

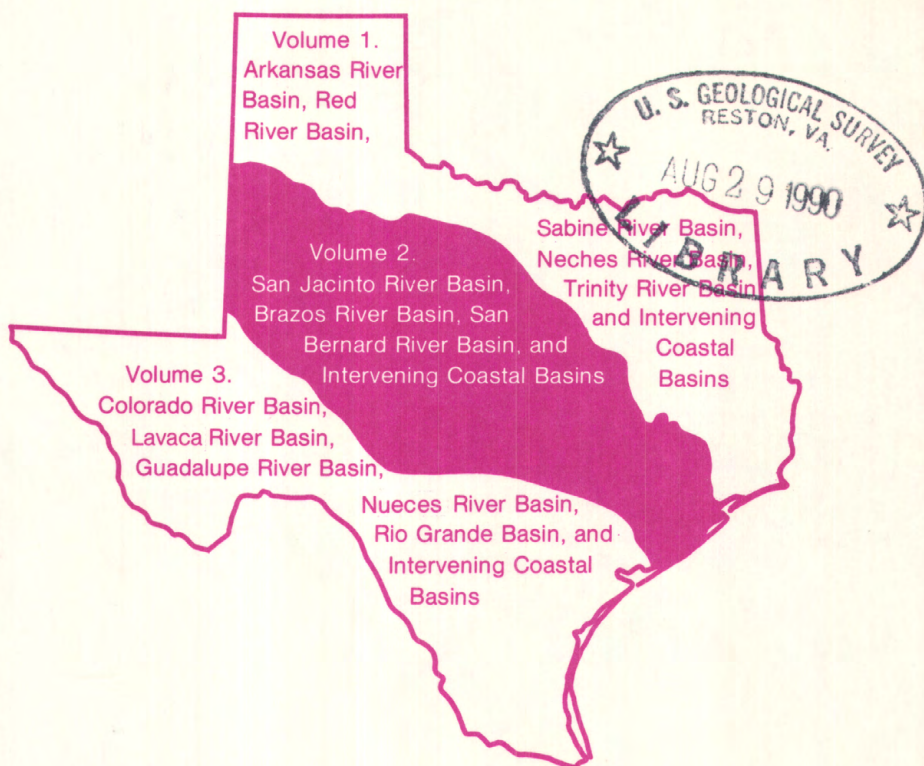
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# Water Resources Data Texas Water Year 1989

Volume 2. San Jacinto River Basin, Brazos River Basin,  
San Bernard River Basin, and  
Intervening Coastal Basins



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TX-89-2  
Prepared in cooperation with the State of Texas  
and with other agencies



## CALENDAR FOR WATER YEAR 1989

1988

## OCTOBER

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1989

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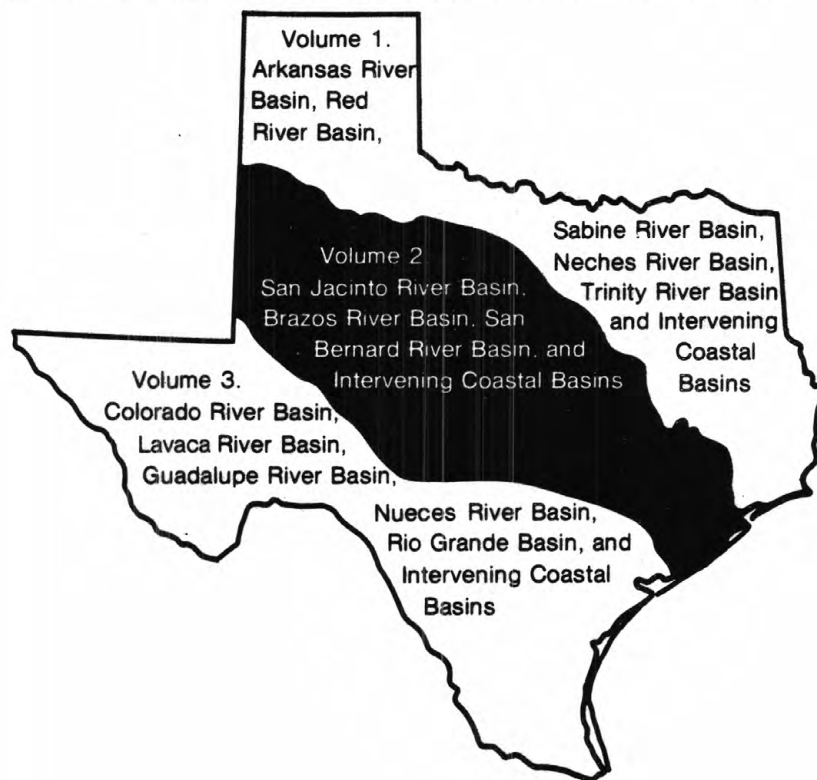




