181400 HELOTES CREEK AT HELOTES, TX--Continued

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

DATE	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)
JAN											
06...	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600
06...	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600
AUG											
22...	<.100	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600

DATE	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	ISODRIN SUR SCD 1608 WTR, UNFLTRD PERCENT (90570)	LINDANE TOTAL (UG/L) (39340)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	TOX-APHENE, TOTAL (UG/L) (39400)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
JAN											
06...	<.200	<.060	<.030	<.800	--	<.030	<.100	<.040	<.100	<2.00	<.100
06...	<.200	<.060	<.030	<.800	--	<.030	<.100	<.040	<.100	<2.00	<.100
AUG											
22...	<.200	<.060	<.030	<.800	45.0	<.030	<.100	<.040	<.100	<2.00	<.100

08181440 INGRAM ROAD OUTFALL AT LEON CREEK TRIB. AT SAN ANTONIO, TX

LOCATION.--Lat 29°26'25", long 98°39'26", Bexar County, Hydrologic Unit 12100302, 445 ft. south of the intersection of Ingram Rd. and Richland Hills Dr. on the east side of the northbound lane of Ingram Rd.

DRAINAGE AREA.-- 0.0218 mi^2.

PERIOD OF RECORD.-- Chemical and biochemical analyses: Dec 1993 to current year. Pesticide analyses: Dec 1993 to current year.

REMARKS.--Water-quality samples and associated discharge data were collected for selected storm events from storm sewer systems draining urban basins. This study is in cooperation with the city of San Antonio to fulfill requirements (by EPA) for the Texas Department of Transportation in applying for a National Pollution Discharge Elimination System (NPDES) storm-water discharge permit.

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

DATE	TIME	PRECIP-ITATION TOTAL INCHES/ STORM (82381)	ELAPSED TIME OF STORM (HOURS) (00135)	STORM WATER FLOW (MGD) (81395)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
JAN												
31-31	0546	1.4	9.7	1.8	--	65	8.1	8.2	18.0	--	5.5	--
31...	0555	--	--	--	--	--	--	--	--	14	--	K1600
FEB												
14-14	0720	.59	9.4	1.2	53	70	7.0	8.0	--	--	4.6	--
14...	0722	--	--	--	--	--	--	--	--	22	--	6800
JUN												
29...	1337	--	--	--	--	--	--	--	--	12	--	2800
JUN												
29-29	1348	2.1	3.2	4.6	265	65	7.4	8.4	28.0	--	5.1	--
AUG												
06...	0419	--	--	--	--	--	--	--	--	16	--	88000
AUG												
06-06	0511	1.1	3.8	2.4	168	61	7.1	8.0	25.5	--	5.3	--

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
JAN												
31-31	--	21	82	72	8.0	.24	1.5	13	.1	1.4	1.8	.89
31...	K2400	--	--	--	--	--	--	--	--	--	--	--
FEB												
14-14	--	23	38	45	8.8	.22	1.4	11	.1	1.6	2.7	.74
14...	6000	--	--	--	--	--	--	--	--	--	--	--
JUN												
29...	6700	--	--	--	--	--	--	--	--	--	--	--
JUN												
29-29	--	22	278	37	8.4	.32	1.3	11	.1	1.5	1.8	1.7
AUG												
06...	5400	--	--	--	--	--	--	--	--	--	--	--
AUG												
06-06	--	22	70	33	8.4	.30	.84	7	.1	1.1	1.6	.74

DATE	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)	ANTI-MONY UNFLTRD TOT REC EPA-CON TRACT (UG/L) (99897)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	CYANIDE UNFLTRD TOT REC EPA-CON-TRACT (MG/L) (99896)	CYANIDE TOTAL (MG/L AS CN) (00720)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)
JAN												
31-31	.33	.078	.075	--	<1	<10	<1	3	5	--	--	10
31...	--	--	--	<.010	--	--	--	--	--	<.020	<.010	--
FEB												
14-14	.53	.091	.037	--	1	<10	<1	3	4	--	--	7
14...	--	--	--	<.010	--	--	--	--	--	<.010	<.010	--
JUN												
29...	--	--	--	<.010	--	--	--	--	--	<.010	<.010	--
JUN												
29-29	1.9	.416	.079	--	3	<10	<1	7	14	--	--	20
AUG												
06...	--	--	--	<10.0	--	--	--	--	--	<10.0	<.010	--
AUG												
06-06	1.0	.229	.056	--	1	<10	<1	4	7	--	--	14

08181440 INGRAM ROAD OUTFALL AT LEON CREEK TRIB. AT SAN ANTONIO, TX--Continued

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

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER UNFLTRD TOT REC EPA-CON-TRACT (UG/L) (99895)	THAL-LIUM, TOTAL (UG/L AS TL) (01059)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L) (00556)	PHENOLS TOTAL (UG/L) (32730)	ACRO-LEIN TOTAL (UG/L) (34210)	ACRYLO-NITRILE TOTAL (UG/L) (34215)
JAN												
31-31	<.10	3	<1	<1	--	--	60	--	--	--	--	--
31...	--	--	--	--	<.001	<0	--	9.1	<1	<1	<20.0	<20.0
FEB												
14-14	<.10	2	<1	<1	--	--	60	--	--	--	--	--
14...	--	--	--	--	<.001	<0	--	8.2	2	<1	<80.0	<80.0
JUN												
29...	--	--	--	--	<.001	<0	--	--	--	--	--	--
JUN												
29-29	<.10	7	<1	<1	--	--	180	--	--	--	--	--
AUG												
06...	--	--	--	--	<1.00	<10	--	11	5	3	--	<100
AUG												
06-06	<.10	5	<1	<1	--	--	110	--	--	--	--	--

DATE	BENZENE TOTAL (UG/L) (34030)	BROMO-BENZENE WATER, WHOLE, TOTAL (UG/L) (81555)	METHANE BROMO CHLORO-WAT UNFLTRD REC (UG/L) (77297)	BROMO-FORM TOTAL (UG/L) (32104)	BENZENE N-BUTYL WATER UNFLTRD REC (UG/L) (77342)	BENZENE SEC BUTYL-WATER UNFLTRD REC (UG/L) (77350)	BENZENE TERT-BUTYL-WATER UNFLTRD REC (UG/L) (77353)	CARBON TETRA-CHLO-RIDE TOTAL (UG/L) (32102)	CHLORO-BENZENE TOTAL (UG/L) (34301)	CHLORO-DI-BROMO-METHANE TOTAL (UG/L) (32105)	CHLORO-ETHANE TOTAL (UG/L) (34311)	CHLORO-FORM TOTAL (UG/L) (32106)
JAN												
31-31	--	--	--	--	--	--	--	--	--	--	--	--
31...	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200
FEB												
14-14	--	--	--	--	--	--	--	--	--	--	--	--
14...	<.800	<.800	<.800	<.800	<.800	<.800	<.800	<.800	<.800	<.800	<.800	<.800
JUN												
29...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
29-29	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
06...	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00
AUG												
06-06	--	--	--	--	--	--	--	--	--	--	--	--

DATE	METHYL-CHLO-RIDE TOTAL (UG/L) (34418)	O-CHLORO-TOLUENE WATER WHOLE TOTAL (UG/L) (77275)	TOLUENE P-CHLOR WATER UNFLTRD REC (UG/L) (77277)	DIBROMO CHLORO-PROPANE WATER WHOLE TOT.REC (UG/L) (82625)	DI-BROMO-METHANE WATER WHOLE RECOVER (UG/L) (30217)	1,2-DIBROMO ETHANE WATER WHOLE TOTAL (UG/L) (77651)	BROMO-DI-CHLORO-METHANE TOTAL (UG/L) (32101)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L) (34501)	1,1-DI CHLORO-PRO-PENE, WAT, WH TOTAL (UG/L) (77168)	BENZENE O-DI-CHLORO-WATER UNFLTRD REC (UG/L) (34536)	BENZENE 1,3-DI-CHLORO-WATER UNFLTRD REC (UG/L) (34566)	BENZENE 1,4-DI-CHLORO-WATER UNFLTRD REC (UG/L) (34571)
JAN												
31-31	--	--	--	--	--	--	--	--	--	<.200	<.200	<.200
31...	<.200	<.200	<.200	<1.00	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200
FEB												
14-14	--	--	--	--	--	--	--	--	--	<.800	<.800	<.800
14...	<.800	<.800	<.800	<4.00	<.800	<.800	<.800	<.800	<.800	<.800	<.800	<.800
JUN												
29...	--	--	--	--	--	--	--	--	--	<5.00	<5.00	<5.00
JUN												
29-29	--	--	--	--	--	--	--	--	--	<5.00	<5.00	<5.00
AUG												
06...	<8.00	<8.00	<8.00	<40.0	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00
AUG												
06-06	--	--	--	--	--	--	--	--	--	<8.00	<8.00	<8.00

08181440 INGRAM ROAD OUTFALL AT LEON CREEK TRIB. AT SAN ANTONIO, TX--Continued

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

DATE	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L) (34668)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L) (34496)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L) (32103)	1,2-DI-PHENYL-HYDRA-ZINE WATER TOT.REC (UG/L) (82626)	CIS-1,2-DI-CHLORO-ETHENE WATER TOTAL (UG/L) (77093)	TRANS-1,2-DI-CHLORO-ETHENE TOTAL (UG/L) (34546)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L) (34541)	1,3-DI-CHLORO-PROPANE WAT. WH TOTAL (UG/L) (77173)	2,2-DI CHLORO-PRO-PANE WAT, WH TOTAL (UG/L) (77170)	CIS 1,3-DI-CHLORO-PROPENE TOTAL (UG/L) (34704)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L) (34699)	ETHYL-BENZENE TOTAL (UG/L) (34371)
JAN												
31-31	--	--	--	--	--	--	--	--	--	--	--	--
31...	<.200	<.200	<.200	--	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200
FEB												
14-14	--	--	--	<5.00	--	--	--	--	--	--	--	--
14...	<.800	<.800	<.800	--	<.800	<.800	<.800	<.800	<.800	<.800	<.800	<.800
JUN												
29...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
29-29	--	--	--	<5.00	--	--	--	--	--	--	--	--
AUG												
06...	<8.00	<8.00	<8.00	--	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00
AUG												
06-06	--	--	--	<5.00	--	--	--	--	--	--	--	--

DATE	HEXA-CHLORO-BUT-ADIENE TOTAL (UG/L) (39702)	ISO-PROPYL-BENZENE WATER WHOLE REC (UG/L) (77223)	P-ISO-PROPYL-TOLUENE WATER WHOLE REC (UG/L) (77356)	METHYL-BROMIDE TOTAL (UG/L) (34413)	METHYL ENE CHLO-RIDE TOTAL (UG/L) (34423)	METHYL TERT-BUTYL ETHER WAT UNF REC (UG/L) (78032)	NAPHTH-ALENE TOTAL (UG/L) (34696)	BENZENE N-PROPY WATER UNFLTRD REC (UG/L) (77224)	STYRENE TOTAL (UG/L) (77128)	ETHANE, 1112-TETRA-CHLORO-WAT UNF REC (UG/L) (77562)	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L) (34516)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L) (34475)
JAN												
31-31	<.200	--	--	--	--	--	<.200	--	--	--	--	--
31...	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200
FEB												
14-14	<.800	--	--	--	--	--	<.800	--	--	--	--	--
14...	<.800	<.800	<.800	<.800	<.800	<.800	<.800	<.800	<.800	<.800	<.800	<.800
JUN												
29...	<5.00	--	--	--	--	--	<5.00	--	--	--	--	--
JUN												
29-29	<5.00	--	--	--	--	--	<5.00	--	--	--	--	--
AUG												
06...	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00
AUG												
06-06	<8.00	--	--	--	--	--	<8.00	--	--	--	--	--

DATE	TOLUENE TOTAL (UG/L) (34010)	1,2,3-TRI-CHLORO BENZENE WAT, WH REC (UG/L) (77613)	BENZENE 1,2,4-TRI-CHLORO-WAT UNF REC (UG/L) (34551)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L) (34506)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L) (34511)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L) (39180)	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L) (34488)	123-TRI CHLORO-PROPANE WATER WHOLE TOTAL (UG/L) (77443)	FREON-113 WATER UNFLTRD REC (UG/L) (77652)	BENZENE 124-TRI METHYL UNFILT RECOVER (UG/L) (77222)	BENZENE 135-TRI METHYL WATER UNFLTRD REC (UG/L) (77226)	VINYL CHLO-RIDE TOTAL (UG/L) (39175)
JAN												
31-31	--	--	<.200	--	--	--	--	--	--	--	--	--
31...	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200	<.200
FEB												
14-14	--	--	<.800	--	--	--	--	--	--	--	--	--
14...	<.800	<.800	<.800	<.800	<.800	<.800	<.800	<.800	<.800	<.800	<.800	<.800
JUN												
29...	--	--	<5.00	--	--	--	--	--	--	--	--	--
JUN												
29-29	--	--	<5.00	--	--	--	--	--	--	--	--	--
AUG												
06...	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00
AUG												
06-06	--	--	<8.00	--	--	--	--	--	--	--	--	--

08181440 INGRAM ROAD OUTFALL AT LEON CREEK TRIB. AT SAN ANTONIO, TX--Continued

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

DATE	XYLENE WATER UNFLTRD REC (UG/L) (81551)	ACE-NAPHTH-ENE TOTAL (UG/L) (34205)	ACE-NAPHTH-YLENE TOTAL (UG/L) (34200)	ANTHRA-CENE TOTAL (UG/L) (34220)	BENZI-DINE TOTAL (UG/L) (39120)	BENZ(A) ANTHRA-CENE WATER UNFLTRD REC (UG/L) (34526)	BENZO-A-PYRENE TOTAL (UG/L) (34247)	BENZO B FLUOR-AN-THENE TOTAL (UG/L) (34230)	BENZO K FLUOR-AN-THENE TOTAL (UG/L) (34242)	BENZO-[GHI]-PERY-LENE TOTAL (UG/L) (34521)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L) (34636)	N-BUTYL BENZYL PHTHAL-ATE TOTAL (UG/L) (34292)
JAN												
31-31	--	--	--	--	--	--	--	--	--	--	--	--
31...	<.200	--	--	--	--	--	--	--	--	--	--	--
FEB												
14-14	--	<5.00	<5.00	<5.00	<40.0	<10.0	<10.0	<10.0	<10.0	<10.0	<5.00	<5.00
14...	<.800	--	--	--	--	--	--	--	--	--	--	--
JUN												
29...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
29-29	--	<5.00	<5.00	<5.00	<40.0	E.298	E.398	E.794	E.258	E.341	<5.00	<5.00
AUG												
06...	<8.00	--	--	--	--	--	--	--	--	--	--	--
AUG												
06-06	--	E.032	<5.00	E.127	<40.0	E.855	E1.07	E1.60	E.600	E.807	<5.00	<5.00

DATE	BIS(2-CHLORO-ETHOXY) METHANE TOTAL (UG/L) (34278)	BIS(2-CHLORO-ETHYL) ETHER UNFLTRD RECOVER (UG/L) (34273)	BIS(2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L) (34283)	PARA-CHLORO-META CRESOL TOTAL (UG/L) (34452)	2-CHLORO-NAPH-THALENE TOTAL (UG/L) (34581)	2-CHLORO-PHENOL TOTAL (UG/L) (34586)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L) (34641)	CHRY-SENE TOTAL (UG/L) (34320)	1,2,5,6-DIBENZ-ANTHRA-CENE TOTAL (UG/L) (34556)	3,3'-DI-CHLORO-BENZI-DINE TOTAL (UG/L) (34631)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L) (34601)
JAN											
31-31	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
FEB											
14-14	<5.00	<5.00	<5.00	<30.0	<5.00	<5.00	<5.00	<10.0	<10.0	<20.0	<5.00
14...	--	--	--	--	--	--	--	--	--	--	--
JUN											
29...	--	--	--	--	--	--	--	--	--	--	--
JUN											
29-29	<5.00	<5.00	<5.00	<30.0	<5.00	<5.00	<5.00	E.703	<10.0	<20.0	<5.00
AUG											
06...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06-06	<5.00	<5.00	<5.00	<30.0	<5.00	<5.00	<5.00	E1.20	<10.0	<20.0	<5.00

DATE	DIETHYL PHTHAL-ATE TOTAL (UG/L) (34336)	DI-METHYL PHTHAL-ATE TOTAL (UG/L) (34341)	2,4-DI-METHYL-PHENOL TOTAL (UG/L) (34606)	DI-N-BUTYL PHTHAL-ATE TOTAL (UG/L) (39110)	4,6-DINITRO-ORTHO-CRESOL TOTAL (UG/L) (34657)	2,4,-DI-NITRO-PHENOL TOTAL (UG/L) (34616)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L) (34611)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L) (34626)	DI-N-OCTYL PHTHAL-ATE TOTAL (UG/L) (34596)	BIS(2-ETHYL HEXYL) PHTHAL-ATE TOTAL (UG/L) (39100)	FLUOR-ANTHENE TOTAL (UG/L) (34376)
JAN											
31-31	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
FEB											
14-14	<5.00	<5.00	<5.00	<5.00	<30.0	<20.0	<5.00	<5.00	<10.0	E2.11	E.215
14...	--	--	--	--	--	--	--	--	--	--	--
JUN											
29...	--	--	--	--	--	--	--	--	--	--	--
JUN											
29-29	<5.00	<5.00	<5.00	<5.00	<30.0	<20.0	<5.00	<5.00	<10.0	E1.77	E1.12
AUG											
06...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06-06	<5.00	<5.00	<5.00	<5.00	<30.0	<20.0	<5.00	<5.00	<10.0	<5.00	E2.48

08181440 INGRAM ROAD OUTFALL AT LEON CREEK TRIB. AT SAN ANTONIO, TX--Continued

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

DATE	FLUOR-ENE TOTAL (UG/L) (34381)	HEXA-CHLORO-BENZENE TOTAL (UG/L) (39700)	CYCLOPENTADIEN HEXA-CHLORO-UNFLTRD RECOVER (UG/L) (34386)	ETHANE HEXA-CHLORO-WATER UNFLTRD RECOVER (UG/L) (34396)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L) (34403)	ISO-PHORONE TOTAL (UG/L) (34408)	BENZENE NITRO-WATER UNFLTRD RECOVER (UG/L) (34447)	N-NITRO-SODI-METHYL-AMINE TOTAL (UG/L) (34438)	2-NITRO-PHENOL TOTAL (UG/L) (34591)	4-NITRO-PHENOL TOTAL (UG/L) (34646)	N-NITRO-SODI-N-PROPYL-AMINE TOTAL (UG/L) (34428)
JAN											
31-31	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
FEB											
14-14	<5.00	<5.00	<20.0	<5.00	<10.0	<5.00	<5.00	<5.00	<5.00	E5.33	<5.00
14...	--	--	--	--	--	--	--	--	--	--	--
JUN											
29...	--	--	--	--	--	--	--	--	--	--	--
JUN											
29-29	E.055	<5.00	<20.0	<5.00	E.324	<5.00	<5.00	<5.00	<5.00	<30.0	<5.00
AUG											
06...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06-06	E.060	<5.00	<20.0	<5.00	E.700	<5.00	<5.00	<5.00	<5.00	E2.65	<5.00

DATE	N-NITRO-SODI-PHENYL-AMINE TOTAL (UG/L) (34433)	PENTA-CHLORO-PHENOL TOTAL (UG/L) (39032)	PHENAN-THRENE TOTAL (UG/L) (34461)	PHENOL (C6H-5OH) TOTAL (UG/L) (34694)	PYRENE TOTAL (UG/L) (34469)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L) (34621)	ALDRIN, TOTAL (UG/L) (39330)	P,P' DDT, TOTAL (UG/L) (39300)	ALPHA BHC TOTAL (UG/L) (39337)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)
JAN											
31-31	--	--	--	--	--	--	<.040	<.100	<.030	<.030	<.090
31...	--	--	--	--	--	--	--	--	--	--	--
FEB											
14-14	<5.00	<30.0	E.143	<5.00	E.197	<20.0	<.040	<.100	<.030	<.030	<.090
14...	--	--	--	--	--	--	--	--	--	--	--
JUN											
29...	--	--	--	--	--	--	--	--	--	--	--
JUN											
29-29	<5.00	<30.0	E.638	<5.00	E.921	<20.0	<.040	<.100	<.030	<.030	<.090
AUG											
06...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06-06	<5.00	<30.0	E1.06	<5.00	E1.94	<20.0	<.040	<.100	<.030	<.030	<.090

DATE	LINDANE TOTAL (UG/L) (39340)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ENDO-SULFAN II TOTAL (UG/L) (34356)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)
JAN											
31-31	<.030	<.100	<.100	<.100	<.100	<.040	<.020	<.100	<.040	<.600	<.060
31...	--	--	--	--	--	--	--	--	--	--	--
FEB											
14-14	<.030	<.100	<.100	<.100	<.100	<.040	<.020	<.100	<.040	<.600	<.060
14...	--	--	--	--	--	--	--	--	--	--	--
JUN											
29...	--	--	--	--	--	--	--	--	--	--	--
JUN											
29-29	<.030	<.100	<.100	<.100	<.100	<.040	<.020	<.100	<.040	<.600	<.060
AUG											
06...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06-06	<.030	<.100	<.100	<.100	<.100	<.040	<.020	<.100	<.040	<.600	<.060

08181440 INGRAM ROAD OUTFALL AT LEON CREEK TRIB. AT SAN ANTONIO, TX--Continued

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

DATE	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	TOX-APHENE, TOTAL (UG/L) (39400)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)
JAN											
31-31	<.200	<.030	<.800	<2.00	<.100	<1.00	<.100	<.100	<.100	<.100	<.100
31...	--	--	--	--	--	--	--	--	--	--	--
FEB											
14-14	<.200	<.030	<.800	<2.00	<.100	<1.00	<.100	<.100	<.100	<.100	<.100
14...	--	--	--	--	--	--	--	--	--	--	--
JUN											
29...	--	--	--	--	--	--	--	--	--	--	--
JUN											
29-29	<.200	<.030	<.800	<2.00	<.100	<1.00	<.100	<.100	<.100	<.100	<.100
AUG											
06...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06-06	<.200	<.030	<.800	<2.00	<.100	<1.00	<.100	<.100	<.100	<.100	<.100

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX

LOCATION.--Lat 29°19'47", long 98°35'02", Bexar County, Hydrologic Unit 12100302, on left bank between bridges on Interstate Highway 35 in San Antonio, 1.7 mi northeast of the intersection of Interstate Highway 35 and Loop 410, and 11.8 mi upstream from mouth.

DRAINAGE AREA.--219 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1984 to current year.

GAGE.--Water-stage recorder. Datum of gage is 573.49 ft above sea level. Satellite telemeter at station.

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

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	1.5	3.0	3.8	45	14	8.3	5.3	4.3	4.5	3.7	14
2	1.8	1.8	2.9	3.4	16	12	8.1	4.8	4.1	2.9	3.7	8.4
3	2.3	1.7	3.8	3.3	9.5	12	7.7	4.5	4.0	2.9	3.3	7.6
4	2.0	1.8	3.8	3.3	7.4	11	7.3	4.6	4.3	10	3.1	7.3
5	1.1	1.9	3.7	3.3	7.3	11	7.6	5.1	4.6	4.8	3.6	6.8
6	5.5	2.3	3.5	142	6.9	9.7	7.4	5.0	4.6	2.7	9.1	6.4
7	3.7	2.2	4.3	65	6.1	10	7.4	5.1	4.4	3.0	20	6.1
8	21	2.7	5.0	24	5.8	9.9	7.3	4.8	4.6	2.6	6.2	5.8
9	9.0	3.3	4.6	12	5.8	8.9	6.9	4.9	4.9	2.5	4.5	6.2
10	54	13	4.0	9.0	9.8	8.7	6.7	4.5	4.8	2.7	4.1	6.0
11	30	7.1	3.4	7.6	6.3	8.9	6.6	4.1	12	2.8	4.2	15
12	8.6	33	3.2	6.4	7.8	8.8	6.2	4.2	3.6	2.7	4.8	11
13	54	24	3.1	5.6	8.1	12	6.3	4.9	2.9	2.6	7.1	14
14	12	9.2	2.9	5.4	32	35	6.3	4.9	2.3	3.0	48	7.5
15	4.7	5.7	3.6	4.5	14	24	6.2	5.1	2.6	3.2	22	9.3
16	3.1	4.5	4.0	4.0	48	717	6.0	4.9	2.1	3.2	37	26
17	2.4	3.9	4.2	4.1	16	573	6.1	5.2	2.3	3.0	21	21
18	2.4	3.9	4.4	4.4	11	107	6.9	4.4	2.3	3.2	26	9.9
19	2.0	3.8	4.1	3.7	10	56	5.9	4.2	2.1	3.2	10	7.7
20	1.9	3.9	79	3.8	254	31	5.9	4.3	2.3	2.9	9.0	6.4
21	1.8	4.3	42	4.2	107	20	5.5	4.4	2.1	3.0	9.6	6.0
22	1.5	3.2	8.4	3.8	107	15	5.6	4.4	1.9	3.3	349	6.0
23	1.6	3.1	5.9	3.6	37	14	5.2	4.4	1.9	3.3	1190	5.8
24	1.6	3.7	3.7	3.4	18	12	5.6	4.5	2.1	3.3	214	5.7
25	1.6	3.7	2.9	3.9	15	11	5.3	4.5	2.5	3.3	57	5.5
26	1.0	3.5	15	3.3	117	11	5.3	4.1	2.4	3.3	28	5.4
27	.66	4.1	8.2	3.2	52	10	5.2	9.3	2.4	3.2	17	4.8
28	1.4	3.3	5.0	3.6	22	9.4	5.1	5.5	2.2	3.3	13	4.7
29	1.8	2.6	4.0	3.7	---	9.4	5.1	4.9	3.5	3.2	11	5.1
30	1.8	3.1	3.9	3.7	---	8.7	5.2	4.5	4.9	3.4	9.5	5.1
31	1.6	---	3.5	144	---	8.5	---	4.3	---	3.4	9.5	---
TOTAL	239.76	165.8	253.0	499.0	1001.8	1808.9	190.2	149.6	105.0	104.4	2158.0	256.5
MEAN	7.73	5.53	8.16	16.1	35.8	58.4	6.34	4.83	3.50	3.37	69.6	8.55
MAX	54	33	79	144	254	717	8.3	9.3	12	10	1190	26
MIN	.66	1.5	2.9	3.2	5.8	8.5	5.1	4.1	1.9	2.5	3.1	4.7
AC-FT	476	329	502	990	1990	3590	377	297	208	207	4280	509

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 1998, BY WATER YEAR (WY)

MEAN	22.7	10.9	51.2	20.0	41.5	31.1	21.8	69.2	152	21.3	12.7	14.2
MAX	92.0	37.9	575	116	355	192	82.6	356	824	144	69.6	38.3
(WY)	1995	1993	1992	1992	1992	1992	1991	1992	1987	1990	1998	1988
MIN	2.80	3.95	4.62	3.76	5.93	5.11	3.69	2.14	2.72	2.56	1.94	1.97
(WY)	1997	1992	1990	1997	1989	1996	1995	1996	1996	1989	1989	1989

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1985 - 1998	
ANNUAL TOTAL	18560.59		6931.96			
ANNUAL MEAN	50.9		19.0		38.9	
HIGHEST ANNUAL MEAN					156	1992
LOWEST ANNUAL MEAN					6.22	1996
HIGHEST DAILY MEAN	7860	Jun 22	1190	Aug 23	7860	Jun 22 1997
LOWEST DAILY MEAN	.52	Sep 15	.66	Oct 27	.52	Sep 15 1997
ANNUAL SEVEN-DAY MINIMUM	1.1	Sep 13	1.3	Oct 22	.78	Aug 1 1996
INSTANTANEOUS PEAK FLOW			2510	Aug 23	27900	Jun 22 1997
INSTANTANEOUS PEAK STAGE			11.67	Aug 23	24.60	Jun 22 1997
ANNUAL RUNOFF (AC-FT)	36810		13750		28200	
10 PERCENT EXCEEDS	37		23		37	
50 PERCENT EXCEEDS	4.2		4.9		7.7	
90 PERCENT EXCEEDS	1.8		2.4		3.0	

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Jul 1984 to current year. Pesticide analyses: Aug. 1995 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Sep 1984 to current year.
PH: Apr 1989 to current year.
WATER TEMPERATURE: Sep 1984 to current year.
DISSOLVED OXYGEN: Apr 1989 to current year.

INSTRUMENTATION.--Since Sep 1984, a 2-parameter water-quality monitor continuously measured specific conductance and water temperature at this station. Since Apr 1989, a 4-parameter water-quality monitor has continuously measured specific conductance, temperature, pH, and dissolved oxygen.

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 ofice upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,260 microsiemens, Nov 19, 1988, Jun 29, 1995; minimum, 39 microsiemens, Jan 18, 1991.
PH: Maximum, 8.5 units, Mar 29, 1990; minimum, 6.7 units, Jun 30, 1991.
WATER TEMPERATURE: Maximum, 32.5°C, Jul 16, 17, 1989; minimum, 4.0°C, Dec 24, 1989.
DISSOLVED OXYGEN: Maximum, 19.8 mg/L, Oct 13, 14, 1989; minimum, 1.2 mg/L, on several days in water years 1990, 1993, 1996, and 1997.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 829 microsiemens, Apr 9, 12; minimum, 92 microsiemens, Aug 22.
PH: Maximum, 8.2 units, Mar 8; minimum, 7.2 units, May 28-29, Aug 20.
WATER TEMPERATURE: Maximum, 32.0°C, Jul 12; minimum, 9.2°C, Dec 14.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L, Jan 24; minimum, 1.5 mg/L, May 30.

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)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV (MG/L AS CACO3 (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)
OCT 10-10	1236	119	330	26	4.0	120	17	41	5.2	16	.6

DATE	SODIUM PERCENT (00932)	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)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CYANIDE TOTAL (MG/L AS CN) (00720)
OCT 10-10	21	3.0	110	24	20	190	185	150	9.6	<.010

DATE	PHENOLS TOTAL (UG/L) (32730)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L) (00556)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)
OCT 10-10	<1	<1	2	<10	2	14	9	12	<.10	6

DATE	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ALDRIN, TOTAL (UG/L) (39330)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)
OCT 10-10	<1	<1	<10	<.040	<.100	<.030	<.100	<1.00	<.100	<.100

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, TX--Continued

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

DATE	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)
OCT 10-10	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600

DATE	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	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)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	TOX-APHENE, TOTAL (UG/L) (39400)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT 10-10	<.200	<.060	<.030	<.800	<.030	<.100	<.040	<.100	<2.00	<.100

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	713	705	709	791	760	772	803	794	798	676	623	644
2	715	705	711	760	738	748	814	792	798	741	676	713
3	718	707	713	746	731	739	824	814	820	767	741	758
4	721	711	715	741	727	731	817	791	801	768	759	763
5	766	720	733	777	741	759	791	763	776	776	765	772
6	789	766	776	776	744	759	811	773	793	776	168	582
7	766	682	725	747	739	742	810	775	795	679	198	483
8	682	309	467	760	741	748	775	759	765	638	445	498
9	531	312	383	795	545	777	819	772	805	518	458	486
10	594	162	459	786	589	686	801	742	781	532	518	524
11	366	283	317	639	451	607	742	727	732	609	522	557
12	347	271	306	705	246	452	768	738	751	662	609	640
13	496	150	368	568	340	458	814	768	788	692	662	680
14	349	310	324	467	375	447	819	798	811	706	689	697
15	446	349	403	508	467	481	798	781	788	758	706	735
16	510	446	482	575	508	545	814	786	807	758	730	746
17	560	510	529	624	575	606	824	805	812	733	716	725
18	597	560	584	652	624	638	825	803	818	729	715	722
19	638	597	619	650	626	643	818	802	805	752	729	744
20	660	638	649	668	624	648	827	138	558	754	744	749
21	689	660	674	718	650	681	387	140	338	751	734	744
22	716	689	701	742	710	728	485	382	419	771	743	761
23	723	715	721	748	710	726	677	485	599	759	748	755
24	721	698	707	764	745	756	690	650	661	762	742	753
25	698	687	690	776	733	754	733	690	717	779	749	765
26	700	689	693	793	776	789	759	476	708	760	748	755
27	711	699	706	791	777	785	668	393	551	777	748	762
28	730	708	713	795	776	783	689	668	682	776	750	765
29	799	730	768	807	795	802	691	672	686	769	752	759
30	783	734	751	807	801	803	672	628	657	778	753	770
31	804	767	793	---	---	---	637	591	612	787	169	556
MONTH	804	150	609	807	246	686	827	138	717	787	168	689

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, 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	624	232	520	606	527	557	758	751	755	778	768	773
2	483	423	442	651	606	638	782	757	772	792	774	779
3	514	451	495	649	605	622	784	769	777	804	792	800
4	570	509	530	656	621	640	772	764	769	802	791	797
5	630	570	612	704	655	685	769	764	766	792	774	783
6	639	609	623	738	704	722	796	766	779	775	746	760
7	665	611	637	741	714	727	821	796	811	748	740	744
8	713	665	694	744	727	735	810	791	800	742	738	741
9	722	700	710	770	729	745	829	795	819	754	739	743
10	721	695	712	770	742	757	823	789	801	765	754	761
11	716	545	622	768	737	753	818	785	803	766	750	758
12	726	525	598	770	747	759	829	815	823	752	738	744
13	733	691	712	803	760	770	822	788	802	741	731	736
14	717	288	592	802	493	637	791	776	785	733	726	730
15	661	475	597	650	475	589	785	779	783	732	727	729
16	661	218	500	591	154	301	796	784	788	740	729	734
17	595	503	547	308	200	245	818	796	811	762	740	749
18	554	497	511	409	308	363	818	789	801	805	762	776
19	685	554	635	490	407	449	797	789	792	806	777	787
20	698	685	694	555	490	522	796	748	767	779	761	770
21	705	156	617	609	555	582	756	716	733	771	762	766
22	463	148	357	642	609	632	799	756	779	768	751	761
23	417	336	375	681	642	660	798	773	787	757	746	753
24	541	417	476	707	681	697	789	772	776	754	743	750
25	632	541	591	715	700	707	805	789	794	769	751	760
26	627	191	323	718	709	713	825	805	815	772	764	769
27	550	409	470	722	714	717	824	795	812	766	723	740
28	527	424	480	756	722	737	795	783	787	726	563	642
29	---	---	---	756	735	744	786	770	777	651	564	605
30	---	---	---	747	735	743	775	765	770	654	623	638
31	---	---	---	758	743	751	---	---	---	663	628	640
MONTH	733	148	560	803	154	642	829	716	788	806	563	743

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	720	663	691	695	510	577	723	709	718	729	646	682
2	746	720	735	567	547	558	721	706	716	695	645	665
3	750	729	742	596	567	574	716	701	711	705	667	693
4	739	718	731	632	207	578	724	703	713	667	642	657
5	725	717	722	491	271	379	735	724	730	643	632	639
6	726	714	721	386	268	311	728	689	705	693	632	669
7	738	726	735	529	386	449	719	259	463	710	672	687
8	756	738	745	615	529	575	329	248	283	734	710	724
9	777	755	764	619	591	606	433	329	372	738	715	726
10	768	742	756	598	592	594	504	433	469	716	705	712
11	755	614	722	618	598	605	560	504	537	734	685	709
12	614	382	475	644	618	632	615	560	588	685	359	466
13	645	393	536	661	644	652	643	403	617	589	372	529
14	673	644	665	670	661	667	665	180	552	611	450	516
15	670	619	652	675	661	666	321	273	286	671	594	649
16	695	647	662	699	675	689	327	132	269	631	309	549
17	740	695	721	700	682	694	472	136	298	593	235	376
18	747	732	741	692	680	687	473	254	331	617	585	599
19	741	698	726	690	678	685	371	297	332	603	583	593
20	708	687	703	684	668	678	441	340	380	604	579	592
21	712	685	702	677	665	672	547	441	502	606	602	604
22	711	693	703	682	671	676	543	92	335	615	606	609
23	715	704	712	689	681	686	227	156	181	635	615	626
24	717	702	711	692	681	687	341	202	270	688	634	659
25	708	690	701	691	682	687	440	341	394	748	688	727
26	727	662	712	698	690	695	523	440	481	746	727	735
27	760	727	744	706	694	700	584	523	549	728	721	726
28	764	751	759	722	706	714	614	584	600	722	710	715
29	755	687	746	734	721	729	656	614	632	726	712	719
30	728	565	693	739	718	731	657	643	648	728	724	726
31	---	---	---	730	712	721	729	657	674	---	---	---
MONTH	777	382	704	739	207	631	735	92	495	748	235	643
YEAR	829	92	659									

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, 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	7.8	7.5	7.7	7.7	7.6	7.6	7.6	7.6	7.6	7.7	7.5	7.6
2	7.7	7.5	7.6	7.7	7.6	7.6	7.6	7.6	7.6	7.7	7.5	7.6
3	7.8	7.5	7.6	7.7	7.6	7.6	7.7	7.6	7.6	7.8	7.6	7.7
4	7.8	7.6	7.6	7.8	7.6	7.6	7.7	7.6	7.7	7.7	7.5	7.6
5	7.8	7.6	7.7	7.9	7.6	7.6	7.8	7.7	7.7	7.7	7.5	7.6
6	7.8	7.5	7.6	7.8	7.6	7.7	7.8	7.7	7.7	7.7	7.5	7.6
7	7.8	7.6	7.7	7.8	7.7	7.7	7.8	7.6	7.7	7.6	7.5	7.6
8	7.6	7.3	7.5	7.8	7.7	7.7	7.8	7.6	7.7	7.6	7.4	7.5
9	7.5	7.3	7.4	7.8	7.7	7.7	7.8	7.7	7.7	7.5	7.4	7.4
10	8.0	7.4	7.6	7.9	7.6	7.7	7.8	7.7	7.7	7.5	7.4	7.4
11	7.5	7.4	7.5	7.6	7.5	7.6	7.8	7.7	7.7	7.5	7.4	7.4
12	7.5	7.4	7.4	7.8	7.6	7.7	7.8	7.7	7.7	7.6	7.5	7.5
13	7.9	7.3	7.6	7.9	7.7	7.8	7.9	7.7	7.8	7.6	7.5	7.6
14	7.5	7.5	7.5	7.7	7.6	7.7	7.9	7.7	7.8	7.7	7.6	7.6
15	7.5	7.5	7.5	7.6	7.5	7.5	7.9	7.8	7.8	7.7	7.6	7.7
16	7.6	7.5	7.5	7.6	7.5	7.6	7.9	7.8	7.9	7.8	7.6	7.7
17	7.6	7.5	7.6	7.6	7.6	7.6	7.9	7.8	7.9	7.8	7.6	7.7
18	7.7	7.5	7.6	7.7	7.6	7.6	7.9	7.8	7.9	7.9	7.6	7.8
19	7.7	7.5	7.6	7.6	7.6	7.6	7.9	7.7	7.8	7.9	7.7	7.8
20	7.6	7.6	7.6	7.7	7.6	7.6	8.1	7.7	7.8	7.8	7.6	7.7
21	7.7	7.6	7.6	7.7	7.6	7.7	8.1	7.6	7.7	7.8	7.6	7.7
22	7.7	7.6	7.6	7.7	7.6	7.7	7.6	7.5	7.6	7.8	7.6	7.7
23	7.7	7.6	7.6	7.7	7.6	7.6	7.7	7.5	7.6	7.8	7.5	7.7
24	7.7	7.6	7.7	7.7	7.6	7.7	7.7	7.6	7.6	7.8	7.6	7.7
25	7.7	7.6	7.7	7.7	7.6	7.6	7.7	7.6	7.7	7.8	7.6	7.7
26	7.8	7.7	7.7	7.6	7.6	7.6	7.9	7.7	7.8	7.8	7.6	7.7
27	7.8	7.7	7.7	7.6	7.6	7.6	7.9	7.6	7.7	7.8	7.7	7.7
28	7.7	7.6	7.7	7.6	7.5	7.6	7.9	7.8	7.8	7.8	7.6	7.7
29	7.8	7.7	7.7	7.6	7.5	7.5	7.8	7.6	7.7	7.8	7.6	7.7
30	7.8	7.6	7.7	7.6	7.5	7.6	7.7	7.6	7.6	7.7	7.6	7.7
31	7.7	7.6	7.6	---	---	---	7.7	7.5	7.6	7.8	7.5	7.7
MONTH	8.0	7.3	7.6	7.9	7.5	7.6	8.1	7.5	7.7	7.9	7.4	7.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.6	7.4	7.6	8.0	7.8	7.9	7.8	7.6	7.7	7.8	7.7	7.7
2	7.5	7.4	7.4	7.9	7.8	7.8	7.8	7.6	7.7	7.8	7.7	7.7
3	7.6	7.4	7.5	7.9	7.8	7.8	7.8	7.7	7.7	7.8	7.7	7.7
4	7.7	7.5	7.6	8.0	7.8	7.9	7.8	7.7	7.7	7.8	7.7	7.7
5	7.7	7.5	7.6	8.1	7.8	7.9	7.8	7.7	7.8	7.8	7.6	7.7
6	7.7	7.5	7.6	8.0	7.8	7.9	7.8	7.7	7.7	7.7	7.6	7.7
7	7.9	7.5	7.7	8.1	7.8	7.9	7.8	7.7	7.8	7.7	7.6	7.6
8	8.0	7.6	7.8	8.2	7.9	8.0	7.8	7.7	7.7	7.7	7.6	7.6
9	8.0	7.6	7.8	8.0	7.8	7.9	7.8	7.6	7.7	7.7	7.6	7.6
10	7.9	7.6	7.7	8.0	7.7	7.9	7.8	7.7	7.7	7.7	7.6	7.6
11	7.8	7.4	7.6	8.1	7.8	7.9	7.8	7.7	7.7	7.7	7.6	7.6
12	7.9	7.4	7.6	7.9	7.6	7.8	7.8	7.7	7.7	7.7	7.6	7.6
13	7.9	7.7	7.8	7.7	7.6	7.6	7.8	7.7	7.7	7.7	7.5	7.6
14	7.8	7.6	7.6	7.7	7.5	7.6	7.8	7.7	7.7	7.7	7.5	7.6
15	7.9	7.6	7.7	7.7	7.5	7.6	7.8	7.7	7.7	7.7	7.5	7.6
16	7.7	7.6	7.7	7.8	7.5	7.6	7.8	7.7	7.7	7.6	7.5	7.6
17	7.8	7.6	7.7	7.7	7.6	7.6	7.7	7.6	7.6	7.7	7.5	7.5
18	7.7	7.5	7.6	7.6	7.5	7.5	7.7	7.6	7.6	7.8	7.6	7.6
19	7.9	7.6	7.7	7.6	7.5	7.6	7.7	7.5	7.6	7.8	7.6	7.7
20	8.0	7.6	7.8	7.6	7.6	7.6	7.6	7.5	7.6	7.8	7.6	7.7
21	8.0	7.7	7.7	7.7	7.6	7.6	7.6	7.5	7.5	7.7	7.5	7.6
22	8.0	7.6	7.7	7.7	7.6	7.7	7.6	7.5	7.5	7.6	7.4	7.5
23	7.6	7.5	7.6	7.7	7.6	7.7	7.7	7.6	7.6	7.6	7.4	7.5
24	7.7	7.5	7.6	7.8	7.7	7.7	7.7	7.6	7.6	7.7	7.4	7.5
25	7.8	7.6	7.7	7.8	7.7	7.7	7.7	7.6	7.6	7.6	7.4	7.5
26	7.9	7.7	7.8	7.9	7.7	7.8	7.7	7.6	7.6	7.6	7.4	7.5
27	7.9	7.8	7.9	7.9	7.8	7.8	7.7	7.6	7.6	7.7	7.4	7.6
28	7.9	7.8	7.8	8.0	7.8	7.8	7.7	7.6	7.7	7.5	7.2	7.4
29	---	---	---	7.9	7.8	7.8	7.8	7.7	7.7	7.5	7.2	7.3
30	---	---	---	7.8	7.6	7.8	7.8	7.7	7.7	7.6	7.3	7.4
31	---	---	---	7.8	7.6	7.7	---	---	---	7.7	7.4	7.5
MONTH	8.0	7.4	7.7	8.2	7.5	7.8	7.8	7.5	7.7	7.8	7.2	7.6

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, 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	7.8	7.4	7.5	7.7	7.5	7.6	8.0	7.7	7.8	8.0	7.7	7.8
2	7.8	7.5	7.6	7.6	7.4	7.5	7.9	7.7	7.8	7.8	7.7	7.7
3	7.9	7.5	7.7	7.4	7.3	7.4	8.0	7.6	7.8	7.8	7.7	7.7
4	7.9	7.6	7.7	7.7	7.3	7.5	8.0	7.6	7.8	7.8	7.7	7.7
5	7.8	7.6	7.7	7.5	7.3	7.4	7.9	7.6	7.7	7.8	7.7	7.7
6	8.0	7.6	7.7	7.4	7.3	7.4	7.9	7.6	7.7	7.7	7.6	7.7
7	7.8	7.7	7.7	7.6	7.3	7.5	7.8	7.4	7.6	7.8	7.7	7.7
8	8.0	7.6	7.8	7.7	7.6	7.6	7.5	7.3	7.4	7.8	7.6	7.7
9	8.0	7.7	7.8	7.7	7.5	7.6	7.4	7.3	7.3	7.7	7.6	7.7
10	8.0	7.7	7.8	7.7	7.5	7.6	7.5	7.3	7.4	7.7	7.7	7.7
11	8.0	7.6	7.8	7.8	7.6	7.7	7.6	7.4	7.5	7.8	7.6	7.7
12	7.7	7.4	7.5	7.8	7.6	7.7	7.7	7.5	7.5	7.6	7.4	7.5
13	7.8	7.4	7.6	7.9	7.7	7.7	7.9	7.6	7.7	7.6	7.4	7.6
14	8.0	7.6	7.7	7.8	7.7	7.7	7.8	7.5	7.6	7.6	7.5	7.6
15	7.8	7.5	7.6	7.9	7.8	7.8	7.5	7.3	7.4	7.7	7.6	7.7
16	7.9	7.5	7.7	7.9	7.8	7.8	7.8	7.3	7.4	7.7	7.5	7.6
17	7.9	7.6	7.7	8.0	7.8	7.8	7.8	7.3	7.4	7.6	7.4	7.5
18	8.1	7.7	7.8	8.0	7.8	7.9	7.4	7.3	7.4	7.7	7.6	7.6
19	8.0	7.7	7.8	8.0	7.8	7.9	7.4	7.3	7.3	7.7	7.6	7.6
20	8.1	7.6	7.8	8.0	7.8	7.9	7.5	7.2	7.3	7.6	7.6	7.6
21	8.1	7.7	7.8	8.0	7.7	7.9	7.6	7.4	7.5	7.7	7.6	7.6
22	8.0	7.6	7.8	8.0	7.7	7.8	7.9	7.4	7.6	7.7	7.6	7.6
23	7.9	7.6	7.8	8.0	7.8	7.9	7.7	7.4	7.6	7.8	7.6	7.7
24	8.0	7.7	7.8	8.0	7.8	7.9	7.6	7.6	7.6	7.8	7.7	7.7
25	8.0	7.7	7.8	8.1	7.8	7.9	7.6	7.6	7.6	7.8	7.7	7.8
26	8.0	7.7	7.8	8.1	7.8	7.9	7.6	7.6	7.6	7.8	7.8	7.8
27	8.0	7.7	7.8	8.1	7.8	7.9	7.7	7.6	7.7	7.9	7.8	7.8
28	8.0	7.7	7.8	7.9	7.6	7.8	7.8	7.7	7.7	7.9	7.8	7.8
29	7.7	7.6	7.7	7.9	7.5	7.7	7.8	7.8	7.8	7.9	7.8	7.8
30	7.9	7.6	7.7	8.0	7.5	7.8	7.9	7.8	7.8	7.9	7.8	7.9
31	---	---	---	8.1	7.7	7.8	7.9	7.8	7.9	---	---	---
MONTH	8.1	7.4	7.7	8.1	7.3	7.7	8.0	7.2	7.6	8.0	7.4	7.7
YEAR	8.2	7.2	7.7									

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	25.8	23.4	24.3	20.8	19.0	20.0	16.7	15.5	16.1	14.4	12.6	13.3
2	25.9	23.6	24.4	19.7	17.7	18.7	15.9	15.4	15.7	16.7	14.4	15.4
3	25.9	24.1	24.8	18.3	16.8	17.4	17.3	15.8	16.3	18.0	16.7	17.2
4	26.3	24.6	25.2	18.2	16.5	17.2	16.2	14.6	15.4	18.9	18.0	18.4
5	25.9	24.6	25.1	19.5	17.9	18.6	15.3	13.9	14.5	19.4	18.7	19.0
6	25.2	24.4	24.7	19.4	17.7	18.5	14.2	12.9	13.4	19.4	16.2	18.4
7	25.5	24.3	24.8	17.9	16.5	17.2	14.0	13.2	13.5	16.2	14.8	15.4
8	26.0	24.9	25.5	17.2	16.0	16.6	15.4	13.4	14.4	14.8	13.8	14.2
9	26.1	25.6	25.9	18.1	17.0	17.7	15.5	14.2	14.9	14.6	12.9	13.8
10	25.8	23.3	24.8	18.1	16.9	17.7	15.1	13.9	14.4	15.3	14.0	14.6
11	24.3	23.9	24.0	16.9	14.8	15.7	13.9	12.5	13.2	16.4	14.9	15.6
12	24.4	24.0	24.2	14.8	13.7	14.2	12.6	10.7	11.7	18.1	16.3	17.2
13	24.4	21.8	23.0	15.4	14.2	14.8	11.0	9.3	10.1	17.6	16.6	17.3
14	21.9	20.0	20.8	15.8	14.5	15.1	11.1	9.2	10.1	17.2	16.0	16.6
15	20.1	18.6	19.4	15.4	13.6	14.5	11.4	9.3	10.3	16.6	15.0	15.9
16	19.7	18.2	19.0	13.7	12.7	13.1	12.0	10.0	10.9	15.6	13.6	14.8
17	19.7	18.1	18.9	13.0	12.6	12.7	12.5	10.7	11.5	15.5	13.6	14.7
18	19.9	18.4	19.2	13.6	12.7	13.1	12.6	10.9	11.7	16.5	14.5	15.5
19	20.4	18.7	19.5	13.8	13.2	13.4	14.8	12.2	13.2	15.9	14.3	15.2
20	20.8	19.4	20.1	14.5	13.6	13.9	18.5	14.8	16.5	16.1	14.7	15.3
21	21.3	20.1	20.6	16.2	14.5	15.2	18.1	16.2	16.8	18.1	16.0	16.9
22	20.8	19.6	20.2	16.2	14.7	15.3	16.4	15.2	15.9	17.7	15.5	16.5
23	21.3	19.6	20.3	16.0	14.5	15.2	16.4	15.5	16.0	15.5	13.8	14.8
24	21.6	20.0	20.7	16.1	14.6	15.3	15.5	14.0	14.9	14.8	13.4	14.2
25	22.3	21.0	21.4	17.6	16.1	16.8	14.8	13.4	13.8	14.9	13.5	14.1
26	21.1	18.0	19.6	19.3	17.6	18.4	13.8	12.6	13.4	15.7	13.7	14.8
27	18.0	16.3	17.1	20.2	19.3	19.7	12.6	10.8	11.5	15.1	13.3	14.4
28	17.0	16.2	16.6	21.1	19.7	20.3	11.6	10.2	10.8	15.2	12.9	14.2
29	18.2	16.7	17.4	19.9	18.1	19.1	11.7	9.6	10.7	16.1	14.2	15.1
30	19.9	18.2	19.1	18.1	16.6	17.3	12.1	10.1	11.2	17.4	15.5	16.3
31	21.9	19.8	20.7	---	---	---	12.8	11.1	12.0	17.7	16.3	16.8
MONTH	26.3	16.2	21.7	21.1	12.6	16.4	18.5	9.2	13.4	19.4	12.6	15.7

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, 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	17.0	16.3	16.7	17.5	15.4	16.5	21.5	18.9	20.3	22.9	20.3	21.6
2	17.2	16.1	16.6	17.6	15.2	16.2	21.6	18.7	20.1	24.3	21.5	22.6
3	16.9	15.1	16.0	17.0	16.0	16.4	22.2	19.6	20.8	25.2	22.7	23.7
4	16.6	15.2	16.0	18.5	16.4	17.4	21.7	19.4	20.6	24.7	23.5	23.9
5	17.2	15.9	16.4	20.5	18.0	19.2	21.6	19.1	20.4	25.0	23.4	24.0
6	16.6	15.0	15.9	19.9	18.7	19.2	21.0	20.0	20.6	26.0	23.9	24.6
7	15.7	13.7	14.7	19.1	17.7	18.4	22.9	20.7	21.6	26.4	24.0	25.1
8	16.5	13.6	15.0	18.6	16.7	17.7	23.6	21.7	22.5	26.1	25.0	25.4
9	17.0	14.4	15.8	17.4	14.7	16.2	22.2	19.9	21.2	26.8	24.4	25.4
10	18.0	16.2	17.0	16.4	13.7	15.2	21.7	19.2	20.6	26.2	23.9	24.8
11	17.3	15.2	16.3	15.2	13.3	14.4	21.6	19.2	20.5	25.0	23.2	24.0
12	16.7	14.8	15.8	14.8	13.5	13.8	22.3	20.2	21.2	25.1	23.4	24.0
13	17.4	15.7	16.4	14.1	13.2	13.5	23.5	21.4	22.3	25.2	23.8	24.3
14	16.7	15.1	16.1	15.7	14.1	15.1	24.4	22.3	23.2	25.8	24.3	24.8
15	16.2	14.8	15.4	16.9	15.6	16.2	23.9	22.8	23.3	26.5	24.8	25.4
16	15.7	14.4	15.3	17.3	15.1	16.4	24.5	22.7	23.5	25.5	25.0	25.2
17	16.3	14.2	15.2	18.1	15.8	16.9	23.3	21.3	22.0	26.0	24.4	25.0
18	16.0	14.6	15.3	19.3	16.9	18.1	21.3	20.2	20.7	26.2	24.1	25.0
19	17.7	15.2	16.3	20.1	19.0	19.6	21.4	19.1	20.3	26.3	23.7	24.8
20	17.8	15.0	16.4	19.3	17.4	18.5	21.6	19.4	20.5	26.8	24.3	25.2
21	16.9	14.8	16.2	18.6	16.7	17.8	21.8	19.8	20.7	27.2	24.6	25.6
22	16.1	14.2	15.1	19.3	16.7	18.0	21.2	19.0	20.1	27.5	25.0	25.9
23	17.9	14.9	16.4	19.7	17.3	18.6	21.3	18.9	20.1	26.8	25.3	25.8
24	18.5	15.9	17.2	21.3	19.1	20.1	21.8	19.5	20.6	27.0	25.1	25.9
25	20.5	18.0	19.2	22.3	20.7	21.3	21.6	20.7	21.1	26.8	25.3	25.8
26	20.3	17.0	17.9	22.7	21.2	21.8	22.9	21.2	21.8	26.6	25.4	25.8
27	17.8	16.5	17.1	23.3	21.4	22.2	22.7	21.8	22.3	26.9	24.9	26.0
28	17.8	15.8	16.7	23.5	21.6	22.4	22.2	20.4	21.4	27.2	25.3	26.2
29	---	---	---	23.9	22.3	22.9	22.6	20.4	21.3	28.3	25.7	26.6
30	---	---	---	24.3	22.3	23.2	22.2	19.8	21.0	28.7	26.0	27.3
31	---	---	---	23.2	21.1	22.1	---	---	---	29.3	26.3	27.5
MONTH	20.5	13.6	16.2	24.3	13.2	18.2	24.5	18.7	21.2	29.3	20.3	25.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	29.2	26.5	27.6	30.0	27.8	28.7	30.6	27.5	28.7	28.8	27.6	28.1
2	29.6	26.6	27.7	30.1	28.1	29.0	30.9	27.8	29.0	29.0	27.4	28.2
3	29.8	27.1	28.1	28.9	27.8	28.4	30.6	27.8	29.1	28.5	26.8	27.7
4	30.0	27.5	28.4	28.3	27.3	27.6	30.9	28.6	29.5	28.6	26.9	27.8
5	28.9	27.2	28.2	29.5	27.2	28.1	29.9	28.2	29.0	28.6	26.9	27.7
6	28.0	25.3	26.5	30.4	27.7	28.7	28.8	26.7	27.6	28.4	26.7	27.5
7	26.1	25.0	25.3	30.3	28.0	29.0	27.3	26.5	26.9	28.3	26.7	27.4
8	27.5	24.9	25.9	30.6	28.2	29.1	29.1	26.5	27.5	27.6	26.6	27.1
9	28.4	26.1	26.9	30.4	28.1	29.0	29.9	27.5	28.4	27.8	26.4	27.1
10	28.5	26.6	27.3	30.8	28.0	29.1	30.6	27.7	28.7	27.2	25.6	26.4
11	27.4	26.0	26.8	31.2	28.2	29.3	30.5	27.8	28.8	25.6	25.0	25.1
12	27.8	26.4	27.0	32.0	28.5	29.8	30.1	27.7	28.8	25.1	24.6	24.9
13	28.4	26.8	27.5	31.1	28.8	29.8	30.3	26.8	28.5	25.9	24.6	25.2
14	30.0	27.2	28.3	30.3	28.2	29.1	28.3	25.3	27.6	26.4	25.4	25.8
15	29.2	26.8	27.8	30.2	27.6	28.6	27.3	25.3	26.0	26.8	25.8	26.2
16	30.1	27.2	28.3	30.5	27.7	28.8	27.4	26.1	26.5	26.7	25.9	26.3
17	29.6	27.5	28.3	30.7	27.8	28.9	27.1	26.5	26.8	26.7	26.1	26.3
18	30.5	27.8	28.7	30.7	27.8	28.9	27.3	26.6	27.0	26.9	25.8	26.3
19	30.8	27.9	29.1	30.6	27.8	28.9	28.7	27.0	27.7	27.1	25.6	26.3
20	30.8	27.9	29.0	30.7	28.0	29.1	28.9	27.1	27.9	27.3	25.7	26.5
21	30.8	28.1	29.2	30.7	28.1	29.2	29.0	27.5	28.1	27.7	26.0	26.8
22	31.1	28.1	29.2	30.8	28.0	29.1	28.1	24.8	26.3	28.2	26.5	27.2
23	30.3	28.0	28.9	30.5	28.0	29.0	26.1	25.0	25.5	28.0	26.6	27.3
24	29.9	27.7	28.6	30.6	28.0	29.0	27.4	25.9	26.5	28.0	26.5	27.2
25	30.1	27.6	28.6	30.7	28.0	29.1	27.9	27.2	27.5	27.7	26.5	27.1
26	30.4	27.7	28.8	30.5	28.0	29.1	28.8	27.4	28.0	27.9	26.6	27.1
27	31.1	28.1	29.3	30.2	27.9	28.9	29.3	28.0	28.5	28.2	26.4	27.1
28	30.4	28.5	29.3	30.4	27.8	28.8	29.0	27.6	28.2	28.0	26.0	26.8
29	29.5	27.6	28.6	30.3	27.5	28.7	29.2	27.4	28.2	27.4	26.1	26.7
30	29.1	27.8	28.3	30.0	27.6	28.7	28.8	27.2	28.0	27.4	26.0	26.7
31	---	---	---	30.3	27.6	28.7	28.7	27.4	28.0	---	---	---
MONTH	31.1	24.9	28.0	32.0	27.2	28.9	30.9	24.8	27.8	29.0	24.6	26.8
YEAR	32.0	9.2	21.7									

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, 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
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.3	5.3	7.2	9.0	5.9	7.0	---	---	---	10.4	7.6	9.0
2	10.1	5.6	7.1	9.1	6.2	7.2	---	---	---	10.5	7.1	8.7
3	9.9	5.3	7.0	9.3	6.5	7.4	---	---	---	9.9	6.5	8.2
4	9.3	5.1	6.6	9.8	6.8	7.8	---	---	---	8.7	5.9	7.4
5	8.3	4.7	6.0	8.8	6.1	7.1	---	---	---	7.9	5.5	6.7
6	7.8	4.5	5.4	9.0	6.1	7.1	---	---	---	8.4	5.2	6.7
7	7.6	4.5	5.6	9.8	5.8	7.6	---	---	---	8.8	7.3	8.4
8	5.4	4.3	4.8	9.9	6.8	7.7	---	---	---	8.8	7.6	8.3
9	5.2	3.7	4.4	7.9	6.3	7.1	---	---	---	9.2	8.3	8.8
10	7.6	4.1	5.5	7.0	4.9	6.3	---	---	---	8.8	7.2	8.4
11	6.9	6.0	6.6	6.5	4.7	5.5	---	---	---	8.5	7.9	8.1
12	6.1	5.2	5.6	8.8	6.5	8.1	9.0	7.1	8.1	8.7	6.6	8.0
13	7.7	5.0	6.7	8.2	7.7	7.9	11.8	8.1	9.5	8.5	6.2	7.8
14	7.3	6.1	7.0	8.4	7.4	7.8	12.0	8.7	10.3	9.8	7.7	8.4
15	7.3	6.0	6.8	7.4	6.9	7.2	12.3	8.9	10.6	10.8	7.9	9.0
16	7.5	5.8	6.5	8.5	6.7	7.7	12.2	8.8	10.4	11.7	8.0	9.6
17	7.3	6.3	6.7	8.4	7.7	8.0	12.0	8.2	10.2	12.9	8.6	10.4
18	7.3	6.3	6.7	8.8	7.7	8.1	11.8	7.9	9.8	13.6	8.7	10.8
19	8.1	6.2	6.9	---	---	---	10.9	7.5	9.5	14.0	7.7	10.9
20	7.9	6.5	7.1	---	---	---	10.0	6.2	7.5	13.3	8.6	10.6
21	8.1	6.5	7.1	---	---	---	7.1	6.2	6.6	13.9	8.4	10.9
22	7.5	6.4	6.9	---	---	---	6.4	5.7	6.1	12.8	8.2	10.5
23	8.2	6.5	7.1	---	---	---	6.0	5.5	5.7	14.4	8.3	11.3
24	8.3	6.3	7.0	---	---	---	6.5	5.2	5.9	15.0	9.6	12.3
25	8.1	6.2	6.8	---	---	---	7.0	5.5	6.2	13.4	9.4	11.4
26	8.0	5.9	6.8	---	---	---	7.7	6.0	6.8	13.7	9.3	11.6
27	8.8	6.0	7.3	---	---	---	9.1	7.1	8.1	13.9	9.7	11.9
28	9.2	7.2	7.9	---	---	---	9.6	8.1	8.6	14.3	8.5	11.9
29	9.5	7.4	8.2	---	---	---	10.8	8.0	9.2	13.3	8.9	11.2
30	9.0	7.2	7.9	---	---	---	11.0	8.3	9.5	12.4	8.4	10.5
31	8.8	6.4	7.3	---	---	---	11.5	7.9	9.6	11.0	8.1	9.2
MONTH	10.3	3.7	6.7	---	---	---	---	---	---	15.0	5.2	9.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.0	8.0	8.7	10.3	7.9	8.8	8.7	5.9	7.0	8.9	4.4	6.7
2	9.2	7.9	8.4	11.2	8.0	9.1	8.9	6.1	7.1	8.4	5.2	6.4
3	10.1	8.0	8.8	10.8	8.1	9.2	8.6	5.9	6.9	8.4	4.8	6.1
4	10.5	7.9	9.0	11.2	8.0	9.2	8.5	4.8	6.4	7.2	3.1	5.6
5	10.8	7.4	8.9	12.1	7.5	9.3	8.5	5.1	6.7	7.7	3.5	5.5
6	10.7	7.9	8.9	10.6	7.0	8.5	6.6	5.6	6.0	7.1	3.3	5.3
7	13.4	8.0	10.3	10.5	6.9	8.5	7.9	5.5	6.4	7.1	4.1	5.3
8	14.8	8.4	11.1	11.8	7.1	9.1	8.1	4.9	6.4	6.2	4.0	4.9
9	13.8	8.3	10.8	13.0	7.3	9.7	7.9	5.3	6.3	6.9	3.9	4.9
10	10.7	7.6	9.2	13.4	7.2	10.0	8.2	5.6	6.6	6.9	3.7	4.8
11	12.4	6.9	9.3	12.8	7.9	10.1	8.4	5.6	6.6	6.8	3.9	5.0
12	12.4	7.3	9.5	10.1	7.7	8.8	8.1	5.4	6.5	6.4	3.9	4.9
13	13.1	8.4	10.3	9.6	7.5	8.4	8.1	5.0	6.2	6.1	2.8	4.7
14	10.2	7.5	8.5	8.4	7.3	7.8	8.8	5.0	6.4	6.1	3.0	4.7
15	11.1	8.2	9.2	7.8	6.9	7.4	7.0	4.3	5.7	6.2	3.6	4.6
16	9.6	8.4	8.9	8.5	6.1	7.7	8.0	4.8	5.9	4.5	2.9	4.0
17	11.2	8.4	9.4	8.2	7.7	8.0	8.2	5.0	6.3	5.8	2.1	4.2
18	10.7	8.3	9.2	8.0	7.3	7.8	8.0	4.7	6.6	7.9	3.8	5.1
19	12.8	8.3	10.0	7.4	6.5	7.2	8.9	5.7	6.9	7.2	3.7	5.0
20	14.0	8.1	10.5	7.9	6.4	7.3	8.4	4.1	6.5	7.9	3.2	5.4
21	10.0	8.1	8.7	8.1	7.2	7.5	8.4	5.0	6.4	7.5	4.2	5.2
22	9.1	7.5	8.2	8.6	6.6	7.9	8.7	5.4	6.7	8.0	3.6	5.2
23	7.8	7.0	7.6	8.6	7.3	7.8	9.2	5.9	7.1	7.1	3.5	4.9
24	8.4	6.8	7.5	9.0	7.0	7.7	9.1	5.7	7.0	7.4	3.2	4.9
25	8.3	6.3	7.1	9.4	6.8	7.7	7.6	5.3	6.3	6.6	2.7	4.1
26	8.8	7.5	8.2	9.7	6.7	7.8	7.3	3.6	5.6	6.0	2.4	4.0
27	8.8	8.1	8.5	10.3	6.6	7.9	6.9	3.4	5.6	5.9	3.4	4.4
28	9.3	8.0	8.5	10.5	6.6	8.0	8.0	5.0	6.2	4.8	2.2	3.3
29	---	---	---	9.7	6.4	7.6	8.6	4.2	6.5	5.7	1.6	3.1
30	---	---	---	8.9	6.0	7.0	8.7	4.9	6.6	6.6	1.5	3.7
31	---	---	---	8.5	5.5	6.5	---	---	---	7.3	2.1	4.0
MONTH	14.8	6.3	9.0	13.4	5.5	8.2	9.2	3.4	6.4	8.9	1.5	4.8

08181480 LEON CREEK AT INTERSTATE HIGHWAY 35 AT SAN ANTONIO, 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
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.7	2.2	4.4	5.7	3.4	4.3	9.1	3.4	5.7	6.8	5.9	6.3
2	8.5	2.3	4.9	5.4	2.9	3.9	9.1	3.7	5.3	7.3	5.7	6.4
3	9.1	3.3	5.5	4.5	2.5	3.6	7.0	2.5	4.1	7.5	5.9	6.6
4	8.6	2.3	4.9	5.3	2.8	3.5	7.8	1.9	4.1	7.5	5.8	6.5
5	6.8	3.4	4.6	4.0	3.1	3.5	5.7	2.4	3.6	7.6	5.6	6.4
6	9.8	2.5	5.6	3.9	2.3	3.2	4.0	2.3	3.4	7.4	5.5	6.3
7	5.8	3.5	4.5	4.8	3.0	3.7	3.8	2.9	3.4	7.4	5.5	6.2
8	9.3	3.5	5.3	5.0	3.2	4.0	3.3	2.2	2.8	7.2	5.5	6.2
9	10.5	4.1	6.6	6.2	3.4	4.6	4.0	1.6	2.6	7.5	5.5	6.4
10	10.9	4.2	6.8	6.5	3.2	4.9	3.6	1.8	2.7	6.7	5.7	6.2
11	7.6	3.9	5.1	6.9	4.0	5.2	4.7	2.3	3.3	6.9	5.2	6.3
12	5.2	1.8	3.5	7.0	3.2	5.1	4.8	3.0	3.7	5.7	4.9	5.3
13	6.6	2.2	4.3	6.9	3.1	4.8	7.5	2.9	4.0	6.5	5.7	6.0
14	7.5	2.4	4.7	6.8	3.3	4.7	7.2	3.3	4.6	6.2	5.2	5.7
15	7.1	3.1	4.5	7.3	3.7	5.2	6.2	4.2	5.0	6.7	5.3	5.8
16	7.6	3.0	4.8	7.4	4.0	5.5	6.8	3.9	5.1	5.9	4.9	5.4
17	7.7	3.4	4.9	7.8	4.5	5.6	5.8	4.1	4.9	6.3	5.7	5.9
18	8.5	3.4	5.3	8.1	3.9	5.6	5.4	4.2	4.6	6.3	5.4	5.7
19	8.7	3.2	5.5	8.4	3.6	5.7	4.6	3.0	3.6	6.4	5.2	5.6
20	8.4	3.4	5.3	8.3	3.5	5.8	4.4	2.9	3.4	6.0	4.7	5.2
21	8.2	2.9	5.1	8.7	3.7	5.6	4.2	3.2	3.6	5.8	4.4	5.0
22	9.0	3.3	5.6	8.7	3.1	5.5	6.7	2.9	4.8	5.9	4.3	4.9
23	7.9	3.5	5.2	8.3	3.7	5.6	6.5	4.7	5.9	6.1	4.2	4.9
24	7.7	3.6	5.2	7.2	2.9	4.5	6.4	5.7	6.1	5.9	4.1	4.9
25	8.4	2.9	5.5	8.4	2.9	5.2	6.0	5.3	5.6	6.1	4.2	4.9
26	8.1	4.0	5.5	8.7	2.9	5.3	5.4	5.2	5.3	5.9	4.2	4.9
27	8.4	3.9	5.6	8.4	2.9	5.1	5.5	5.0	5.3	6.1	4.1	4.8
28	8.1	3.9	5.6	8.5	2.6	5.1	5.6	4.9	5.2	5.8	4.1	4.7
29	5.8	3.6	4.6	9.5	3.6	5.8	5.9	5.0	5.4	5.8	4.1	4.8
30	6.4	3.4	4.3	8.9	3.7	5.9	6.4	5.2	5.8	5.8	4.1	4.8
31	---	---	---	9.3	3.3	5.8	6.6	5.2	5.9	---	---	---
MONTH	10.9	1.8	5.1	9.5	2.3	4.9	9.1	1.6	4.5	7.6	4.1	5.6

08181500 MEDINA RIVER AT SAN ANTONIO, TX

LOCATION.--Lat 29°15'14", long 98°28'20", Bexar County, Hydrologic Unit 12100302, near right bank at upstream side of pier of upstream bridge of two bridges on U.S. Highway 281 in San Antonio, and 6.8 mi upstream from mouth.

DRAINAGE AREA.--1,317 mi^2, of which 634 mi^2 is above dam forming Medina Lake.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1929 to Dec 1930, Jul 1939 to current year. Oct 1929 to Dec 1930, records below about 50 ft^3/s in connection with seepage investigation (published as "at Losoya"). Published as "near San Antonio" Jul 1939 to Sep 1970.

REVISED RECORDS.--WSP 1562: 1957. WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 439.0 ft above sea level (levels by U.S. Army Corps of Engineers). Oct 1929 to Dec 1930, nonrecording gage at Losoya 1.5 mi downstream at different datum. Jul 27, 1939, to Sep 30, 1987, at site near left bank at downstream side of pier of upstream bridge of two bridges at same datum. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since installation of gage in water year 1939, at least 10% of contributing drainage area has been regulated by Medina Lake (08179500) 60 mi upstream and by diversion dam reservoir, capacity 4,500 acre-ft. Streamflow is lost into the Edwards and associated limestones in the Balcones Fault Zone that crosses the basin between the upstream end of Medina Lake and about 5 mi downstream from Medina Dam, or 0.9 mi downstream from the diversion dam. Several small diversions below diversion dam reservoir. Records furnished by the city of San Antonio show that during the current year, wastewater effluent in the amount of 629 acre-ft from Mitchell Lake and 38,080 acre-ft from the Leon Creek plant was discharged into the Medina River above this station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 55 ft prior to construction of Medina Dam in 1913, 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	120	125	153	166	327	217	515	165	153	172	e78	197
2	136	127	150	169	227	206	520	165	153	159	e76	187
3	130	131	157	168	198	198	483	163	145	146	e80	181
4	119	121	155	167	186	196	457	160	130	147	e78	173
5	118	125	155	169	181	195	442	158	134	168	e79	149
6	127	129	155	218	178	190	424	157	136	155	82	135
7	134	124	155	474	173	176	409	159	134	133	177	134
8	783	121	160	304	168	173	398	158	129	125	148	137
9	508	121	157	248	170	178	388	152	135	120	129	133
10	303	149	154	221	260	174	374	149	149	108	134	132
11	398	152	152	211	195	169	352	155	166	111	127	144
12	352	180	153	209	177	164	336	159	190	112	108	154
13	300	188	156	198	174	167	324	163	181	108	100	155
14	272	189	160	193	185	201	314	159	156	107	237	163
15	204	180	158	190	219	227	307	161	152	106	298	166
16	178	172	156	178	244	648	292	162	145	113	210	186
17	167	170	155	172	242	1600	281	157	138	109	206	209
18	159	166	153	166	243	763	275	162	140	99	221	164
19	154	166	151	165	232	645	258	158	141	95	206	147
20	162	166	224	165	194	751	242	149	131	95	151	142
21	166	168	304	162	203	786	228	148	120	90	134	136
22	164	164	219	159	437	753	216	150	131	85	257	131
23	153	162	198	159	372	717	206	151	124	87	1160	129
24	148	162	188	162	269	680	197	149	128	91	618	128
25	146	163	177	158	234	649	189	150	123	86	375	130
26	141	165	181	157	315	622	184	154	123	83	294	125
27	141	159	198	153	285	589	187	161	117	93	255	123
28	135	152	190	151	244	562	177	172	115	83	236	122
29	132	153	181	145	---	551	171	164	130	e80	219	121
30	133	150	178	144	---	530	169	153	151	e78	196	119
31	132	---	174	206	---	509	---	149	---	e77	192	---
TOTAL	6415	4600	5357	5907	6532	14186	9315	4872	4200	3421	6861	4452
MEAN	207	153	173	191	233	458	311	157	140	110	221	148
MAX	783	189	304	474	437	1600	520	172	190	172	1160	209
MIN	118	121	150	144	168	164	169	148	115	77	76	119
AC-FT	12720	9120	10630	11720	12960	28140	18480	9660	8330	6790	13610	8830

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

MEAN	196	151	149	165	224	180	190	265	407	207	152	183
MAX	1734	835	961	979	2923	2558	1621	2018	7006	3261	1175	1427
(WY)	1974	1977	1992	1968	1992	1992	1992	1992	1987	1973	1978	1973
MIN	7.60	8.50	12.7	5.58	12.7	9.77	6.63	8.71	6.52	6.13	6.40	8.24
(WY)	1956	1956	1955	1957	1953	1956	1956	1953	1956	1954	1952	1954

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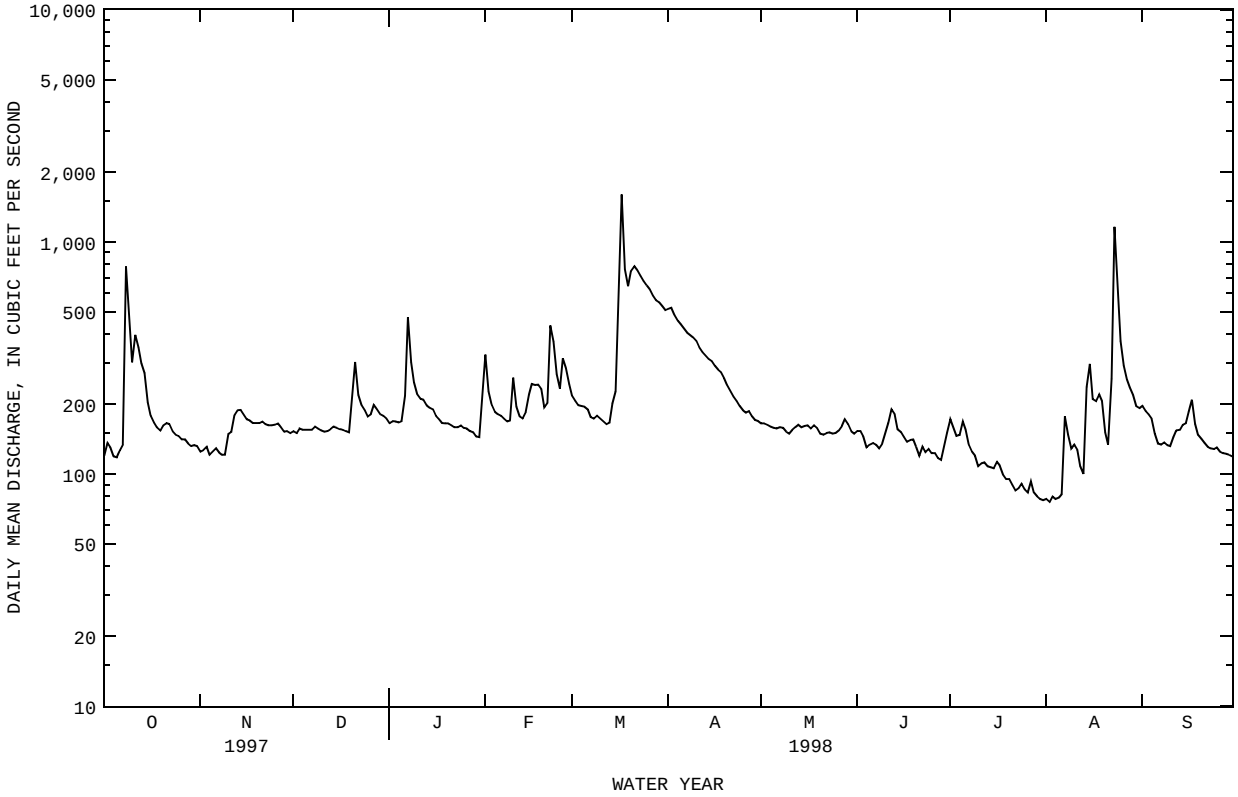
SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1939 - 1998z	
ANNUAL TOTAL	125670		76118			
ANNUAL MEAN	344		209		206	
HIGHEST ANNUAL MEAN					1218	1992
LOWEST ANNUAL MEAN					14.3	1956
HIGHEST DAILY MEAN	11200	Jun 23	1600	Mar 17	28300	Jul 17 1973
LOWEST DAILY MEAN	65	Jan 13	76	Aug 2	3.3	Apr 18 1956
ANNUAL SEVEN-DAY MINIMUM	71	Jan 31	78	Jul 30	4.0	Jan 21 1957
INSTANTANEOUS PEAK FLOW			2020	Mar 17	31900	Jul 17 1973
INSTANTANEOUS PEAK STAGE			14.99	Mar 17	43.59	Jul 17 1973
ANNUAL RUNOFF (AC-FT)	249300		151000		149100	
10 PERCENT EXCEEDS	445		352		361	
50 PERCENT EXCEEDS	147		163		94	
90 PERCENT EXCEEDS	98		120		18	

e Estimated
z Period of requlated streamflow.



08181500 MEDINA RIVER AT SAN ANTONIO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Jun 1965 to current year. Pesticide analyses: Apr 1971 to Sep 1981; Dec 1992 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Jan 1987 to current year.
PH: Jan 1987 to current year.
WATER TEMPERATURE: Jan 1987 to current year.
DISSOLVED OXYGEN: Jan 1987 to current year.

INSTRUMENTATION.--Beginning Jan 1987, 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 malfunction of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed for previous years using the daily (or continuous) records of specific conductance and 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 ofice upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,190 microsiemens, Oct 16, 1996; minimum, 30 microsiemens, Jul 16, 1990.
PH: Maximum, 8.8 units, Dec 4, 5, 1988, Mar 22, 1989; minimum, 7.0 units, Apr 1-3, 1989, Mar 5, 6, 1990.
WATER TEMPERATURE: Maximum, 32.0°C, Jun 11, 1989; minimum, 9.0°C, Jan 11, 1988, Dec 23, 1989.
DISSOLVED OXYGEN: Maximum, 14.3 mg/L, Feb 18, 1997; minimum, 1.8 mg/L, Oct 17, Nov 8, 1987.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,000 microsiemens, Jan 31; minimum, 292 microsiemens, Aug 23.
PH: Maximum, 8.3 units, Jun 11-16, Jul 2, 5; minimum, 7.5 units, Feb 27-28.
WATER TEMPERATURE: Maximum, 31.1°C, Jul 12; minimum, 12.6°C, Dec 29.
DISSOLVED OXYGEN: Maximum, 11.9 mg/L, Dec 29; minimum, 2.9 mg/L, Jul 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 WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
MAR 16-16	0515	740	544	7.8	17.5	9.4	46	5.6	190	42	59

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	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)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)
MAR 16-16	10	32	1	26	5.5	150	55	44	334	391	690

DATE	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, 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)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CYANIDE TOTAL (MG/L AS CN) (00720)
MAR 16-16	2.02	.354	4.9	2.5	.37	.73	2.9	1.43	.518	22	<.010

DATE	PHENOLS TOTAL (UG/L) (32730)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L) (00556)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)
MAR 16-16	2	<1	6	<10	<1	11	10	15	<.10	11

08181500 MEDINA RIVER AT SAN ANTONIO, TX--Continued

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

DATE	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ALDRIN, TOTAL (UG/L) (39330)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)
MAR 16-16	<1	<1	50	<.040	<.100	<.030	<.100	<1.00	<.100	<.100

DATE	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)
MAR 16-16	<.100	<.100	<.100	<.040	<.030	<.100	<.100	<.090	<.020	<.600

DATE	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	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)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	TOX-APHENE, TOTAL (UG/L) (39400)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
MAR 16-16	<.200	<.060	<.030	<.800	<.030	<.100	<.040	<.100	<2.00	<.100

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	868	838	853	842	810	828	859	812	836	805	777	792
2	868	818	845	850	805	829	864	822	850	808	778	800
3	869	811	839	842	793	821	878	837	858	819	783	801
4	874	846	864	---	---	e883	885	859	873	822	792	814
5	867	833	855	902	844	883	879	844	864	816	802	812
6	867	830	847	923	842	883	884	840	858	845	799	826
7	873	831	852	863	815	841	884	849	871	799	588	651
8	861	331	666	842	800	822	886	835	861	687	633	668
9	592	386	490	841	796	828	864	835	850	769	686	716
10	703	573	612	823	792	811	864	831	850	805	754	777
11	701	606	632	820	793	805	867	835	853	809	757	795
12	651	628	639	825	777	802	864	828	846	809	776	795
13	680	638	653	777	726	752	858	823	837	814	777	797
14	711	638	666	772	744	763	856	804	835	847	809	829
15	783	711	750	818	770	791	841	800	823	848	822	836
16	822	783	806	815	750	782	861	800	841	868	833	856
17	851	813	836	786	749	767	869	827	851	890	850	871
18	855	826	843	800	753	777	874	827	855	895	859	883
19	856	828	848	797	763	783	866	837	854	892	858	883
20	857	822	842	807	773	792	874	682	838	926	883	901
21	855	818	836	815	773	795	686	565	593	929	890	912
22	843	806	826	824	771	794	754	596	649	962	918	940
23	825	799	813	822	756	795	756	699	735	949	904	929
24	850	805	826	798	753	781	767	733	756	957	916	937
25	833	806	823	802	766	790	770	733	758	970	935	955
26	840	815	831	815	776	803	767	731	751	970	920	944
27	846	808	828	831	790	814	767	727	753	955	916	938
28	855	823	837	832	802	823	771	737	752	959	913	939
29	850	813	834	841	813	827	778	745	766	974	929	953
30	873	824	849	847	811	834	779	745	766	983	936	964
31	858	816	840	---	---	---	794	767	779	1000	901	975
MONTH	874	331	786	---	---	810	886	565	808	1000	588	854

08181500 MEDINA RIVER AT SAN ANTONIO, 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	901	691	730	741	700	728	565	525	546	913	881	897
2	895	763	811	760	728	749	535	503	524	921	881	901
3	916	881	901	799	755	777	549	515	532	917	878	902
4	912	864	894	803	766	788	575	532	553	898	872	892
5	924	880	907	806	767	790	593	549	573	916	884	894
6	933	881	913	803	771	790	604	579	595	915	885	906
7	961	906	933	827	780	800	627	591	614	916	888	908
8	962	899	936	831	783	815	629	594	617	913	887	907
9	962	907	937	837	785	814	631	599	621	921	884	906
10	956	653	836	843	779	819	638	598	624	923	877	907
11	936	719	811	843	793	822	655	606	635	907	884	901
12	941	897	924	855	801	827	655	619	647	916	877	900
13	984	926	961	845	795	820	661	632	654	910	874	901
14	985	938	969	832	804	818	691	656	671	905	861	891
15	974	873	937	813	755	788	695	676	690	884	843	875
16	956	909	939	770	544	665	743	693	717	874	850	869
17	925	909	915	547	354	418	749	719	737	873	829	860
18	946	662	902	451	386	409	769	719	745	866	836	858
19	841	663	777	466	451	460	779	729	763	878	841	863
20	830	799	819	461	438	451	788	755	780	890	843	875
21	820	781	804	452	428	441	828	786	808	895	853	882
22	833	547	681	464	436	451	845	806	832	890	845	879
23	733	626	665	474	451	466	859	815	844	891	860	879
24	710	666	691	489	465	480	867	827	850	892	851	877
25	739	707	723	498	476	491	866	828	857	878	834	863
26	803	619	695	505	483	498	864	825	856	870	846	862
27	650	623	633	516	492	508	868	852	864	891	851	870
28	738	649	682	529	498	515	893	851	876	888	848	876
29	---	---	---	526	497	515	906	854	887	872	833	859
30	---	---	---	538	504	527	906	859	887	881	837	861
31	---	---	---	554	518	541	---	---	---	883	838	868
MONTH	985	547	833	855	354	638	906	503	713	923	829	884

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	877	843	867	886	840	866	885	810	861	765	715	737
2	882	838	869	883	827	861	897	812	869	744	693	726
3	884	836	869	887	828	862	898	824	869	762	703	740
4	879	833	861	872	816	849	918	830	879	770	720	749
5	870	838	854	880	838	858	893	863	878	802	725	757
6	905	856	878	873	818	848	872	816	855	814	738	782
7	905	835	871	897	841	870	884	780	837	807	750	786
8	886	851	876	906	842	879	816	757	788	848	780	814
9	883	824	863	907	852	884	839	780	820	859	800	832
10	873	820	858	939	847	897	857	807	833	892	840	868
11	898	830	866	896	833	872	859	802	830	908	839	874
12	901	881	895	886	821	859	835	788	811	874	825	852
13	887	791	850	897	836	867	831	781	807	872	782	832
14	832	782	813	917	850	888	898	483	706	843	787	815
15	834	806	815	932	857	898	708	524	631	847	785	815
16	858	814	836	920	851	889	765	695	719	812	747	779
17	873	824	846	928	856	894	784	659	697	775	703	737
18	873	846	858	907	839	876	775	688	733	787	732	768
19	---	---	e865	931	843	883	787	718	756	838	779	806
20	---	---	e861	901	839	869	803	768	790	850	789	825
21	---	---	e857	925	852	884	841	781	817	864	802	835
22	874	829	852	920	874	903	840	342	723	878	829	856
23	884	835	852	929	842	894	465	292	376	900	853	874
24	899	853	876	933	844	897	540	349	454	903	847	880
25	---	---	e879	928	862	899	587	523	555	892	836	868
26	---	---	e879	929	852	886	638	583	608	880	846	866
27	---	---	e864	918	831	878	672	629	656	900	844	874
28	---	---	e864	931	856	894	678	616	649	915	853	880
29	---	---	e861	917	856	892	689	617	648	925	860	892
30	878	830	864	897	808	869	717	653	686	922	868	893
31	---	---	---	892	811	867	744	677	714	---	---	---
MONTH	---	---	861	939	808	878	918	292	737	925	693	820

e Estimated

08181500 MEDINA RIVER AT SAN ANTONIO, 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	8.0	7.8	7.9	8.0	7.9	8.0	8.1	7.9	8.0	8.1	8.0	8.0
2	8.0	7.9	7.9	8.0	7.9	8.0	8.0	7.9	8.0	8.1	8.0	8.0
3	8.0	7.9	7.9	8.0	7.9	8.0	8.0	7.9	8.0	8.0	7.9	8.0
4	8.0	7.8	7.9	---	---	---	8.1	8.0	8.0	8.0	7.9	7.9
5	8.0	7.9	7.9	8.0	8.0	8.0	8.1	8.0	8.0	8.0	7.9	7.9
6	8.0	7.9	7.9	8.0	7.8	7.9	8.1	8.0	8.0	8.0	7.9	7.9
7	8.0	7.9	7.9	7.9	7.8	7.8	8.1	8.0	8.0	8.0	7.9	7.9
8	8.0	7.8	7.9	7.9	7.8	7.8	8.1	8.0	8.0	8.0	7.9	8.0
9	7.8	7.7	7.8	7.9	7.8	7.8	8.1	8.0	8.0	8.0	7.9	7.9
10	7.8	7.6	7.7	7.9	7.8	7.8	8.1	8.0	8.0	8.0	8.0	8.0
11	7.8	7.7	7.7	8.0	7.8	7.9	8.1	8.0	8.0	8.0	7.9	7.9
12	7.9	7.8	7.8	7.8	7.8	7.8	8.0	8.0	8.0	8.0	7.9	7.9
13	7.8	7.8	7.8	8.0	7.8	7.9	8.1	8.0	8.0	8.0	7.9	7.9
14	7.9	7.8	7.8	8.0	7.8	7.9	8.1	8.0	8.0	8.0	8.0	8.0
15	7.9	7.9	7.9	8.0	8.0	8.0	8.1	8.0	8.0	8.0	8.0	8.0
16	8.0	7.9	7.9	8.0	7.9	7.9	8.1	8.0	8.1	8.1	8.0	8.0
17	8.0	7.9	8.0	8.0	7.9	7.9	8.1	8.0	8.1	8.1	8.0	8.0
18	8.1	8.0	8.0	8.0	7.9	7.9	8.2	8.0	8.1	8.1	8.0	8.0
19	8.1	8.0	8.0	8.0	7.9	7.9	8.1	7.9	8.0	8.1	8.0	8.0
20	8.1	8.0	8.0	8.0	7.9	7.9	8.0	7.9	7.9	8.1	8.0	8.0
21	8.0	7.9	8.0	8.0	7.9	8.0	7.9	7.8	7.8	8.1	8.0	8.0
22	8.0	7.9	8.0	8.0	7.9	8.0	8.0	7.7	7.8	8.1	8.0	8.0
23	8.0	7.9	8.0	8.0	7.9	8.0	8.0	7.9	7.9	8.1	8.0	8.1
24	8.0	7.9	8.0	8.0	7.9	8.0	8.0	7.9	7.9	8.2	8.1	8.1
25	8.0	7.9	8.0	8.1	7.9	8.0	8.0	8.0	8.0	8.1	8.0	8.1
26	8.0	7.9	8.0	8.1	8.0	8.0	8.0	7.9	8.0	8.1	8.0	8.1
27	8.1	8.0	8.0	8.1	8.0	8.0	8.0	7.9	7.9	8.1	8.1	8.1
28	8.1	8.0	8.0	8.1	8.0	8.0	8.0	7.9	7.9	8.1	8.1	8.1
29	8.1	8.0	8.0	8.1	8.0	8.0	8.0	7.9	7.9	8.1	8.0	8.1
30	8.1	8.0	8.0	8.1	8.0	8.0	8.1	7.9	8.0	8.1	8.0	8.0
31	8.1	8.0	8.0	---	---	---	8.1	8.0	8.0	8.1	8.0	8.0
MONTH	8.1	7.6	7.9	---	---	---	8.2	7.7	8.0	8.2	7.9	8.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.0	7.9	7.9	7.7	7.6	7.6	8.0	8.0	8.0	7.9	7.8	7.9
2	8.0	7.9	8.0	7.8	7.6	7.7	8.0	8.0	8.0	7.9	7.8	7.9
3	8.1	8.0	8.0	7.8	7.8	7.8	8.0	7.9	7.9	7.9	7.8	7.9
4	8.1	8.0	8.0	7.8	7.8	7.8	7.9	7.9	7.9	7.9	7.8	7.8
5	8.1	8.0	8.0	7.8	7.8	7.8	7.9	7.9	7.9	7.9	7.8	7.8
6	8.1	8.0	8.0	7.8	7.7	7.8	7.9	7.9	7.9	7.9	7.7	7.8
7	8.1	8.0	8.1	7.8	7.8	7.8	7.9	7.8	7.9	7.9	7.8	7.8
8	8.1	8.0	8.1	7.9	7.8	7.8	7.9	7.9	7.9	7.9	7.8	7.8
9	8.1	8.0	8.0	7.9	7.8	7.8	7.9	7.9	7.9	8.0	7.8	7.9
10	8.1	8.0	8.0	7.9	7.8	7.8	7.9	7.9	7.9	8.0	7.9	7.9
11	8.0	7.9	7.9	7.9	7.8	7.9	7.9	7.9	7.9	8.0	7.9	7.9
12	8.0	8.0	8.0	7.9	7.8	7.9	7.9	7.8	7.9	8.0	7.8	7.9
13	8.1	8.0	8.0	7.9	7.8	7.9	7.9	7.8	7.9	7.9	7.8	7.8
14	8.1	8.0	8.1	7.9	7.8	7.9	7.9	7.8	7.8	8.0	7.8	7.9
15	8.1	8.0	8.1	7.9	7.8	7.8	7.9	7.8	7.8	8.0	7.9	7.9
16	8.1	8.0	8.0	7.9	7.7	7.8	7.9	7.8	7.8	8.0	7.9	7.9
17	8.1	8.0	8.1	7.9	7.6	7.8	7.9	7.8	7.9	8.1	7.9	8.0
18	8.1	8.0	8.1	7.8	7.8	7.8	7.9	7.9	7.9	8.1	8.0	8.0
19	8.1	7.7	7.9	7.9	7.8	7.8	7.9	7.8	7.9	8.1	8.0	8.1
20	7.7	7.6	7.7	8.0	7.9	8.0	7.9	7.8	7.9	8.2	8.0	8.1
21	7.7	7.6	7.7	8.1	8.0	8.0	7.9	7.8	7.9	8.2	8.0	8.1
22	7.7	7.6	7.6	8.1	8.0	8.0	8.0	7.8	7.9	8.2	8.1	8.1
23	7.7	7.6	7.7	8.1	8.0	8.0	7.9	7.8	7.8	8.2	8.1	8.2
24	7.6	7.6	7.6	8.1	8.0	8.1	7.9	7.8	7.8	8.2	8.1	8.2
25	7.6	7.6	7.6	8.1	8.0	8.0	7.8	7.8	7.8	8.2	8.1	8.2
26	7.6	7.6	7.6	8.1	8.0	8.1	7.8	7.8	7.8	8.2	8.0	8.1
27	7.6	7.5	7.5	8.0	7.9	7.9	7.8	7.7	7.8	8.1	8.0	8.1
28	7.7	7.5	7.6	8.0	7.9	8.0	7.8	7.8	7.8	8.2	8.0	8.1
29	---	---	---	8.0	7.9	8.0	7.9	7.8	7.8	8.2	8.0	8.1
30	---	---	---	8.0	7.9	7.9	7.9	7.8	7.9	8.2	8.0	8.1
31	---	---	---	8.0	7.9	8.0	---	---	---	8.2	8.0	8.1
MONTH	8.1	7.5	7.9	8.1	7.6	7.9	8.0	7.7	7.9	8.2	7.7	8.0

08181500 MEDINA RIVER AT SAN ANTONIO, 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	8.2	8.1	8.1	8.2	8.1	8.1	8.2	8.0	8.1	7.9	7.8	7.8
2	8.2	8.0	8.1	8.3	8.1	8.2	8.2	8.0	8.1	7.9	7.7	7.8
3	8.2	8.1	8.1	8.2	8.1	8.1	8.1	7.9	8.0	7.9	7.7	7.8
4	8.2	8.0	8.1	8.2	8.0	8.1	8.1	7.9	8.0	7.8	7.7	7.8
5	---	---	---	8.3	8.0	8.1	8.0	8.0	8.0	7.9	7.8	7.9
6	8.2	8.0	8.1	8.2	8.0	8.1	8.0	7.9	8.0	7.9	7.8	7.8
7	8.2	8.1	8.1	8.0	7.8	7.9	8.0	7.8	7.9	7.9	7.8	7.9
8	8.1	8.1	8.1	7.9	7.7	7.8	7.9	7.7	7.8	7.9	7.8	7.8
9	---	---	---	7.9	7.6	7.8	7.9	7.7	7.8	7.9	7.7	7.8
10	8.2	8.0	8.1	7.9	7.6	7.8	7.9	7.7	7.8	7.7	7.6	7.7
11	8.3	8.0	8.1	8.2	7.8	8.0	8.0	7.9	7.9	7.7	7.6	7.6
12	8.3	8.1	8.2	8.2	8.0	8.1	8.0	7.9	8.0	7.6	7.6	7.6
13	8.3	8.2	8.3	8.2	7.9	8.1	8.0	7.8	7.9	7.6	7.6	7.6
14	8.3	8.2	8.3	8.2	8.0	8.1	7.9	7.7	7.7	7.6	7.6	7.6
15	8.3	8.2	8.3	8.2	8.0	8.1	7.7	7.7	7.7	7.6	7.6	7.6
16	8.3	8.2	8.2	8.2	8.0	8.1	7.8	7.7	7.7	7.6	7.6	7.6
17	---	---	---	8.2	8.0	8.1	7.8	7.7	7.7	7.6	7.6	7.6
18	---	---	---	8.2	8.1	8.1	7.8	7.6	7.7	7.6	7.6	7.6
19	---	---	---	8.2	8.0	8.1	7.8	7.8	7.8	7.6	7.6	7.6
20	---	---	---	8.2	8.0	8.1	7.8	7.7	7.7	7.6	7.6	7.6
21	---	---	---	8.1	7.9	8.0	7.8	7.8	7.8	7.6	7.6	7.6
22	8.1	7.9	8.0	8.1	7.9	8.0	7.9	7.7	7.8	7.6	7.6	7.6
23	8.1	8.0	8.0	8.1	7.9	8.0	7.8	7.7	7.7	7.6	7.6	7.6
24	8.2	7.9	8.0	8.1	7.9	8.0	7.7	7.6	7.7	7.6	7.6	7.6
25	8.2	7.9	8.0	8.1	8.0	8.1	7.7	7.7	7.7	7.7	7.6	7.6
26	7.9	7.9	7.9	8.1	7.9	8.0	7.7	7.7	7.7	7.7	7.6	7.6
27	8.0	7.9	7.9	8.1	7.9	8.0	7.7	7.7	7.7	7.7	7.6	7.6
28	8.0	7.9	8.0	8.2	8.0	8.1	7.7	7.7	7.7	7.7	7.6	7.6
29	8.0	7.8	7.9	8.2	8.0	8.1	7.8	7.7	7.7	7.7	7.6	7.6
30	8.2	7.8	8.0	8.2	8.0	8.1	7.8	7.7	7.8	7.7	7.6	7.6
31	---	---	---	8.2	8.0	8.1	7.9	7.7	7.8	---	---	---
MONTH	---	---	---	8.3	7.6	8.0	8.2	7.6	7.8	7.9	7.6	7.7

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	27.2	25.8	26.5	22.6	21.1	21.6	19.4	17.8	18.5	16.3	14.4	14.8
2	27.1	25.9	26.5	21.9	20.1	20.6	18.9	17.8	18.4	17.7	16.2	16.5
3	27.3	26.2	26.7	21.0	19.2	19.9	19.4	18.5	18.8	18.8	17.5	17.8
4	27.5	26.4	26.9	---	---	---	18.9	17.5	18.1	19.5	18.4	18.7
5	27.4	26.3	26.7	21.9	20.8	21.1	18.0	16.5	17.2	19.9	19.2	19.5
6	26.9	26.2	26.5	21.6	20.3	20.9	17.3	15.6	16.4	20.0	18.9	19.8
7	26.9	26.0	26.4	20.7	19.0	19.8	17.5	15.7	16.5	18.9	16.0	16.9
8	26.7	24.5	25.6	20.6	18.5	19.2	18.0	16.8	17.3	16.0	15.1	15.6
9	25.7	24.8	25.3	21.2	19.5	20.2	18.1	16.9	17.5	16.0	14.6	15.2
10	25.8	25.0	25.4	21.2	18.8	19.7	17.8	16.2	16.9	17.1	15.7	16.0
11	25.5	24.5	24.8	18.8	16.8	17.9	16.9	15.3	16.1	17.9	16.4	16.9
12	25.3	24.6	24.8	18.0	17.0	17.6	15.8	14.1	15.0	18.8	17.8	18.2
13	25.3	23.9	24.6	17.6	16.9	17.2	14.8	12.9	13.6	18.7	18.0	18.4
14	23.9	22.1	22.7	18.4	17.1	17.6	15.0	12.9	13.6	18.2	17.3	17.8
15	22.4	21.1	21.7	18.1	15.8	17.0	15.0	13.2	14.1	18.0	16.6	17.2
16	22.3	21.0	21.6	16.9	15.1	16.0	15.4	13.7	14.4	17.3	15.8	16.5
17	22.5	21.0	21.6	16.9	15.1	16.1	15.4	13.8	14.6	17.3	15.8	16.4
18	22.8	21.1	21.8	16.7	15.2	16.1	15.7	13.9	14.6	18.0	16.7	17.1
19	23.0	21.4	22.1	17.0	15.6	16.3	17.3	15.2	15.9	17.9	16.2	16.9
20	23.2	21.9	22.5	17.4	16.0	16.7	18.2	17.0	17.4	17.6	16.5	17.0
21	23.2	22.2	22.6	18.3	17.1	17.6	17.5	16.3	16.8	19.0	17.6	18.2
22	23.0	21.6	22.2	18.3	16.7	17.3	16.9	15.7	16.3	18.9	17.1	17.9
23	23.2	21.9	22.3	18.2	16.5	17.2	16.9	16.2	16.6	17.2	15.9	16.5
24	23.8	22.3	22.9	18.7	16.9	17.5	16.7	15.4	16.0	16.9	15.4	16.1
25	23.9	23.2	23.5	19.8	18.4	18.9	16.4	14.5	15.3	17.2	15.5	16.1
26	23.7	21.0	21.9	20.7	19.5	19.9	15.4	14.1	14.7	17.3	16.2	16.7
27	21.4	19.5	20.2	21.7	20.4	20.8	15.1	13.2	13.9	17.0	15.5	16.2
28	20.3	19.2	19.8	21.6	20.9	21.1	14.4	12.7	13.3	17.3	15.6	16.3
29	21.3	19.8	20.3	21.3	19.9	20.4	14.2	12.6	13.3	17.9	16.5	17.0
30	22.3	21.0	21.5	20.4	18.6	19.1	14.5	12.9	13.6	18.5	17.3	17.8
31	23.1	22.0	22.4	---	---	---	15.0	13.5	14.1	19.1	17.7	18.2
MONTH	27.5	19.2	23.6	---	---	---	19.4	12.6	15.8	20.0	14.4	17.1

08181500 MEDINA RIVER AT SAN ANTONIO, 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	17.8	17.1	17.4	18.2	16.7	17.5	20.9	19.3	20.0	24.2	22.0	22.9
2	18.1	17.1	17.5	18.3	16.4	17.3	20.3	18.9	19.6	25.0	22.8	23.7
3	17.8	16.5	17.1	18.0	17.0	17.5	20.7	19.4	20.0	25.5	24.0	24.7
4	17.5	16.4	16.9	18.9	17.6	18.1	20.4	19.1	19.8	25.3	24.5	24.9
5	17.8	16.7	17.2	20.3	18.8	19.4	20.3	18.9	19.6	25.4	24.3	24.8
6	17.5	16.3	16.9	20.1	18.8	19.4	20.2	19.7	20.0	26.1	24.7	25.2
7	17.0	15.2	16.0	19.6	18.3	18.9	21.5	20.0	20.6	26.9	25.0	25.8
8	17.5	15.5	16.4	19.5	17.8	18.5	22.4	20.9	21.6	26.6	25.6	26.1
9	18.0	16.2	17.0	18.2	16.6	17.4	21.8	20.2	21.0	26.9	25.4	26.1
10	18.2	13.7	16.4	17.4	15.9	16.7	21.4	19.8	20.6	26.4	24.4	25.3
11	17.6	14.6	15.9	16.7	15.5	16.1	21.5	19.8	20.7	25.6	24.1	24.9
12	17.6	16.8	17.1	16.4	14.8	15.6	21.9	20.5	21.2	25.5	24.5	24.9
13	18.0	16.6	17.2	15.9	14.5	15.3	22.7	21.3	21.9	25.8	24.9	25.2
14	17.7	16.6	17.3	17.0	15.8	16.2	23.6	22.1	22.8	26.2	25.3	25.6
15	17.5	16.2	16.8	17.8	16.6	17.1	23.6	22.8	23.2	26.5	25.6	26.0
16	17.8	16.7	17.2	17.8	17.0	17.4	23.9	23.0	23.4	26.3	25.6	25.8
17	17.2	15.9	16.6	17.1	16.0	16.6	23.5	21.9	22.5	26.2	25.1	25.6
18	17.5	14.0	16.3	18.5	16.6	17.4	22.1	20.9	21.5	26.3	25.0	25.7
19	17.8	14.0	16.1	19.1	18.3	18.7	22.1	20.3	21.2	26.5	24.9	25.6
20	18.1	16.4	17.2	18.6	17.4	18.0	22.4	20.8	21.6	26.9	25.3	26.0
21	17.6	16.6	17.1	17.9	16.5	17.2	22.3	21.2	21.8	27.2	25.6	26.3
22	17.2	15.0	16.0	17.5	16.1	16.9	22.1	20.6	21.3	27.4	25.8	26.6
23	17.5	15.5	16.5	18.0	16.5	17.3	22.3	20.5	21.3	27.0	26.0	26.5
24	18.7	16.5	17.5	19.1	17.5	18.2	22.9	21.0	21.8	27.0	26.0	26.6
25	20.1	18.5	19.1	19.9	18.8	19.4	22.7	21.8	22.2	26.9	26.0	26.5
26	20.1	19.1	19.6	20.4	19.7	20.0	23.3	22.1	22.5	27.0	26.2	26.6
27	19.1	17.5	18.2	21.1	20.1	20.5	23.3	22.7	23.0	27.4	25.9	26.6
28	18.6	17.3	17.9	21.5	20.3	20.8	22.9	21.6	22.2	27.8	26.2	27.0
29	---	---	---	21.6	20.8	21.2	23.2	21.6	22.3	28.3	26.6	27.4
30	---	---	---	22.3	21.0	21.6	23.4	21.5	22.3	28.6	26.8	27.7
31	---	---	---	22.1	20.8	21.4	---	---	---	29.0	27.1	28.1
MONTH	20.1	13.7	17.1	22.3	14.5	18.2	23.9	18.9	21.5	29.0	22.0	25.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	29.1	27.4	28.3	30.2	28.5	29.3	30.2	28.5	29.4	29.2	27.9	28.5
2	29.2	27.5	28.4	30.1	28.5	29.3	30.6	28.8	29.7	29.0	27.8	28.4
3	29.4	27.8	28.6	29.7	28.6	28.8	30.4	28.8	29.8	29.1	27.7	28.3
4	29.4	27.7	28.6	28.6	28.0	28.4	30.5	29.1	29.9	29.2	27.9	28.5
5	29.4	28.2	28.8	29.4	27.9	28.6	30.4	29.2	29.8	29.1	27.8	28.4
6	---	---	---	30.3	28.2	29.2	29.7	28.1	28.6	28.9	27.5	28.1
7	---	---	---	30.5	28.6	29.6	28.5	27.5	28.0	29.0	27.6	28.2
8	---	---	---	30.3	28.7	29.5	29.6	27.5	28.4	28.6	27.7	28.1
9	28.5	26.9	27.7	30.3	28.7	29.5	30.2	28.2	29.1	28.8	27.5	28.1
10	28.6	27.5	28.0	30.5	28.8	29.7	30.5	28.6	29.5	28.2	26.6	27.3
11	28.4	27.2	27.8	30.8	28.9	29.9	30.5	28.7	29.6	26.6	25.8	26.3
12	28.3	27.7	28.0	31.1	29.1	30.1	30.5	28.8	29.6	26.6	25.9	26.1
13	28.9	27.5	28.2	30.7	29.3	30.1	30.3	28.9	29.6	27.3	26.0	26.6
14	29.7	27.8	28.7	30.6	29.0	29.8	29.7	26.1	28.2	27.4	26.6	27.0
15	29.4	27.6	28.5	30.2	28.6	29.4	27.8	25.9	26.9	27.7	26.6	27.1
16	29.6	27.8	28.9	30.5	28.8	29.6	27.6	27.2	27.4	27.3	26.5	26.8
17	29.8	27.7	29.0	30.5	28.7	29.7	27.9	27.1	27.4	27.1	26.1	26.5
18	30.1	28.2	29.4	30.4	28.7	29.7	28.0	27.1	27.5	27.8	26.5	27.0
19	---	---	---	30.5	28.7	29.6	29.1	27.5	28.1	28.0	26.7	27.2
20	---	---	---	30.5	28.9	29.8	29.6	28.1	28.7	28.2	26.8	27.4
21	---	---	---	30.6	29.1	29.8	29.5	28.2	28.8	28.7	27.3	27.9
22	30.2	28.6	29.2	30.7	29.1	29.8	29.0	25.7	27.6	28.9	27.7	28.2
23	30.0	28.4	29.3	30.4	28.9	29.7	26.3	25.6	25.9	28.8	27.7	28.2
24	29.9	28.4	29.2	30.5	28.9	29.7	27.6	26.3	26.9	28.8	27.6	28.1
25	29.9	28.2	29.1	30.6	28.8	29.7	28.4	27.1	27.7	28.6	27.4	27.9
26	30.2	28.2	29.2	30.5	28.9	29.6	28.9	27.7	28.2	28.7	27.6	28.0
27	30.4	28.7	29.6	30.4	28.9	29.7	29.2	28.0	28.5	28.6	27.4	28.0
28	30.2	29.0	29.6	30.4	28.9	29.7	29.1	28.0	28.5	28.8	27.3	28.0
29	29.7	28.8	29.1	30.2	28.7	29.5	29.3	27.9	28.5	28.9	27.5	28.1
30	29.9	28.4	29.1	30.1	28.6	29.4	29.1	27.8	28.4	28.8	27.5	28.1
31	---	---	---	30.2	28.6	29.5	29.2	28.1	28.6	---	---	---
MONTH	---	---	---	31.1	27.9	29.5	30.6	25.6	28.5	29.2	25.8	27.7

08181500 MEDINA RIVER AT SAN ANTONIO, 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
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	6.7	5.5	6.0	8.5	7.4	8.0	9.3	8.0	8.5	10.8	9.7	10.2
2	6.8	5.6	6.1	9.0	8.0	8.4	8.5	8.0	8.1	10.3	9.3	9.6
3	6.8	5.8	6.3	9.3	8.3	8.7	8.7	7.9	8.2	9.7	8.6	9.1
4	6.8	5.5	6.1	---	---	---	9.1	8.1	8.4	9.0	8.1	8.6
5	6.9	5.4	6.2	9.2	8.4	8.7	10.1	8.2	9.2	8.6	7.7	8.1
6	7.0	5.8	6.4	8.5	8.1	8.2	10.5	9.2	9.7	8.2	7.1	7.6
7	7.2	6.2	6.6	8.8	7.9	8.3	9.5	8.9	9.3	8.5	7.6	8.2
8	6.7	5.2	5.9	9.1	8.2	8.5	9.9	8.6	9.1	8.8	8.3	8.5
9	6.4	5.3	5.7	8.3	7.7	8.0	9.5	8.7	9.0	9.1	8.1	8.4
10	6.7	4.7	5.7	8.4	7.5	7.9	10.1	8.9	9.3	9.0	8.5	8.6
11	7.2	6.6	6.9	8.9	8.2	8.4	10.5	9.3	9.7	8.7	8.1	8.3
12	7.3	6.8	7.0	8.8	8.3	8.5	10.4	9.7	9.9	8.6	7.9	8.3
13	7.4	6.1	6.8	9.1	8.6	8.8	11.3	10.0	10.6	8.5	7.8	8.1
14	8.0	6.4	7.1	9.4	8.6	8.9	11.6	10.1	10.6	8.8	8.3	8.5
15	8.3	7.5	7.8	9.5	8.6	9.0	11.2	9.8	10.3	9.2	8.3	8.7
16	8.4	7.6	8.0	10.5	9.2	9.8	10.6	9.5	9.8	9.6	8.9	9.2
17	8.4	7.7	8.1	10.3	9.5	9.8	10.5	9.3	9.7	10.0	9.2	9.5
18	8.5	7.7	8.1	10.4	9.7	10.0	10.5	9.1	9.6	9.8	9.1	9.4
19	8.5	7.4	7.9	10.5	9.8	10.0	9.8	8.6	9.1	9.9	8.9	9.3
20	8.3	7.6	7.9	10.3	9.6	9.9	8.6	7.8	8.2	9.6	9.0	9.2
21	8.2	7.6	7.9	10.2	9.4	9.7	7.9	7.1	7.6	9.4	8.7	9.1
22	8.2	7.6	7.8	10.5	9.4	9.9	8.8	6.7	7.5	9.3	8.6	8.9
23	8.2	7.5	7.9	10.8	9.4	10.0	8.6	7.0	8.1	10.1	9.1	9.5
24	8.2	7.5	7.7	10.9	9.6	10.1	9.6	8.2	8.8	10.4	9.5	9.8
25	7.8	7.0	7.4	9.7	8.9	9.5	9.9	8.8	9.2	9.8	9.3	9.6
26	8.3	7.0	7.6	9.1	8.6	8.8	10.3	9.4	9.7	9.9	9.0	9.5
27	9.0	8.0	8.5	8.8	7.9	8.4	11.3	9.6	10.3	10.2	9.4	9.8
28	8.7	8.4	8.5	8.5	7.6	7.9	11.5	10.2	10.8	10.4	9.5	9.9
29	9.1	8.4	8.7	8.4	7.5	7.9	11.9	10.6	11.0	10.0	8.6	9.1
30	8.6	8.0	8.3	8.9	7.5	8.2	11.6	10.5	10.9	9.4	8.5	8.9
31	8.3	7.8	8.0	---	---	---	11.2	10.0	10.5	8.8	8.4	8.5
MONTH	9.1	4.7	7.3	---	---	---	11.9	6.7	9.4	10.8	7.1	9.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.7	8.4	8.5	9.5	8.7	9.1	9.2	8.7	9.0	7.3	6.4	6.8
2	8.9	8.2	8.5	9.6	8.9	9.2	9.2	8.8	9.0	7.4	6.0	6.6
3	9.3	8.6	8.9	9.4	9.1	9.2	9.0	8.6	8.8	7.1	5.9	6.5
4	9.5	8.8	9.1	9.3	8.9	9.2	8.8	8.6	8.7	6.4	5.0	5.7
5	9.5	9.0	9.2	8.9	8.6	8.8	8.9	8.6	8.7	6.0	4.4	5.2
6	9.6	8.8	9.2	8.9	8.3	8.6	8.6	8.4	8.5	6.3	4.1	5.1
7	10.0	9.4	9.6	9.0	8.7	8.8	8.5	8.1	8.4	6.1	4.3	5.2
8	10.1	9.5	9.8	9.5	8.4	9.0	8.2	7.9	8.1	6.3	4.6	5.4
9	9.8	9.2	9.5	9.8	9.1	9.4	8.4	7.8	8.1	7.0	5.0	6.0
10	9.2	9.2	9.2	10.3	9.4	9.8	8.5	7.8	8.2	8.0	5.7	6.8
11	9.3	8.4	8.8	10.1	9.5	9.9	8.4	7.7	8.1	7.9	6.2	7.0
12	9.0	8.5	8.8	10.0	9.4	9.8	8.2	7.5	7.9	6.8	5.5	6.1
13	9.3	8.6	8.9	10.1	9.5	9.9	8.0	7.3	7.6	5.7	4.5	5.1
14	8.9	8.5	8.7	10.1	9.5	9.8	7.5	6.9	7.3	5.9	4.5	5.2
15	9.2	8.2	8.7	9.9	9.4	9.6	7.3	6.3	6.8	5.8	4.4	5.1
16	9.1	8.4	8.7	10.0	9.4	9.6	7.3	6.4	6.8	---	---	---
17	9.5	8.5	8.9	10.0	8.8	9.4	7.6	6.5	7.0	6.0	4.6	5.3
18	9.6	8.9	9.1	10.2	9.6	9.8	7.8	7.0	7.3	6.0	5.0	5.5
19	9.9	8.8	9.2	10.1	9.4	9.6	7.9	7.1	7.5	6.4	4.9	5.6
20	9.4	8.8	9.1	10.4	9.7	10.0	7.7	6.9	7.3	6.2	5.1	5.6
21	9.1	8.9	9.0	10.5	10.0	10.3	7.7	6.8	7.2	6.6	4.8	5.8
22	9.5	8.8	9.3	10.8	10.3	10.5	7.7	7.0	7.3	6.5	5.3	5.9
23	9.5	9.0	9.3	10.5	10.2	10.3	7.8	6.9	7.3	6.4	5.2	5.8
24	9.2	8.7	8.9	10.2	9.7	10.1	7.7	7.0	7.3	6.6	5.1	5.8
25	8.8	8.3	8.6	9.9	9.5	9.7	7.4	6.7	7.0	6.5	5.1	5.8
26	8.5	8.1	8.3	9.6	9.4	9.5	7.1	6.4	6.8	6.4	5.2	5.7
27	8.9	7.7	8.2	9.4	9.2	9.2	6.9	6.1	6.5	6.6	4.7	5.7
28	9.2	8.1	8.6	9.2	9.0	9.1	7.2	6.3	6.8	7.0	5.1	6.0
29	---	---	---	---	8.9	8.9	7.4	6.4	6.9	7.0	5.5	6.1
30	---	---	---	---	8.5	8.7	7.3	6.7	6.9	6.9	5.3	6.1
31	---	---	---	8.9	8.4	8.6	---	---	---	7.0	4.8	5.9
MONTH	10.1	7.7	8.9	---	8.3	9.5	9.2	6.1	7.6	---	---	---

08181500 MEDINA RIVER AT SAN ANTONIO, 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
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.1	5.4	6.2	6.3	5.1	5.6	7.0	5.5	6.1	6.4	6.0	6.2
2	7.0	5.3	6.2	6.3	5.1	5.7	6.8	5.4	6.0	6.5	6.1	6.3
3	6.5	5.3	6.0	5.6	5.1	5.4	6.8	5.5	6.0	6.5	6.0	6.3
4	6.7	5.4	6.1	5.8	5.0	5.4	6.5	5.3	5.9	6.6	6.2	6.4
5	---	---	---	6.3	5.0	5.6	6.2	5.3	5.7	6.6	6.3	6.5
6	---	---	---	5.6	4.8	5.2	5.6	5.2	5.4	6.6	6.2	6.4
7	---	---	---	5.3	4.1	4.7	5.5	5.3	5.4	6.6	6.2	6.4
8	---	---	---	4.8	3.6	4.1	5.7	5.3	5.5	6.5	6.1	6.3
9	7.0	5.9	6.3	4.7	3.2	3.8	5.9	5.2	5.5	6.6	6.2	6.4
10	6.3	4.6	5.5	4.7	2.9	3.7	6.0	5.4	5.7	6.5	6.3	6.4
11	4.8	3.5	4.3	5.9	3.7	4.9	6.1	5.6	5.8	6.5	6.2	6.3
12	5.2	3.2	4.2	5.8	4.6	5.1	6.1	5.7	5.8	6.6	6.2	6.4
13	5.3	3.7	4.6	5.4	4.2	4.8	6.0	5.5	5.8	6.6	6.1	6.4
14	5.4	4.0	4.8	5.7	4.5	5.0	5.9	4.9	5.6	6.6	6.1	6.4
15	5.8	4.2	5.0	5.9	4.6	5.2	5.9	5.7	5.8	6.5	6.3	6.4
16	6.4	4.5	5.4	6.3	4.9	5.5	5.9	5.4	5.6	6.5	6.3	6.4
17	6.0	4.5	5.4	6.5	5.0	5.7	5.9	5.6	5.7	6.6	6.4	6.5
18	---	---	---	6.7	5.1	5.8	6.1	5.6	5.7	6.6	6.4	6.5
19	---	---	---	6.9	5.0	5.7	6.2	6.0	6.1	6.5	6.2	6.4
20	---	---	---	6.7	5.1	5.9	6.1	5.7	5.8	6.3	6.1	6.2
21	---	---	---	6.7	5.2	5.8	6.0	5.7	5.8	6.2	5.9	6.0
22	7.1	5.7	6.2	7.0	5.3	6.0	6.3	5.2	5.8	6.1	5.6	5.9
23	7.1	5.3	6.1	6.9	5.4	6.0	6.4	4.7	5.8	6.1	5.6	5.9
24	7.5	5.2	6.1	6.9	5.4	6.1	6.5	6.2	6.4	6.3	5.8	6.0
25	---	---	---	7.3	5.4	6.2	6.4	6.2	6.3	6.2	5.9	6.1
26	---	---	---	7.5	5.5	6.2	6.3	6.2	6.3	6.1	5.8	6.0
27	7.1	5.5	6.0	6.7	5.5	6.0	6.3	6.0	6.2	6.1	5.4	5.7
28	6.9	5.0	6.1	6.6	5.4	5.9	6.2	6.1	6.1	6.0	5.3	5.7
29	7.1	5.6	6.3	6.8	5.4	6.0	6.4	6.1	6.2	5.7	5.0	5.3
30	6.3	5.4	5.9	6.9	5.5	6.1	6.4	6.1	6.3	5.8	5.3	5.5
31	---	---	---	6.8	5.4	6.0	6.4	6.0	6.2	---	---	---
MONTH	---	---	---	7.5	2.9	5.5	7.0	4.7	5.9	6.6	5.0	6.2

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX

LOCATION.--Lat 29°13'19", long 98°21'20", Bexar County, Hydrologic Unit 12100301, at downstream side of bridge on Farm Road 1604, 2.7 mi southwest of Elmendorf, 3.3 mi downstream from Braunig Plant Lake, and 203.0 mi upstream from mouth.

DRAINAGE AREA.--1,743 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Sep 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 380.00 ft above sea level. Sep 12, 1962 to Dec 19, 1980, at site 2.5 mi upstream at different datum. Dec 19, 1980 to Dec 23, 1986, at same site and datum. Dec 24, 1986 to Jun 15, 1993, at site 2.8 mi upstream at different datum. Satellite telemeter at station.

REMARKS.--Records fair. Since installation of gage in water year 1962, at least 10% of contributing drainage area has been regulated by Medina Lake (station 08179500) and by Olmos flood-control reservoir (combined capacity, 269,500 acre-ft). Additional regulation since 1973 by eleven Soil Conservation Service floodwater-retarding structures (combined capacity of 26,770 acre-ft). Storage began in Medina Lake in 1913, and Olmos Dam was completed in 1926. Water is diverted above station from Medina River for irrigation in the vicinity of Devine and Lytle, with some water diverted for irrigation near San Antonio. During the current year, the city of San Antonio discharged 135,200 acre-ft of wastewater effluent into the San Antonio River from their Leon Creek, Salado Creek, Dos Rios and Mitchell plants. The San Antonio City Public Service Board pumped 5,796 acre-ft into Braunig Lake and 20,380 acre-ft into Calaveras Lake upstream from this station and released 120 acre-ft from Braunig Lake and made no releases from Calaveras Lake upstream from this station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, 61 ft in 1946. Second highest stage was 53 ft in 1913, from information by local residents. At site and datum in use prior to Dec 19, 1980.

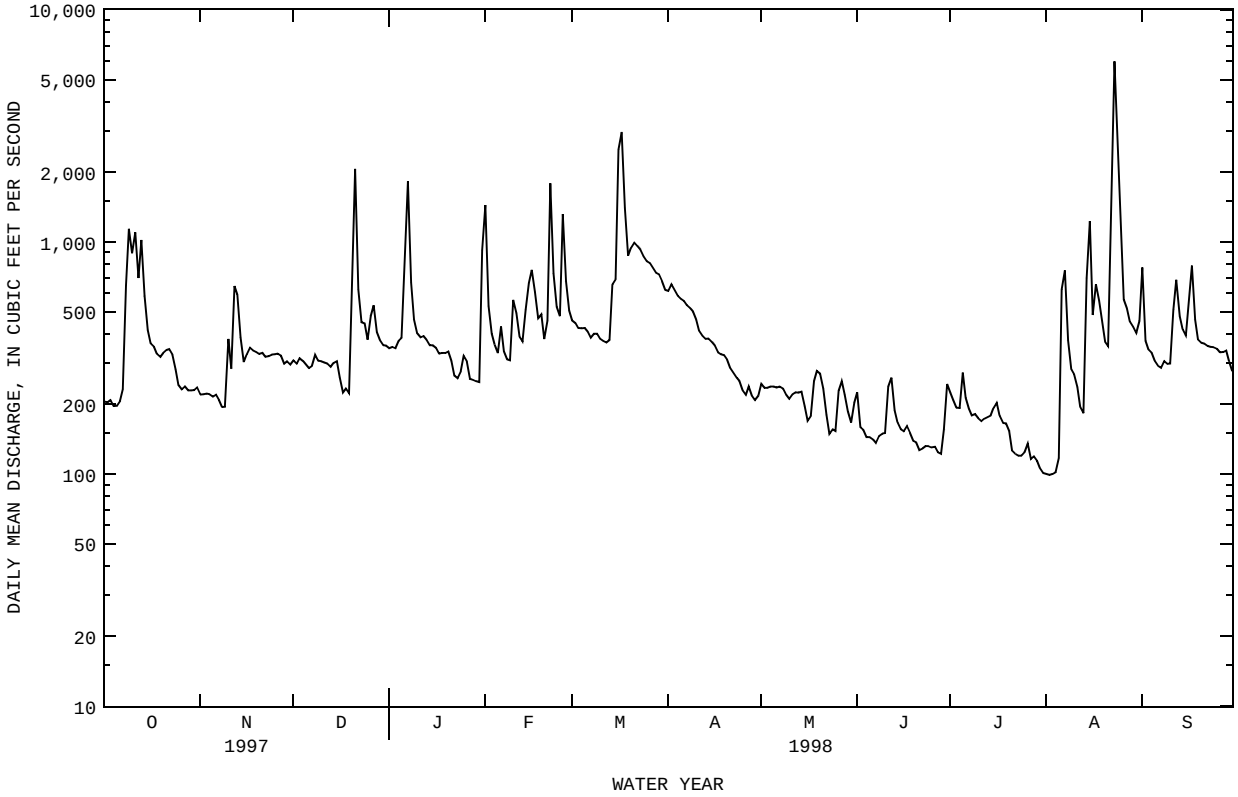
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	205	220	309	348	1440	459	614	244	225	224	100	776
2	204	221	299	353	529	448	657	235	159	208	99	374
3	208	222	316	348	402	426	620	235	155	193	100	344
4	196	221	308	374	361	424	587	238	144	192	102	333
5	197	216	297	386	332	425	569	238	144	274	117	307
6	206	220	286	810	432	410	557	236	141	213	625	293
7	232	209	293	1820	337	387	536	238	136	191	754	287
8	649	194	326	668	312	402	520	234	146	179	377	307
9	1140	195	308	463	309	402	501	219	149	181	283	298
10	894	382	306	403	563	383	462	211	150	174	268	299
11	1100	284	302	388	494	375	413	221	238	169	237	510
12	698	644	299	393	389	369	394	225	260	173	194	687
13	1020	592	290	378	372	378	382	224	188	176	183	479
14	587	388	301	359	512	658	383	226	167	179	700	420
15	418	304	307	359	667	692	371	196	156	193	1230	395
16	365	328	261	350	757	2500	357	170	153	203	485	545
17	354	350	225	330	610	2970	334	178	161	178	657	791
18	330	340	234	332	470	1400	328	251	150	166	559	463
19	320	335	223	332	488	873	325	278	139	165	456	380
20	332	329	690	338	382	945	312	271	137	153	370	367
21	342	332	2060	307	457	994	286	234	127	126	355	364
22	345	320	625	266	1790	960	273	180	129	122	1540	356
23	327	322	450	259	734	925	260	149	132	120	6000	353
24	283	327	444	277	524	e866	251	156	132	120	2320	352
25	241	328	379	323	479	e826	229	153	130	124	1050	347
26	231	330	480	306	1320	811	219	228	131	135	564	334
27	238	324	533	257	678	777	238	251	124	116	517	335
28	229	299	408	254	505	738	217	220	122	119	454	340
29	229	306	376	251	---	727	208	186	156	114	431	306
30	230	296	359	249	---	676	218	167	244	106	405	277
31	236	---	357	921	---	621	---	203	---	101	456	---
TOTAL	12586	9378	12651	13202	16645	24247	11621	6695	4725	5087	21988	12019
MEAN	406	313	408	426	594	782	387	216	158	164	709	401
MAX	1140	644	2060	1820	1790	2970	657	278	260	274	6000	791
MIN	196	194	223	249	309	369	208	149	122	101	99	277
AC-FT	24960	18600	25090	26190	33020	48090	23050	13280	9370	10090	43610	23840
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1998, BY WATER YEAR (WY)												
MEAN	483	432	451	493	568	499	519	753	989	506	403	476
MAX	2424	1255	2176	2191	3803	3031	1997	3293	8527	3764	1760	2761
(WY)	1974	1977	1992	1968	1992	1992	1992	1992	1987	1973	1978	1973
MIN	127	153	160	168	146	143	150	130	88.6	81.9	52.8	120
(WY)	1997	1967	1971	1967	1967	1971	1967	1967	1967	1964	1963	1989

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1962 - 1998	
ANNUAL TOTAL	197290		150844			
ANNUAL MEAN	541		413		547	
HIGHEST ANNUAL MEAN					1784	1992
LOWEST ANNUAL MEAN					166	1963
HIGHEST DAILY MEAN	12100	Jun 24	6000	Aug 23	27600	Sep 27 1973
LOWEST DAILY MEAN	112	Sep 1	99	Aug 2	25	Aug 26 1963
ANNUAL SEVEN-DAY MINIMUM	124	Aug 26	103	Jul 29	42	Aug 21 1963
INSTANTANEOUS PEAK FLOW			7210	Aug 23	40000	Sep 27 1973
INSTANTANEOUS PEAK STAGE			35.14	Aug 23	53.06	Jun 5 1986
ANNUAL RUNOFF (AC-FT)	391300		299200		396200	
10 PERCENT EXCEEDS	834		699		977	
50 PERCENT EXCEEDS	283		323		314	
90 PERCENT EXCEEDS	159		153		146	

e Estimated



08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Sep 1964 to current year. Chemical and biochemical analyses: Jan 1968 to current year. Pesticide analyses: Jan 1968 to Sep 1981; Dec 1992 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1966 to current year.
PH: Jun 1984 to current year.
WATER TEMPERATURE: Oct 1966 to current year.
DISSOLVED OXYGEN: Jun 1984 to current year.

INSTRUMENTATION.--Beginning Jun 1984, 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 instruments or probe fouling. 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 ofice upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,240 microsiemens, Jan 29, 1973, Aug 8, 1975; minimum, 110 microsiemens, Jul 16, 1990.
PH: Maximum, 9.0 units, Jun 16, 17, 1993; minimum, 7.0 units, Oct 25 and 28, 1988, Jan 11, 1989.
WATER TEMPERATURE: Maximum, 33.5°C, Jun 19, 20, Sep 2, 1996; minimum, 5.5°C, Jan 10, 1973.
DISSOLVED OXYGEN: Maximum, 13.2 mg/L, Feb 4, 1996; minimum, 0.0 mg/L, Mar 2, Apr 14, 15, 1985.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,030 microsiemens, Jun 11; minimum, 150 microsiemens, Aug 22.
PH: Maximum, 8.4 units, Jan 31, Aug 1, 4; minimum, 7.5 units, Mar 16, Jun 30, Jul 1, Aug 23-24.
WATER TEMPERATURE: Maximum, 33.1°C, Aug 2; minimum, 13.7°C, Dec 27.
DISSOLVED OXYGEN: Maximum, 10.7 mg/L, Dec 14; minimum, 2.7 mg/L, Aug 14.

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 (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT												
08-09	1800	1110	--	--	--	--	--	--	--	230	53	67
22...	1230	324	910	8.2	21.0	--	--	--	--	290	83	87
NOV												
19...	1230	318	867	8.2	16.0	10.0	103	--	--	270	67	79
DEC												
08...	1309	--	--	--	--	--	--	--	--	--	--	--
17...	1200	212	927	8.2	17.0	9.7	102	--	--	280	67	82
DEC												
20-21	1500	1250	--	--	--	--	--	--	--	160	36	48
DEC												
20-21	1515	1960	470	--	--	--	--	120	15	160	35	48
JAN												
06-07	1930	1050	--	--	--	--	--	--	--	150	29	48
JAN												
06-07	1932	2260	475	--	--	--	--	60	11	160	29	48
22...	1000	265	903	8.2	17.0	7.5	79	--	--	280	78	82
JAN 31-												
FEB 01	1700	1270	--	--	--	--	--	--	--	150	30	46
19...	1200	462	795	8.2	18.0	7.6	82	--	--	250	65	76
FEB												
21-23	2230	1080	--	--	--	--	--	--	--	160	40	51
MAR												
16-16	0730	1360	--	--	--	--	--	--	--	150	31	47
26...	0945	812	610	8.1	21.0	8.4	0	--	--	220	45	67
APR												
28...	0945	218	880	7.7	22.0	7.3	--	--	--	290	79	85
JUN												
25...	1030	129	970	8.1	29.0	6.5	86	--	--	260	55	76
JUL												
29...	0915	123	895	7.8	29.0	5.5	--	--	--	260	60	76

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

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

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
OCT												
08-09	15	44	1	29	6.6	170	57	57	.4	11	380	379
22...	19	69	2	33	7.5	210	68	88	.4	15	543	532
NOV												
19...	17	65	2	34	8.0	200	66	85	.5	13	527	513
DEC												
08...	--	--	--	--	--	--	--	--	--	--	--	--
17...	18	72	2	35	7.8	210	70	93	.6	11	562	543
DEC												
20-21	9.0	27	.9	27	4.9	120	37	35	.3	6.2	277	448
DEC												
20-21	9.2	29	1	27	5.1	120	39	38	--	--	272	468
JAN												
06-07	8.6	29	1	28	4.6	130	38	36	.3	7.7	270	375
JAN												
06-07	8.7	28	1	27	4.7	130	39	36	--	--	253	395
22...	18	69	2	34	7.1	200	71	92	.6	11	539	533
JAN 31-												
FEB 01	8.4	27	.9	27	4.3	120	39	34	.3	6.7	276	300
19...	15	60	2	33	7.0	190	67	75	.5	12	479	470
FEB												
21-23	8.7	29	1	27	4.6	120	41	39	.3	7.9	281	400
MAR												
16-16	7.3	22	.8	24	3.8	120	33	27	.2	7.8	240	404
26...	14	32	.9	23	4.2	180	50	41	.3	10	361	355
APR												
28...	19	66	2	33	7.3	210	71	84	.5	14	535	533
JUN												
25...	18	77	2	38	9.7	210	66	100	.5	13	604	555
JUL												
29...	18	80	2	39	10	200	62	100	.5	14	591	557

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)
OCT												
08-09	--	4.86	.04	4.9	.03	6.2	1.3	.45	.5	1.3	.94	.57
22...	--	9.70	.07	9.8	.08	10	.45	.39	.5	.5	1.7	1.6
NOV												
19...	--	10.8	.02	11	<.02	11	--	--	.5	.6	1.6	1.7
DEC												
08...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	11.7	.06	12	<.02	13	--	--	.6	.8	2.0	2.0
DEC												
20-21	--	3.01	.04	3.0	<.02	6.8	--	--	.4	3.7	1.5	.36
DEC												
20-21	1330	--	--	2.9	.06	3.4	.36	.32	.38	.4	.41	.39
JAN												
06-07	--	3.33	.04	3.4	.12	4.2	.66	.45	.6	.8	.50	.46
JAN												
06-07	720	--	--	3.1	.18	6.1	2.8	.35	.53	3.0	1.4	.43
22...	--	10.8	.04	11	.02	11	.60	.50	.5	.6	1.5	1.5
JAN 31-												
FEB 01	--	2.86	.01	2.9	.03	4.1	1.1	.32	.4	1.2	.61	.34
19...	--	6.93	.05	7.0	.13	7.9	.79	.55	.7	.9	.89	.81
FEB												
21-23	--	2.98	.02	3.0	.13	4.7	1.6	.23	.4	1.7	.78	.38
MAR												
16-16	--	2.24	.07	2.3	.13	5.4	2.9	.27	.4	3.1	1.3	.27
26...	--	3.87	.04	3.9	.04	4.5	.51	.20	.2	.5	.49	.40
APR												
28...	--	11.2	.11	11	.37	12	.71	.61	1	1.1	1.8	1.7
JUN												
25...	--	13.1	.11	13	.11	14	.66	.55	.7	.8	1.8	1.7
JUL												
29...	--	13.7	.06	14	.07	15	.73	.60	.7	.8	2.5	2.5

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, 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)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L) (00556)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)
OCT												
08-09	.54	1.7	--	4.8	>5	--	--	--	815	272	--	--
22...	1.6	5.0	--	3.3	.4	--	--	--	16	18	--	--
NOV												
19...	1.6	4.8	--	3.6	.3	--	--	--	14	16	--	--
DEC												
08...	--	--	--	--	--	--	--	--	--	--	--	--
17...	1.7	5.3	--	3.7	.3	--	--	--	6.3	11	--	--
DEC												
20-21	.35	1.1	--	4.1	>5.0	--	--	--	4350	1290	--	--
DEC												
20-21	--	--	47	--	--	<.01	<1	1	--	--	6	<10
JAN												
06-07	.45	1.4	--	3.6	>5.2	--	--	--	2310	815	--	--
JAN												
06-07	--	--	42	--	--	<.01	2	3	--	--	4	<10
22...	1.4	4.3	--	3.3	.3	--	--	--	16	22	--	--
JAN 31-												
FEB 01	.37	1.1	--	4.1	>5.0	--	--	--	1970	574	--	--
19...	.77	2.4	--	3.7	.8	--	--	--	146	117	--	--
FEB												
21-23	.34	1.1	--	3.3	>5.0	--	--	--	2440	837	--	--
MAR												
16-16	.27	.83	--	4.1	>5.0	--	--	--	4110	1120	--	--
26...	.38	1.2	--	3.1	.5	--	--	--	195	89	--	--
APR												
28...	1.8	5.4	--	3.3	.4	--	--	--	14	23	--	--
JUN												
25...	1.6	4.8	--	--	--	--	--	--	5.9	17	--	--
JUL												
29...	2.3	7.1	--	--	--	--	--	--	6.6	20	--	--

DATE	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	1-NAPH THOL, WATER, FLTRD, GF 0.7U REC (UG/L) (49295)
OCT												
08-09	--	--	--	8	--	<1	--	--	--	--	--	<.007
22...	--	--	--	13	--	3	--	--	--	--	--	<.007
NOV												
19...	--	--	--	12	--	<4	--	--	--	--	--	--
DEC												
08...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	16	--	5	--	--	--	--	--	--
DEC												
20-21	--	--	--	<10	--	<4	--	--	--	--	--	--
DEC												
20-21	<1	21	28	--	91	--	<.1	19	<1	<1	210	--
JAN												
06-07	--	--	--	<10	--	<4	--	--	--	--	--	--
JAN												
06-07	<1	14	20	--	65	--	<.1	12	<1	<1	150	--
22...	--	--	--	15	--	<4	--	--	--	--	--	--
JAN 31-												
FEB 01	--	--	--	<10	--	<4	--	--	--	--	--	--
19...	--	--	--	11	--	<4	--	--	--	--	--	--
FEB												
21-23	--	--	--	<10	--	<4	--	--	--	--	--	--
MAR												
16-16	--	--	--	<10	--	<4	--	--	--	--	--	--
26...	--	--	--	<10	--	<4	--	--	--	--	--	--
APR												
28...	--	--	--	11	--	4	--	--	--	--	--	--
JUN												
25...	--	--	--	<10	--	6	--	--	--	--	--	--
JUL												
29...	--	--	--	<10	--	<4	--	--	--	--	--	--

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

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

DATE	2,4,5-T DIS-SOLVED (UG/L) (39742)	2,4-D, DIS-SOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	SILVEX, DIS-SOLVED (UG/L) (39762)	3HYDRXY CARBO-FURAN WAT,FLT GF 0.7U REC (UG/L) (49308)	DNOC WAT,FLT GF 0.7U REC (UG/L) (49299)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ACIFL-UORFEN WATER, FLTRD, GF 0.7U REC (UG/L) (49315)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALDI-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)	ALDI-CARB SULFONE WAT,FLT GF 0.7U REC (UG/L) (49313)
OCT												
08-09	<.035	<.035	<.035	<.003	<.021	<.014	<.035	<.002	<.035	<.002	<.016	<.016
22...	<.035	<.035	<.035	<.003	<.021	<.014	<.035	<.002	<.035	<.002	<.016	<.016
NOV												
19...	<.035	<.15	<.24	<.003	<.021	<.014	<.42	<.002	<.035	<.002	<.55	<.1
DEC												
08...	--	--	--	--	--	--	--	--	--	--	--	--
17...	<.035	<.15	<.24	<.003	<.021	<.014	<.42	<.002	<.035	<.002	<.55	<.1
DEC												
20-21	<.035	<.15	<.24	<.003	<.021	<.014	<.42	<.002	<.035	<.002	<.55	<.1
DEC												
20-21	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
06-07	<.035	<.15	<.24	<.003	<.021	<.014	<.42	<.002	<.035	<.002	<.55	<.1
JAN												
06-07	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 31-												
FEB 01	<.035	<.15	<.24	<.003	<.021	<.014	<.42	<.002	<.035	<.002	<.55	<.1
19...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
21-23	<.035	<.15	<.24	<.003	<.021	<.014	<.42	<.002	<.035	<.002	<.55	<.1
MAR												
16-16	--	--	--	--	--	--	--	--	--	--	--	--
26...	<.035	<.15	<.24	<.003	<.021	<.014	<.42	<.002	<.035	<.002	<.55	<.1
APR												
28...	<.035	<.15	<.24	<.003	<.021	<.014	<.42	<.002	<.035	<.002	<.55	<.1
JUN												
25...	--	--	--	<.003	--	--	--	<.002	--	<.002	--	--
JUL												
29...	--	--	--	<.003	--	--	--	<.002	--	<.002	--	--

DATE	ALDICA-RB SUL-FOXIDE, WAT,FLT GF 0.7U REC (UG/L) (49314)	ALDRIN, TOTAL (UG/L) (39330)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ALPHA BHC TOTAL (UG/L) (39337)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)
OCT												
08-09	<.021	--	--	<.002	--	--	--	--	--	--	--	--
22...	<.021	--	--	<.002	--	--	--	--	--	--	--	--
NOV												
19...	<.021	--	--	<.002	--	--	--	--	--	--	--	--
DEC												
08...	--	--	--	--	--	--	--	--	--	--	--	--
17...	<.021	--	--	<.002	--	--	--	--	--	--	--	--
DEC												
20-21	<.021	--	--	<.002	--	--	--	--	--	--	--	--
DEC												
20-21	--	<.04	<.1	--	<.03	<.1	<1	<.1	<.1	<.1	<.1	<.1
JAN												
06-07	<.021	--	--	<.002	--	--	--	--	--	--	--	--
JAN												
06-07	--	<.04	<.1	--	<.03	<.1	<1	<.1	<.1	<.1	<.1	<.1
22...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 31-												
FEB 01	<.021	--	--	.0140	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
21-23	<.021	--	--	<.002	--	--	--	--	--	--	--	--
MAR												
16-16	--	--	--	--	--	--	--	--	--	--	--	--
26...	<.021	--	--	<.002	--	--	--	--	--	--	--	--
APR												
28...	<.021	--	--	<.002	--	--	--	--	--	--	--	--
JUN												
25...	--	--	--	<.002	--	--	--	--	--	--	--	--
JUL												
29...	--	--	--	<.002	--	--	--	--	--	--	--	--

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, TX--Continued

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

DATE	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BENTA-ZON, WATER, FLTRD, GF 0.7U REC (UG/L) (38711)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	BRO-MACIL, WATER, DISS, REC (UG/L) (04029)	BRO-MOXYNIL WATER, FLTRD, GF 0.7U REC (UG/L) (49311)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN, WATER, FLTRD, GF 0.7U REC (UG/L) (49309)
OCT												
08-09	.0146	<.001	<.002	<.014	--	--	<.035	<.035	<.002	<.008	<.003	<.028
22...	.0133	<.001	<.002	<.014	--	--	<.035	<.035	<.002	<.008	E.0120	<.028
NOV												
19...	.0081	<.001	<.002	<.014	--	--	<.035	<.035	<.002	<.008	E.0081	<.12
DEC												
08...	--	--	--	--	--	--	--	--	--	--	--	--
17...	.0082	<.001	<.002	<.014	--	--	<.035	<.035	<.002	<.008	<.003	<.12
DEC												
20-21	.0138	<.001	<.002	<.014	--	--	<.035	<.035	<.002	<.008	E.0444	<.12
DEC												
20-21	--	--	--	--	<.04	<.03	--	--	--	--	--	--
JAN												
06-07	.0251	<.001	<.002	<.014	--	--	<.035	<.035	<.002	<.008	E.161	<.12
JAN												
06-07	--	--	--	--	<.04	<.03	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 31-												
FEB 01	.136	<.001	<.002	<.014	--	--	<.035	<.035	<.002	.04	E.241	<.12
19...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
21-23	.181	<.001	<.002	<.014	--	--	<.035	<.035	<.002	<.008	E.361	<.12
MAR												
16-16	--	--	--	--	--	--	--	--	--	--	--	--
26...	.0504	<.001	<.002	<.014	--	--	<.035	<.035	<.002	<.008	<.003	<.12
APR												
28...	.0822	<.001	<.002	<.014	--	--	<.035	<.035	<.002	<.008	<.008	<.12
JUN												
25...	.0257	<.001	<.002	--	--	--	--	--	<.002	--	<.003	--
JUL												
29...	.0138	<.001	<.002	--	--	--	--	--	<.002	--	<.003	--

DATE	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-AMBEN, WATER, FLTRD, GF 0.7U REC (UG/L) (49307)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLORO-THALO-NIL, WAT,FLT GF 0.7U REC (UG/L) (49306)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CLOPYR-ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DACTHAL MONO-ACID, WAT,FLT GF 0.7U REC (UG/L) (49304)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)
OCT												
08-09	<.003	<.011	--	<.035	<.004	--	<.005	<.05	<.004	<.017	E.00073	E.0096
22...	E.0424	<.011	--	<.035	<.004	--	<.005	<.05	<.004	<.017	<.002	E.0103
NOV												
19...	<.003	<.42	--	<.48	E.0038	--	<.005	<.23	<.004	<.017	<.002	E.0074
DEC												
08...	--	--	--	--	--	--	--	--	--	--	--	--
17...	<.003	<.42	--	<.48	<.004	--	<.005	<.23	<.004	<.017	<.002	E.0171
DEC												
20-21	<.003	<.42	--	<.48	.0063	--	<.005	<.23	<.004	<.017	E.0023	E.0076
DEC												
20-21	--	--	<.1	--	--	<.1	--	--	--	--	--	--
JAN												
06-07	<.003	<.42	--	<.48	.0085	--	<.005	<.23	<.004	<.017	E.0020	E.0101
JAN												
06-07	--	--	<.1	--	--	<.1	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 31-												
FEB 01	<.003	<.42	--	<.48	.0084	--	<.005	<.23	<.004	<.017	E.00065	E.0067
19...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
21-23	<.003	<.42	--	<.48	.0059	--	<.005	<.23	<.004	<.017	<.002	E.0102
MAR												
16-16	--	--	--	--	--	--	--	--	--	--	--	--
26...	<.003	<.42	--	<.48	<.004	--	<.005	<.23	<.004	<.017	<.002	E.0071
APR												
28...	<.003	<.42	--	<.48	.0052	--	<.005	<.23	<.004	<.017	<.002	E.0144
JUN												
25...	<.003	--	--	--	<.004	--	<.005	--	<.004	--	<.002	E.0191
JUL												
29...	<.003	--	--	--	<.004	--	<.005	--	<.004	--	<.002	<.016

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

DATE	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	DICHLO-BENIL, WATER, FLTRD, GF 0.7U REC (UG/L) (49303)	DICHLOR PROP, WATER, FLTRD, GF 0.7U REC (UG/L) (49302)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)
OCT											
08-09	--	.0146	<.035	<.02	<.032	--	<.001	<.035	<.017	<.02	--
22...	--	.0057	<.035	<.02	<.032	--	<.001	<.035	<.017	<.02	--
NOV											
19...	--	<.010	<.035	<1.2	<.032	--	<.001	<.035	<.017	<.02	--
DEC											
08...	--	--	--	--	--	--	--	--	--	--	--
17...	--	.0148	<.035	<1.2	<.032	--	<.001	<.035	<.017	<.02	--
DEC											
20-21	--	.0526	<.035	<1.2	<.032	--	<.001	<.035	<.017	<.02	--
DEC											
20-21	<.09	--	--	--	--	<.02	--	--	--	--	<.6
JAN											
06-07	--	.0320	<.035	<1.2	<.032	--	<.001	<.035	<.017	<.02	--
JAN											
06-07	<.09	--	--	--	--	<.02	--	--	--	--	<.6
22...	--	--	--	--	--	--	--	--	--	--	--
JAN 31-											
FEB 01	--	.0634	<.035	<1.2	<.032	--	<.001	<.035	<.017	<.02	--
19...	--	--	--	--	--	--	--	--	--	--	--
FEB											
21-23	--	.0967	<.035	<1.2	<.032	--	<.001	<.035	<.017	<.02	--
MAR											
16-16	--	--	--	--	--	--	--	--	--	--	--
26...	--	.0098	<.035	<1.2	<.032	--	<.001	<.035	<.017	<.02	--
APR											
28...	--	.0133	<.035	<1.2	<.032	--	<.001	<.035	<.017	<.02	--
JUN											
25...	--	.0147	--	--	--	--	<.001	--	<.017	--	--
JUL											
29...	--	<.035	--	--	--	--	<.001	--	<.017	--	--

DATE	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ESFEN-VAL-ERATE, WAT,FLT GF 0.7U REC (UG/L) (49298)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FEN-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)	FLUO-METURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)	FONOFOS WATER DISS REC (UG/L) (04095)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)
OCT											
08-09	--	--	<.002	<.019	<.004	<.003	<.013	<.035	<.003	--	--
22...	--	--	<.002	<.019	<.004	<.003	<.013	<.035	<.003	--	--
NOV											
19...	--	--	<.002	--	<.004	<.003	<.013	<.035	<.003	--	--
DEC											
08...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	<.002	--	<.004	<.003	<.013	<.035	<.003	--	--
DEC											
20-21	--	--	<.002	--	<.004	<.003	<.013	<.035	<.003	--	--
DEC											
20-21	<.2	<.06	--	--	--	--	--	--	--	<.03	<.8
JAN											
06-07	--	--	<.002	--	<.004	<.003	<.013	<.035	<.003	--	--
JAN											
06-07	<.2	<.06	--	--	--	--	--	--	--	<.03	<.8
22...	--	--	--	--	--	--	--	--	--	--	--
JAN 31-											
FEB 01	--	--	<.002	--	<.004	<.003	<.013	<.035	<.003	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
FEB											
21-23	--	--	<.002	--	<.004	<.003	<.013	<.035	<.003	--	--
MAR											
16-16	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	<.002	--	<.004	<.003	<.013	<.035	<.003	--	--
APR											
28...	--	--	<.002	--	<.004	<.003	<.013	<.035	<.003	--	--
JUN											
25...	--	--	<.002	--	<.004	<.003	--	--	<.003	--	--
JUL											
29...	--	--	<.002	--	<.004	<.003	--	--	<.003	--	--

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

DATE	LINDANE TOTAL (UG/L) (39340)	LINDANE DIS-SOLVED (UG/L) (39341)	LINURON WATER, FLTRD, GF 0.7U REC (UG/L) (38478)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	MCPA, WATER, FLTRD, GF 0.7U REC (UG/L) (38482)	MCPB, WATER, FLTRD, GF 0.7U REC (UG/L) (38487)	METHIO-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (38501)	METH-OMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49296)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)
OCT											
08-09	--	<.004	<.018	<.002	<.005	<.05	<.035	<.026	<.017	.0104	<.004
22...	--	<.004	<.018	<.002	<.005	<.05	<.035	<.026	<.017	<.002	<.004
NOV											
19...	--	.0191	<.018	<.002	<.005	<.17	<.14	<.026	<.017	.0057	<.004
DEC											
08...	--	--	--	--	--	--	--	--	--	--	--
17...	--	.0386	<.018	<.002	<.005	<.17	<.14	<.026	<.017	<.002	<.004
DEC											
20-21	--	.0049	<.018	<.002	.0154	<.17	<.14	<.026	<.017	.0040	<.004
DEC											
20-21	<.03	--	--	--	--	--	--	--	--	--	--
JAN											
06-07	--	.0094	<.018	<.002	.0095	<.17	<.14	<.026	<.017	.0063	<.004
JAN											
06-07	<.03	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
JAN 31-											
FEB 01	--	.0100	<.018	<.002	.0098	<.17	<.14	<.026	<.017	E.0029	<.004
19...	--	--	--	--	--	--	--	--	--	--	--
FEB											
21-23	--	.0063	<.018	<.002	.0067	<.17	<.14	<.026	<.017	.0106	<.004
MAR											
16-16	--	--	--	--	--	--	--	--	--	--	--
26...	--	.0090	<.018	<.002	<.005	<.17	<.14	<.026	<.017	E.0036	<.004
APR											
28...	--	.0132	<.018	<.002	<.005	<.17	<.14	<.026	<.017	E.0036	<.004
JUN											
25...	--	<.019	--	<.002	<.005	--	--	--	--	.0045	<.004
JUL											
29...	--	<.035	--	<.002	.0086	--	--	--	--	<.002	<.004

DATE	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	NEB-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49294)	NORFLUR AZON, WATER, FLTRD, GF 0.7U REC (UG/L) (49293)	ORY-ZALIN, WATER, FLTRD, GF 0.7U REC (UG/L) (49292)	OXAMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (38866)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE DISSOLV (UG/L) (34653)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	PARA-THION, DIS-SOLVED (UG/L) (39542)
OCT											
08-09	<.004	<.003	<.015	<.024	<.019	<.018	--	<.006	--	--	<.004
22...	<.004	<.003	<.015	<.024	<.019	<.018	--	<.006	--	--	<.004
NOV											
19...	<.004	<.003	<.015	<.024	<.31	<.018	--	<.006	--	--	<.004
DEC											
08...	--	--	--	--	--	--	--	--	--	--	--
17...	<.004	<.003	<.015	<.024	<.31	<.018	--	<.006	--	--	<.004
DEC											
20-21	<.004	<.003	<.015	<.024	<.31	<.018	--	<.006	--	--	<.004
DEC											
20-21	--	--	--	--	--	--	<.1	--	<.04	<.1	--
JAN											
06-07	<.004	<.003	<.015	<.024	<.31	<.018	--	<.006	--	--	<.004
JAN											
06-07	--	--	--	--	--	--	<.1	--	<.04	<.1	--
22...	--	--	--	--	--	--	--	--	--	--	--
JAN 31-											
FEB 01	<.004	<.003	<.015	<.024	<.31	<.018	--	<.006	--	--	<.004
19...	--	--	--	--	--	--	--	--	--	--	--
FEB											
21-23	<.004	<.003	<.015	<.024	<.31	<.018	--	<.006	--	--	<.004
MAR											
16-16	--	--	--	--	--	--	--	--	--	--	--
26...	<.004	<.003	<.015	<.024	<.31	<.018	--	<.006	--	--	<.004
APR											
28...	<.004	<.003	<.015	<.024	<.31	<.018	--	<.006	--	--	<.004
JUN											
25...	<.004	<.003	--	--	--	--	--	<.006	--	--	<.004
JUL											
29...	<.004	<.003	--	--	--	--	--	<.006	--	--	<.004

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

DATE	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PIC-LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PROP-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRO-PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PRO-POXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)
OCT											
08-09	<.006	<.004	<.004	<.002	<.05	E.0132	<.007	<.004	<.013	<.035	<.035
22...	<.006	<.004	<.004	<.002	<.05	E.0131	<.007	<.004	<.013	<.035	<.035
NOV											
19...	<.006	<.004	<.004	<.002	<.05	E.0073	<.007	<.004	<.013	<.035	<.035
DEC											
08...	--	--	--	--	--	--	--	--	--	--	--
17...	<.006	<.004	<.004	<.002	<.05	E.0070	<.007	<.004	<.013	<.035	<.035
DEC											
20-21	<.006	<.004	<.004	<.002	<.05	.0238	<.007	<.004	<.013	<.035	<.035
DEC											
20-21	--	--	--	--	--	--	--	--	--	--	--
JAN											
06-07	<.006	<.004	<.004	<.002	<.05	.0198	<.007	<.004	<.013	<.035	<.035
JAN											
06-07	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
JAN 31-											
FEB 01	<.006	<.004	<.004	<.002	<.05	.0399	<.007	<.004	<.0250	<.035	<.035
19...	--	--	--	--	--	--	--	--	--	--	--
FEB											
21-23	<.006	<.004	<.004	<.002	<.05	.0189	<.007	<.004	<.013	<.035	<.035
MAR											
16-16	--	--	--	--	--	--	--	--	--	--	--
26...	<.006	<.004	<.004	<.002	<.05	E.0056	<.007	<.004	<.013	<.035	<.035
APR											
28...	<.006	<.004	<.004	<.002	<.05	E.0098	<.007	<.004	<.013	<.035	<.035
JUN											
25...	<.006	<.004	<.004	<.002	--	.0186	<.007	<.004	<.013	--	--
JUL											
29...	<.006	<.004	<.004	<.002	--	<.018	<.007	<.004	<.013	--	--

DATE	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TOX-APHENE, TOTAL (UG/L) (39400)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
OCT											
08-09	<.003	.0116	<.010	<.007	<.013	<.002	--	--	<.001	<.05	<.002
22...	<.003	.0090	E.0189	<.007	<.013	<.002	--	--	<.001	<.05	<.002
NOV											
19...	<.003	.0076	<.010	<.007	<.013	<.002	--	--	<.001	<.25	<.002
DEC											
08...	--	--	--	--	--	--	--	--	--	--	--
17...	<.003	.0052	<.010	<.007	<.013	<.002	--	--	<.001	<.25	<.002
DEC											
20-21	<.003	.0174	<.010	<.007	E.0114	<.002	--	--	<.001	<.25	<.002
DEC											
20-21	--	--	--	--	--	--	<2	<.1	--	--	--
JAN											
06-07	<.003	.0124	.0263	<.007	<.013	<.002	--	--	<.001	<.25	<.002
JAN											
06-07	--	--	--	--	--	--	<2	<.1	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
JAN 31-											
FEB 01	<.003	.0433	<.010	<.007	<.013	<.002	--	--	<.001	<.25	<.002
19...	--	--	--	--	--	--	--	--	--	--	--
FEB											
21-23	<.003	.0156	.0145	<.007	<.013	<.002	--	--	<.001	<.25	<.002
MAR											
16-16	--	--	--	--	--	--	--	--	--	--	--
26...	<.003	<.005	E.0073	<.007	<.013	<.002	--	--	<.001	<.25	<.002
APR											
28...	<.003	.0057	.0134	<.007	<.013	<.002	--	--	<.001	<.25	<.002
JUN											
25...	<.003	<.005	<.010	<.007	<.013	<.002	--	--	<.001	--	<.002
JUL											
29...	<.003	<.005	<.010	<.007	<.013	<.002	--	--	<.001	--	<.002

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, 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	944	908	926	---	---	e875	882	853	867	886	832	850
2	967	933	947	---	---	e900	893	865	876	862	824	838
3	968	939	956	---	---	e920	910	875	894	853	818	829
4	973	941	950	---	---	e950	930	895	907	855	811	835
5	983	932	954	---	---	e960	936	908	922	845	814	826
6	938	901	921	961	926	946	937	902	917	873	247	756
7	930	904	916	981	960	e966	923	888	904	602	277	489
8	940	474	844	---	---	e900	914	875	890	657	468	567
9	583	386	479	---	---	e875	918	875	889	766	657	703
10	672	291	544	---	---	e800	924	899	914	816	739	770
11	551	345	475	---	---	e775	930	893	907	834	776	799
12	591	551	564	---	---	e750	932	888	911	834	777	798
13	598	322	468	---	---	e700	914	881	896	859	802	817
14	639	490	564	760	678	714	909	878	890	886	834	849
15	731	629	664	828	738	773	896	854	874	898	852	867
16	777	699	729	840	793	813	931	868	894	903	864	880
17	799	721	751	840	794	809	956	931	945	929	866	882
18	832	755	787	854	810	825	965	934	948	934	880	901
19	832	771	799	880	847	856	975	946	963	916	865	883
20	832	779	806	888	855	869	972	413	806	915	866	881
21	834	796	812	893	859	876	598	265	402	915	886	900
22	835	767	798	896	867	879	682	392	560	935	885	901
23	825	774	791	900	865	879	793	682	734	977	919	944
24	852	801	815	898	833	859	816	727	758	938	902	915
25	848	828	837	890	841	857	---	---	e750	928	902	914
26	849	772	794	895	860	877	---	---	e750	926	887	901
27	795	747	763	891	860	872	720	583	655	916	882	897
28	796	748	762	895	861	875	---	---	e780	934	904	915
29	835	787	801	881	855	866	---	---	e800	936	898	918
30	849	805	820	878	855	866	849	800	827	937	901	921
31	---	---	e850	---	---	---	884	826	842	929	260	758
MONTH	---	---	771	---	---	856	---	---	835	977	247	836

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	559	390	477	810	752	780	663	610	645	968	928	947
2	729	533	648	821	756	783	639	611	626	961	932	947
3	834	724	775	852	791	809	649	605	627	959	924	943
4	853	804	824	891	794	849	654	622	638	946	901	924
5	867	811	828	895	852	869	665	634	653	944	908	924
6	851	734	788	903	854	873	684	635	662	969	933	954
7	838	774	793	897	852	867	724	656	685	975	935	957
8	876	817	841	890	861	871	734	687	706	974	940	956
9	876	836	852	875	832	846	739	693	709	966	946	954
10	877	593	761	894	845	859	750	691	716	973	942	957
11	752	613	677	893	861	875	749	711	730	960	913	939
12	878	752	821	894	854	871	750	702	730	941	916	929
13	888	847	861	893	855	869	754	697	726	971	935	953
14	905	575	841	888	684	756	792	714	748	986	949	967
15	709	555	647	726	622	674	808	745	775	985	943	965
16	750	458	639	715	223	479	828	764	793	965	930	948
17	716	622	686	460	342	396	842	781	807	990	936	962
18	823	710	771	510	436	459	842	792	812	951	898	928
19	823	691	770	558	510	543	842	773	804	934	906	919
20	915	762	861	562	536	548	852	787	823	960	926	941
21	907	425	867	552	528	540	882	809	838	974	936	955
22	547	313	457	555	534	545	895	855	875	987	946	969
23	673	524	635	569	545	562	909	873	890	972	864	947
24	793	650	729	584	570	579	915	873	891	963	886	937
25	828	739	774	590	574	581	917	892	905	945	857	922
26	806	311	561	593	568	582	919	870	894	926	886	907
27	673	567	617	604	577	590	902	860	881	1010	902	923
28	776	670	707	615	594	604	913	878	891	1010	869	910
29	---	---	---	617	595	606	939	909	923	948	915	931
30	---	---	---	626	590	609	958	918	938	958	895	929
31	---	---	---	644	597	620	---	---	---	958	909	935
MONTH	915	311	732	903	223	687	958	605	778	1010	857	941

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, 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	951	902	931	903	852	877	982	929	968	718	321	557
2	936	906	921	945	901	916	976	911	960	816	718	762
3	963	918	942	957	894	937	965	936	949	856	813	824
4	964	884	935	949	908	931	957	923	940	871	835	852
5	961	916	943	971	776	849	970	951	960	881	798	842
6	960	872	928	866	818	838	1010	452	756	888	794	840
7	949	846	907	904	853	890	721	332	539	---	---	e853
8	935	878	908	935	890	919	783	585	693	893	824	863
9	928	882	911	965	914	945	846	777	798	926	842	881
10	951	905	930	971	934	957	867	838	852	941	855	915
11	1030	764	922	967	930	954	898	863	884	931	573	870
12	847	745	785	971	910	951	924	890	909	657	554	611
13	891	847	868	935	888	921	931	909	920	750	657	699
14	914	855	889	920	885	906	994	233	609	821	749	772
15	890	842	873	957	908	936	578	242	444	853	804	815
16	900	854	881	950	923	941	752	578	648	863	573	760
17	926	869	904	950	912	936	639	424	535	609	467	534
18	957	904	938	946	914	933	682	617	653	769	609	678
19	952	903	936	950	916	937	807	681	737	842	768	787
20	954	902	929	938	906	926	879	798	827	865	813	830
21	953	906	938	931	890	913	884	845	871	873	818	845
22	932	888	918	946	916	935	876	150	667	880	840	860
23	924	882	907	956	930	944	345	177	274	917	870	892
24	955	904	935	957	935	946	430	293	359	931	894	915
25	967	931	953	949	926	938	538	405	458	936	884	916
26	975	933	956	958	926	945	693	538	616	920	883	903
27	967	937	957	939	910	927	743	648	690	920	886	903
28	962	933	954	955	894	927	783	713	742	917	874	896
29	949	904	933	959	927	942	790	737	762	920	889	902
30	973	815	901	979	940	959	804	745	774	951	914	932
31	---	---	---	987	913	973	885	637	796	---	---	---
MONTH	1030	745	918	987	776	927	1010	150	729	---	---	817

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	8.1	7.8	8.0	---	---	---	8.1	7.9	8.0	8.2	8.1	8.1
2	8.0	7.9	8.0	---	---	---	8.0	7.9	8.0	8.2	8.1	8.1
3	8.1	8.0	8.0	---	---	---	8.1	7.9	8.0	8.2	8.1	8.1
4	8.1	8.0	8.0	---	---	---	8.1	8.0	8.0	8.2	8.1	8.2
5	8.1	8.0	8.0	---	---	---	8.1	8.0	8.0	8.2	8.1	8.1
6	8.1	8.0	8.0	7.9	7.9	7.9	8.1	8.0	8.0	8.2	8.0	8.1
7	8.1	8.0	8.0	7.9	7.9	7.9	8.1	8.0	8.0	8.1	8.0	8.0
8	8.0	7.7	7.9	---	---	---	8.1	8.0	8.0	8.1	8.0	8.0
9	7.9	7.7	7.8	---	---	---	8.1	8.0	8.0	8.1	8.1	8.1
10	7.9	7.7	7.8	---	---	---	8.1	8.0	8.0	8.2	8.1	8.1
11	7.8	7.7	7.8	---	---	---	8.1	8.0	8.0	8.2	8.1	8.1
12	7.9	7.8	7.9	---	---	---	8.1	8.0	8.1	8.2	8.1	8.1
13	7.9	7.8	7.9	---	---	---	8.2	8.1	8.1	8.2	8.1	8.1
14	7.9	7.9	7.9	8.0	7.9	8.0	8.2	8.1	8.1	8.2	8.2	8.2
15	8.0	7.9	7.9	8.1	8.0	8.0	8.2	8.1	8.1	8.2	8.2	8.2
16	8.0	7.9	8.0	8.1	8.0	8.0	8.1	8.0	8.1	8.3	8.2	8.2
17	8.0	8.0	8.0	8.1	8.0	8.1	8.1	8.0	8.0	8.3	8.2	8.2
18	8.0	8.0	8.0	8.1	8.0	8.0	8.1	8.0	8.0	8.3	8.2	8.2
19	8.1	8.0	8.0	8.1	8.0	8.0	8.1	8.0	8.0	8.3	8.2	8.2
20	8.1	8.0	8.0	8.1	8.0	8.0	8.0	7.8	7.9	8.3	8.2	8.2
21	8.1	8.0	8.0	8.1	8.0	8.1	7.9	7.8	7.9	8.3	8.2	8.2
22	8.1	8.0	8.0	8.1	8.1	8.1	7.9	7.8	7.8	8.3	8.0	8.2
23	8.1	8.0	8.0	8.2	8.1	8.1	8.0	7.9	7.9	8.2	8.1	8.1
24	8.1	8.0	8.0	8.2	8.1	8.1	8.0	7.9	7.9	8.2	8.1	8.1
25	8.1	8.0	8.0	8.1	8.1	8.1	---	---	---	8.2	8.1	8.1
26	8.1	8.0	8.1	8.1	8.0	8.1	---	---	---	8.1	8.0	8.0
27	8.1	8.0	8.1	8.1	8.1	8.1	8.0	7.9	8.0	8.1	8.0	8.0
28	8.1	8.0	8.1	8.1	8.1	8.1	---	---	---	8.1	8.0	8.0
29	8.1	8.0	8.0	8.1	8.0	8.1	---	---	---	8.1	8.0	8.0
30	8.1	8.0	8.1	8.1	7.9	8.0	8.1	8.0	8.1	8.1	8.0	8.0
31	---	---	---	---	---	---	8.2	8.1	8.1	8.4	7.9	8.0
MONTH	---	---	---	---	---	---	---	---	---	8.4	7.9	8.1