# Water Resources Data Texas Water Year 1989

## Volume 2. San Jacinto River Basin, Brazos River Basin, San Bernard River Basin, and Intervening Coastal Basins

by H.D. Buckner, W. J. Shelby, and H.J. Davidson



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TX-89-2  
Prepared in cooperation with the State of Texas  
and with other agencies



UNITED STATES DEPARTMENT OF THE INTERIOR

MANUEL LUJAN, JR., Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

For additional information write to:  
District Chief, Water Resources Division  
U.S. Geological Survey  
8011A Cameron Rd.  
Austin, Texas 78753

1990



## Preface

This volume of the annual hydrologic data report of Texas is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. Records of streamflow and quality-of-water data required to provide the hydrologic information needed by State, local and Federal agencies, and the private sector for developing and managing land and water resources in Texas are contained in 3 volumes:

- Volume 1. Arkansas River Basin, Red River Basin, Sabine River Basin, Neches River Basin, Trinity River Basin, and intervening and adjacent 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

This report is the culmination of a concerted effort by dedicated personnel of the Texas District, U.S. Geological Survey, who collected, compiled, analyzed, verified, and organized the data, typed, edited, and assembled the report, and who assured that the information contained here is accurate, complete, and adheres to Geological Survey policy and established guidelines.

This report was prepared in cooperation with the State of Texas and other agencies under the supervision of C. R. Burchett, District Chief.



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<b>15. Supplementary Notes</b> Prepared in cooperation with the State of Texas and with other agencies				
<b>16. Abstract (Limit 200 words)</b> Surface-water data for the 1989 water year for Texas are presented in three volumes, appropriately identified as to content by river basins. Data in each volume consist of records of stage, discharge, and water quality of streams and canals; and stage, contents, and water quality of lakes and reservoirs. Also included are crest-stage and flood-hydrograph partial-record stations, reconnaissance partial-record stations, and low-flow partial-record stations. Additional water data were collected at various sites, not part of the systematic data-collection program, and are published as miscellaneous measurements. Records for a few pertinent stations in bordering States also are included. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in Texas.				
<b>17. Document Analysis. a. Descriptors</b> *Texas, *Hydrologic data, *Surface water, *Water quality, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediments, Water temperatures, Sampling sites, Water analyses				
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## CONTENTS

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	Page
Preface.....	iii
List of gaging stations, in downstream order, for which records are published.....	v
Introduction.....	1
Cooperation.....	2
Hydrologic conditions.....	3
Streamflow.....	3
Water quality.....	5
Special networks and programs.....	7
Explanation of the records.....	8
Station identification numbers.....	8
Downstream order numbering.....	8
Records of stage and water discharge.....	9
Data collection and computation.....	9
Data presentation.....	11
Identifying estimated daily discharge.....	13
Accuracy of the records.....	13
Other records available.....	14
Records of surface-water quality.....	14
Classification of records.....	14
Arrangement of records.....	15
On-site measurements and sample collection.....	15
Water temperature.....	16
Sediment.....	16
Laboratory measurements.....	16
Data presentation.....	17
Remark codes.....	18
Access to WATSTORE data.....	18
Definition of terms.....	19
Publications of techniques of water-resources investigations.....	31
Gaging-station records.....	33
Discharge at partial-record stations.....	407
Low-flow partial-record stations.....	407
Crest-stage partial-record stations.....	408
Index.....	411

## ILLUSTRATION

---

Figure 1. Area of Texas covered by volume 2 and location of selected streamflow and water-quality stations in volume 2.....	4
2. Comparison of monthly mean discharge at four long-term representative gaging stations during the 1988 water year with median of the monthly mean discharge for the period 1951-80.....	6