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, 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	8.0	7.8	7.9	7.9	7.8	7.9	8.0	7.9	8.0	7.8	7.7	7.7
2	7.9	7.8	7.8	7.9	7.9	7.9	8.0	8.0	8.0	7.8	7.7	7.7
3	7.9	7.8	7.9	8.0	7.9	7.9	8.0	8.0	8.0	7.9	7.7	7.8
4	7.9	7.9	7.9	8.0	7.9	7.9	8.0	8.0	8.0	7.8	7.7	7.7
5	8.0	7.8	7.9	8.0	7.9	7.9	8.0	7.9	8.0	7.8	7.6	7.7
6	7.9	7.8	7.9	8.0	8.0	8.0	7.9	7.9	7.9	7.8	7.6	7.7
7	7.9	7.8	7.9	8.1	8.0	8.0	7.9	7.7	7.9	7.8	7.7	7.7
8	7.9	7.9	7.9	8.1	8.0	8.0	8.0	7.9	7.9	7.8	7.7	7.7
9	8.0	7.7	7.9	8.1	8.0	8.1	8.0	7.9	8.0	7.9	7.7	7.8
10	7.9	7.7	7.9	8.1	8.0	8.1	8.0	8.0	8.0	7.9	7.8	7.8
11	7.8	7.7	7.8	8.1	8.0	8.1	8.0	7.9	8.0	7.9	7.8	7.8
12	7.9	7.8	7.8	8.1	8.0	8.1	8.0	7.9	8.0	7.9	7.7	7.8
13	7.9	7.9	7.9	8.1	8.0	8.0	8.0	7.9	7.9	7.9	7.7	7.8
14	8.0	7.8	7.9	8.1	8.0	8.0	7.9	7.7	7.9	8.0	7.8	7.9
15	7.9	7.8	7.9	8.0	8.0	8.0	7.9	7.9	7.9	8.0	7.9	7.9
16	7.9	7.8	7.9	8.2	7.5	7.8	7.9	7.7	7.9	8.0	7.9	7.9
17	7.9	7.8	7.9	7.8	7.6	7.7	7.8	7.7	7.7	8.1	7.9	8.0
18	7.9	7.8	7.9	7.8	7.7	7.8	7.8	7.7	7.7	8.1	7.9	8.0
19	7.9	7.8	7.9	7.9	7.8	7.9	7.8	7.7	7.7	8.1	7.9	8.0
20	7.9	7.8	7.9	8.0	7.9	8.0	7.8	7.7	7.7	8.1	8.0	8.0
21	8.0	7.8	7.9	8.0	8.0	8.0	7.8	7.7	7.7	8.1	7.9	8.0
22	8.2	7.8	7.9	8.1	8.0	8.0	7.8	7.7	7.7	8.1	7.9	8.0
23	7.9	7.8	7.9	8.1	8.0	8.1	7.8	7.7	7.7	8.1	7.9	8.0
24	7.9	7.9	7.9	8.1	8.0	8.0	7.9	7.7	7.8	8.3	7.9	8.0
25	8.0	7.9	7.9	8.1	8.0	8.0	7.8	7.8	7.8	8.1	7.9	8.0
26	8.1	7.8	7.9	8.0	8.0	8.0	7.8	7.7	7.8	8.1	7.9	8.0
27	7.9	7.8	7.9	8.0	8.0	8.0	7.8	7.7	7.8	8.1	7.9	8.0
28	7.9	7.8	7.8	8.0	8.0	8.0	7.8	7.7	7.8	8.1	7.9	8.0
29	---	---	---	8.1	8.0	8.0	7.9	7.7	7.8	8.1	7.9	8.0
30	---	---	---	8.0	7.9	7.9	7.8	7.7	7.8	8.1	7.9	8.0
31	---	---	---	8.0	7.9	8.0	---	---	---	8.1	7.9	8.0
MONTH	8.2	7.7	7.9	8.2	7.5	8.0	8.0	7.7	7.9	8.3	7.6	7.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.1	7.9	8.0	7.7	7.5	7.6	8.4	8.0	8.1	7.9	7.7	7.8
2	8.1	7.9	8.0	7.7	7.6	7.6	8.3	8.0	8.1	8.0	7.9	7.9
3	8.1	7.9	8.0	7.7	7.6	7.6	8.3	8.0	8.2	8.0	7.9	7.9
4	8.1	7.9	8.0	7.7	7.6	7.6	8.4	8.1	8.2	8.1	7.9	8.0
5	8.2	7.9	8.0	7.8	7.6	7.7	8.3	8.1	8.2	8.1	8.0	8.0
6	8.2	7.9	8.0	7.9	7.6	7.7	8.2	7.7	8.0	---	---	---
7	8.1	7.9	8.0	7.8	7.7	7.7	8.0	7.8	7.9	---	---	---
8	8.1	7.9	8.0	7.9	7.7	7.8	8.1	8.0	8.0	8.1	8.0	8.0
9	8.1	7.9	8.0	7.9	7.7	7.8	8.1	8.0	8.0	8.1	8.0	8.0
10	8.1	7.9	8.0	7.9	7.7	7.8	8.1	7.9	8.0	8.2	8.1	8.1
11	8.1	7.9	8.0	7.9	7.8	7.8	8.0	7.9	8.0	8.1	7.9	8.1
12	8.0	7.7	7.8	8.0	7.8	7.9	8.1	8.0	8.0	8.0	7.9	8.0
13	8.1	7.9	8.0	8.0	7.8	7.9	8.1	8.0	8.0	8.1	8.0	8.0
14	8.0	7.9	8.0	8.0	7.8	7.9	8.2	7.6	7.8	8.0	7.9	8.0
15	8.0	7.9	7.9	8.0	7.8	7.9	8.2	7.7	7.8	8.0	7.9	7.9
16	8.0	7.9	7.9	8.0	7.8	7.9	7.8	7.7	7.8	8.0	7.9	7.9
17	8.0	7.9	7.9	8.0	7.8	7.9	7.8	7.6	7.7	7.9	7.8	7.9
18	8.1	7.9	8.0	8.1	7.8	7.9	7.8	7.7	7.7	8.0	7.9	7.9
19	8.1	7.9	8.0	8.1	7.8	8.0	7.9	7.7	7.8	8.0	7.9	8.0
20	8.1	7.9	8.0	8.2	7.9	8.0	7.9	7.8	7.9	8.0	7.9	8.0
21	8.1	7.8	8.0	8.2	8.0	8.1	7.9	7.9	7.9	8.1	8.0	8.0
22	8.1	7.8	8.0	8.2	7.9	8.0	8.1	7.7	7.9	8.0	7.9	8.0
23	8.0	7.7	7.8	8.2	7.9	8.0	8.0	7.5	7.7	8.1	8.0	8.0
24	8.0	7.7	7.8	8.2	7.9	8.0	7.8	7.5	7.7	8.1	8.0	8.0
25	8.0	7.7	7.9	8.2	7.9	8.1	7.9	7.8	7.8	8.1	8.0	8.1
26	8.0	7.7	7.8	8.2	7.9	8.1	7.9	7.8	7.8	8.2	8.1	8.1
27	8.0	7.8	7.9	8.2	8.0	8.1	7.9	7.8	7.8	8.2	8.1	8.1
28	---	---	---	8.2	8.0	8.1	7.9	7.8	7.9	8.1	8.1	8.1
29	7.9	7.7	7.7	8.2	8.0	8.1	7.9	7.9	7.9	8.1	8.0	8.0
30	7.7	7.5	7.6	8.2	8.0	8.1	8.0	7.9	7.9	8.1	8.0	8.1
31	---	---	---	8.2	7.9	8.1	8.0	7.8	7.9	---	---	---
MONTH	---	---	---	8.2	7.5	7.9	8.4	7.5	7.9	---	---	---

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, 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	
1	28.3	26.9	27.7	---	---	---	19.9	18.7	19.1	17.2	15.7	16.2
2	28.4	27.1	27.8	---	---	---	19.7	18.7	19.1	18.8	17.1	17.7
3	28.4	27.4	27.9	---	---	---	20.2	19.6	19.8	19.7	18.5	18.9
4	28.5	27.5	28.0	---	---	---	20.0	18.6	19.0	20.3	19.5	19.8
5	28.0	27.4	27.6	---	---	---	19.2	17.7	18.2	21.2	20.2	20.5
6	27.5	27.1	27.3	23.1	21.4	21.9	18.5	16.7	17.2	21.2	17.3	20.4
7	27.8	26.9	27.3	21.9	20.7	21.0	17.8	16.8	17.2	18.3	16.3	17.5
8	28.0	25.3	27.2	---	---	---	19.0	17.5	18.1	16.5	15.6	16.1
9	26.7	25.1	26.0	---	---	---	19.1	18.2	18.5	17.1	15.5	16.1
10	26.5	24.6	25.8	---	---	---	19.1	17.3	18.0	17.8	16.3	16.9
11	25.3	24.9	25.0	---	---	---	18.0	16.1	16.8	18.9	17.2	17.8
12	25.7	25.2	25.3	---	---	---	16.7	14.6	15.6	20.2	18.6	19.2
13	25.7	23.9	24.6	---	---	---	15.3	13.9	14.4	20.0	19.0	19.4
14	24.0	22.7	23.3	19.0	17.6	18.4	15.2	13.9	14.5	19.1	18.2	18.6
15	23.3	21.8	22.6	18.9	16.5	17.4	16.3	14.3	15.0	19.1	17.8	18.2
16	23.3	21.8	22.6	17.4	16.3	16.6	16.5	15.1	15.7	18.3	16.8	17.5
17	23.7	21.8	22.6	17.7	16.3	16.8	16.6	15.6	16.0	18.2	16.9	17.4
18	23.7	22.2	22.9	17.8	16.6	17.1	16.9	15.4	15.9	18.8	17.8	18.3
19	24.0	22.4	23.3	18.1	17.1	17.3	18.9	16.4	17.2	18.8	17.2	17.8
20	24.5	22.9	23.7	19.1	17.7	18.0	19.0	16.9	18.6	19.0	17.5	17.9
21	24.5	23.4	24.0	19.7	18.7	19.0	18.4	16.9	17.3	20.3	18.8	19.4
22	24.4	22.5	23.2	19.7	18.2	18.7	17.8	16.5	17.1	20.2	17.8	18.7
23	24.1	22.8	23.2	19.2	17.7	18.4	17.9	17.4	17.6	18.1	16.9	17.4
24	25.0	23.5	24.0	20.3	18.0	18.8	17.7	16.3	16.9	17.9	16.6	17.2
25	25.0	24.7	24.8	21.3	19.8	20.2	---	---	---	17.9	16.5	17.0
26	24.8	21.6	22.7	22.0	21.0	21.3	---	---	---	18.1	16.9	17.6
27	21.8	20.6	21.0	22.4	21.5	21.9	14.6	13.7	14.1	18.0	16.5	17.2
28	21.6	20.3	20.8	22.5	22.0	22.3	---	---	---	18.3	16.5	17.2
29	23.0	21.1	21.7	22.2	20.9	21.4	---	---	---	18.9	17.5	18.0
30	23.8	22.4	22.9	21.0	19.5	20.0	15.7	14.1	14.9	19.7	18.4	18.9
31	---	---	---	---	---	---	16.2	14.8	15.3	19.7	16.7	18.6
MONTH	---	---	---	---	---	---	---	---	---	21.2	15.5	18.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	17.9	16.8	17.4	19.1	17.2	18.3	22.1	20.5	21.3	26.0	23.3	24.5
2	18.6	17.4	17.9	19.3	16.9	18.2	21.9	20.0	20.9	26.9	24.2	25.4
3	18.6	17.1	17.9	19.0	17.6	18.3	22.5	20.6	21.4	27.2	25.4	26.2
4	18.6	17.1	17.9	20.0	18.3	19.0	21.9	20.4	21.2	26.9	25.9	26.3
5	18.7	15.1	18.1	21.3	19.8	20.3	22.0	20.1	21.0	26.6	25.4	26.0
6	18.5	16.9	17.4	21.1	19.8	20.2	21.5	20.8	21.1	27.5	25.8	26.5
7	17.5	15.9	16.7	20.3	19.1	19.8	23.3	21.1	21.9	28.7	26.3	27.4
8	18.3	16.2	17.2	20.2	18.5	19.3	23.9	22.3	22.9	28.2	27.0	27.4
9	19.3	17.0	17.9	19.1	17.2	18.3	23.4	21.4	22.4	28.7	26.5	27.5
10	19.2	14.0	17.6	18.5	16.6	17.6	23.0	21.0	22.0	27.6	25.8	26.7
11	17.9	15.8	16.6	17.8	16.5	17.1	22.9	21.0	22.0	26.9	25.2	26.1
12	18.5	17.1	17.7	17.7	15.7	16.5	23.3	21.4	22.4	26.7	25.4	26.1
13	18.9	17.6	18.1	17.0	15.7	16.1	24.3	22.1	23.2	26.9	25.9	26.4
14	18.8	16.6	18.0	17.6	15.8	16.7	25.2	23.2	24.1	27.4	26.3	26.8
15	17.5	16.4	16.9	18.4	17.3	17.7	24.8	23.9	24.3	27.7	26.7	27.2
16	17.6	16.4	17.1	18.4	16.2	17.6	25.3	24.0	24.6	27.5	26.7	26.9
17	17.9	16.5	17.1	17.5	16.4	17.0	24.6	22.7	23.4	28.1	26.2	27.0
18	18.5	16.5	17.4	19.2	17.3	18.1	23.1	21.7	22.5	27.7	26.1	27.0
19	18.5	17.0	17.7	20.4	19.2	19.7	23.6	21.0	22.4	27.9	25.9	26.9
20	19.1	17.0	18.1	19.5	18.3	18.9	24.1	21.4	22.9	28.3	26.5	27.3
21	18.8	16.2	18.0	18.6	17.7	18.1	23.9	22.0	23.1	28.8	26.8	27.8
22	16.7	15.5	16.1	18.5	17.2	17.8	23.9	21.5	22.8	29.4	27.0	28.1
23	18.5	16.4	17.2	19.3	17.7	18.3	24.3	21.7	23.1	28.6	27.1	27.9
24	19.8	17.4	18.4	19.3	18.5	18.6	24.6	22.2	23.5	28.8	27.0	27.9
25	21.1	18.8	19.9	21.5	20.0	20.9	24.1	22.8	23.3	28.4	27.0	27.7
26	20.9	18.3	19.5	21.9	20.6	21.1	24.3	23.0	23.6	28.2	27.2	27.7
27	19.5	18.1	18.6	22.6	20.8	21.5	24.3	23.7	24.0	28.8	26.9	27.9
28	19.2	17.9	18.5	22.9	21.4	22.0	24.4	22.5	23.5	29.5	27.2	28.3
29	---	---	---	23.0	22.0	22.4	24.7	22.8	23.8	30.1	27.9	28.9
30	---	---	---	23.5	22.0	22.6	25.2	22.7	23.9	30.9	28.2	29.4
31	---	---	---	23.1	21.8	22.5	---	---	---	31.1	28.5	29.7
MONTH	21.1	14.0	17.7	23.5	15.7	19.0	25.3	20.0	22.8	31.1	23.3	27.2

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, 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	31.1	28.7	29.8	31.5	29.5	30.4	32.7	29.1	30.8	30.7	27.9	29.0
2	31.3	28.5	29.8	31.6	29.5	30.5	33.1	28.9	31.1	30.3	28.5	29.4
3	31.1	28.7	29.8	30.8	29.1	29.7	32.9	29.7	31.3	30.4	28.6	29.5
4	31.6	29.0	30.1	29.8	28.8	29.3	33.0	29.9	31.3	30.7	28.9	29.8
5	30.7	29.0	29.8	31.0	29.0	29.8	32.2	30.0	31.1	30.4	27.5	29.4
6	29.0	24.9	27.9	31.7	29.3	30.4	30.9	27.5	29.1	30.1	26.6	29.0
7	28.4	25.2	27.1	32.2	29.7	30.9	28.4	26.9	27.9	30.7	26.6	29.2
8	29.2	26.8	27.8	32.0	29.8	30.8	30.4	28.0	29.0	29.7	27.3	29.0
9	30.4	27.8	28.9	31.6	29.6	30.6	31.5	29.1	30.2	30.8	27.6	29.1
10	30.2	28.5	29.3	32.4	29.6	30.8	31.8	29.8	30.8	29.4	27.4	28.1
11	29.6	28.2	28.9	32.7	29.8	31.2	32.0	29.9	31.0	27.4	25.5	26.7
12	29.3	28.4	28.9	33.0	30.1	31.5	32.2	29.9	31.1	26.3	25.6	25.9
13	30.7	28.4	29.5	32.7	30.4	31.5	32.4	30.1	31.2	28.0	26.2	26.9
14	31.8	28.8	30.1	32.5	30.0	31.2	31.3	26.1	28.7	28.3	27.5	27.8
15	31.5	28.6	30.0	32.0	29.6	30.8	28.0	26.2	27.2	28.9	27.8	28.3
16	31.7	29.0	30.2	32.4	29.7	31.0	28.2	27.6	27.9	28.7	27.2	28.0
17	31.2	29.0	30.0	32.3	29.8	31.0	28.1	27.5	27.8	27.2	26.5	26.8
18	31.8	29.1	30.4	32.4	29.8	31.1	28.7	27.6	28.1	28.5	26.9	27.6
19	32.5	29.5	30.8	32.4	29.7	31.0	30.0	28.0	28.9	28.9	27.5	28.2
20	32.8	29.7	31.0	32.3	29.7	30.9	30.6	28.7	29.6	29.3	27.8	28.6
21	32.5	29.4	30.8	32.8	29.7	31.0	30.4	29.3	29.8	30.0	28.4	29.1
22	32.2	29.4	30.7	32.9	29.6	31.0	30.1	25.4	28.0	30.1	28.9	29.4
23	32.1	29.3	30.5	32.6	29.5	30.9	26.3	25.4	25.8	29.8	28.9	29.4
24	32.0	29.2	30.4	32.8	29.6	31.0	27.7	26.2	26.8	29.9	28.7	29.3
25	32.1	29.2	30.5	32.9	29.6	31.0	29.1	27.4	28.1	29.6	28.6	29.1
26	32.4	29.2	30.7	32.6	29.7	31.0	29.8	28.3	28.9	29.8	28.8	29.2
27	32.8	29.6	31.1	32.0	29.5	30.7	30.6	28.8	29.5	30.0	28.5	29.2
28	31.9	29.9	30.8	32.3	29.5	30.7	30.4	28.7	29.6	30.0	28.4	29.2
29	30.7	29.5	30.0	32.5	29.3	30.7	30.5	28.7	29.6	29.9	28.6	29.3
30	31.0	29.1	29.9	32.5	29.3	30.7	30.4	28.7	29.6	29.8	28.5	29.2
31	---	---	---	32.6	29.3	30.8	30.8	29.1	29.9	---	---	---
MONTH	32.8	24.9	29.9	33.0	28.8	30.8	33.1	25.4	29.3	30.8	25.5	28.6

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	7.0	7.3	---	---	---	8.7	7.8	8.3	9.1	8.7	9.0
2	7.4	6.8	7.1	---	---	---	8.3	7.9	8.1	8.9	8.4	8.7
3	7.5	6.7	7.0	---	---	---	8.5	7.8	8.1	8.7	8.3	8.5
4	7.3	6.7	6.9	---	---	---	8.8	8.0	8.4	8.3	8.1	8.2
5	7.2	6.6	6.9	---	---	---	9.1	8.2	8.6	8.3	7.9	8.1
6	7.3	6.7	6.9	8.6	7.8	8.2	9.5	8.5	9.0	8.0	7.8	7.8
7	7.2	6.7	6.9	8.8	7.9	8.2	9.1	8.7	8.9	---	---	---
8	6.8	4.9	6.4	---	---	---	9.2	8.5	8.8	---	---	---
9	5.8	4.8	5.2	---	---	---	9.0	8.5	8.7	8.4	7.5	8.0
10	6.0	5.0	5.6	---	---	---	9.4	8.5	8.9	8.0	6.8	7.5
11	5.9	5.4	5.7	---	---	---	9.8	8.8	9.3	7.4	6.2	6.9
12	5.8	5.6	5.7	---	---	---	10.1	9.2	9.6	7.2	6.1	6.7
13	6.6	5.6	6.0	---	---	---	10.6	9.6	10.2	7.5	6.1	6.8
14	6.4	6.1	6.2	9.0	8.6	8.8	10.7	9.7	10.2	7.2	6.1	6.8
15	6.6	6.0	6.3	9.2	8.6	8.9	10.5	9.5	10.0	7.9	5.9	6.9
16	6.7	6.0	6.5	9.5	8.9	9.3	10.0	9.1	9.6	7.5	4.7	6.6
17	7.0	6.2	6.7	9.6	9.0	9.2	9.8	9.0	9.3	7.4	6.0	6.8
18	7.1	6.2	6.7	9.4	9.0	9.2	9.8	8.9	9.3	---	---	---
19	7.0	6.3	6.7	9.4	8.1	9.1	9.6	8.7	9.1	---	---	---
20	6.9	6.3	6.6	9.2	8.6	8.9	8.8	7.3	8.3	---	---	---
21	6.9	6.2	6.5	8.9	8.4	8.7	8.6	6.6	8.2	---	---	---
22	6.9	6.2	6.5	9.0	8.4	8.7	8.8	8.4	8.6	---	---	---
23	6.7	6.2	6.5	9.2	8.5	8.8	8.9	8.6	8.7	10.2	7.7	9.3
24	6.5	6.0	6.3	9.2	8.5	8.8	9.1	8.7	8.9	10.5	7.9	9.3
25	6.4	5.8	6.1	8.6	8.1	8.4	---	---	---	8.9	8.1	8.5
26	6.9	6.0	6.5	8.3	7.8	8.1	---	---	---	9.7	8.0	8.6
27	7.2	6.5	6.9	8.1	7.6	7.9	9.9	9.6	9.7	9.5	8.0	8.6
28	7.3	6.7	6.9	7.8	7.5	7.6	---	---	---	9.5	8.2	8.5
29	7.1	6.5	6.8	8.0	7.4	7.7	---	---	---	9.3	7.8	8.4
30	6.8	6.2	6.5	8.4	7.5	8.0	9.7	8.4	9.3	8.7	7.7	8.1
31	---	---	---	---	---	---	9.4	8.9	9.2	9.3	7.7	8.2
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

08181800 SAN ANTONIO RIVER NEAR ELMENDORF, 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	9.2	8.5	8.8	9.1	8.3	8.9	8.9	8.5	8.7	8.3	7.1	7.6
2	8.7	8.1	8.5	9.3	8.3	8.9	8.9	8.7	8.8	8.1	6.9	7.4
3	8.5	7.7	8.2	9.2	8.3	9.0	8.8	8.6	8.7	8.4	6.7	7.3
4	8.5	7.3	8.1	9.1	8.2	8.9	8.8	8.5	8.6	8.1	6.6	7.1
5	8.7	7.8	8.3	8.9	7.8	8.7	8.7	8.5	8.6	8.0	6.4	7.0
6	9.0	7.7	8.3	9.0	7.7	8.6	8.6	8.4	8.5	7.9	6.4	7.0
7	8.4	7.1	7.8	9.1	8.2	8.9	8.5	8.2	8.4	7.5	6.6	6.9
8	8.1	6.8	7.5	9.6	8.3	9.1	8.2	8.0	8.1	7.1	6.4	6.7
9	8.8	6.4	7.4	10.0	8.7	9.6	8.4	7.9	8.1	8.0	6.5	7.0
10	8.3	6.4	7.0	10.4	9.4	9.9	8.4	8.1	8.2	8.6	6.8	7.3
11	---	---	---	10.4	8.9	9.9	8.4	8.1	8.3	8.1	7.0	7.5
12	---	---	---	10.3	9.0	9.8	8.2	8.0	8.1	8.3	6.9	7.5
13	---	---	---	10.3	9.0	10.0	8.2	7.9	8.0	8.4	7.1	7.5
14	---	---	---	10.3	9.0	9.8	8.1	7.7	7.9	8.9	6.9	7.9
15	---	---	---	9.7	8.9	9.3	7.9	7.6	7.7	8.8	7.8	8.2
16	---	---	---	9.5	8.2	9.1	8.3	7.7	7.9	8.4	7.8	8.0
17	---	---	---	8.9	7.7	8.4	8.5	7.8	8.1	9.0	7.9	8.3
18	---	---	---	8.6	7.6	7.9	8.9	7.9	8.3	8.8	7.8	8.2
19	8.9	8.4	8.7	8.1	7.5	7.7	9.1	8.1	8.5	8.7	7.6	8.0
20	8.5	8.3	8.4	8.7	7.8	8.3	9.1	8.1	8.4	9.0	7.4	8.1
21	8.6	7.2	8.4	9.2	8.5	8.8	9.0	7.8	8.4	8.7	7.5	8.0
22	8.8	7.1	8.4	9.4	8.7	9.1	9.2	8.0	8.5	8.5	7.2	7.8
23	9.0	8.5	8.8	9.3	8.9	9.1	9.0	7.6	8.3	8.6	7.2	7.7
24	8.8	8.5	8.7	9.1	8.9	9.0	8.5	7.4	7.9	8.5	7.3	7.8
25	8.6	8.0	8.4	10.3	9.6	9.9	8.2	7.4	7.8	8.3	7.1	7.6
26	8.7	7.6	8.3	9.6	8.5	9.0	8.1	7.3	7.7	8.1	7.0	7.5
27	8.7	8.2	8.5	8.9	8.7	8.8	8.0	7.3	7.6	7.9	7.0	7.4
28	9.0	8.2	8.7	8.8	8.6	8.7	8.5	7.3	7.6	8.3	6.8	7.3
29	---	---	---	8.7	8.4	8.5	8.4	7.1	7.7	8.1	6.6	7.2
30	---	---	---	8.5	8.3	8.4	8.4	7.2	7.7	8.0	6.5	7.1
31	---	---	---	8.6	8.3	8.4	---	---	---	8.0	6.6	7.1
MONTH	---	---	---	10.4	7.5	9.0	9.2	7.1	8.2	9.0	6.4	7.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.0	6.5	7.1	8.3	6.9	7.4	9.7	5.9	7.1	6.8	4.4	6.2
2	8.1	6.4	7.1	8.4	6.7	7.4	9.6	6.1	7.1	7.0	6.6	6.8
3	7.9	6.3	7.0	7.5	6.6	7.2	9.4	5.6	6.9	7.1	6.6	6.8
4	8.0	6.2	6.9	7.5	6.7	7.1	9.9	5.7	6.9	7.2	6.6	6.9
5	7.8	6.1	6.9	7.7	6.2	7.0	8.9	5.7	6.9	6.9	6.6	6.7
6	8.2	6.8	7.6	7.8	6.1	6.9	7.1	4.0	6.1	---	---	---
7	8.5	6.9	7.3	7.5	6.0	6.8	7.2	5.8	6.4	---	---	---
8	8.4	7.0	7.5	7.6	6.1	6.8	7.3	6.7	7.1	7.2	6.8	6.9
9	8.5	6.8	7.5	7.4	6.1	6.7	7.2	6.5	6.9	7.1	6.7	6.8
10	8.6	6.7	7.5	7.8	6.0	6.7	7.0	6.3	6.8	7.4	6.7	7.1
11	8.6	7.1	7.6	7.8	5.8	6.6	6.9	6.5	6.7	7.3	6.9	7.1
12	7.8	6.5	7.1	7.8	5.7	6.5	7.1	6.5	6.7	7.3	7.0	7.2
13	8.4	7.0	7.5	7.8	5.7	6.5	7.2	6.5	6.8	7.4	7.1	7.3
14	8.4	6.9	7.4	7.9	5.1	6.4	7.0	2.7	6.0	7.1	6.9	7.0
15	8.5	7.0	7.6	8.0	6.0	6.7	6.4	3.9	6.0	7.0	6.8	6.9
16	8.6	7.2	7.7	8.3	6.1	6.9	6.5	4.9	5.7	7.0	6.8	6.8
17	8.5	7.1	7.6	8.7	6.0	7.0	6.1	5.0	5.6	7.1	6.8	7.0
18	8.7	7.0	7.6	9.0	6.0	7.1	5.8	5.1	5.4	7.0	6.8	6.8
19	8.7	6.9	7.5	9.2	6.3	7.4	5.2	4.4	4.9	6.9	6.6	6.8
20	8.9	6.9	7.6	9.0	6.3	7.4	5.4	3.9	4.7	7.0	6.6	6.8
21	8.9	6.8	7.6	9.3	6.3	7.3	5.0	4.1	4.5	6.9	6.5	6.7
22	9.0	7.1	7.8	9.7	6.1	7.4	6.9	4.1	5.0	6.8	6.4	6.6
23	8.9	7.1	7.7	9.6	5.9	7.2	7.4	5.9	6.9	6.9	6.3	6.6
24	8.5	7.1	7.6	9.6	6.0	7.3	6.7	5.9	6.5	7.0	6.3	6.6
25	8.8	6.8	7.6	10.1	6.3	7.7	6.7	6.0	6.4	7.1	6.3	6.7
26	8.4	6.8	7.3	9.9	6.6	7.7	6.4	5.8	6.0	7.0	6.4	6.7
27	8.5	6.4	7.2	9.9	6.4	7.6	6.0	5.2	5.6	7.2	6.6	6.8
28	8.5	6.6	7.3	9.7	6.1	7.4	5.4	5.0	5.2	7.0	6.5	6.6
29	8.3	6.8	7.4	9.8	6.0	7.3	5.4	4.8	5.1	6.9	6.3	6.6
30	7.7	6.7	7.2	10.4	5.8	7.6	6.0	4.9	5.5	6.8	6.2	6.6
31	---	---	---	10.4	6.2	7.5	7.2	5.4	6.4	---	---	---
MONTH	9.0	6.1	7.4	10.4	5.1	7.1	9.9	2.7	6.1	---	---	---

08183500 SAN ANTONIO RIVER NEAR FALLS CITY, TX

LOCATION.--Lat 28°57'05", long 98°03'50", Karnes County, Hydrologic Unit 12100303, on left bank 23 ft downstream from bridge on Farm Road 791, 0.9 mi upstream from Scared Dog Creek, 3.6 mi southwest of Falls City, and 150.5 mi upstream from mouth.

DRAINAGE AREA.--2,113 mi^2.

PERIOD OF RECORD.--Apr 1925 to current year.
Water-quality records.--Chemical analyses: Apr 1959. Chemical and biochemical analyses: May 1965 to Sep 1981, Oct 1986 to Aug 1995. Sediment analyses: Jan 1987 to Sep 1996. Specific conductance: Jan 1987 to Sep 1996. pH: Jan 1987 to Sep 1996. Water temperature: Jan 1987 to Sep 1996. Dissolved oxygen: Jan 1987 to Sep 1996.

REVISED RECORDS.--WSP 1732: 1947(M). WSP 1923: Drainage area. WDR TX-87-3: 1983-84.

GAGE.--Water-stage recorder. Datum of gage is 285.49 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in Apr 1925, at least 10% of contributing drainage area has been regulated by Medina Lake (station 08179500) and Olmos flood-control structure (combined capacity of 269,500 acre-ft). Storage began in Medina Lake in 1913 and Olmos Dam was completed in 1926. Additional regulation by Calaveras Lake on Calaveras Creek and by Brauning Lake. Flow from Brauning Lake enters the San Antonio River above the station near Elmendorf, and flow from Calaveras Creek enters the San Antonio River some distance downstream from the station near Elmendorf. Records provided by the San Antonio City Public Service Board show that during the current year, 464 acre-ft of water was released into Calaveras Creek from Calaveras Lake and that 120 acre-ft was released from Brauning Lake. Flow is also regulated by eleven Soil Conservation Service floodwater-retarding structures (combined capacity of 26,770 acre-ft). Floodwater-retarding structures were completed in 1972. Some diversions for municipal uses and irrigation above station (amount unknown).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Oct 1913 reached a stage of 28.4 ft, from floodmark, from information by local residents. Maximum stage since at least 1875, that of Sep 29, 1946.

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	263	248	323	400	938	565	755	211	154	173	75	459
2	218	241	320	401	1530	491	737	242	212	215	81	890
3	204	236	356	386	675	466	806	245	157	202	81	437
4	210	230	336	396	473	446	746	239	128	196	80	352
5	205	231	334	406	406	441	711	233	122	189	82	330
6	207	232	325	433	360	435	680	237	118	240	106	312
7	201	234	319	773	446	426	660	226	124	222	426	282
8	230	230	322	1730	390	401	629	230	112	181	957	264
9	476	221	336	890	347	403	603	233	108	165	586	274
10	1180	227	342	543	360	410	579	231	121	156	357	273
11	935	308	327	462	531	399	543	213	122	159	303	301
12	1200	372	331	437	616	386	479	198	125	148	294	421
13	803	570	328	430	464	385	454	207	307	151	224	851
14	1030	669	322	421	404	386	429	213	201	147	203	572
15	729	471	326	402	493	658	431	212	158	158	654	466
16	469	350	323	393	890	927	418	207	126	161	1300	413
17	391	330	314	386	810	2190	396	157	124	198	614	520
18	370	365	259	370	742	2870	380	151	110	163	808	957
19	351	360	257	364	901	1690	365	191	118	156	645	603
20	342	352	261	360	552	1110	364	269	115	146	550	420
21	336	347	593	367	699	1140	334	261	108	145	415	384
22	345	342	1820	353	942	1190	317	245	101	122	443	364
23	352	341	892	307	1660	1170	294	176	86	100	1280	357
24	344	337	522	290	909	1130	278	128	95	89	4980	351
25	324	335	495	291	593	1080	268	125	102	94	3100	350
26	264	338	435	347	520	1040	253	123	101	99	1380	344
27	258	343	462	345	1290	1000	232	144	91	117	734	333
28	244	345	637	297	841	961	237	247	90	96	601	325
29	247	326	479	282	---	917	240	224	90	89	509	322
30	244	322	423	277	---	904	222	179	87	86	466	312
31	247	---	409	838	---	846	---	155	---	81	437	---
TOTAL	13219	9853	13528	14377	19782	26863	13840	6352	3813	4644	22771	12839
MEAN	426	328	436	464	707	867	461	205	127	150	735	428
MAX	1200	669	1820	1730	1660	2870	806	269	307	240	4980	957
MIN	201	221	257	277	347	385	222	123	86	81	75	264
AC-FT	26220	19540	26830	28520	39240	53280	27450	12600	7560	9210	45170	25470

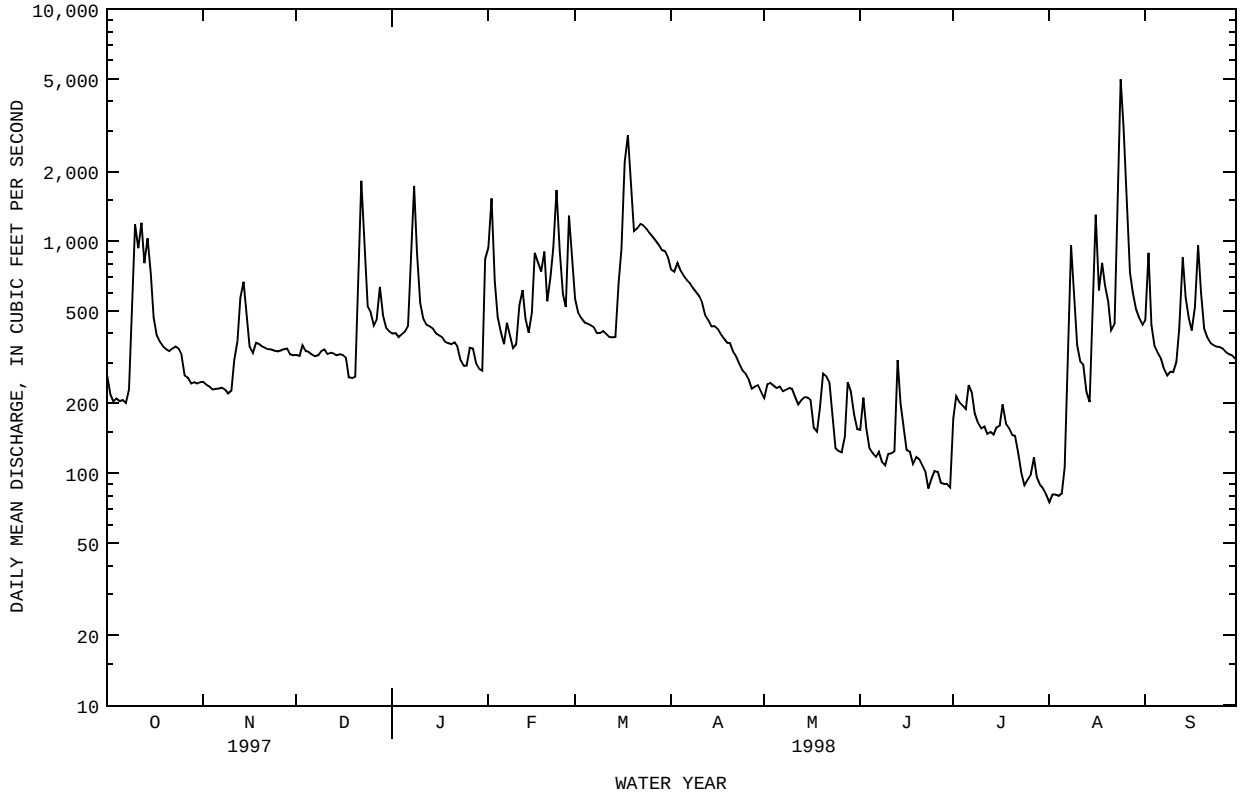
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1998z, BY WATER YEAR (WY)

MEAN	423	369	369	404	462	391	462	626	756	419	296	479
MAX	2926	1592	2668	2705	4803	3536	2615	4303	10120	3662	1564	4100
(WY)	1974	1977	1992	1968	1992	1992	1992	1992	1987	1973	1978	1946
MIN	57.5	67.3	70.6	89.0	94.9	75.6	61.2	84.7	38.0	55.3	40.4	57.7
(WY)	1956	1956	1955	1957	1956	1956	1956	1956	1956	1954	1954	1930

08183500 SAN ANTONIO RIVER NEAR FALLS CITY, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1925 -1998z	
ANNUAL TOTAL	203702		161881			
ANNUAL MEAN	558		444		456	
HIGHEST ANNUAL MEAN					2253	1992
LOWEST ANNUAL MEAN					92.0	1956
HIGHEST DAILY MEAN	11200	Jun 26	4980	Aug 24	42200	Sep 29 1946
LOWEST DAILY MEAN	120	Sep 3	75	Aug 1	19	Jun 27 1956
ANNUAL SEVEN-DAY MINIMUM	134	Aug 28	81	Jul 30	23	Jun 8 1956
INSTANTANEOUS PEAK FLOW			5490	Aug 24	47400	Sep 29 1946
INSTANTANEOUS PEAK STAGE			7.91	Aug 24	33.80	Sep 29 1946
ANNUAL RUNOFF (AC-FT)	404000		321100		330500	
10 PERCENT EXCEEDS	932		891		822	
50 PERCENT EXCEEDS	310		342		248	
90 PERCENT EXCEEDS	172		124		92	

z Period of requalted streamflow.



08183850 CIBOLO CREEK AT IH-10 ABOVE BOERNE, TX

LOCATION.--Lat 29°48'52", long 98°45'12", Kendall County, Hydrologic Unit 12100304, on right bank between westbound Interstate Highway 10 bridge and frontage road bridge, 600 ft downstream from Ranger Creek, 0.7 mi downstream from Boerne Lake, and 1.9 mi northwest of Boerne.

DRAINAGE AREA.--29.0 mi^2.

PERIOD OF RECORD.--Oct 1995 to current year. Discharge measurements only prior to May 1996.

GAGE.--Water-stage recorder. Datum of gage is 1,428.5 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known diversion above station. Flow impounded by Boerne Lake Reservoir (capacity 4,043 acre-ft) from drainage area of 19.8 mi^2. The reservoir was completed Jan 1978.

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	1.6	1.5	1.5	3.6	38	23	40	7.5	3.2	.48	.14	5.6
2	1.6	.95	1.6	4.1	29	22	33	6.8	2.9	.44	.13	4.6
3	1.6	.86	1.8	4.3	21	22	30	6.8	2.6	.60	.15	3.5
4	1.6	.79	1.4	4.6	17	21	27	7.0	2.4	1.4	.16	3.3
5	1.7	.80	1.3	4.6	15	22	25	7.1	2.5	.80	.34	3.2
6	2.1	.85	1.1	7.5	13	20	24	7.2	2.4	.65	4.7	2.9
7	2.3	.78	1.3	13	11	20	24	7.9	2.3	.61	.86	2.4
8	5.9	.82	1.6	e17	10	20	23	7.6	2.6	.57	.57	2.1
9	6.6	.93	1.6	e12	9.4	15	20	7.0	2.5	.54	.42	1.7
10	8.5	1.4	1.3	e8.8	10	14	20	5.9	2.7	.50	.49	1.6
11	10	1.1	1.2	e6.0	9.0	13	19	5.8	16	.46	.59	5.6
12	11	3.4	.85	e3.8	8.5	13	18	4.8	14	.47	.82	9.2
13	8.4	4.1	.67	e2.2	8.2	15	18	4.6	11	.43	.55	9.1
14	5.6	3.5	.66	1.6	21	21	18	4.7	8.4	.40	.50	21
15	4.3	3.2	.67	1.4	27	29	17	4.3	6.4	.40	.56	16
16	3.5	2.6	.72	1.4	26	753	16	4.0	4.6	.42	.67	13
17	3.0	2.3	.80	1.3	21	408	14	4.3	3.4	.41	.71	10
18	2.6	2.2	.87	1.4	18	171	13	4.4	2.2	.32	.75	8.2
19	2.4	2.2	.98	1.4	17	103	12	4.1	1.7	.31	1.2	6.3
20	2.2	2.3	31	1.6	16	72	12	3.6	1.4	.31	.97	5.7
21	2.1	2.4	25	1.6	28	61	12	3.3	1.1	.34	1.7	4.9
22	1.9	2.3	15	1.6	36	53	12	3.4	.88	.33	33	4.1
23	2.1	2.3	11	1.6	31	48	11	3.3	.73	.28	32	3.9
24	2.1	2.3	8.9	1.7	28	45	11	3.2	.63	.26	75	3.6
25	2.2	2.5	6.8	1.8	28	42	10	3.1	.57	.23	43	3.1
26	1.9	2.6	7.4	1.8	33	39	11	3.3	.53	.20	26	3.0
27	1.1	2.6	6.2	1.7	29	37	10	4.8	.48	.16	18	2.4
28	.98	2.6	5.3	1.8	26	34	9.3	4.5	.44	.16	14	2.3
29	1.0	2.4	4.3	1.9	---	32	8.4	4.4	.58	.15	10	2.1
30	1.2	1.9	3.9	1.9	---	41	8.3	4.0	.57	.16	7.7	2.0
31	1.3	---	3.5	41	---	59	---	3.7	---	.18	6.9	---
TOTAL	104.38	60.48	150.22	160.0	584.1	2288	526.0	156.4	101.71	12.97	282.58	166.4
MEAN	3.37	2.02	4.85	5.16	20.9	73.8	17.5	5.05	3.39	.42	9.12	5.55
MAX	11	4.1	31	41	38	753	40	7.9	16	1.4	75	21
MIN	.98	.78	.66	1.3	8.2	13	8.3	3.1	.44	.15	.13	1.6
AC-FT	207	120	298	317	1160	4540	1040	310	202	26	560	330

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

MEAN	1.80	1.16	2.74	2.87	11.5	41.8	37.2	13.8	106	13.0	5.46	2.77
MAX	3.37	2.02	4.85	5.16	20.9	73.8	56.8	22.5	313	38.5	9.12	5.55
(WY)	1998	1998	1998	1998	1998	1998	1997	1997	1997	1997	1998	1998
MIN	.24	.30	.64	.58	2.24	9.89	17.5	5.05	.48	.066	.25	.44
(WY)	1997	1997	1997	1997	1997	1997	1998	1998	1996	1996	1996	1996

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1996 - 1998	
ANNUAL TOTAL	13987.38		4593.24			
ANNUAL MEAN	38.3		12.6		25.1	
HIGHEST ANNUAL MEAN					37.6	1997
LOWEST ANNUAL MEAN					12.6	1998
HIGHEST DAILY MEAN	4940	Jun 22	753	Mar 16	4940	Jun 22 1997
LOWEST DAILY MEAN	.34	Jan 13	.13	Aug 2	.00	Jul 23 1996
ANNUAL SEVEN-DAY MINIMUM	.37	Jan 12	.15	Jul 28	.00	Aug 3 1996
INSTANTANEOUS PEAK FLOW			3400	Mar 16	i20100	Jun 22 1997
INSTANTANEOUS PEAK STAGE			6.46	Mar 16	a20.82	Jun 22 1997
ANNUAL RUNOFF (AC-FT)	27740		9110		18160	
10 PERCENT EXCEEDS	44		27		30	
50 PERCENT EXCEEDS	4.9		3.5		2.3	
90 PERCENT EXCEEDS	.73		.55		.15	

e Estimated
a From floodmark.

08185000 CIBOLO CREEK AT SELMA, TX

LOCATION.--Lat 29°35'38", long 98°18'39", Bexar-Guadalupe County line, Hydrologic Unit 12100304, on right bank 0.6 mi downstream from Missouri-Kansas-Texas Railroad Co. bridge and 0.9 mi upstream from bridge on Interstate Highway 35 at Selma.

DRAINAGE AREA.--274 mi^2.

PERIOD OF RECORD.--Mar 1946 to current year. Figures for water year 1960 in WSP 1813 are in error and should be disregarded.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 728.34 ft above sea level.

REMARKS.--Records good. One known diversion above station. Since water year 1980, at least 10% of contributing drainage area has been regulated by Boerne Lake Reservoir (capacity 4,043 acre-ft) from drainage area of 19.8 mi^2. Considerable flow of Cibolo Creek enters the Edwards and associated limestones in the Balcones Fault Zone that crosses basin between this station and the station at Boerne (station 08183850). Rain gage at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--33 years (water years 1947-79), 15.3 ft^3/s (11,080 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1947-79).--Maximum discharge, 65,000 ft^3/s Jul 16, 1973 (gage height, 26.2 ft, from floodmark), from rating curve extended above 16,000 ft^3/s on basis of field estimate of 54,000 ft^3/s and contracted-opening measurement of 65,000 ft^3/s; no flow most of time.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 26 ft occurred in 1889, from information by local residents. Maximum stage since at least 1869, that of Jun 22, 1997.

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	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	2960	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	1190	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	653	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	321	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	180	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	92	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	45	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	14	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	1.5	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	5456.50	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.000	176	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	2960	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	10820	.00	.00	.00	.00	.00	.00

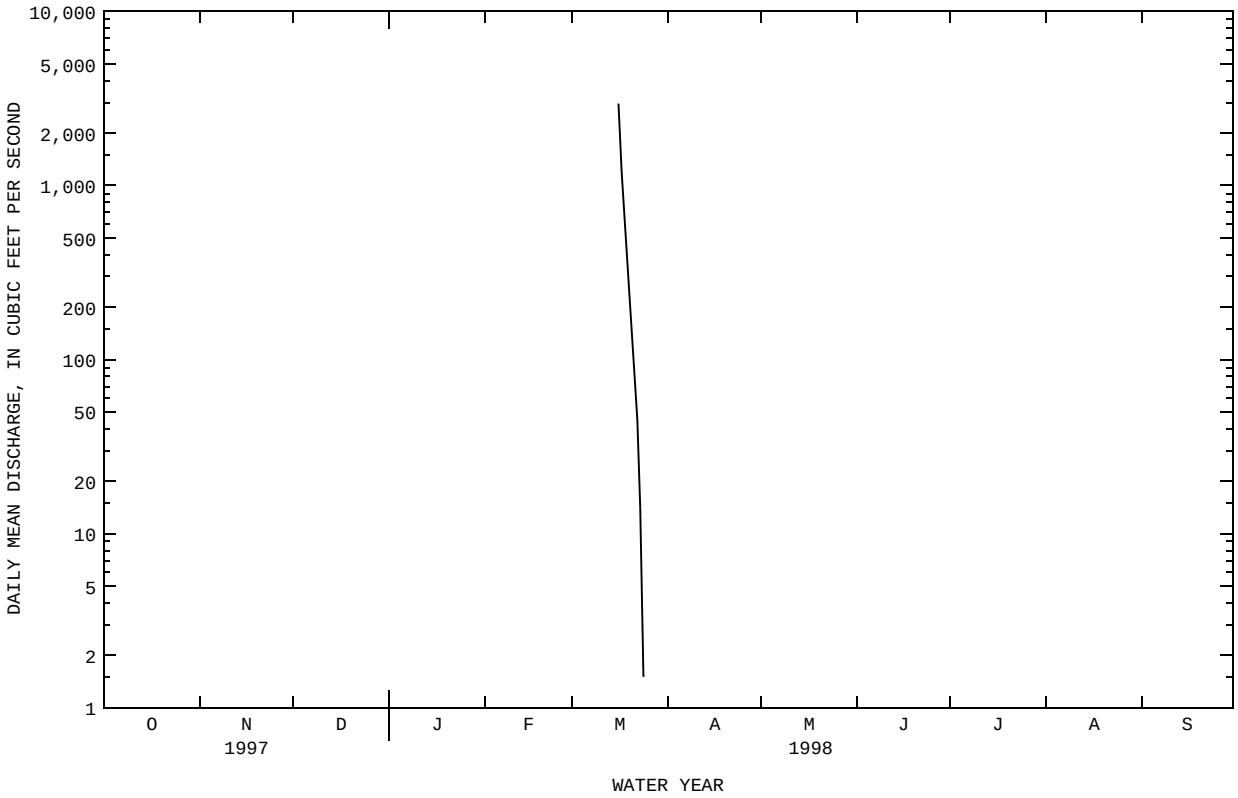
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1998z, BY WATER YEAR (WY)

MEAN	.51	.55	65.7	4.08	34.9	34.7	4.35	34.6	192	4.06	.080	.022
MAX	5.23	6.35	1143	76.9	646	483	75.5	494	1567	44.7	1.52	.35
(WY)	1987	1982	1992	1992	1992	1992	1991	1992	1997	1985	1997	1996
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980	1981

08185000 CIBOLO CREEK AT SELMA, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1980 - 1998z	
ANNUAL TOTAL	48013.41		5456.50			
ANNUAL MEAN	132		14.9		31.1	
HIGHEST ANNUAL MEAN					257	1992
LOWEST ANNUAL MEAN					.000	1984
HIGHEST DAILY MEAN	24900	Jun 22	2960	Mar 16	24900	Jun 22 1997
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Oct 1 1979
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Oct 1 1979
INSTANTANEOUS PEAK FLOW			14700	Mar 16	69600	Jun 22 1997
INSTANTANEOUS PEAK STAGE			14.11	Mar 16	a29.73	Jun 22 1997
ANNUAL RUNOFF (AC-FT)	95230		10820		22520	
10 PERCENT EXCEEDS	.00		.00		.00	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated
a From floodmark
z Period of regulated streamflow



08186000 CIBOLO CREEK NEAR FALLS CITY, TX

LOCATION.--Lat 29°00'50", long 97°55'48", Karnes County, Hydrologic Unit 12100304, at right downstream abutment of bridge on State Highway 123, 5.7 mi northeast of Falls City, and 10.4 mi upstream from mouth.

DRAINAGE AREA.--827 mi^2.

PERIOD OF RECORD.--Oct 1930 to current year. Monthly discharge only for some periods, published in WSP 1312.
Water-quality records.--Chemical analyses: Oct 1961 to Sep 1996. Chemical and biochemical analyses: Dec 1969 to Sep 1996. Sediment analyses: 1960, Nov 1965 to May 1975. Specific conductance: Oct 1968 to Sep 1991. Water Temperature: Oct 1968 to Sep 1991.

REVISED RECORDS.--WSP 733: 1931. WSP 1058: 1935. WSP 1562: 1931(M), 1933. WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 264.28 ft above sea level. Nov 4, 1930, to Aug 4, 1940, water-stage recorder at site 1,600 ft upstream at datum 0.56 ft higher. Aug 5 to Sep 13, 1940, nonrecording gage at site 150 ft to the left at same datum. Sep 14, 1940, to Mar 15, 1990, water-stage recorder at site 150 ft to the left at same datum. Mar 16, 1990, to Jul 15, 1993, water-stage recorder at site 50 ft downstream at same datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. There are several diversions for irrigation above station. Much of the base flow is effluent from the Carrizo Sands in the vicinity of Sutherland Springs. Flow is affected at times by discharge from the flood-detention pools of ten floodwater-retarding structures with a combined detention capacity of 16,620 acre-ft. These structures control runoff from 62.9 mi^2.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 35 ft occurred in Oct 1913 (discharge, about 35,000 ft^3/s). Maximum stage since at least 1890, that of Sep 28, 1973.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,600 ft^3/s:

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

No peak greater than base discharge.

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

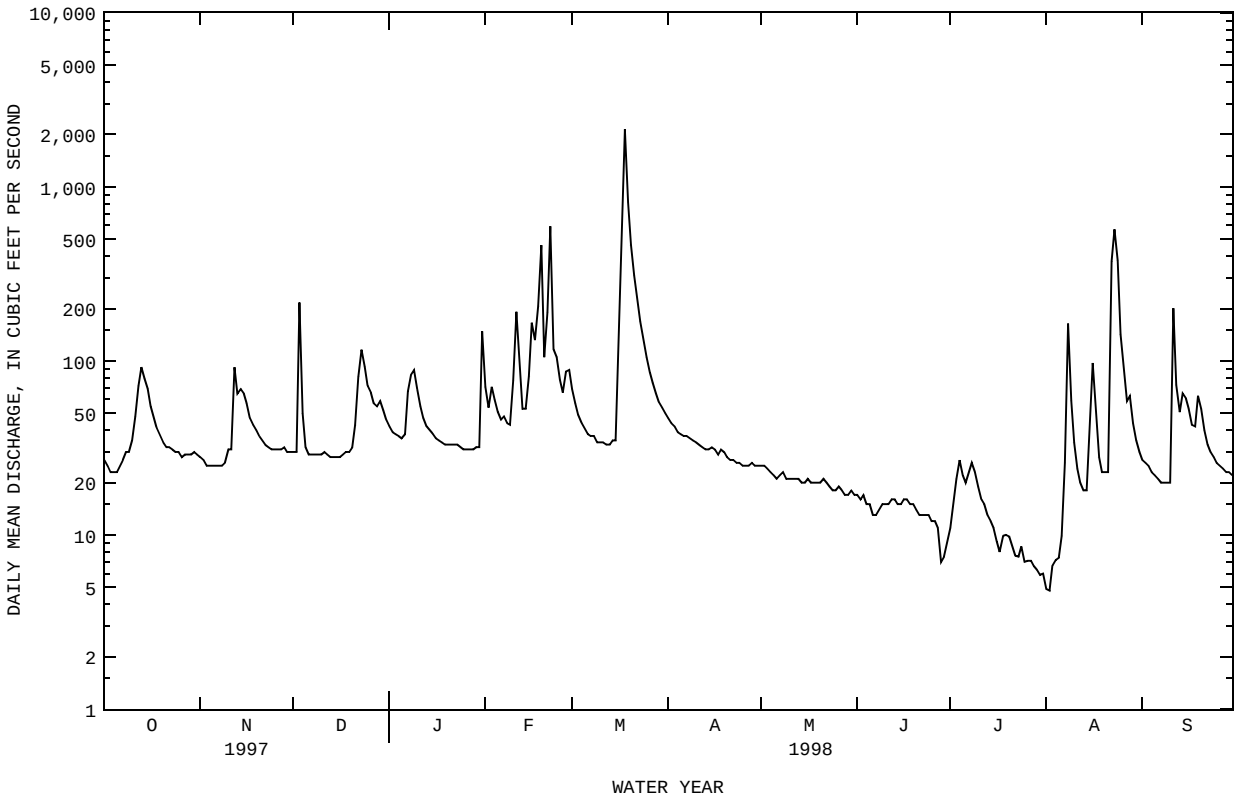
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	28	30	42	71	69	47	25	17	11	4.9	27
2	25	27	30	39	54	57	44	25	16	15	4.8	26
3	23	25	216	38	71	49	42	24	17	21	6.7	25
4	23	25	50	37	60	44	39	23	15	27	7.2	23
5	23	25	32	36	51	41	38	22	15	22	7.4	22
6	25	25	29	38	46	38	37	21	13	20	9.9	21
7	27	25	29	67	48	37	37	22	13	23	26	20
8	30	25	29	84	44	37	36	23	14	26	164	20
9	30	26	29	89	43	34	35	21	15	23	59	20
10	35	31	29	69	77	34	34	21	15	19	34	20
11	48	31	30	55	192	34	33	21	15	16	24	201
12	72	92	29	47	104	33	32	21	16	15	20	73
13	92	65	28	42	53	33	31	21	16	13	18	51
14	79	69	28	40	53	35	31	20	15	12	18	65
15	69	65	28	38	82	35	32	20	15	11	46	61
16	55	57	28	36	166	101	31	21	16	9.2	97	53
17	47	47	29	35	132	600	29	20	16	8.0	49	43
18	41	43	30	34	207	2140	31	20	15	9.9	28	42
19	37	40	30	33	462	815	30	20	15	10	23	63
20	34	37	32	33	105	466	28	20	14	9.8	23	53
21	32	35	43	33	190	310	27	21	13	8.7	23	40
22	32	33	81	33	595	226	27	20	13	7.6	373	33
23	31	32	116	33	117	169	26	19	13	7.5	571	30
24	30	31	93	32	105	132	26	18	13	8.6	378	28
25	30	31	72	31	78	105	25	18	12	7.0	142	26
26	28	31	66	31	66	86	25	19	12	7.1	90	25
27	29	31	57	31	87	75	25	18	11	7.1	59	24
28	29	32	55	31	89	65	26	17	7.0	6.6	63	23
29	29	30	59	32	---	58	25	17	7.5	6.3	44	23
30	30	30	52	32	---	54	25	18	9.1	5.9	35	22
31	29	---	46	148	---	50	---	17	---	6.0	30	---
TOTAL	1171	1124	1535	1399	3448	6062	954	633	413.6	399.3	2477.9	1203
MEAN	37.8	37.5	49.5	45.1	123	196	31.8	20.4	13.8	12.9	79.9	40.1
MAX	92	92	216	148	595	2140	47	25	17	27	571	201
MIN	23	25	28	31	43	33	25	17	7.0	5.9	4.8	20
AC-FT	2320	2230	3040	2770	6840	12020	1890	1260	820	792	4910	2390

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1998, BY WATER YEAR (WY)

MEAN	102	83.7	100	94.6	114	69.4	162	245	262	98.0	54.2	154
MAX	996	565	2156	1627	1756	860	1492	2230	2821	1357	909	1579
(WY)	1974	1941	1992	1968	1992	1992	1977	1972	1987	1942	1946	1973
MIN	8.49	8.08	9.99	10.3	9.64	7.04	5.23	4.59	1.74	1.96	2.40	5.41
(WY)	1932	1932	1955	1956	1956	1956	1971	1971	1967	1971	1956	1984

08186000 CIBOLO CREEK NEAR FALLS CITY, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1931 - 1998	
ANNUAL TOTAL	64252		20819.8			
ANNUAL MEAN	176		57.0		128	
HIGHEST ANNUAL MEAN					717	1992
LOWEST ANNUAL MEAN					10.4	1956
HIGHEST DAILY MEAN	13500	Jun 24	2140	Mar 18	27300	Sep 28 1973
LOWEST DAILY MEAN	23	Jan 10	4.8	Aug 2	.00	Jul 30 1956
ANNUAL SEVEN-DAY MINIMUM	23	Jan 8	5.9	Jul 28	.00	Aug 4 1956
INSTANTANEOUS PEAK FLOW			3080	Mar 18	33600	Jul 6 1942
INSTANTANEOUS PEAK STAGE			13.35	Mar 18	35.44	Sep 28 1973
ANNUAL RUNOFF (AC-FT)	127400		41300		92740	
10 PERCENT EXCEEDS	180		89		124	
50 PERCENT EXCEEDS	34		30		27	
90 PERCENT EXCEEDS	25		13		9.7	



08188500 SAN ANTONIO RIVER AT GOLIAD, TX

LOCATION.--Lat 28°38'58", long 97°23'04", Goliad County, Hydrologic Unit 12100303, on right downstream bank 300 ft below bridge on U.S. Highway 183, 1.2 mi southeast of courthouse in Goliad, 11.7 mi upstream from Manahuilla Creek, and 66.5 mi upstream from mouth.

DRAINAGE AREA.--3,921 mi^2.

PERIOD OF RECORD.--Jun 1924 to Mar 1929, Feb 1939 to current year.
Water-quality records.--Chemical analyses: Dec 1941 to Dec 1942, Nov 1944 to Sep 1946, Sep 1958 to Sep 1996. Chemical and biochemical analyses: Jan 1968 to Sep 1996. Pesticide analyses: Jan 1968 to May 1982. Sediment analyses: Apr 1959, Oct 1974 to Aug 1994.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 91.08 ft above sea level. Prior to Mar 31, 1929, nonrecording gage at Texas and New Orleans Railroad Co. bridge 1.1 mi upstream at same datum. Satellite telemeter at station.

REMARKS.--Records good. There are many diversions and regulations above station (see station 08181800). Flow is affected at times by discharge from the flood-detention pools of 36 floodwater-retarding structures, with a combined detention capacity of 66,730 acre-ft. These structures control runoff from 213 mi^2 in the drainage area above this station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in Oct 1913 and Jun 15, 1935, reached about the same stage as flood in 1942. Maximum stage since about 1800 occurred in 1869 and was several feet higher than flood of Sep 23, 1967. Maximum stage since 1869, that of Sep 23, 1967. Flood of Jul 9, 1942, reached a stage of 44.9 ft.

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

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

No peak greater than base discharge.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	302	297	360	439	1070	1160	845	284	204	122	106	445
2	295	292	359	423	1480	775	791	271	184	122	102	415
3	290	291	361	418	1560	641	780	265	179	156	100	592
4	259	285	479	411	1010	586	e830	283	213	226	100	569
5	248	282	532	409	625	565	e775	281	192	243	103	393
6	253	279	406	448	513	545	e710	276	165	213	103	353
7	254	276	377	787	463	532	665	271	158	202	102	338
8	258	275	365	570	442	524	648	271	153	224	116	322
9	261	277	359	1460	490	504	626	262	154	224	442	300
10	289	282	360	1270	435	481	601	262	154	198	753	290
11	1130	288	371	716	433	e470	581	259	e150	187	431	565
12	2230	305	368	563	578	e465	563	253	e140	176	319	3280
13	2600	464	359	506	842	e460	523	244	e140	172	276	2580
14	1080	480	359	479	633	e455	486	235	e200	166	276	885
15	861	661	356	466	532	e450	467	239	e350	164	227	778
16	940	609	352	451	740	740	452	244	e250	161	218	1300
17	623	463	355	433	1020	1310	446	243	e170	163	876	889
18	491	391	354	427	1130	1900	443	240	158	165	804	550
19	439	382	343	418	2360	4150	446	208	154	179	566	683
20	416	398	311	403	2480	3320	414	198	153	168	580	736
21	394	390	315	402	1250	1710	397	221	156	158	523	512
22	382	383	320	403	1640	1350	385	271	151	154	515	428
23	382	377	1240	401	3240	1310	366	267	143	148	519	401
24	387	373	1360	381	2130	1240	349	254	138	142	1410	387
25	388	370	690	350	1420	1170	333	214	131	122	3370	375
26	374	369	553	340	927	1100	322	182	128	116	4070	367
27	347	371	513	345	730	1040	315	172	135	113	2050	362
28	310	378	460	378	978	988	300	171	135	114	946	356
29	306	382	553	370	---	945	283	179	134	116	653	346
30	298	379	555	339	---	898	286	242	127	124	556	341
31	299	---	469	415	---	867	---	231	---	107	479	---
TOTAL	17386	11049	14514	15621	31151	32651	15428	7493	4999	5045	21691	20138
MEAN	561	368	468	504	1113	1053	514	242	167	163	700	671
MAX	2600	661	1360	1460	3240	4150	845	284	350	243	4070	3280
MIN	248	275	311	339	433	450	283	171	127	107	100	290
AC-FT	34490	21920	28790	30980	61790	64760	30600	14860	9920	10010	43020	39940

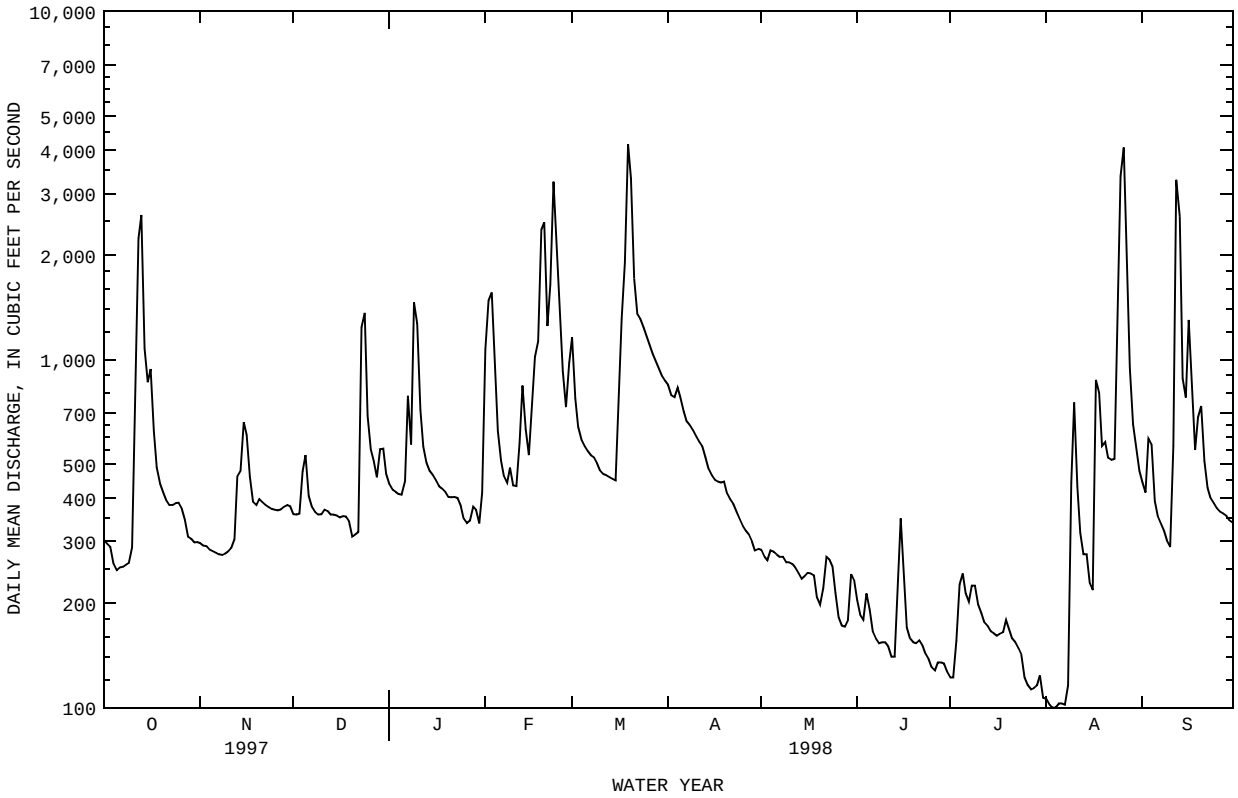
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1998h, BY WATER YEAR (WY)

MEAN	749	583	529	568	692	529	759	1063	1181	601	396	910
MAX	7084	2574	4628	4309	7682	4379	4488	6169	15370	4723	1736	12050
(WY)	1974	1941	1992	1968	1992	1992	1992	1992	1987	1973	1978	1967
MIN	75.1	76.2	86.5	104	107	83.9	86.8	137	26.2	52.4	47.9	66.8
(WY)	1956	1956	1955	1956	1956	1956	1956	1971	1956	1956	1963	1954

08188500 SAN ANTONIO RIVER AT GOLIAD, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1924 - 1998h	
ANNUAL TOTAL	305657		197166			
ANNUAL MEAN	837		540		720	
HIGHEST ANNUAL MEAN					3289	1992
LOWEST ANNUAL MEAN					98.2	1956
HIGHEST DAILY MEAN	12600	Jun 28	4150	Mar 19	121000	Sep 23 1967
LOWEST DAILY MEAN	183	Feb 9	100	Aug 3	2.1	Jun 14 1956
ANNUAL SEVEN-DAY MINIMUM	205	Jan 30	102	Aug 1	5.0	Jun 12 1956
INSTANTANEOUS PEAK FLOW			4610	Mar 19	138000	Sep 23 1967
INSTANTANEOUS PEAK STAGE			18.78	Mar 19	53.70	Sep 23 1967
ANNUAL RUNOFF (AC-FT)	606300		391100		521700	
10 PERCENT EXCEEDS	1360		1070		1210	
50 PERCENT EXCEEDS	370		378		328	
90 PERCENT EXCEEDS	238		154		118	

e Estimated
h See PERIOD OF RECORD paragraph.



08188600 GBRA CALHOUN CANAL PUMP STATION NEAR LONG MOTT, TX

LOCATION.--Lat 28°30'00", long 96°46'43", Calhoun County, Hydrologic Unit 12100204, at raw water pump station on Goff Bayou, 0.6 mi upstream from State Highway 185, and 1.3 mi northwest of Long Mott.

PERIOD OF RECORD.--Mar 1968 to Feb 1970 (monthly discharge only), Mar 1970 to current year.

GAGE.--Totalizing flow meters on rated pumps. Mar 1968 to Mar 6, 1981, Parshall flume and deflection-vane recorder. Mar 7, 1981, to Oct 5, 1989, water-stage and velocity recorders with duplex water-stage recorder. Oct 6, 1989, to Jun 30, 1992, non-recording gage. All at former site 0.5 mi downstream. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Flow is diverted from Guadalupe River 550 ft upstream from Guadalupe River near Tivoli (station 08188800), and then through a system of canals, Hog Bayou, and Goff Bayou, a distance of 8.2 mi to the pumping station on Goff Bayou.

COOPERATION.--Log of pumping station on Goff Bayou provided by the Guadalupe-Blanco River Authority.

AVERAGE DISCHARGE.--30 years (water years 1969-98), 88.2 ft^3/s (63,900 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 311 ft^3/s Jul 7, 1968; no flow at times in 1968-74 and 1977-98.

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	59	24	32	27	27	25	32	124	178	162	147	58
2	66	25	51	16	27	17	25	138	182	186	152	62
3	54	34	51	25	26	26	26	150	204	175	148	63
4	53	33	49	8.3	36	26	53	126	238	170	166	75
5	53	22	32	46	25	26	54	98	246	178	181	61
6	52	19	20	69	25	19	54	88	228	158	154	67
7	53	36	20	69	25	11	88	146	237	163	144	62
8	52	18	19	69	25	.00	111	174	245	169	136	51
9	52	18	21	68	28	30	146	140	232	168	126	51
10	22	19	51	68	25	50	137	132	235	157	127	32
11	.00	32	52	53	17	54	125	149	224	150	115	1.1
12	.00	27	34	52	25	36	112	170	212	142	89	.00
13	8.9	35	18	61	39	26	127	209	230	141	105	.00
14	44	37	22	48	26	10	144	234	222	139	95	.00
15	54	19	22	55	26	24	110	208	208	151	140	.00
16	38	19	23	64	18	14	97	164	211	160	118	.00
17	22	18	40	53	20	34	75	156	216	160	54	49
18	22	50	34	53	44	45	58	144	220	164	40	66
19	2.5	71	25	27	26	54	85	164	192	164	53	26
20	32	71	14	27	26	35	81	197	195	151	52	26
21	52	71	13	27	26	26	98	195	202	142	52	36
22	52	55	40	12	26	39	115	191	200	142	28	54
23	38	71	23	17	15	36	117	170	195	142	27	53
24	28	51	23	27	25	54	126	162	183	149	25	41
25	39	64	23	.40	.00	35	124	163	189	143	43	60
26	27	34	38	18	.00	40	106	157	189	148	42	61
27	27	17	52	27	17	26	84	160	189	138	53	30
28	40	18	51	27	16	27	90	180	188	133	54	52
29	39	17	41	41	---	38	97	213	149	125	62	47
30	49	17	28	36	---	26	92	183	153	136	75	76
31	23	---	41	27	---	28	---	173	---	152	69	---
TOTAL	1153.40	1042	1003	1217.70	661.00	937.00	2789	5058	6192	4758	2872	1260.10
MEAN	37.2	34.7	32.4	39.3	23.6	30.2	93.0	163	206	153	92.6	42.0
MAX	66	71	52	69	44	54	146	234	246	186	181	76
MIN	.00	17	13	.40	.00	.00	25	88	149	125	25	.00
AC-FT	2290	2070	1990	2420	1310	1860	5530	10030	12280	9440	5700	2500

CAL YR 1997 TOTAL 19725.40 MEAN 54.0 MAX 181 MIN .00 AC-FT 39130
WTR YR 1998 TOTAL 28943.20 MEAN 79.3 MAX 246 MIN .00 AC-FT 57410

08188800 GUADALUPE RIVER NEAR TIVOLI, TX

LOCATION.--Lat 28°30'20", long 96°53'04", Calhoun-Refugio County line, Hydrologic Unit 12100204, on right bank at diversion and saltwater barrier, one orifice located upstream and one downstream, 550 ft downstream from Calhoun County Irrigation Canal intake, 0.4 mi downstream from San Antonio River, 3.5 mi north of Tivoli, and at mile 10.2.

DRAINAGE AREA.--10,128 mi^2.

WATER-STAGE RECORDS

PERIOD OF RECORD.--Sep 1965 to current year.

REVISED RECORDS.--WRD TX-68-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 0.04 ft above sea level.

REMARKS.--Since installation of gage in Sep 1965, at least 10% of contributing drainage area has been regulated by Canyon Lake (station 08167700). Some regulation by power plants. Many small diversions above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height (upstream from barrier), 13.7 ft Sep 22, 1967; minimum, 1.2 ft Jul 2, 1984, Jan 25, 1990. Maximum gage height (downstream from barrier), 13.6 ft Sep 22, 1967; minimum, 0.5 ft Jul 12, 14, 1967, Mar 25, 1996. Maximum stage since at least 1936, that of Sep 22, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Jul 1936 reached a stage of 11 ft, present site and datum. Levees along the Navigation Canal from San Antonio Bay to Victoria were built in 1961, thus decreasing the flood plain.

EXTREMES FOR CURRENT YEAR.--Maximum gage height (upstream from barrier) 8.6 Oct 14-16; mimimum 2.9 June 26: Maximum gage height (downstream from barrier) 8.6 ft; minimum 1.8 July 18, Aug 2.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	4.8	4.5	5.3	5.3	4.3	4.0	5.6	5.6	4.6	4.6	7.7	7.6
2	4.4	4.2	5.0	5.0	4.6	4.5	5.4	5.4	5.6	5.5	7.8	7.7
3	4.4	4.1	4.8	---	4.8	4.6	5.3	5.2	6.6	6.6	7.8	7.7
4	5.0	4.0	4.5	---	4.7	4.4	5.2	5.2	6.8	6.8	7.6	7.6
5	5.2	3.8	4.4	---	5.1	4.9	5.1	5.1	7.0	7.0	7.5	7.4
6	5.1	3.5	4.3	---	5.7	5.5	5.1	5.0	7.0	7.0	7.4	7.3
7	5.2	3.9	4.2	---	5.8	5.5	5.1	5.1	6.7	6.6	7.2	7.2
8	5.2	4.3	4.2	---	5.8	5.5	6.0	5.9	6.3	6.3	7.2	7.1
9	5.9	5.9	4.3	---	5.6	5.3	6.6	6.5	6.2	6.1	7.0	6.9
10	6.8	6.8	4.4	---	4.5	4.2	7.2	7.2	6.3	6.2	6.9	6.8
11	8.1	8.1	4.3	4.1	4.2	4.0	7.5	7.4	6.3	6.3	6.8	6.7
12	8.1	8.1	4.6	4.4	4.2	4.0	7.5	7.5	6.6	6.6	6.8	6.7
13	8.2	8.2	5.1	4.9	4.2	4.0	7.4	7.4	7.0	6.9	6.8	6.7
14	8.6	8.5	4.9	4.7	3.9	3.8	7.1	7.1	7.4	7.4	6.8	6.7
15	8.6	8.6	5.2	5.0	4.0	3.8	6.9	6.8	7.5	7.4	6.8	6.7
16	8.6	8.5	5.5	5.2	4.0	3.8	6.8	6.7	7.5	7.5	7.1	7.0
17	8.1	8.1	5.6	5.4	3.8	3.6	6.7	6.6	7.7	7.6	7.6	7.5
18	8.0	7.9	5.6	5.3	3.6	3.4	6.5	6.4	7.8	7.7	7.8	7.7
19	7.8	7.8	5.1	4.9	3.8	3.8	6.2	6.2	7.8	7.8	7.8	7.7
20	7.5	7.5	5.2	4.9	3.9	3.8	5.9	5.8	8.0	8.0	8.0	7.8
21	7.3	7.3	5.2	5.0	4.0	4.0	5.6	5.5	8.1	8.1	8.1	7.9
22	7.0	7.0	5.1	4.9	4.0	4.0	5.5	5.4	8.1	8.1	8.1	7.9
23	6.8	6.8	4.8	4.7	4.0	4.0	5.3	5.3	8.0	7.9	8.0	7.9
24	6.8	6.7	4.8	4.7	5.7	5.6	5.1	5.1	8.0	8.0	7.9	7.8
25	6.4	6.4	4.8	4.7	6.5	6.5	5.1	5.1	8.1	8.0	7.9	7.8
26	6.1	6.1	4.7	4.5	6.5	6.5	4.9	4.9	8.1	8.0	7.8	7.7
27	5.8	5.8	4.5	4.3	6.1	6.0	4.6	4.5	8.0	7.9	7.9	7.8
28	5.5	5.5	4.7	4.6	5.9	5.9	4.3	4.3	7.9	7.8	7.8	7.7
29	5.4	5.4	4.6	4.4	5.8	5.7	4.2	4.2	---	---	7.8	7.6
30	5.4	5.4	4.5	4.3	5.5	5.5	4.2	4.2	---	---	7.8	7.7
31	5.4	5.4	---	---	5.6	5.6	4.5	4.4	---	---	7.8	7.7
MAX	8.6	8.6	5.6	---	6.5	6.5	7.5	7.5	8.1	8.1	8.1	7.9
MIN	4.4	3.5	4.2		3.6	3.4	4.2	4.2	4.6	4.6	6.8	6.7

08188800 GUADALUPE RIVER NEAR TIVOLI, TX--Continued

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN	UP	DOWN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.7	7.6	5.6	5.4	3.3	3.1	3.8	2.7	4.1	1.9	6.9	6.9
2	7.6	7.5	5.3	5.3	3.4	3.2	---	2.6	4.1	1.8	6.3	6.3
3	7.6	7.5	5.3	5.3	3.5	3.2	---	3.1	3.8	2.1	5.9	5.8
4	7.5	7.4	5.1	5.0	3.6	3.2	---	2.9	3.5	2.4	5.3	5.3
5	7.4	7.3	4.7	4.6	3.6	3.2	---	2.9	4.2	2.4	5.5	5.5
6	7.5	7.4	4.7	4.6	3.4	3.0	---	3.0	3.7	2.3	5.5	5.5
7	7.5	7.4	4.7	4.6	3.7	3.3	---	2.9	3.5	2.5	4.9	4.9
8	7.4	7.3	4.7	4.6	4.1	3.7	---	3.1	4.1	2.4	4.6	4.6
9	7.2	7.1	4.6	4.6	4.1	3.6	---	3.1	4.2	2.5	4.8	4.8
10	7.1	7.0	4.4	4.3	4.3	3.8	---	3.0	4.1	2.3	5.2	5.2
11	7.1	6.9	4.2	4.1	4.4	3.9	---	2.8	4.1	3.2	7.0	7.0
12	7.1	7.0	4.2	4.2	4.1	3.7	---	2.6	4.0	3.2	7.8	7.7
13	7.1	7.0	4.2	4.1	3.7	3.3	---	2.5	4.1	2.7	8.0	7.9
14	---	---	4.1	4.1	3.7	3.3	---	2.2	3.7	2.5	8.1	8.1
15	---	---	4.2	4.1	3.4	3.0	---	2.3	3.5	2.2	8.1	8.0
16	6.8	6.6	4.1	4.1	3.4	2.9	---	2.2	3.5	2.4	8.2	8.1
17	6.6	6.4	4.1	4.0	3.5	3.0	---	2.0	4.1	2.4	8.2	8.2
18	6.4	6.3	3.8	3.8	3.7	3.2	---	1.8	4.2	2.9	8.2	8.1
19	6.4	---	3.7	3.6	3.7	3.2	---	2.0	4.1	4.0	8.1	8.1
20	6.4	---	3.7	3.7	3.5	3.0	---	2.4	3.9	3.8	7.9	7.9
21	6.3	---	3.7	3.6	3.4	3.0	---	2.4	3.8	3.7	7.8	7.8
22	6.1	6.0	3.7	3.6	3.3	2.9	---	2.3	4.8	4.8	7.7	7.7
23	6.0	5.8	3.8	3.7	3.0	2.7	---	2.4	5.4	5.4	7.6	7.5
24	5.9	5.8	3.6	3.5	3.1	2.9	---	2.3	6.5	6.5	7.3	7.3
25	5.9	5.8	3.5	3.5	3.0	2.7	---	2.2	7.3	7.3	7.1	7.1
26	5.9	5.7	3.6	3.5	2.9	2.8	---	2.2	7.6	7.6	7.0	7.0
27	5.9	5.8	3.6	3.5	3.2	3.0	---	2.2	7.9	7.9	6.8	6.7
28	5.6	5.5	3.3	3.3	3.2	2.9	---	2.1	8.0	7.9	6.5	6.5
29	5.5	5.3	3.3	3.3	3.7	2.9	---	2.2	7.9	7.9	6.3	6.2
30	5.6	5.5	3.4	3.2	4.0	2.8	---	2.2	7.7	7.7	6.2	6.1
31	---	---	3.4	3.2	---	---	3.6	2.1	7.3	7.2	---	---
MAX	---	---	5.6	5.4	4.4	3.9	---	3.1	8.0	7.9	8.2	8.2
MIN			3.3	3.2	2.9	2.7		1.8	3.5	1.8	5.2	4.6

08188800 GUADALUPE RIVER NEAR TIVOLI, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Aug 1965 to current year. Chemical and biochemical analyses: Jan 1968 to Sep 1996. Pesticide analyses: Oct 1970 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Aug 1965 to Oct 1982.
WATER TEMPERATURE: Aug 1965 to Oct 1982.

INSTRUMENTATION.--From Aug 1965 to Oct 1982, a water-quality monitor continuously recorded conductance at this station. From Mar 1981 to Oct 1982, a water-quality monitor continuously recorded water temperature at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,000 microsiemens, Jun 1, 1971, Aug 3, 1978; minimum daily, 159 microsiemens, Apr 28, 1980.
WATER TEMPERATURE (1965-69, 1981-82): Maximum daily, 32.0°C, on many days during summer months; minimum daily, 8.0°C, Jan 15, 1968.