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

	Page
<b>WESTERN GULF OF MEXICO BASINS</b>	
<b>SAN JACINTO RIVER BASIN</b>	
West Fork San Jacinto River (head of San Jacinto River):	
Lake Conroe near Conroe.....	33
Lake Conroe at outflow weir near Conroe.....	40
West Fork San Jacinto River below Lake Conroe near Conroe.....	41
Lake Creek near Conroe.....	44
West Fork San Jacinto River near Conroe.....	45
West Fork San Jacinto River above Lake Houston near Porter.....	52
Spring Creek at Spring.....	55
Cypress Creek at Katy-Hockley Road near Hockley.....	58
Cypress Creek at House and Hahl Road near Cypress.....	59
Little Cypress Creek near Cypress.....	62
Cypress Creek at Grant Road near Cypress.....	63
Cypress Creek at Stuebner-Airline Road near Westfield.....	64
Cypress Creek near Westfield.....	65
West Fork San Jacinto River near Humble.....	69
East Fork San Jacinto River near Cleveland.....	70
East Fork San Jacinto River near New Caney.....	72
Caney Creek near Splendora.....	79
<b>San Jacinto River:</b>	
<b>Lake Houston:</b>	
Luce Bayou above Lake Houston near Huffman.....	82
Lake Houston near Sheldon.....	85
San Jacinto River near Sheldon.....	129
Buffalo Bayou near Katy.....	131
Barker Reservoir near Addicks.....	132
<b>South Mayde Creek:</b>	
Bear Creek near Barker.....	133
Addicks Reservoir near Addicks.....	134
Buffalo Bayou near Addicks.....	135
Buffalo Bayou at West Belt Drive, Houston.....	136
Buffalo Bayou at Piney Point.....	138
Buffalo Bayou at Houston.....	139
Whiteoak Bayou at Houston.....	145
Buffalo Bayou at Main Street, Houston.....	147
Buffalo Bayou at Turning Basin, Houston.....	154
Brays Bayou at Houston.....	161
Sims Bayou at Hiram Clarke Street, Houston.....	163
Sims Bayou at Houston.....	164
Berry Bayou at Forest Oaks Street, Houston.....	166
Vince Bayou at Pasadena.....	168
Hunting Bayou at Interstate Highway 610, Houston.....	169
Greens Bayou at U.S. Highway 75 near Houston.....	171
Greens Bayou near Houston.....	172
Garners Bayou near Humble.....	174
Halls Bayou at Houston.....	175
Greens Bayou at Ley Road, Houston.....	176
<b>CLEAR CREEK BASIN</b>	
Clear Creek near Pearland.....	177
<b>COASTAL BASIN</b>	
Moses Lake-Galveston Bay near Texas City.....	178
<b>HIGHLAND BAYOU BASIN</b>	
Highland Bayou Diversion Channel:	
LaMarque Levee pump station near LaMarque.....	180
<b>CHOCOLATE BAYOU BASIN</b>	
Chocolate Bayou near Alvin.....	183
<b>BRAZOS RIVER BASIN</b>	
Double Mountain Fork Brazos River (head of Brazos River):	
North Fork Double Mountain Fork Brazos River near Post.....	184
Double Mountain Fork Brazos River at Justiceburg.....	187
Double Mountain Fork Brazos River near Aspermont.....	190
<b>Salt Fork Brazos River:</b>	
Duck Creek near Girard.....	194
Salt Fork Brazos River near Aspermont.....	195
Brazos River at Seymour.....	197
Millers Creek near Munday.....	201

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

vii

	Page
WESTERN GULF OF MEXICO BASINS--Continued	
BRAZOS RIVER BASIN--Continued	
Brazos River:	
Millers Creek Reservoir near Bomartin.....	202
Clear Fork Brazos River near Roby.....	203
Clear Fork Brazos River at Hawley.....	204
Mulberry Creek near Hawley.....	205
Clear Fork Brazos River at Nugent.....	206
Deadman Creek near Nugent.....	207
Paint Creek:	
California Creek near Stamford.....	208
Clear Fork Brazos River at Fort Griffin.....	209
Hubbard Creek:	
Salt Prong Hubbard Creek:	
North Fork Hubbard Creek Near Albany.....	210
Hubbard Creek below Albany.....	214
Big Sandy Creek above Breckenridge.....	219
Hubbard Creek Reservoir near Breckenridge.....	224
Brazos River near South Bend.....	230
Salt Creek:	
Briar Creek near Graham.....	233
Lake Graham near Graham.....	234
Big Cedar Creek near Ivan.....	235
Possum Kingdom Lake near Graford.....	236
Brazos River at Morris Sheppard Dam near Graford.....	246
Brazos River near Palo Pinto.....	249
Brazos River near Dennis.....	250
Lake Granbury near Granbury.....	254
Brazos River near Glen Rose.....	262
Paluxy River:	
Squaw Creek:	
Squaw Creek Reservoir near Glen Rose.....	263
Squaw Creek near Glen Rose.....	264
Lake Whitney near Whitney.....	265
Brazos River at Whitney Dam near Whitney.....	266
Brazos River near Aquilla.....	269
Aquilla Creek near Peoria.....	270
Hackberry Creek at Hillsboro.....	271
Hackberry Creek below Hillsboro.....	273
Aquilla Lake above Aquilla.....	274
Aquilla Creek above Aquilla.....	290
Aquilla Creek near Aquilla.....	291
North Bosque River at Hico.....	293
North Bosque River near Clifton.....	294
North Bosque River at Valley Mills.....	295
Waco Lake near Waco.....	296
Brazos River at Waco.....	297
Brazos River near Highbank.....	298
Proctor Lake near Proctor.....	303
Leon River near Hasse.....	304
Leon River near Hamilton.....	305
Leon River at Gatesville.....	306
Cowhouse Creek at Pidcoke.....	307
Belton Lake near Belton.....	308
Leon River near Belton.....	309
Lampasas River near Kempner.....	310
Rocky Creek:	
South Fork Rocky Creek near Briggs.....	312
Stillhouse Hollow Lake near Belton.....	314
Lampasas River near Belton.....	328
Little River near Little River.....	330
San Gabriel River:	
North Fork San Gabriel River near Liberty Hill.....	331
Lake Georgetown near Georgetown.....	332
North Fork San Gabriel River near Georgetown.....	343
South Fork San Gabriel River at Georgetown.....	345
San Gabriel:	
Berry Creek near Georgetown.....	346
San Gabriel River near Weir.....	347
Granger Lake near Granger.....	349



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

	Page
WESTERN GULF OF MEXICO BASINS--Continued	
BRAZOS RIVER BASIN--Continued	
Brazos River:	
Little River:	
San Gabriel River at Laneport.....	360
San Gabriel River near Rockdale.....	362
Little River near Rockdale.....	363
Little River at Cameron.....	364
Brazos River near Bryan.....	369
Middle Yegua Creek (head of Yegua Creek) near Dime Box.....	370
East Yegua Creek near Dime Box.....	371
Somerville Lake near Somerville.....	372
Yegua Creek near Somerville.....	383
Davidson Creek near Lyons.....	385
Brazos River at Washington.....	386
Navasota River above Groesbeck.....	387
Big Creek near Freestone.....	390
Lake Limestone near Marquez.....	391
Navasota River near Easterly.....	396
Navasota River near Bryan.....	397
Brazos River near Hempstead.....	398
Mill Creek near Bellville.....	399
Brazos River at Richmond.....	400
Big Creek near Needville.....	404
Brazos River near Rosharon.....	405
SAN BERNARD RIVER BASIN	
San Bernard River near Boling.....	406

## WATER RESOURCES DATA - TEXAS, 1989

### VOLUME 2 SAN JACINTO RIVER BASIN, BRAZOS RIVER BASIN, SAN BERNARD RIVER BASIN, AND INTERVENING COASTAL BASINS

#### INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with Federal, State, and City agencies, obtains a large amount of data pertaining to the water resources of Texas each water year. Such data, accumulated during many water years, constitute a valuable data base for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the Geological Survey, the data are published annually in three 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. Volume 2 contains records for water discharge at 98 gaging stations; stage only at 8 gaging stations; stage and contents at 20 lakes and reservoirs; and water quality at 60 gaging stations. Also included are data for 34 partial-record stations. The data in this report represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating City, State, and Federal 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.

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 Geological Survey for all States. These official 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-89-2." 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.

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) 832-5791.

#### COOPERATION

Federal agencies that assisted the Geological Survey in the collection of data in this report in the form of funds or services in 1989 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 Geological Survey are:

Texas Water Development Board, M.R. Arnold II, Executive Administrator; the cities of Abilene, Arlington, Austin, Carrollton, Corpus Christi, Dallas, Fort Worth, Gainesville, Garland, Graham, Houston, Lubbock, Nacogdoches, Runaway Bay, San Angelo, San Antonio, and Wichita Falls; Bexar, Medina, and Atascosa Counties Water Control and Improvement District No. 1; Brazos River Authority; Coastal Industrial Water Authority; Colorado River Municipal Water District; Dallas Public Works Department; Dallas Utilities Water Department; Edwards Underground Water District; Franklin County Water District; Galveston County; Greenbelt Municipal and Industrial Water Authority; Guadalupe-Blanco River Authority; Harris County Flood Control District; Lavaca-Navidad River Authority; Lower Colorado River Authority; Lower Neches Valley Authority; North Central Texas Municipal Water Authority; Northeast Texas Municipal Water District; North Texas Municipal Water District; 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 City Water Board; San Antonio River Authority; San Jacinto River Authority; Tarrant County Water Control and Improvement District No. 1; Texas Water 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.

Precipitation distribution for water year 1989 followed the long-term pattern and decreased across the State from east to west. Total precipitation for the year was near normal in the area between the Brazos and Colorado Rivers, greater than normal east of the Brazos River, and below normal west of the Colorado River.

The greater than normal precipitation totals recorded in North Central, East, and extreme Southeast Texas during the year were the result of heavy rains that occurred during May and June. Several locations had totals near 19 inches, with more than 10 inches common throughout the entire area during May. Intense storms in June over the same areas as the May storms resulted in severe flooding in some areas. During June, several stations in North Central Texas reported nearly 17 inches of rainfall. In East Texas, rainfall amounts for June were almost 20 inches, and in extreme Southeast Texas, rainfall amounts in excess of 20 inches for the month were not uncommon.