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 (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)
NOV												
10...	1325	733	8.2	18.0	8.3	88	270	39	80	16	45	1
APR												
06...	1330	565	8.2	20.0	8.7	96	230	35	68	16	26	.7
MAY												
28...	1150	724	8.1	28.5	6.7	86	260	48	73	18	52	1
AUG												
04...	1335	758	8.1	32.0	6.4	87	230	37	62	18	61	2
21...	1035	606	7.7	29.5	6.0	78	180	26	51	13	47	2
SEP												
30...	1015	523	7.9	30.0	5.6	75	180	19	56	9.8	29	1

DATE	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)	PCB, TOTAL (UG/L) (39516)	PCNS UNFILT RECOVER (UG/L) (39250)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	P,P'-DDD UNFILT RECOVER (UG/L) (39360)
NOV												
10...	3.8	230	44	62	.27	13	401	--	--	--	--	--
APR												
06...	3.0	200	37	34	.23	11	314	--	--	--	--	--
MAY												
28...	3.6	210	54	69	.28	13	408	<.100	<.100	<.010	<.100	<.010
AUG												
04...	4.4	190	55	82	.50	16	415	--	--	--	--	--
21...	5.1	160	43	57	.37	16	325	--	--	--	--	--
SEP												
30...	4.8	160	28	37	.23	18	281	--	--	--	--	--

DATE	P,P'-DDE, TOTAL (UG/L) (39365)	P,P'-DDT UNFILT RECOVER (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)	ENDO-SULFAN, I TOTAL (UG/L) (39388)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)
NOV												
10...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
06...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
28...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
AUG												
04...	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
30...	--	--	--	--	--	--	--	--	--	--	--	--

08188800 GUADALUPE RIVER NEAR TIVOLI, TX--Continued

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

DATE	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	MIREX, TOTAL (UG/L) (39755)	PARA-THION, TOTAL (UG/L) (39540)	PER-THANE TOTAL (UG/L) (39034)	PHORATE TOTAL (UG/L) (39023)	SILVEX, TOTAL (UG/L) (39760)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2, 4-DP TOTAL (UG/L) (82183)	2,4,5-T TOTAL (UG/L) (39740)
NOV												
10...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
06...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
28...	<.010	<.010	<.010	<.010	<.100	<.010	<.010	<1.00	<.010	<.010	<.010	<.010
AUG												
04...	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
30...	--	--	--	--	--	--	--	--	--	--	--	--

08189200 COPANO CREEK NEAR REFUGIO, TX

LOCATION.--Lat 28°18'12", long 97°06'44", Refugio County, Hydrologic Unit 12100405, on right bank at downstream end of bridge on Farm Road 774, 3.6 mi upstream from Alameda Creek, 8.1 mi east of Refugio, and 11.9 mi upstream from mouth.

DRAINAGE AREA.--87.8 mi^2.

PERIOD OF RECORD.--Jun 1970 to current year.
Water-quality records.--Chemical and biochemical analyses: Jul 1970 to Dec 1988. Pesticide analyses: Jul 1970 to Jul 1981.

GAGE.--Water-stage recorder. Datum of gage is 17.25 ft above sea level. Satellite telemeter at station.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1921, 22 ft in Sep 1967, from information by local residents.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 15	2100	1,630	13.61	Sep 16	1545	923	11.39

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	31	3.6	.04	1.4	21	.00	.00	.00	.00	.00	6.1
2	9.2	16	3.6	.04	6.0	11	.00	.00	.00	.00	.00	4.3
3	5.6	6.6	3.2	.06	19	7.1	.00	.00	.00	.00	.00	3.3
4	3.2	4.3	2.6	.36	27	4.6	.00	.00	.00	.00	.00	2.6
5	2.2	3.4	1.9	.36	28	3.3	.00	.00	.00	.00	.00	2.2
6	2.0	2.8	1.6	.39	19	2.3	.00	.00	.00	.00	.00	2.2
7	2.8	2.3	1.4	.68	11	1.6	.00	.00	.00	.00	.00	2.3
8	1.8	2.0	1.4	.54	6.6	1.0	.00	.00	.00	.00	.00	2.3
9	49	1.8	1.3	.39	4.2	.98	.00	.00	.00	.00	.00	2.3
10	308	22	1.1	2.1	2.9	.85	.00	.00	.00	.00	.00	3.3
11	623	30	1.0	5.8	1.9	1.9	.00	.00	.00	.00	.00	4.4
12	831	63	.87	4.7	1.3	1.2	.00	.00	.00	.00	.00	16
13	1030	139	.79	3.2	.87	.77	.00	.00	.00	.00	.00	36
14	1200	112	.67	2.3	.72	1.3	.00	.00	.00	.00	.00	31
15	1510	76	.52	1.7	2.1	3.0	.00	.00	.00	.00	.00	35
16	1510	57	.38	1.3	8.0	42	.00	.00	.00	.00	.00	526
17	1200	47	.30	.81	33	73	.00	.00	.00	.00	.00	816
18	914	38	.25	.62	36	66	.00	.00	.00	.00	.00	855
19	695	26	.16	.46	56	81	.00	.00	.00	.00	.00	821
20	536	18	.17	.33	89	77	.00	.00	.00	.00	.00	823
21	417	14	.15	.23	137	61	.00	.00	.00	.00	.00	755
22	281	10	.28	.22	192	38	.00	.00	.00	.00	45	634
23	158	7.1	.27	.20	208	15	.00	.00	.00	.00	235	508
24	92	4.9	.16	.16	198	7.1	.00	.00	.00	.00	234	365
25	66	3.5	.16	.08	162	4.1	.00	.00	.00	.00	167	214
26	52	2.7	.11	.04	122	2.3	.00	.00	.00	.00	99	126
27	41	2.1	.07	.02	82	1.4	.00	.00	.00	.00	57	84
28	31	2.0	.03	.02	45	.86	.00	.00	.00	.00	43	74
29	28	4.0	.07	.41	---	.54	.00	.00	.00	.00	25	51
30	33	4.0	.19	1.1	---	.25	.00	.00	.00	.00	13	43
31	34	---	.07	.99	---	.06	---	.00	---	.00	8.7	---
TOTAL	11679.8	752.5	28.37	29.65	1499.99	531.51	0.00	0.00	0.00	0.00	926.70	6848.3
MEAN	377	25.1	.92	.96	53.6	17.1	.000	.000	.000	.000	29.9	228
MAX	1510	139	3.6	5.8	208	81	.00	.00	.00	.00	235	855
MIN	1.8	1.8	.03	.02	.72	.06	.00	.00	.00	.00	.00	2.2
AC-FT	23170	1490	56	59	2980	1050	.00	.00	.00	.00	1840	13580

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1998, BY WATER YEAR (WY)

MEAN	61.9	39.3	22.6	24.1	38.9	39.9	29.3	63.4	69.1	42.6	3.40	92.9
MAX	551	589	240	189	459	524	229	508	499	416	29.9	1028
(WY)	1984	1982	1992	1979	1992	1997	1992	1981	1981	1990	1998	1971
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1978	1989	1971	1983	1971	1971	1971	1971	1971	1971	1974	1977

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1970 - 1998	
ANNUAL TOTAL	36988.93		22296.82			
ANNUAL MEAN	101		61.1		44.0	
HIGHEST ANNUAL MEAN					138	1992
LOWEST ANNUAL MEAN					.52	1989
HIGHEST DAILY MEAN	2190	Mar 19	1510	Oct 15	5960	Sep 12 1971
LOWEST DAILY MEAN	.00	Jan 12	.00	Apr 1	.00	Aug 14 1970
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 12	.00	Apr 1	.00	Aug 14 1970
INSTANTANEOUS PEAK FLOW			1630	Oct 15	6300	Sep 12 1971
INSTANTANEOUS PEAK STAGE			13.61	Oct 15	21.00	Sep 12 1971
ANNUAL RUNOFF (AC-FT)	73370		44230		31900	
10 PERCENT EXCEEDS	285		104		66	
50 PERCENT EXCEEDS	1.4		.62		.06	
90 PERCENT EXCEEDS	.00		.00		.00	

08189500 MISSION RIVER AT REFUGIO, TX

LOCATION.--Lat 28°17'30", long 97°16'44", Refugio County, Hydrologic Unit 12100406, on left bank at upstream side of upstream bridge of two bridges on U.S. Highway 77, 560 ft upstream from Missouri Pacific Railroad Co. bridge, and 0.2 mi southwest of Refugio.

DRAINAGE AREA.--690 mi^2.

PERIOD OF RECORD.--Jul 1939 to current year.
Water-quality records.--Chemical analyses: Sep 1961 to Aug 1993. Chemical and biochemical analyses: Jan 1968 to Aug 1993. Pesticide analyses: Oct 1970 to Apr 1979. Sediment analyses: Jan 1978 to Aug 1993.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1.00 ft above sea level. Prior to Nov 25, 1958, nonrecording gage at site 59 ft downstream at same datum. Nov 26, 1958, to Apr 18, 1963, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation. There are several small diversions above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in Aug 1914 and May 17, 1938, reached a stage of 32.3 ft, from information by local residents. Maximum stage since about 1899, that of Sep 12, 1971.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 14	1200	10,800	29.27	Sep 18	0145	4,600	23.36
Aug 23	1115	4,940	24.00				

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

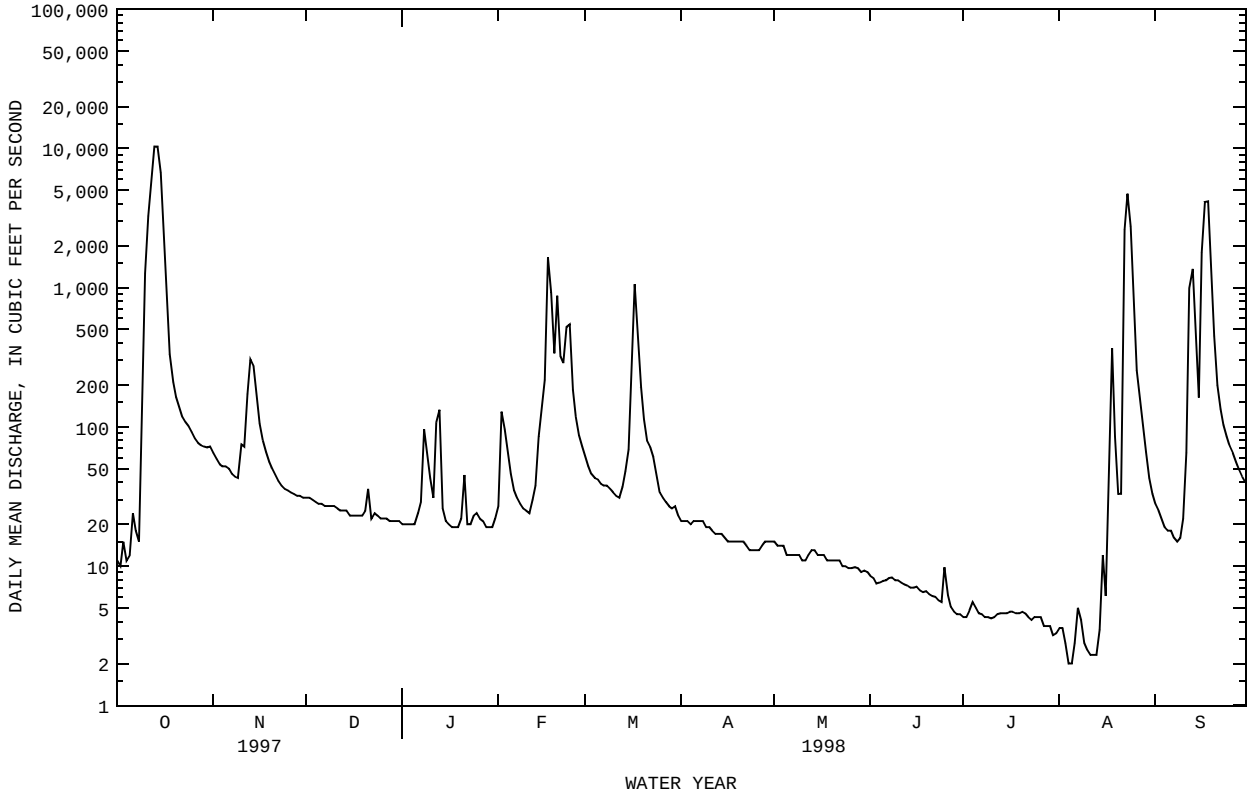
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	65	31	20	27	62	21	15	8.5	4.3	3.6	28
2	10	59	31	20	129	52	21	14	8.2	4.3	3.6	25
3	15	54	30	20	96	46	21	14	7.5	4.8	2.8	22
4	11	52	29	20	68	43	20	14	7.6	5.5	2.0	19
5	12	52	28	20	46	42	21	12	7.8	5.0	2.0	18
6	24	50	28	24	35	39	21	12	7.9	4.6	2.8	18
7	18	46	27	29	31	38	21	12	8.2	4.5	5.0	16
8	15	44	27	96	28	38	21	12	8.3	4.3	4.1	15
9	117	43	27	66	26	36	19	12	7.9	4.3	2.8	16
10	1270	75	27	43	25	34	19	11	7.9	4.2	2.5	22
11	3270	72	26	31	24	32	18	11	7.6	4.3	2.3	65
12	6290	172	25	108	30	31	17	12	7.4	4.5	2.3	989
13	10300	305	25	133	38	37	17	13	7.2	4.6	2.3	1360
14	10300	273	25	26	85	48	17	13	7.0	4.6	3.5	453
15	6730	165	23	21	137	69	16	12	7.0	4.6	12	162
16	2570	106	23	20	217	273	15	12	7.1	4.7	6.1	1780
17	765	80	23	19	1650	1060	15	12	6.7	4.7	38	4120
18	333	66	23	19	923	491	15	11	6.5	4.6	368	4170
19	210	56	23	19	338	193	15	11	6.6	4.6	85	1770
20	163	50	25	22	876	114	15	11	6.3	4.7	33	449
21	137	45	36	45	321	79	15	11	6.1	4.6	33	199
22	118	41	22	20	288	71	14	11	6.0	4.3	2620	134
23	108	38	24	20	523	61	13	10	5.7	4.1	4740	103
24	101	36	23	23	547	45	13	10	5.5	4.3	2760	85
25	92	35	22	24	185	34	13	9.7	9.8	4.3	769	73
26	83	34	22	22	118	31	13	9.7	6.2	4.3	255	65
27	77	33	22	21	87	29	14	9.8	5.1	3.7	164	56
28	74	32	21	19	72	27	15	9.7	4.7	3.7	109	49
29	72	32	21	19	---	26	15	9.1	4.5	3.7	66	44
30	71	31	21	19	---	27	15	9.3	4.5	3.2	43	40
31	72	---	21	22	---	23	---	9.1	---	3.3	33	---
TOTAL	43439	2242	781	1030	6970	3231	505	354.4	207.3	135.2	12175.7	16365
MEAN	1401	74.7	25.2	33.2	249	104	16.8	11.4	6.91	4.36	393	546
MAX	10300	305	36	133	1650	1060	21	15	9.8	5.5	4740	4170
MIN	10	31	21	19	24	23	13	9.1	4.5	3.2	2.0	15
AC-FT	86160	4450	1550	2040	13820	6410	1000	703	411	268	24150	32460
CFSM	2.03	.11	.04	.05	.36	.15	.02	.02	.01	.01	.57	.79
IN.	2.34	.12	.04	.06	.38	.17	.03	.02	.01	.01	.66	.88

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

MEAN	176	61.9	60.2	46.4	108	60.0	103	186	181	136	62.0	305
MAX	1882	1380	849	417	1178	595	851	1387	1848	2135	1076	7646
(WY)	1974	1982	1992	1992	1958	1997	1992	1972	1973	1990	1942	1967
MIN	.051	.63	.62	.66	.66	2.20	1.90	.46	.65	.40	.096	.027
(WY)	1990	1990	1990	1990	1990	1989	1940	1989	1990	1989	1989	1989

08189500 MISSION RIVER AT REFUGIO, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1939 - 1998	
ANNUAL TOTAL	96633.8		87435.6			
ANNUAL MEAN	265		240		124	
HIGHEST ANNUAL MEAN					647	1967
LOWEST ANNUAL MEAN					1.74	1989
HIGHEST DAILY MEAN	10300	Oct 13	10300	Oct 13	78800	Sep 22 1967
LOWEST DAILY MEAN	4.6	Jan 7	2.0	Aug 4	.00	Sep 1 1989
ANNUAL SEVEN-DAY MINIMUM	4.7	Jan 7	2.8	Aug 8	.00	Aug 30 1989
INSTANTANEOUS PEAK FLOW			10800	Oct 14	79000	Sep 12 1971
INSTANTANEOUS PEAK STAGE			29.27	Oct 14	38.25	Sep 12 1971
ANNUAL RUNOFF (AC-FT)	191700		173400		89870	
ANNUAL RUNOFF (CFSM)	.38		.35		.18	
ANNUAL RUNOFF (INCHES)	5.21		4.71		2.44	
10 PERCENT EXCEEDS	271		232		94	
50 PERCENT EXCEEDS	22		23		11	
90 PERCENT EXCEEDS	5.8		4.6		2.2	



08189700 ARANSAS RIVER NEAR SKIDMORE, TX

LOCATION.--Lat 28°16'56", long 97°37'14", Bee County, Hydrologic Unit 12100407, on right bank 160 ft downstream from centerline of county road bridge, 3.8 mi downstream from confluence of West Aransas and Poesta Creeks, and 4.4 mi northeast of Skidmore.

DRAINAGE AREA.--247 mi^2.

PERIOD OF RECORD.--Mar 1964 to current year.
Water-quality records.--Chemical analyses: Oct 1965 to Sep 1966. Sediment records: Feb 1966 to Sep 1975.

GAGE.--Water-stage recorder. Datum of gage is 72.37 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair. The city of Beeville discharges wastewater effluent into the river via Poesta Creek 3.8 mi upstream. No known regulation or diversions.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sep 1954 reached a stage of 33 ft (discharge, 19,600 ft^3/s), from information by local resident. Maximum stage since at least 1914, that of Sep 22, 1967.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 10	2400	4,720	20.80	Aug 22	1230	1,370	12.37
Oct 13	1900	4,470	20.42	Sep 12	0545	728	9.44

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	2.4	21	6.7	6.8	108	7.3	3.5	3.2	2.2	1.7	1.6	3.4
2	2.2	12	6.8	7.0	37	7.1	3.4	3.1	2.2	1.7	1.7	3.2
3	2.2	9.4	7.2	7.4	18	7.0	3.7	3.2	2.1	2.2	2.1	2.9
4	2.2	8.7	6.9	8.9	12	7.0	3.5	3.3	2.2	16	1.9	2.9
5	2.9	8.5	6.8	8.1	9.2	7.3	3.2	3.3	2.3	12	2.1	2.9
6	3.5	8.2	6.8	7.9	8.2	7.2	3.3	3.6	2.4	4.5	2.4	2.8
7	2.7	7.8	6.8	22	7.4	7.0	3.6	3.6	2.3	2.9	2.9	2.9
8	3.0	7.6	6.9	14	7.5	7.0	3.7	3.7	2.1	2.5	4.9	2.7
9	17	7.8	6.7	11	7.2	7.3	3.3	3.6	2.0	2.6	12	3.0
10	1550	8.4	6.7	8.4	7.0	7.2	2.9	3.5	2.1	3.2	5.0	3.4
11	2740	13	6.4	7.4	6.8	6.6	3.1	3.4	2.1	2.5	3.4	98
12	2200	23	5.9	6.9	6.7	6.4	3.1	3.5	2.1	2.2	3.1	458
13	2490	36	6.0	6.7	6.8	7.1	3.2	3.6	2.0	2.1	3.0	91
14	1280	21	6.4	6.2	7.2	24	3.2	3.9	1.8	2.0	37	24
15	141	12	6.6	6.2	14	18	3.4	3.9	1.4	1.9	26	38
16	52	9.0	6.6	6.0	57	31	3.5	3.7	1.3	1.9	10	143
17	28	7.9	6.8	6.1	157	71	3.0	3.6	1.8	1.8	6.4	186
18	21	8.0	6.8	6.3	32	21	3.0	3.4	2.1	1.8	5.0	37
19	17	8.0	6.5	6.0	83	12	5.4	3.2	1.7	1.8	4.8	14
20	15	7.7	6.8	6.0	147	8.0	5.8	3.0	1.6	1.8	4.7	9.7
21	13	7.6	7.0	6.4	43	6.4	3.5	3.0	1.7	1.8	23	7.6
22	13	7.5	7.0	7.0	91	6.1	3.2	3.0	1.7	1.9	635	6.7
23	12	7.4	7.0	6.7	41	5.3	2.9	2.9	1.7	1.8	183	13
24	12	7.1	9.4	6.4	18	5.1	3.0	2.8	1.7	1.7	24	12
25	11	7.1	11	6.3	12	5.0	2.8	2.6	1.7	1.7	10	8.2
26	9.6	7.6	7.4	6.4	9.7	4.9	3.0	2.6	1.8	1.7	7.0	7.1
27	9.3	7.9	6.6	6.0	8.2	4.6	3.5	2.7	1.8	1.7	5.6	6.4
28	9.1	7.7	6.4	5.9	7.8	4.6	3.4	2.7	1.8	1.6	6.3	5.8
29	9.7	7.1	6.6	6.2	---	4.5	4.1	2.5	1.9	1.7	4.8	5.6
30	10	7.0	6.6	6.3	---	4.3	3.5	2.3	1.8	1.7	4.0	5.4
31	43	---	6.8	8.1	---	4.1	---	2.3	---	1.7	3.7	---
TOTAL	10723.8	319.0	214.9	237.0	969.7	331.4	103.7	98.7	57.4	88.1	1046.4	1206.6
MEAN	346	10.6	6.93	7.65	34.6	10.7	3.46	3.18	1.91	2.84	33.8	40.2
MAX	2740	36	11	22	157	71	5.8	3.9	2.4	16	635	458
MIN	2.2	7.0	5.9	5.9	6.7	4.1	2.8	2.3	1.3	1.6	1.6	2.7
AC-FT	21270	633	426	470	1920	657	206	196	114	175	2080	2390

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1998, BY WATER YEAR (WY)

MEAN	39.2	7.73	18.6	7.72	14.9	13.9	29.0	55.7	50.8	28.5	13.0	136
MAX	346	39.0	327	38.9	119	117	255	349	512	451	176	2356
(WY)	1998	1982	1992	1992	1969	1992	1992	1972	1973	1990	1980	1967
MIN	.000	.17	.72	1.05	1.10	.55	.31	1.04	.026	.031	.000	.000
(WY)	1990	1965	1965	1971	1967	1966	1967	1989	1967	1986	1965	1965

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1964 - 1998	
ANNUAL TOTAL	17319.5		15396.7			
ANNUAL MEAN	47.5		42.2		35.2	
HIGHEST ANNUAL MEAN					199	1967
LOWEST ANNUAL MEAN					3.15	1986
HIGHEST DAILY MEAN	2740	Oct 11	2740	Oct 11	49300	Sep 22 1967
LOWEST DAILY MEAN	1.3	Aug 9	1.3	Jun 16	.00	Jun 24 1964
ANNUAL SEVEN-DAY MINIMUM	1.3	Aug 9	1.7	Jun 15	.00	Aug 16 1964
INSTANTANEOUS PEAK FLOW			4720	Oct 10	82800	Sep 22 1967
INSTANTANEOUS PEAK STAGE			20.80	Oct 10	42.22	Sep 22 1967
ANNUAL RUNOFF (AC-FT)	34350		30540		25490	
10 PERCENT EXCEEDS	22		23		15	
50 PERCENT EXCEEDS	5.8		6.3		3.9	
90 PERCENT EXCEEDS	2.3		1.9		.63	

08190000 NUECES RIVER AT LAGUNA, TX

LOCATION.--Lat 29°25'42", long 99°59'49", Uvalde County, Hydrologic Unit 12110101, on right bank 0.5 mi downstream from Sycamore Creek, 1.0 mi northeast of Laguna, and at mile 370.8.

DRAINAGE AREA.--737 mi^2.

PERIOD OF RECORD.--Oct 1923 to current year.
Water-quality records.--Chemical analyses: May 1949 to Jun 1952, Sep 1964 to Sep 1993. Chemical, biochemical, and pesticide analyses: Feb 1970 to Sep 1993. Sediment analyses: Jan 1966.

REVISED RECORDS.--WSP 1562: 1930, 1931(M), 1932, 1939. WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,119.72 ft above sea level. Prior to Jan 26, 1925, nonrecording gage at site 2 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records fair. No known regulation. There are many small diversions above station for irrigation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Jun 1913 reached a stage of about 29 ft (discharge, 210,000 ft^3/s); flood of Sep 21, 1923, reached a stage of about 26.5 ft (discharge, 160,000 ft^3/s); from information by local residents. Maximum stage since at least 1866, that of Sep 24, 1955.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 18	1315	1,200	6.42	Aug 24	1745	23,900	13.76
Aug 23	1615	82,000	21.30	Sep 17	0930	3,880	7.82

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

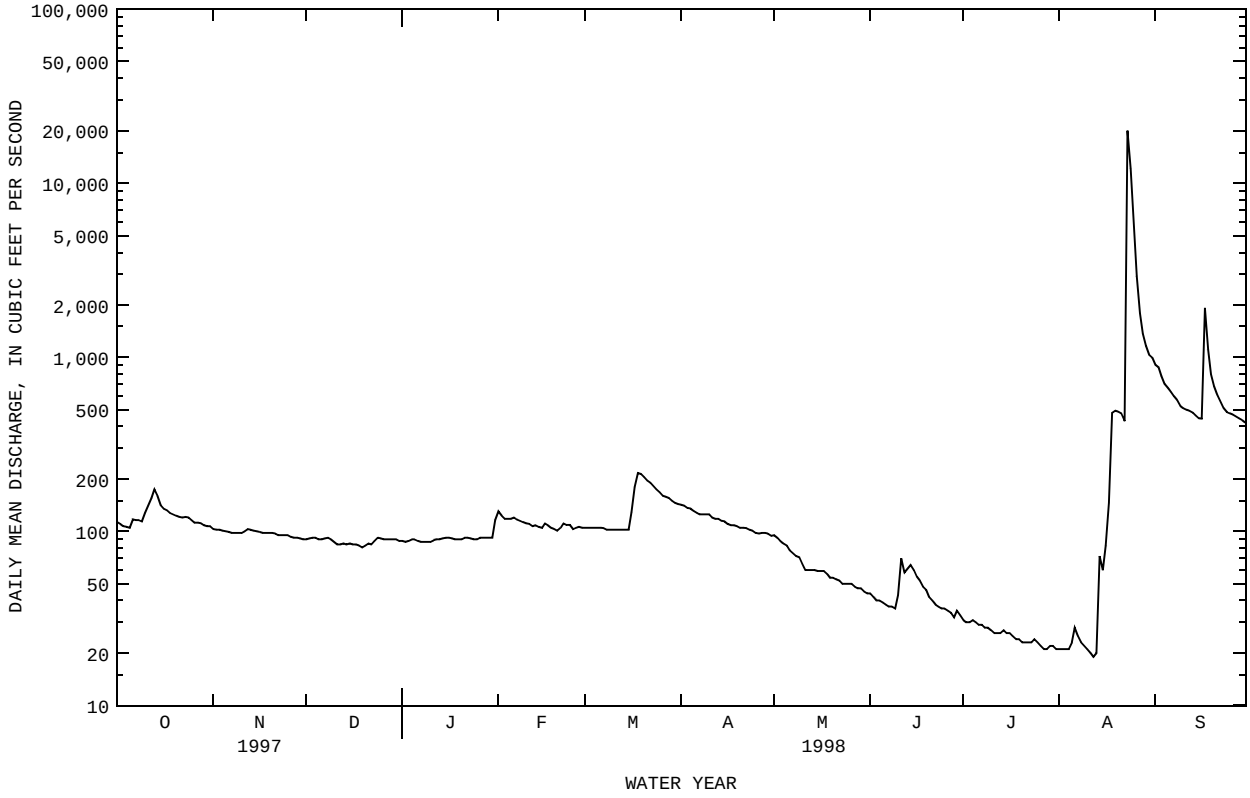
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	113	103	90	88	130	105	142	95	44	31	21	908
2	110	102	91	87	123	105	140	92	42	30	21	877
3	107	102	92	88	118	105	136	88	40	30	21	780
4	106	101	92	90	118	105	135	85	40	31	21	701
5	105	100	90	90	118	105	131	83	39	30	23	667
6	117	99	90	88	120	105	128	78	38	29	28	630
7	116	98	91	87	117	104	125	75	37	29	25	596
8	116	98	92	87	115	102	125	72	37	28	23	567
9	114	98	90	87	113	102	125	71	36	28	22	525
10	128	98	87	87	111	102	125	65	43	27	21	511
11	141	100	84	89	110	102	120	60	70	26	20	500
12	155	103	84	90	107	102	118	60	58	26	19	493
13	174	102	85	90	108	102	118	60	61	26	20	481
14	159	101	84	91	106	102	115	60	64	27	72	462
15	141	100	85	92	105	102	114	59	60	26	60	446
16	135	99	84	92	111	129	110	59	55	26	83	444
17	132	98	84	91	108	180	108	59	52	25	146	1920
18	128	98	83	90	105	216	108	57	48	24	481	1110
19	125	98	81	90	103	213	107	54	46	24	493	800
20	123	98	83	90	101	205	105	54	42	23	486	678
21	121	97	85	92	105	196	105	53	40	23	477	604
22	120	95	84	92	111	190	104	52	38	23	429	552
23	121	95	88	91	109	182	102	50	37	23	20000	510
24	120	95	92	90	109	174	101	50	36	24	12100	485
25	116	95	91	90	103	168	98	50	36	23	5950	477
26	112	93	90	92	105	160	97	50	35	22	2930	468
27	112	92	90	92	106	158	98	48	34	21	1790	458
28	111	92	90	92	105	155	98	47	32	21	1370	446
29	108	91	90	92	---	150	97	47	35	22	1160	436
30	107	90	90	92	---	146	94	45	33	22	1030	421
31	107	---	88	116	---	143	---	44	---	21	990	---
TOTAL	3800	2931	2720	2815	3100	4315	3429	1922	1308	791	50332	18953
MEAN	123	97.7	87.7	90.8	111	139	114	62.0	43.6	25.5	1624	632
MAX	174	103	92	116	130	216	142	95	70	31	20000	1920
MIN	105	90	81	87	101	102	94	44	32	21	19	421
AC-FT	7540	5810	5400	5580	6150	8560	6800	3810	2590	1570	99830	37590
CFSM	.17	.13	.12	.12	.15	.19	.16	.08	.06	.03	2.20	.86
IN.	.19	.15	.14	.14	.16	.22	.17	.10	.07	.04	2.54	.96

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1998, BY WATER YEAR (WY)

MEAN	227	123	117	105	116	107	111	155	268	162	162	249
MAX	2030	544	894	610	1160	867	766	868	5407	1580	2500	2668
(WY)	1974	1924	1992	1992	1949	1992	1977	1935	1935	1939	1971	1955
MIN	7.39	5.42	5.58	5.46	5.10	7.04	23.7	18.2	12.2	8.11	6.99	8.60
(WY)	1953	1957	1957	1957	1957	1957	1935	1953	1953	1953	1953	1956

08190000 NUECES RIVER AT LAGUNA, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1924 - 1998	
ANNUAL TOTAL	131474		96416			
ANNUAL MEAN	360		264		159	
HIGHEST ANNUAL MEAN					611	1935
LOWEST ANNUAL MEAN					23.1	1953
HIGHEST DAILY MEAN	37900	Jun 22	20000	Aug 23	107000	Jun 14 1935
LOWEST DAILY MEAN	81	Dec 19	19	Aug 12	3.0	Feb 27 1957
ANNUAL SEVEN-DAY MINIMUM	83	Dec 14	21	Jul 27	3.2	Mar 10 1957
INSTANTANEOUS PEAK FLOW			81500	Aug 23	307000	Sep 24 1955
INSTANTANEOUS PEAK STAGE			21.30	Aug 23	32.70	Sep 24 1955
ANNUAL RUNOFF (AC-FT)	260800		191200		114900	
ANNUAL RUNOFF (CFSM)	.49		.36		.22	
ANNUAL RUNOFF (INCHES)	6.64		4.87		2.92	
10 PERCENT EXCEEDS	377		464		238	
50 PERCENT EXCEEDS	169		98		76	
90 PERCENT EXCEEDS	94		28		24	



08190500 WEST NUECES RIVER NEAR BRACKETTVILLE, TX

LOCATION.--Lat 29°28'21", long 100°14'10", Kinney County, Hydrologic Unit 12110102, at Wilson Ranch on Farm Road 3199, 1.3 mi upstream from Miguel Canyon, 16.0 mi northeast of Brackettville, and 40.2 mi upstream from mouth.

DRAINAGE AREA.--694 mi^2.

PERIOD OF RECORD.--Sep 1939 to Sep 1950, Apr 1956 to current year.

REVISED RECORDS.--WSP 1312: 1949(M). WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,326.79 ft above sea level. Prior to Mar 14, 1940, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records fair. No known regulation or diversions. In ordinary years, a large part of streamflow is lost by seepage into the Balcones Fault Zone of the Edwards and associated limestones above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1879, about 40 ft Jun 14, 1935 (discharge, 550,000 ft^3/s, based on slope-area measurements of 580,000 ft^3/s at site 33 mi upstream from gage) and 536,000 ft^3/s (at site 24 mi downstream from gage, present site and datum), from gage-height relation of 1935 and 1955 flood peaks at site 0.6 mi upstream. Flood in 1900 reached a stage about 34 ft, and flood of Sep 24, 1955, reached a stage of 27.1 ft, from floodmark at present site (discharge, 150,000 ft^3/s, by slope-area measurement).

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 24	1730	46,400	20.18	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	.84	.28	.45	.75	.79	.52	.75	.93	.57	.24	.02	205
2	.76	.28	.50	.75	.75	.52	.75	.91	.53	.23	.04	198
3	.75	.30	.48	.80	.75	.54	.72	1.0	.53	.23	.04	188
4	.75	.33	.45	.84	.75	.59	.75	.94	.55	.23	.03	184
5	.81	.33	.45	.84	.75	.59	.75	.90	.60	.25	.13	180
6	.92	.33	.41	.82	.69	.56	e.75	.87	.57	.25	.27	169
7	.85	.28	.34	.77	.59	.51	e.75	.93	.56	.22	.22	157
8	.84	.28	.33	.80	.59	.48	.73	.93	.62	.18	.16	141
9	.97	.28	.40	.88	.59	.65	.75	.84	.59	.12	.15	130
10	1.1	.25	.45	.93	.61	.72	.75	.92	.83	.12	.12	119
11	1.1	.26	.45	.93	.68	.64	.75	.94	1.0	.11	.10	110
12	1.2	.30	.43	.93	.67	.60	.75	.95	.64	.13	.10	103
13	3.7	.28	.39	.93	.67	.67	.75	.97	.71	.15	.09	96
14	4.9	.28	.39	.84	.64	.66	.77	.97	.73	.21	.15	89
15	4.9	.29	.39	.84	.58	.70	.84	.92	.71	.21	1.7	82
16	3.9	.23	.39	.84	.57	.84	.84	.90	.65	.15	3.9	84
17	2.8	.23	.39	.84	.52	1.5	.89	.91	.65	.14	2.6	91
18	1.9	.23	.39	.84	.52	2.1	.92	.85	.63	.12	355	86
19	1.2	.23	.41	.84	.46	1.9	.94	.82	.50	.12	228	84
20	.87	.23	.53	.84	.45	1.7	.93	.81	.43	.12	88	79
21	.62	.23	.48	.83	.55	1.5	.93	.79	.38	.11	66	74
22	.46	.23	.49	.69	.51	1.3	.93	.72	.41	.11	54	70
23	.45	.23	.54	.67	.45	1.2	.92	.73	.37	.07	5610	67
24	.41	.23	.48	.67	.46	1.1	.86	.75	.34	.05	20700	64
25	.39	.23	.45	.67	.52	1.1	.85	.75	.32	.04	4570	61
26	.32	.25	.48	.64	.47	1.0	.89	.75	.28	.04	1060	59
27	.28	.28	.45	.63	.52	.90	.88	.72	.25	.03	385	57
28	.28	.29	.44	.67	.50	.92	.93	.67	.24	.03	265	54
29	.28	.42	.64	.66	---	.92	.93	.64	.27	.02	240	52
30	.28	.45	.72	.63	---	.82	.93	.60	.26	.01	224	50
31	.28	---	.75	.99	---	.67	---	.59	---	.01	214	---
TOTAL	39.11	8.34	14.34	24.60	16.60	28.42	24.88	25.92	15.72	4.05	34068.82	3183
MEAN	1.26	.28	.46	.79	.59	.92	.83	.84	.52	.13	1099	106
MAX	4.9	.45	.75	.99	.79	2.1	.94	1.0	1.0	.25	20700	205
MIN	.28	.23	.33	.63	.45	.48	.72	.59	.24	.01	.02	50
AC-FT	78	17	28	49	33	56	49	51	31	8.0	67580	6310

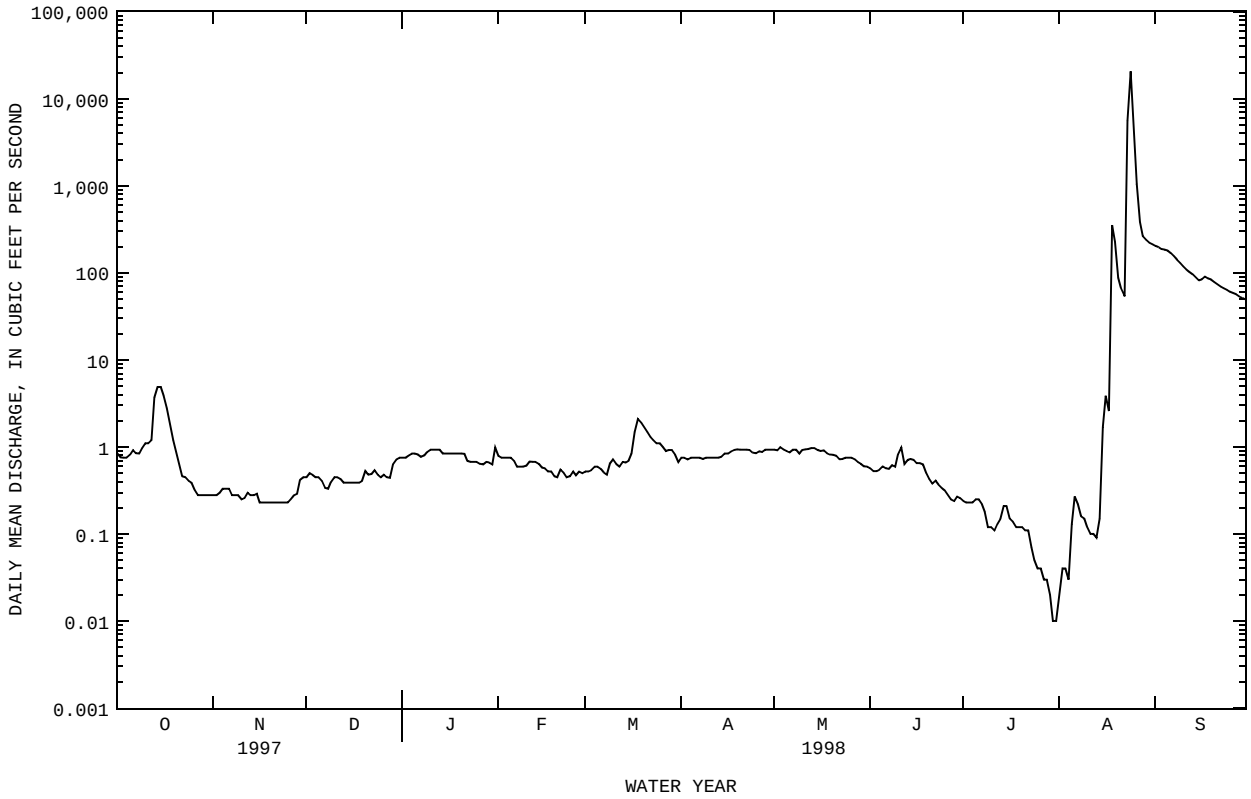
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1998h, BY WATER YEAR (WY)

MEAN	81.9	5.34	4.93	2.42	21.2	3.72	9.78	12.3	107	47.1	65.0	72.1
MAX	1145	76.5	164	68.4	978	60.2	238	266	1880	737	1308	2180
(WY)	1997	1959	1985	1985	1949	1979	1990	1957	1958	1976	1971	1964
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1941	1941	1940	1940	1940	1940	1942	1942	1942	1941	1940	1940

08190500 WEST NUECES RIVER NEAR BRACKETTVILLE, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1939 - 1998h	
ANNUAL TOTAL	32810.95		37453.80			
ANNUAL MEAN	89.9		103		36.5	
HIGHEST ANNUAL MEAN					237	1958
LOWEST ANNUAL MEAN					.000	1962
HIGHEST DAILY MEAN	24000	Jun 22	20700	Aug 24	42500	Sep 20 1964
LOWEST DAILY MEAN	.23	Nov 16	.01	Jul 30	.00	Sep 28 1939
ANNUAL SEVEN-DAY MINIMUM	.23	Nov 16	.02	Jul 26	.00	Sep 28 1939
INSTANTANEOUS PEAK FLOW			46400	Aug 24	246000	Sep 20 1964
INSTANTANEOUS PEAK STAGE			20.18	Aug 24	31.30	Sep 20 1964
ANNUAL RUNOFF (AC-FT)	65080		74290		26480	
10 PERCENT EXCEEDS	17		65		8.4	
50 PERCENT EXCEEDS	2.7		.67		.02	
90 PERCENT EXCEEDS	.37		.22		.00	

e Estimated
h See PERIOD OF RECORD paragraph.



08192000 NUECES RIVER BELOW UVALDE, TX

LOCATION.--Lat 29°07'25", long 99°53'40", Uvalde County, Hydrologic Unit 12110103, on right bank at McDaniel Ranch, 5.7 mi upstream from bridge on U.S. Highway 83, 8.8 mi southwest of Uvalde, 18.2 mi downstream from West Nueces River, and at mile 338.7.

DRAINAGE AREA.--1,861 mi^2.

PERIOD OF RECORD.--Apr 1939 to current year. Oct 1927 to Apr 1939, published as "near Uvalde" (station 08191500); records are equivalent only during periods of flood flow.

REVISED RECORDS.--WSP 1732: 1956(M). WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 796.12 ft above sea level. Oct 4, 1927, to Apr 30, 1939, water-stage recorder at site 6.2 mi upstream at different datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation. Part of the flow of the Nueces River enters the Edwards and associated limestones in the Balcones Fault Zone that crosses the basin downstream from Laguna (station 08190000) and upstream from this station. At low stage, most of headwater flow enters this formation. There are many small diversions above station for irrigation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1836, 40.4 ft Jun 14, 1935, from floodmark (discharge at former site, 616,000 ft^3/s, by slope-area measurement). Large floods also occurred in 1901 and 1913, stages unknown.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 18	1515	14,100	11.96	Aug 25	0615	68,800	16.65
Aug 23	2245	83,200	17.56	Sep 17	2030	3,200	6.56

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

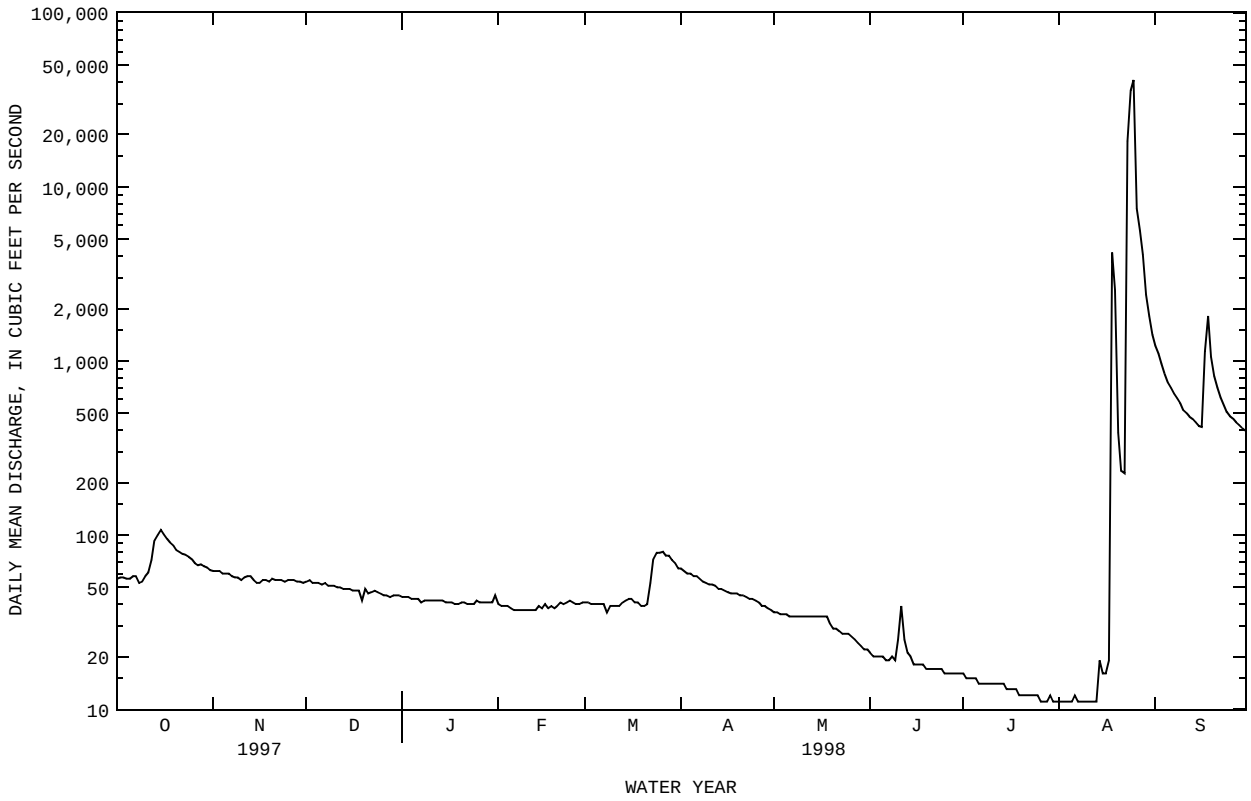
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	62	54	44	40	41	64	36	21	16	11	1220
2	57	62	55	44	39	41	62	36	20	15	11	1100
3	57	62	53	44	39	40	60	35	20	15	11	966
4	56	60	53	43	39	40	60	35	20	15	11	842
5	56	60	53	43	38	40	58	35	20	15	11	751
6	58	60	52	43	37	40	58	34	19	14	12	699
7	58	58	53	41	37	40	56	34	19	14	11	651
8	53	57	51	42	37	36	54	34	20	14	11	610
9	54	57	51	42	37	39	53	34	19	14	11	570
10	58	55	51	42	37	39	52	34	25	14	11	523
11	61	57	50	42	37	39	52	34	39	14	11	502
12	72	58	50	42	37	39	51	34	25	14	11	481
13	93	58	49	42	37	41	49	34	21	14	11	464
14	100	55	49	42	39	42	49	34	20	14	19	445
15	107	53	49	41	38	43	48	34	18	13	16	422
16	101	53	48	41	40	43	47	34	18	13	16	418
17	95	55	48	41	38	41	46	34	18	13	19	1130
18	91	55	48	40	39	41	46	34	18	13	4200	1810
19	87	54	42	40	38	39	46	31	17	12	2570	1060
20	82	56	49	41	39	39	45	29	17	12	386	819
21	80	55	46	41	41	40	45	29	17	12	234	703
22	78	55	47	40	40	53	44	28	17	12	227	617
23	77	55	48	40	41	73	43	27	17	12	18300	562
24	75	54	47	40	42	79	43	27	17	12	35700	508
25	73	55	46	42	41	79	42	27	16	12	41100	483
26	69	55	45	41	40	80	41	26	16	11	7500	468
27	67	55	45	41	40	76	39	25	16	11	5610	445
28	68	54	44	41	41	76	39	24	16	11	4110	428
29	66	54	45	41	---	72	38	23	16	12	2410	412
30	65	53	45	41	---	69	37	22	16	11	1810	398
31	63	---	45	45	---	64	---	22	---	11	1410	---
TOTAL	2233	1692	1511	1293	1088	1564	1467	959	578	405	125781	20507
MEAN	72.0	56.4	48.7	41.7	38.9	50.5	48.9	30.9	19.3	13.1	4057	684
MAX	107	62	55	45	42	80	64	36	39	16	41100	1810
MIN	53	53	42	40	37	36	37	22	16	11	11	398
AC-FT	4430	3360	3000	2560	2160	3100	2910	1900	1150	803	249500	40680

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

MEAN	268	85.1	78.3	69.2	95.9	61.8	73.8	99.0	271	140	218	229
MAX	3153	380	811	656	2487	909	785	972	3496	1525	4057	3081
(WY)	1974	1959	1992	1985	1949	1992	1977	1987	1958	1976	1998	1964
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1953	1953	1952	1952	1952	1952	1952	1953	1953	1951	1951	1951

08192000 NUECES RIVER BELOW UVALDE, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1939 - 1998	
ANNUAL TOTAL	142379		159078			
ANNUAL MEAN	390		436		141	
HIGHEST ANNUAL MEAN					678	1997
LOWEST ANNUAL MEAN					3.63	1956
HIGHEST DAILY MEAN	45600	Jun 23	41100	Aug 25	51600	Oct 29 1996
LOWEST DAILY MEAN	42	Dec 19	11	Jul 26	.00	May 10 1951
ANNUAL SEVEN-DAY MINIMUM	45	Dec 25	11	Jul 30	.00	Jun 18 1951
INSTANTANEOUS PEAK FLOW			83200	Aug 23	201000	Oct 28 1996
INSTANTANEOUS PEAK STAGE			17.56	Aug 23	24.88	Oct 28 1996
ANNUAL RUNOFF (AC-FT)	282400		315500		101800	
10 PERCENT EXCEEDS	334		435		193	
50 PERCENT EXCEEDS	96		42		26	
90 PERCENT EXCEEDS	51		14		2.8	



08193000 NUECES RIVER NEAR ASHERTON, TX

LOCATION.--Lat 28°30'00", long 99°40'54", Dimmit County, Hydrologic Unit 12110103, on right bank 28 ft downstream from bridge on Farm Road 190, 0.1 mi downstream from El Moro Creek, 5.8 mi northeast of Asherton, and at mile 266.0.

DRAINAGE AREA.--4,082 mi^2.

PERIOD OF RECORD.--Oct 1939 to current year.

REVISED RECORDS.--WSP 1118: 1944.

GAGE.--Water-stage recorder. Datum of gage is 470.92 ft above sea level. Prior to Feb 2, 1940, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Part of flow of the Nueces River and its headwater tributaries enters the Edwards and associated limestones in the Balcones Fault Zone, that crosses basin between Laguna and Uvalde (stations 08190000 and 08192000). Considerable loss of flow into various permeable formations occurs downstream from the Balcones Fault Zone. Since Mar 1948, at least 10% of contributing drainage area has been regulated by Upper Nueces Reservoir (capacity, 7,590 acre-ft), 13 mi upstream. Many small diversions above station for irrigation.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--8 years (water years 1940-48), 140 ft^3/s (101,700 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1940-48).--Maximum discharge, 24,000 ft^3/s Sep 2, 1944 (gage height 30.40, corrected);no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, 33 ft Jun 17, 1935; flood of Jun 30, 1913, reached about same stage, 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	29	37	18	2.1	.22	1.4	13	.11	.00	.00	.00	2820
2	29	32	18	1.3	.39	1.7	11	.06	.00	.00	.00	1710
3	27	30	18	.83	.32	1.5	10	.03	.00	.00	.00	1350
4	27	30	18	.74	.33	1.5	8.6	.02	.00	.00	.00	1180
5	28	30	15	.59	.52	1.6	6.5	.01	.00	.00	.00	1040
6	30	27	10	.69	.42	1.3	4.5	.01	.00	.00	22	928
7	31	24	7.8	.56	.38	1.3	2.9	.01	.00	.00	14	842
8	32	21	6.2	.23	.32	1.3	1.8	.01	.00	.00	5.0	772
9	35	17	6.0	.17	.39	.87	.98	.01	.00	.00	2.5	720
10	45	16	6.9	.17	.55	.71	.47	.00	.00	.00	1.8	671
11	61	17	8.2	.18	.41	.77	.14	.00	.00	.00	.70	637
12	54	22	9.0	.27	.24	.88	.03	.00	.00	.00	.05	617
13	55	30	9.4	.65	.34	1.4	.01	.00	.00	.00	.00	587
14	56	31	6.4	.59	1.1	1.8	.01	.00	.00	.00	.00	561
15	52	32	5.3	.49	1.4	2.2	.01	.00	.00	.00	.00	540
16	48	44	4.8	.28	1.4	250	.01	.00	.00	.00	.00	518
17	49	48	4.6	.28	.82	281	.01	.00	.00	.00	.00	1220
18	54	46	4.4	.35	.84	127	.01	.00	.00	.00	.00	1030
19	60	43	3.7	.16	.83	62	.01	.00	.00	.00	.00	1510
20	63	39	3.0	.10	.83	39	.02	.00	.00	.00	1770	1660
21	64	38	2.3	.11	.82	24	.02	.00	.00	.00	2430	1230
22	62	37	1.8	.27	1.0	14	.02	.00	.00	.00	3170	930
23	59	35	1.6	.26	.99	11	.02	.00	.00	.00	3520	778
24	56	31	1.5	.14	1.1	9.1	.02	.00	.00	.00	3430	690
25	52	30	1.0	.13	1.3	8.3	.02	.00	.00	.00	7240	632
26	48	30	.93	.12	1.8	8.1	.01	.00	.00	.00	12900	584
27	47	33	2.1	.08	1.7	8.5	.26	.00	.00	.00	17400	554
28	45	35	6.0	.07	1.4	8.7	.32	.00	.00	.00	17900	532
29	44	33	7.3	.05	---	8.9	.25	.00	.00	.00	13700	499
30	47	26	5.5	.08	---	12	.27	.00	.00	.00	8940	493
31	43	---	3.7	.15	---	14	---	.00	---	.00	5370	---
TOTAL	1432	944	216.43	12.19	22.16	905.83	61.22	0.27	0.00	0.00	97816.05	27835
MEAN	46.2	31.5	6.98	.39	.79	29.2	2.04	.009	.000	.000	3155	928
MAX	64	48	18	2.1	1.8	281	13	.11	.00	.00	17900	2820
MIN	27	16	.93	.05	.22	.71	.01	.00	.00	.00	.00	493
AC-FT	2840	1870	429	24	44	1800	121	.5	.00	.00	194000	55210

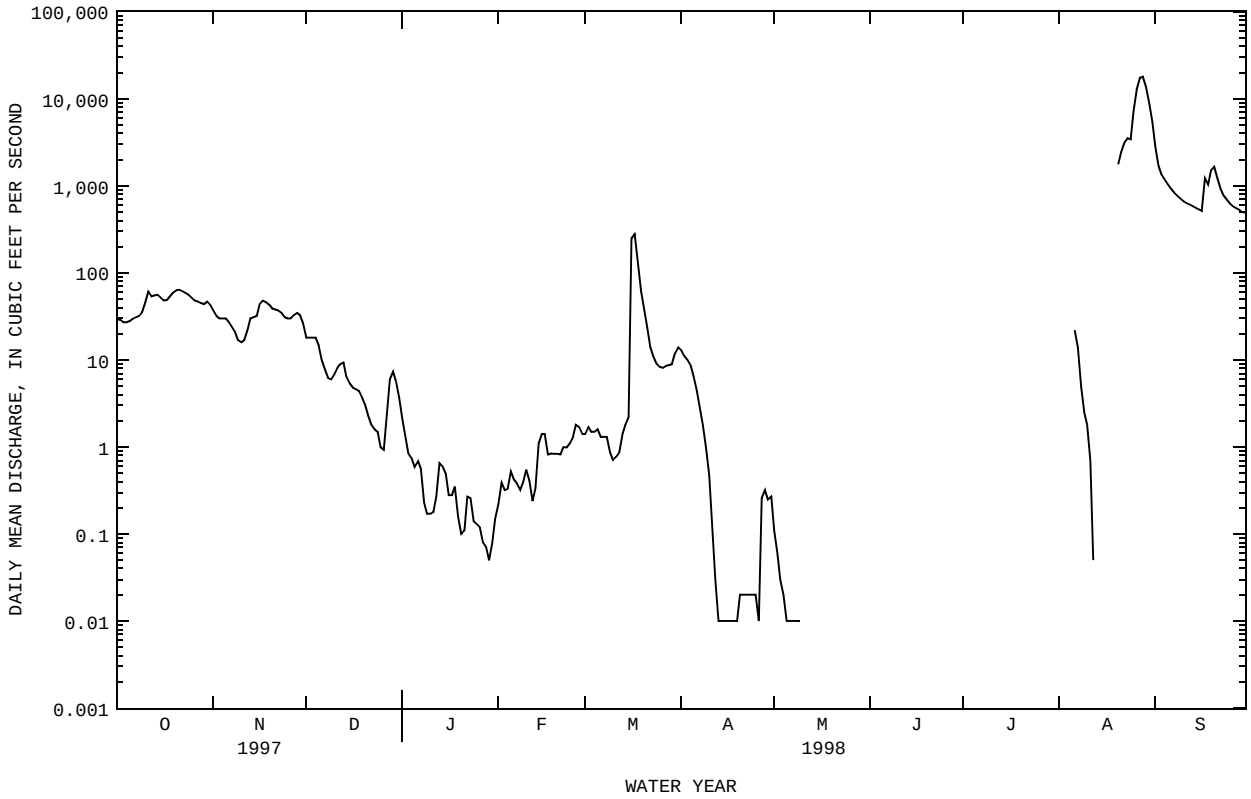
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 1998z, BY WATER YEAR (WY)

MEAN	369	100	55.5	63.6	80.2	79.4	96.4	234	451	221	249	292
MAX	3254	831	537	724	1498	1347	1256	1738	4349	1845	5246	3674
(WY)	1960	1997	1992	1985	1949	1949	1957	1957	1987	1971	1971	1964
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1953	1951	1949	1949	1950	1950	1950	1956	1953	1951	1951	1952

08193000 NUECES RIVER NEAR ASHERTON, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1949 - 1998z	
ANNUAL TOTAL	105191.83		129245.15			
ANNUAL MEAN	288		354		191	
HIGHEST ANNUAL MEAN					700	1971
LOWEST ANNUAL MEAN					.003	1989
HIGHEST DAILY MEAN	12700	Jun 26	17900	Aug 28	24800	Oct 6 1959
LOWEST DAILY MEAN	.93	Dec 26	.00	May 10	.00	Oct 1 1948
ANNUAL SEVEN-DAY MINIMUM	1.6	Dec 21	.00	May 10	.00	Oct 1 1948
INSTANTANEOUS PEAK FLOW			19100	Aug 27	28500	Oct 6 1959
INSTANTANEOUS PEAK STAGE			30.08	Aug 27	30.88	Oct 6 1959
ANNUAL RUNOFF (AC-FT)	208600		256400		138500	
10 PERCENT EXCEEDS	366		557		278	
50 PERCENT EXCEEDS	62		1.0		.20	
90 PERCENT EXCEEDS	16		.00		.00	

z Period of regulated streamflow.



08194000 NUECES RIVER AT COTULLA, TX

LOCATION.--Lat 28°25'34", long 99°14'23", La Salle County, Hydrologic Unit 12110105, on left bank at downstream side of bridge on U.S. Highway 81, 0.4 mi upstream from Missouri Pacific Railroad Co. bridge, 0.8 mi southwest of Cotulla, 1.0 mi upstream from Lind Dam, and at mile 216.9.

DRAINAGE AREA.--5,171 mi^2.

PERIOD OF RECORD.--Nov 1923 to current year. Nov 1923 to Sep 1926 monthly discharge only, published in WSP 1312; figures of daily discharge for Oct 31, 1923, to Sep 30, 1926, published in WSP 588, 608, and 628, have been found to be unreliable and should not be used. Gage-height records collected in this vicinity in 1914-17 and since 1922 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1732: 1957(M). WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 368.08 ft above sea level. From Oct 31, 1923, to Aug 3, 1924, nonrecording gage at approximate site of present gage at datum 7.28 ft higher. Aug 4, 1924, to Nov 19, 1934, nonrecording gage at site 5,000 ft downstream at datum 8.42 ft higher. From Nov 20, 1934, to Jul 14, 1938, water-stage recorder, and Jul 15, 1938, to Apr 30, 1963, nonrecording gage, at present site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1949, at least 10% of contributing drainage area has been regulated by Upper Nueces Reservoir (capacity 7,590 acre-ft). Part of the flow of the Nueces River and its headwater tributaries enters the Edwards and associated limestones in the Balcones Fault Zone, that crosses basin between Laguna and Uvalde (stations 08190000 and 08192000, respectively). Many small diversions above station for irrigation (amount unknown).

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--22 years (water years 1927-48), 315 ft^3/s (228,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1927-48).--Maximum discharge 82,600 ft^3/s Jun 13, 1935, (gage height 32.4 ft from flood marks), by slope-area method; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jun 19, 1899, reached a stage of 29.7 ft, from information by local residents. Maximum stage since at least 1879, that of Jun 18, 1935.

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	39	24	.18	3.3	.00	27	.00	.00	.00	.00	13400
2	36	38	24	.15	3.1	.00	27	.00	.00	.00	.00	8890
3	32	36	24	.09	1.8	.00	32	.00	.00	.00	.00	5210
4	27	35	24	.07	1.2	.00	37	.00	.00	.00	.00	2960
5	27	30	20	.44	1.1	.00	38	.00	.00	.00	.00	2060
6	25	26	17	2.2	1.1	.00	34	.00	.00	.00	.00	1690
7	26	25	16	3.0	1.1	.00	32	.00	.00	.00	.00	1490
8	24	25	16	2.0	.82	.00	28	.00	.00	.00	30	1300
9	23	23	14	2.0	.64	.00	24	.00	.00	.00	163	1130
10	22	22	13	105	.62	.00	19	.00	.00	.00	192	994
11	26	20	11	129	.42	.00	14	.00	.00	.00	93	899
12	33	18	8.7	109	.36	.00	9.5	.00	.00	.00	55	813
13	50	18	7.0	101	.32	.00	7.0	.00	.00	.00	43	741
14	59	18	5.6	81	1.9	.00	5.6	.00	.00	.00	34	682
15	71	21	3.9	58	1.4	.00	4.8	.00	.00	.00	28	688
16	139	24	3.7	44	.66	.00	3.5	.00	.00	.00	17	610
17	160	30	3.9	32	.37	.00	2.5	.00	.00	.00	21	614
18	155	37	4.3	25	.26	21	1.9	.00	.00	.00	25	610
19	123	35	4.5	20	.17	277	.94	.00	.00	.00	15	918
20	98	34	4.1	16	.08	270	.54	.00	.00	.00	6.9	1290
21	83	35	3.2	14	.05	188	.23	.00	.00	.00	3.9	1610
22	74	35	2.4	12	.06	140	.08	.00	.00	.00	307	1760
23	71	35	1.9	9.6	.04	109	.01	.00	.00	.00	911	1700
24	69	33	1.8	8.0	.02	84	.00	.00	.00	.00	1560	1450
25	63	33	1.8	7.1	.01	67	.00	.00	.00	.00	2630	1150
26	55	31	1.7	6.0	.00	55	.00	.00	.00	.00	3160	926
27	52	27	1.2	4.6	.00	48	.00	.00	.00	.00	3690	764
28	48	25	.89	3.4	.00	46	.00	.00	.00	.00	6020	654
29	45	24	.62	2.6	---	38	.00	.00	.00	.00	10400	586
30	43	24	.42	2.3	---	29	.00	.00	.00	.00	15900	547
31	42	---	.26	2.6	---	27	---	.00	---	.00	16900	---
TOTAL	1843	856	264.89	802.33	20.90	1399.00	348.60	0.00	0.00	0.00	62204.80	58136
MEAN	59.5	28.5	8.54	25.9	.75	45.1	11.6	.000	.000	.000	2007	1938
MAX	160	39	24	129	3.3	277	38	.00	.00	.00	16900	13400
MIN	22	18	.26	.07	.00	.00	.00	.00	.00	.00	.00	547
AC-FT	3660	1700	525	1590	41	2770	691	.00	.00	.00	123400	115300

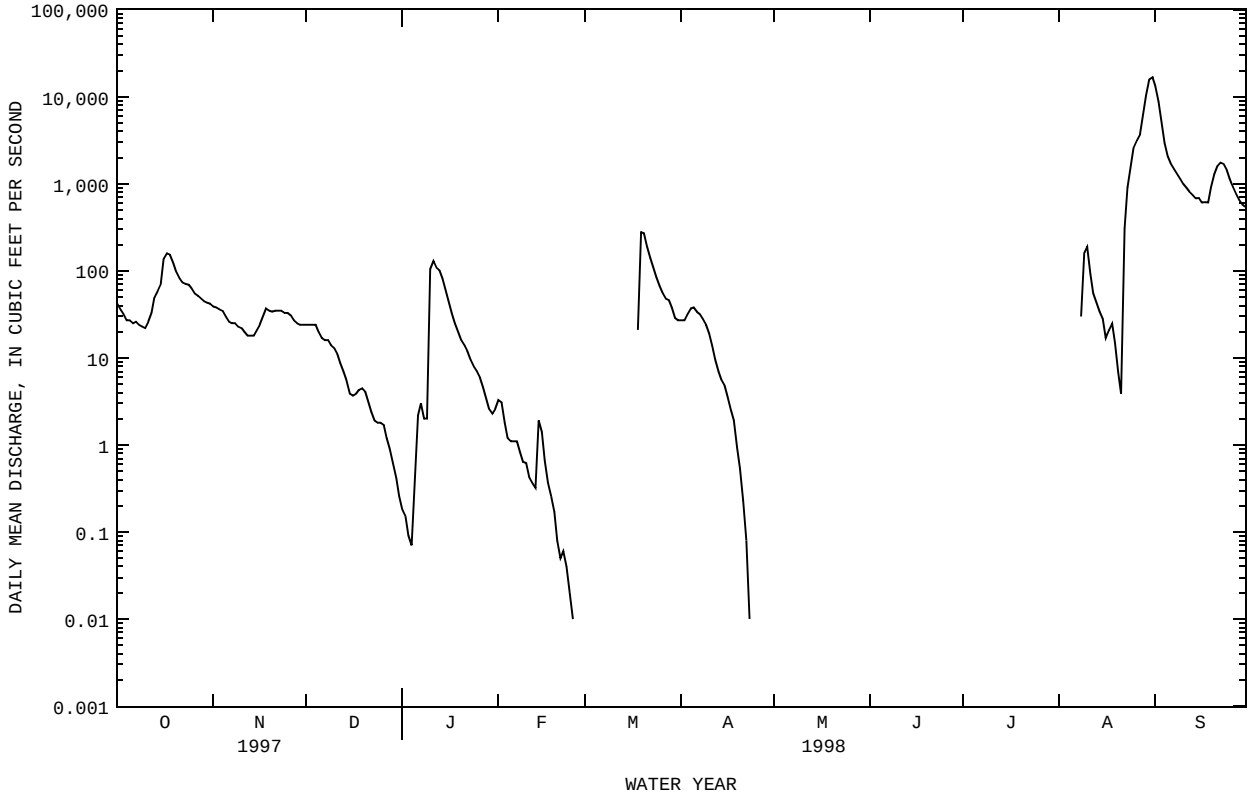
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 1998z, BY WATER YEAR (WY)

MEAN	481	139	58.3	68.8	53.8	101	112	256	544	294	275	379
MAX	3906	1098	414	761	619	2351	1444	1873	5280	3922	6412	5417
(WY)	1960	1977	1970	1985	1992	1949	1957	1957	1987	1971	1971	1964
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1953	1951	1949	1949	1951	1950	1950	1956	1953	1951	1951	1951

08194000 NUECES RIVER AT COTULLA, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1949 - 1998z	
ANNUAL TOTAL	112276.79		125875.52			
ANNUAL MEAN	308		345		231	
HIGHEST ANNUAL MEAN					1003	1971
LOWEST ANNUAL MEAN					2.24	1989
HIGHEST DAILY MEAN	9830	Jun 29	16900	Aug 31	37400	Sep 18 1964
LOWEST DAILY MEAN	.26	Dec 31	.00	Feb 26	.00	Oct 8 1948
ANNUAL SEVEN-DAY MINIMUM	.98	Dec 25	.00	Feb 26	.00	Oct 8 1948
INSTANTANEOUS PEAK FLOW			17600	Aug 31	46000	Sep 17 1964
INSTANTANEOUS PEAK STAGE			a21.72	Aug 31	27.75	Sep 17 1964
ANNUAL RUNOFF (AC-FT)	222700		249700		167200	
10 PERCENT EXCEEDS	490		610		359	
50 PERCENT EXCEEDS	55		3.5		.40	
90 PERCENT EXCEEDS	11		.00		.00	

z Period of regulated streamflow.
a From floodmark.



08194200 SAN CASIMIRO CREEK NEAR FREER, TX

LOCATION.--Lat 27°57'53", long 98°58'00", Webb County, Hydrologic Unit 12110105, at downstream side of bridge on State Highway 44, 11.4 mi upstream from mouth, and 22 mi northwest of Freer.

DRAINAGE AREA.--469 mi^2.

PERIOD OF RECORD.--Jan 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 298 ft above sea level, from Texas Department of Transportation datum.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1946, that of Oct 17, 1971. The next highest stage, 26 ft (discharge 65,200 ft^3/s), occurred in 1954, from information by Texas Department of Transportation.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 17	Unknown	1,830	a18.11	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	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	1.8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	18	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	13	62
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e34	245
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e1150	104
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e688	125
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e80	13
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	55	.46
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	13	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.7	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.10	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.26	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	1.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2053.09	549.46
MEAN	.059	.000	.000	.000	.000	.000	.000	.000	.000	.000	66.2	18.3
MAX	1.8	.00	.00	.00	.00	.00	.00	.00	.00	.00	1150	245
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	3.6	.00	.00	.00	.00	.00	.00	.00	.00	.00	4070	1090

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

MEAN	127	18.2	8.34	2.12	2.29	7.96	19.2	118	80.8	16.0	25.0	140
MAX	3021	288	247	40.2	19.5	145	297	747	606	365	377	2367
(WY)	1972	1986	1977	1977	1973	1985	1985	1981	1981	1976	1980	1967
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1964	1965	1965	1962	1962	1962	1965	1962	1965	1965	1963	1965

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1962 - 1998	
ANNUAL TOTAL	3434.90		2604.38			
ANNUAL MEAN	9.41		7.14		48.1	
HIGHEST ANNUAL MEAN					323	1972
LOWEST ANNUAL MEAN					2.44	1984
HIGHEST DAILY MEAN	500	Jun 9	1150	Aug 17	36600	Oct 17 1971
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Jan 1 1962
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Jan 1 1962
INSTANTANEOUS PEAK FLOW			1830	Aug 17	82000	Oct 17 1971
INSTANTANEOUS PEAK STAGE			a18.11	Aug 17	26.87	Oct 17 1971
ANNUAL RUNOFF (AC-FT)	6810		5170		34840	
10 PERCENT EXCEEDS	2.3		.00		16	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated
a From floodmark.

08194500 NUECES RIVER NEAR TILDEN, TX

LOCATION.--Lat 28°18'31", long 98°33'25", McMullen County, Hydrologic Unit 12110105, on right bank at downstream side of bridge on State Highway 16, 1.8 mi upstream from Kings Branch, 10.5 mi south of Tilden, and at mile 135.4.

DRAINAGE AREA.--8,093 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Nov 1942 to current year.

REVISED RECORDS.--WSP 1512: 1947. WSP 1732: 1951(M). WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 183.5 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair. Since water year 1949, at least 10% of contributing drainage area has been regulated by Upper Nueces Reservoir. Part of flow of Nueces River and its headwater tributaries enters the Edwards and associated limestones in the Balcones Fault Zone, which crosses basin between Laguna and Uvalde (stations 08190000 and 08192000). Some loss of flow into various permeable formations occurs downstream from the Balcones Fault Zone. Some diversions for irrigation above station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--6 years (water years 1943-48), 510 ft^3/s (369,500 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1943-48).--Maximum discharge 57,500 ft^3/s, Oct 11, 1946 (gage height 26.46 ft), from rating curve extended above 46,400 ft^3/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in Jun 1935 reached a stage of 23.7 ft and in Jul 1942 about 22 ft, from information by local residents. Maximum stage since about 1902, that of Sep 24, 1967.

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	68	48	26	1.7	5.1	.79	9.7	.00	.00	.00	.00	1250
2	63	44	23	1.6	4.4	.73	6.5	.00	.00	.00	.00	1420
3	55	42	20	1.5	3.9	.73	5.0	.00	.00	.00	.00	1810
4	48	39	18	1.3	3.5	.73	4.0	.00	.00	.00	.00	6830
5	42	37	18	1.3	3.1	.83	3.0	.00	.00	.00	.00	13000
6	37	37	18	1.3	2.7	.98	2.4	.00	.00	.00	.00	11900
7	35	36	20	1.2	2.3	1.0	2.3	.00	.00	.00	.00	9150
8	43	34	19	1.2	1.9	1.0	2.2	.00	.00	.00	.00	6520
9	54	31	16	1.0	1.7	1.3	3.1	.00	.00	.00	90	4570
10	50	27	13	.92	1.5	1.4	4.8	.00	.00	.00	486	3600
11	41	26	11	.74	1.1	1.5	4.4	.00	.00	.00	527	3020
12	36	31	9.2	.73	1.2	1.7	3.1	.00	.00	.00	155	2620
13	31	30	8.3	.72	1.1	1.8	2.1	.00	.00	.00	122	2240
14	29	27	7.1	.64	1.5	1.9	1.6	.00	.00	.00	102	2010
15	31	23	6.9	58	2.1	1.9	1.3	.00	.00	.00	78	1780
16	39	22	6.9	134	2.0	3.0	.80	.00	.00	.00	145	1480
17	47	22	6.3	89	2.4	1.8	.39	.00	.00	.00	173	1000
18	56	21	5.3	68	2.6	1.8	.24	.00	.00	.00	763	854
19	123	17	4.1	52	3.3	1.7	.11	.00	.00	.00	1120	982
20	176	16	3.6	40	2.1	.95	.02	.00	.00	.00	1420	1140
21	147	18	3.6	32	2.7	.62	.00	.00	.00	.00	2130	1220
22	127	23	3.2	24	12	1.4	.00	.00	.00	.00	2410	1070
23	105	31	2.8	19	12	164	.00	.00	.00	.00	1960	880
24	86	36	2.7	15	3.3	197	.00	.00	.00	.00	444	897
25	76	38	2.7	12	2.0	133	.00	.00	.00	.00	254	989
26	70	37	2.9	9.7	1.4	96	.00	.00	.00	.00	535	1120
27	65	35	2.6	8.4	1.2	70	.00	.00	.00	.00	658	1260
28	62	33	3.0	7.3	.99	48	.00	.00	.00	.00	752	1400
29	58	31	3.0	6.0	---	34	.00	.00	.00	.00	850	1530
30	55	29	2.6	5.1	---	22	.00	.00	.00	.00	957	1620
31	51	---	2.0	4.7	---	15	---	.00	---	.00	1090	---
TOTAL	2006	921	290.8	600.05	85.09	808.56	57.06	0.00	0.00	0.00	17221.00	89162
MEAN	64.7	30.7	9.38	19.4	3.04	26.1	1.90	.000	.000	.000	556	2972
MAX	176	48	26	134	12	197	9.7	.00	.00	.00	2410	13000
MIN	29	16	2.0	.64	.99	.62	.00	.00	.00	.00	.00	854
AC-FT	3980	1830	577	1190	169	1600	113	.00	.00	.00	34160	176900

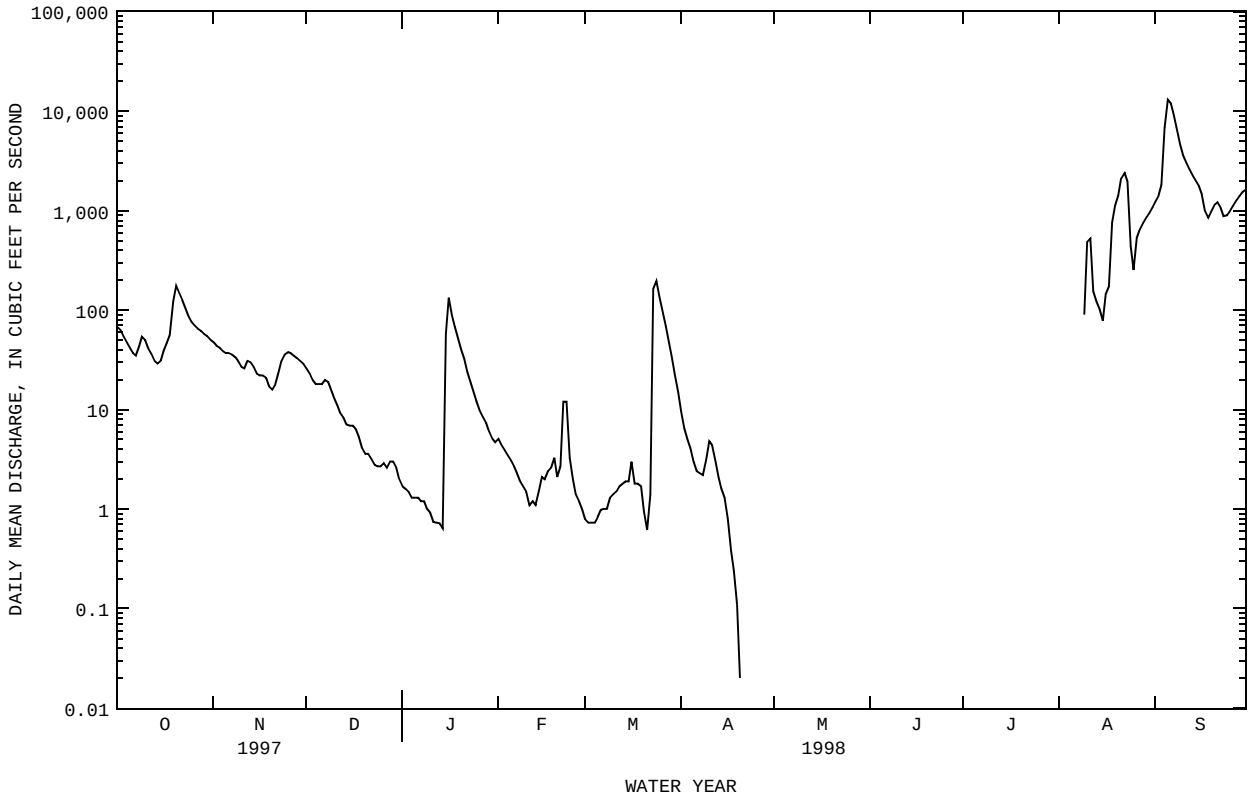
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 1998z, BY WATER YEAR (WY)

MEAN	825	272	90.6	117	151	116	163	524	707	422	347	722
MAX	11250	3509	1275	1912	4793	2104	2028	4122	5404	6291	7197	10150
(WY)	1972	1977	1977	1958	1958	1949	1949	1957	1987	1971	1971	1967
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1953	1953	1951	1951	1964	1954	1955	1971	1998	1953	1951	1952

08194500 NUECES RIVER NEAR TILDEN, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1949 - 1998z	
ANNUAL TOTAL	120943.90		111151.56			
ANNUAL MEAN	331		305		372	
HIGHEST ANNUAL MEAN					1736	1971
LOWEST ANNUAL MEAN					14.0	1989
HIGHEST DAILY MEAN	6300	Jul 8	13000	Sep 5	70000	Sep 24 1967
LOWEST DAILY MEAN	.72	Feb 20	.00	Apr 21	.00	Oct 15 1948
ANNUAL SEVEN-DAY MINIMUM	1.2	Feb 16	.00	Apr 21	.00	Jan 6 1949
INSTANTANEOUS PEAK FLOW			13400	Sep 5	76500	Sep 24 1967
INSTANTANEOUS PEAK STAGE			20.53	Sep 5	26.57	Sep 24 1967
ANNUAL RUNOFF (AC-FT)	239900		220500		269400	
10 PERCENT EXCEEDS	879		864		729	
50 PERCENT EXCEEDS	58		3.0		6.1	
90 PERCENT EXCEEDS	8.2		.00		.00	

z Period of regulated streamflow.



08194500 NUECES RIVER NEAR TILDEN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Dec 1997 to Aug 1998. Pesticide analyses: Dec 1997 to Aug 1998.

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 (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
DEC												
17...	1235	6.4	696	8.1	10.0	9.9	88	240	58	66	17	44
FEB												
10...	1230	1.4	578	8.1	18.0	9.0	95	150	--	47	8.8	54
AUG												
27...	1144	656	425	7.8	29.0	7.0	92	150	30	48	6.6	23

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	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)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
DEC												
17...	1	28	3.5	180	53	80	.17	5.5	376	--	<.010	<.050
FEB												
10...	2	42	5.3	170	24	64	.20	5.7	309	--	<.010	<.050
AUG												
27...	.8	24	7.5	120	32	38	.11	11	241	.510	.068	.578

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (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)
DEC											
17...	<.020	--	.25	.026	.027	.08	1	108	<1.0	<8.0	<14
FEB											
10...	<.020	--	.54	.038	.037	.11	2	91	<1.0	<8.0	<14
AUG											
27...	.032	.53	.56	.088	.079	.24	2	83	<1.0	<8.0	<14

DATE	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)
DEC											
17...	<12	<10	<10	<100	10	5.3	<.1	<60	<40	<1	<4.0
FEB											
10...	<12	<10	<10	<100	12	17	<.1	<60	<40	<1	<4.0
AUG											
27...	<12	<10	<10	<100	7	<4.0	<.1	<60	<40	<1	<4.0

DATE	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)	2,4,5-T TOTAL (UG/L) (39740)	2,4-D, TOTAL (UG/L) (39730)	SILVEX, TOTAL (UG/L) (39760)	DICAMBA TOTAL (UG/L) (82052)	2,4-DP TOTAL (UG/L) (82183)	PIC-LORAM UNFILT RECOVER (UG/L) (39720)	TOTAL TRI-THION (UG/L) (39786)	CHLOR-PYRIFOS TOTAL RECOVER (UG/L) (38932)
DEC											
17...	386	<10	<20	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
FEB											
10...	270	<10	<20	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
AUG											
27...	237	10	<20	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010

08194500 NUECES RIVER NEAR TILDEN, TX--Continued

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

DATE	DI-AZINON, TOTAL (UG/L) (39570)	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)	ETHION, TOTAL (UG/L) (39398)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L) (82614)	MALA-THION, TOTAL (UG/L) (39530)	PARA-THION, TOTAL (UG/L) (39540)	METHYL PARA-THION, TOTAL (UG/L) (39600)	PHORATE TOTAL (UG/L) (39023)	DEF TOTAL (UG/L) (39040)	SAMPLE VOLUME SCHED-ULE 1319 (ML) (99868)	SET NUMBER SCHED-ULE 1319 (NO.) (99804)
DEC											
17...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	959	5033.00
FEB											
10...	<.010	<.030	<.010	<.010	<.030	<.010	<.010	<.010	<.010	840	8049.00
AUG											
27...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	890	8247.00

08195000 FRIO RIVER AT CONCAN, TX

LOCATION.--Lat 29°29'18", long 99°42'16", Uvalde County, Hydrologic Unit 12110106, on left bank 0.7 mi southeast of Concan Post Office, 15 mi upstream from Dry Frio River, and 222.8 mi upstream from mouth.

DRAINAGE AREA.--389 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1923 to Sep 1929, Oct 1930 to current year.

REVISED RECORDS.--WSP 1342: Drainage area. WSP 1512: 1926, 1931-32, 1934(M), 1935-36. WSP 1712: 1958. WSP 1923: 1954(M), 1957(M). WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,203.71 ft above sea level. Oct 26, 1923, to Jul 28, 1924, nonrecording gage at site 86 ft upstream at datum 5.08 ft lower. Jul 29, 1924, to Oct 3, 1930, nonrecording gage, and Oct 4, 1930, to May 18, 1939, water-stage recorder, at site 130 ft downstream at present datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. No known regulation. Many small diversions for irrigation above station.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 31	1000	6,800	8.65	Aug 28	0245	591	4.79

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

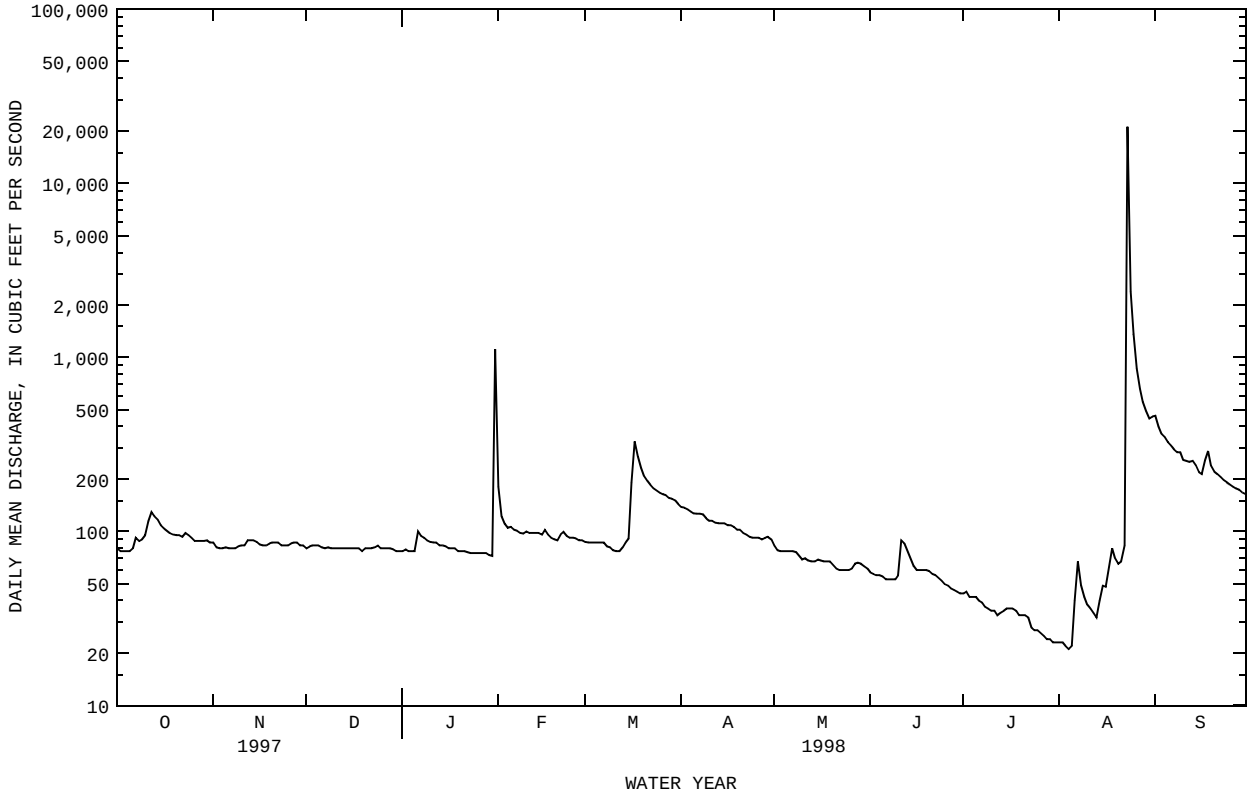
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80	86	80	77	181	87	138	83	58	44	23	461
2	77	81	82	79	122	86	137	78	57	45	23	399
3	77	80	83	77	110	86	134	77	56	42	22	363
4	77	80	83	77	105	86	130	77	56	42	21	349
5	77	81	83	77	106	86	127	77	55	42	22	326
6	80	80	81	100	102	86	126	77	53	40	40	310
7	92	80	80	94	101	86	126	77	53	39	67	295
8	88	80	81	92	98	82	125	76	53	37	49	284
9	90	82	80	89	97	81	119	72	53	36	42	285
10	95	83	80	87	100	78	115	69	56	35	38	257
11	114	83	80	86	98	77	115	70	89	35	36	253
12	129	89	80	86	98	77	112	68	85	33	34	251
13	122	89	80	83	98	81	111	67	77	34	32	253
14	117	89	80	83	98	86	111	67	70	35	40	240
15	108	87	80	82	96	91	111	69	63	36	49	219
16	104	84	80	80	102	190	108	68	60	36	48	213
17	101	83	80	80	96	329	108	67	60	36	61	255
18	98	83	80	80	92	269	106	67	60	35	80	289
19	96	85	77	77	90	231	102	67	60	33	70	238
20	95	86	80	77	89	208	102	64	59	33	65	220
21	95	86	80	77	96	195	98	61	57	33	67	213
22	93	86	80	76	99	185	96	60	56	32	83	205
23	98	83	81	75	94	177	93	60	54	28	21100	198
24	95	83	83	75	92	172	92	60	52	27	2380	192
25	92	83	80	75	92	167	92	60	50	27	1360	186
26	88	85	80	75	91	163	92	61	49	26	862	181
27	88	86	80	75	89	161	90	65	47	25	662	176
28	88	86	80	75	89	155	92	66	46	24	553	173
29	88	83	79	73	---	154	93	65	45	24	492	168
30	89	83	77	72	---	151	90	63	44	23	446	164
31	86	---	77	1110	---	143	---	61	---	23	458	---
TOTAL	2917	2515	2487	3521	2821	4306	3291	2119	1733	1040	29325	7616
MEAN	94.1	83.8	80.2	114	101	139	110	68.4	57.8	33.5	946	254
MAX	129	89	83	1110	181	329	138	83	89	45	21100	461
MIN	77	80	77	72	89	77	90	60	44	23	21	164
AC-FT	5790	4990	4930	6980	5600	8540	6530	4200	3440	2060	58170	15110
CFSM	.24	.22	.21	.29	.26	.36	.28	.18	.15	.09	2.43	.65
IN.	.28	.24	.24	.34	.27	.41	.31	.20	.17	.10	2.80	.73

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1998, BY WATER YEAR (WY)

MEAN	147	100	100	90.3	96.7	97.5	108	136	189	168	111	142
MAX	648	391	767	525	613	762	859	1041	2468	2823	1050	1333
(WY)	1970	1959	1992	1992	1992	1992	1981	1935	1935	1932	1971	1936
MIN	.000	.000	.000	3.01	8.25	11.8	8.52	6.48	1.08	1.25	.019	.000
(WY)	1957	1957	1957	1957	1957	1956	1956	1956	1956	1953	1956	1956

08195000 FRIO RIVER AT CONCAN, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1924 - 1998	
ANNUAL TOTAL	89490		63691			
ANNUAL MEAN	245		174		124	
HIGHEST ANNUAL MEAN					434	1992
LOWEST ANNUAL MEAN					8.80	1956
HIGHEST DAILY MEAN	22800	Jun 22	21100	Aug 23	52000	Jul 1 1932
LOWEST DAILY MEAN	77	Oct 2	21	Aug 4	.00	Aug 5 1956
ANNUAL SEVEN-DAY MINIMUM	78	Sep 29	22	Jul 30	.00	Aug 5 1956
INSTANTANEOUS PEAK FLOW			59900	Aug 23	162000	Jul 1 1932
INSTANTANEOUS PEAK STAGE			24.22	Aug 23	34.44	Jul 1 1932
ANNUAL RUNOFF (AC-FT)	177500		126300		89730	
ANNUAL RUNOFF (CFSM)	.63		.45		.32	
ANNUAL RUNOFF (INCHES)	8.56		6.09		4.33	
10 PERCENT EXCEEDS	333		201		198	
50 PERCENT EXCEEDS	117		83		68	
90 PERCENT EXCEEDS	80		40		19	



08195000 FRIO RIVER AT CONCAN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: June 1952, December 1964 to July 1965. Chemical and biochemical analyses: August 1968 to September 1993, April 1996 to April 1998. Pesticide analyses: August 1968 to September 1993. Sediment analyses: April 1996 to April 1998.

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 (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)
OCT											
20...	1045	95	432	8.1	20.0	8.4	97	200	18	57	14
NOV											
20...	1030	86	424	8.0	15.0	9.9	103	210	26	62	14
DEC											
18...	1030	80	413	8.2	11.5	10.5	101	210	19	60	15
JAN											
14...	1000	83	410	8.2	15.0	9.0	94	210	29	60	14
JAN											
31-31	0900	3900	--	--	--	--	--	73	7	24	2.9
FEB											
18...	1030	92	420	8.3	14.0	9.6	98	200	19	61	13
APR											
02...	1215	126	420	8.1	20.0	9.5	110	210	22	61	13
29...	1045	92	410	8.2	20.0	8.7	100	210	24	60	14

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
OCT										
20...	6.9	.2	7	.9	180	14	13	.1	12	256
NOV										
20...	6.9	.2	7	.8	190	14	12	.1	11	241
DEC										
18...	7.2	.2	7	.8	190	14	12	.3	10	244
JAN										
14...	6.8	.2	7	.8	180	13	12	.1	10	238
JAN										
31-31	2.1	.1	6	2.2	66	5.4	3.4	<.1	5.5	108
FEB										
18...	6.7	.2	7	.8	190	16	11	.1	9.8	246
APR										
02...	6.7	.2	6	.8	190	14	14	.2	10	243
29...	6.8	.2	7	.8	180	15	11	.1	11	238

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, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT										
20...	224	.718	.01	.73	.04	--	--	--	<.2	<.2
NOV										
20...	238	--	<.01	.68	<.02	--	--	--	<.1	<.1
DEC										
18...	235	--	<.01	.73	<.02	--	--	--	<.1	<.1
JAN										
14...	231	.804	.01	.81	<.02	--	--	--	<.1	<.1
JAN										
31-31	311	.603	.01	.62	.04	1.8	1.2	.29	.3	1.2
FEB										
18...	238	--	<.01	.88	.03	--	--	--	<.1	<.1
APR										
02...	233	--	<.01	.72	.03	--	--	--	<.1	<.1
29...	224	--	<.01	.53	.02	--	--	--	<.1	<.1

08195000 FRIO RIVER AT CONCAN, TX--Continued

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

DATE	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)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT										
20...	<.01	<.01	<.01	--	.8	<.2	.77	3	<3	<1
NOV										
20...	<.01	<.01	<.01	--	.7	<.2	.70	3	<3	<1
DEC										
18...	<.01	<.01	.01	.04	.7	<.2	.86	4	<10	<4
JAN										
14...	<.01	<.01	<.01	--	.7	<.2	.45	2	<10	<4
JAN										
31-31	.12	<.01	.02	.05	5.6	>5.0	12700	1210	<10	<4
FEB										
18...	<.01	<.01	.01	.04	.9	<.2	.50	2	<10	<4
APR										
02...	<.01	<.01	.01	.03	1.1	<.2	3.7	11	<10	<4
29...	<.01	<.01	<.01	--	1.1	<.2	2.0	8	<10	<4

08196000 DRY FRIO RIVER NEAR REAGAN WELLS, TX

LOCATION.--Lat 29°30'16", long 99°46'52", Uvalde County, Hydrologic Unit 12110106, on right bank 2.3 mi upstream from bridge on U.S. Highway 83, 3.1 mi upstream from Rocky Creek, 4.3 mi southeast of Reagan Wells, and 25.9 mi upstream from mouth.

DRAINAGE AREA.--126 mi^2.

PERIOD OF RECORD.--Sep 1952 to current year.
Water-quality records.--Chemical and biochemical analyses: Jan 1966 to Sep 1993. Pesticide analyses: Jan 1974 to Sep 1993. Sediment analyses: Jan 1966.

REVISED RECORDS.--WSP 1712: 1953. WSP 1923: 1955(M). WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,335.2 ft above sea level, from Texas Department of Transportation datum. Satellite telemeter at station.

REMARKS.--Records fair. No known regulation. There are several small diversions above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1875 occurred in 1880 (about 33 ft). Flood of Jun 14, 1935, reached a stage of 26.0 ft (discharge, 64,700 ft^3/s, determined at site 2.6 mi upstream), and flood of Jul 1, 1932, reached a stage of 23 ft (discharge, 30,700 ft^3/s, determined at site 2.0 mi upstream), from information by local residents.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 31	0745	3,750	8.29	Aug 23	0700	25,500	a21.05
Aug 18	1800	424	3.55	Aug 24	1315	1,550	5.62

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	15	11	11	187	20	26	9.2	3.4	3.8	1.6	175
2	4.7	14	12	12	102	19	25	8.7	3.3	3.6	1.6	153
3	4.4	14	13	12	72	19	24	7.8	2.9	3.5	1.5	140
4	4.4	13	12	12	59	19	23	7.7	2.7	3.4	1.6	127
5	4.4	13	12	13	53	19	22	7.7	2.7	3.2	e1.5	117
6	4.8	12	11	13	46	19	22	7.6	3.1	3.2	1.4	109
7	6.6	12	12	13	41	18	22	7.1	4.1	3.1	1.6	102
8	6.8	11	13	12	37	17	22	6.8	4.2	3.0	1.6	95
9	7.1	12	13	11	34	16	20	6.6	4.1	2.8	1.6	89
10	11	12	12	11	35	15	19	5.9	4.4	2.6	1.7	82
11	35	12	11	11	31	15	18	5.5	17	2.6	2.0	78
12	69	16	11	12	28	15	18	5.3	16	2.4	2.2	76
13	61	18	10	11	27	17	19	5.6	11	2.3	2.3	71
14	48	17	10	11	27	19	18	5.3	9.1	2.3	3.5	67
15	39	17	11	10	26	23	17	5.6	7.5	2.5	3.6	63
16	33	17	11	9.8	29	67	17	5.2	6.9	3.4	5.4	60
17	29	15	11	9.7	28	74	15	5.3	7.1	3.3	9.9	67
18	26	15	11	9.7	29	69	14	4.9	7.7	3.3	99	61
19	23	14	11	9.5	25	63	14	4.6	7.8	3.1	56	56
20	22	14	12	9.2	23	54	13	4.3	7.5	3.1	21	53
21	21	14	13	9.6	25	49	13	4.1	6.9	2.9	13	50
22	21	13	12	9.7	27	45	12	3.9	6.2	2.6	13	48
23	22	13	12	9.3	25	42	12	3.8	5.9	2.6	5440	46
24	22	13	14	9.0	24	39	11	3.8	5.4	2.4	934	44
25	21	13	13	9.0	23	37	11	3.8	5.0	2.4	559	43
26	18	13	13	9.3	22	35	11	3.9	4.6	2.2	390	41
27	17	13	14	9.2	21	34	11	4.2	4.4	2.2	309	40
28	16	12	13	8.9	20	32	10	4.1	4.3	2.1	255	38
29	16	11	12	8.7	---	31	9.6	4.0	4.3	1.9	217	37
30	16	11	12	8.9	---	30	9.2	3.7	4.0	1.8	191	35
31	16	---	11	620	---	28	---	3.5	---	1.7	188	---
TOTAL	650.2	409	369	934.5	1126	999	497.8	169.5	183.5	85.3	8729.6	2263
MEAN	21.0	13.6	11.9	30.1	40.2	32.2	16.6	5.47	6.12	2.75	282	75.4
MAX	69	18	14	620	187	74	26	9.2	17	3.8	5440	175
MIN	4.4	11	10	8.7	20	15	9.2	3.5	2.7	1.7	1.4	35
AC-FT	1290	811	732	1850	2230	1980	987	336	364	169	17320	4490
CFSM	.17	.11	.09	.24	.32	.26	.13	.04	.05	.02	2.23	.60
IN.	.19	.12	.11	.28	.33	.29	.15	.05	.05	.03	2.58	.67

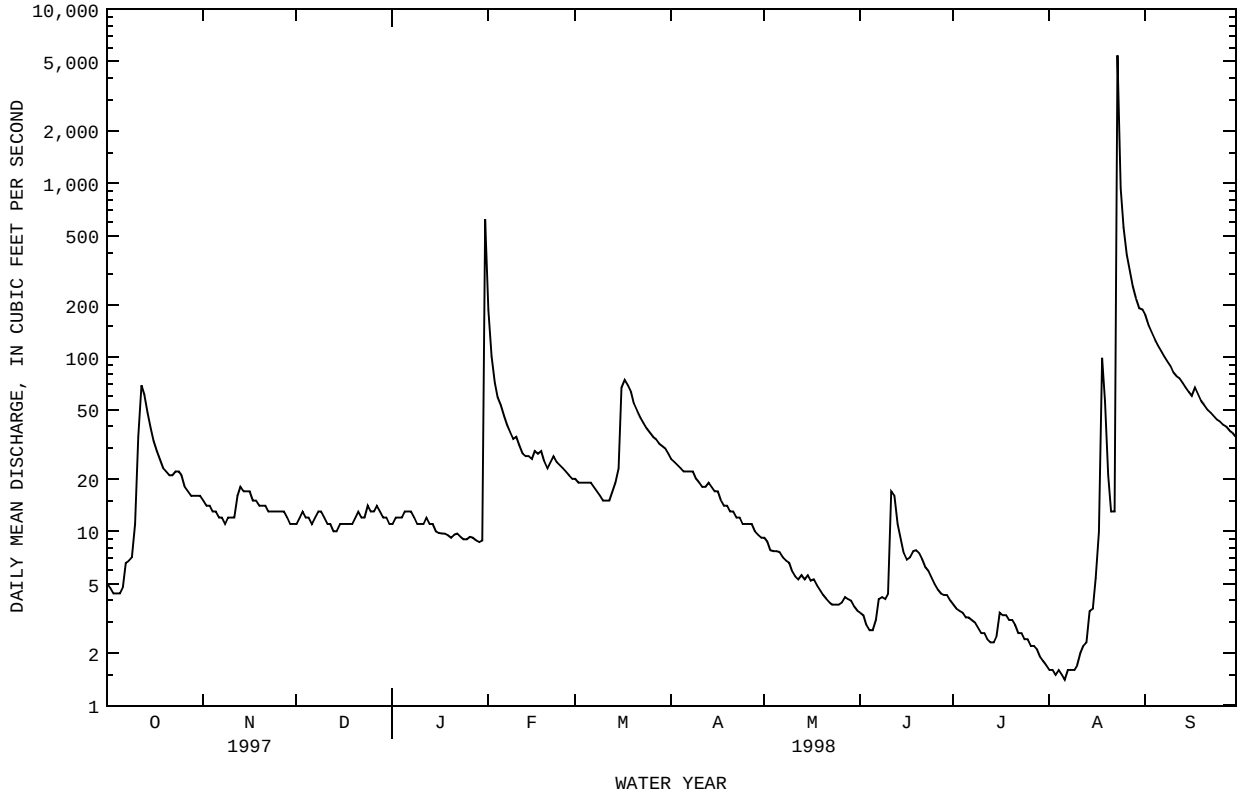
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1998, BY WATER YEAR (WY)

MEAN	54.8	29.2	27.5	22.4	24.4	28.4	29.7	39.3	63.6	37.1	38.9	38.6
MAX	258	134	185	120	131	208	257	338	483	277	365	277
(WY)	1970	1968	1992	1992	1992	1992	1981	1987	1987	1976	1966	1958
MIN	.000	.000	.055	.51	.87	2.24	1.50	.86	.19	.077	.000	.000
(WY)	1957	1957	1957	1957	1957	1954	1956	1956	1953	1953	1956	1956

08196000 DRY FRIO RIVER NEAR REAGAN WELLS, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1952 - 1998	
ANNUAL TOTAL	22648.4		16416.4			
ANNUAL MEAN	62.1		45.0		36.3	
HIGHEST ANNUAL MEAN					121	1987
LOWEST ANNUAL MEAN					2.99	1956
HIGHEST DAILY MEAN	7080	Jun 22	5440	Aug 23	8100	Aug 13 1966
LOWEST DAILY MEAN	3.4	Sep 30	1.4	Aug 6	.00	Jul 10 1953
ANNUAL SEVEN-DAY MINIMUM	3.7	Sep 24	1.5	Aug 1	.00	Jul 30 1953
INSTANTANEOUS PEAK FLOW			25500	Aug 23	123000	Aug 13 1966
INSTANTANEOUS PEAK STAGE			a21.05	Aug 23	27.60	Aug 13 1966
ANNUAL RUNOFF (AC-FT)	44920		32560		26290	
ANNUAL RUNOFF (CFSM)	.49		.36		.29	
ANNUAL RUNOFF (INCHES)	6.69		4.85		3.91	
10 PERCENT EXCEEDS	85		61		64	
50 PERCENT EXCEEDS	19		12		14	
90 PERCENT EXCEEDS	10		3.1		2.3	

e Estimated
a From floodmark



08197500 FRIO RIVER BELOW DRY FRIO RIVER NEAR UVALDE, TX

LOCATION.--Lat 29°14'44", long 99°40'27", Uvalde County, Hydrologic Unit 12110106, on right bank 1.1 mi upstream from Farm Road 1023, 5.7 mi downstream from Dry Frio River, 6.3 mi downstream from bridge on U.S. Highway 90, 7.2 mi northeast of Uvalde, and 194.5 mi upstream from mouth.

DRAINAGE AREA.--631 mi^2.

PERIOD OF RECORD.--Sep 1952 to current year. Sum of records published as Frio River at Knippa and Dry Frio River at Knippa for period Sep 1952 to Sep 1953 is equivalent to record for this station.

REVISED RECORDS.--WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 882.47 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair. No known regulation. Part of flow of Frio River enters the Edwards and associated limestones in the Balcones Fault Zone, that crosses the basin between Concan (station 08195000) and this station. Most of the low flow enters this formation. Many diversions for irrigation above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1887, about 35 ft in 1894. Flood of Jul 1, 1932, reached a stage of about 30 ft. A higher flood than that of 1894 occurred prior to 1887, from information by local residents.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 31	1800	3,020	7.31	Aug 24	0100	81,230	a23.10

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	.00	200	.00	.00	.00	.00	.00	.00	e180
2	.00	.00	.00	.00	4.5	.00	.00	.00	.00	.00	.00	e150
3	.00	.00	.00	.00	.21	.00	.00	.00	.00	.00	.00	116
4	.00	.00	.00	.00	.03	.00	.00	.00	e.00	.00	.00	95
5	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	71
6	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	50
7	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	33
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	15
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.9
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.15
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.07
12	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05
13	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05
14	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05
15	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04
16	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02
17	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
18	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
19	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e20	.01
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e30000	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e4000	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e1600	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e900	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e600	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	e320	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	e280	.00
31	.00	---	.00	465	---	.00	---	.00	---	.00	e210	---
TOTAL	0.00	0.00	0.00	465.00	204.80	0.00	0.00	0.00	0.00	0.00	37930.00	712.40
MEAN	.000	.000	.000	15.0	7.31	.000	.000	.000	.000	.000	1224	23.7
MAX	.00	.00	.00	465	200	.00	.00	.00	.00	.00	30000	180
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	922	406	.00	.00	.00	.00	.00	75230	1410

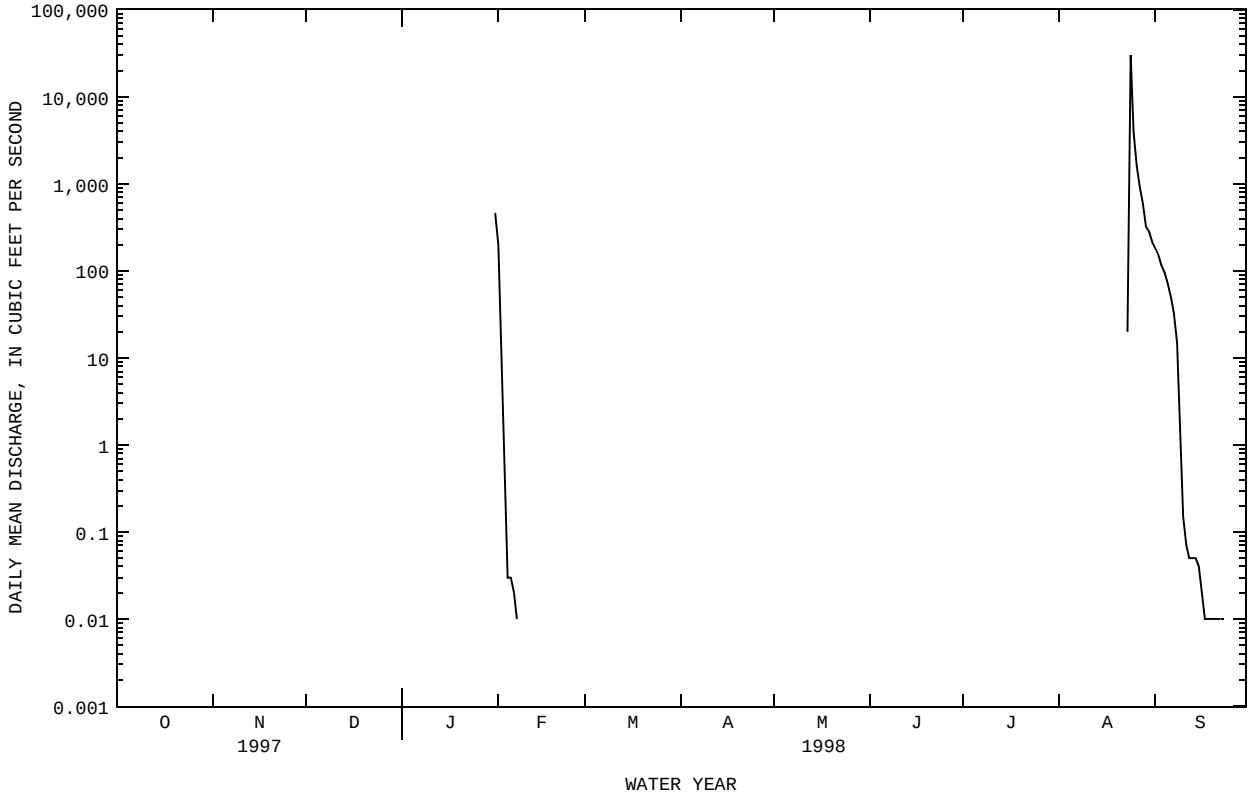
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1998, BY WATER YEAR (WY)

MEAN	75.7	4.03	29.0	11.1	7.09	11.5	27.7	38.7	123	36.4	71.8	48.7
MAX	842	81.3	710	241	300	455	702	865	1584	597	1224	699
(WY)	1997	1959	1985	1992	1992	1992	1981	1987	1997	1973	1998	1958
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1954	1954	1954	1954	1954	1954	1954	1955	1954	1954	1954	1954

08197500 FRIO RIVER BELOW DRY FRIO RIVER NEAR UVALDE, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1954 - 1998	
ANNUAL TOTAL	52641.35		39312.20			
ANNUAL MEAN	144		108		40.6	
HIGHEST ANNUAL MEAN					221	1987
LOWEST ANNUAL MEAN					.000	1962
HIGHEST DAILY MEAN	32300	Jun 22	30000	Aug 24	32300	Jun 22 1997
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Oct 1 1953
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Oct 1 1953
INSTANTANEOUS PEAK FLOW			81200	Aug 24	100000	Jun 22 1997
INSTANTANEOUS PEAK STAGE			a23.10	Aug 24	a25.09	Jun 22 1997
ANNUAL RUNOFF (AC-FT)	104400		77980		29380	
10 PERCENT EXCEEDS	15		.01		.16	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated
a From floodmark



08198000 SABINAL RIVER NEAR SABINAL, TX

LOCATION.--Lat 29°29'27", long 99°29'33", Uvalde County, Hydrologic Unit 12110106, on right bank 108 ft upstream from concrete dam, 2.3 mi downstream from mouth of Onion Creek, 12.5 mi north of Sabinal, and 41.6 mi upstream from mouth.

DRAINAGE AREA.--206 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1942 to current year.

REVISED RECORDS.--WSP 1312: 1943(M), 1944(M), 1947(M).

GAGE.--Water-stage recorder. Datum of gage is 1,131.20 ft above sea level. Prior to Apr 9, 1971, at site 0.3 mi downstream at same datum. Satellite telemeter at station.

REMARKS.--Records fair. No known regulation. There are several small diversions above station for irrigation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1892, about 33 ft Jul 2, 1932, from information by local residents. A flood in the middle 1800's reached a stage of nearly 63 ft. Information indicates that a flood in 1858 covered the townsite of Sabinal. The stage would have been 70 to 80 ft, which seems unlikely. However, it is possible that a flood occurred in 1858 that covered part of the townsite and was higher than any flood since that date.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 31	1100	3,440	8.27	Aug 23	1145	18,500	17.13
Mar 16	0345	1,670	7.19				

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	21	20	119	50	98	49	24	13	3.3	132
2	26	24	22	20	70	50	96	48	23	12	3.2	115
3	26	23	23	19	57	51	93	46	21	12	3.1	107
4	25	23	23	19	50	51	90	46	21	13	2.9	102
5	25	23	23	18	48	52	88	46	21	12	3.4	97
6	27	23	23	40	46	51	87	45	20	11	11	95
7	30	22	24	41	44	51	88	43	21	11	8.6	91
8	27	22	24	34	42	48	85	42	21	9.9	6.5	89
9	30	23	23	30	41	48	82	39	20	9.4	5.4	86
10	33	23	23	27	42	47	80	38	e60	9.0	4.7	83
11	37	24	22	26	42	45	78	36	48	8.2	4.2	84
12	42	28	22	24	42	46	76	36	46	8.2	3.9	84
13	40	28	23	24	41	48	76	36	38	8.7	3.6	82
14	36	26	23	23	45	52	71	37	32	9.6	6.0	79
15	34	26	23	23	44	55	70	36	28	9.8	8.8	76
16	33	25	23	22	47	787	69	35	26	8.5	6.9	76
17	32	25	22	22	47	259	67	35	25	7.8	7.3	76
18	31	25	21	22	46	187	66	34	24	7.2	8.3	75
19	30	24	19	21	45	163	65	32	23	7.0	8.5	72
20	29	24	20	21	45	146	64	31	22	6.6	7.4	70
21	29	24	20	21	46	137	63	30	21	6.2	7.2	68
22	31	23	20	21	55	130	62	28	20	e5.7	16	66
23	32	23	23	20	55	124	61	28	18	5.1	6900	65
24	28	23	23	20	52	120	59	27	15	5.2	651	64
25	27	23	22	20	51	116	58	27	15	4.9	322	62
26	25	22	23	20	53	112	57	27	14	4.5	219	62
27	26	22	22	20	52	110	54	30	14	4.3	177	61
28	26	21	22	20	51	107	53	29	13	4.2	153	59
29	26	20	22	19	---	104	52	28	14	4.1	136	58
30	26	21	21	19	---	101	50	26	15	3.7	126	57
31	25	---	21	643	---	98	---	25	---	3.5	126	---
TOTAL	920	707	686	1339	1418	3546	2158	1095	723	245.3	8950.2	2393
MEAN	29.7	23.6	22.1	43.2	50.6	114	71.9	35.3	24.1	7.91	289	79.8
MAX	42	28	24	643	119	787	98	49	60	13	6900	132
MIN	25	20	19	18	41	45	50	25	13	3.5	2.9	57
AC-FT	1820	1400	1360	2660	2810	7030	4280	2170	1430	487	17750	4750
CFSM	.14	.11	.11	.21	.25	.56	.35	.17	.12	.04	1.40	.39
IN.	.17	.13	.12	.24	.26	.64	.39	.20	.13	.04	1.62	.43

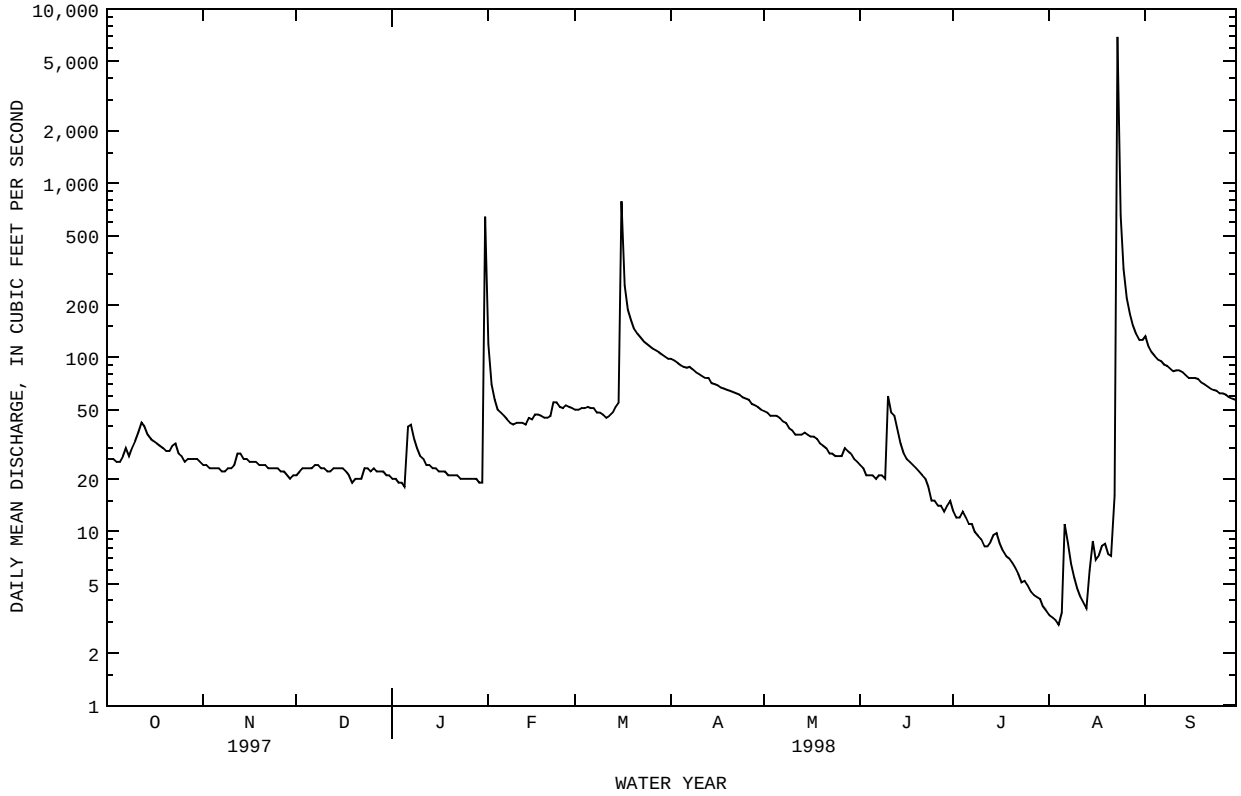
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 1998, BY WATER YEAR (WY)

MEAN	65.2	48.1	49.1	46.3	52.8	59.1	58.4	69.1	126	79.1	58.5	50.7
MAX	318	321	612	408	584	624	392	389	1527	1035	669	306
(WY)	1972	1959	1992	1992	1992	1992	1992	1987	1987	1973	1971	1980
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1952	1952	1952	1952	1952	1952	1954	1953	1953	1953	1948	1951

08198000 SABINAL RIVER NEAR SABINAL, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1943 - 1998	
ANNUAL TOTAL	47521		24180.5			
ANNUAL MEAN	130		66.2		63.6	
HIGHEST ANNUAL MEAN					340	1992
LOWEST ANNUAL MEAN					.82	1955
HIGHEST DAILY MEAN	12800	Jun 22	6900	Aug 23	13000	Jun 17 1958
LOWEST DAILY MEAN	19	Dec 19	2.9	Aug 4	.00	Aug 10 1946
ANNUAL SEVEN-DAY MINIMUM	20	Feb 5	3.3	Jul 30	.00	Aug 10 1946
INSTANTANEOUS PEAK FLOW			17	Aug 23	55200	Jun 17 1958
INSTANTANEOUS PEAK STAGE			17.13	Aug 23	a28.50	Jun 22 1997
ANNUAL RUNOFF (AC-FT)	94260		47960		46040	
ANNUAL RUNOFF (CFSM)	.63		.32		.31	
ANNUAL RUNOFF (INCHES)	8.58		4.37		4.19	
10 PERCENT EXCEEDS	174		92		121	
50 PERCENT EXCEEDS	38		28		26	
90 PERCENT EXCEEDS	22		8.6		.00	

e Estimated
a From floodmark



08198000 SABINAL RIVER NEAR SABINAL, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: November 1964 to July 1965. Chemical and biochemical analyses: February 1970 to September 1993, April 1996 to April 1998. Pesticide analyses: August 1971 to September 1993. Sediment analyses: November 1965, April 1996 to April 1998.

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 (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)
OCT											
20...	1345	30	473	8.0	22.0	--	--	220	24	68	13
NOV											
20...	1315	23	749	8.0	15.0	9.1	95	240	32	72	14
DEC											
18...	1400	20	482	8.2	17.0	10.7	116	240	32	74	14
JAN											
14...	1200	23	469	8.1	15.0	8.2	85	230	36	72	13
JAN											
31-31	1030	1790	--	--	--	--	--	110	9	36	5.0
FEB											
18...	1330	46	460	8.2	15.0	9.4	98	220	27	69	12
APR											
06...	1030	85	458	8.1	19.0	8.6	98	220	21	69	12
30...	1100	50	450	8.1	21.0	8.5	100	230	36	73	12

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
OCT										
20...	7.9	.2	7	1	200	27	12	.2	13	264
NOV										
20...	8.4	.2	7	.9	210	27	12	.2	12	259
DEC										
18...	8.3	.2	7	.9	210	28	12	.2	12	283
JAN										
14...	7.5	.2	7	1.1	200	28	11	.2	11	277
JAN										
31-31	3.5	.1	6	2.2	100	12	5.3	.1	7.3	149
FEB										
18...	7.1	.2	6	1.0	200	27	11	.2	9.7	272
APR										
06...	7.0	.2	6	.9	200	23	10	.2	10	269
30...	6.9	.2	6	.9	200	26	11	.2	12	264

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, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT										
20...	237	--	<.01	.66	.04	--	--	--	<.2	<.2
NOV										
20...	269	--	<.01	.60	<.02	--	--	--	<.1	<.1
DEC										
18...	274	--	<.01	.52	<.02	--	--	--	<.1	<.1
JAN										
14...	260	--	<.01	.45	<.02	--	--	--	<.1	<.1
JAN										
31-31	430	.329	.01	.34	.04	2.1	1.8	.19	.2	1.8
FEB										
18...	259	--	<.01	.38	.02	--	--	--	<.1	<.1
APR										
06...	252	.360	.02	.38	.02	--	--	--	<.1	<.1
30...	258	--	<.01	.29	.06	--	--	--	<.1	<.1

08198000 SABINAL RIVER NEAR SABINAL, TX--Continued

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

DATE	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)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT										
20...	<.01	<.01	<.01	--	.7	<.2	.41	5	3	<1
NOV										
20...	<.01	.01	<.01	--	.7	<.2	.25	4	<3	<1
DEC										
18...	<.01	<.01	.01	.03	.7	<.2	.11	2	<10	<4
JAN										
14...	<.01	<.01	<.01	--	.8	<.2	.25	4	19	<4
JAN										
31-31	.21	<.01	.02	.06	3.4	>5.0	6720	1390	<10	<4
FEB										
18...	<.01	<.01	.02	.06	.8	<.2	.50	4	<10	<4
APR										
06...	<.01	<.01	.01	.04	.8	<.2	1.4	6	<10	<4
30...	<.01	<.01	<.01	--	.8	<.2	1.5	11	<10	<4

08198500 SABINAL RIVER AT SABINAL, TX

LOCATION.--Lat 29°18'05", long 99°28'46", Uvalde County, Hydrologic Unit 12110106, on left bank 80 ft downstream from bridge on U.S. Highway 90, 1,100 ft downstream from Southern Pacific Lines railroad bridge, 0.8 mi west of Sabinal, 5.8 mi upstream from Ranchero Creek, and 223 mi upstream from mouth.

DRAINAGE AREA.--241 mi^2.

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

REVISED RECORDS.--WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 882.17 ft above sea level. Prior to Jul 29, 1958, nonrecording gage, and Jul 29, 1958, to Mar 19, 1964, water-stage recorder at site 80 ft upstream at same datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. No known regulation. Several small diversions for irrigation above station. Most of low flow of the Sabinal River enters the Edwards and associated limestones in the Balcones Fault Zone, that crosses basin upstream from this station and downstream from Sabinal River near Sabinal (station 08198000).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1890, 40 ft Aug 24, 1919, from information by local residents. Flood of Jul 2, 1932, reached a stage of 31 ft (discharge, 60,000 ft^3/s), from information by Southern Pacific Lines. Information indicates that a flood in 1858 covered the townsite of Sabinal. The stage would have been 70 to 80 ft, which seems unlikely. However, it is possible that a flood occurred in 1858 that covered part of the townsite and was higher than any flood since that date.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 31	2100	735	7.56	Aug 23	1530	19,700	21.32
Mar 16	1900	591	7.14				

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	1.3	.83	2.1	101	3.8	5.3	4.0	1.7	.71	.71	12
2	1.9	1.2	.85	2.1	11	3.7	5.2	4.2	1.6	.71	.69	11
3	1.9	1.2	.92	2.1	4.9	3.6	5.1	4.0	1.5	.71	.58	9.6
4	1.9	1.2	.96	1.9	4.4	3.6	4.9	4.0	1.4	.71	.58	9.2
5	1.9	1.2	1.0	1.9	4.3	3.6	4.7	4.0	1.3	.71	.67	8.7
6	1.9	1.3	.96	1.9	4.2	3.6	4.6	4.0	1.2	.68	1.3	8.2
7	1.9	1.3	.93	1.8	4.1	3.5	4.6	3.9	1.1	.61	1.2	7.9
8	1.9	1.2	.96	1.9	4.0	3.4	4.6	3.9	1.1	.58	1.1	7.7
9	2.1	1.2	.95	1.9	3.8	3.4	4.5	3.8	1.1	.58	.97	7.6
10	2.7	1.3	.93	1.9	4.1	3.3	4.5	3.8	1.1	.58	.93	7.4
11	2.4	1.2	1.0	1.9	4.8	3.1	4.5	3.7	1.7	.58	.90	7.8
12	2.3	1.3	1.0	1.9	4.6	3.1	4.4	3.7	1.2	.58	.85	7.9
13	2.2	1.2	1.2	1.9	4.6	3.1	4.2	3.7	1.2	.58	.80	7.6
14	2.2	1.2	1.3	1.8	5.0	3.1	4.2	3.7	1.2	.58	1.2	7.5
15	2.2	1.1	1.2	1.7	4.5	3.1	4.2	3.6	1.2	.62	1.1	7.7
16	2.0	1.0	1.2	1.7	4.8	190	4.2	3.9	1.2	.65	2.2	8.3
17	1.9	1.0	1.2	1.9	4.6	217	4.0	3.8	1.1	.63	1.5	9.1
18	1.9	1.0	1.2	1.8	4.6	77	4.0	3.5	1.1	.52	1.5	9.0
19	1.9	.96	1.2	1.8	4.6	45	4.0	3.4	.93	.52	1.4	8.9
20	1.9	.93	1.2	1.7	4.4	29	4.0	3.2	.92	.52	1.6	8.9
21	1.9	.98	1.5	1.6	4.3	19	3.9	3.1	.90	.52	1.7	8.7
22	1.9	1.0	2.3	1.6	4.2	14	3.7	2.9	.93	.52	6.3	8.8
23	1.9	.98	2.4	1.6	4.2	10	3.6	2.6	.91	.56	6060	9.3
24	1.9	.93	2.4	1.5	4.1	8.5	3.6	2.5	.85	.58	821	9.3
25	1.7	.86	2.4	1.5	5.0	7.3	3.4	2.4	.84	.58	285	9.8
26	1.5	.85	2.6	1.4	4.3	6.4	3.4	2.3	.77	.58	144	9.9
27	1.4	.85	2.4	1.3	4.0	6.0	3.3	2.1	.70	.58	84	9.7
28	1.4	.73	2.4	1.2	3.9	5.9	3.6	2.1	.65	.58	53	8.2
29	1.4	.71	2.4	1.2	---	5.7	3.8	1.9	.69	.58	34	7.7
30	1.3	.77	2.4	1.2	---	5.3	3.9	1.8	.71	.58	22	8.0
31	1.3	---	2.2	91	---	5.3	---	1.8	---	.64	15	---
TOTAL	58.5	31.95	46.39	142.7	226.3	702.4	125.9	101.3	32.80	18.66	7547.78	261.4
MEAN	1.89	1.07	1.50	4.60	8.08	22.7	4.20	3.27	1.09	.60	243	8.71
MAX	2.7	1.3	2.6	91	101	217	5.3	4.2	1.7	.71	6060	12
MIN	1.3	.71	.83	1.2	3.8	3.1	3.3	1.8	.65	.52	.58	7.4
AC-FT	116	63	92	283	449	1390	250	201	65	37	14970	518

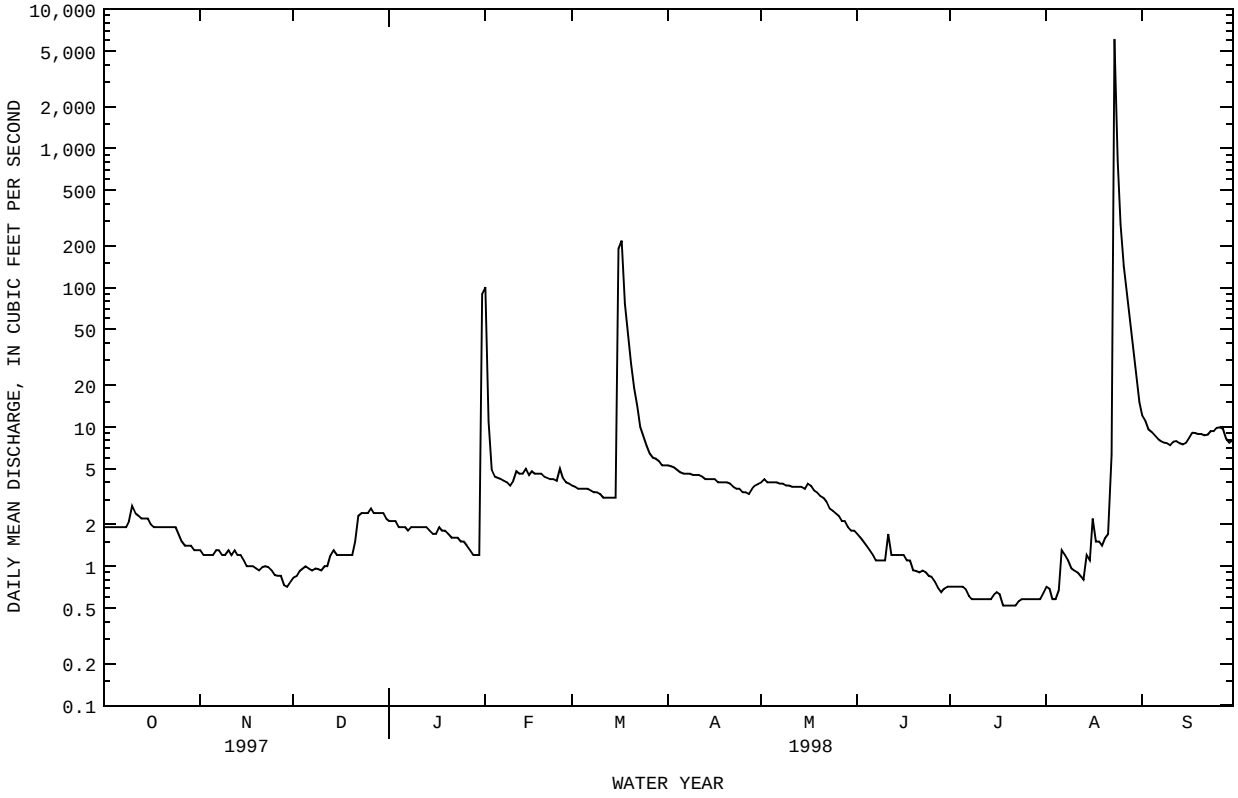
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 1998, BY WATER YEAR (WY)

MEAN	35.1	14.7	19.7	15.8	21.6	25.6	28.1	34.8	118	59.3	37.5	22.5
MAX	261	219	498	292	510	535	349	427	1493	1066	709	210
(WY)	1970	1959	1992	1992	1992	1992	1992	1987	1987	1973	1971	1958
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1953	1953	1953	1953	1953	1956	1956	1953	1953	1953	1962	1962

08198500 SABINAL RIVER AT SABINAL, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1953 - 1998	
ANNUAL TOTAL	30684.00		9296.08			
ANNUAL MEAN	84.1		25.5		36.1	
HIGHEST ANNUAL MEAN					265	1992
LOWEST ANNUAL MEAN					.070	1963
HIGHEST DAILY MEAN	16100	Jun 22	6060	Aug 23	17100	Jun 17 1958
LOWEST DAILY MEAN	.66	Jan 9	.52	Jul 18	.00	Oct 1 1952
ANNUAL SEVEN-DAY MINIMUM	.78	Jan 4	.53	Jul 18	.00	Oct 1 1952
INSTANTANEOUS PEAK FLOW			19700	Aug 23	93500	Jun 22 1997
INSTANTANEOUS PEAK STAGE			21.32	Aug 23	a35.86	Jun 22 1997
ANNUAL RUNOFF (AC-FT)	60860		18440		26130	
10 PERCENT EXCEEDS	59		8.6		44	
50 PERCENT EXCEEDS	3.2		1.9		1.5	
90 PERCENT EXCEEDS	.98		.71		.10	

a From floodmark



08200000 HONDO CREEK NEAR TARPLEY, TX

LOCATION.--Lat 29°34'10", long 99°14'47", Medina County, Hydrologic Unit 12110107, on left bank 460 ft downstream from bridge on Ranch Road 462, 6.3 mi southeast of Tarpley, and 16.6 mi northwest of Hondo.

DRAINAGE AREA.--95.6 mi^2.

PERIOD OF RECORD.--Aug 1952 to current year.
Water-quality records.--Chemical analyses: Nov 1965 to Sep 1969. Chemical and biochemical analyses: Feb 1970 to Sep 1993. Pesticide analyses: Aug 1971 to Sep 1993. Sediment analyses: Nov to Dec 1965.

REVISED RECORDS.--WSP 1712: 1957. WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,169.1 ft, from Magnolia Oil Co. datum. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation. There are several small diversions for irrigation above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Jul 1932 reached a stage of about 26 ft (discharge, 58,500 ft^3/s), from information by local resident. Maximum stage since at least 1907, that of Jun 17, 1958.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 31	1130	1,410	4.50	Aug 23	0745	16,400	14.41
Mar 16	0400	2,320	5.32				

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	e12	5.4	4.9	7.5	72	31	62	23	e9.6	e5.2	.87	62
2	e12	5.1	5.5	7.9	50	29	60	22	e8.8	e4.7	.86	56
3	e12	5.1	5.8	7.5	43	30	57	22	e8.3	4.3	.78	51
4	e12	5.2	4.8	7.4	41	29	55	22	e7.8	e3.8	.67	48
5	e11	5.5	5.0	7.6	43	30	53	22	e7.4	e4.2	1.2	45
6	e11	4.9	5.0	8.4	37	28	51	21	e7.2	e3.6	12	42
7	e11	4.6	5.8	7.9	35	28	51	20	e6.9	4.8	3.4	40
8	e10	4.6	5.8	8.6	33	26	49	19	e6.8	4.0	8.5	38
9	e10	5.0	5.2	8.5	32	24	45	18	6.5	3.8	6.7	36
10	e9.8	5.2	4.7	8.5	32	23	44	17	26	3.5	5.5	34
11	e13	5.3	4.6	9.2	29	23	43	16	69	3.3	4.2	40
12	e18	11	4.4	9.1	29	24	43	16	9.4	2.8	3.5	38
13	e14	9.5	4.5	9.0	27	27	42	16	5.0	e2.8	3.0	34
14	e13	7.8	4.6	8.7	36	33	40	16	e4.9	e2.9	5.2	31
15	e12	7.2	4.5	8.4	35	41	40	16	e4.8	e4.0	7.7	29
16	e12	6.4	4.4	8.0	38	575	38	15	e4.7	e3.9	9.0	32
17	e11	6.2	4.3	7.7	34	197	35	15	e4.6	e3.8	7.3	30
18	e10	6.4	4.1	7.6	34	164	34	14	e4.5	e3.2	6.4	28
19	e9.0	6.3	4.3	7.1	34	152	33	13	e4.4	e3.0	6.2	27
20	e8.8	6.3	14	7.4	34	139	34	13	e4.3	e2.9	5.1	26
21	e7.5	6.1	14	7.6	35	128	31	12	e4.2	2.8	4.7	24
22	e7.8	6.0	7.0	7.0	39	123	31	12	e4.1	2.5	163	23
23	e8.0	5.8	9.6	6.8	34	117	30	12	e4.0	2.0	3060	22
24	e7.9	5.7	11	6.8	33	114	27	12	e4.0	1.9	344	21
25	e7.8	5.9	9.1	6.7	34	103	27	12	e3.8	1.8	219	20
26	e6.9	6.0	12	6.8	41	93	28	12	e3.6	1.5	160	21
27	e6.7	5.6	9.3	6.1	34	91	27	32	e3.6	1.4	129	19
28	e6.6	5.9	8.7	6.2	32	79	25	37	e3.9	1.3	107	18
29	e6.3	5.5	8.0	6.3	---	75	25	e16	e4.0	1.2	89	17
30	e6.1	5.0	7.8	6.3	---	74	24	e11	e5.8	.97	76	16
31	e5.9	---	7.5	260	---	66	---	e10	---	.85	74	---
TOTAL	309.1	180.5	210.2	488.6	1030	2716	1184	534	251.9	92.72	4523.78	968
MEAN	9.97	6.02	6.78	15.8	36.8	87.6	39.5	17.2	8.40	2.99	146	32.3
MAX	18	11	14	260	72	575	62	37	69	5.2	3060	62
MIN	5.9	4.6	4.1	6.1	27	23	24	10	3.6	.85	.67	16
AC-FT	613	358	417	969	2040	5390	2350	1060	500	184	8970	1920
CFSM	.10	.06	.07	.16	.38	.92	.41	.18	.09	.03	1.53	.34
IN.	.12	.07	.08	.19	.40	1.06	.46	.21	.10	.04	1.76	.38

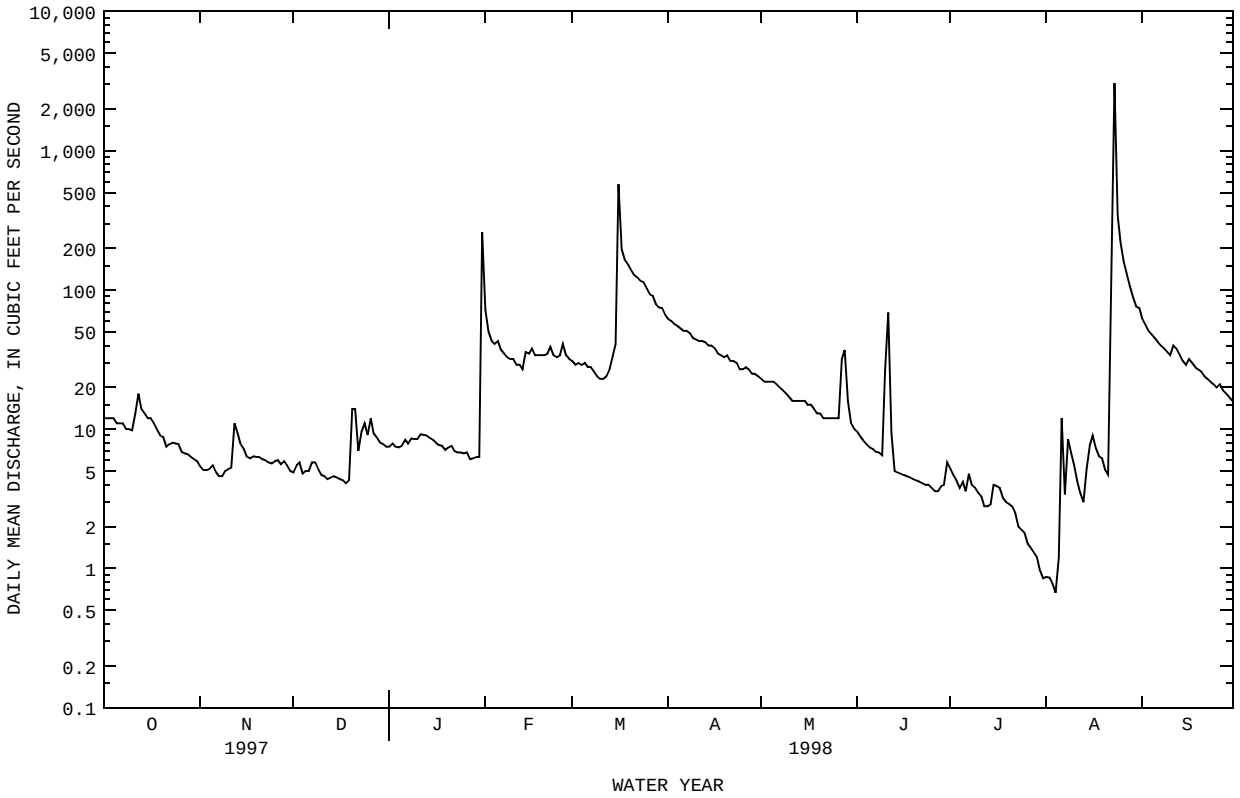
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1998, BY WATER YEAR (WY)

MEAN	33.3	24.3	32.5	26.4	34.4	37.3	38.0	66.0	100	38.6	38.4	28.2
MAX	254	134	541	172	342	323	178	402	1056	574	654	153
(WY)	1972	1959	1992	1992	1992	1992	1992	1987	1987	1973	1971	1958
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1956	1955	1955	1956	1956	1956	1956	1956	1996	1996	1984	1955

08200000 HONDO CREEK NEAR TARPLEY, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1952 - 1998	
ANNUAL TOTAL	29420.5		12488.80			
ANNUAL MEAN	80.6		34.2		41.5	
HIGHEST ANNUAL MEAN					205	1992
LOWEST ANNUAL MEAN					.41	1956
HIGHEST DAILY MEAN	11100	Jun 22	3060	Aug 23	11900	Jun 17 1958
LOWEST DAILY MEAN	1.5	Feb 4	.67	Aug 4	.00	Sep 1 1952
ANNUAL SEVEN-DAY MINIMUM	1.6	Jan 30	.89	Jul 29	.00	Sep 1 1952
INSTANTANEOUS PEAK FLOW			16400	Aug 23	76900	Jun 22 1997
INSTANTANEOUS PEAK STAGE			14.41	Aug 23	29.64	Jun 22 1997
ANNUAL RUNOFF (AC-FT)	58360		24770		30070	
ANNUAL RUNOFF (CFSM)	.84		.36		.43	
ANNUAL RUNOFF (INCHES)	11.45		4.86		5.90	
10 PERCENT EXCEEDS	102		52		82	
50 PERCENT EXCEEDS	18		10		12	
90 PERCENT EXCEEDS	2.9		4.0		.14	

e Estimated



08200700 HONDO CREEK AT KING WATERHOLE NEAR HONDO, TX

LOCATION.--Lat 29°23'26", long 99°09'04", Medina County, Hydrologic Unit 12110107, on left bank 0.3 mi downstream from county road low-water crossing, 3.1 mi north of Hondo, 7.8 mi upstream from Verde Creek, and 55.4 mi upstream from mouth.

DRAINAGE AREA.--149 mi^2.

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

REVISED RECORDS.--WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 897.87 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. No known regulation. Most of the low flow enters the Edwards and associated limestones in the Balcones Fault Zone, that crosses the basin between Tarpley (station 08200000) and this station. There are several small diversions above station for irrigation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1875, 21 ft in Sep 1919, from information by local resident. Other outstanding floods occurred in Jul 1932, stage 18 ft, and Jun 17, 1958, stage 17 ft.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 16	0530	4,900	6.27	Aug 23	1030	12,600	9.17

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	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	1040	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	11	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.35	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3090	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	134	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.4	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	1051.01	0.00	0.00	0.00	0.00	3229.75	0.00
MEAN	.000	.000	.000	.000	.000	33.9	.000	.000	.000	.000	104	.000
MAX	.00	.00	.00	.00	.00	1040	.00	.00	.00	.00	3090	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	2080	.00	.00	.00	.00	6410	.00

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

MEAN	8.86	.49	11.0	2.89	7.21	9.48	7.37	30.5	65.0	14.6	35.6	7.36
MAX	160	10.8	379	56.9	187	168	89.5	468	1060	509	1015	151
(WY)	1972	1972	1992	1968	1992	1992	1981	1987	1987	1973	1971	1980
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1962	1961	1962	1961	1962	1962	1961	1961	1962	1962	1961	1961

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1961 - 1998	
ANNUAL TOTAL	17068.33		4280.76			
ANNUAL MEAN	46.8		11.7		16.7	
HIGHEST ANNUAL MEAN					128	1987
LOWEST ANNUAL MEAN					.000	1962
HIGHEST DAILY MEAN	13900	Jun 22	3090	Aug 23	13900	Jun 22 1997
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Oct 1 1960
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Oct 1 1960
INSTANTANEOUS PEAK FLOW			12600	Aug 23	63600	Jun 22 1997
INSTANTANEOUS PEAK STAGE			9.17	Aug 23	18.96	Jun 22 1997
ANNUAL RUNOFF (AC-FT)	33860		8490		12120	
10 PERCENT EXCEEDS	.00		.00		.26	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

08201500 SECO CREEK AT MILLER RANCH NEAR UTOPIA, TX

LOCATION.--Lat 29°34'23", long 99°24'10", Medina County, Hydrologic Unit 12110107, on right bank 200 ft upstream from county road crossing, 4.5 mi downstream from Cascade Creek, 7.9 mi southeast of Utopia, and 58.0 mi upstream from mouth.

DRAINAGE AREA.--45.0 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1961 to current year.

REVISED RECORDS.--WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 1,265.8 ft, from Magnolia Oil Company datum, adjustment unknown. 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 1901, 16.4 ft Jun 17, 1958, from floodmarks (discharge, 52,600 ft^3/s, by slope-area measurement of peak flow).

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 31	0945	1,090	3.78	Aug 23	0645	13,000	a9.14

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	2.5	3.8	2.7	2.7	42	14	29	8.1	3.2	1.9	.30	54
2	2.4	3.5	3.0	2.8	30	14	28	7.9	3.0	1.7	.28	49
3	2.3	3.5	3.3	2.8	27	14	26	7.7	2.9	1.6	.27	42
4	2.4	3.5	2.7	2.8	24	14	25	7.6	2.9	1.7	.25	39
5	2.3	3.6	2.6	2.9	23	14	24	7.6	3.1	1.9	.24	37
6	5.9	3.3	2.6	16	20	13	23	7.0	2.8	1.6	3.9	34
7	5.3	3.1	2.9	13	19	14	22	6.9	2.5	1.6	21	33
8	4.8	3.2	3.2	7.9	18	12	20	6.5	3.1	1.4	10	31
9	7.2	3.3	2.7	6.1	17	12	19	5.8	2.7	1.3	2.1	29
10	6.5	3.3	2.5	5.4	17	12	18	5.5	2.6	1.3	1.4	28
11	9.6	3.4	2.5	5.3	15	12	17	5.3	23	1.2	1.2	29
12	14	6.9	2.3	4.8	14	12	16	5.4	6.1	1.2	1.1	27
13	10	5.0	2.4	4.3	14	13	16	5.3	4.7	1.2	1.0	24
14	9.1	4.1	2.5	4.1	18	15	16	5.2	4.5	1.2	1.6	23
15	9.0	3.9	2.4	3.8	16	18	15	5.1	3.7	1.4	4.1	21
16	8.3	3.6	2.4	3.6	19	e170	14	4.8	3.3	1.4	1.8	22
17	7.5	3.4	2.4	3.5	17	87	13	4.8	3.2	1.2	15	22
18	6.8	3.4	2.4	3.4	16	78	13	4.6	3.2	1.2	7.4	20
19	6.3	3.4	2.4	3.1	16	69	13	4.4	3.0	1.1	4.1	19
20	5.9	3.4	3.3	3.2	15	62	12	4.3	2.8	1.1	2.7	17
21	5.7	3.4	3.2	3.5	18	59	11	4.1	2.6	1.0	2.6	17
22	6.5	3.2	2.4	3.1	18	55	11	4.0	2.4	.96	40	16
23	7.4	3.1	3.9	3.0	16	51	11	3.9	2.3	.87	1430	15
24	5.6	3.1	4.4	2.9	16	47	e10	4.0	2.1	.80	209	14
25	5.1	3.2	2.8	2.8	16	44	e10	3.8	2.0	.71	148	14
26	4.4	3.3	3.7	2.9	17	43	e10	4.0	2.0	.62	115	14
27	4.3	3.1	3.1	2.5	15	42	9.6	5.6	2.0	.54	98	13
28	4.3	3.2	2.8	2.6	15	39	9.0	4.2	1.8	.49	83	12
29	4.4	3.0	2.6	2.6	---	36	8.9	3.7	1.8	.44	73	12
30	4.4	2.8	2.6	2.6	---	34	8.3	3.5	2.2	.40	65	11
31	4.3	---	2.6	e121	---	31	---	3.4	---	.35	62	---
TOTAL	184.5	106.0	87.3	251.0	528	1150	477.8	164.0	107.5	35.38	2405.34	738
MEAN	5.95	3.53	2.82	8.10	18.9	37.1	15.9	5.29	3.58	1.14	77.6	24.6
MAX	14	6.9	4.4	121	42	170	29	8.1	23	1.9	1430	54
MIN	2.3	2.8	2.3	2.5	14	12	8.3	3.4	1.8	.35	.24	11
AC-FT	366	210	173	498	1050	2280	948	325	213	70	4770	1460
CFSM	.13	.08	.06	.18	.42	.82	.35	.12	.08	.03	1.72	.55
IN.	.15	.09	.07	.21	.44	.95	.39	.14	.09	.03	1.99	.61

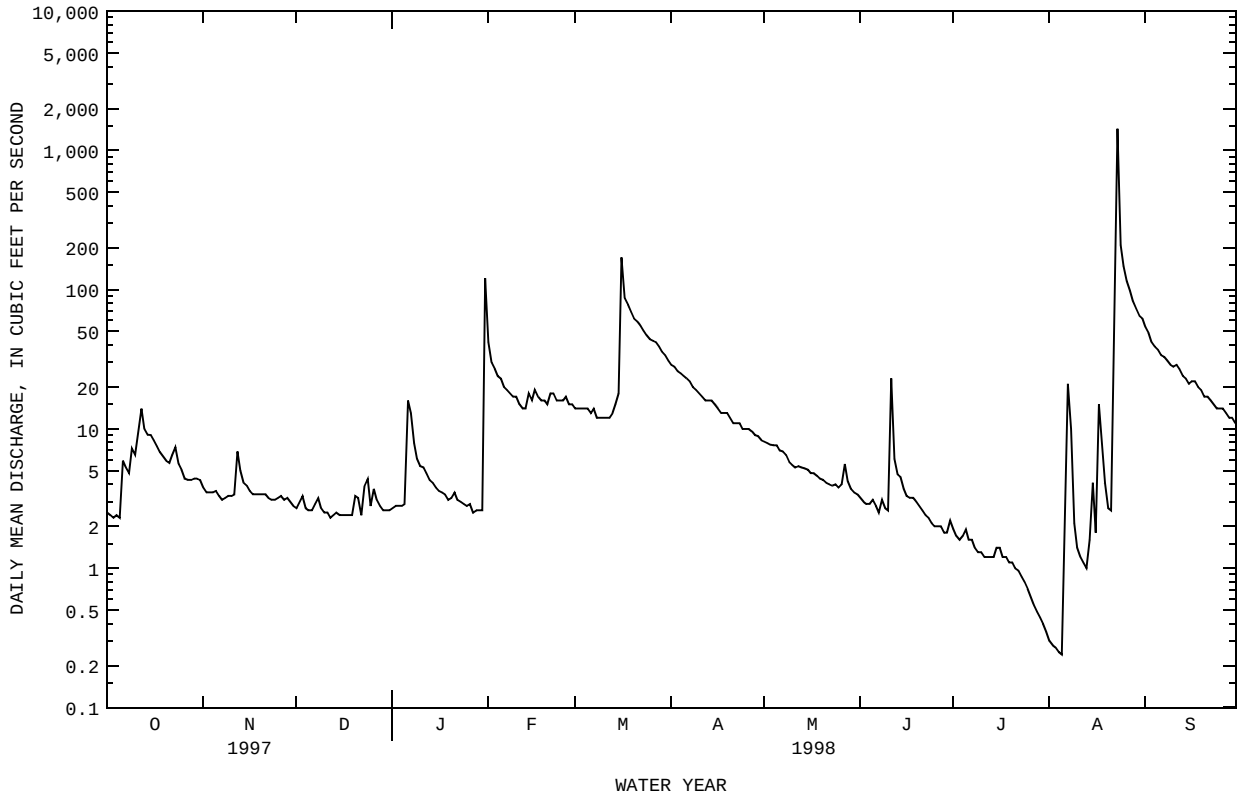
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1998, BY WATER YEAR (WY)

MEAN	18.3	11.1	16.6	12.4	14.7	16.6	16.0	27.0	43.8	22.9	22.3	15.2
MAX	169	48.8	241	92.9	136	134	91.1	120	471	276	279	63.1
(WY)	1972	1987	1992	1992	1992	1992	1992	1987	1987	1973	1971	1967
MIN	.24	.50	.40	.67	1.08	.70	1.29	.64	.15	.010	.005	.000
(WY)	1964	1964	1964	1963	1963	1963	1996	1984	1989	1989	1989	1989

08201500 SECO CREEK AT MILLER RANCH NEAR UTOPIA, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1961 - 1998	
ANNUAL TOTAL	13913.1		6234.82			
ANNUAL MEAN	38.1		17.1		19.8	
HIGHEST ANNUAL MEAN					87.4	1992
LOWEST ANNUAL MEAN					.97	1989
HIGHEST DAILY MEAN	5000	Jun 22	1430	Aug 23	5000	Jun 22 1997
LOWEST DAILY MEAN	2.0	Feb 5	.24	Aug 5	.00	Jul 30 1963
ANNUAL SEVEN-DAY MINIMUM	2.2	Jan 31	.30	Jul 30	.00	Jul 30 1963
INSTANTANEOUS PEAK FLOW			13000	Aug 23	64900	Jun 22 1997
INSTANTANEOUS PEAK STAGE			a9.14	Aug 23	a17.70	Jun 22 1997
ANNUAL RUNOFF (AC-FT)	27600		12370		14360	
ANNUAL RUNOFF (CFSM)	.85		.38		.44	
ANNUAL RUNOFF (INCHES)	11.50		5.15		5.98	
10 PERCENT EXCEEDS	59		30		40	
50 PERCENT EXCEEDS	7.9		4.8		5.3	
90 PERCENT EXCEEDS	2.5		1.6		.80	

e Estimated
a From floodmark



08201500 SECO CREEK AT MILLER RANCH NEAR UTOPIA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: November 1965 to September 1969. Chemical and biochemical analyses: March 1970 to 1993, August 1994 to current year. Pesticide analyses: January 1974 to 1993, August 1994 to current year. Bacteria analyses: November 1976 to current year. Sediment analyses: November 1965, August 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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
DEC												
17...	1100	2.6	435	8.10	11.0	10.5	98	.2	K2	48	200	47
JUN												
10...	1130	2.6	377	7.80	25.5	6.60	84	.000	31	1500	180	49
JUL												
16...	1245	3.4	345	8.1	34.0	--	--	.2	K9	37	160	45
SEP												
15...	1120	21	400	8.00	26.0	8.60	111	.4	29	95	190	28

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS 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												
17...	61	12	6.8	.2	7	.9	160	47	12	.2	10	245
JUN												
10...	53	11	7.3	.2	8	1.0	130	43	11	.2	14	219
JUL												
16...	46	9.7	7.0	.2	9	1.1	110	44	13	.3	14	201
SEP												
15...	59	10	5.9	.2	6	1.1	160	30	9.7	.2	12	228

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)	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)
DEC												
17...	--	<.01	.25	<.02	--	<.1	<.01	<.01	--	<1	24	<1.0
JUN												
10...	.092	.02	.11	.06	.04	.1	<.01	.02	.05	<1	26	1.5
JUL												
16...	.074	.01	.09	.04	.09	.1	<.01	.02	.05	<1	24	<1.0
SEP												
15...	.411	.01	.42	.03	--	<.1	.01	<.01	--	<1	27	<1.0

DATE	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	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)
DEC											
17...	<8	<14	<12	<10	<10	<1	5	<4	<.1	<60	<40
JUN											
10...	<8	<14	<12	<10	<10	<1	<4	<4	<.1	<60	<40
JUL											
16...	<8	<14	<12	<10	<10	<1	6	<4	<.1	<60	<40
SEP											
15...	<8	<14	<12	<10	<10	<1	5	<4	<.1	<60	<40

08201500 SECO CREEK AT MILLER RANCH NEAR UTOPIA, TX--Continued

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

DATE	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)	2,4,5-T TOTAL (UG/L) (39740)	2,4-D, TOTAL (UG/L) (39730)	SILVEX, TOTAL (UG/L) (39760)	DICAMBA TOTAL (UG/L) (82052)	2, 4-DP TOTAL (UG/L) (82183)	PIC-LORAM UNFILT RECOVER (UG/L) (39720)
DEC											
17...	<1	<4	400	<10	<20	<.01	<.01	<.01	<.01	<.01	<.01
JUN											
10...	<1	<4	400	<10	<20	<.01	<.01	<.01	<.01	<.01	<.01
JUL											
16...	<1	<4	350	<10	<20	<.01	<.01	<.01	<.01	<.01	<.01
SEP											
15...	<1	<4	390	<10	<20	<.01	<.01	<.01	<.01	<.01	<.01

08202450 SECO CREEK RESERVOIR INFLOW NEAR UTOPIA, TX

LOCATION.--Lat 29°31'34", long 99°23'42", Medina County, Hydrologic Unit 12110107, on right bank 0.7 mi east of Seco Valley Road, 0.8 mi upstream from Seco Creek Reservoir dam, 2.8 mi upstream from Little Seco Creek, 4.2 mi downstream from gaging station 08201500, 10.0 mi southeast of Utopia, and 53.8 mi upstream from mouth.

DRAINAGE AREA.--59.5 mi^2.

PERIOD OF RECORD.--March 1991 to current year. Prior to October 1995, published in OFR 98-627.

GAGE.--Water-stage recorder. Datum of gage is 1199.47 ft above sea level, from Edwards Aquifer Authority datum, adjustment unknown. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Most of the low flow from Seco Creek enters the Edwards and associated limestones in the Balcones Fault Zone, that crosses the basin between Miller Ranch (station 08201500) and this station. No known diversions above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,000 ft^3/s Jun 22, 1997 (gage height, 23.71 ft, from floodmark), from rating curve extended above slope-area measurement of 17,000 ft^3/s; no flow most of time.

EXTREMES FOR 1996 WATER YEAR.--Maximum discharge, 7.1 ft^3/s Sep 15 (gage height, 4.64 ft); no flow most of time.

PEAK DISCHARGES FOR 1997 WATER YEAR.--Peak discharges greater than base discharge of 600 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 3	2330	2,450	a9.84	Jun 22	0430	40,000	a23.71
Apr 26	0430	1,600	8.79	Jun 22	0830	6,150	12.73

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 31	1100	830	a7.54	Aug 23	0730	10,900	a15.21

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.65
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.65
MEAN	.002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.022
MAX	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.65
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.3

08202450 SECO CREEK RESERVOIR INFLOW NEAR UTOPIA, TX--Continued

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	.00	.00	.00	.00	.00	.00	.00	26	33	99	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	23	28	83	.00	.00
3	.00	.00	.00	.00	.00	.00	138	19	25	76	.00	.00
4	.00	.00	.00	.00	.00	.00	231	17	22	69	.00	.00
5	.00	.00	.00	.00	.00	.00	94	14	21	61	.00	.00
6	.00	.00	.00	.00	.00	.00	69	13	25	52	.00	.00
7	.00	.00	.00	.00	.00	.00	55	12	19	47	.00	.00
8	.00	.00	.00	.00	.00	.00	47	10	16	43	.00	.00
9	.00	.00	.00	.00	.00	.00	39	12	28	40	.00	.00
10	.00	.00	.00	.00	.00	.00	35	8.9	17	36	.00	.00
11	.00	.00	.00	.00	.00	44	33	6.5	14	34	.00	.00
12	.00	.00	.00	.00	.00	33	27	43	11	28	.00	.00
13	.00	.00	.00	.00	.00	20	26	32	9.5	25	.00	.00
14	.00	.00	.00	.00	.00	13	23	13	8.2	23	.00	.00
15	.00	.00	.00	.00	.00	9.9	20	10	54	20	.00	.00
16	.00	.00	.00	.00	.00	9.3	17	9.2	9.2	17	.00	.00
17	.00	.00	.00	.00	.00	8.0	15	7.2	7.5	14	.00	.00
18	.00	.00	.00	.00	.00	5.7	12	5.7	4.7	12	.00	.00
19	.00	.00	.00	.00	.00	2.7	13	5.0	3.4	10	.00	.00
20	.00	.00	.00	.00	.00	1.2	9.0	44	2.2	8.9	.00	.00
21	.00	.00	.00	.00	.00	.02	6.4	21	8.2	7.9	.00	.00
22	.00	.00	.00	.00	.00	.00	4.0	23	e3590	7.6	.00	.00
23	.00	.00	.00	.00	.00	.00	2.4	102	e407	6.3	.00	.00
24	.00	.00	.00	.00	.00	.00	1.2	76	318	5.0	.00	.00
25	.00	.00	.00	.00	.00	.00	7.1	67	255	3.9	.00	.00
26	.00	.00	.00	.00	.00	.00	254	59	205	3.0	.00	.00
27	.00	.00	.00	.00	.00	.00	47	52	171	2.2	.00	.00
28	64	.00	.00	.00	.00	.00	41	52	156	.20	.00	.00
29	8.1	.00	.00	.00	---	.00	34	44	138	.00	.00	.00
30	.00	.00	.00	.00	---	.00	30	39	110	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	36	---	.00	.00	---
TOTAL	72.10	0.00	0.00	0.00	0.00	146.82	1330.10	901.5	5715.9	834.00	0.00	0.00
MEAN	2.33	.000	.000	.000	.000	4.74	44.3	29.1	191	26.9	.000	.000
MAX	64	.00	.00	.00	.00	44	254	102	3590	99	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	5.0	2.2	.00	.00	.00
AC-FT	143	.00	.00	.00	.00	291	2640	1790	11340	1650	.00	.00

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	.00	23	.00	7.7	.00	.00	.00	.00	36
2	.00	.00	.00	.00	16	.00	6.7	.00	.00	.00	.00	28
3	.00	.00	.00	.00	11	.00	4.8	.00	.00	.00	.00	20
4	.00	.00	.00	.00	6.7	.00	3.2	.00	.00	.00	.00	17
5	.00	.00	.00	.00	6.3	.00	2.2	.00	.00	.00	.00	14
6	.00	.00	.00	.00	2.6	.00	1.7	.00	.00	.00	.00	13
7	.00	.00	.00	.00	.83	.00	2.0	.00	.00	.00	.00	11
8	.00	.00	.00	.00	.05	.00	.06	.00	.00	.00	5.8	9.7
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	8.4
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	6.2
11	.00	.00	.00	.00	.00	.00	.00	.00	6.3	.00	.00	7.7
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	7.3
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.3
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.1
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.93
16	.00	.00	.00	.00	.18	163	.00	.00	.00	.00	.00	1.7
17	.00	.00	.00	.00	.10	81	.00	.00	.00	.00	.00	2.3
18	.00	.00	.00	.00	.00	62	.00	.00	.00	.00	.00	.05
19	.00	.00	.00	.00	.00	51	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	42	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	37	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.10	33	.00	.00	.00	.00	21	.00
23	.00	.00	.00	.00	.00	28	.00	.00	.00	.00	1840	.00
24	.00	.00	.00	.00	.00	24	.00	.00	.00	.00	233	.00
25	.00	.00	.00	.00	.00	20	.00	.00	.00	.00	143	.00
26	.00	.00	.00	.00	.36	18	.00	.00	.00	.00	101	.00
27	.00	.00	.00	.00	.00	17	.00	.00	.00	.00	78	.00
28	.00	.00	.00	.00	.00	14	.00	.00	.00	.00	62	.00
29	.00	.00	.00	.00	---	12	.00	.00	.00	.00	51	.00
30	.00	.00	.00	.00	---	11	.00	.00	.00	.00	43	.00
31	.00	---	.00	92	---	8.3	---	.00	---	.00	41	---
TOTAL	0.00	0.00	0.00	92.00	67.22	621.30	28.36	0.00	6.30	0.00	2618.80	191.68
MEAN	.000	.000	.000	2.97	2.40	20.0	.95	.000	.21	.000	84.5	6.39
MAX	.00	.00	.00	92	23	163	7.7	.00	6.3	.00	1840	36
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	182	133	1230	56	.00	12	.00	5190	380

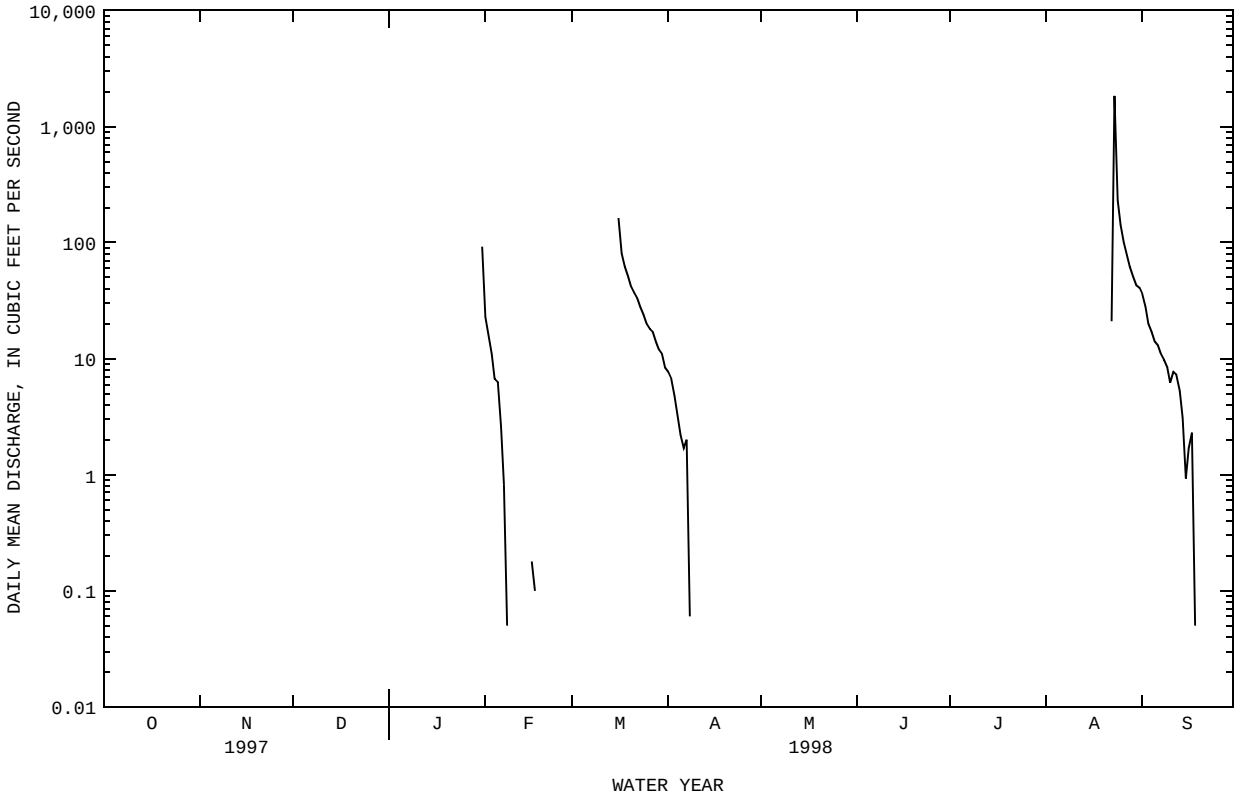
08202450 SECO CREEK RESERVOIR INFLOW NEAR UTOPIA, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.33	.30	19.6	7.47	16.1	18.6	13.6	15.1	38.1	3.96	10.6	4.17
MAX	2.33	1.34	136	48.4	107	105	63.8	48.6	191	26.9	84.5	16.9
(WY)	1997	1993	1992	1992	1992	1992	1992	1992	1997	1997	1998	1995
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1992	1994	1993	1994	1993	1994	1993	1996	1991	1993	1991	1992

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1991 - 1998	
ANNUAL TOTAL	8928.32		3625.66			
ANNUAL MEAN	24.5		9.93		13.1	
HIGHEST ANNUAL MEAN					52.0	1992
LOWEST ANNUAL MEAN					.002	1996
HIGHEST DAILY MEAN	3590	Jun 22	1840	Aug 23	3590	Jun 22 1997
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Mar 15 1991
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Mar 15 1991
INSTANTANEOUS PEAK FLOW			10900	Aug 23	40000	Jun 22 1997
INSTANTANEOUS PEAK STAGE			a15.21	Aug 23	a23.71	Jun 22 1997
ANNUAL RUNOFF (AC-FT)	17710		7190		9500	
10 PERCENT EXCEEDS	42		10		20	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated
a From floodmark.