Streamflow during water year 1989 generally followed the precipitation patterns. North and East of the Brazos River, streamflow was normal to greater than normal, while West of the Brazos River, streamflow usually was normal to below normal.

The precipitation pattern was reflected by changes in reservoirs contents. Conservation storage in 74 selected reservoirs throughout the State, with a combined conservation capacity of 33,958,690 acre-feet, increased from 78 percent at the end of September 1988 to 86 percent at the end of September 1989. Records from these reservoirs indicate that storage increased in 47, decreased in 23, and remained the same in 4.

The area for which water-resources data are presented in volume 2 extends from the New Mexico border in northwestern Texas, southeastward across the central part of the State to the upper middle Texas Gulf Coast. Normal annual precipitation ranges from less than 17 inches in the westernmost part of the area to nearly 50 inches along the Gulf Coast. Annual runoff ranges from less than 1.0 inch in the west to more than 15 inches in places along the Gulf Coast. The area described in volume 2 and the location of selected streamflow and water-quality stations in the area are shown in figure 1.

## Streamflow

Streamflow for water year 1989 was normal to below normal in the northern and western parts of the area, and normal to greater than normal in the eastern part of the area described in volume 2. For six selected streamflow stations in the area, streamflow was below normal at four and greater than normal at two. Flow rates in the Bosque and San Jacinto River basins were greater than normal during May and June because of heavy rainfall that caused record flooding in the Houston area (San Jacinto River basin).



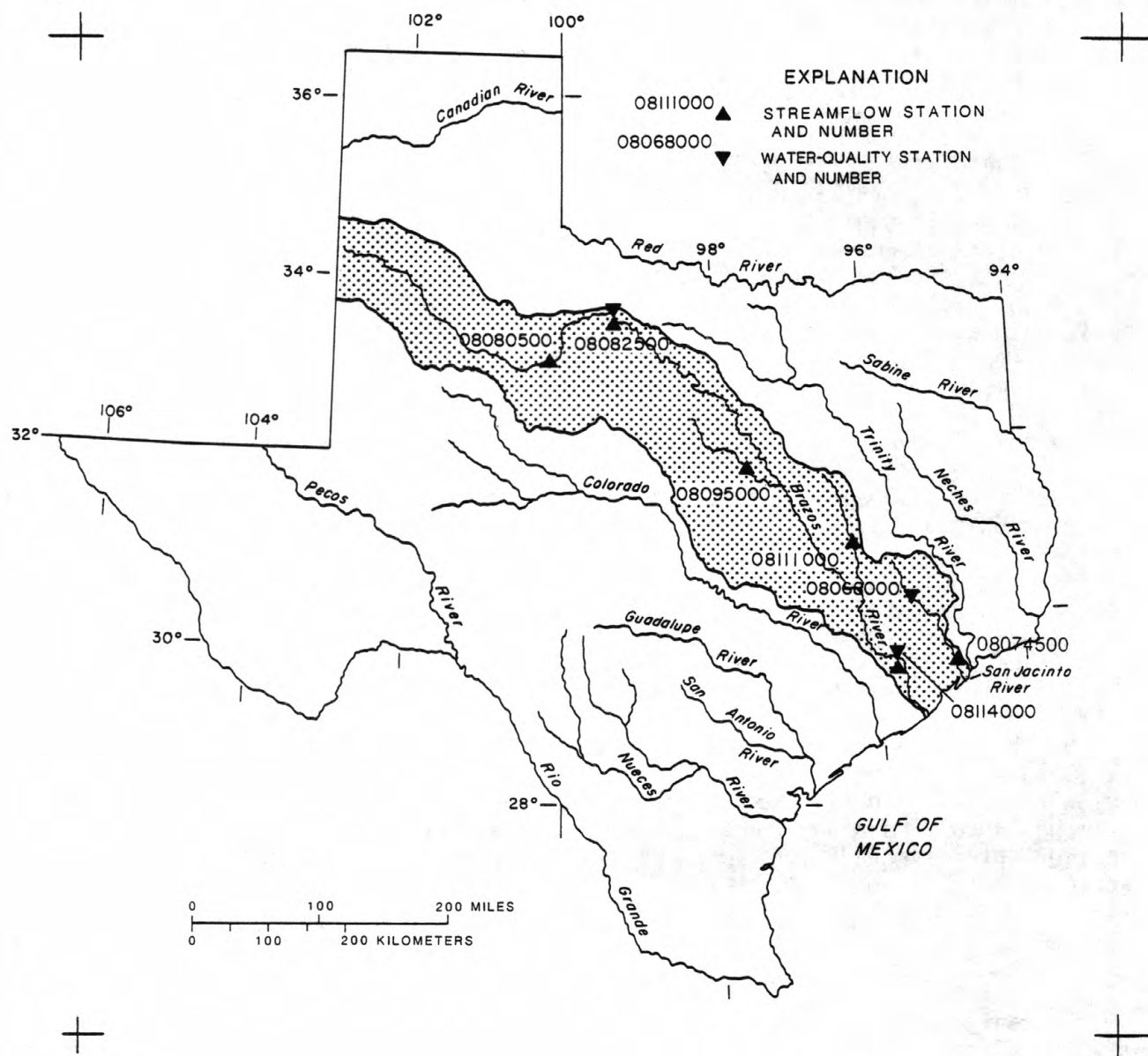


Figure 1.--Area of Texas covered by volume 2 (shaded) and location of selected streamflow and water-quality stations in volume 2.