08202700 SECO CREEK AT ROWE RANCH NEAR D'HANIS, TX

LOCATION.--Lat 29°21'43", long 99°17'05", Medina County, Hydrologic Unit 12110107, on left bank 2.9 mi north of D'Hanis and 8.0 mi downstream from Rocky Creek.

DRAINAGE AREA.--168 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 900.88 ft above sea level. Prior to Oct 1970, published as "at Crook Ranch, near D'Hanis". Satellite telemeter at station.

REMARKS.--Records good. No known regulation or diversions. All of low flow from Seco Creek enters the Edwards and associated limestones in the Balcones Fault Zone that crosses the basin between Miller Ranch (station 08201500) and this station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1852, 35.7 ft May 31, 1935, from information by local resident. Other floods occurred Aug 31, 1894, 33 ft; Sep 1919, 28 ft; Jul 2, 1932, 28.2 ft (discharge, 35,800 ft^3/s, by slope-area measurement); and Jun 17, 1958, 32.4 ft.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 16	0845	871	a10.25	Aug 23	1030	19,200	a20.80

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	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	214	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	3.0	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	4470	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	106	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	34	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	14	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	7.3	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	3.0	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.85	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.12	---
TOTAL	0.00	0.00	0.00	0.00	0.00	217.00	0.00	0.00	0.00	0.00	4657.27	0.00
MEAN	.000	.000	.000	.000	.000	7.00	.000	.000	.000	.000	150	.000
MAX	.00	.00	.00	.00	.00	214	.00	.00	.00	.00	4470	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	430	.00	.00	.00	.00	9240	.00

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

MEAN	6.62	.002	4.57	.66	1.00	1.79	3.48	11.8	29.5	8.12	29.9	4.43
MAX	183	.057	117	24.7	33.2	27.0	74.6	277	411	275	862	58.5
(WY)	1972	1977	1992	1968	1992	1992	1981	1987	1997	1973	1971	1980
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1962	1961	1961	1961	1961	1961	1961	1961	1962	1962	1961	1961

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1961 - 1998	
ANNUAL TOTAL	12639.12		4874.27			
ANNUAL MEAN	34.6		13.4		8.64	
HIGHEST ANNUAL MEAN					73.3	1971
LOWEST ANNUAL MEAN					.000	1962
HIGHEST DAILY MEAN	11800	Jun 22	4470	Aug 23	11800	Jun 22 1997
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Nov 1 1960
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Nov 1 1960
INSTANTANEOUS PEAK FLOW			19200	Aug 23	51400	Jun 22 1997
INSTANTANEOUS PEAK STAGE			a20.80	Aug 23	a30.62	Jun 22 1997
ANNUAL RUNOFF (AC-FT)	25070		9670		6260	
10 PERCENT EXCEEDS	.00		.00		.00	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated
a From floodmark

08202800 PARKERS CREEK RESERVOIR NEAR D'HANIS, TX

LOCATION.--Lat 29°26'42", long 99°15'09", Medina County, Hydrologic Unit 12110107, on crest of Parkers Creek Reservoir Dam on Parkers Creek, 1.9 mi east of Ranch Road 1796 bridge over Seco Creek, 7.9 mi north of D'Hanis, and 20.6 mi upstream from mouth.

DRAINAGE AREA.--10.0 mi^2.

PERIOD OF RECORD.--November 1990 to September 1998 (discontinued). Prior to October 1995, published in OFR 98-627.

GAGE.--Water-stage recorder. Datum of gage is 982.00 ft above sea level, from Lodal and Bain Engineers datum, adjustment unknown. Satellite telemeter at station.

REMARKS.--The reservoir is formed by a 1,500 ft long rock face, earthfill embankment, a drop-inlet structure and a 300-ft-wide earthen emergency spillway. The dam was completed on Mar 18, 1974 for the purposes of flood control and for retaining runoff for the natural recharge of the Edwards Aquifer. The emergency spillway has a natural approach and discharge channel cut through the left abutment. The service spillway consists of an uncontrolled drop inlet, two secondary gate inlets, and a low-flow inlet. The uncontrolled drop inlet has an effective crest width of 20 feet. The two secondary gate inlets are gates 2.5 feet wide by 3 feet high located on either side of the main drop inlet. The low-flow inlet is a gate valve that regulates the flow through an 8-inch-diameter pipe located on the upstream side of the drop inlet. The controls for the low-flow and secondary gate inlets are located on top of the inlet structure and are operated manually. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Gage height (feet)
Top of dam	56.7
Emergency spillway crest	44.6
Conservation pool (service spillway crest)	30.0
Secondary gated inlet crest	24.7
Lowest gated outlet (invert)	13.0

COOPERATION.--Capacity table computed Mar 8, 1978, provided by Lodal and Bain Engineers of San Antonio, Texas.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 2,770 acre-ft Jun 23, 1997 at 0300 hours (gage height, 46.13 ft, from floodmark); no contents most of time.

EXTREMES FOR 1996 WATER YEAR.--Maximum contents, 1.2 acre-ft Jun 26 at 1700 hours (gage height, 5.74 ft); no contents most of time.

EXTREMES FOR 1997 WATER YEAR.--Maximum contents, 2,770 acre-ft Jun 23 at 0300 hours (gage height, 46.13 ft, from floodmark); no contents most of time.

EXTREMES FOR 1998 WATER YEAR.--Maximum contents, 936 acre-ft Aug 23 at 1045 hours (gage height 34.62 ft, from floodmark); no contents most of time.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	1.2	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	e.67	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
MAX	.00	.00	.00	.00	.00	.00	.00	.00	1.2	.00	.00	.00

08202800 PARKERS CREEK RESERVOIR NEAR D'HANIS, TX--Continued

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	36	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	e28	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	e17	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	7.04	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	1.72	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	e.17	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	14	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	12	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	7.2	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	4.1	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	2.4	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	1.4	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	5.9	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	2710	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	2770	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	118	1870	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	83	883	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	38	459	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	17	273	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	5.7	122	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	1.7	27	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	e.53	2.7	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
MAX	.00	.00	.00	.00	.00	.00	36	118	2770	.00	.00	.00

RESERVOIR STORAGE (ACRE-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	e.00	.00	.00	.00	e.65	.00	.00	.00	.00	.00	.00	.00
2	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	392	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	304	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	180	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	90	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	42	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	18	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	6.0	.00	.00	.00	.00	76	.00
23	.00	.00	.00	.00	.00	2.1	.00	.00	.00	.00	936	.00
24	.00	.00	.00	.00	.00	e.34	.00	.00	.00	.00	593	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	356	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	190	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	64	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	15	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	1.5	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	1.2	---	.00	---	.00	---	.00	.00	---
MAX	.00	.00	.00	1.2	.65	392	.00	.00	.00	.00	936	.00

e Estimated

08205500 FRIO RIVER NEAR DERBY, TX

LOCATION.--Lat 28°44'11", long 99°08'40", Frio County, Hydrologic Unit 12110106, on right bank 17 ft downstream from centerline of railroad tracks, 35 ft right of the Missouri Pacific Railroad Co. bridge abutment, 167 ft downstream from Interstate Highway 35, 917 ft downstream from Leona River, 2.5 mi south of Derby, and 115.1 mi upstream from mouth.

DRAINAGE AREA.--3,429 mi^2.

PERIOD OF RECORD.--Aug 1915 to current year.

REVISED RECORDS.--WSP 568: 1915-16, 1918-22. WSP 1312: 1917-18(M). WSP 1923: 1954. WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 449.11 ft above sea level. Aug 1, 1915, to Apr 21, 1931, nonrecording gage, and Apr 22, 1931, to Mar 6, 1940, water-stage recorder at same site and datum. Mar 7, 1940, to May 4, 1972, water-stage recorder, and May 5 to Nov 1, 1972, nonrecording gage at site 167 ft upstream at same datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation. Part of flow of the Frio River and its headwater tributaries enters the Edwards and associated limestones in the Balcones Fault Zone upstream from U.S. Highway 90. There is considerable loss of flow into various permeable formations downstream from the Balcones Fault Zone. There are many small diversions for irrigation above station. Maximum stage since at least 1860 that of Jul 4, 1932.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 18	1100	4,000	7.92	Aug 25	1430	14,600	12.95

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

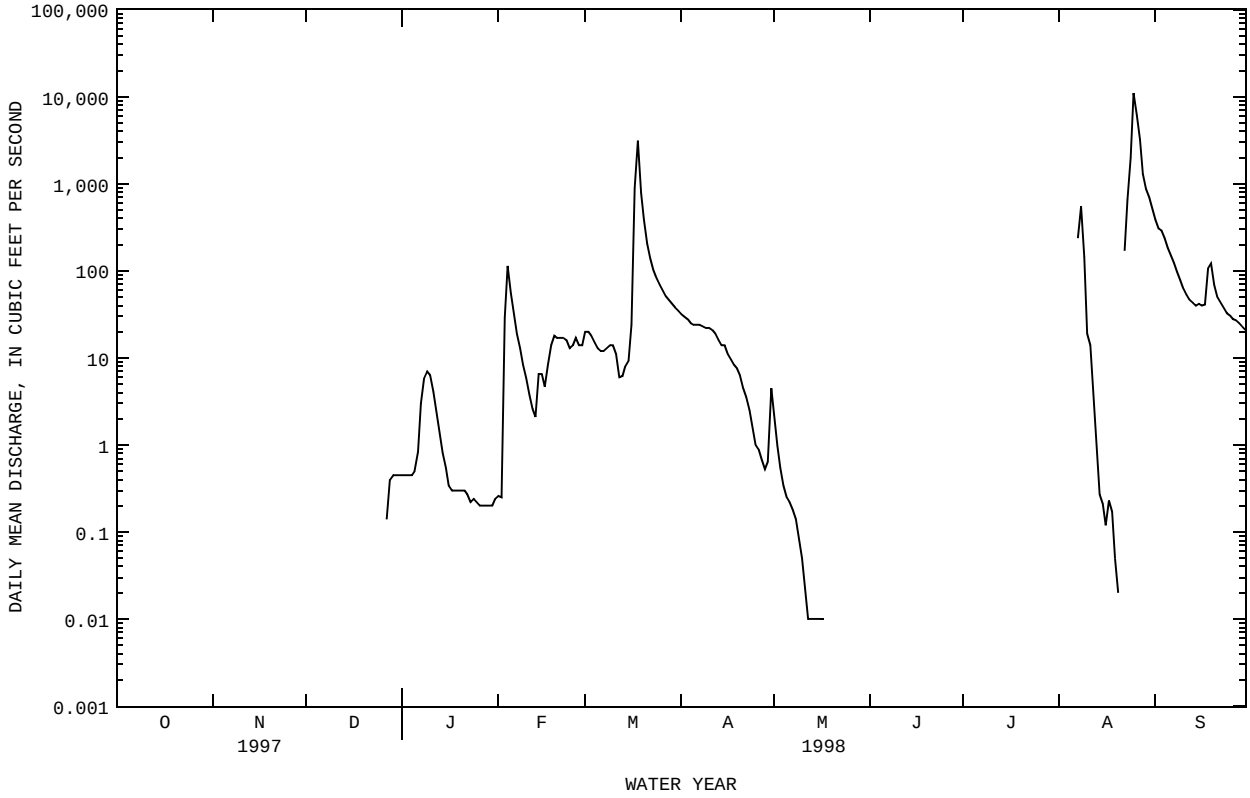
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.45	.26	20	32	2.2	.00	.00	.00	391
2	.00	.00	.00	.45	.25	20	30	.98	.00	.00	.00	308
3	.00	.00	.00	.45	29	18	28	.55	.00	.00	.00	292
4	.00	.00	.00	.45	114	15	25	.34	.00	.00	.00	239
5	.00	.00	.00	.50	56	13	24	.25	.00	.00	.00	183
6	.00	.00	.00	.84	31	12	24	.22	.00	.00	.00	150
7	.00	.00	.00	3.0	19	12	24	.18	.00	.00	238	124
8	.00	.00	.00	5.9	13	13	23	.14	.00	.00	551	97
9	.00	.00	.00	7.0	8.4	14	22	.08	.00	.00	145	78
10	.00	.00	.00	6.3	5.9	14	22	.05	.00	.00	19	63
11	.00	.00	.00	4.1	3.8	11	21	.02	.00	.00	14	53
12	.00	.00	.00	2.4	2.6	6.0	19	.01	.00	.00	4.6	47
13	.00	.00	.00	1.4	2.1	6.2	16	.01	.00	.00	.99	43
14	.00	.00	.00	.81	6.5	8.1	14	.01	.00	.00	.27	40
15	.00	.00	.00	.55	6.5	9.4	14	.01	.00	.00	.21	42
16	.00	.00	.00	.34	4.7	24	11	.01	.00	.00	.12	40
17	.00	.00	.00	.30	8.4	894	9.6	.01	.00	.00	.23	41
18	.00	.00	.00	.30	14	3130	8.3	.00	.00	.00	.17	108
19	.00	.00	.00	.30	18	797	7.5	.00	.00	.00	.05	123
20	.00	.00	.00	.30	17	387	6.3	.00	.00	.00	.02	69
21	.00	.00	.00	.30	17	207	4.5	.00	.00	.00	.00	50
22	.00	.00	.00	.27	17	138	3.5	.00	.00	.00	170	43
23	.00	.00	.00	.22	16	103	2.5	.00	.00	.00	658	38
24	.00	.00	.00	.24	13	83	1.6	.00	.00	.00	2000	33
25	.00	.00	.00	.22	14	69	1.0	.00	.00	.00	11100	31
26	.00	.00	.00	.20	17	59	.88	.00	.00	.00	6260	28
27	.00	.00	.14	.20	14	51	.68	.00	.00	.00	3260	27
28	.00	.00	.40	.20	14	46	.53	.00	.00	.00	1310	25
29	.00	.00	.45	.20	---	42	.64	.00	.00	.00	868	23
30	.00	.00	.45	.20	---	38	4.5	.00	.00	.00	701	21
31	.00	---	.45	.24	---	35	---	.00	---	.00	512	---
TOTAL	0.00	0.00	1.89	38.63	482.41	6294.7	401.03	5.07	0.00	0.00	27812.66	2850
MEAN	.000	.000	.061	1.25	17.2	203	13.4	.16	.000	.000	897	95.0
MAX	.00	.00	.45	7.0	114	3130	32	2.2	.00	.00	11100	391
MIN	.00	.00	.00	.20	.25	6.0	.53	.00	.00	.00	.00	21
AC-FT	.00	.00	3.7	77	957	12490	795	10	.00	.00	55170	5650

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 1998, BY WATER YEAR (WY)

MEAN	159	46.1	45.4	50.7	60.1	49.7	115	199	380	253	148	195
MAX	1813	674	950	559	988	1079	1072	2320	8069	8943	5648	3247
(WY)	1920	1920	1992	1992	1992	1992	1957	1935	1935	1932	1971	1919
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1918	1916	1916	1916	1916	1916	1917	1917	1918	1918	1917	1922

08205500 FRIO RIVER NEAR DERBY, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1915 - 1998	
ANNUAL TOTAL	98647.86		37886.39			
ANNUAL MEAN	270		104		142	
HIGHEST ANNUAL MEAN					1087	1935
LOWEST ANNUAL MEAN					1.76	1952
HIGHEST DAILY MEAN	46500	Jun 24	11100	Aug 25	135000	Jul 4 1932
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Aug 1 1915
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Aug 1 1915
INSTANTANEOUS PEAK FLOW			14600	Aug 25	230000	Jul 4 1932
INSTANTANEOUS PEAK STAGE			12.95	Aug 25	29.45	Jul 4 1932
ANNUAL RUNOFF (AC-FT)	195700		75150		102800	
10 PERCENT EXCEEDS	162		61		150	
50 PERCENT EXCEEDS	.00		.14		4.9	
90 PERCENT EXCEEDS	.00		.00		.00	



08206600 FRIO RIVER AT TILDEN, TX

LOCATION.--Lat 28°28'02", long 98°32'50", McMullen County, Hydrologic Unit 12110108, on left bank 80 ft downstream from bridge on State Highway 16 in Tilden, 300 ft downstream from Leoncita Creek, 1.3 mi upstream from Salt Branch, 1.8 mi downstream from Big Slough, and 44.2 mi upstream from mouth.

DRAINAGE AREA.--4,493 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jul 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 216.04 ft above sea level. Jul 14, 1978, to Sep 13, 1994, at site 80 ft upstream at same datum. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. No known regulation. Part of the flow of the Frio River and its headwater tributaries enters the Edwards and associated limestones in the Balcones Fault Zone that crosses the basin upstream from U. S. Highway 90. Considerable flow into various permeable formations also occurs downstream from the Balcones Fault Zone. There are many small diversions above station for irrigation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jul 1932 reached a stage of 38.44 ft, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 23	1000	1,880	16.36	Aug 29	2030	8,520	24.44

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	e1.4	.08	.47	.43	.90	3.1	45	2.3	.00	.00	.28	1760
2	e1.3	.07	.71	.33	.88	2.5	42	1.8	.00	.00	.27	1080
3	e1.3	.05	.49	.27	.77	2.1	39	1.4	.09	.09	.27	618
4	e1.3	.10	.51	.30	.66	2.5	37	.92	.17	.13	.25	321
5	e1.2	.13	.42	.40	.70	2.8	34	.63	.14	.04	.90	231
6	e1.1	.13	.33	.40	.62	2.6	31	.51	.02	.00	26	206
7	e1.1	.12	.28	.42	.74	3.4	30	.38	.00	.00	15	165
8	e1.1	.12	.33	.38	31	4.0	27	.36	.00	.00	69	128
9	e1.1	.11	.44	.31	28	2.9	26	1.3	.00	.00	258	107
10	e1.1	.56	.48	.24	16	2.4	25	1.1	.08	.00	325	91
11	e.94	.72	.48	.21	9.2	2.1	25	.69	.02	.00	416	77
12	e.94	1.4	.48	.18	6.0	1.8	23	.56	.00	.00	180	69
13	e.94	2.9	.43	.96	4.8	1.7	21	.33	.00	.00	54	61
14	e.94	1.9	.32	1.2	4.4	1.8	19	.25	.00	.00	34	54
15	e.94	.78	.13	2.6	4.3	1.7	19	.27	.00	.03	22	50
16	e.94	.35	.12	3.2	3.3	3.7	18	.39	.00	.12	17	60
17	e.93	.18	.12	2.9	2.8	3.6	17	.36	.00	.15	19	205
18	e.93	.14	.20	2.6	2.3	3.8	15	.24	.00	.17	43	90
19	e.92	.14	.09	2.1	2.4	42	14	.08	.00	.22	29	52
20	e.92	.21	.10	1.8	2.1	385	13	.03	.00	.19	12	47
21	e.92	.12	.17	1.6	2.2	617	12	.01	.00	.05	7.0	73
22	.92	.11	.22	1.4	17	999	11	.02	.00	.00	231	89
23	.85	.10	1.1	1.3	47	1010	9.7	.04	.00	.00	1490	64
24	.69	.09	1.6	1.1	29	311	8.8	.00	.00	.00	689	53
25	.61	.16	1.5	.94	11	113	7.6	.00	.08	.00	856	47
26	.33	.55	2.2	.81	6.4	84	6.7	.13	.13	.00	862	42
27	.26	.74	2.0	.65	4.6	70	5.5	.04	.03	.00	930	38
28	.18	1.2	1.4	.56	3.7	61	4.3	.00	.00	.00	2270	34
29	.14	1.3	.95	.47	---	56	3.5	.00	.00	.05	7550	31
30	.12	.63	.70	.43	---	52	2.8	.00	.00	.18	6500	29
31	.10	---	.56	.83	---	48	---	.00	---	.24	3190	---
TOTAL	26.46	15.19	19.33	31.32	242.77	3896.5	591.9	14.14	0.76	1.66	26095.97	5972
MEAN	.85	.51	.62	1.01	8.67	126	19.7	.46	.025	.054	842	199
MAX	1.4	2.9	2.2	3.2	47	1010	45	2.3	.17	.24	7550	1760
MIN	.10	.05	.09	.18	.62	1.7	2.8	.00	.00	.00	.25	29
AC-FT	52	30	38	62	482	7730	1170	28	1.5	3.3	51760	11850

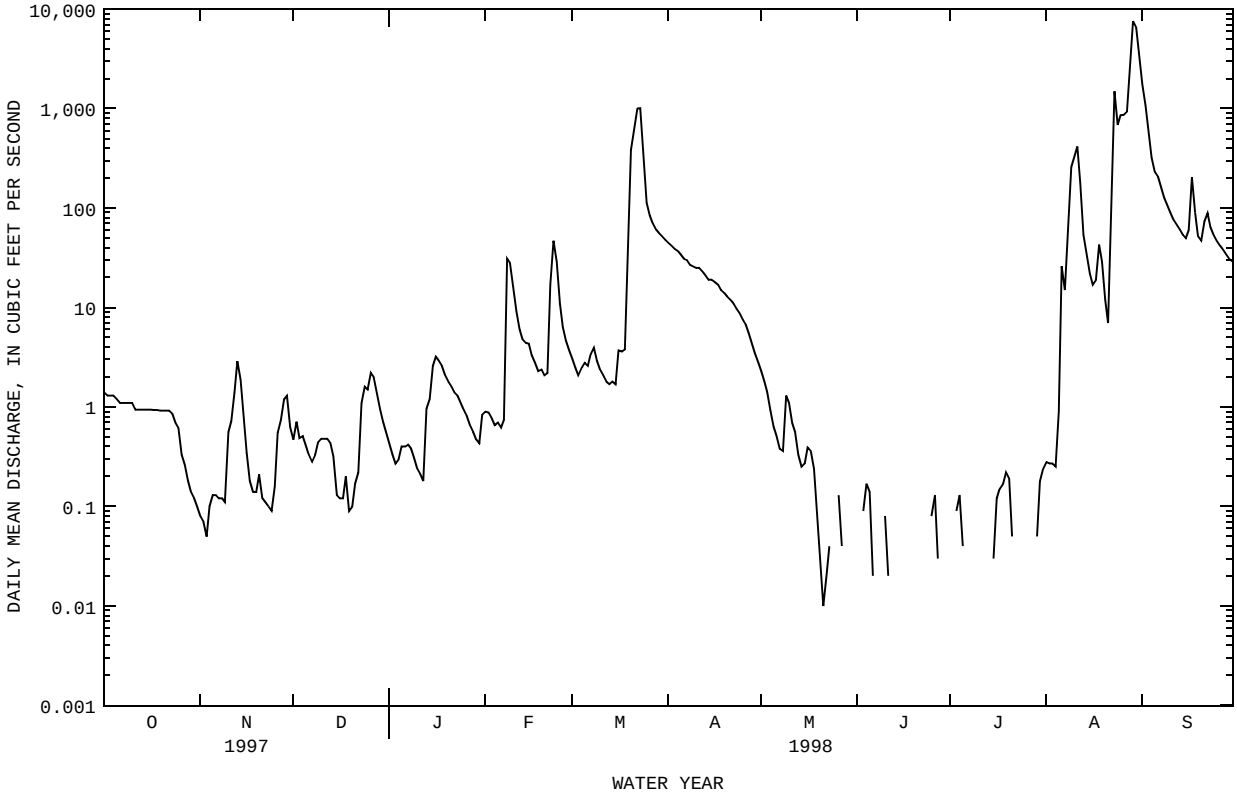
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1998, BY WATER YEAR (WY)

MEAN	171	58.1	111	113	131	111	130	204	861	202	128	107
MAX	861	185	1314	877	1745	1188	935	1171	8992	1232	842	315
(WY)	1986	1997	1992	1992	1992	1992	1992	1980	1987	1990	1998	1991
MIN	.12	.25	.27	.45	.32	2.91	.55	.46	.025	.000	.045	.52
(WY)	1991	1991	1991	1991	1990	1984	1984	1998	1998	1996	1985	1989

08206600 FRIO RIVER AT TILDEN, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1978 - 1998	
ANNUAL TOTAL	89541.44		36908.00			
ANNUAL MEAN	245		101		191	
HIGHEST ANNUAL MEAN					1000	1987
LOWEST ANNUAL MEAN					7.06	1984
HIGHEST DAILY MEAN	19900	Jun 28	7550	Aug 29	20100	Jun 9 1987
LOWEST DAILY MEAN	.05	Nov 3	.00	May 24	.00	Apr 16 1984
ANNUAL SEVEN-DAY MINIMUM	.09	Oct 30	.00	Jun 12	.00	Apr 22 1984
INSTANTANEOUS PEAK FLOW			8520	Aug 29	20900	Jun 9 1987
INSTANTANEOUS PEAK STAGE			24.44	Aug 29	29.56	Jun 28 1997
ANNUAL RUNOFF (AC-FT)	177600		73210		138400	
10 PERCENT EXCEEDS	153		71		255	
50 PERCENT EXCEEDS	2.1		.94		26	
90 PERCENT EXCEEDS	.29		.00		.26	

e Estimated



08206600 FRIO RIVER AT TILDEN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: Dec 1997 to Aug 1998. Pesticide analyses: Dec 1997 to Aug 1998.

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 (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
DEC												
17...	1405	.10	5980	8.1	11.0	12.3	113	680	320	180	56	937
FEB												
10...	1407	15	8940	7.9	16.5	10.0	105	2100	1900	460	240	1140
AUG												
27...	1230	924	325	7.7	29.5	4.6	61	110	8	36	4.8	17

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	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)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
DEC												
17...	16	75	2.0	360	290	1500	.64	4.7	3170	--	<.010	1.53
FEB												
10...	11	54	10	260	1400	2200	.29	5.0	5610	--	<.010	<.050
AUG												
27...	.7	23	9.2	100	19	22	.10	12	185	.320	.033	.353

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (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)
DEC											
17...	<.020	--	.94	.119	.118	.36	3	184	<5.0	<40	<70
FEB											
10...	.028	.41	.44	.015	.020	.06	1	209	<5.0	<40	<70
AUG											
27...	.045	.25	.30	.169	.156	.48	3	45	<1.0	<8.0	<14

DATE	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)
DEC											
17...	<60	<50	<50	<500	180	<20	<.1	<300	<200	<1	<20
FEB											
10...	<60	<50	<50	<500	370	<20	<.1	<300	<200	<1	<20
AUG											
27...	<12	<10	19	<100	5	<4.0	<.1	<60	<40	<1	<4.0

DATE	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)	2,4,5-T TOTAL (UG/L) (39740)	2,4-D, TOTAL (UG/L) (39730)	SILVEX, TOTAL (UG/L) (39760)	DICAMBA TOTAL (UG/L) (82052)	2, 4-DP TOTAL (UG/L) (82183)	PIC-LORAM UNFILT RECOVER (UG/L) (39720)	TOTAL TRI-THION (UG/L) (39786)	CHLOR-PYRIFOS TOTAL RECOVER (UG/L) (38932)
DEC											
17...	1980	<50	<100	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
FEB											
10...	4660	<50	<100	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
AUG											
27...	178	<10	<20	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010

08206600 FRIO RIVER AT TILDEN, TX--Continued

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

DATE	DI-AZINON, TOTAL (UG/L) (39570)	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)	ETHION, TOTAL (UG/L) (39398)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L) (82614)	MALA-THION, TOTAL (UG/L) (39530)	PARA-THION, TOTAL (UG/L) (39540)	METHYL PARA-THION, TOTAL (UG/L) (39600)	PHORATE TOTAL (UG/L) (39023)	DEF TOTAL (UG/L) (39040)	SAMPLE VOLUME SCHED-ULE 1319 (ML) (99868)	SET NUMBER SCHED-ULE 1319 (NO.) (99804)
DEC											
17...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	883	5033.00
FEB											
10...	<.010	<.030	<.010	<.010	<.030	<.010	<.010	<.010	<.010	846	8049.00
AUG											
27...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	731	8247.00

08206700 SAN MIGUEL CREEK NEAR TILDEN, TX

LOCATION.--Lat 28°35'14", long 98°32'44", McMullen County, Hydrologic Unit 12110109, on left bank 25 ft downstream from State Highway 16, 0.3 mi upstream from mouth of Bruce Branch, 0.9 mi downstream from mouth of Far Live Oak Creek, 3 mi upstream from San Patricio Creek, 7 mi downstream from Clear Creek, 8.7 mi north of Tilden, and 12.9 mi upstream from mouth.

DRAINAGE AREA.--783 mi^2.

PERIOD OF RECORD.--Jan 1964 to current year.
Water-quality records.--Chemical and biochemical analyses: Jul 1978 to Sep 1984.

REVISED RECORDS.--WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 242.95 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good except those for Feb 23 to Mar 15, which are fair. No known regulation. There are five diversions above station, but amounts are unknown. At times, excessive amount of water from Bexar-Medina-Atascosa Counties Water Improvement District No. 1 system enters San Miguel Creek basin via Chacon Creek 52 mi upstream (amounts unknown).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1919, 32.6 ft in 1942; stage of 1919 flood not known, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 23	0515	1,910	14.41	No other peak greater than base discharge.			

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

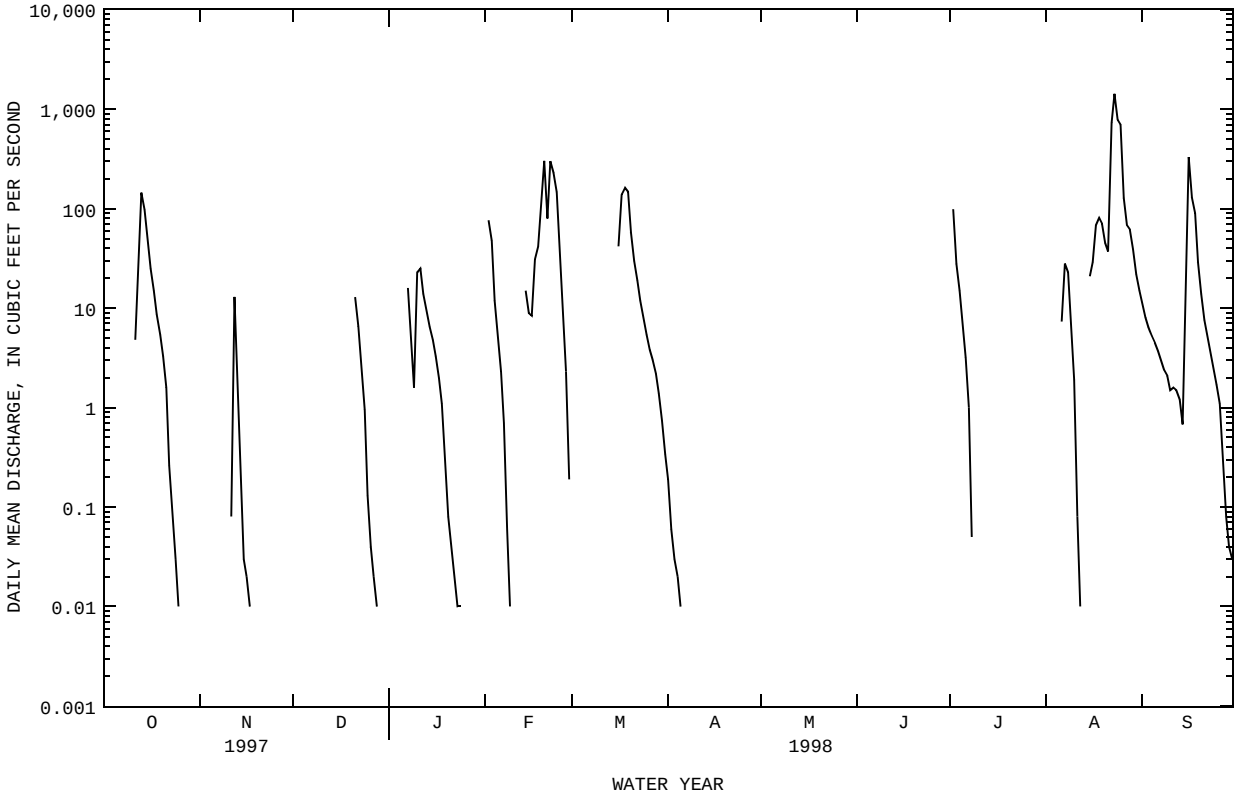
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.19	.00	.00	.00	.00	11
2	.00	.00	.00	.00	77	.00	.06	.00	.00	99	.00	8.0
3	.00	.00	.00	.00	48	.00	.03	.00	.00	28	.00	6.4
4	.00	.00	.00	.00	12	.00	.02	.00	.00	15	.00	5.3
5	.00	.00	.00	.00	5.4	.00	.01	.00	.00	6.5	.00	4.5
6	.00	.00	.00	.00	2.3	.00	.00	.00	.00	3.2	7.3	3.7
7	.00	.00	.00	16	.70	.00	.00	.00	.00	1.0	28	3.0
8	.00	.00	.00	4.4	.06	.00	.00	.00	.00	.05	23	2.4
9	.00	.00	.00	1.6	.01	.00	.00	.00	.00	.00	6.4	2.1
10	.00	.00	.00	23	.00	.00	.00	.00	.00	.00	1.9	1.5
11	4.8	.08	.00	25	.00	.00	.00	.00	.00	.00	.08	1.6
12	29	13	.00	14	.00	.00	.00	.00	.00	.00	.01	1.5
13	146	1.5	.00	9.4	.00	.00	.00	.00	.00	.00	.00	1.2
14	98	.20	.00	6.5	15	.00	.00	.00	.00	.00	.00	.68
15	47	.03	.00	4.8	8.9	.00	.00	.00	.00	.00	21	18
16	25	.02	.00	3.3	8.4	42	.00	.00	.00	.00	29	332
17	15	.01	.00	2.0	31	140	.00	.00	.00	.00	68	130
18	8.7	.00	.00	1.1	42	162	.00	.00	.00	.00	81	90
19	5.4	.00	.00	.33	106	147	.00	.00	.00	.00	71	29
20	3.3	.00	.00	.08	303	58	.00	.00	.00	.00	45	14
21	1.6	.00	13	.04	80	30	.00	.00	.00	.00	37	7.6
22	.26	.00	6.6	.02	299	19	.00	.00	.00	.00	729	5.0
23	.08	.00	2.3	.01	230	12	.00	.00	.00	.00	1440	3.5
24	.03	.00	.96	.01	147	8.1	.00	.00	.00	.00	783	2.4
25	.01	.00	.13	.00	43	5.4	.00	.00	.00	.00	696	1.7
26	.00	.00	.04	.00	10	3.8	.00	.00	.00	.00	129	1.1
27	.00	.00	.02	.00	2.3	3.0	.00	.00	.00	.00	68	.31
28	.00	.00	.01	.00	.19	2.2	.00	.00	.00	.00	62	.08
29	.00	.00	.00	.00	---	1.4	.00	.00	.00	.00	39	.04
30	.00	.00	.00	.00	---	.74	.00	.00	.00	.00	22	.03
31	.00	---	.00	.00	---	.34	---	.00	---	.00	15	---
TOTAL	384.18	14.84	23.06	111.59	1471.26	634.98	0.31	0.00	0.00	152.75	4401.69	687.64
MEAN	12.4	.49	.74	3.60	52.5	20.5	.010	.000	.000	4.93	142	22.9
MAX	146	13	13	25	303	162	.19	.00	.00	99	1440	332
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03
AC-FT	762	29	46	221	2920	1260	.6	.00	.00	303	8730	1360

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1998, BY WATER YEAR (WY)

MEAN	65.4	20.4	17.2	27.7	25.6	9.64	58.3	125	105	39.1	54.6	89.3
MAX	486	286	226	641	352	78.0	1065	900	690	748	741	1233
(WY)	1982	1993	1987	1968	1992	1992	1977	1980	1987	1990	1980	1967
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1980	1995	1989	1989	1995	1996	1996	1971	1967	1996	1991	1989

08206700 SAN MIGUEL CREEK NEAR TILDEN, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1964 - 1998	
ANNUAL TOTAL	5993.96		7882.30			
ANNUAL MEAN	16.4		21.6		54.2	
HIGHEST ANNUAL MEAN					161	1968
LOWEST ANNUAL MEAN					2.43	1984
HIGHEST DAILY MEAN	1100	Jun 22	1440	Aug 23	16700	May 16 1980
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Feb 1 1964
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Feb 7 1964
INSTANTANEOUS PEAK FLOW			1910	Aug 23	20600	May 16 1980
INSTANTANEOUS PEAK STAGE			14.41	Aug 23	27.31	May 16 1980
ANNUAL RUNOFF (AC-FT)	11890		15630		39240	
10 PERCENT EXCEEDS	24		30		37	
50 PERCENT EXCEEDS	.00		.00		2.0	
90 PERCENT EXCEEDS	.00		.00		.00	



08206900 CHOKE CANYON RESERVOIR NEAR THREE RIVERS, TX

LOCATION.--Lat 28°29'01", long 98°14'44", Live Oak County, Hydrologic Unit 12110108, at Choke Canyon Dam on Frio River, 3.9 mi upstream from Atascosa River, and 4.0 mi west of Three Rivers.

DRAINAGE AREA.--5,490 mi^2.

PERIOD OF RECORD.--Oct 1984 to current year.

GAGE.--Nonrecording gage read twice daily. Supplemental water-stage recorder operated by city of Corpus Christi. Datum of gage is sea level. Satellite telemeter at station.

REMARKS.--The reservoir is formed by a rolled earthfill dam, 3.5 mi long. The dam was completed and deliberate impoundment began on Oct 12, 1982. The spillway has seven radial gates, each 50 ft long and 24 ft high. Water for municipal and industrial use to meet the needs of the Coastal Bend area is released downstream through a 5.0- x 5.0-foot square slide gate. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	241.1
Top of spillway gates	222.5
Crest of spillway	199.5
Lowest gated outlet (invert)	136.3

COOPERATION.--Capacity table computed Jun 1, 1983, provided by the city of Corpus Christi. Elevation and reservoir contents record provided by the city of Corpus Christi.

EXTREMES (AT 0600 HOURS) FOR PERIOD OF RECORD.--Maximum daily contents, 733,100 acre-ft Jun 21, 1987 (elevation, 222.1 ft); minimum daily, 4,500 acre-ft Oct 1-9, 1984 (elevation, 156.9 ft).

EXTREMES (AT 0600 HOURS) FOR CURRENT YEAR.--Maximum contents, 304,500 acre-ft, Sep 14 (elevation, 201.77 ft); minimum contents, 235,900 acre-ft, Aug 5 (elevation, 197.12 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 0600 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	295100	287700	282100	276500	273000	276300	278900	271700	262100	250500	237600	299500
2	295100	287400	282100	276500	273300	276200	278900	271400	261700	249900	237300	301900
3	294600	286500	281900	276300	273300	276000	278900	271100	261400	249500	236900	302300
4	293800	286200	281900	276300	273300	275900	278700	270800	261100	249800	236300	303600
5	293200	285300	281800	276000	273300	275700	278600	270500	260800	249600	235900	303900
6	292700	285000	281600	276000	273300	275500	278300	270200	260500	249600	236900	303600
7	292600	284700	281600	276000	273200	275400	278000	269900	260200	249500	237200	303600
8	292400	284400	281500	275700	273000	275200	277800	269700	259900	248900	236900	303600
9	292100	284100	281000	275700	273000	274900	277500	269600	259500	248500	236700	303400
10	291600	284200	280700	275500	272900	274600	277500	269300	259100	248000	236400	303300
11	293200	284200	280400	275500	272700	274300	277200	269000	258600	247500	236800	303400
12	293600	285600	280200	275500	272400	274000	277100	268700	258300	247300	237100	303700
13	294000	285600	279900	275400	272400	273700	276800	268400	258000	246600	236900	304400
14	293600	285700	279800	275400	272300	274000	276300	268100	257800	246200	237100	304500
15	293000	285100	279600	275200	272300	274000	275900	267800	257300	245700	237300	304400
16	292600	285300	279200	274900	272700	275200	275700	267700	256700	245000	237200	304400
17	292200	284500	278600	274800	272600	275200	275500	267700	256300	244800	240800	304400
18	292200	284500	278600	274600	272400	275400	275900	267400	255900	244500	241300	304200
19	291800	284700	278400	274500	272700	275500	276200	267100	255500	243900	241200	304100
20	291600	284200	278400	274200	272700	275500	276000	266800	255000	243400	241200	304100
21	291300	284200	280800	274200	272700	275900	275900	266500	254600	242800	241000	304400
22	291300	284100	280100	274000	273000	276300	275500	266200	254200	242300	241200	304400
23	291000	283700	279500	274000	276000	278400	274900	265700	253800	241900	244500	304500
24	290100	282800	278700	273900	276800	279900	274500	265400	253300	241400	257000	304500
25	289800	282700	278300	273700	276800	280100	273900	265200	252800	241000	260000	334500
26	289300	282700	278000	273600	276500	279900	273600	264700	252300	240500	262800	304500
27	289100	282500	278000	273400	276600	279800	273300	264100	251900	240100	264400	304400
28	289000	282400	277700	273200	276500	279600	272900	263800	251500	239500	266000	304200
29	288700	282200	277400	273000	---	279500	272600	263500	251200	239000	269000	304100
30	288400	282100	277100	272900	---	279200	272000	263300	250800	238400	279800	303900
31	287900	---	276800	272700	---	278900	---	262800	---	238000	292400	---
MAX	295100	287700	282100	276500	276800	280100	278900	271700	262100	250500	292400	334500
MIN	287900	282100	276800	272700	272300	273700	272000	262800	250800	238000	235900	299500
(+)	200.7	200.3	200.0	199.7	200.0	200.1	199.7	199.0	198.2	197.3	201.0	201.7
(@)	-7600	-5800	-5300	-4100	+3800	+2400	-6900	-9200	-12000	-12800	+54400	+11500

CAL YR 1997 MAX 318800 MIN 167800 (@) 100,900
WTR YR 1998 MAX 334500 MIN 235900 (@) 8,400

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

08206910 CHOKE CANYON RESERVOIR OWC NEAR THREE RIVERS, TX

LOCATION.--Lat 28°29'09", long 98°14'29", Live Oak County, Hydrologic Unit 12110108, 0.2 mi downstream from Choke Canyon Dam on Frio River, 3.7 mi upstream from Atascosa River, and 3.8 mi west of Three Rivers.

DRAINAGE AREA.--5,490 mi^2.

PERIOD OF RECORD.--Nov 1991 to current year (low flow).

GAGE.--Water-stage recorder. Datum of gage is 124.06 ft above sea level.

REMARKS.--Records fair. Discharges are not published for days when instantaneous discharge exceeds 73 ft^3/s. Flow regulated by Choke Canyon Reservoir (station 08206900) 0.2 mi upstream.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 10.42 ft (backwater from Atascosa River) Sep 9 at 0400 hours; no flow Oct 21.

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	30	33	36	34	31	32	31	38	32	31	32
2	32	30	33	37	---	32	32	30	37	32	30	32
3	32	30	33	37	---	32	32	36	36	31	30	32
4	32	31	33	37	34	33	32	34	35	31	31	32
5	32	31	33	37	34	34	32	---	32	31	31	32
6	32	31	33	37	34	34	32	37	32	31	30	32
7	32	31	34	37	34	34	32	38	31	31	30	---
8	32	31	34	35	34	33	31	35	34	36	30	---
9	32	31	34	35	34	33	31	35	36	34	30	---
10	32	31	34	35	34	32	31	35	35	39	30	---
11	32	31	34	35	34	31	30	37	36	42	31	---
12	32	31	34	35	34	31	30	35	38	40	31	32
13	32	31	34	34	34	31	30	34	36	37	31	32
14	32	31	34	34	34	32	30	33	36	35	31	32
15	32	31	35	34	34	32	30	36	33	34	31	32
16	---	32	35	34	34	31	30	37	33	32	31	32
17	28	32	35	34	34	32	30	34	33	33	31	32
18	28	32	35	34	34	32	30	33	34	32	31	32
19	28	32	35	34	34	32	30	35	35	32	31	33
20	12	32	36	34	---	32	31	35	43	32	31	33
21	.00	32	36	34	---	32	31	35	40	32	31	33
22	7.5	32	36	34	---	32	32	35	39	31	31	33
23	30	32	36	34	---	32	34	32	40	31	31	32
24	30	32	37	33	---	32	31	32	38	31	---	31
25	30	32	36	33	30	32	31	32	41	31	---	32
26	30	32	36	33	30	32	31	36	40	31	---	32
27	30	32	36	33	31	32	32	36	39	31	31	32
28	30	32	36	34	30	32	33	35	37	31	31	32
29	30	33	36	34	---	31	30	35	34	31	31	e33
30	30	33	36	34	---	32	34	37	33	31	32	e33
31	30	---	36	34	---	32	---	39	---	31	32	---
TOTAL	---	944	1078	1075	---	995	937	---	1084	1019	---	---
MEAN	---	31.5	34.8	34.7	---	32.1	31.2	---	36.1	32.9	---	---
MAX	---	33	37	37	---	34	34	---	43	42	---	---
MIN	---	30	33	33	---	31	30	---	31	31	---	---

e Estimated

08208000 ATASCOSA RIVER AT WHITSETT, TX

LOCATION.--Lat 28°37'19", long 98°16'52", Live Oak County, Hydrologic Unit 12110110, on right bank at downstream side of bridge on Farm Road 99, 1.1 mi southwest of Whitsett, 4.2 mi downstream from La Parita Creek, and 12.9 mi upstream from mouth.

DRAINAGE AREA.--1,171 mi^2.

PERIOD OF RECORD.--Sep 1924 to May 1926, May 1932 to current year.

GAGE.--Water-stage recorder. Datum of gage is 159.04 ft above sea level. Prior to May 8, 1926, nonrecording gage at bridge destroyed in 1956 at site 200 ft downstream at 1.38 ft higher datum. May 21, 1932, to Feb 16, 1983, water-stage recorder at site 1,000 ft upstream at same datum. Satellite telemeter at station.

REMARKS.--Records fair. Considerable loss of flow into various permeable formations occurs upstream from this station. The Campbellton water wells discharge into the Atascosa River 12 mi upstream from this station to supplement streamflow during dry periods; however, records provided by the city of Corpus Christi indicate that during the current year, the Campbellton water wells did not discharge into the Atascosa River. No known regulation. There are several small diversions above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1881, that of Sep 23, 1967. Second highest stage, 41 ft (discharge 106,000 ft^3/s), occurred in Sep 1919.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 2	1400	2,360	19.08	Feb 23	1600	1,600	16.13
Feb 20	1900	2,400	19.20	Aug 23	2200	1,840	17.16

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	.15	1.2	3.4	604	32	6.6	2.3	.29	.00	.00	14
2	.00	.12	.95	3.1	2080	27	6.9	2.2	.23	.00	.00	11
3	.00	.13	.99	2.9	583	23	6.4	2.0	.20	.00	.00	8.9
4	.00	.16	82	2.6	108	21	6.0	2.2	.16	.00	.00	6.7
5	.00	.13	36	2.6	60	19	5.7	2.1	.14	.00	.08	4.6
6	.00	.10	18	3.0	39	17	5.5	1.9	.14	.00	9.2	3.2
7	.00	.07	12	32	29	16	5.6	1.9	.12	.00	2.3	5.6
8	.00	.07	7.9	222	23	14	5.5	1.7	.10	.00	19	5.6
9	.00	.08	6.2	101	19	13	5.2	1.7	.05	.00	12	2.8
10	.55	.14	4.6	37	16	12	4.6	1.9	.02	.00	7.3	5.7
11	28	11	3.8	22	29	11	4.6	1.8	.02	.00	3.6	14
12	48	53	3.3	13	65	11	4.4	1.5	.07	.00	1.3	e65
13	85	171	2.9	9.5	56	11	4.3	1.4	.11	.00	.41	e65
14	31	74	2.8	21	115	12	4.5	1.3	.08	.00	.12	e35
15	18	33	2.7	21	60	12	4.5	1.2	.03	.00	.06	e26
16	25	20	3.1	14	53	29	4.4	1.2	.00	.00	.09	e33
17	15	13	3.2	8.7	285	484	4.0	1.3	.00	.00	16	e30
18	10	8.9	3.2	6.9	222	662	3.7	1.3	.00	.00	415	e25
19	7.0	6.8	3.1	5.5	459	149	4.0	1.2	.00	.00	389	e16
20	4.5	5.2	3.2	4.4	1970	81	4.2	1.2	.00	.00	85	e9.4
21	2.7	4.3	3.9	3.6	1310	47	3.6	1.1	.00	.00	25	e6.5
22	1.8	3.6	67	3.1	603	32	3.2	.99	.00	.00	195	e4.5
23	1.3	3.2	57	2.9	1380	23	3.1	.84	.00	.00	1030	e3.4
24	.85	2.8	29	2.7	592	18	3.1	.75	.00	.00	1520	e2.7
25	.81	2.4	16	2.5	159	15	3.2	.65	.00	.00	1530	e2.2
26	.61	2.2	11	2.4	87	13	3.8	.61	.00	.00	227	e1.8
27	.47	2.1	8.4	2.2	56	9.9	4.2	.56	.00	.00	76	e1.6
28	.39	1.8	7.8	2.1	41	9.6	3.8	.56	.00	.00	300	e1.3
29	.35	1.6	5.7	1.9	---	9.3	3.0	.54	.00	.00	117	e1.2
30	.35	1.4	4.6	1.9	---	8.1	2.5	.46	.00	.00	31	e1.0
31	.41	---	3.9	2.7	---	7.0	---	.35	---	.00	20	---
TOTAL	282.09	422.45	415.44	563.6	11103	1847.9	134.1	40.71	1.76	0.00	6031.46	412.7
MEAN	9.10	14.1	13.4	18.2	397	59.6	4.47	1.31	.059	.000	195	13.8
MAX	85	171	82	222	2080	662	6.9	2.3	.29	.00	1530	65
MIN	.00	.07	.95	1.9	16	7.0	2.5	.35	.00	.00	.00	1.0
AC-FT	560	838	824	1120	22020	3670	266	81	3.5	.00	11960	819

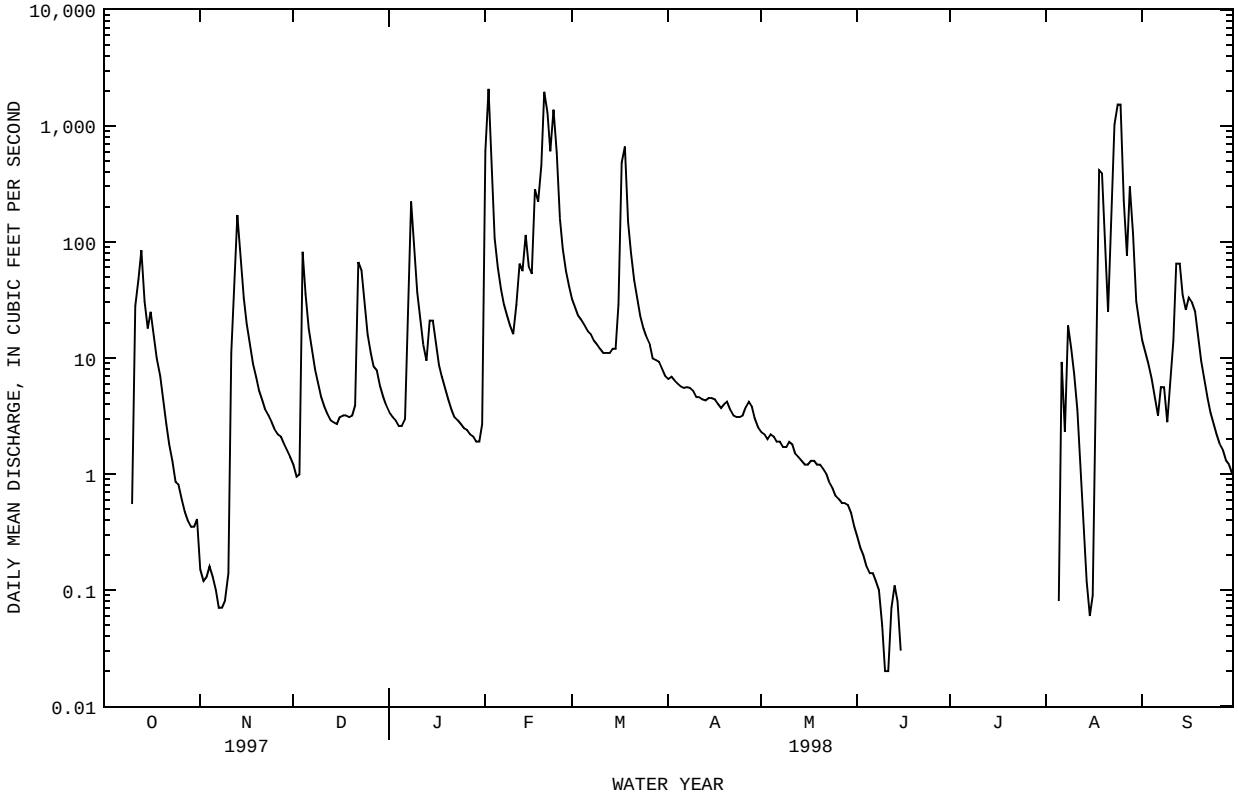
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1998, BY WATER YEAR (WY)

MEAN	102	49.5	58.5	80.3	97.0	32.2	150	230	239	120	77.2	246
MAX	788	399	1060	2053	1590	250	2298	1365	3445	2879	1207	5006
(WY)	1947	1941	1992	1968	1992	1970	1977	1957	1935	1942	1946	1967
MIN	.048	.21	.19	1.52	1.57	1.51	.57	.000	.000	.000	.000	.001
(WY)	1989	1989	1989	1996	1990	1996	1996	1996	1989	1998	1954	1997

08208000 ATASCOSA RIVER AT WHITSETT, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1932 - 1998	
ANNUAL TOTAL	16532.41		21255.21			
ANNUAL MEAN	45.3		58.2		124	
HIGHEST ANNUAL MEAN					472	1935
LOWEST ANNUAL MEAN					2.29	1989
HIGHEST DAILY MEAN	2780	Jun 23	2080	Feb 2	65000	Sep 23 1967
LOWEST DAILY MEAN	.00	Aug 20	.00	Oct 1	.00	Jun 11 1934
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 20	.00	Oct 1	.00	Jun 11 1934
INSTANTANEOUS PEAK FLOW			2400	Feb 20	121000	Sep 23 1967
INSTANTANEOUS PEAK STAGE			19.20	Feb 20	41.30	Sep 23 1967
INSTANTANEOUS LOW FLOW			.00	Oct 1		
ANNUAL RUNOFF (AC-FT)	32790		42160		89670	
10 PERCENT EXCEEDS	53		70		93	
50 PERCENT EXCEEDS	2.5		3.2		11	
90 PERCENT EXCEEDS	.00		.00		.90	

e Estimated



08210000 NUECES RIVER NEAR THREE RIVERS, TX

LOCATION.--Lat 28°25'38", long 98°10'40", Live Oak County, Hydrologic Unit 12110111, on right bank at U.S. Highway 281, 1.0 mi downstream from Frio River, 2.2 mi south of Three Rivers, and at mile 100.2.

DRAINAGE AREA.--15,427 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jul 1915 to current year. Monthly discharge only for Nov 1919 to Jan 1920, published in WSP 1312.

REVISED RECORDS.--WSP 548: 1920-21. WSP 1562: 1916, 1918-21, 1922(M), 1923, 1929. WDR TX-83-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 99.26 ft above sea level. Prior to Apr 5, 1932, nonrecording gage at railroad bridge 0.8 mi upstream at datum 1.87 ft higher. Apr 5, 1932, to Aug 9, 1983, recording gage at a site 0.8 mi upstream at datum 1.87 ft higher. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. Since water year 1949, at least 10% of contributing drainage area has been regulated by the Upper Nueces Reservoir. Flow of the Frio River is impounded in Choke Canyon Reservoir (see station 08206900), about 11 mi upstream from this station on the Frio River. Part of flow of the Nueces and Frio Rivers and their headwater tributaries enters the Edwards and associated limestones in the Balcones Fault Zone upstream from U.S. Highway 90. Considerable loss of flow into various permeable formations also occurs downstream from the Balcones Fault Zone. There are many small diversions for irrigation and for municipal supply above this station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--33 years (water years 1916-48) prior to partial regulation by Choke Canyon Reservoir, 945 ft^3/s (684,500 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1916-48).--Maximum discharge, 85,000 ft^3/s Sep 18, 1919 (gage height, 46.0 ft), site and datum then in use; no flow at times. Maximum stage since about 1875, that of Sep 23, 1967.

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	87	78	58	43	195	65	55	34	32	33	34	1140
2	89	74	57	43	1180	58	51	34	31	32	35	1250
3	90	71	57	43	1780	53	48	34	31	34	34	1350
4	86	68	54	42	312	50	44	34	31	34	34	1490
5	79	62	105	41	110	48	43	40	31	33	35	1940
6	74	61	80	41	79	46	42	38	31	32	40	3570
7	71	61	67	40	63	45	40	34	31	33	38	6260
8	68	61	63	89	54	43	39	35	31	33	40	9060
9	66	61	60	208	49	42	38	34	31	33	44	9740
10	88	61	57	103	44	40	36	33	31	32	45	8160
11	100	58	53	68	41	40	36	33	31	32	343	6050
12	126	68	50	56	58	40	36	34	31	32	614	4540
13	216	152	48	49	103	40	37	33	31	32	243	3660
14	112	191	46	46	121	40	38	33	31	32	214	2960
15	83	111	45	49	116	40	38	33	31	32	197	2430
16	80	84	45	54	92	63	38	34	32	33	137	2060
17	92	70	45	152	124	165	36	34	32	32	598	1770
18	81	65	45	130	335	836	38	34	32	32	504	1250
19	84	62	45	108	314	429	38	33	33	33	1420	981
20	125	58	45	93	1170	136	36	33	33	33	1490	1050
21	175	54	45	81	2060	94	36	33	33	33	1460	1160
22	153	53	45	72	1950	70	35	32	33	33	1920	1230
23	153	52	93	63	1280	58	34	32	33	33	2580	1160
24	133	54	87	58	1370	121	34	32	33	32	3540	987
25	115	59	66	54	390	217	34	32	32	33	3070	982
26	102	63	56	50	156	169	35	32	33	33	1610	1050
27	96	63	50	45	104	132	35	32	33	33	810	1150
28	91	63	47	43	79	107	35	32	33	33	902	1250
29	89	61	46	42	---	86	35	32	33	33	1150	1340
30	86	58	45	41	---	75	35	31	33	33	1010	1420
31	83	---	43	41	---	63	---	32	---	34	1050	---
TOTAL	3173	2157	1748	2088	13729	3511	1155	1036	957	1015	25241	82440
MEAN	102	71.9	56.4	67.4	490	113	38.5	33.4	31.9	32.7	814	2748
MAX	216	191	105	208	2060	836	55	40	33	34	3540	9740
MIN	66	52	43	40	41	40	34	31	31	32	34	981
AC-FT	6290	4280	3470	4140	27230	6960	2290	2050	1900	2010	50070	163500

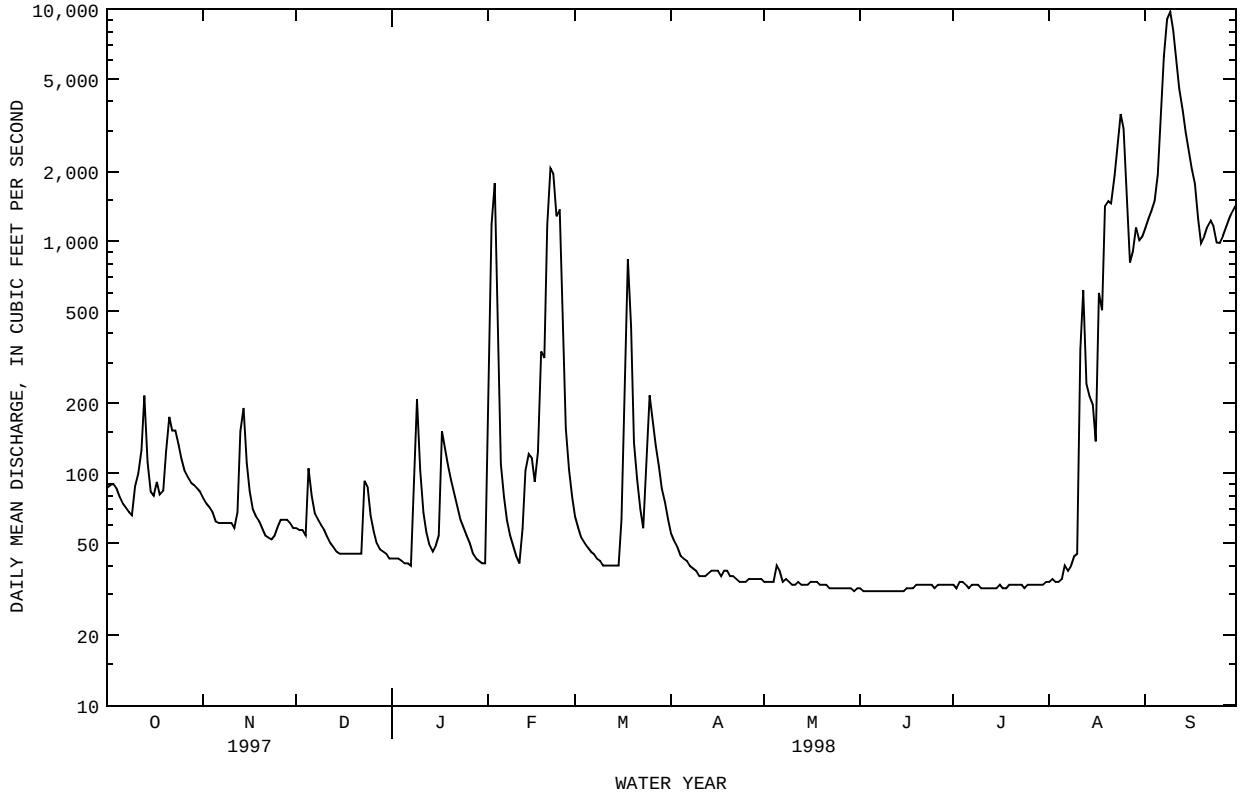
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 1998z, BY WATER YEAR (WY)

MEAN	1199	459	217	328	375	222	458	1138	1333	648	631	1360
MAX	13810	4944	1801	4833	7868	2285	5082	8645	8451	5723	10550	23650
(WY)	1972	1977	1977	1958	1958	1949	1977	1957	1987	1971	1971	1967
MIN	.54	.033	.63	3.61	5.80	6.21	4.30	1.85	8.72	3.05	.026	1.28
(WY)	1963	1951	1951	1967	1951	1963	1984	1971	1967	1967	1962	1984

08210000 NUECES RIVER NEAR THREE RIVERS, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1949 - 1998z	
ANNUAL TOTAL	146138		138250			
ANNUAL MEAN	400		379		698	
HIGHEST ANNUAL MEAN					2110	1971
LOWEST ANNUAL MEAN					82.3	1984
HIGHEST DAILY MEAN	6210	Jun 23	9740	Sep 9	128000	Sep 23 1967
LOWEST DAILY MEAN	39	Feb 22	31	May 30	.00	Aug 25 1950
ANNUAL SEVEN-DAY MINIMUM	39	Feb 20	31	Jun 2	.00	Aug 28 1950
INSTANTANEOUS PEAK FLOW			9900	Sep 9	18300	Sep 21 1983
INSTANTANEOUS PEAK STAGE			33.45	Sep 9	37.29	Jun 22 1987
ANNUAL RUNOFF (AC-FT)	289900		274200		505300	
10 PERCENT EXCEEDS	1010		1160		1440	
50 PERCENT EXCEEDS	99		54		87	
90 PERCENT EXCEEDS	47		32		5.5	

z Period of requlated streamflow.



08210000 NUECES RIVER NEAR THREE RIVERS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: Aug 1941 to Sep 1952. Chemical and biochemical analyses: May 1965 to current year. Pesticide analyses: Jan 1968 to May 1982, Oct 1996 to current year. Sediment analyses: Oct 1941 to Aug 1945, Mar 1951 to Sep 1952, Oct 1974 to Aug 1994.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1941 to Sep 1952, Oct 1974 to Sep 1981.
WATER TEMPERATURE: Oct 1950 to Sep 1952, Oct 1974 to Sep 1981.
SUSPENDED-SEDIMENT DISCHARGE: Oct 1950 to Sep 1951.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,310 microsiemens, Jan 17, 1977; minimum daily, 157 microsiemens, May 26, 1975.
WATER TEMPERATURE: Maximum daily, 32.0°C, on several days during summers of 1977, 1978, and 1981; minimum daily, 7.0°C, Jan 2, 3, 1979.

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 (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
DEC												
17...	1015	45	764	8.1	10.5	10.3	93	190	35	57	13	68
FEB												
10...	1010	45	716	7.9	16.0	7.8	79	170	19	51	9.7	70
JUN												
16...	0930	31	749	8.0	29.0	6.6	87	190	20	53	13	70
AUG												
27...	1013	793	406	7.8	29.0	6.1	80	120	3	41	4.3	31

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	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, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
DEC											
17...	2	42	9.3	160	55	100	.20	14	413	<.010	<.050
FEB											
10...	2	46	11	150	59	87	.21	15	393	<.010	.206
JUN											
16...	2	43	12	170	51	98	.19	16	416	<.010	.077
AUG											
27...	1	33	9.3	120	25	30	.16	15	229	<.010	.398

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (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)
DEC											
17...	.043	.50	.54	.030	.038	.12	4	96	<1.0	<8.0	<14
FEB											
10...	.157	.53	.69	.135	.126	.39	3	88	<1.0	<8.0	<14
JUN											
16...	.123	.57	.69	.042	.042	.13	5	106	<1.0	<8.0	<14
AUG											
27...	.032	.37	.40	.209	.202	.62	6	83	<1.0	<8.0	<14

DATE	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)
DEC											
17...	<12	<10	<10	<100	16	8.8	<.1	<60	<40	<1	<4.0
FEB											
10...	<12	<10	<10	<100	22	8.1	<.1	<60	<40	<1	<4.0
JUN											
16...	<12	<10	<10	<100	18	<4.0	<.1	<60	<40	<1	<4.0
AUG											
27...	<12	<10	<10	<100	11	<4.0	<.1	<60	<40	<1	<4.0

08210000 NUECES RIVER NEAR THREE RIVERS, TX--Continued

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

DATE	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)	2,4,5-T TOTAL (UG/L) (39740)	2,4-D, TOTAL (UG/L) (39730)	SILVEX, TOTAL (UG/L) (39760)	DICAMBA TOTAL (UG/L) (82052)	2,4-DP TOTAL (UG/L) (82183)	PIC-LORAM UNFILT RECOVER (UG/L) (39720)	TOTAL TRI-THION (UG/L) (39786)	CHLOR-PYRIFOS TOTAL RECOVER (UG/L) (38932)
DEC											
17...	360	<10	<20	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
FEB											
10...	355	<10	<20	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
JUN											
16...	391	<10	<20	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010
AUG											
27...	238	13	<20	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010

DATE	DI-AZINON, TOTAL (UG/L) (39570)	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)	ETHION, TOTAL (UG/L) (39398)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L) (82614)	MALA-THION, TOTAL (UG/L) (39530)	PARA-THION, TOTAL (UG/L) (39540)	METHYL PARA-THION, TOTAL (UG/L) (39600)	PHORATE TOTAL (UG/L) (39023)	DEF TOTAL (UG/L) (39040)	SAMPLE VOLUME SCHED-ULE 1319 (ML) (99868)	SET NUMBER SCHED-ULE 1319 (NO.) (99804)
DEC											
17...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	881	5033.00
FEB											
10...	<.010	<.030	<.010	<.010	<.030	<.010	<.010	<.010	<.010	869	8049.00
JUN											
16...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	932	8170.00
AUG											
27...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.010	882	8247.00

08210500 LAKE CORPUS CHRISTI NEAR MATHIS, TX

LOCATION.--Lat 28°02'17", long 97°52'15", San Patricio-Jim Wells County line, Hydrologic Unit 12110111, on right upstream corner of outlet tower at right end of Wesley E. Seale Dam on Nueces River, 0.6 mi upstream from bridge on State Highway 359, and 4.5 mi southwest of Mathis.

DRAINAGE AREA.--16,656 mi^2.

PERIOD OF RECORD.--Sep 1948 to current year. Prior to Oct 1960, month end records only. The Natural Resources Conservation Service, in cooperation with the Texas Natural Resources Conservation Commission, collected fragmentary gage-height records in connection with sedimentation studies from Feb 2, 1942, to Jul 10, 1947.

REVISED RECORDS.--WSP 1923: 1953(M), 1957(M).

GAGE.--Nonrecording gage read twice daily. Supplemental water-stage recorder operated by city of Corpus Christi. Datum of gage is sea level. Prior to Oct 1, 1957, nonrecording gage at various sites 0.2 mi upstream at datum 0.52 ft higher. Oct 1, 1957, to Apr 3, 1961, nonrecording gage near left end of Mathis Dam 0.2 mi upstream at present datum.

REMARKS.--Mathis Dam was completed and storage began Jul 24, 1934. The original capacity at spillway crest (elevation, 74.5 ft) was 54,000 acre-ft, but by Mar 1948 had decreased to 39,400 acre-ft because of sedimentation. Wesley E. Seale Dam was completed and deliberate impoundment began on Apr 26, 1958, submerging the old Mathis Dam. Wesley E. Seale Dam is a rolled earthfill dam, 5,930 ft long, including two spillways. The 1,320- foot north spillway has 33 gates that are operated by movable hydraulic lifts. The 1,080-foot south spillway has 27 gates that are electrically operated from the control tower. The gates were repaired and modified in Aug 1966. All gates in both spillways are 37.5 by 8.75 ft wide. Water for municipal supply for the city of Corpus Christi is released downstream through a 4.0-foot-diameter cylinder valve and three 2.5- by 4.0-foot rectangular openings. The releases are diverted from the river at Calallen 35 mi downstream for domestic, municipal, irrigation, mining, and industrial uses in the Corpus Christi area. The cities of Alice, Beeville, and Mathis withdrew 7,277 acre-ft from the lake during the current year for municipal use. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	106.0
Top of north spillway gates	94.46
Top of south spillway gates	94.0
Crest of spillways	88.0
Lowest gated outlet (invert)	55.5

COOPERATION.--Capacity curve 5-C is from a Jan 1987 survey provided by the city of Corpus Christi. Figures for new capacity curve were used beginning Oct 1, 1989. Elevation and content records were provided by the city of Corpus Christi.

EXTREMES (AT 0600 HOURS) FOR PERIOD OF RECORD.--Maximum daily contents, 320,000 acre-ft Sep 22, 1967, and Sep 12, 1971; maximum elevation, 94.82 ft Sep 22, 1967; minimum daily, 14,740 acre-ft May 5, 1951 (elevation, 67.62 ft).

EXTREMES (AT 0600 HOURS) FOR CURRENT YEAR.--Maximum contents, 188,900 acre-ft, Oct 14 (elevation, 91.2 ft); minimum contents, 95,510 acre-ft, Aug 18 (elevation, 85.1 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 0600 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	152900	183300	179400	169200	164700	185700	180000	164800	147000	127300	103000	123600
2	152300	183300	179000	168700	164700	185400	179400	164300	146400	126500	101800	124800
3	151600	183100	178800	168200	164800	184900	178700	163800	145900	125500	101200	125700
4	151300	182800	178700	167800	166800	184500	178200	163300	145300	124600	100700	126000
5	151000	181900	178200	167700	168700	184200	178000	162700	144700	124000	100100	126100
6	150800	181200	178000	167700	166700	184200	177300	162200	144000	123400	99480	126800
7	150500	181100	177800	168000	169200	183800	177000	161700	143600	122900	98830	130100
8	152800	181100	177600	168000	169000	183500	176600	161200	142900	122100	98310	135900
9	163800	181100	177500	168200	169000	183000	176300	160700	142500	121400	97930	147000
10	167500	181200	177500	168500	168700	182400	175600	160400	141900	120700	97280	157100
11	185200	181200	177300	169200	168300	181900	175100	159700	141200	120000	96520	165700
12	187300	181600	177300	169000	168300	181200	174700	159200	140500	119200	95880	176800
13	187100	182400	177100	168800	168200	180600	174100	158700	139700	118500	95880	180200
14	188900	182400	176800	168800	168200	180200	173400	158100	138900	117700	96010	184700
15	187500	183000	176400	168500	168300	179900	172700	157400	138000	116500	95760	186300
16	186800	183300	176300	168200	168800	179700	172200	157300	137100	115900	95760	186300
17	186400	183100	176100	167800	169800	180700	171900	157000	136500	115200	95630	186300
18	185700	183000	175100	167800	170300	181600	171500	156500	135900	114500	95510	186300
19	185400	183000	174200	167700	170900	183000	171500	155700	135600	114000	95880	186300
20	185000	182800	173900	167500	171400	183700	170900	154700	134900	113200	97160	186300
21	185000	182300	173700	167300	172000	184200	170200	154000	134600	112700	99220	186300
22	184900	181800	173700	167300	173200	184000	169800	153400	134000	112000	99740	186300
23	184900	181600	173600	167200	177300	183700	169200	152800	133400	111300	103000	186300
24	184900	181200	173400	167200	182800	183300	168800	152100	132500	110400	106800	186300
25	184700	180900	173000	167000	184500	183000	168200	151500	131600	109700	111800	186300
26	184700	180700	172900	166800	185600	182600	167500	151000	130700	108900	116800	186300
27	184400	180600	172700	166700	185700	181900	166800	150400	130000	108100	119500	186300
28	183800	180200	172400	168000	185600	181800	166200	149700	129400	107200	120000	186300
29	183800	180000	171700	165700	---	181600	165800	149200	128800	106100	120200	186300
30	183800	179900	170900	165200	---	181200	165300	148600	128200	105100	121700	186300
31	183700	---	170000	164800	---	180600	---	147800	---	104100	122100	---
MAX	188900	183300	179400	169200	185700	185700	180000	164800	147000	127300	122100	186300
MIN	150500	179900	170000	164800	164700	179700	165300	147800	128200	104100	95510	123600
(+)	90.9	90.7	90.0	89.7	91.0	90.7	89.8	88.7	87.4	85.7	87.0	91.0
(@)	+30000	-3800	-9900	-5200	+20800	-5000	-15300	-17500	-19600	-24100	+18000	+64200

CAL YR 1997 MAX 188900 MIN 103800 (@) +54100
WTR YR 1998 MAX 188900 MIN 95510 (@) +32700

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

08211000 NUECES RIVER NEAR MATHIS, TX

LOCATION.--Lat 28°02'17", long 97°51'36", San Patricio-Jim Wells County line, Hydrologic Unit 12110111, at downstream side of bridge on State Highway 359, 0.6 mi downstream from Wesley E. Seale Dam, 4 mi southwest of Mathis, and at mile 46.7.

DRAINAGE AREA.--16,660 mi^2, of which 16,656 mi^2 is above Wesley E. Seale Dam.

PERIOD OF RECORD.--Aug 1939 to current year.
Water-quality records.--Chemical analyses: Oct 1947 to Sep 1991. Specific conductance: Oct 1947 to Sep 1991. Water temperature: Oct 1947 to Sep 1991.

GAGE.--Water-stage recorder. Datum of gage is 26.53 ft above sea level. Aug 5, 1939, to Aug 29, 1984, on left bank 9 ft upstream at datum 1.0 ft higher. Aug 29 to Nov 5, 1984, on left bank 9 ft upstream at present datum. Nov 5, 1984, to Aug 5, 1987, on left bank 154 ft downstream at present datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. Since installation of gage in water year 1939, at least 10% of contributing drainage area has been regulated by Lake Corpus Christi (station 08210500) 0.6 mi upstream. Upstream from Lake Corpus Christi, flow is affected by recharge to permeable formations, small diversions, and minor regulation. Water for municipal and industrial uses at Corpus Christi is released from Lake Corpus Christi above gage and is diverted from river at Calallen 34 mi downstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of about 41 ft, present datum, occurred Sep 20, 1919, from information by Texas and New Orleans Railroad Co. and is the second highest known. Maximum stage since at least 1888, that of Sep 24, 1967.

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	148	101	134	96	121	107	111	158	203	252	316	276
2	157	126	118	108	115	104	114	159	195	239	305	305
3	147	140	117	109	113	107	114	154	218	239	271	737
4	134	144	104	118	114	112	157	161	228	245	307	1190
5	133	121	102	120	109	123	154	187	209	243	321	1190
6	130	105	107	119	107	122	170	181	214	238	322	1190
7	127	107	121	117	114	140	185	186	216	226	285	1190
8	129	109	140	129	120	198	135	197	212	242	257	1210
9	104	123	166	126	129	125	115	188	197	245	260	1360
10	397	123	154	118	140	115	127	188	211	229	278	3380
11	2040	109	146	116	151	115	137	187	227	234	280	2620
12	1960	96	109	133	144	114	183	186	218	237	294	4340
13	2310	97	108	134	116	113	212	175	227	219	283	3120
14	2860	97	127	126	117	109	178	183	229	232	265	797
15	827	95	133	127	112	109	134	175	231	259	278	2360
16	91	106	148	126	112	95	133	184	219	294	308	2480
17	90	125	143	127	111	112	133	181	233	291	312	1390
18	84	130	124	141	114	138	145	184	216	333	301	1550
19	87	130	122	127	126	126	147	172	227	324	291	1200
20	75	133	112	128	175	124	145	166	228	316	312	756
21	81	124	105	129	303	139	152	178	225	289	325	617
22	85	117	105	122	305	139	158	172	224	296	434	628
23	84	118	107	117	351	139	172	179	205	289	460	829
24	80	130	225	119	559	139	170	179	238	264	524	912
25	81	134	301	122	364	137	250	181	245	261	753	927
26	95	139	306	197	237	298	257	195	230	260	760	927
27	109	184	313	316	103	290	251	190	236	283	749	925
28	102	268	314	322	106	304	265	207	240	275	314	923
29	112	292	309	317	---	304	190	188	233	301	276	923
30	100	252	113	276	---	201	166	189	250	311	275	923
31	108	---	97	121	---	114	---	195	---	308	274	---
TOTAL	13067	4075	4830	4603	4788	4612	4960	5605	6684	8274	10990	41175
MEAN	422	136	156	148	171	149	165	181	223	267	355	1373
MAX	2860	292	314	322	559	304	265	207	250	333	760	4340
MIN	75	95	97	96	103	95	111	154	195	219	257	276
AC-FT	25920	8080	9580	9130	9500	9150	9840	11120	13260	16410	21800	81670

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

MEAN	1249	424	199	299	334	284	437	1224	1304	836	529	1521
MAX	14850	4552	1871	4994	5165	4377	4639	10500	8204	10440	10050	24950
(WY)	1972	1977	1977	1958	1958	1958	1977	1941	1987	1942	1971	1967
MIN	55.3	31.0	27.9	28.1	24.3	31.0	37.3	39.3	43.7	67.0	41.6	44.0
(WY)	1953	1940	1940	1940	1942	1948	1948	1948	1948	1951	1943	1945

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1939 - 1998	
ANNUAL TOTAL	125382		113663			
ANNUAL MEAN	344		311		722	
HIGHEST ANNUAL MEAN					2167	1967
LOWEST ANNUAL MEAN					104	1964
HIGHEST DAILY MEAN	6990	Jun 24	4340	Sep 12	125000	Sep 25 1967
LOWEST DAILY MEAN	73	Mar 12	75	Oct 20	6.8	Aug 15 1940
ANNUAL SEVEN-DAY MINIMUM	82	Oct 19	82	Oct 19	15	Aug 9 1940
INSTANTANEOUS PEAK FLOW			4590	Sep 12	138000	Sep 24 1967
INSTANTANEOUS PEAK STAGE			21.38	Sep 12	48.70	Sep 24 1967
ANNUAL RUNOFF (AC-FT)	248700		225500		522900	
10 PERCENT EXCEEDS	357		582		1250	
50 PERCENT EXCEEDS	134		179		129	
90 PERCENT EXCEEDS	94		107		52	

08211200 NUECES RIVER AT BLUNTZER, TX

LOCATION.--Lat 27°56'15", long 97°46'32", Nueces County, Hydrologic Unit 12110111, on right bank, at downstream end of bridge on Farm Road 666, 1.2 mi south of San Patricio, 5.5 mi upstream from Cayamon Creek, and 10.3 mi northwest of Calallen.

DRAINAGE AREA.--16,772 mi^2.

PERIOD OF RECORD.--Jan 1966 to Feb 1967, Mar 1992 to current year (operated as a low-flow station only). Prior to Oct 1994, published as "above Calallen".

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Mar 27, 1992, at same site at datum 6.04 ft higher. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Daily discharges are published only for days when instantaneous maximum discharge does not exceed 2,950 ft^3/s. Since installation of gage in Jan 1966, at least 10% of contributing drainage area has been regulated by Lake Corpus Christi (station 08210500).

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 27.18 ft Mar 29, 1992, at 1500 hours; minimum daily discharge, 83 ft^3/s Feb 7-9, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum gage height 22.70 ft Sep 13 at 0800 hours; minimum discharge, 85 ft^3/s, Oct 25.

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	109	210	110	139	114	124	171	173	199	231	249
2	141	107	136	110	126	112	116	164	176	201	235	246
3	146	131	116	113	117	109	114	160	174	197	231	294
4	136	120	111	113	113	108	121	158	190	202	211	765
5	131	131	102	121	113	109	138	169	191	204	229	1000
6	129	114	100	120	109	112	139	184	181	204	240	1060
7	128	95	102	123	109	117	162	177	188	201	250	1080
8	127	99	111	123	110	135	157	191	196	187	226	1090
9	380	104	126	129	112	165	126	193	193	191	207	1110
10	512	110	140	124	118	124	116	187	183	192	206	1630
11	---	111	136	121	123	118	120	184	188	184	213	2280
12	---	105	124	124	133	118	126	184	195	179	218	2470
13	---	98	109	129	125	117	177	183	190	178	226	2610
14	---	96	117	128	116	117	190	174	197	169	228	1170
15	2250	95	129	125	117	115	152	172	199	179	258	1260
16	1010	95	135	125	113	115	130	166	200	196	245	---
17	419	102	145	125	112	104	127	172	195	205	257	1860
18	209	114	141	127	109	115	128	176	202	220	261	1580
19	140	118	129	133	111	125	135	174	191	239	250	1500
20	115	118	128	128	115	121	136	166	197	240	245	1110
21	92	119	118	128	205	121	135	159	200	238	264	772
22	96	111	115	125	283	126	137	163	197	223	295	623
23	93	108	114	122	301	128	142	159	189	227	352	648
24	91	110	123	119	442	129	149	163	176	221	385	788
25	85	113	257	118	512	129	171	165	192	208	487	853
26	86	118	303	120	376	177	227	166	197	203	609	868
27	101	123	319	228	209	275	248	171	186	203	649	868
28	111	198	329	301	121	295	249	171	191	210	563	867
29	108	250	330	317	---	310	257	176	192	208	326	862
30	118	293	276	319	---	309	193	171	191	218	264	861
31	105	---	141	237	---	176	---	165	---	230	253	---
TOTAL	---	3715	4972	4585	4789	4545	4642	5334	5710	6356	9114	---
MEAN	---	124	160	148	171	147	155	172	190	205	294	---
MAX	---	293	330	319	512	310	257	193	202	240	649	---
MIN	---	95	100	110	109	104	114	158	173	169	206	---
AC-FT	---	7370	9860	9090	9500	9020	9210	10580	11330	12610	18080	---

08211500 NUECES RIVER AT CALALLEN, TX

LOCATION.--Lat 27°52'34", long 97°37'32", Nueces County, Hydrologic Unit 12110111, at the Cunningham pumping station in Corpus Christi, 0.4 mi upstream from Calallen Dam, 0.5 mi northwest of Calallen, about 1.4 mi upstream from bridge on Interstate Highway 37, about 1.5 mi upstream from Missouri-Pacific Railroad bridge, and about 8 mi upstream from Nueces Bay.

DRAINAGE AREA.--16,920 mi^2.

PERIOD OF RECORD.--Oct 1989 to current year (low flow). Maximum annual gage height and discharge were published at this site from Oct 1983 to Sep 1989. Gage-height records collected from Apr 1920 to Jul 1950 were not published but are filed in the District Office in Austin. Records collected from Aug 1915 to Sep 1918 (referenced in WSP 1312) are unreliable and should not be used.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 0.84 ft above sea level. From Aug 12, 1915, to Mar 31, 1919, and Apr 1, 1920, to Jul 31, 1950, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. Daily discharges are published only for days when instantaneous maximum discharge does not exceed 2,570 ft^3/s. Since installation of gage in water year 1990, at least 10% of contributing drainage area has been regulated by Lake Corpus Christi (station 08210500). There are numerous diversions above station for agricultural, municipal, and industrial supply. The cities of Corpus Christi, San Patricio, Robstown, and the Nueces River Water Control and Improvement District No. 3 have a combined withdrawal capacity of 205,500 gallons/minute.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,780 ft^3/s Jun 11, 1987 (gage height, 9.25 ft), from extension of rating above 2,500 ft^3/s; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,180 ft^3/s, Oct 15 (gage height, 7.57 ft); no flow for many days.

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	13	.00	89	7.9	50	13	6.5	13	.00	.00	.00	20
2	8.2	.00	19	.00	26	.77	.78	6.7	.00	.00	.00	12
3	11	.00	11	.00	6.9	.00	.00	4.6	.00	.00	.00	44
4	13	.00	3.9	.00	5.3	.00	.00	.52	.00	.00	.00	370
5	2.2	3.6	.00	.00	.67	.00	.00	.00	.00	7.1	.00	704
6	5.6	9.5	.00	.00	.00	.00	.00	.91	.00	9.7	.00	790
7	6.9	1.6	.00	.00	.00	.00	.00	.63	.00	4.2	4.6	834
8	1.0	.00	.00	.00	.00	.00	2.7	.03	.00	.00	39	855
9	151	.00	.00	.00	.00	.00	8.9	11	.04	.00	12	901
10	452	.00	.00	.00	.00	6.1	.00	.08	.00	.00	1.5	1050
11	1110	.00	.00	.00	.00	7.8	.00	3.2	.00	.00	.00	1450
12	1580	.13	.00	.00	.00	8.0	.00	6.2	.00	.00	.00	1600
13	1930	.28	.00	.00	.00	11	.00	5.6	.00	.00	2.7	1780
14	2040	.00	.00	.00	.29	14	.31	.00	.00	.00	14	1830
15	2080	.00	.00	.00	14	2.4	10	.00	.00	.00	34	1390
16	1450	.00	.00	.00	7.6	17	2.0	.00	.00	.00	53	1560
17	607	.00	.00	.00	.99	.26	.00	4.7	.00	.00	38	1680
18	261	.00	8.4	.53	.00	.00	.00	5.8	.00	.00	53	1470
19	75	.00	6.0	8.8	.00	.00	.00	.00	.02	.00	41	1380
20	34	.00	4.0	3.5	.00	.00	.00	.00	.57	.00	31	1180
21	17	.00	11	.00	2.8	.00	.00	.00	10	.00	45	815
22	2.5	.00	4.2	3.5	114	.00	.00	.00	3.4	.00	59	602
23	4.5	.00	.00	7.1	145	.00	.00	.00	.00	.17	138	573
24	.39	.00	.00	1.1	269	.00	.00	.00	.00	.00	110	698
25	.00	.00	32	.00	458	.00	.00	.00	.00	1.1	243	771
26	.00	.00	131	.00	354	.30	21	.00	.00	.00	416	771
27	.00	.00	180	20	155	65	50	.00	.00	.00	473	785
28	.00	9.4	186	122	31	133	71	.00	.00	.00	425	766
29	.00	70	181	176	---	176	82	.00	.00	.00	133	732
30	.00	129	184	165	---	165	34	.00	.00	.00	62	747
31	.00	---	43	124	---	63	---	.00	---	.00	54	---
TOTAL	11855.29	223.51	1093.50	639.43	1640.55	682.63	289.19	62.97	14.03	22.27	2481.80	28160
MEAN	382	7.45	35.3	20.6	58.6	22.0	9.64	2.03	.47	.72	80.1	939
MAX	2080	129	186	176	458	176	82	13	10	9.7	473	1830
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	12
AC-FT	23510	443	2170	1270	3250	1350	574	125	28	44	4920	55860

08211520 OSO CREEK AT CORPUS CHRISTI, TX

LOCATION.--Lat 27°42'40", long 97°30'06", Nueces County, Hydrologic Unit 12110202, on left downstream end of bridge on Farm Road 763, 1.5 mi south of intersection of Farm Roads 763 and 665, 1.6 mi downstream from mouth of West Oso Creek, and 1.9 mi southwest of intersection of Farm Road 665 and State Highway 357.

DRAINAGE AREA.--90.3 mi^2.

PERIOD OF RECORD.--Sep 1972 to current year.
Water-quality records.--Chemical and biochemical analyses: Jul 1972 to Aug 1988. Pesticide analyses: Jul 1972 to Jul 1981.

GAGE.--Water-stage recorder. Datum of gage is 1.91 ft below sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions. An undetermined amount of water from oil-field operations enters the stream upstream from station at various points.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 24.5 ft occurred in May 1968, from information by local resident.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 11	2200	4,230	25.25	Oct 13	1700	5,960	26.99

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	2.6	2.5	2.1	2.6	2.0	1.7	1.5	1.2	1.0	1.1	1.6
2	1.7	2.5	2.5	2.2	2.9	1.9	1.7	1.5	1.1	.99	1.2	1.7
3	1.6	2.6	2.4	2.2	4.8	2.0	1.7	1.4	1.2	1.2	1.1	1.5
4	1.7	2.5	2.5	2.2	3.8	2.0	1.7	1.3	1.2	1.2	1.1	1.4
5	1.9	2.5	2.4	2.3	2.9	1.9	1.7	1.2	1.3	1.2	3.9	1.4
6	2.4	2.6	2.1	9.0	2.4	1.9	1.7	1.3	1.2	1.1	7.9	1.5
7	3.7	2.4	2.1	6.7	2.1	2.0	1.7	1.2	1.3	1.0	4.2	1.7
8	2.6	2.5	2.1	2.5	2.1	29	1.8	1.3	1.3	1.0	1.4	4.7
9	214	2.4	2.1	2.3	2.0	71	1.6	1.3	1.2	.98	1.3	13
10	1590	2.3	2.2	2.6	2.0	17	1.5	1.3	1.1	1.0	1.3	33
11	3230	2.5	2.2	2.5	2.0	7.2	1.6	1.3	1.0	1.0	1.2	15
12	2700	8.1	2.1	2.4	2.0	4.9	1.6	1.4	1.1	1.0	1.2	15
13	3920	22	2.1	2.8	1.9	5.5	1.6	1.4	1.2	1.0	1.2	13
14	2450	10	2.1	2.8	9.4	12	1.6	1.5	1.1	.99	1.4	6.0
15	439	5.8	2.1	3.4	41	25	1.6	1.5	1.0	.99	2.4	9.1
16	104	3.8	2.1	3.3	38	38	1.7	1.4	1.1	1.0	9.8	128
17	38	2.8	2.1	2.8	9.0	65	1.6	1.4	1.1	1.0	8.7	194
18	15	2.7	2.2	2.5	4.3	22	1.5	1.4	1.1	1.0	8.4	250
19	11	2.6	2.3	2.4	5.7	8.2	1.5	1.4	1.0	1.0	12	90
20	11	2.6	2.3	2.4	7.9	3.7	1.6	1.4	.99	.96	5.7	24
21	4.5	2.6	2.3	2.4	4.9	2.6	1.5	1.4	1.0	.98	3.3	8.8
22	3.8	2.5	2.2	2.9	3.5	2.1	1.5	1.3	1.0	.99	2.1	76
23	3.5	2.4	2.2	3.1	3.2	2.0	1.5	1.3	1.0	.94	1.9	44
24	3.2	2.3	2.3	3.0	2.9	1.8	1.5	1.2	1.0	.97	1.8	13
25	2.8	2.7	2.2	3.1	2.7	1.8	1.5	1.2	1.0	1.0	1.6	4.7
26	2.7	2.9	2.1	2.8	2.3	1.8	1.7	1.2	1.0	.99	1.8	4.4
27	2.5	2.6	2.1	2.5	2.3	1.7	1.7	1.3	1.0	.97	1.9	2.9
28	2.5	2.2	2.0	2.4	2.1	1.8	1.5	1.3	1.0	.98	1.6	2.3
29	2.6	2.5	2.0	2.4	---	1.8	1.5	1.3	.99	1.0	1.5	2.1
30	2.7	2.6	2.0	2.4	---	1.8	1.5	1.3	1.0	1.0	1.4	2.0
31	2.5	---	2.0	2.4	---	1.8	---	1.2	---	1.0	1.5	---
TOTAL	14772.8	113.1	67.9	90.8	172.7	343.2	48.1	41.4	32.78	31.43	96.9	965.8
MEAN	477	3.77	2.19	2.93	6.17	11.1	1.60	1.34	1.09	1.01	3.13	32.2
MAX	3920	22	2.5	9.0	41	71	1.8	1.5	1.3	1.2	12	250
MIN	1.6	2.2	2.0	2.1	1.9	1.7	1.5	1.2	.99	.94	1.1	1.4
AC-FT	29300	224	135	180	343	681	95	82	65	62	192	1920

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

MEAN	66.9	20.0	15.0	12.7	21.2	17.2	21.7	32.4	55.2	23.8	23.0	45.1
MAX	477	119	181	130	238	128	176	185	379	339	454	228
(WY)	1998	1982	1992	1984	1982	1995	1997	1993	1993	1976	1980	1979
MIN	1.26	1.40	1.27	1.53	1.29	.89	1.05	1.34	1.09	.86	1.07	1.91
(WY)	1991	1994	1991	1993	1975	1988	1975	1998	1998	1996	1997	1986

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1972 - 1998	
ANNUAL TOTAL	21619.21		16776.91			
ANNUAL MEAN	59.2		46.0		29.5	
HIGHEST ANNUAL MEAN					54.3	1992
LOWEST ANNUAL MEAN					3.03	1989
HIGHEST DAILY MEAN	3920	Oct 13	3920	Oct 13	6160	Aug 11 1980
LOWEST DAILY MEAN	.89	Aug 20	.94	Jul 23	.27	Mar 12 1988
ANNUAL SEVEN-DAY MINIMUM	.98	Aug 7	.98	Jul 20	.35	Mar 9 1988
INSTANTANEOUS PEAK FLOW			5960	Oct 13	12100	Aug 10 1980
INSTANTANEOUS PEAK STAGE			26.99	Oct 13	29.37	Aug 10 1980
ANNUAL RUNOFF (AC-FT)	42880		33280		21380	
10 PERCENT EXCEEDS	15		11		19	
50 PERCENT EXCEEDS	2.1		2.1		2.3	
90 PERCENT EXCEEDS	1.1		1.0		1.2	

08364000 RIO GRANDE AT EL PASO, TX
(National stream-quality accounting network)
(National water-quality assessment program)

LOCATION.--Lat 31°48'10", long 106°32'25", El Paso County, Hydrologic Unit 13030102, at gaging station on the downstream side of the Courchesne Bridge, 5.6 mi upstream from the Santa Fe Street-Juarez Avenue bridge between El Paso, Tx., and Cd. Juarez, Chihuahua, at mile 1,249, and 1.7 mi upstream from the American Dam.

DRAINAGE AREA.--29,267 mi^2.

PERIOD OF RECORD.--Chemical analyses: Feb 1930 to current year.

REMARKS.--Records of specific conductance and discharge for water year 1998 are given in International Boundary and Water Commission Water Bulletins Nos. 67 and 68. Since 1995, quality assurance data for this station may be obtained from the U.S.Geological Survey upon request.

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

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER 00027)	SAMPLING METHOD, CODES (82398)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE AIR (DEG C) (00020)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	HARDNESS TOTAL (MG/L AS CACO3) (00900)
OCT													
27...	1000	1028	10	287	1720	8.0	20.0	15.5	--	664	8.0	93	--
29...	1315	1028	10	265	1730	8.0	24.5	16.5	20	666	8.5	100	350
NOV													
19...	0915	1028	70	218	1990	8.5	4.5	9.0	8.1	665	9.2	92	380
20...	0810	84823	70	194	1770	7.9	--	10.0	--	--	--	--	390
DEC													
18...	1000	84823	70	144	1990	8.0	--	4.5	--	--	--	--	440
JAN													
28...	1315	1028	10	339	1260	8.2	21.0	10.0	29	665	10.4	106	270
28...	1330	1028	10	339	1260	8.2	21.0	10.0	28	665	10.4	106	270
FEB													
19...	0815	84823	70	275	1360	8.2	--	6.5	--	--	--	--	300
MAR													
24...	1200	1028	10	1020	861	8.3	19.0	15.0	76	666	7.9	90	200
APR													
28...	0945	1028	10	809	973	8.4	14.0	14.0	43	668	7.6	85	220
MAY													
12...	0930	1028	10	681	1020	8.6	17.0	17.5	22	662	7.5	91	230
JUN													
23...	0930	1028	10	978	902	8.3	25.0	22.5	45	665	6.6	88	210
JUL													
15...	0845	1028	10	1090	878	8.4	26.5	25.5	50	665	6.0	85	190
AUG													
12...	0915	1028	10	1030	966	8.3	28.5	26.0	47	670	5.8	82	210
SEP													
03...	0930	1028	10	999	938	8.3	24.5	22.5	41	663	6.2	83	210

DATE	HARDNESS NONCARB DISSOLVFLD. AS CACO3 (MG/L) (00904)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CARBONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
OCT													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	96	100	23	200	5	9.2	316	0	259	--	360	180	.7
NOV													
19...	150	110	25	270	6	10	276	6	237	--	440	260	.7
20...	140	110	24	221	5	9.6	--	--	240	--	370	190	.8
DEC													
18...	180	120	35	296	6	11	--	--	260	--	480	300	.9
JAN													
28...	80	78	17	150	4	7.6	229	0	188	199	230	150	.8
28...	82	79	17	150	4	8.0	229	0	188	--	230	150	.8
FEB													
19...	100	86	20	167	4	8.1	--	--	190	--	230	140	.7
MAR													
24...	53	57	13	99	3	6.5	175	0	144	--	160	78	.6
APR													
28...	49	65	14	110	3	6.9	201	5	173	--	190	85	.6
MAY													
12...	55	66	15	110	3	7.3	203	5	175	--	200	92	.7
JUN													
23...	48	60	14	97	3	6.9	195	0	160	--	170	72	.6
JUL													
15...	31	57	13	91	3	6.8	151	24	164	--	160	68	.7
AUG													
12...	52	62	14	110	3	6.5	193	2	162	--	190	84	.7
SEP													
03...	45	60	14	110	3	6.5	200	0	164	--	170	76	.7

08364000 RIO GRANDE AT EL PASO, TX--Continued

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, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)
OCT												
27...	--	--	--	--	--	--	--	--	--	--	--	--
29...	23	1130	1060	1.22	.02	1.2	.05	.15	.5	.2	.17	.09
NOV												
19...	22	1300	1290	1.12	.12	1.2	.04	.25	.5	.3	.10	.05
20...	25	--	1100	--	--	--	--	--	--	--	--	--
DEC												
18...	27	--	1420	--	--	--	--	--	--	--	--	--
JAN												
28...	13	798	762	.704	.02	.72	.04	--	1.0	--	.26	.09
28...	13	802	760	.699	.02	.72	.04	.22	.7	.3	.25	.10
FEB												
19...	13	--	786	--	--	--	--	--	--	--	--	--
MAR												
24...	10	531	511	--	<.01	.15	.04	.17	.9	.2	.28	<.01
APR												
28...	13	609	587	.307	.01	.32	.03	.17	.7	.2	.22	.04
MAY												
12...	13	642	612	--	<.01	.06	.05	.18	.4	.2	.03	<.01
JUN												
23...	14	567	530	.247	.01	.26	.10	.12	.4	.2	.06	.03
JUL												
15...	15	533	508	.063	.02	.08	.04	.21	.9	.3	.23	.02
AUG												
12...	16	602	577	.179	.01	.19	.05	.17	.8	.2	.23	.02
SEP												
03...	16	579	553	.265	.02	.28	.04	.14	1	.2	.24	.02

DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, DIS-SOLVED (UG/L AS B) (01020)	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)
OCT												
27...	--	--	--	--	--	--	--	--	--	--	--	--
29...	.11	3.2	.7	2	<1	4	107	<1	273	<1	3	<1
NOV												
19...	.09	3.2	.5	1	<1	4	92	<1	350	<1	3	<1
20...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
18...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
28...	.12	--	--	<10	--	3	66	--	--	<1	<1.0	<12
28...	.11	3.4	2.4	1	<1	3	71	<1	210	<1	4	<1
FEB												
19...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
24...	.03	3.4	3.9	3	<1	3	62	<1	156	<1	<1	<1
APR												
28...	.05	3.5	1.4	2	<1	3	69	<1	166	<1	3	<1
MAY												
12...	.02	3.1	2.5	1	<1	3	69	<1	170	<1	2	<1
JUN												
23...	.03	2.9	2.7	2	<1	4	67	<1	155	<1	1	<1
JUL												
15...	.03	3.4	3.1	12	<1	4	65	<1	148	<1	2	<1
AUG												
12...	.04	3.3	2.9	4	<1	4	72	<1	170	<1	1	<1
SEP												
03...	.03	3.2	2.4	8	<1	4	71	<1	172	<1	<1	<1

08364000 RIO GRANDE AT EL PASO, TX--Continued

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

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	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)
OCT												
27...	--	--	--	--	--	--	--	--	--	--	--	--
29...	2	<3	<1	150	7	--	12	2	<1	<1	1300	<6
NOV												
19...	1	<9	<1	190	21	--	15	3	<1	<1	1500	<18
20...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
18...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
28...	<1	<10	<1	120	25	<.1	<60	<1	<1	<1	1000	<10
28...	<1	<10	<1	120	24	--	9	1	<1	<1	1000	<10
FEB												
19...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
24...	3	<10	<1	83	2	--	8	2	<1	<1	730	<10
APR												
28...	<1	<10	<1	92	3	--	8	1	<1	<1	820	<10
MAY												
12...	1	<10	<1	98	2	--	8	2	<1	<1	870	<10
JUN												
23...	1	<10	<1	87	<1	--	8	1	<1	<1	780	<10
JUL												
15...	2	<10	<1	82	2	--	7	1	<1	<1	740	<10
AUG												
12...	1	<10	<1	92	2	--	8	1	<1	<1	810	<10
SEP												
03...	1	<10	<1	87	1	--	8	<1	<1	<1	770	<10

DATE	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)	BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167)	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)
OCT											
27...	--	--	--	--	--	4	21	73	99	100	100
29...	1	5	--	--	--	4	21	73	99	99	100
NOV											
19...	3	6	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
DEC											
18...	--	--	--	--	--	--	--	--	--	--	--
JAN											
28...	<20	--	--	--	--	--	--	--	--	--	--
28...	2	4	--	--	--	--	--	--	--	--	--
FEB											
19...	--	--	--	--	--	--	--	--	--	--	--
MAR											
24...	6	3	399	1100	74	--	--	--	--	--	--
APR											
28...	2	4	310	677	85	--	--	--	--	--	--
MAY											
12...	1	4	143	263	93	--	--	--	--	--	--
JUN											
23...	1	3	--	--	--	--	--	--	--	--	--
JUL											
15...	2	3	--	--	--	--	--	--	--	--	--
AUG											
12...	2	3	286	795	79	--	--	--	--	--	--
SEP											
03...	2	3	276	744	71	--	--	--	--	--	--

08364000 RIO GRANDE AT EL PASO, TX--Continued

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

DATE	TIME	PROP-CHLOR, WATER, DISS, REC (UG/L) (04024)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	FONOFOS WATER DISS REC (UG/L) (04095)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	P,P' DDE DISSOLV (UG/L) (34653)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	LINDANE DIS-SOLVED (UG/L) (39341)
OCT												
29...	1315	<.007	<.002	<.005	E.0081	<.002	<.004	<.003	<.002	<.006	E.0036	<.004
NOV												
19...	0915	<.007	<.002	<.005	E.0125	<.002	<.004	<.003	<.002	<.006	.0056	<.004
20...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
18...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
28...	1330	<.007	<.002	<.005	<.018	<.002	<.004	<.003	<.002	<.006	<.004	<.004
FEB												
19...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
24...	1200	<.007	<.002	<.005	<.018	<.002	<.004	<.003	<.002	<.006	<.004	<.004
APR												
28...	0945	<.007	<.002	E.0046	E.0054	<.002	.0100	<.003	<.002	<.006	<.004	<.004
MAY												
12...	0930	<.007	<.002	<.005	<.018	<.002	<.004	<.003	<.002	<.006	<.004	<.004
JUN												
23...	0930	<.007	<.002	<.005	<.018	<.002	<.004	<.003	<.002	<.006	<.004	<.004
JUL												
15...	0845	<.007	<.002	<.005	<.018	<.002	<.004	<.003	<.002	<.006	<.004	<.004
AUG												
12...	0915	<.007	<.002	E.0039	<.018	<.002	<.004	<.003	<.002	<.006	<.004	<.004
SEP												
03...	0930	<.007	<.002	<.005	<.018	<.002	<.004	<.003	<.002	<.006	<.004	<.004

DATE	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	MALA-THION, DIS-SOLVED (UG/L) (39532)	PARA-THION, DIS-SOLVED (UG/L) (39542)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)
OCT												
29...	<.001	.0050	<.005	<.004	<.005	<.001	<.002	<.002	<.004	<.003	<.002	<.004
NOV												
19...	<.001	.0052	<.005	<.004	.0069	<.001	<.002	<.002	<.004	<.003	<.002	<.004
20...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
18...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
28...	<.001	.0051	<.005	<.004	E.0033	<.001	<.002	<.002	<.004	<.003	<.002	<.004
FEB												
19...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
24...	<.001	<.002	<.005	<.004	<.002	<.001	<.002	<.002	<.004	<.003	<.002	<.004
APR												
28...	<.001	.0077	<.005	<.004	<.002	E.0040	<.002	<.002	<.020	<.003	<.002	<.004
MAY												
12...	<.001	.0043	<.005	<.004	<.002	<.001	<.002	<.002	<.004	<.003	<.002	<.004
JUN												
23...	<.001	.0050	<.005	<.004	<.002	E.0029	<.002	<.002	<.004	<.003	<.002	<.004
JUL												
15...	<.001	<.002	<.005	<.004	<.002	<.001	<.002	<.002	<.004	<.003	<.002	<.004
AUG												
12...	<.001	<.006	<.005	<.004	<.002	<.001	<.002	<.002	<.004	<.003	<.002	<.004
SEP												
03...	<.001	E.0030	<.005	<.004	<.002	<.001	<.002	<.002	<.004	<.003	<.002	<.004

08364000 RIO GRANDE AT EL PASO, TX--Continued

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

DATE	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)
OCT												
29...	<.002	<.007	<.002	<.006	<.002	<.004	<.010	<.004	<.003	<.002	<.003	<.013
NOV												
19...	<.002	<.007	<.002	<.006	<.002	<.004	<.010	<.004	<.003	<.002	<.003	<.013
20...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
18...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
28...	<.002	<.007	<.002	<.006	<.002	<.004	<.010	<.004	<.003	<.002	<.010	<.013
FEB												
19...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
24...	<.002	<.007	<.002	<.006	<.002	<.004	E.0060	<.004	<.003	<.002	<.013	<.013
APR												
28...	<.002	<.007	<.002	<.006	<.002	<.004	<.010	<.004	<.003	<.002	E.0106	<.013
MAY												
12...	<.002	<.007	<.002	<.006	<.002	<.004	E.0052	<.004	<.003	<.002	<.003	<.013
JUN												
23...	<.002	<.007	<.002	<.006	<.002	<.004	E.0062	<.004	<.003	<.002	<.003	<.013
JUL												
15...	<.002	<.007	<.002	<.006	<.002	<.004	<.010	<.004	<.003	<.002	<.003	<.013
AUG												
12...	<.002	<.007	<.002	<.006	<.002	<.004	<.010	<.004	<.003	<.002	<.003	<.013
SEP												
03...	<.002	<.007	<.002	<.006	<.002	<.004	<.010	<.004	<.003	<.002	<.003	<.013

DATE	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)
OCT												
29...	<.003	<.017	<.001	<.004	<.008	<.002	.0042	<.004	<.003	<.013	<.001	<.005
NOV												
19...	<.003	<.017	<.001	<.004	<.003	<.002	E.0033	<.004	<.003	<.013	<.001	<.005
20...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
18...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
28...	<.003	<.017	<.001	<.004	<.003	<.002	<.002	<.004	<.003	<.013	<.001	<.005
FEB												
19...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
24...	<.003	<.017	<.001	<.004	<.003	<.002	E.0017	<.004	<.003	<.013	<.001	<.005
APR												
28...	<.003	<.017	<.001	<.004	<.003	<.002	E.0023	<.004	<.003	<.013	<.001	<.005
MAY												
12...	<.003	<.017	<.001	<.004	<.003	<.002	<.002	<.004	<.003	<.013	<.001	<.005
JUN												
23...	<.003	<.017	<.001	<.004	<.003	<.002	<.002	<.004	<.003	<.013	<.001	<.005
JUL												
15...	<.003	<.017	<.001	<.004	<.003	<.002	<.002	<.004	<.003	<.024	<.001	<.005
AUG												
12...	<.003	<.017	<.001	<.004	<.003	<.002	<.002	<.004	<.003	<.013	<.001	<.005
SEP												
03...	<.003	<.017	<.001	<.004	<.003	<.002	<.002	<.004	<.003	<.013	<.001	<.005

08364000 RIO GRANDE AT EL PASO, TX--Continued

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

DATE	TIME	ALUM-INUM BOT MAT <63U WS FIELD PERCENT (34790)	ANTI-MONY BOT MAT <63U WS FIELD (UG/G) (34795)	ARSENIC BOT MAT <63U WS FIELD (UG/G) (34800)	BARIUM BOT MAT <63U WS FIELD (UG/G) (34805)	BERYL-LIUM BOT MAT <63U WS FIELD (UG/G) (34810)	BISMUTH BOT MAT <180UWS FIELD (UG/G) (34816)	CADMIUM BOT MAT <63U WS FIELD (UG/G) (34825)	CALCIUM BOT MAT <63U WS FIELD PERCENT (34830)	CERIUM BOT MAT <63U WS FIELD (UG/G) (34835)	CHRO-MIUM BOT MAT <63U WS FIELD (UG/G) (34840)	COBALT BOT MAT <63U WS FIELD (UG/G) (34845)
OCT 27...	1000	5.8	.7	4.7	560	1	<10	.2	8.5	74	53	8

DATE	COPPER BOT MAT <63U WS FIELD (UG/G) (34850)	EURO-PIUM BOT MAT <63U WS FIELD (UG/G) (34855)	GALLIUM BOT MAT <63U WS FIELD (UG/G) (34860)	GOLD BOT MAT <63U WS FIELD (UG/G) (34870)	HOLMIUM BOT MAT <63U WS FIELD (UG/G) (34875)	IRON BOT MAT <63U WS FIELD PERCENT (34880)	LANTHA-NUM BOT MAT <63U WS FIELD (UG/G) (34885)	LEAD BOT MAT <63U WS FIELD (UG/G) (34890)	LITHIUM BOT MAT <63U WS FIELD (UG/G) (34895)	MAGNE-SIUM BOT MAT <63U WS FIELD PERCENT (34900)	MANGA-NESE BOT MAT <63U WS FIELD (UG/G) (34905)
OCT 27...	33	<2	22	<8	<4	2.7	42	19	40	1.2	970

DATE	MERCURY BOT MAT <63U WS FIELD (UG/G) (34910)	MOLYB-DENUM BOT MAT <63U WS FIELD (UG/G) (34915)	NEODYM-IUM BOT MAT <63U WS FIELD (UG/G) (34920)	NICKEL BOT MAT <63U WS FIELD (UG/G) (34925)	NIOBIUM BOT MAT <63U WS FIELD (UG/G) (34930)	PHOS-PHORUS BOT MAT <63U WS FIELD PERCENT (34935)	POTAS-SIUM BOT MAT <63U WS FIELD PERCENT (34940)	SCAN-DIUM BOT MAT <63U WS FIELD (UG/G) (34945)	SELE-NIUM BOT MAT <63U WS FIELD (UG/G) (34950)	SILVER BOT MAT <63U WS FIELD (UG/G) (34955)	SODIUM BOT MAT <63U WS FIELD PERCENT (34960)
OCT 27...	.03	<2	34	19	17	.10	2.0	8	.2	.2	1.0

DATE	STRON-TIUM BOT MAT <63U WS FIELD (UG/G) (34965)	SULFUR BOT MAT <63U WS FIELD (UG/G) (34970)	TANTA-LUM BOT MAT <63U WS FIELD (UG/G) (34975)	THORIUM BOT MAT <63U WS FIELD (UG/G) (34980)	TIN BOT MAT <63U WS FIELD (UG/G) (34985)	TITA-NIUM, SED, BM WS,<63U DRY WGT REC PERCENT (49274)	URANIUM BOT MAT <63U WS FIELD (UG/G) (35000)	VANA-DIUM BOT MAT <63U WS FIELD (UG/G) (35005)	YTTRIUM BOT MAT <63U WS FIELD (UG/G) (35010)	YTTER-BIUM BOT MAT <63U WS FIELD (UG/G) (35015)	ZINC BOT MAT <63U WS FIELD (UG/G) (35020)
OCT 27...	480	.12	<40	11	<5	.37	3.5	72	25	2	71

08377200 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TX
(National stream-quality accounting network)

LOCATION.--Lat 29°46'50", long 101°45'20", Val Verde County, Hydrologic Unit 13040212, at gaging station 0.1 mi downstream from Terrell-Val Verde County line, 16.9 mi from Langtry, and 597.2 mi downstream from the American Dam at El Paso.

DRAINAGE AREA.--80,742 mi^2, United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 44.

PERIOD OF RECORD.--Inorganic chemical analyses: Apr 1944 to current year. Biochemical analyses: Oct 1974 to Aug 1995. Organic chemical analyses: Jul 1975 to Jun 1982, Oct 1995 to current year. Sediment analyses: Oct 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1974 to Sep 1981.
WATER TEMPERATURE: Oct 1974 to Sep 1981.

REMARKS.--Discharges published in the table were obtained directly from rating table furnished by International Boundary and Water Commission. Records of daily mean discharge for water year 1998 are given in International Boundary and Water Commission Water Bulletins Nos. 67 and 68. Since Sep 1995, suspended sediment chemistry and quality assurance data for this station may be obtained from the U.S. Geological Survey upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,110 microsiemens, Dec 4, 1974; minimum daily, 225 microsiemens, May 2, 1981.
WATER TEMPERATURE: Maximum daily, 32.0°C, Jun 13, 1977, Jul 25, 26, 1979, Jul 4, 1980, and Jun 8, 1981; minimum daily, 9.0°C, Jan 12, 1975, Jan 8, 1976, and Jan 18, 1981.

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

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	SAMPLING METHOD, CODES (82398)	DISCHARGE, 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, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
NOV												
19...	1140	1028	10	541	1620	7.9	13.5	150	10.6	106	340	190
JAN												
28...	1110	1028	10	419	1610	8.5	14.5	64	12.1	125	320	180
MAR												
11...	1130	1028	10	305	1530	8.5	13.5	65	10.7	107	330	180
APR												
29...	0950	1028	10	244	1220	7.8	20.5	65	8.2	96	310	160
MAY												
27...	1130	1028	10	274	733	8.3	26.5	78	7.9	104	210	64
JUN												
23...	1020	1028	10	356	820	8.2	27.0	160	7.5	99	220	87
JUL												
29...	1000	1028	10	419	842	8.2	26.0	250	7.2	93	260	120
AUG												
21...	1450	1028	10	4000	1500	7.7	28.0	8800	4.2	57	320	210
SEP												
01...	1230	1028	10	438	850	8.0	29.0	320	6.6	90	260	130

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	SODIUM PERCENT (00932)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	CARBONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	BICARBONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
NOV												
19...	90	28	215	5	57	7.0	0	185	151	330	230	1.0
JAN												
28...	82	28	215	5	59	7.0	7	158	140	340	230	1.2
MAR												
11...	86	28	195	5	56	6.8	8	164	147	310	220	1.1
APR												
29...	78	27	135	3	48	6.2	0	175	144	280	140	1.3
MAY												
27...	59	16	71	2	41	4.9	6	172	151	130	54	.96
JUN												
23...	65	14	76	2	42	4.8	0	163	133	170	58	.98
JUL												
29...	77	16	71	2	37	5.0	0	171	140	210	46	1.1
AUG												
21...	110	12	186	5	55	7.4	0	140	115	390	140	1.0
SEP												
01...	85	11	67	2	36	5.1	0	153	125	200	48	.71

08377200 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TX--Continued
(National stream-quality accounting network)

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, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
NOV 19...	18	1060	1020	.528	.004	.532	.032	1.2	.63	.19	.22	.66
JAN 28...	2.7	--	991	.290	.003	.293	.003	1.3	1.0	.23	.24	1.0
MAR 11...	12	998	957	.212	.003	.215	.002	.79	.57	.14	.14	.58
APR 29...	19	820	778	.525	.004	.529	<.002	1.0	--	--	<.10	.49
MAY 27...	16	458	448	.878	.023	.901	<.002	1.5	--	--	.26	.62
JUN 23...	16	526	489	--	<.001	1.19	<.002	1.3	--	--	.19	.15
JUL 29...	16	555	531	.799	.002	.801	<.002	2.4	--	--	.16	1.6
AUG 21...	13	998	940	.860	.167	1.03	.017	13	12	.26	.28	12
SEP 01...	14	541	511	1.07	.003	1.07	<.002	1.7	--	--	.20	.61

DATE	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)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)
NOV 19...	.123	.014	.011	.03	2.0	4.6	440	301	100	<1.0	<1.0	3
JAN 28...	.104	.015	.002	.01	3.0	6.8	171	151	100	<1.0	<1.0	2
MAR 11...	.051	<.010	<.001	--	2.1	3.8	142	172	100	<1.0	<1.0	2
APR 29...	.119	<.010	<.001	--	1.2	1.8	99	150	100	<1.0	<1.0	3
MAY 27...	.115	<.010	<.001	--	3.6	2.3	126	170	100	1.5	<1.0	3
JUN 23...	.012	<.010	.037	.11	2.4	2.2	319	332	99	1.6	<1.0	3
JUL 29...	.789	<.010	.002	.01	2.6	4.0	572	506	100	2.3	<1.0	3
AUG 21...	13.6	<.010	.007	.02	3.5	>20	271000	25100	100	1.3	<1.0	1
SEP 01...	.196	.010	.008	.02	3.2	6.3	642	543	100	3.8	<1.0	2

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, DIS-SOLVED (UG/L AS B) (01020)	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)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
NOV 19...	83	<1.0	281	<1.0	2.0	<1.0	1.2	<3.0	<1.0	120	<1.0	10
JAN 28...	79	<1.0	275	<1.0	2.9	<1.0	1.1	<10	<1.0	110	<1.0	9.7
MAR 11...	87	<1.0	266	<1.0	1.4	<1.0	1.3	<10	<1.0	110	<1.0	10
APR 29...	95	<1.0	243	<1.0	3.0	<1.0	<1.0	<10	<1.0	92	<1.0	11
MAY 27...	68	<1.0	150	<1.0	2.8	<1.0	1.5	<10	<1.0	47	<1.0	7.0
JUN 23...	106	<1.0	156	<1.0	1.9	<1.0	1.2	<10	<1.0	49	<1.0	7.4
JUL 29...	102	<1.0	160	<1.0	1.8	<1.0	1.6	<10	<1.0	54	<1.0	8.3
AUG 21...	194	<1.0	256	<1.0	1.9	<1.0	2.6	<10	<1.0	67	<1.0	10
SEP 01...	112	<1.0	120	<1.0	1.3	<1.0	1.3	<10	<1.0	36	1.8	5.7

08377200 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TX--Continued
(National stream-quality accounting network)

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

DATE	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	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)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)
NOV												
19...	1.9	<1	<1.0	2070	<6	<1.0	5.4	<.0030	<.0020	<.002	<.0020	<.001
JAN												
28...	1.9	<1	<1.0	1980	<10	2.0	4.7	<.0030	<.0020	<.002	<.0020	<.001
MAR												
11...	2.2	<1	<1.0	2000	<10	1.5	4.9	<.0030	<.0020	<.002	<.0020	<.001
APR												
29...	1.2	<1	<1.0	2070	<10	<1.0	5.2	<.0030	<.0020	<.002	<.0020	E.003
MAY												
27...	1.3	<1	<1.0	1330	10	1.8	3.4	<.0030	<.0020	<.002	<.0020	.005
JUN												
23...	1.1	1	<1.0	1450	19	1.0	3.4	<.0030	<.0020	<.002	<.0020	E.001
JUL												
29...	1.3	1	<1.0	1740	<10	<1.0	3.7	<.0030	<.0020	<.002	<.0020	<.001
AUG												
21...	2.4	2	<1.0	1820	<10	1.6	5.3	<.0030	<.0020	<.002	<.0020	<.001
SEP												
01...	1.2	1	<1.0	1240	<10	1.2	3.0	<.0030	<.0020	<.002	<.0020	<.001

DATE	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)
NOV												
19...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.004	<.001
JAN												
28...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.008	<.001
MAR												
11...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
APR												
29...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
MAY												
27...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	E.0032	.004	<.001
JUN												
23...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	E.004	<.001
JUL												
29...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
AUG												
21...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
SEP												
01...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001

DATE	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)
NOV												
19...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
JAN												
28...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
MAR												
11...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
APR												
29...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
MAY												
27...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	E.004	<.004	<.0040	<.0030
JUN												
23...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
JUL												
29...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
AUG												
21...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
SEP												
01...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030

08377200 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TX--Continued
(National stream-quality accounting network)

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

DATE	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PROP-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)
NOV											
19...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	.0206	<.0070	<.0040	<.160	<.0030
JAN											
28...	<.0060	.012	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	.0123
MAR											
11...	E.0012	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
APR											
29...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
MAY											
27...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
JUN											
23...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
JUL											
29...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
AUG											
21...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
SEP											
01...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030

DATE	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	TERBUTH YLAZINE SURROGT WAT FLT 0.7 U GF, REC PERCENT (91064)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	SAMPLE VOLUME SCHED-ULE 2001 (ML) (99856)
NOV											
19...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	111	125	100	917
JAN											
28...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	119	127	104	900
MAR											
11...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	112	120	102	952
APR											
29...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	118	122	104	934
MAY											
27...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	100	110	99.1	943
JUN											
23...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	124	113	94.1	952
JUL											
29...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	98.3	111	92.2	884
AUG											
21...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	99.2	112	91.2	970
SEP											
01...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	115	104	101	943

08407500 PECOS RIVER AT RED BLUFF, NM

LOCATION.--Lat 32°04'30", long 104°02'21", in SW¼NW¼NE¼ sec.1, T.26 S., R.28 E., Eddy County, Hydrologic Unit 13060011, on right bank at Red Bluff, 0.2 mi downstream from Red Bluff Draw, 1.6 mi northwest of the El Paso Natural Gas (Pecos River) compressor station, 5.2 mi north of the New Mexico-Texas State line, 5.5 mi upstream from Delaware River, and at mile 411.2.

DRAINAGE AREA.--19,540 mi^2, approximately (contributing area).

PERIOD OF RECORD.--October 1937 to current year.

GAGE.--Water stage recorder. Elevation of gage is 2,850.05 ft above National Geodetic Vertical Datum of 1929. Satellite telemeter at station.

REMARKS.--Discharge records good. Flow regulated by many reservoirs and diversion dams. Diversions and ground-water withdrawals upstream from station for irrigation of about 202,000 acres, 1959 determination. Several observations of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1904 reached a stage of 28.0 ft, from information by Panhandle and Santa Fe Railway Co. (For dates of other historical floods see stations 08404000, 08406500.)

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	60	697	92	86	99	74	66	79	33	33	48	47
2	67	715	90	87	98	75	72	75	33	34	46	46
3	65	718	90	90	97	75	61	70	33	39	45	49
4	60	704	94	95	95	75	57	65	33	36	45	53
5	59	699	89	136	98	75	69	52	32	46	52	54
6	70	693	85	108	98	75	62	45	34	63	62	53
7	141	687	84	102	98	73	59	42	39	38	46	49
8	217	675	83	99	96	70	55	49	39	36	62	47
9	196	671	83	101	97	79	57	49	33	34	51	46
10	140	671	207	114	96	79	55	45	32	32	45	48
11	98	683	310	118	95	76	62	54	32	32	45	49
12	68	697	142	133	93	73	64	46	33	33	44	47
13	63	705	93	129	93	73	60	36	34	36	44	47
14	62	705	85	127	93	74	59	34	39	36	45	45
15	61	700	285	147	92	75	57	34	41	34	70	46
16	61	699	472	146	94	78	56	39	40	49	66	56
17	70	704	268	123	94	88	57	39	36	41	47	52
18	87	712	131	118	94	82	65	35	32	39	44	62
19	299	721	95	117	91	75	71	34	32	190	47	54
20	334	722	97	108	93	71	66	34	32	464	49	48
21	335	716	105	107	92	69	61	43	33	449	50	52
22	340	710	105	104	92	69	62	42	41	450	57	53
23	391	634	110	110	90	68	61	40	40	423	76	51
24	437	366	115	113	90	67	62	41	34	429	59	48
25	428	194	123	104	82	67	63	35	32	254	52	45
26	502	114	110	103	78	67	57	36	32	102	51	44
27	568	100	99	102	76	65	57	41	33	69	49	41
28	614	104	94	101	74	70	63	36	33	57	48	40
29	631	100	88	102	---	69	63	35	33	52	52	56
30	622	96	87	101	---	67	73	34	33	49	80	58
31	668	---	86	100	---	65	---	33	---	49	60	---
TOTAL	7814	17112	4097	3431	2578	2258	1852	1372	1036	3728	1637	1486
MEAN	252	570	132	111	92.1	72.8	61.7	44.3	34.5	120	52.8	49.5
MAX	668	722	472	147	99	88	73	79	41	464	80	62
MIN	59	96	83	86	74	65	55	33	32	32	44	40
AC-FT	15500	33940	8130	6810	5110	4480	3670	2720	2050	7390	3250	2950

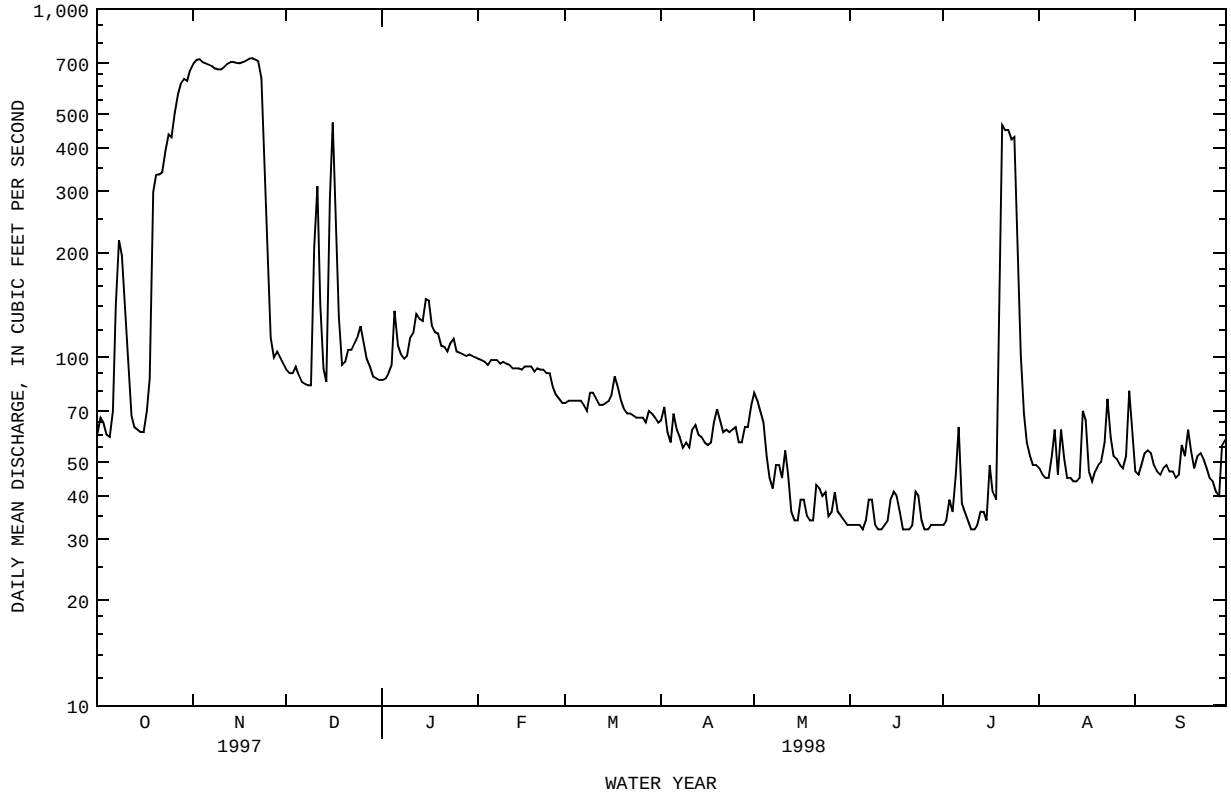
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1998, BY WATER YEAR (WY)

MEAN	273	157	125	113	97.6	70.4	58.6	217	179	114	156	282
MAX	5255	1382	813	703	534	295	681	6954	3181	1273	4210	6521
(WY)	1942	1942	1942	1942	1942	1942	1942	1941	1941	1941	1966	1941
MIN	10.0	6.71	8.57	10.7	13.7	7.76	6.38	7.90	4.30	2.55	5.08	5.77
(WY)	1965	1978	1978	1965	1965	1978	1978	1971	1990	1966	1964	1977

08407500 PECOS RIVER AT RED BLUFF, NM--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1938 - 1998	
ANNUAL TOTAL	49477		48401			
ANNUAL MEAN	136		133		154	
HIGHEST ANNUAL MEAN					1655	1941
LOWEST ANNUAL MEAN					19.2	1977
HIGHEST DAILY MEAN	722	Nov 20	722	Nov 20	50700	Aug 24 1966
LOWEST DAILY MEAN	41	Apr 2	32	Jun 5	.22	Aug 1 1966
ANNUAL SEVEN-DAY MINIMUM	49	Apr 14	33	Jun 25	.33	Jul 26 1966
INSTANTANEOUS PEAK FLOW			728	Nov 2	[a]111000	Aug 23 1966
INSTANTANEOUS PEAK STAGE			6.50	Nov 2	33.32	Aug 23 1966
INSTANTANEOUS LOW FLOW			31	Jun 19	.19	Aug 1 1966
ANNUAL RUNOFF (AC-FT)	98140		96000		111500	
10 PERCENT EXCEEDS	340		425		208	
50 PERCENT EXCEEDS	68		69		57	
90 PERCENT EXCEEDS	50		35		14	

[a] From rating curve extended above 32,000 ft^3/s, on basis of slope-area measurement of peak flow.



08408500 DELAWARE RIVER NEAR RED BLUFF, NM

LOCATION.--Lat 32°01'23", long 104°03'15", in NE¼SW¼SE¼ sec.23, T.26 S., R.28 E., Eddy County, Hydrologic Unit 13070002, near center of channel on downstream side of pier of bridge on U.S. Highway 285, 2.1 mi north of the New Mexico-Texas State line, 3.6 mi southwest of Red Bluff, 3.7 mi upstream from mouth and 14 mi south of Malaga. Mouth at Pecos River mile 405.6.

DRAINAGE AREA.--689 mi^2.

PERIOD OF RECORD.--April 1912 to September 1913, May 1914 to June 1915, October 1937 to current year. Published as "near Malaga" 1912-13, and as "near Angeles, Tex." 1914-15.

GAGE.--Water-stage recorder. Elevation of gage is 2,900.66 ft above National Geodetic Vertical Datum of 1929 (U.S. Boundary Commission post). Prior to May 1914, at site 3.0 mi upstream at different datum. May 1914 to June 1915, at site 2.5 mi downstream at different datum.

REMARKS.--Records good. One small upstream diversion. Several observations of water temperature were made during the year. No flow for many days most years.

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	.84	1.4	1.5	1.5	1.5	1.5	.72	.00	.00	.00	3.8
2	.00	.83	1.4	1.5	1.5	1.5	1.4	.66	.00	.00	.00	.89
3	.00	.83	1.3	1.5	1.5	1.5	1.4	.57	.00	.00	.00	.17
4	.00	.86	1.4	1.6	1.5	1.5	1.6	.46	.00	.00	.00	.00
5	.00	.83	1.4	1.6	1.5	1.5	1.7	.38	.00	.00	.01	.00
6	.00	.83	1.4	1.5	1.5	1.5	1.5	.33	.00	.00	.00	.00
7	.65	.87	1.5	1.5	1.6	1.5	1.5	.31	.00	.00	.00	.00
8	10	.84	1.4	1.5	1.6	1.5	1.4	.27	.00	.00	.00	.00
9	3.0	.83	1.3	1.5	1.6	1.5	1.4	.22	.00	.00	.00	.00
10	.42	.89	1.2	1.5	1.6	1.5	1.4	.21	.00	.00	.00	.00
11	1.3	.86	1.1	1.5	1.6	1.5	1.3	.17	.00	.00	.00	.00
12	120	.92	1.2	1.6	1.5	1.5	1.2	.10	.00	.00	.00	.00
13	8.9	1.1	1.2	1.6	1.5	1.6	1.2	.08	.00	.00	.00	.00
14	1.5	1.0	1.3	1.6	1.5	1.7	1.1	.06	.00	.00	.00	.00
15	.70	.95	1.3	1.4	1.5	1.7	1.1	.02	.00	.00	.00	.00
16	.54	.98	1.5	1.5	1.5	1.7	1.1	.01	.00	.00	.00	.00
17	.50	.94	1.4	1.4	1.5	1.8	1.0	.00	.00	.00	.00	.00
18	.50	1.0	1.4	1.4	1.4	1.7	1.1	.00	.00	.00	.00	.00
19	.52	1.1	1.4	1.4	1.4	1.7	1.1	.00	.00	.00	.00	.00
20	.54	1.1	1.8	1.4	1.4	1.7	1.1	.00	.00	.00	.00	.00
21	.57	1.1	1.9	1.4	1.4	1.6	.99	.00	.00	.00	.00	.00
22	.68	1.1	2.1	1.4	1.4	1.6	1.0	.00	.00	.00	.00	.00
23	.78	1.2	2.5	1.5	1.5	1.7	.99	.00	.00	.00	.00	.00
24	.75	1.2	2.3	1.5	1.5	1.6	.95	.00	.00	.00	.00	.00
25	.71	1.3	2.0	1.5	1.5	1.6	.82	.00	.00	.00	.00	.00
26	.69	1.3	1.7	1.5	1.5	1.6	.75	.00	.00	.00	.00	.00
27	.64	1.3	1.7	1.6	1.5	1.5	.69	.00	.00	.00	.00	.00
28	.65	1.3	1.7	1.6	1.5	1.5	.70	.00	.00	.00	.00	.00
29	.71	1.3	1.6	1.6	---	1.5	.73	.00	.00	.00	43	.00
30	.78	1.3	1.5	1.5	---	1.4	.74	.00	.00	.00	93	.00
31	.83	---	1.5	1.5	---	1.4	---	.00	---	.00	23	---
TOTAL	156.86	30.80	47.8	46.6	42.0	48.6	34.46	4.57	0.00	0.00	159.01	4.86
MEAN	5.06	1.03	1.54	1.50	1.50	1.57	1.15	.15	.000	.000	5.13	.16
MAX	120	1.3	2.5	1.6	1.6	1.8	1.7	.72	.00	.00	93	3.8
MIN	.00	.83	1.1	1.4	1.4	1.4	.69	.00	.00	.00	.00	.00
AC-FT	311	61	95	92	83	96	68	9.1	.00	.00	315	9.6

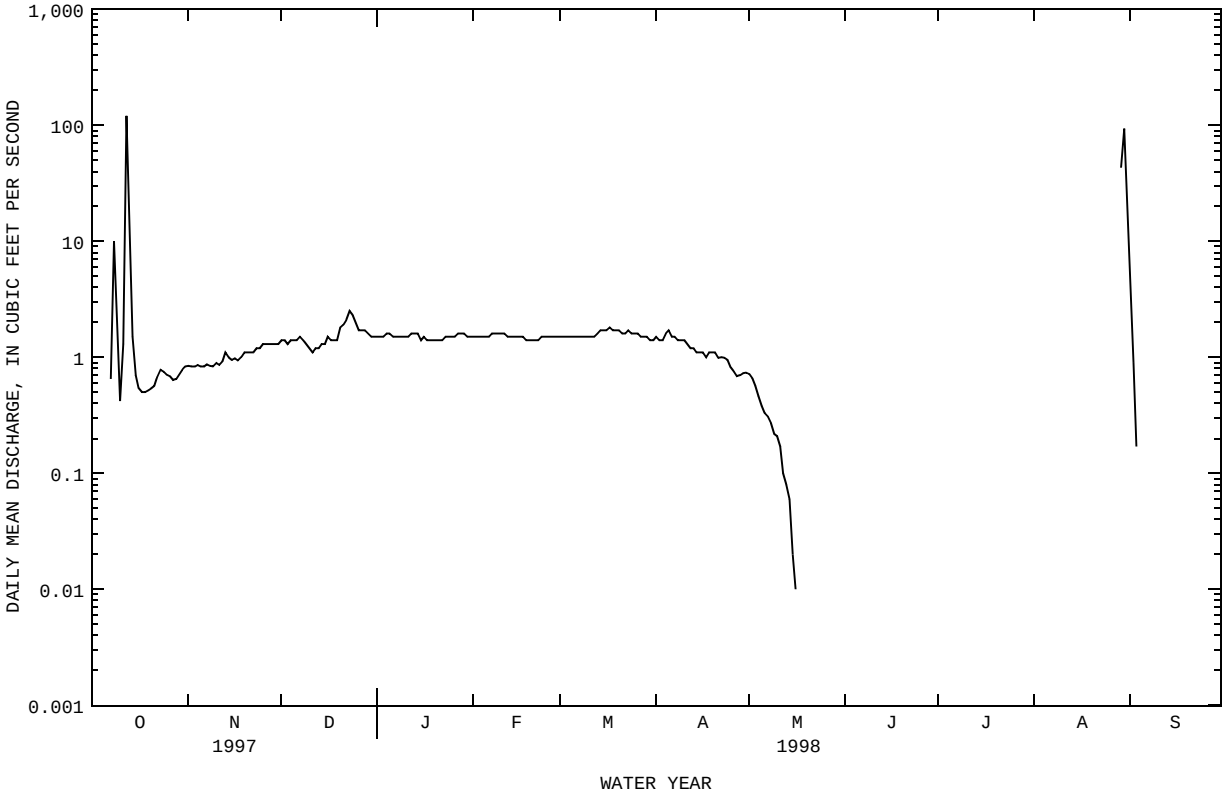
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1998, BY WATER YEAR (WY)

MEAN	28.5	3.44	3.23	3.29	3.08	2.75	5.64	9.35	18.1	13.9	21.9	21.6
MAX	748	18.9	7.99	8.57	8.77	9.44	135	233	281	166	326	303
(WY)	1956	1979	1987	1987	1987	1987	1954	1941	1938	1952	1966	1978
MIN	.000	.030	.17	.41	.13	.42	.23	.003	.000	.000	.000	.000
(WY)	1952	1965	1966	1965	1966	1993	1968	1950	1950	1947	1983	1953

08408500 DELAWARE RIVER NEAR RED BLUFF, NM--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1938 - 1998	
ANNUAL TOTAL	1283.71		575.56			
ANNUAL MEAN	3.52		1.58		11.3	
HIGHEST ANNUAL MEAN					66.1	1956
LOWEST ANNUAL MEAN					1.58	1998
HIGHEST DAILY MEAN	160	Jun 8	120	Oct 12	22000	Oct 2 1955
LOWEST DAILY MEAN	.00	Jul 26	.00	Oct 1	.00	Jun 12 1938
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 26	.00	May 17	.00	Jul 29 1946
INSTANTANEOUS PEAK FLOW			375	Oct 12	a81400	Oct 2 1955
INSTANTANEOUS PEAK STAGE			4.77	Oct 12	b27.00	Oct 2 1955
INSTANTANEOUS LOW FLOW			.00	Oct 1	.00	Jun 11 1938
ANNUAL RUNOFF (AC-FT)	2550		1140		8180	
10 PERCENT EXCEEDS	2.5		1.6		7.0	
50 PERCENT EXCEEDS	1.4		.83		2.2	
90 PERCENT EXCEEDS	.00		.00		.00	

a From rating curve extended above 6,500 ft^3/s, on basis of slope-area measurements at gage heights, 12.84 ft, 17.55 ft, and 27.0 ft.
b From floodmarks.



08410000 RED BLUFF RESERVOIR NEAR ORLA, TX

LOCATION.--Lat 31°54'04", long 103°54'35", Reeves County, Hydrologic Unit 13070001, at right end of Red Bluff Dam on the Pecos River, 2.8 mi upstream from Salt Creek, and 5.2 mi north of Orla.

DRAINAGE AREA.--20,720 mi^2, approximately (contributing area).

PERIOD OF RECORD.--February 1937 to current year. Monthly contents only for some periods, published in WSP 1312.

GAGE.--Nonrecording gage. Datum of gage is 0.43 ft below National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by a rock-faced earthfill dam 9,200 ft long. The dam was completed and storage began in Sep 1936 The dam and reservoir are owned and operated by the Red Bluff Water Power Control District. The water is used for power development and for irrigation from Mentone to Grandfalls. The uncontrolled emergency spillway, 790 ft wide, is a cut through natural ground located to the right of right end of dam. The controlled service spillway is equipped with 12 tainter gates that are 25 by 15 ft high. Inflow is regulated by many reservoirs and diversion dams. The capacity curve is based on Geological Survey topographic map and aerial photography, survey of 1986. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Gage height (feet)
Top of dam	2,856.0
Crest of emergency spillway	2,845.0
Top of gates (top of conservation pool)	2,842.0
Crest of service spillway and bottom of tainter gates	2,827.0
Lowest gated outlet (invert)	2,764.0

COOPERATION.--Gage-height records and capacity curve were furnished by Red Bluff Water Power and Control District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 352,000 acre-ft, Sept. 27, 28, 1941, gage height, 2,846.2 ft, observed on nonrecording gage at service spillway (affected by variable drawdown due to flow through tainter gates); minimum observed, 11,080 acre-ft, May 13, 1948, gage height, 2,781.4 ft.

EXTREMES (AT 0800) FOR CURRENT YEAR.--Maximum contents observed, 99,480 acre-ft, Mar. 26, gage height, 2,817.56 ft; minimum observed, 48,750 acre-ft, Sept. 30, gage height, 2,804.76 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	49950	61440	86920	92600	96190	98530	98030	82110	74340	67600	56460	49770
2	50010	62600	86960	92700	96290	98530	97330	81890	74220	67060	55920	49740
3	50040	63820	87010	92800	96380	98580	96630	81670	74090	66520	55390	49680
4	50040	65040	87050	92900	96480	98630	95950	81460	73930	65990	54890	49590
5	50040	66220	87100	92990	96580	98680	95270	81190	73770	65480	54380	49490
6	50040	67370	87150	93090	96680	98730	94590	80930	73610	64960	53990	49410
7	50040	68300	87240	93190	96780	98780	93910	80670	73450	64440	53640	49320
8	50160	69190	87330	93290	96880	98830	93240	80410	73290	63930	53260	49230
9	50250	70070	87430	93380	96980	98830	92560	80100	73130	63410	52840	49150
10	50340	71000	87520	93480	97080	98880	91880	79800	72970	62900	52400	49060
11	50430	71960	87620	93570	97180	98930	91220	79500	72890	62390	52160	49010
12	50520	73050	87850	93670	97280	98980	90570	79150	72720	61890	51920	49030
13	50620	74010	88360	93770	97380	99030	89910	78800	72560	61400	51670	49060
14	50670	74930	88320	93860	97480	99080	89250	78450	72400	60910	51430	49090
15	50740	76100	88550	93960	97580	99030	88600	78150	72240	60420	51190	49120
16	50800	77190	88790	94060	97680	98980	87940	77860	72080	59920	50950	49150
17	50860	78190	89020	94150	97780	99030	87290	77570	71920	59430	50700	49180
18	50920	79320	89250	94250	97830	99080	86650	77270	71760	58940	50460	49230
19	50980	80450	89490	94350	97880	99130	86020	76980	71600	58470	50220	49290
20	51550	81540	89860	94450	97980	99190	85390	76690	71440	58000	49980	49350
21	52130	82630	90190	94590	98080	99230	84710	76390	71280	57830	49740	49380
22	52710	83760	90470	94740	98180	99280	84260	76100	71120	57670	49590	49410
23	53320	84800	90750	94880	98280	99330	83940	75810	70960	57830	49440	49440
24	53930	85700	91030	95030	98380	99380	83670	75520	70790	58000	49290	49440
25	54630	86150	91320	95170	98430	99430	83440	75220	70630	58270	49200	49320
26	55330	86380	91590	95320	98430	99480	83220	75100	70310	58600	49150	49200
27	56050	86510	91830	95470	98480	99330	82990	74970	69760	58540	49090	49090
28	56890	86650	92070	95610	98480	99190	82760	74840	69220	58200	49380	48980
29	58000	86780	92220	95760	---	99030	82540	74720	68680	57800	49620	48860
30	59110	86870	92360	95900	---	98880	82320	74590	68140	57330	49710	48750
31	60270	---	92360	96050	---	98730	---	74470	---	56930	49800	---
MAX	60270	86870	92360	96050	98480	99480	98030	82110	74340	67600	56460	49770
MIN	49950	61440	86920	92600	96190	98530	82320	74470	68140	56930	49090	48750
(+)	2308.36	2814.94	2816.11	2816.87	2817.36	2817.41	2813.93	2812.09	2810.50	2807.38	2805.12	2804.76
(@)	+10470	+26600	+5490	+3690	+2430	+250	-16410	-7850	-6330	-11210	-7130	-1050

CAL YR 1997 MAX 92360 MIN 48690 (++) +18670
WTR YR 1998 MAX 99480 MIN 48750 (++) -1050

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

08412500 PECOS RIVER NEAR ORLA, TX

LOCATION.--Lat 31°52'21", long 103°49'52", Reeves County, Hydrologic Unit 1300001, on right bank at bridge on Farm Road 652, 5.5 mi downstream from Salt Creek (Screw Bean Arroyo), 5.9 mi northeast of Orla, and 8.5 mi downstream from Red Bluff Reservoir.

DRAINAGE AREA.--21,210 mi^2 approximately (contributing area).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1937 to current year.

REVISED RECORDS.--WSP 928: 1937.

GAGE.--Water-stage recorder. Datum of gage is 2,730.86 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 16, 1969, at site 6.9 mi downstream at datum 12.81 ft lower.

REMARKS.--Water-discharge records good. Most of flow is releases from storage in Red Bluff Reservoir (station 08410000) 8.5 mi upstream. Occasional runoff occurs from draws between dam and station. There are many diversions above Red Bluff Reservoir for irrigation.

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

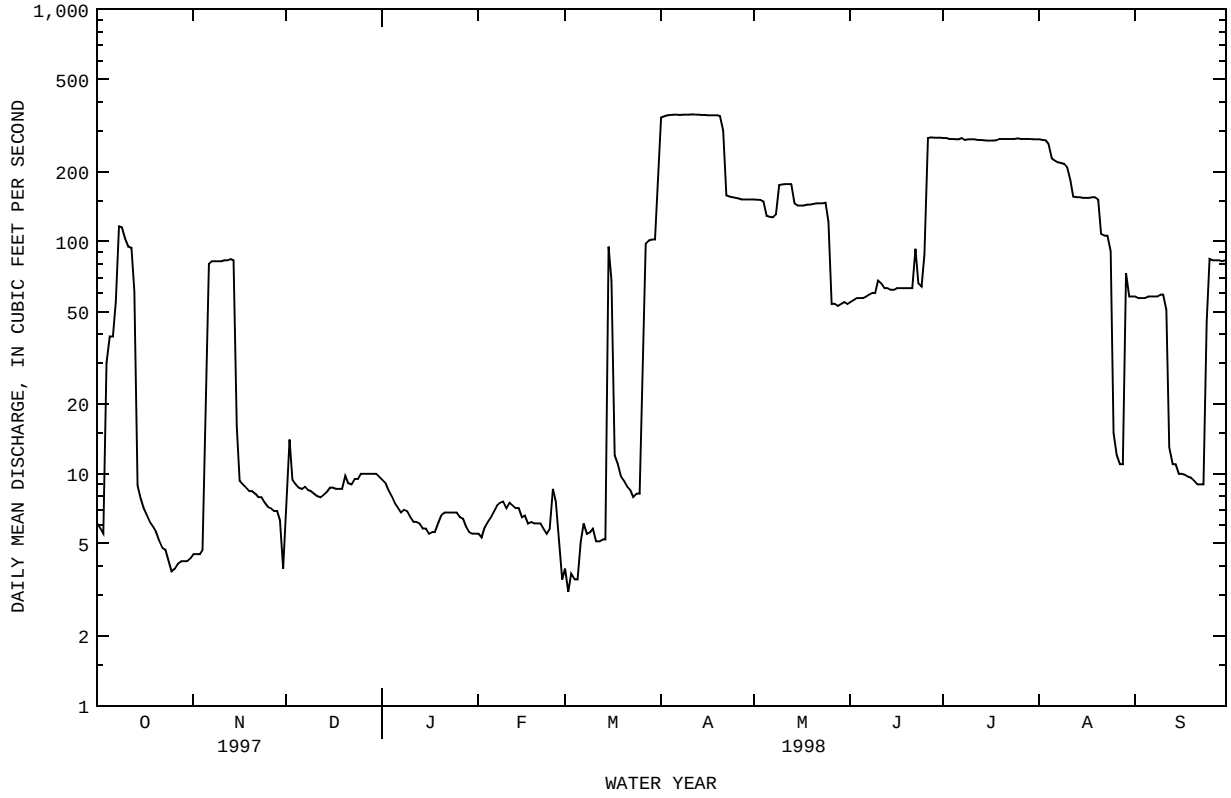
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.1	4.5	7.0	9.4	5.5	3.9	342	152	55	279	275	58
2	5.8	4.5	14	9.1	5.3	3.1	346	151	56	279	274	57
3	5.5	4.5	9.4	8.5	5.9	3.7	349	151	57	277	273	57
4	30	4.7	9.0	8.0	6.2	3.5	351	149	57	277	263	57
5	39	13	8.7	7.5	6.5	3.5	352	129	57	276	229	58
6	39	80	8.6	7.1	6.9	5.1	352	128	58	276	223	58
7	55	82	8.8	6.8	7.3	6.1	351	127	59	279	219	58
8	116	82	8.5	7.0	7.5	5.5	352	131	60	274	218	58
9	115	82	8.4	6.9	7.6	5.6	352	175	60	275	216	59
10	103	82	8.2	6.5	7.1	5.8	352	176	68	276	209	59
11	95	83	8.0	6.2	7.5	5.1	353	177	66	275	184	51
12	94	83	7.9	6.2	7.3	5.1	352	177	63	274	156	13
13	61	84	8.1	6.1	7.1	5.2	352	177	63	274	155	11
14	8.9	83	8.3	5.8	7.1	5.2	351	146	62	273	155	11
15	7.8	16	8.7	5.8	6.5	95	351	143	62	272	154	10
16	7.1	9.3	8.7	5.5	6.6	68	350	143	63	272	154	10
17	6.6	9.0	8.6	5.6	6.1	12	349	143	63	272	154	9.9
18	6.2	8.7	8.6	5.6	6.2	11	350	144	63	273	155	9.7
19	5.9	8.4	8.6	6.1	6.1	9.7	350	144	63	277	155	9.6
20	5.6	8.4	9.8	6.6	6.1	9.3	348	145	63	277	152	9.3
21	5.1	8.2	9.1	6.8	6.1	8.8	301	146	63	277	108	9.0
22	4.8	7.9	9.0	6.8	5.8	8.5	158	146	93	277	106	9.0
23	4.7	7.9	9.5	6.8	5.5	7.9	156	146	66	277	106	9.0
24	4.2	7.5	9.5	6.8	5.8	8.2	155	147	64	277	91	45
25	3.8	7.2	10	6.8	8.6	8.2	154	122	88	278	15	84
26	3.9	7.1	10	6.5	7.6	26	153	54	279	277	12	83
27	4.1	6.9	10	6.4	5.1	98	152	54	281	277	11	83
28	4.2	6.9	10	5.9	3.5	101	152	53	280	277	11	83
29	4.2	6.3	10	5.6	---	102	152	54	280	277	73	82
30	4.2	3.9	10	5.5	---	102	152	55	280	276	58	83
31	4.3	---	9.7	5.5	---	176	---	54	---	275	58	---
TOTAL	860.0	901.8	282.7	205.7	180.4	918.0	8690	4039	2992	8552	4622	1293.5
MEAN	27.7	30.1	9.12	6.64	6.44	29.6	290	130	99.7	276	149	43.1
MAX	116	84	14	9.4	8.6	176	353	177	281	279	275	84
MIN	3.8	3.9	7.0	5.5	3.5	3.1	152	53	55	272	11	9.0
AC-FT	1710	1790	561	408	358	1820	17240	8010	5930	16960	9170	2570

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

MEAN	155	69.5	41.8	38.8	44.4	85.9	200	199	225	239	194	231
MAX	5717	1474	838	712	617	288	601	2717	3481	1425	686	6515
(WY)	1942	1942	1942	1942	1942	1955	1942	1941	1941	1941	1941	1941
MIN	1.78	1.38	1.77	.76	.46	.84	1.05	5.86	17.1	8.11	.74	8.70
(WY)	1948	1960	1962	1965	1965	1965	1965	1978	1953	1984	1965	1953

08412500 PECOS RIVER NEAR ORLA, TX--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1938 - 1998	
ANNUAL TOTAL	28674.3		33537.1			
ANNUAL MEAN	78.6		91.9		144	
HIGHEST ANNUAL MEAN					1284	1941
LOWEST ANNUAL MEAN					13.1	1953
HIGHEST DAILY MEAN	381	Jul 5	353	Apr 11	23700	Sep 28 1941
LOWEST DAILY MEAN	1.7	Feb 9	3.1	Mar 2	.00	Sep 9 1946
ANNUAL SEVEN-DAY MINIMUM	1.9	Feb 6	3.8	Feb 27	.00	Jul 7 1965
INSTANTANEOUS PEAK FLOW			354	Apr 8	23700	Sep 29 1941
INSTANTANEOUS PEAK STAGE			4.45	Apr 8	20.74	Sep 29 1941
INSTANTANEOUS LOW FLOW			2.8	Mar 2	.00	Sep 9 1946
ANNUAL RUNOFF (AC-FT)	56880		66520		104200	
10 PERCENT EXCEEDS	284		277		362	
50 PERCENT EXCEEDS	10		55		34	
90 PERCENT EXCEEDS	3.1		5.6		5.3	



08412500 PECOS RIVER NEAR ORLA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1937 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1937 to current year.
WATER TEMPERATURE: March 1953 to current year.

REMARKS.--October 1937 to September 1969, this station was published as 08410100 Pecos River below Red Bluff Dam, near Orla, TX.
Water-quality station operation transfered from the Texas District to the New Mexico District beginning with the 1993 water year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 29,400 microsiemens, May 16, 1978; minimum daily, 1,600 microsiemens, June 19, 1984.
WATER TEMPERATURE: Maximum daily, 32.5 °C, July 20, 1998; minimum daily, 0.0 °C, many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 13,000 microsiemens, Mar. 6; minimum daily, 7,000 microsiemens, Apr. 5.
WATER TEMPERATURE: Maximum daily, 32.5 °C, July 20; minimum daily, 2.0 °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 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 (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)
DEC												
11...	1000	8.0	10600	--	1.0	3.0	701	10.1	85	2000	1900	510
MAR												
13...	1030	4.8	9470	--	10.0	10.0	696	--	--	2300	--	580
APR												
29...	1130	150	7500	--	22.0	16.0	695	--	--	1900	1800	470
JUN												
17...	0930	64	8340	7.8	32.0	24.0	687	7.0	95	2100	2000	530
SEP												
08...	1230	58	9470	--	34.0	24.0	692	--	--	2300	2300	570
16...	0915	11	9910	7.8	23.0	24.0	694	--	--	2500	2500	650

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)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	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												
11...	180	1000	10	21	172	0	141	1700	1700	.9	13	5300
MAR												
13...	210	1500	13	2.1	--	--	--	2000	2600	1	7.2	--
APR												
29...	180	940	9	24	122	1	102	1700	1600	.9	17	4960
JUN												
17...	190	1100	10	24	99	0	81	1800	1700	.9	13	5430
SEP												
08...	220	1200	11	31	87	7	83	2000	2100	.9	12	6170
16...	220	1300	11	28	92	0	75	2200	2300	.76	13	6760

08412500 PECOS RIVER NEAR ORLA, TX--Continued

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10400	11000	8870	11400	10900	9360	7050	7370	7870	8560	9450	9160
2	10500	11000	8840	11200	11100	9380	7030	7380	8020	8550	9410	9160
3	10700	10900	8290	11100	11000	12000	7050	7370	8470	8630	9480	9210
4	10600	10700	7740	11000	11200	10000	7060	7370	8720	8630	9420	9170
5	9480	10700	7890	11100	10900	11900	7000	7460	8790	8590	9330	9200
6	9420	8620	7940	11200	10600	13000	7040	7460	8660	8610	9380	9210
7	9390	8830	7720	11400	10600	12600	7050	7460	8500	8620	9340	9230
8	9150	8910	7920	11300	10400	12800	7040	7510	8590	8670	9330	9230
9	9290	8870	7930	10800	10200	12100	7050	7490	8480	8890	9390	9260
10	9370	7840	7980	10900	10200	11600	7120	7500	8420	8810	9380	---
11	9410	8340	8020	10800	10300	10700	7130	7460	8230	8840	9380	9320
12	9430	8370	7900	10700	10300	11000	7110	7510	8250	8890	9410	9330
13	9450	8230	7880	10700	10300	10600	7140	7520	8250	8890	9500	9520
14	9560	7990	7840	10900	10300	10800	7080	7520	8250	8970	9440	9770
15	9910	8030	7890	10800	10100	7410	7120	7540	8260	8960	9020	9800
16	10100	8200	7980	11000	10300	7310	7160	7590	8300	9030	9000	9900
17	10200	8640	7880	10800	11000	7250	7140	7550	8270	9090	8970	9900
18	10300	8720	7870	10900	10900	8120	7210	7530	8360	9060	8970	9910
19	10500	8630	7980	11000	10800	8710	7140	7570	8400	9110	8980	9940
20	10500	8670	7800	10900	10500	8900	7210	7620	8380	9120	9010	9970
21	10600	8610	7620	10800	10500	9390	7240	7600	8530	9170	9020	10200
22	10500	8490	7720	10600	10400	9450	7280	7600	8710	9230	9010	9990
23	10400	8470	7650	10500	10500	9470	7280	7600	8550	9280	9010	9900
24	10600	8550	8590	10400	10600	9410	7240	7700	8940	9480	9040	9920
25	10700	8510	8230	10200	10700	9610	7270	7680	8980	9470	9080	9370
26	11000	8520	---	10100	10500	9990	7360	7800	8590	9520	9340	9380
27	11000	---	8690	10100	9540	8090	7390	7720	8530	9420	9610	9410
28	10800	---	11000	10100	---	7530	7410	---	8540	9470	9760	9420
29	11000	8580	11300	10200	---	7550	7380	7790	8560	9420	9310	9410
30	11000	8700	11700	10200	---	7640	7410	7800	8480	9410	9130	9420
31	11000	---	11800	10500	---	7460	---	7800	---	9430	9150	---
MEAN	10200	8920	8480	10800	10500	9710	7170	7560	8460	9030	9260	9540
MAX	11000	11000	11800	11400	11200	13000	7410	7800	8980	9520	9760	10200
MIN	9150	7840	7620	10100	9540	7250	7000	7370	7870	8550	8970	9160

WTR YR 1998 MEAN 9130 MAX 13000 MIN 7000

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.0	14.0	9.0	4.0	10.0	9.0	13.0	16.0	22.0	24.0	26.0	---
2	23.0	13.0	11.0	5.5	8.0	7.0	13.0	16.0	22.0	25.0	26.0	---
3	22.5	11.0	10.0	13.0	8.0	10.0	14.0	17.0	22.0	25.0	26.0	---
4	22.0	11.0	9.0	10.0	10.0	7.0	14.0	17.0	23.0	25.0	26.0	---
5	22.0	12.0	6.5	9.0	9.0	11.0	14.0	17.5	20.0	25.0	25.0	---
6	22.5	13.0	7.0	8.0	9.0	12.0	14.0	17.0	21.0	25.0	25.0	---
7	23.0	13.5	12.0	8.0	8.0	14.0	15.0	17.0	21.0	25.0	25.0	---
8	22.0	17.0	10.0	5.0	10.0	11.0	14.0	17.0	22.0	24.0	25.0	---
9	22.0	14.0	12.0	5.0	10.5	9.0	14.0	18.0	21.0	26.0	25.0	---
10	22.5	13.0	7.0	4.0	11.0	8.5	15.0	17.0	23.0	25.0	25.0	---
11	22.5	11.0	6.0	5.0	9.0	7.0	15.0	17.0	20.0	26.0	25.0	---
12	21.5	13.0	3.0	6.0	12.0	9.5	16.0	18.0	23.0	29.0	25.0	---
13	18.0	13.5	2.0	7.0	8.0	10.0	15.0	17.0	24.0	26.0	25.0	---
14	17.0	13.0	3.0	5.0	11.0	12.0	15.0	18.0	23.0	26.0	25.0	---
15	15.0	11.0	3.0	5.0	12.0	12.5	15.0	17.0	20.0	26.0	---	---
16	14.5	7.0	3.5	5.0	10.0	11.0	16.0	17.0	24.0	27.0	---	---
17	14.0	7.0	3.0	6.0	9.5	11.5	16.0	18.0	24.0	26.0	---	---
18	14.0	8.0	4.0	8.0	10.0	12.0	15.0	19.0	23.0	26.0	---	---
19	14.5	7.0	4.0	8.0	10.5	14.0	15.0	20.0	23.5	26.0	---	---
20	15.0	10.0	5.5	10.0	9.0	15.0	15.0	20.0	24.0	32.5	---	---
21	16.5	10.5	9.0	9.0	11.0	12.0	15.5	20.0	24.0	26.0	---	---
22	16.0	10.0	4.5	9.0	10.0	13.0	16.0	20.0	25.0	25.0	---	---
23	16.0	9.0	5.0	7.0	11.0	14.0	16.0	20.0	24.0	25.0	---	---
24	16.5	8.0	8.0	6.0	12.0	15.0	15.0	20.0	25.0	26.0	---	---
25	15.0	11.0	6.5	7.0	12.0	17.0	17.0	20.0	25.0	26.0	---	---
26	13.0	9.5	---	6.0	10.0	13.0	17.0	22.0	24.0	26.0	---	---
27	11.0	---	10.0	7.0	10.0	12.5	16.0	21.0	24.0	26.0	---	---
28	12.5	---	4.0	7.0	---	13.0	18.0	---	24.0	26.0	---	---
29	12.5	9.0	3.0	8.0	---	13.0	16.0	22.0	24.0	26.0	---	---
30	13.5	8.0	3.0	7.0	---	13.0	16.0	22.5	24.0	26.0	---	---
31	13.0	---	4.0	9.5	---	12.0	---	22.0	---	26.0	---	---
MEAN	17.6	11.0	6.3	7.1	10.0	11.6	15.2	18.7	23.0	25.9	25.3	---
MAX	24.0	17.0	12.0	13.0	12.0	17.0	18.0	22.5	25.0	32.5	26.0	---
MIN	11.0	7.0	2.0	4.0	8.0	7.0	13.0	16.0	20.0	24.0	25.0	---

WTR YR 1998 MEAN 15.2 MAX 32.5 MIN 2.0

08446500 PECOS RIVER NEAR GIRVIN, TX

LOCATION.--Lat 31°06'47", long 102°25'02", Pecos County, Hydrologic Unit 13070008, on right bank 2.1 mi upstream from Comanche Creek, 3.8 mi northwest of Girvin, and 7.2 mi upstream from bridge on U.S. Highway 67.

DRAINAGE AREA.--29,560 mi^2 approximately, for contributing area of supplementary gage 7.2 mi downstream.

PERIOD OF RECORD.--Aug 1939 to current year.
Water-quality records.--Chemical analyses: Oct 1939 to Jun 1941, Oct 1946 to Sep 1947, Oct 1953 to Aug 1982. Pesticide analyses: May 1968 to Jul 1974. Specific conductance: Oct 1939 to Jun 1941, Oct 1946 to Sep 1947, Oct 1953 to Sep 1982. Water temperature: Oct 1953 to Jan 1959, Mar 1964 to Sep 1982.

GAGE.--Water-stage recorder with concrete control and measuring flume. Datum of gage not determined. Supplementary water-stage recorder, used as regular gage prior to Jul 17, 1951, is now used only for peaks exceeding about 750 ft^3/s, 7.2 mi downstream at datum 2,269.65 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 water year 1939, at least 10% of contributing drainage area has been regulated by Red Bluff Reservoir (station 08410000). There are also numerous diversions above station for irrigation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1932 occurred Oct 5, 1941.

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	11	15	23	26	24	17	15	46	6.7	34	36
2	12	11	15	23	26	22	17	14	42	7.0	31	43
3	11	11	15	23	26	22	17	14	34	7.5	31	42
4	11	11	15	24	26	22	18	13	26	7.7	31	36
5	10	11	16	24	27	22	18	12	19	7.7	42	33
6	e10	11	17	24	27	22	17	12	15	7.8	40	28
7	e10	11	18	24	27	22	17	14	12	7.7	41	23
8	11	12	19	24	27	22	17	16	12	7.5	37	19
9	9.5	12	20	25	27	23	17	15	11	8.2	30	17
10	13	12	20	24	27	21	18	19	9.9	12	25	15
11	12	12	19	23	27	22	17	29	9.2	11	34	15
12	11	14	20	23	27	22	17	24	9.0	10	38	15
13	9.2	15	20	23	27	21	18	21	8.3	9.6	39	16
14	9.3	14	20	24	27	21	19	19	7.5	9.3	39	18
15	10	15	21	25	25	23	19	18	7.6	9.0	37	20
16	11	15	21	26	26	26	18	16	6.6	9.0	35	30
17	9.8	14	21	26	27	26	18	15	6.3	10	28	37
18	9.6	15	21	27	27	25	17	14	6.3	12	23	24
19	9.9	15	21	26	25	24	17	15	5.9	13	19	22
20	10	15	24	26	25	23	18	15	5.9	14	23	21
21	11	15	26	26	25	21	18	15	5.9	14	21	21
22	11	15	26	26	24	21	18	17	6.0	14	18	20
23	10	15	27	26	25	21	18	22	6.0	17	16	22
24	11	15	27	27	23	22	18	20	6.0	18	14	23
25	11	15	26	25	24	20	17	20	6.1	20	15	27
26	11	15	26	26	23	20	17	28	6.1	22	14	27
27	11	16	25	26	24	19	16	33	6.2	21	13	26
28	11	16	24	26	23	20	16	33	6.3	19	14	25
29	11	16	23	26	---	19	16	39	6.3	17	21	25
30	11	15	23	26	---	17	15	44	6.4	16	24	25
31	11	---	23	26	---	17	---	46	---	24	27	---
TOTAL	331.3	410	654	773	720	672	520	647	360.8	388.7	854	751
MEAN	10.7	13.7	21.1	24.9	25.7	21.7	17.3	20.9	12.0	12.5	27.5	25.0
MAX	13	16	27	27	27	26	19	46	46	24	42	43
MIN	9.2	11	15	23	23	17	15	12	5.9	6.7	13	15
AC-FT	657	813	1300	1530	1430	1330	1030	1280	716	771	1690	1490

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

MEAN	201	107	69.1	65.0	55.3	45.2	36.6	46.8	103	47.4	34.7	65.6
MAX	8506	3007	1192	935	769	314	143	538	3556	813	376	1168
(WY)	1942	1942	1942	1942	1942	1942	1957	1942	1941	1941	1941	1941
MIN	9.52	13.0	15.7	18.3	14.5	16.7	11.3	7.62	2.84	3.86	4.13	6.05
(WY)	1980	1974	1984	1984	1982	1966	1985	1985	1983	1964	1969	1983

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1939 - 1998	
ANNUAL TOTAL	7865.7		7081.8			
ANNUAL MEAN	21.5		19.4		73.1	
HIGHEST ANNUAL MEAN					1386	1942
LOWEST ANNUAL MEAN					16.2	1984
HIGHEST DAILY MEAN	91	Jun 10	46	May 31	19400	Oct 5 1941
LOWEST DAILY MEAN	9.2	Oct 13	5.9	Jun 19	1.9	Jun 19 1982
ANNUAL SEVEN-DAY MINIMUM	9.8	Oct 13	6.0	Jun 19	2.3	Jul 1 1983
INSTANTANEOUS PEAK FLOW			115	Aug 5	20000	Oct 5 1941
INSTANTANEOUS PEAK STAGE			1.90	Aug 5	20.49	Oct 5 1941
ANNUAL RUNOFF (AC-FT)	15600		14050		52990	
10 PERCENT EXCEEDS	33		27		86	
50 PERCENT EXCEEDS	20		19		29	
90 PERCENT EXCEEDS	11		9.6		11	

e Estimated

08447410 PECOS RIVER NEAR LANGTRY, TX
(National stream-quality accounting network)

LOCATION.--Lat 29°48'10", long 101°26'45", Val Verde County, Hydrologic Unit 13040212, at gaging station 7.4 mi east of Langtry, and 15.0 mi upstream from confluence with the Rio Grande.