Streamflow at the hydrologic index station North Bosque River near Clifton was below normal in November (within the lowest 25 percent of record), greater than normal (within the highest 25 percent of record) during March and from April through July, and normal for the remainder of the year. A comparison of streamflow for water year 1989 with streamflow for the period of record at six selected stations (fig. 1) for which data are included in volume 2 is presented in the following table:

Station no. and name	Discharge during 1989 water year (cubic feet per second)			Discharge during period of record (cubic feet per second)		
	Max.	Min.	Avg.	Max.	Min.	Avg.
<u>San Jacinto River basin</u>						
08074500 Whiteoak Bayou at Houston, Tex.	18,300	26	156	18,300	0	89.7 (1937-89)
<u>Brazos River basin</u>						
08080500 Double Mountain Fork Brazos River near Aspermont, Tex. <u>1</u> /	5,070	0	53.7	91,400	0	158 (1925-34, 1941-89)
08082500 Brazos River at Seymour, Tex.	15,600	.09	212	95,400	0	372 (1925-89)
08095000 North Bosque River near Clifton, Tex. <u>2</u> /	37,900	2.5	363	92,800	0	167 (1968-89)
08111000 Navasota River near Bryan, Tex.	33,500	.17	376	38,200	0	575 (1961-89)
08114000 Brazos River at Richmond, Tex.	43,800	229	5,436	123,000	35	7,158 (1941-89)

1/ National Stream Quality Accounting Network (NASQAN) site.

2/ Hydrologic index station.

At the other three index stations in the State, streamflow during water year 1989 was near normal. Monthly mean discharge and the median of the monthly means for the water years 1951-80 for the four hydrologic index stations in the State are shown in figure 2. For the Neches River near Rockland, streamflow was greater than normal during April through July, and normal for the remainder of the year. The North Concho River near Carlsbad had greater than normal streamflow from December through March and during June, and normal streamflow for the remainder of the year. The Guadalupe River near Spring Branch had normal streamflow from October through August and below normal for September.

Conservation storage in 21 selected reservoirs in this area of the State, with a total combined conservation capacity of 3,921,370 acre-feet, increased from 79 percent of capacity at the end of September 1988, to 93 percent of capacity at the end of