DRAINAGE AREA.--35,179 mi^2.

PERIOD OF RECORD.--Inorganic chemical analyses: Oct 1954 to current year. Biochemical analyses: Oct 1974 to Aug 1995. Organic analyses: Jul 1975 to Jun 1982, Oct 1995 to current year. Sediment analyses: Oct 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1970 to Sep 1976, Oct 1980 to Sep 1985.
WATER TEMPERATURE: Oct 1970 to Sep 1985.

INSTRUMENTATION.--Specific conductance and water temperature were recorded continuously from Nov 1980 to Sep 1985.

REMARKS.--Discharges published in the table were obtained directly from rating table furnished by International Boundary and Water Commission. Records of daily mean discharge for water year 1998 are given in International Boundary and Water Commission Water Bulletins Nos. 67 and 68. Since Oct 1995, suspended sediment chemistry and quality assurance data for this station may be obtained from the U.S. Geological Survey upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 6,000 microsiemens, Mar 21, 22, 1981; minimum daily, 230 microsiemens, Oct 11, 1981.
WATER TEMPERATURE: Maximum daily, 32.5°C, Jun 8, 1981; minimum daily, 1.5°C, Dec 26, 27, 1983.

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

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	SAMPLING METHOD, CODES (82398)	DISCHARGE, 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, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
NOV												
18...	1430	1028	20	139	2470	8.1	12.0	.38	10.7	104	520	370
JAN												
29...	1410	1028	20	142	3950	8.2	14.0	.35	9.8	101	760	610
MAR												
10...	1530	1028	20	128	4080	7.9	15.0	.22	10.4	108	780	650
APR												
28...	1410	1028	20	99	4040	8.0	23.5	.67	8.7	108	760	650
MAY												
26...	1600	1028	20	82	3550	8.1	27.5	.34	8.0	108	650	550
JUN												
24...	0950	1028	20	73	3290	8.0	28.0	.32	7.3	99	580	490
JUL												
28...	1310	1028	20	50	2980	8.1	29.5	.20	7.3	101	540	450
AUG												
27...	0940	1028	8010	8540	716	7.9	25.0	660	6.6	84	150	73
SEP												
02...	1210	1028	20	435	3080	8.3	29.0	2.0	7.3	101	630	470

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	SODIUM PERCENT (00932)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	CARBONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	BICARBONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
NOV												
18...	120	55	320	6	57	6.0	0	186	155	320	530	.79
JAN												
29...	160	84	538	8	60	8.1	0	189	155	530	900	.96
MAR												
10...	170	86	552	9	60	8.6	0	163	134	570	990	.86
APR												
28...	160	88	544	9	61	8.9	0	137	112	560	950	.95
MAY												
26...	130	77	487	8	62	7.9	0	122	100	470	800	.83
JUN												
24...	120	69	425	8	61	8.3	0	117	96	430	730	.88
JUL												
28...	110	64	400	8	61	7.0	0	112	91	380	660	.89
AUG												
27...	44	9.5	62	2	46	5.4	0	94	77	68	100	.27
SEP												
02...	150	62	382	7	56	8.8	1	197	162	380	640	.77

08447410 PECOS RIVER NEAR LANGTRY, TX--Continued
(National stream-quality accounting network)

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, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
NOV 18...	14	1520	1460	--	<.010	.654	.234	--	--	--	.10	<.10
JAN 29...	12	2430	2340	.705	.012	.717	.047	.87	.11	.06	.10	.15
MAR 10...	9.8	2560	2470	.433	.010	.443	<.020	.63	--	--	.14	.18
APR 28...	9.1	2550	2400	--	<.010	.112	.038	.38	.23	.14	.18	.27
MAY 26...	11	2140	2060	--	<.010	<.050	.064	--	.20	.22	.28	.26
JUN 24...	15	2010	1850	.041	.010	.051	.064	.24	.13	.18	.24	.19
JUL 28...	17	1760	1700	--	<.010	<.050	<.020	--	--	--	.27	.31
AUG 27...	8.8	381	351	.900	.027	.927	.100	1.3	.31	.45	.55	.41
SEP 02...	17	1880	1760	1.88	.029	1.91	.048	2.3	.38	.43	.48	.43

DATE	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)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)
NOV 18...	<.010	<.010	<.001	--	.90	<.20	3.8	10	52	<2.0	<2.0	<1
JAN 29...	<.010	<.010	.001	.00	1.2	.20	26	67	98	<2.0	<2.0	1
MAR 10...	<.010	<.010	.002	.01	1.4	<.20	5.9	17	69	<2.0	<2.0	<1
APR 28...	<.010	<.010	<.001	--	2.2	<.20	--	<1	80	<2.0	<2.0	1
MAY 26...	<.010	<.010	<.001	--	2.7	<.20	2.0	9	59	<2.0	<2.0	1
JUN 24...	<.010	.013	.021	.06	2.4	<.20	.39	2	55	<2.0	<2.0	1
JUL 28...	.015	<.010	<.001	--	2.5	<.20	.00	0	100	2.4	<2.0	1
AUG 27...	.041	.030	.004	.01	6.6	>4.0	37100	1610	100	1.5	<1.0	2
SEP 02...	<.010	<.010	<.001	--	4.3	.50	26	22	93	<2.0	<2.0	2

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, DIS-SOLVED (UG/L AS B) (01020)	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)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
NOV 18...	66	<2.0	184	<2.0	<2.0	<2.0	<2.0	<9.0	<2.0	55	<2.0	5.6
JAN 29...	85	<2.0	235	<2.0	2.4	<2.0	<2.0	<30	<2.0	80	<2.0	6.9
MAR 10...	86	<2.0	256	<2.0	2.1	<2.0	<2.0	<30	<2.0	89	<2.0	8.7
APR 28...	87	<2.0	249	<2.0	2.7	<2.0	<2.0	<30	<2.0	85	4.2	7.6
MAY 26...	82	<2.0	80	<2.0	2.6	<2.0	2.4	<30	<2.0	71	4.9	6.1
JUN 24...	79	<2.0	233	<2.0	<2.0	<2.0	<2.0	<30	<2.0	68	5.8	5.8
JUL 28...	77	<2.0	213	<2.0	<2.0	<2.0	<2.0	<30	<2.0	55	3.0	5.6
AUG 27...	48	<1.0	56	<1.0	<1.0	<1.0	1.2	<10	<1.0	9	<1.0	3.7
SEP 02...	113	<2.0	210	<2.0	<2.0	<2.0	<2.0	<30	<2.0	58	2.0	9.4

08447410 PECOS RIVER NEAR LANGTRY, TX--Continued
(National stream-quality accounting network)

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

DATE	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	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)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)
NOV												
18...	<2.0	<1	<2.0	2150	<18	<2.0	2.9	<.0030	<.0020	<.002	<.0020	<.001
JAN												
29...	<2.0	<1	<2.0	3140	<30	2.2	3.9	<.0030	<.0020	<.002	<.0020	<.001
MAR												
10...	<2.0	<1	<2.0	3050	<30	<2.0	4.1	<.0030	<.0020	<.002	<.0020	<.001
APR												
28...	<2.0	<1	<2.0	3140	<30	<2.0	3.7	<.0030	<.0020	<.002	<.0020	E.004
MAY												
26...	<2.0	<1	<2.0	2790	<30	3.2	2.8	<.0030	<.0020	<.002	<.0020	E.003
JUN												
24...	<2.0	<1	<2.0	2540	<30	6.4	2.6	<.0030	<.0020	<.002	<.0020	<.001
JUL												
28...	<2.0	<1	<2.0	2370	<30	<2.0	2.2	<.0030	<.0020	<.002	<.0020	<.001
AUG												
27...	1.2	<1	<1.0	471	13	<1.0	1.8	<.0030	<.0020	<.002	<.0020	<.001
SEP												
02...	<2.0	1	<2.0	2440	<30	<2.0	2.0	<.0030	<.0020	<.002	<.0020	<.001

DATE	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)
NOV												
18...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
JAN												
29...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
MAR												
10...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
APR												
28...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
MAY												
26...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
JUN												
24...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
JUL												
28...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
AUG												
27...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
SEP												
02...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001

DATE	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)
NOV												
18...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
JAN												
29...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
MAR												
10...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
APR												
28...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
MAY												
26...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
JUN												
24...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
JUL												
28...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
AUG												
27...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
SEP												
02...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030

08447410 PECOS RIVER NEAR LANGTRY, TX--Continued
(National stream-quality accounting network)

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

DATE	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PROP-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)
NOV											
18...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.190	<.0030
JAN											
29...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
MAR											
10...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
APR											
28...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
MAY											
26...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
JUN											
24...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
JUL											
28...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
AUG											
27...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
SEP											
02...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030

DATE	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	TERBUTH YLAZINE SURROGT WAT FLT 0.7 U GF, REC PERCENT (91064)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	SAMPLE VOLUME SCHED-ULE 2001 (ML) (99856)
NOV											
18...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	105	120	97.3	909
JAN											
29...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	117	124	99.1	925
MAR											
10...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	110	125	99.1	952
APR											
28...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	117	124	112	952
MAY											
26...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	92.4	106	95.3	943
JUN											
24...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	122	111	89.2	952
JUL											
28...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	99.8	107	95.7	943
AUG											
27...	<.0050	<.0100	--	<.0130	<.0020	<.0010	<.0020	103	91.6	85.5	952
SEP											
02...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	117	96.8	97.3	952

08450900 RIO GRANDE BELOW AMISTAD DAM NEAR DEL RIO, TX
(National stream-quality accounting network)

LOCATION.--Lat 29°25'00", long 101°27'02", Val Verde County, Hydrologic Unit 13080001, 2.2 mi downstream from Amistad Dam and 10 mi northwest of Del Rio.

DRAINAGE AREA.--123,143 mi^2.

PERIOD OF RECORD.--Inorganic chemical analyses: Jul 1968 to current year. Organic chemical and sediment analyses: Oct 1995 to current year.

REMARKS.--The flow is controlled largely by releases from Amistad Reservoir. Discharges published in the table were obtained directly from rating table furnished by International Boundary and Water Commission. Records of daily mean discharge for water year 1998 are given in International Boundary and Water Commission Water Bulletins Nos. 67 and 68. Since Jun 1996, suspended sediment chemistry and quality assurance data for this station may be obtained from the U.S. Geological Survey upon request.

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

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	SAMPLING METHOD, CODES (82398)	DISCHARGE, 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, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
OCT												
15...	0745	84823	70	268	1150	7.8	20.5	--	--	--	270	160
NOV												
19...	1300	84823	70	1720	1160	7.8	17.0	--	--	--	260	160
DEC												
18...	1445	84823	70	1620	1170	8.0	14.1	--	--	--	260	140
JAN												
29...	0920	1028	10	547	1170	8.0	12.5	.55	8.6	84	270	150
FEB												
18...	0815	84823	70	222	1160	7.9	13.0	--	--	--	260	190
MAR												
12...	1020	1028	10	1460	1130	8.3	13.5	.55	10.1	99	270	150
APR												
30...	0900	1028	10	9180	1160	8.1	17.5	1.9	7.1	77	280	110
MAY												
28...	1030	1028	10	3960	1190	8.0	20.0	.46	3.5	40	290	160
JUN												
17...	0930	84823	70	3990	1220	7.8	22.0	--	--	--	270	160
JUL												
30...	0900	1028	10	1730	1210	7.7	24.0	.30	2.2	27	290	150
AUG												
19...	0800	84823	70	1830	1150	7.7	25.0	--	--	--	270	160
SEP												
03...	1200	1028	10	74	645	7.6	26.0	12	4.7	60	180	71

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	SODIUM PERCENT (00932)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	CARBONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	BICARBONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ALKALINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
OCT												
15...	75	20	120	3	48	4.6	--	--	--	110	210	160
NOV												
19...	68	21	123	3	50	4.9	--	--	--	98	220	170
DEC												
18...	68	22	128	3	51	5.1	--	--	--	120	210	150
JAN												
29...	72	22	130	3	51	4.8	0	147	120	--	230	160
FEB												
18...	70	21	121	3	50	4.9	--	--	--	72	220	160
MAR												
12...	72	21	122	3	49	5.1	0	144	118	--	220	150
APR												
30...	73	23	124	3	49	5.2	0	203	120	--	220	160
MAY												
28...	75	24	132	3	50	5.4	0	153	125	--	220	160
JUN												
17...	71	23	129	3	50	5.7	--	--	--	120	220	170
JUL												
30...	74	24	133	3	50	5.0	0	162	133	--	220	170
AUG												
19...	69	23	128	3	50	5.0	--	--	--	110	200	150
SEP												
03...	57	10	52	2	38	3.4	0	138	113	--	94	61

08450900 RIO GRANDE BELOW AMISTAD DAM NEAR DEL RIO, TX--Continued
(National stream-quality accounting network)

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

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	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, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)
OCT 15...	.76	13	--	673	--	--	--	--	--	--	--	--
NOV 19...	.83	14	--	682	--	--	--	--	--	--	--	--
DEC 18...	.80	13	--	666	--	--	--	--	--	--	--	--
JAN 29...	.87	12	732	703	.210	.010	.220	.065	.42	.13	.10	.17
FEB 18...	.85	12	--	650	--	--	--	--	--	--	--	--
MAR 12...	.75	11	704	680	--	<.010	.186	<.020	.37	--	--	.16
APR 30...	.85	11	730	717	.221	.013	.234	.026	.42	.16	.11	.14
MAY 28...	.81	12	744	716	.223	.012	.235	.046	.34	.06	.17	.21
JUN 17...	.79	13	--	696	--	--	--	--	--	--	--	--
JUL 30...	.78	14	778	718	.123	.010	.133	.023	.38	.22	.19	.21
AUG 19...	.81	15	--	658	--	--	--	--	--	--	--	--
SEP 03...	.39	11	385	362	.713	.299	1.01	.119	1.4	.28	.23	.35

DATE	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)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)
OCT 15...	--	--	--	--	--	--	--	--	--	--	--	--
NOV 19...	--	--	--	--	--	--	--	--	--	--	--	--
DEC 18...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 29...	.20	.011	<.010	.004	.01	2.0	.20	4.4	3	91	<1.0	<1.0
FEB 18...	--	--	--	--	--	--	--	--	--	--	--	--
MAR 12...	.19	<.010	<.010	.001	.00	2.0	.20	16	4	100	<1.0	<1.0
APR 30...	.18	<.010	<.010	<.001	--	2.1	.20	99	4	96	1.2	<1.0
MAY 28...	.11	.013	<.010	<.001	--	2.0	<.20	32	3	89	<1.0	<1.0
JUN 17...	--	--	--	--	--	--	--	--	--	--	--	--
JUL 30...	.24	.075	<.010	<.001	--	2.1	<.20	4.7	1	100	2.7	<1.0
AUG 19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 03...	.40	.026	<.010	.007	.02	3.8	.60	3.6	18	99	1.1	<1.0

08450900 RIO GRANDE BELOW AMISTAD DAM NEAR DEL RIO, TX--Continued
(National stream-quality accounting network)

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)	BORON, DIS-SOLVED (UG/L AS B) (01020)	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)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT 15...	--	--	--	--	--	--	--	--	--	--	--	--
NOV 19...	--	--	--	--	--	--	--	--	--	--	--	--
DEC 18...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 29...	2	115	<1.0	168	<1.0	2.9	<1.0	<1.0	<10	<1.0	51	3.1
FEB 18...	--	--	--	--	--	--	--	--	--	--	--	--
MAR 12...	2	119	<1.0	160	<1.0	1.1	<1.0	1.2	<10	<1.0	48	2.3
APR 30...	2	121	<1.0	163	<1.0	2.3	<1.0	<1.0	<10	<1.0	50	1.9
MAY 28...	2	120	<1.0	163	<1.0	2.2	<1.0	1.7	<10	<1.0	51	12
JUN 17...	--	--	--	--	--	--	--	--	--	--	--	--
JUL 30...	4	120	<1.0	171	<1.0	1.7	<1.0	<1.0	<10	<1.0	53	173
AUG 19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 03...	2	71	<1.0	97	<1.0	1.5	<1.0	<1.0	<10	<1.0	21	22

DATE	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)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)
OCT 15...	--	--	--	--	--	--	--	--	--	--	--	--
NOV 19...	--	--	--	--	--	--	--	--	--	--	--	--
DEC 18...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 29...	7.2	1.1	<1	<1.0	1370	<10	<1.0	3.3	<.0030	<.0020	<.002	<.0020
FEB 18...	--	--	--	--	--	--	--	--	--	--	--	--
MAR 12...	7.0	1.5	<1	<1.0	1230	<10	1.5	3.4	<.0030	<.0020	<.002	<.0020
APR 30...	7.3	1.1	<1	<1.0	1320	<10	1.1	3.5	<.0030	<.0020	<.002	<.0020
MAY 28...	7.3	1.9	<1	<1.0	1360	<10	1.5	3.5	<.0030	<.0020	<.002	<.0020
JUN 17...	--	--	--	--	--	--	--	--	--	--	--	--
JUL 30...	6.8	1.2	<1	<1.0	1410	<10	<1.0	3.2	<.0030	<.0020	<.002	<.0020
AUG 19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 03...	3.4	1.1	1	<1.0	726	<10	1.9	1.6	<.0030	<.0020	<.002	<.0020

08450900 RIO GRANDE BELOW AMISTAD DAM NEAR DEL RIO, TX--Continued
(National stream-quality accounting network)

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

DATE	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DI-AZINON, DIS-SOLVED (UG/L) (39572)
OCT												
15...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
19...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
18...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
29...	<.001	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002
FEB												
18...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
12...	E.003	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002
APR												
30...	.004	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002
MAY												
28...	<.001	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002
JUN												
17...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
30...	<.001	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
03...	<.001	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002

DATE	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)
OCT												
15...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
19...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
18...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
29...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
FEB												
18...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
12...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
APR												
30...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
MAY												
28...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
JUN												
17...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
30...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
03...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040

08450900 RIO GRANDE BELOW AMISTAD DAM NEAR DEL RIO, TX--Continued
(National stream-quality accounting network)

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

DATE	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PROP-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)
OCT												
15...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
19...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
18...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
29...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
FEB												
18...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
12...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
APR												
30...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
MAY												
28...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	--	<.0030
JUN												
17...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
30...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
AUG												
19...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
03...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030

DATE	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	TERBUTH YLAZINE SURROGT WAT FLT 0.7 U GF, REC PERCENT (91064)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	SAMPLE VOLUME SCHED-ULE 2001 (ML) (99856)
OCT											
15...	--	--	--	--	--	--	--	--	--	--	--
NOV											
19...	--	--	--	--	--	--	--	--	--	--	--
DEC											
18...	--	--	--	--	--	--	--	--	--	--	--
JAN											
29...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	110	119	96.2	961
FEB											
18...	--	--	--	--	--	--	--	--	--	--	--
MAR											
12...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	107	117	99.0	970
APR											
30...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	112	117	100	909
MAY											
28...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	115	113	82.2	961
JUN											
17...	--	--	--	--	--	--	--	--	--	--	--
JUL											
30...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	102	105	104	943
AUG											
19...	--	--	--	--	--	--	--	--	--	--	--
SEP											
03...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	110	94.2	91.0	952

08459000 RIO GRANDE AT LAREDO, TX

LOCATION.--Lat 27°29'45", long 99°29'30", Webb County, Hydrologic Unit 13080002, at gaging station 1.1 mi downstream from the highway bridge between Laredo and Nuevo Laredo, Tamaulipas, Mex., and 891.0 mi downstream from the American Dam at El Paso.

DRAINAGE AREA.--132,578 mi^2, United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 44.

PERIOD OF RECORD.--Chemical analyses: Apr 1952, Jul 1955 to Sep 1986, Oct 1989 to current year. Chemical and biochemical analyses: Jan 1973 to Sep 1986. Pesticide analyses: Mar to May 1979. Sediment analyses: Jan 1973 to Sep 1986.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Jan 1954 to Sep 1986.
WATER TEMPERATURE: Feb 1973 to Aug 1976.

REMARKS.--Records of daily mean discharge for water year 1997 are given in International Boundary and Water Commission Water Bulletins Nos. 66 and 67.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,690 microsiemens, Jun 1, 1963; minimum daily, 214 microsiemens, Sep 26, 1964.

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) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
NOV									
19...	1123	1560	1000	7.8	13.0	250	130	72	18
DEC									
17...	0830	1460	1080	8.0	10.0	270	170	73	21

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)
NOV									
19...	94	3	3.8	130	180	120	.66	12	577
DEC									
17...	110	3	4.2	100	180	130	.67	11	587

08459200 RIO GRANDE RIVER AT PIPELINE CROSSING BELOW LAREDO, TX

(National stream-quality accounting network)

WATER-QUALITY RECORDS

LOCATION.--Lat 27°24'01", long 99°29'18", Webb County, Hydrologic Unit 13080002, 8.7 mi (14.0 km) downstream from Texas-Mexican Railway bridge near Laredo, and at mile 352.69 (567.47 km).

DRAINAGE AREA.--132,578 mi^2.

PERIOD OF RECORD.--Biochemical analyses: Apr 1977 to Dec 1981. Chemical and biochemical analyses: Jan 1998 to Sep 1998. Pesticide analyses: Jan 1998 to Sep 1988. Sediment analyses: Jan 1998 to Sep 1998. Radiochemical analyses: Jan 1998 to Sep 1998.

REMARKS.--Since January 1998, suspended sediment chemistry and quality assurance data for this station may be obtained from the U.S. Geological Survey upon request.

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

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	SAMPLING METHOD, CODES (82398)	DISCHARGE, 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, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
JAN												
28...	0930	1028	30	1270	1250	8.1	14.0	--	9.6	93	290	180
FEB												
24...	1310	1028	10	1270	1170	8.0	19.0	30	8.7	94	310	170
MAR												
31...	1030	1028	10	1060	1210	8.1	22.0	38	7.8	90	290	170
APR												
27...	1300	1028	10	8690	1200	8.0	25.0	140	7.9	96	290	170
MAY												
27...	1100	1028	10	3880	1240	8.1	27.0	19	7.7	95	290	160
JUN												
16...	1030	1028	10	3510	1200	8.4	30.5	17	7.0	93	280	160
JUL												
21...	1230	1028	10	1250	1280	8.0	29.5	7.7	6.4	85	290	180
AUG												
12...	1130	1028	10	1270	1260	8.3	28.5	16	7.9	101	290	180
SEP												
22...	1000	1028	30	1380	720	7.9	27.0	80	5.8	74	190	100

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	SODIUM PERCENT (00932)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	CARBONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	BICARBONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ALKALINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
JAN												
28...	79	23	125	3	48	4.3	--	--	--	110	230	150
FEB												
24...	84	22	126	3	47	4.7	0	168	138	--	220	150
MAR												
31...	79	23	128	3	48	5.0	0	152	125	--	230	150
APR												
27...	77	23	128	3	49	5.2	0	148	121	--	220	160
MAY												
27...	76	24	136	3	50	5.3	0	153	126	--	230	170
JUN												
16...	75	23	131	3	50	5.6	0	154	126	--	220	160
JUL												
21...	71	26	145	4	52	5.5	0	133	109	--	230	170
AUG												
12...	72	26	144	4	51	5.5	0	129	106	--	230	170
SEP												
22...	57	11	58	2	40	4.9	0	107	88	--	120	78

08459200 RIO GRANDE RIVER AT PIPELINE CROSSING BELOW LAREDO, TX--Continued

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

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	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, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)
JAN 28...	.78	8.2	--	683	--	--	--	--	--	--	--	--
FEB 24...	.77	10	718	705	.861	.018	.879	.130	1.5	.46	.28	.41
MAR 31...	.78	10	736	709	.406	.034	.440	.206	1.3	.63	.22	.43
APR 27...	.79	12	720	705	.426	.010	.436	.090	1.5	.95	.19	.28
MAY 27...	.77	11	756	731	.332	.013	.345	<.020	.67	--	--	.20
JUN 16...	.76	12	744	705	.412	.012	.424	.060	.84	.36	.15	.21
JUL 21...	.78	14	780	737	.420	.015	.435	.131	.98	.41	.23	.36
AUG 12...	.80	14	775	731	.429	.019	.448	.160	1.0	.42	.14	.30
SEP 22...	.27	7.8	438	398	1.03	.071	1.10	.246	1.9	.51	.20	.44

DATE	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)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)
JAN 28...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 24...	.59	.207	.152	.140	.43	2.4	1.5	610	178	54	4.6	<1.0
MAR 31...	.84	.289	.188	.182	.56	<2.7	1.0	218	76	100	11	<1.0
APR 27...	1.0	.293	.032	.042	.13	2.5	1.2	8470	361	98	<1.0	<1.0
MAY 27...	.33	.123	.030	.025	.08	2.1	.20	545	52	99	1.9	<1.0
JUN 16...	.42	.105	.079	.067	.21	<2.5	<.20	379	40	100	4.4	<1.0
JUL 21...	.54	.184	.155	.127	.39	2.8	.60	84	25	99	9.5	<1.0
AUG 12...	.58	.175	.112	.120	.37	2.9	.20	137	40	100	7.2	<1.0
SEP 22...	.75	.146	.137	.148	.45	3.6	2.1	462	124	99	8.1	<1.0

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)	BORON, DIS-SOLVED (UG/L AS B) (01020)	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)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
JAN 28...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 24...	2	106	<1.0	188	<1.0	2.5	<1.0	<1.0	<10	<1.0	46	4.7
MAR 31...	3	113	<1.0	197	<1.0	1.6	<1.0	<1.0	<10	<1.0	49	4.8
APR 27...	2	124	<1.0	174	<1.0	2.4	<1.0	<1.0	<10	<1.0	50	<1.0
MAY 27...	2	117	<1.0	174	<1.0	2.1	<1.0	1.7	<10	<1.0	50	<1.0
JUN 16...	3	115	<1.0	173	<1.0	1.8	<1.0	1.3	<10	<1.0	51	<1.0
JUL 21...	3	117	<1.0	207	<1.0	1.8	<1.0	1.1	<10	<1.0	54	3.3
AUG 12...	3	113	<1.0	205	<1.0	1.8	<1.0	1.5	<10	<1.0	57	1.9
SEP 22...	2	82	<1.0	122	<1.0	1.3	<1.0	1.6	<10	<1.0	15	2.8

08459200 RIO GRANDE RIVER AT PIPELINE CROSSING BELOW LAREDO, TX--Continued

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

DATE	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)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)
JAN 28...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 24...	6.4	1.4	<1	<1.0	1410	<10	<5.7	3.2	<.0030	<.0020	<.002	<.0020
MAR 31...	7.6	1.3	<1	<1.0	1440	<10	4.6	3.4	<.0030	<.0020	<.002	<.0020
APR 27...	7.3	1.2	<1	<1.0	1370	<10	<1.0	3.7	<.0030	<.0020	<.002	<.0020
MAY 27...	7.4	1.9	<1	<1.0	1410	<10	<2.9	3.5	--	--	--	--
JUN 16...	7.0	1.3	<1	<1.0	1400	14	1.5	3.3	<.0030	<.0020	<.002	<.0020
JUL 21...	7.4	1.5	<1	<1.0	1450	<10	2.5	3.2	<.0030	<.0020	<.002	<.0020
AUG 12...	7.5	1.4	<1	<1.0	1450	<10	<2.5	3.2	<.0030	<.0020	<.002	<.0020
SEP 22...	2.5	1.4	<1	<1.0	911	<10	2.2	1.2	<.0030	<.0020	<.002	<.0020

DATE	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DI-AZINON, DIS-SOLVED (UG/L) (39572)
JAN 28...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 24...	<.001	<.100	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.005
MAR 31...	E.003	<.0010	<.0020	<.0020	E.0179	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	E.003
APR 27...	.005	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.048
MAY 27...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 16...	.007	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	E.0036	<.025
JUL 21...	<.001	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.038
AUG 12...	<.001	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.006
SEP 22...	<.001	<.0010	<.0020	<.0020	E.0180	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.062

DATE	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)
JAN 28...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 24...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
MAR 31...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
APR 27...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	.031	<.0040
MAY 27...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 16...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.033	<.0040
JUL 21...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
AUG 12...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
SEP 22...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040

08459200 RIO GRANDE RIVER AT PIPELINE CROSSING BELOW LAREDO, TX--Continued

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

DATE	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PROP-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)
JAN												
28...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
24...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
MAR												
31...	<.0030	E.0011	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
APR												
27...	<.0030	<.0060	<.004	<.0200	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
MAY												
27...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
16...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
JUL												
21...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
AUG												
12...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
SEP												
22...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030

DATE	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	TERBUTH YLAZINE SURROGT WAT FLT 0.7 U GF, REC PERCENT (91064)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	SAMPLE VOLUME SCHED-ULE 2001 (ML) (99856)
JAN											
28...	--	--	--	--	--	--	--	--	--	--	--
FEB											
24...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	97.1	108	90.8	970
MAR											
31...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	105	105	101	900
APR											
27...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	101	106	90.9	925
MAY											
27...	--	--	--	--	--	--	--	--	--	--	--
JUN											
16...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	106	120	99.2	847
JUL											
21...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	109	110	88.4	943
AUG											
12...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	107	103	93.3	943
SEP											
22...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	104	104	95.4	917

08461300 RIO GRANDE BELOW FALCON DAM, TX

(National stream-quality accounting network)

LOCATION.--Lat 26°33'25", long 99°10'05", Starr County, Hydrologic Unit 13090001, U.S. Tailrace at Falcon Dam.

DRAINAGE AREA.--159,270 mi^2, United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 44.

PERIOD OF RECORD.--Chemical analyses: Jul 1955 to current year. Biochemical analyses: Oct 1995 to current year. Pesticide analyses: Oct 1995 to current year.

REMARKS.--The flow is controlled by releases from Falcon Reservoir. Discharges published in the table were obtained directly from rating table furnished by International Boundary and Water Commission. Records of daily mean discharge and specific conductance for water year 1997 are given in International Boundary and Water Commission Water Bulletins Nos. 66 and 67. Since September 1995, suspended sediment chemistry and quality assurance data for this station may be obtained from the U.S. Geological Survey upon request.

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

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	SAMPLING METHOD, CODES (82398)	DISCHARGE, 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, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
OCT												
22...	1058	84823	70	212	1140	7.6	24.0	--	--	--	250	150
NOV												
19...	1045	84823	70	388	1140	7.4	16.5	--	--	--	230	160
DEC												
16...	0730	84823	70	582	1130	8.0	13.2	--	--	--	250	140
JAN												
13...	0735	84823	70	1540	1120	7.4	16.4	--	--	--	230	130
28...	1420	1028	30	2670	1150	8.2	17.5	--	10.4	109	250	140
FEB												
23...	1230	1028	10	766	1140	8.0	19.0	3.9	9.3	100	270	160
APR												
22...	1050	1028	10	10600	1160	8.3	23.5	7.5	9.0	107	270	160
MAY												
26...	1600	1028	10	2810	1210	8.2	27.0	4.4	7.8	97	280	180
JUN												
15...	1420	1028	30	2540	1250	8.0	30.0	4.1	7.6	100	280	180
JUL												
15...	1100	1028	10	179	1240	8.0	32.0	4.8	6.3	87	270	170
AUG												
11...	1530	1028	10	3460	1280	7.8	30.0	5.3	6.4	85	270	190
SEP												
21...	1510	1028	10	28	915	7.9	33.0	3.0	6.0	85	210	110

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	SODIUM PERCENT (00932)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	CARBONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	BICARBONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ALKALINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
OCT												
22...	66	21	123	3	51	6.2	--	--	--	98	230	160
NOV												
19...	60	20	118	3	52	6.6	--	--	--	75	230	160
DEC												
16...	65	21	121	3	51	5.9	--	--	--	110	200	140
JAN												
13...	62	19	112	3	51	4.9	--	--	--	98	220	150
28...	66	22	121	3	50	5.3	--	--	--	110	220	150
FEB												
23...	70	22	126	3	50	5.4	0	134	110	--	220	150
APR												
22...	70	23	125	3	50	5.5	0	131	108	--	230	150
MAY												
26...	71	25	143	4	52	5.7	0	126	103	--	230	170
JUN												
15...	68	25	146	4	53	5.8	0	116	95	--	240	180
JUL												
15...	66	25	146	4	54	5.6	0	119	97	--	240	180
AUG												
11...	65	27	154	4	55	5.9	0	98	80	--	250	180
SEP												
21...	57	16	98	3	50	5.9	0	126	103	--	150	120

08461300 RIO GRANDE BELOW FALCON DAM, TX--Continued

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

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	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, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)
OCT												
22...	.69	9.8	--	667	--	--	--	--	--	--	--	--
NOV												
19...	.73	10	--	643	--	--	--	--	--	--	--	--
DEC												
16...	.69	10	--	637	--	--	--	--	--	--	--	--
JAN												
13...	.72	9.6	--	640	--	--	--	--	--	--	--	--
28...	.69	9.7	--	653	--	--	--	--	--	--	--	--
FEB												
23...	.67	9.1	684	663	--	<.010	.064	.102	.65	.48	.38	.48
APR												
22...	.74	9.4	712	674	.235	.012	.247	.037	.85	.57	.28	.32
MAY												
26...	.78	12	740	721	.069	.016	.085	.106	.68	.49	.29	.40
JUN												
15...	.82	11	768	735	.143	.067	.210	.132	.91	.57	.19	.33
JUL												
15...	.83	12	774	735	--	<.010	.073	.140	.81	.60	.21	.35
AUG												
11...	.85	12	796	744	--	.010	<.050	.118	--	.74	.19	.30
SEP												
21...	.47	9.2	573	525	.317	.076	.393	.319	1.1	.37	.38	.70

DATE	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)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)
OCT												
22...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
19...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
16...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
23...	.59	.014	<.010	.012	.04	3.7	.40	23	11	86	<1.0	<1.0
APR												
22...	.61	.051	.012	<.001	--	3.6	1.4	830	29	86	<1.0	<1.0
MAY												
26...	.59	.072	<.010	.002	.01	2.9	.60	129	17	85	1.3	<1.0
JUN												
15...	.70	.075	.011	.006	.02	2.7	1.1	103	15	97	<1.0	<1.0
JUL												
15...	.74	.045	<.010	.012	.04	3.0	.90	6.3	13	98	<1.0	<1.0
AUG												
11...	.86	.053	<.010	.002	.01	3.3	.80	84	9	100	<1.0	<1.0
SEP												
21...	.69	.104	.087	.064	.20	3.8	.20	.53	7	78	1.4	<1.0

08461300 RIO GRANDE BELOW FALCON DAM, TX--Continued

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)	BORON, DIS-SOLVED (UG/L AS B) (01020)	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)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT												
22...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
19...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
16...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
23...	2	114	<1.0	194	<1.0	2.2	<1.0	1.0	<10	<1.0	44	12
APR												
22...	2	109	<1.0	203	<1.0	2.4	<1.0	1.0	<10	<1.0	47	2.0
MAY												
26...	2	127	<1.0	189	<1.0	1.9	<1.0	1.6	<10	<1.0	53	5.0
JUN												
15...	3	123	<1.0	193	<1.0	1.3	<1.0	1.2	<10	<1.0	56	2.2
JUL												
15...	4	130	<1.0	195	<1.0	1.5	<1.0	1.1	<10	<1.0	56	9.0
AUG												
11...	4	131	<1.0	210	<1.0	1.5	<1.0	1.5	<10	<1.0	59	7.0
SEP												
21...	4	103	<1.0	166	<1.0	1.2	<1.0	1.0	<10	<1.0	30	43

DATE	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)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)
OCT												
22...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
19...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
16...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
23...	6.9	1.6	<1	<1.0	1270	<10	2.1	3.2	<.0030	<.0020	<.002	<.0020
APR												
22...	7.3	1.4	<1	<1.0	1350	<10	9.9	3.4	<.0030	<.0020	<.002	<.0020
MAY												
26...	7.9	1.8	<1	<1.0	1430	11	2.8	3.7	<.0030	<.0020	<.002	<.0020
JUN												
15...	8.1	1.2	<1	<1.0	1450	13	1.3	3.7	<.0030	<.0020	<.002	<.0020
JUL												
15...	8.2	1.4	<1	<1.0	1400	<10	2.2	3.6	<.0030	<.0020	<.002	<.0020
AUG												
11...	8.6	1.2	<1	<1.0	1450	<10	1.6	3.5	<.0030	<.0020	<.002	<.0020
SEP												
21...	5.0	1.4	<1	<1.0	866	<10	2.1	1.7	<.0030	<.0020	<.002	<.0020

08461300 RIO GRANDE BELOW FALCON DAM, TX--Continued

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

DATE	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DI-AZINON, DIS-SOLVED (UG/L) (39572)
OCT												
22...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
19...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
16...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
23...	E.003	<.0300	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	E.0011	E.0015	<.002
APR												
22...	.008	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	E.0034	.004
MAY												
26...	.005	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.053
JUN												
15...	.007	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	E.0031	--
JUL												
15...	E.007	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.033
AUG												
11...	<.001	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.023
SEP												
21...	<.001	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002

DATE	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)
OCT												
22...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
19...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
16...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
23...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
APR												
22...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	E.003	.026	<.0040
MAY												
26...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
JUN												
15...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	--	<.0040
JUL												
15...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
AUG												
11...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040
SEP												
21...	<.001	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040

08461300 RIO GRANDE BELOW FALCON DAM, TX--Continued

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

DATE	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PROP-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)
OCT												
22...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
19...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
16...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
13...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
23...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
APR												
22...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
MAY												
26...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	--	<.0030
JUN												
15...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
JUL												
15...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
AUG												
11...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
SEP												
21...	<.0030	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030

DATE	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	TERBUTH YLAZINE SURROGT WAT FLT 0.7 U GF, REC PERCENT (91064)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	SAMPLE VOLUME SCHED-ULE 2001 (ML) (99856)
OCT											
22...	--	--	--	--	--	--	--	--	--	--	--
NOV											
19...	--	--	--	--	--	--	--	--	--	--	--
DEC											
16...	--	--	--	--	--	--	--	--	--	--	--
JAN											
13...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
FEB											
23...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	94.1	104	86.7	952
APR											
22...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	113	121	101	892
MAY											
26...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	106	100	80.9	869
JUN											
15...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	115	129	104	909
JUL											
15...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	109	107	88.4	869
AUG											
11...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	108	102	84.5	884
SEP											
21...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	100	106	90.9	909

08464700 RIO GRANDE AT FORT RINGGOLD, RIO GRANDE CITY, TX

LOCATION.--Lat 26°22'05", long 98°48'20", Starr County, Hydrologic Unit 13090001, at gaging station about 1 mi downstream from Rio Grande City, 3.9 mi downstream from mouth of Rio San Juan, and 1,014.3 mi downstream from the American Dam at El Paso.

DRAINAGE AREA.--174,362 mi^2, United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 44.

PERIOD OF RECORD.--Chemical analyses: Jan 1959 to current year.

REMARKS.--Records of specific conductance and discharge for water year 1997 are given in International Boundary and Water Commission Water Bulletins Nos. 66 and 67.

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) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT									
22...	0845	149	1450	7.8	24.5	290	160	83	21
NOV									
19...	0855	377	1390	7.3	15.5	280	180	74	23
DEC									
16...	1010	819	1220	8.0	14.0	260	140	67	22
JAN									
13...	0915	1940	1140	8.6	18.0	260	150	69	22
FEB									
19...	0840	459	1380	6.5	19.5	280	180	75	23
MAR									
24...	0930	1060	1290	7.7	21.5	240	140	63	21
APR									
16...	0855	7630	1160	E7.7	24.0	250	160	66	22
MAY									
19...	0910	5120	910	7.3	27.0	270	170	69	24
JUN									
23...	0850	2730	1250	8.0	29.0	270	180	65	25
JUL									
15...	0840	1840	1270	8.3	30.0	260	160	63	25
AUG									
25...	0910	530	1320	8.4	30.0	270	180	66	26
SEP									
22...	0915	388	480	7.8	30.0	130	47	43	6.0

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)
OCT									
22...	175	4	7.5	130	240	230	.51	9.3	842
NOV									
19...	154	4	7.4	110	260	200	.75	10	796
DEC									
16...	135	4	6.7	120	210	150	.66	9.4	668
JAN									
13...	126	3	8.0	110	200	140	.62	8.8	632
FEB									
19...	159	4	6.3	110	260	200	.65	7.4	794
MAR									
24...	125	3	6.3	100	230	160	.73	2.6	665
APR									
16...	123	3	6.2	95	220	150	.72	9.4	658
MAY									
19...	139	4	5.6	98	190	140	.61	9.6	637
JUN									
23...	144	4	6.0	89	230	170	.77	11	709
JUL									
15...	146	4	5.3	95	240	180	.85	12	734
AUG									
25...	171	5	6.4	95	250	210	.81	13	803
SEP									
22...	43	2	5.0	85	60	44	.20	7.6	260

08466300 RIO GRANDE NEAR LOS EBANOS, TX

LOCATION.--Lat 26°14'15", long 98°33'49", Hidalgo County, Hydrologic Unit 13090001, on Farm Road 886 at U.S. Border Port of Entry near Los Ebanos and at mile 204.37.

PERIOD OF RECORD.--Chemical analyses: Jun 1977 to current year.

REMARKS.--Records of specific conductance and discharge for water year 1997 are given in International Boundary and Water Commission Water Bulletins Nos. 66 and 67.

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) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT									
22...	1245	530	1450	7.9	26.0	350	190	100	24
NOV									
20...	1130	716	1560	7.7	16.0	330	210	87	28
DEC									
11...	1055	653	1200	8.0	16.5	260	140	67	22
JAN									
21...	1045	2350	1150	7.8	18.0	270	160	70	22
MAR									
18...	1100	130	1650	7.6	23.0	310	190	81	26
MAY									
12...	1025	6880	1170	7.3	26.0	270	170	68	24
JUL									
22...	1120	2.4	1290	8.0	29.0	280	190	68	26
SEP									
15...	1145	158	1290	8.4	31.0	280	180	76	23

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)
OCT									
22...	157	4	6.6	160	240	230	.31	12	866
NOV									
20...	176	4	6.1	130	300	240	.71	10	920
DEC									
11...	127	3	5.6	120	230	160	.72	22	704
JAN									
21...	129	3	5.9	110	210	150	.65	9.9	659
MAR									
18...	171	4	5.3	120	290	220	.71	8.2	875
MAY									
12...	136	4	5.5	95	220	150	.72	10	675
JUL									
22...	153	4	5.7	89	250	190	.82	13	757
SEP									
15...	147	4	5.8	100	220	190	.57	12	730

08469200 RIO GRANDE BELOW ANZALDUAS DAM, TX

LOCATION.--Lat 26°08'00", long 98°20'05", Hidalgo County, Hydrologic Unit 13090002, at gaging station 0.5 mi downstream from Anzalduas Dam, 12.2 mi from Hidalgo, and 1,077.1 mi downstream from the American Dam at El Paso.

DRAINAGE AREA.--176,112 mi^2, United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 44.

PERIOD OF RECORD.--Chemical analyses: Mar 1959 to current year. Pesticide analyses: Oct 1967 to Jul 1972.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1977 to current year.

REMARKS.--Records of daily mean discharge and specific conductance for water year 1998 are given in International Boundary and Water Commission Water Bulletins Nos. 67 and 68. 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 6%, sulfate is 7% and for hardness is 9%. Regression equations 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, 5,810 microsiemens, Aug 27, 1998; minimum daily, 340 microsiemens, Sep 22, 1997.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 5,810 microsiemens, Aug 27; minimum daily, 340 microsiemens, Sep 22.

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) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT									
22...	1115	274	930	7.8	24.5	200	110	55	15
NOV									
20...	1340	165	1310	7.8	17.0	260	160	67	23
DEC									
11...	1155	766	1380	8.0	18.0	300	180	78	27
JAN									
21...	1200	1310	1170	8.0	18.5	270	170	71	23
MAR									
18...	1220	440	1580	7.8	20.0	310	190	79	26
MAY									
12...	1220	3080	1190	7.5	27.0	270	180	67	24
JUL									
22...	1030	22	1410	8.0	30.0	280	180	71	25
AUG									
12...	1045	674	1350	8.2	31.0	290	190	70	28
SEP									
15...	1045	188	1020	8.2	29.0	210	130	52	19

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)
OCT									
22...	99	3	5.2	92	160	120	.44	9.0	522
NOV									
20...	139	4	5.9	98	260	190	.74	8.3	755
DEC									
11...	162	4	6.2	130	260	190	.70	7.9	804
JAN									
21...	135	4	5.8	100	220	160	.62	8.7	684
MAR									
18...	160	4	5.3	110	280	210	.70	3.9	831
MAY									
12...	138	4	5.8	89	230	150	.75	10	684
JUL									
22...	174	5	6.4	100	250	220	.73	13	821
AUG									
12...	167	4	6.3	95	250	190	.86	13	781
SEP									
15...	113	3	5.1	82	180	140	.67	8.3	573

08469200 RIO GRANDE BELOW ANZALDUAS DAM, 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	13484	1050	636	23140	130	4770	220	7940	240
NOV.	1997	9335	1410	860	21680	190	4820	290	7380	310
DEC.	1997	16513	1370	833	37120	180	8160	280	12660	300
JAN.	1998	36884	1210	731	72820	150	15410	250	24920	270
FEB.	1998	14766	1260	765	30490	160	6540	260	10420	280
MAR.	1998	22856	1390	849	52400	190	11590	290	17860	300
APR.	1998	66130	1180	715	127700	150	26850	240	43710	260
MAY	1998	81510	1230	748	164600	160	35040	260	56310	270
JUNE	1998	61440	1280	777	128900	170	27720	270	44040	280
JULY	1998	30521	1340	815	67180	180	14640	280	22930	300
AUG.	1998	22850	1350	833	51380	200	12330	280	17370	280
SEPT	1998	27264	975	590	43410	120	8990	200	14880	220
TOTAL		403553	**	**	820800	**	176900	**	280400	**
WTD.AVG.		1110	1240	753	**	160	**	260	**	270

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), 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	1170	920	1540	1350	1170	1500	1180	1210	1320	1350	1400	1460
2	1170	1190	1580	1300	1180	1560	1170	1210	1260	1340	1370	1410
3	1210	1550	1610	1270	1190	1630	1170	1260	1330	1340	1370	1380
4	1140	1780	1610	1240	1190	1630	1180	1220	1260	1350	1360	1360
5	1090	1770	1580	1230	1170	1620	1180	1220	1260	1320	1350	1370
6	1000	1510	1550	1220	1190	1640	1170	1210	1230	1310	1380	1370
7	860	1410	1560	1230	1200	1630	1170	1220	1270	1330	1370	1350
8	930	1380	1480	1270	1180	1670	1160	1230	1250	1310	1370	1330
9	1370	1380	1400	1280	1190	1650	1160	1230	1280	1310	1370	1220
10	1260	1390	1420	1260	1250	1610	1190	1230	1280	1310	1420	1080
11	1280	1400	1460	1260	1230	1610	1180	1250	1290	1290	1380	1100
12	1260	1360	1410	1280	1220	1520	1160	1240	1290	1310	1370	1100
13	1250	1330	1380	1260	1330	1400	1170	1220	1280	1320	1390	1070
14	1090	1340	1330	1190	1450	1390	1180	1220	1300	1320	1410	1060
15	950	1300	1250	1160	1500	1400	1170	1220	1270	1330	1420	1040
16	1020	1290	1220	1180	1490	1410	1170	1250	1290	1330	1480	1050
17	1030	1290	1220	1150	1460	1450	1170	1220	1290	1320	1400	1050
18	1000	1290	1240	1170	1490	1460	1180	1230	1250	1320	1420	1090
19	990	1310	1220	1190	1510	1480	1170	1240	1280	1320	1380	940
20	980	1310	1230	1190	1440	1370	1170	1240	1270	1320	1370	550
21	960	1320	1230	1190	1320	1280	1170	1240	1280	1340	1130	380
22	950	1310	1230	1170	1290	1220	1180	1240	1270	1400	560	340
23	880	1320	1230	1180	1250	1230	1180	1180	1280	1420	440	350
24	830	1360	1240	1200	1220	1230	1170	1250	1290	1420	370	360
25	720	1390	1250	1180	1210	1440	1180	1240	1280	1420	390	360
26	670	1410	1300	1210	1220	1480	1190	1250	1280	1370	450	400
27	630	1410	1340	1190	1300	1260	1200	1210	1290	1340	5810	400
28	590	1430	1370	1190	1490	1300	1260	1260	1290	1350	710	400
29	610	1450	1370	1180	---	1270	1220	1250	1310	1340	890	450
30	760	1490	1290	1160	---	1240	1190	1250	1310	1400	1050	480
31	820	---	1360	1150	---	1220	---	1280	---	1410	1640	---
TOTAL	30470	41390	42500	37680	36330	44800	35390	38220	38430	41660	41220	27300
MEAN	983	1380	1370	1220	1300	1450	1180	1230	1280	1340	1330	910
MAX	1370	1780	1610	1350	1510	1670	1260	1280	1330	1420	5810	1460
MIN	590	920	1220	1150	1170	1220	1160	1180	1230	1290	370	340

08470400 ARROYO COLORADO AT HARLINGEN, TX

(National stream-quality accounting network)

LOCATION.--Lat 26°10'24", long 97°42'01", Cameron County, Hydrologic Unit 13090002, on downstream side of northbound service road on U.S. Highways 83 & 77, about 18 mi from point of main floodway that divides into North Floodway and Arroyo Colorado.

DRAINAGE AREA.--182 mi^2.

PERIOD OF RECORD.--Chemical and biochemical analyses: Nov 1986 to current year. Pesticide analyses: Oct 1995 to current year.

REMARKS.--Discharges published in the table were obtained directly from rating table furnished by International Boundary and Water Commission. Records of daily mean discharge for water year 1997 are given in International Boundary and Water Commission Water Bulletins Nos. 67 and 68. Since September 1995, suspended sediment chemistry and quality assurance data for this station may be obtained from the U.S. Geological Survey upon request.

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

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	SAMPLING METHOD, CODES (82398)	DISCHARGE, 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, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
OCT												
12...	0920	1028	10	618	1790	7.9	26.5	160	5.8	72	330	220
FEB												
09...	1010	1028	10	156	4500	7.9	20.0	85	9.6	106	900	670
MAR												
24...	0920	1028	10	138	4820	8.0	21.0	76	9.0	102	950	720
APR												
20...	1640	1028	10	161	4400	7.9	25.0	77	6.4	79	920	690
MAY												
19...	1400	1028	10	188	3750	8.4	29.0	89	7.9	102	750	540
JUN												
23...	1000	1028	10	167	3630	8.1	29.0	87	8.4	109	750	570
JUL												
14...	1430	1028	10	123	4360	8.3	32.0	60	8.0	111	910	700
AUG												
03...	1310	1028	10	108	4770	8.0	31.0	62	8.6	117	980	750
SEP												
05...	1210	1028	10	140	4030	8.1	29.5	60	5.9	78	800	600
06...	1340	1028	10	600	1770	7.8	26.0	210	9.1	113	340	210
10...	1840	1028	10	1120	1230	7.7	24.0	140	5.9	73	240	130

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	SODIUM PERCENT (00932)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	CARBONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	BICARBONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
OCT												
12...	82	30	218	5	59	7.1	0	131	108	280	320	.45
FEB												
09...	210	88	613	9	60	10	0	275	226	810	920	.88
MAR												
24...	220	94	646	9	59	11	0	283	232	860	950	.80
APR												
20...	220	87	591	9	58	10	0	279	229	790	860	.94
MAY												
19...	180	71	494	8	59	9.5	0	264	216	670	710	.92
JUN												
23...	180	72	481	8	58	11	0	228	187	650	700	.85
JUL												
14...	210	90	623	9	60	11	0	254	208	770	860	.97
AUG												
03...	230	98	696	10	60	10	0	289	237	840	940	.97
SEP												
05...	190	79	562	9	60	10	0	235	192	700	770	.80
06...	83	32	230	5	59	6.5	0	154	126	290	320	.42
10...	64	19	145	4	56	8.3	0	134	110	180	180	.45

08470400 ARROYO COLORADO AT HARLINGEN, TX--Continued

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, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT												
12...	14	1070	1020	1.26	.090	1.35	.066	2.6	1.2	.44	.51	1.2
FEB												
09...	23	2910	2840	3.54	.178	3.72	.097	5.1	1.3	.54	.63	1.4
MAR												
24...	22	3100	2970	3.95	.208	4.16	.066	5.6	1.4	.47	.53	1.4
APR												
20...	24	2910	2740	3.75	.195	3.95	.051	5.0	.99	.43	.48	1.0
MAY												
19...	21	2460	2310	3.22	.097	3.32	.049	5.1	1.8	.49	.54	1.8
JUN												
23...	21	2360	2250	2.47	.086	2.56	.038	4.3	1.7	.46	.49	1.7
JUL												
14...	24	2880	2730	1.56	.058	1.62	.030	3.4	1.7	.43	.46	1.7
AUG												
03...	24	3000	3000	2.34	.105	2.44	<.020	4.4	--	--	.46	1.9
SEP												
05...	23	2620	2460	2.33	.054	2.38	.160	4.0	1.5	.39	.55	1.7
06...	12	1100	1060	1.40	.041	1.44	.152	3.0	1.4	.33	.48	1.5
10...	17	741	692	2.15	.060	2.21	.115	3.4	1.1	.49	.61	1.2

DATE	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)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)
OCT												
12...	.638	.219	.200	.61	7.0	1.3	681	408	92	4.3	<1.0	7
FEB												
09...	.629	.384	.312	.96	4.1	1.4	80	189	99	<2.0	<2.0	5
MAR												
24...	.660	.375	.339	1.0	4.3	2.8	67	179	99	<2.0	<2.0	4
APR												
20...	.470	.368	.342	1.0	--	1.7	82	188	99	<2.0	<2.0	5
MAY												
19...	.620	.240	.245	.75	3.9	2.0	116	229	99	2.2	<2.0	8
JUN												
23...	.722	.336	.357	1.1	4.2	--	112	249	97	5.1	<2.0	9
JUL												
14...	.598	.342	.256	.78	4.1	<7.4	62	188	96	3.7	<1.0	8
AUG												
03...	.710	.340	.336	1.0	4.3	2.7	43	149	100	4.0	<2.0	7
SEP												
05...	.680	.380	.353	1.1	5.2	4.4	55	145	100	16	<2.0	7
06...	.807	.299	.267	.82	5.0	4.6	261	161	95	2.8	<1.0	5
10...	.616	.349	.367	1.1	5.8	2.2	953	315	91	1.6	<1.0	12

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, DIS-SOLVED (UG/L AS B) (01020)	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)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
OCT												
12...	53	<1.0	534	<1.0	2.4	<1.0	2.5	<3.0	<1.0	48	<1.0	9.5
FEB												
09...	74	<2.0	1500	<2.0	4.1	<2.0	<2.0	<30	<2.0	130	8.3	19
MAR												
24...	75	<2.0	1610	<2.0	2.2	<2.0	3.2	<30	<2.0	140	4.1	20
APR												
20...	77	<2.0	1450	<2.0	4.9	<2.0	3.7	<30	<2.0	140	3.9	21
MAY												
19...	88	<2.0	1150	<2.0	3.1	<2.0	4.3	<30	<2.0	120	3.8	19
JUN												
23...	90	<2.0	1150	<2.0	2.1	<2.0	2.6	<30	<2.0	120	8.9	18
JUL												
14...	39	<1.0	1500	<1.0	1.4	<1.0	1.8	<30	<1.0	140	2.5	9.8
AUG												
03...	76	<2.0	1660	<2.0	2.7	<2.0	4.0	<30	<2.0	160	<2.0	22
SEP												
05...	73	<2.0	1330	<2.0	2.4	<2.0	4.3	<30	<2.0	120	10	18
06...	55	<1.0	558	<1.0	2.0	<1.0	2.8	<10	<1.0	46	13	8.4
10...	59	<1.0	392	<1.0	1.5	<1.0	2.7	<10	<1.0	35	1.1	8.4

08470400 ARROYO COLORADO AT HARLINGEN, TX--Continued

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

DATE	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	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)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)
OCT												
12...	2.3	<1	<1.0	1510	14	2.7	3.3	<.0030	<.0020	<.002	<.0020	15.1
FEB												
09...	2.7	1	<2.0	4440	<30	2.4	10	<.0030	<.0020	<.002	<.0020	1.70
MAR												
24...	3.9	2	<2.0	4710	<30	8.2	11	<.0030	<.0020	<.002	<.0020	2.50
APR												
20...	3.4	2	<2.0	4510	<30	5.7	11	<.0030	<.0020	<.002	<.0020	2.24
MAY												
19...	4.1	1	<2.0	3740	<30	3.2	9.2	<.0030	<.0020	<.002	<.0020	.807
JUN												
23...	2.9	1	<2.0	3800	<30	6.5	8.5	<.0030	<.0020	<.002	<.0020	.143
JUL												
14...	1.7	1	<1.0	4560	<30	3.6	4.9	<.0030	<.0020	<.002	<.0020	.047
AUG												
03...	3.6	1	<2.0	4970	<30	4.9	10	<.0030	<.0020	<.002	<.0020	--
SEP												
05...	2.4	1	<2.0	3970	<30	4.2	8.6	<.0030	<.0020	<.002	<.0020	.036
06...	2.2	<1	<1.0	1590	13	6.6	3.5	<.0030	<.0020	<.002	<.0020	.023
10...	1.5	<1	<1.0	1070	22	2.7	2.5	<.0030	<.0020	<.002	<.0020	1.02

DATE	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)
OCT												
12...	<.0010	<.0020	<.0020	E.0114	<.0030	.0206	<.0050	<.0040	.139	E.0825	.082	<.001
FEB												
09...	<.0010	<.0020	<.0020	<.0030	<.0300	<.0040	<.0050	<.0040	E.0013	E.0979	.017	<.001
MAR												
24...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	E.0017	E.215	.019	<.001
APR												
20...	<.0010	<.0020	<.0020	E.0233	E.152	<.0040	<.0050	.0041	<.0020	E.169	.007	<.001
MAY												
19...	<.0010	<.0020	<.0020	<.0030	E.0915	<.0040	<.0050	<.0040	<.0020	E.104	.069	<.001
JUN												
23...	E.0955	<.0020	<.0020	<.0030	<.0170	--	<.0050	<.0040	<.0020	E.0945	--	<.001
JUL												
14...	E.0361	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	E.0304	.054	<.001
AUG												
03...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	--	--	<.001
SEP												
05...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	E.0262	.035	<.001
06...	<.0010	<.0020	<.0020	E.0994	<.0030	<.0100	<.0050	<.0040	<.0020	E.0275	.207	<.001
10...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	.0139	E.252	.049	<.001

DATE	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)
OCT												
12...	<.0170	<.0020	<.0040	.0996	<.0030	.008	<.0020	<.005	.055	<.004	<.0040	.0161
FEB												
09...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.005	<.004	<.0040	<.0030
MAR												
24...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	.0284	<.005	.006	<.004	<.0040	<.0030
APR												
20...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.357	<.004	<.0040	<.0030
MAY												
19...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.030	<.004	<.0040	<.0030
JUN												
23...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.007	<.004	<.0040	<.0030
JUL												
14...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
AUG												
03...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
SEP												
05...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
06...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	.012	<.002	<.004	<.0040	<.0030
10...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.147	<.004	<.0040	.0144

08470400 ARROYO COLORADO AT HARLINGEN, TX--Continued

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

DATE	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PROP-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)
OCT											
12...	<.0060	<.004	<.0060	<.0040	.0494	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
FEB											
09...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	E.0139	<.0070	<.0040	<.0130	<.0030
MAR											
24...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
APR											
20...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
MAY											
19...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	--	<.0030
JUN											
23...	<.0060	<.004	.0195	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
JUL											
14...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
AUG											
03...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
SEP											
05...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
06...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
10...	E.0028	<.004	<.0060	<.0040	.0201	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030

DATE	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	TERBUTH YLAZINE SURROGT WAT FLT 0.7 U GF, REC PERCENT (91064)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	SAMPLE VOLUME SCHED-ULE 2001 (ML) (99856)
OCT											
12...	.0255	<.0100	<.0070	<.0130	<.0020	<.0010	.0066	110	113	92.9	884
FEB											
09...	.0297	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	109	111	107	952
MAR											
24...	.0852	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	107	105	82.1	961
APR											
20...	.442	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	99.1	110	86.5	952
MAY											
19...	.0187	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	104	118	95.7	970
JUN											
23...	.0128	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	127	105	88.2	869
JUL											
14...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	87.0	95.0	98.2	862
AUG											
03...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	89.3	105	88.8	854
SEP											
05...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	113	131	98.3	884
06...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	105	110	92.0	900
10...	.0157	<.0100	<.0070	<.0130	<.0020	<.0010	E.0021	103	111	98.7	892

08475000 RIO GRANDE NEAR BROWNSVILLE, TX

(National stream-quality accounting network)

LOCATION.--Lat 25°52'35", long 97°27'15", Cameron County, Hydrologic Unit 13090002, at International Boundary and Water Commission gaging station, 1,000 ft downstream from El Jardin pumping plant, 6.8 mi below International Bridge between Brownsville and Matamoros, Tamps., Mex., and 48.8 mi above the Gulf of Mexico.

DRAINAGE AREA.--176,333 mi^2.

PERIOD OF RECORD.--Chemical analyses: Jan 1932, Mar 1943 to Feb 1944, Feb 1966 to Sep 1974. Chemical and biochemical analyses: Oct 1974 to current year. Pesticide analyses: May 1975 to May 1982, Oct 1995 to current year. Sediment analyses: Feb 1966 to current year. Radiochemical analyses: Oct 1995 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Mar 1943 to Feb 1944, Apr 1967 to Sep 1983.
WATER TEMPERATURE: Oct 1966 to Sep 1983.
SUSPENDED SEDIMENT DISCHARGE: Feb 1966 to Sep 1983.

REMARKS.--The flow is controlled largely by releases from Falcon Reservoir. Discharges published in the table were obtained directly from rating table furnished by International Boundary and Water Commission. Records of daily mean discharge for water year 1998 are given in International Boundary and Water Commission Water Bulletins Nos. 67 and 68. Since September 1995, suspended sediment chemistry and quality assurance data for this station may be obtained from the U.S. Geological Survey upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,130 microsiemens, May 29, 1972; minimum daily, 337 microsiemens, Sep 3, 1967.
WATER TEMPERATURE: Maximum daily, 35.0°C, on several days during summer months of 1982 and 1983; minimum daily, 8.0°C, Jan 10, 1967.
SEDIMENT CONCENTRATION: Maximum daily mean, 6,000 mg/L, Feb 28, 1983; minimum daily mean, 4 mg/L, Apr 26, 1970, Aug 16, 18, 24, 27, 1977.
SEDIMENT LOADS: Maximum daily, 181,000 tons Feb 28, 1983; minimum daily, 0.12 tons Aug 26, 1983.

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

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	SAMPLING METHOD, CODES (82398)	DISCHARGE, 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, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	HARDNESS NONCARB DISSOLVED 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
MAR 25...	0940	1028	10	6.4	1940	8.2	22.0	11	7.8	88	450	260
APR 21...	1000	1028	10	27	1300	8.1	24.0	16	8.4	101	310	190
MAY 20...	0900	1028	10	44	1340	8.3	27.5	10	7.9	99	310	180
JUN 22...	1100	1028	10	6.9	1420	7.9	33.0	15	6.8	94	320	200
JUL 06...	1010	1028	30	79	1420	8.2	31.0	15	7.3	98	320	190
AUG 04...	1210	1028	10	30	1580	8.0	34.5	9.7	7.8	113	400	230
SEP 30...	1430	1028	10	237	782	8.1	30.5	16	6.6	89	200	68

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	SODIUM PERCENT (00932)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	CARBONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	BICARBONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
OCT 11...	48	14	86	3	51	4.8	0	102	84	130	110	.39
FEB 10...	74	23	136	4	51	5.8	0	142	116	240	170	.75
MAR 25...	120	38	215	4	50	7.2	0	238	195	340	300	.64
APR 21...	82	25	142	4	49	5.7	0	148	121	250	170	.76
MAY 20...	81	26	149	4	50	6.9	0	165	135	260	180	.81
JUN 22...	80	28	164	4	52	6.3	0	149	122	270	210	.75
JUL 06...	82	28	161	4	52	6.7	0	155	127	270	200	.90
AUG 04...	100	35	201	4	52	5.8	0	205	168	280	230	.86
SEP 30...	59	12	76	2	44	6.8	0	161	132	--	--	--

08475000 RIO GRANDE NEAR BROWNSVILLE, TX--Continued

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, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT												
11...	9.4	468	457	.187	.015	.202	.111	.90	.58	.44	.55	.69
FEB												
10...	5.1	748	721	.204	.004	.208	.005	.73	.51	.34	.34	.52
MAR												
25...	5.5	1210	1140	.010	.002	.012	.014	.59	.56	.32	.34	.58
APR												
21...	9.3	794	760	--	<.001	<.005	.004	--	.49	.23	.23	.49
MAY												
20...	11	846	798	--	.002	<.005	<.002	--	--	--	.27	.57
JUN												
22...	14	890	845	--	<.001	<.005	.004	--	.48	.28	.29	.48
JUL												
06...	14	918	843	--	.001	<.005	<.002	--	--	--	.28	.41
AUG												
04...	25	1040	988	--	<.001	<.005	.005	--	.58	.29	.29	.59
SEP												
30...	13	--	--	.056	.001	.057	.009	.58	.52	.22	.23	.53

DATE	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)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)
OCT												
11...	.196	.126	.127	.39	4.0	1.3	24	33	98	2.3	<1.0	3
FEB												
10...	.150	.096	.082	.25	17	.60	19	37	100	<1.0	<1.0	2
MAR												
25...	.207	.147	.132	.40	5.0	.70	.50	29	97	<1.0	<1.0	4
APR												
21...	.167	.113	.087	.27	3.7	.60	2.8	39	96	<1.0	<1.0	4
MAY												
20...	.186	.058	.040	.12	3.2	.80	3.7	31	100	<1.0	<1.0	4
JUN												
22...	.093	.059	.069	.21	3.4	.30	.69	37	88	<1.0	<1.0	3
JUL												
06...	.108	.059	.058	.18	3.0	.90	7.0	33	100	<1.0	<1.0	5
AUG												
04...	.169	.103	.122	.37	3.4	.90	2.0	25	98	<1.0	<1.0	8
SEP												
30...	.294	.230	.199	.61	2.9	1.1	21	33	99	3.0	<1.0	6

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, DIS-SOLVED (UG/L AS B) (01020)	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)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
OCT												
11...	64	<1.0	187	<1.0	1.8	<1.0	1.5	<3.0	<1.0	26	1.7	4.1
FEB												
10...	109	<1.0	242	<1.0	2.8	<1.0	<1.0	<10	<1.0	47	1.2	7.1
MAR												
25...	119	<1.0	494	<1.0	2.3	<1.0	1.5	<10	<1.0	61	2.4	8.3
APR												
21...	105	<1.0	258	<1.0	2.7	<1.0	1.3	<10	<1.0	51	2.4	7.7
MAY												
20...	137	<1.0	245	<1.0	1.5	<1.0	1.7	<10	<1.0	54	1.2	8.5
JUN												
22...	139	<1.0	269	<1.0	1.6	<1.0	1.5	<10	<1.0	60	1.5	8.6
JUL												
06...	136	<1.0	257	<1.0	1.6	<1.0	1.4	<10	<1.0	60	2.5	8.6
AUG												
04...	141	<1.0	350	<1.0	1.8	<1.0	1.6	<10	<1.0	65	<1.0	8.4
SEP												
30...	95	<1.0	209	<1.0	1.1	<1.0	<1.0	<10	<1.0	22	<1.0	4.4

08475000 RIO GRANDE NEAR BROWNSVILLE, TX--Continued

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

DATE	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	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)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)
OCT												
11...	1.3	<1	<1.0	744	6	2.3	1.2	<.0030	<.0020	<.002	<.0020	.224
FEB												
10...	1.1	<1	<1.0	1340	<10	<1.0	2.8	<.0030	<.0020	<.002	<.0020	.139
MAR												
25...	2.1	<1	<1.0	2010	<10	3.8	3.3	<.0030	<.0020	<.002	<.0020	.035
APR												
21...	1.5	<1	<1.0	1480	<10	3.0	2.8	<.0030	<.0020	<.002	<.0020	.012
MAY												
20...	1.9	<1	<1.0	1500	<10	1.8	3.1	<.0030	<.0020	<.002	<.0020	.012
JUN												
22...	1.3	<1	<1.0	1590	<10	2.0	3.1	<.0030	<.0020	<.002	<.0020	.005
JUL												
06...	1.4	<1	<1.0	1580	<10	2.9	3.0	<.0030	<.0020	<.002	<.0020	<.001
AUG												
04...	1.4	<1	<1.0	1890	<10	1.0	3.1	<.0030	<.0020	<.002	<.0020	<.001
SEP												
30...	1.2	<1	<1.0	809	<10	1.4	1.4	<.0030	<.0020	<.002	<.0020	.006

DATE	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)
OCT												
11...	<.0010	<.0020	<.0020	E.160	<.0030	.0101	<.0050	<.0040	E.0010	E.0044	.045	<.001
FEB												
10...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	E.0044	.007	<.001
MAR												
25...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.006	<.001
APR												
21...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	<.002	<.001
MAY												
20...	<.0010	<.0020	<.0020	<.0030	<.0030	E.0038	<.0050	<.0040	<.0020	<.0020	.021	<.001
JUN												
22...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	--	<.001
JUL												
06...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.045	<.001
AUG												
04...	<.0010	<.0020	<.0020	<.0030	<.0030	.0088	<.0050	<.0040	<.0020	<.0020	.057	<.001
SEP												
30...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0050	<.0040	<.0020	<.0020	.087	<.001

DATE	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)
OCT												
11...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	.022	<.002	<.004	<.0040	<.0030
FEB												
10...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	E.003	<.004	<.0040	<.0030
MAR												
25...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
APR												
21...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	E.003	<.004	<.0040	<.0030
MAY												
20...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
JUN												
22...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
JUL												
06...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
AUG												
04...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030
SEP												
30...	<.0170	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030

08475000 RIO GRANDE NEAR BROWNSVILLE, TX--Continued

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

DATE	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PROP-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)
OCT											
11...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	.410	<.0040	<.0130	<.0030
FEB											
10...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
MAR											
25...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
APR											
21...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
MAY											
20...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	--	<.0030
JUN											
22...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
JUL											
06...	<.0060	<.004	<.0060	<.0400	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
AUG											
04...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030
SEP											
30...	<.0060	<.004	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030

DATE	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	TERBUTH YLAZINE SURROGT WAT FLT 0.7 U GF, REC PERCENT (91064)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	SAMPLE VOLUME SCHED-ULE 2001 (ML) (99856)
OCT											
11...	.0142	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	119	119	98.2	900
FEB											
10...	E.0038	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	111	113	108	961
MAR											
25...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	98.1	89.6	79.8	961
APR											
21...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	107	110	90.5	917
MAY											
20...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	109	115	96.7	833
JUN											
22...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	120	106	86.9	869
JUL											
06...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	92.7	98.4	78.2	943
AUG											
04...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	99.4	103	83.1	917
SEP											
30...	<.0050	<.0100	<.0070	<.0130	<.0020	<.0010	<.0020	95.1	98.6	89.4	961

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)
		Colorado River Basin				
08129500	Dove Creek Spring near Knickerbocker, Tex.	Lat 31°11'06", long 100°43'51", Irion County, at headquarters ranch house, 500 ft upstream from Dove Creek, 1.8 mi upstream from Stilson Dam on Dove Creek and 8.5 mi southwest of Knickerbocker.	--	1944-58†, 1959-98	10-01-97 12-01-97 01-27-98 03-24-98 05-20-98 07-14-98 09-08-98	8.90 8.54 8.30 8.46 8.14 8.03 12.7
08143900	Springs at Fort McKavett, Tex.	Lat 30°50'03", long 100°05'37", Menard County, 0.9 mi northwest of Fort McKavett at low-water crossing on Ranch Road 864.	--	1902, 1905, 1922, 1942, 1948-49, 1951-52, 1955-56, 1958-98	10-22-97 12-17-97 01-28-98 03-26-98 05-20-98 07-08-98 09-10-98	15.0 15.7 14.4 14.8 11.5 11.3 15.0
08146500	San Saba Springs at San Saba, Tex.	Lat 31°11'44", long 98°42'42", San Saba County, 150 ft upstream from bridge on U.S. Highway 190 at San Saba and 0.8 mi east of courthouse.	--	1939, 1952, 1957, 1959-98	10-21-97 12-16-97 01-27-98 03-25-98 05-20-98 07-07-98 09-08-98	11.6 13.0 7.07 12.8 10.4 10.1 9.62
08149400	South Llano River near Telegraph, Tex.	Lat 30°15'43", long 99°56'01", Edwards County, 3.7 mi upstream from Paint Creek, 5.7 mi south of Telegraph, and 18.7 mi southwest of Junction.	508	1939, 1952, 1956, 1959-98	10-22-97 12-17-97 01-28-98 03-26-98 05-20-98 07-08-98 09-10-98	28.7 26.3 24.8 22.6 20.3 17.5 39.0
08149500	Seven Hundred Springs near Telegraph, Tex.	Lat 30°16'12", long 99°55'22", Edwards County, about 3 mi upstream from Paint Creek, about 5 mi south of Telegraph, and about 18 mi southwest of Junction.	--	1939, 1952, 1955-56, 1959-98	10-22-97 12-17-97 01-28-98 03-26-98 05-20-98 07-08-98 09-10-98	22.6 19.4 23.7 18.3 18.3 18.9 22.7
08155400	Barton Creek above Barton Springs at Austin, Tex.	Lat 30°15'48", long 97°46'19", Travis County, upstream from upper dam of Barton Creek swimming pool in Zilker Park and upstream from all springs known as Barton Springs at Austin.	125	1919-98	01-27-98 09-11-98	25.7 0.58

See footnote at end of table.

Discharge measurements made at low-flow partial-record station during water year 1998--Continued

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		Guadalupe River Basin				
08166140	Guadalupe River above Bear Creek at Kerrville, Tex.	Lat 30º04'10". long 99º11'42", Kerr County, 600 ft downstream from Goat Creek, 900 ft upstream from Bear Creek and Bear Creek Crossing, and 2.4 mi east of intersection of State Highways 27 and 39 in Ingram.	--	1978-86, 1998	10-01-97 12-09-97 02-03-98 04-07-98 06-09-98 07-29-98	111 95 137 150 83.3 50.4
08168000	Hueco Springs near New Braunfels, Tex	Lat 29º45'33", long 98º08'23", Comal County, two springs located 400 and 500 ft west of the Guadalupe River, 600 ft downstream from the mouth of Elm Creek, and 4.2 mi north of New Braunfels.	--	1944-98	12-11-97 02-05-98 04-09-98 06-04-98 07-30-98	29.7 70.4 80.0 58.1 30.5
08177818	San Antonio Springs at San Antonio, Tex.	Lat 29º27'56", long 98º28'04", Bexar County, just below Hildebrandt Street in San Antonio.	--	1951-52, 1959-62, 1972, 1974-77, 1979-98	11-20-97 12-18-97 01-29-98 03-03-98 03-26-98 05-28-98 07-21-98 08-28-98 09-28-98	0 0 8.06 35.1 50.4 0 0 0 0
08178090	San Pedro Springs at San Antonio, Tex.	Lat 29º26'42", long 98º30'06", Bexar County, at San Pedro Park in San Antonio.	--	1933-35, 1951-52, 1958-61, 1966, 1971, 1974-77, 1979-98	11-20-97 12-18-97 01-29-98 03-03-98 03-26-98 05-28-98 07-21-98 08-28-98 09-28-98	4.54 4.40 5.83 4.92 3.27 0 0 2.84 3.21
		Nueces River Basin				
08204000	Leona River spring flow near Uvalde Tex.	Lat 29º09'15", long 99º44'35", Uvalde County, at old road crossing on White's Ranch, 2.0 mi downstream from Cooks Slough, and 4.7 mi southeast of Uvalde.	--	1935-65†, 1966-98	10-22-97 12-16-97 02-13-98 04-10-98 06-12-98 08-07-98	27.7 32.1 21.2 29.1 10.4 5.62
		Rio Grande Basin				
08425500	Phantom Lake Spring near Toyahvale, Tex.	Lat 30º56'01", long 103º50'43", Jeff Davis County, 375 ft downstream from source of spring, 3.5 mi southwest of Toyahvale, and 7.0 mi southwest of Bahmorhea.	--	1931-33†, 1942-66†, 1967-98	10-03-97 01-30-98 03-30-98 05-21-98 07-07-98 08-18-98	1.21 0.67 0.47 0.29 0.11 0.08
08427000	Giffin Springs at Toyahvale, Tex.	Lat 30º56'51", long 103º47'19", Reeves County, 2,000 ft northwest of post office in Toyahvale.	--	1919, 1922-23, 1925, 1932-33†, 1941-86, 1988-98	10-03-97 01-30-98 03-30-98 05-21-98 07-07-98 08-18-98	3.90 4.00 4.44 4.12 4.01 4.01

See footnote at end of table.

Discharge measurements made at low-flow partial-record station during water year 1998--Continued

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		Rio Grande Basin--Continued				
08456300	Las Moras Springs at Brackettville, Tex. b/	Lat 29º18'33", long 100º25'13", Kinney County, in springflow pool at Brackettville, 160 ft south of U.S. Highway 90, and 1,550 ft upstream from bridge on Brackettville-Fort Clark Road.	--	1896, 1899-1900, 1902, 1904-06, 1910, 1912, 1925, 1928, 1951-98	10-14-97 11-10-97 12-09-97 01-13-98 02-10-98 03-10-98 04-14-98 05-12-98 06-09-98 07-14-98 08-12-98 09-15-98	32.1 28.4 26.0 17.5 15.0 13.9 21.1 11.3 4.7 2.56 2.63 42.7

† Operated as a continuous-record station.

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)
Guadalupe River Basin								
Guadalupe River at New Braunfels, Tex. 08169500	Lat 29º41'52", long 98º06'23", Comal County, Comal Mills in New Braunfels and 0.4 mi upstream from IH-35. Drainage area is 1,652 mi^2.	1988†, 1902, 1915-72, 1974-98	03-18-98	11.48	3,290	09-10-21	28.60	56,600
San Antonio River at Navarro St., San Antonio, Tex. 08177900	Lat 29º25'50", long 98º29'24", Bexar County, at bridge on Navarro Street in San Antonio. Drainage area is unknown.	1973-98	08-22-98	634.39	--	08-08-74	*642.77	--
San Antonio River at San Antonio, Tex.	Lat 29º24'34", long 98º29'41", Bexar County, on left bank 193 ft downstream from South Alamo Street Bridge in San Antinio, 2.1 mi upstream from San Pedro Creek, and 230.6 mi upstream from mouth.	1939-98†	08-14-98	12.02	2,710	10-08-94	15.11	6,090
San Pedro Creek at Santa Rosa St., San Antonio, Tex. 08178100	Lat 29º25'51", long 98º29'49", Bexar County, at bridge on santa Rosa Street in San Antonio. Drainage area is unknown.	1973-98	12-10-97	637.91	--	07-16-90	*648.38	--
Martinez Creek at Fredericksburg Rd., San Antonio, Tex. 08178350	Lat 29º27'22", long 98º31'04", Bexar County, at bridge on Fredericksburg Road in San Antonio. Drainage area is unknown.	1973-98	03-15-98	681.80	--	09-27-73	*683.84	--
Nueces River Basin								
Rutledge Hollow Creek at 7th Street, Poteet, Tex. 08207220	Lat 29º02'07", long 98º34'18", Atascosa in city of Poteet at 7th Street, and 2.0 mi above atascosa River. Drainage area is 9.74 mi^2.	1979-98	02-01-98	419.79	--	07-17-90	*424.89	--
Atascosa River at U.S. Highway 281, Pleasanton, Tex. 08207300	Lat 28º57'44", long 98º28'51", Atascosa County, at bridge on U.S. Highway 281 in Pleasanton. Drainage area is unknown.	1973-98	01-06-98	343.14	--	06-28-93	*352.84	--
San Fernando Creek Basin								
Tranquitas Creek at Kingsville, Tex. 08212300	Lat 27º31'33", long 97º52'02", Kleberg County, at bridge on U.S. Highway 77 Business Route in Kingsville, 4.9 mi above San Fernando Creek, and 5.9 mi downstream from Tranquitas Dam. Drainage area is 48.5 mi^2.	1965-82, 1984-98	10-11-97	3.93	--	08-10-80	6.88	--

* Elevation, in feet.
† Operated as a continuous-record station.

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table:

Discharge measurements made at miscellaneous sites during water year 1998

Station number	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
Colorado River Basin						
Clear Creek near Menard	San Saba River	Lat 30º54'13", long 99º55'27", Menard County, at bridge on U.S. Highway 190, about 9 mi west of Menard.	106	1984-98	10-22-97 12-17-97 01-28-98 05-20-98 09-10-98	13.0 14.9 13.4 9.56 9.26
Tanner Springs near Telegraph	South Llano River	Lat 30º15'45", long 99º56'03", Edwards County, about 5.6 mi south of Telegraph, Kimble County, and 18.6 mi southwest of Junction at mouth.	--	1939, 1962, 1989-98	10-22-97 12-17-97 01-28-98 03-26-98 05-20-98 07-08-98 09-10-98	14.1 13.4 11.8 12.1 10.2 10.6 15.4
Sandy Creek at SH-16 near Eckert, Tex.	Colorado River	Lat 30º33'11", long 98º42'04", Llano County, at bridge on State Highway 16, about 9.7 mi north of Eckert.	--	--	05-29-95	47,300
Rio Grande Basin						
Mud Springs 1/	Mud Creek	Lat 29º27'10", long 100o37'30", Kinney County, on Mays Ranch about 16 mi northwest of Brackettville.	--	1939-41, 1952-53, 1962, 1965-98	10-14-97 11-10-97 12-09-97 01-13-98 02-10-98 03-10-98 04-14-98 05-12-98 06-09-98 07-14-98 08-12-98 09-15-98	15.7 16.3 15.9 14.8 12.9 13.1 13.3 11.1 10.3 7.11 6.34 15.2
Pinto Springs 1/	Pinto Creek	Lat 29º24'10", long 100o27'15",Kinney County, on C.C. Belcher Ranch 7.5 mi northwest of Bracketville.	--	1939-41, 1952-53, 1965-98	10-08-97 11-12-97 12-10-97	0 2.7 4.3

† Operated as a continuous-record station.

1/ Measurements by International Boundary and Water Commission.

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