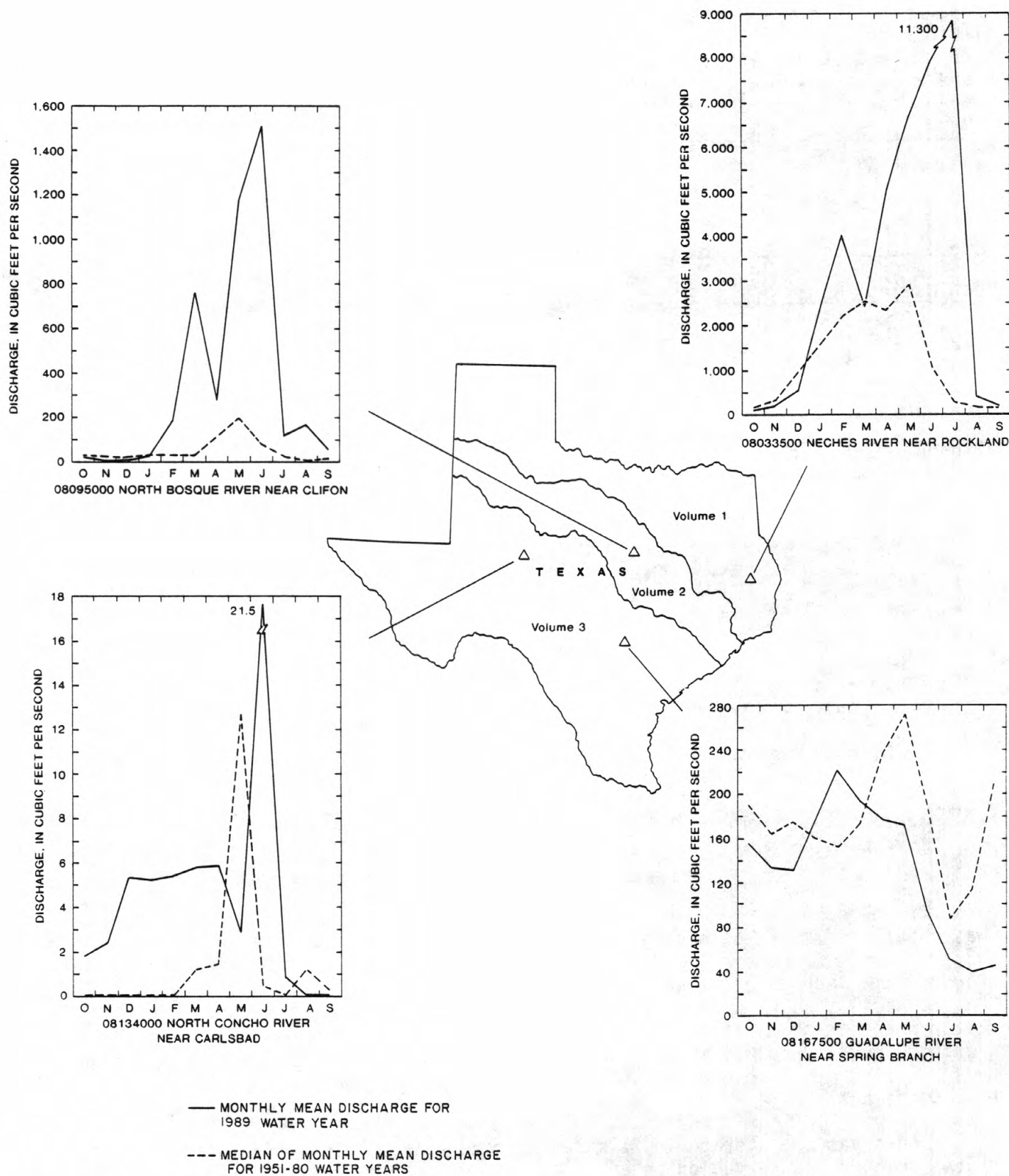


Figure 2.--Comparison of monthly mean discharges at four long-term hydrologic index gaging stations during the 1989 water year with median of the monthly mean discharges for 1951-80 water years.

September 1989. Records from these reservoirs indicate that storage increased in 16, decreased in 4, and remained the same in 1 during water year 1989.

### Water Quality

Dissolved-solids concentrations in most streams in the State are inversely related to streamflow. During years when precipitation and runoff are less than normal, streamflow commonly is much 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 concentration may remain relatively constant despite large fluctuations in precipitation and runoff.

Records of discharge-weighted-average concentrations of dissolved solids for water year 1989 are compared with those for the water years 1985-89 for selected long-term daily or continuous-record water-quality stations (fig. 1) in the San Jacinto and Brazos River basins. Results are shown in the following table:

Station no. and name	Mean discharge (cubic feet per second)		Discharge-weighted-average concentration of dissolved solids (milligrams per liter)	
	1989	1985-89	1989	1985-89
<u>San Jacinto River basin</u>				
08068000 West Fork San Jacinto River near Conroe, Tex.	324	417	144	126
<u>Brazos River basin</u>				
08082500 Brazos River at Seymour, Tex.	212	367	2,240	2,910
08114000 Brazos River at Richmond, Tex.	5,436	7,218	420	394

### SPECIAL NETWORKS AND PROGRAMS

Hydrologic Bench-Mark Network is a network of 57 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 the activities of man.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

The National Trends Network (NTN) is a 150-station network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

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.

#### EXPLANATION OF THE RECORDS

The surface-water records published in this report are for the 1989 water year that began October 1, 1988, and ended September 30, 1989. 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 groundwater 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 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 eight-digit number for each station, such as 08057000, which appears just to the left of the station name, includes the two-digit Part number "08" plus the six-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 water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean daily 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 with reasonable accuracy for any time, or period of time. They may be obtained using a continuous stage-recording device, but need not be. Because daily mean discharges and end-of-day contents commonly are published for such stations, they are referred to as "daily stations."

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device 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 "Crest-stage partial records," or "Low-flow partial records." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered as partial records, but they are presented separately in this report.

#### Data Collection and Computation

The data obtained at a complete-record gaging station on a stream or canal consist of a continuous record of stage, individual measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relationships between stage and discharge. These data, together with supplemental information, such as weather records, are used to compute daily 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 relationship between stage and lake content. These data are used with stage-area and stage-capacity curves or tables to compute water-surface areas and lake storage.

Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage or with digital recorders that punch stage values on paper tapes at selected time intervals. Measurements of discharge are made with current meters using methods adopted by the 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, Chapter A6.

In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves are then constructed. From these curves, rating tables indicating the approximate 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 are 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.

Daily mean discharges are computed by applying the daily mean stages (gage heights) to the stage-discharge curves or tables. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean 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 curves or 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 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 the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall 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 relationship 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 then are determined. If the stage-content relationship changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relationship. Even when this is done, the contents computed may become increasingly in error as the lapsed time since the last survey increases. Discharges over lake or reservoir spillways are computed from stage-discharge relationships much as other stream discharges are computed.

For some 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 recorder stops or otherwise fails

to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily 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

The records published for each gaging station consist of two parts, the manuscript or station description and the data table for the current water year. The manuscript provides, under various headings, descriptive information, such as station location; period of record; average discharge; historical extremes; 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 to which the revisions apply. 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 National Geodetic Vertical Datum of 1929 (see glossary), 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 Geological Survey by a cooperating organization are identified here.

AVERAGE DISCHARGE.--The discharge value given is the arithmetic mean of the water-year mean discharges. It is computed only for those stations having at least 5 water years of complete record, and only water years of complete record are included in the computation. It is not computed for stations where diversions, storage, or other water-use practices cause the value to be meaningless. If water developments significantly altering flow at a station are put into use after the station has been in operation for a period of years, a new average is computed as soon as 5 water years of record have accumulated following the development. The median of yearly mean discharges also is given under this heading for stations having 10 or more water years of record, if the median differs from the average given by more than 10 percent.

EXTREMES FOR PERIOD OF RECORD.--Extremes may include maximum and minimum stages and maximum and minimum discharges or content. Unless otherwise qualified, the maximum discharge or content is the instantaneous maximum corresponding to the highest stage that occurred. The highest stage may have been obtained from a graphic or digital recorder, a crest-stage gage, or by direct observation of a nonrecording gage. If the maximum stage did not occur on the same day as the maximum discharge or content, it is given separately. Similarly, the minimum is the instantaneous minimum discharge, unless otherwise qualified, and was determined and is reported in the same manner as the maximum.

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.

EXTREMES FOR CURRENT YEAR.--Extremes given here are similar to those for the period of record, except the peak discharge listing may include secondary peaks. For stations meeting certain criteria, all peak discharges and stages occurring during the water year and greater than a selected base discharge are presented under this heading. The peaks greater than the base discharge, excluding the highest one, are referred to as secondary peaks. Peak discharges are not published for canals, ditches, drains, or streams for which the peaks are subject to substantial control by man. The time of occurrence for peaks is expressed in 24-hour local standard time. For example, 12:30 a.m. is 0030, and 1:30 p.m. is 1330. The minimum for the current water year appears below the table of peak data.

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 manuscript 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.

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 is usually 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.

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<sup>3</sup>/s; to the nearest tenth between 1.0 and 10 ft<sup>3</sup>/s; to whole numbers between 10 and 1,000 ft<sup>3</sup>/s; and to 3 significant figures for more than 1,000 ft<sup>3</sup>/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 once 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 punched at short intervals on a paper tape. 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.

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 Regional 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.

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 (carbonate and bicarbonate), 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 carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital 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 whose 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 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 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 Geological Survey laboratory are given in TWRI, Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4.

### 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 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.

#### Remark Codes

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

<u>PRINTED OUTPUT</u>	<u>REMARK</u>
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

#### ACCESS TO WATSTORE DATA

The National WATER Data STOrage and REtrieval System (WATSTORE) was established for handling water data collected through the activities of the U.S. Geological Survey and to provide for more effective and efficient means of releasing the data to the public. The system is operated and maintained on the central computer facilities of the Survey at its National Center in Reston, Virginia.

WATSTORE can provide a variety of useful products ranging from simple data tables to complex statistical analyses. A minimal fee, plus the actual computer cost incurred in producing a desired product, is charged to the requester. Information about the availability of specific types of data, the acquisition of data or products, and user charges can be obtained locally from the District office (see address given on the back of the title page).

General inquiries about WATSTORE may be directed to:

Chief Hydrologist  
U.S. Geological Survey  
437 National Center  
Reston, Virginia 22092

#### 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.

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 multi-celled 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.

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 24 hours at 35°C. In the laboratory these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35°C plus or minus 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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 plus or minus 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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 plus or minus 1.0°C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

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

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

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

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

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

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

Bottom material: See Bed material.

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

Cubic-foot-per-second day 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.

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

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

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

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

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

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

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

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

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.

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.

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 ( $\text{CaCO}_3$ ).

Hydrologic Bench-Mark Network is a network of 57 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 the activities of man.

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 eight-digit number.

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

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

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

Micrograms per liter ( $\mu\text{g/L}$ ,  $\text{UG/L}$ ) 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.

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.

National Geodetic Vertical Datum of 1929 (NGVD of 1929) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

The National Trends Network (NTN) is a 150-station network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

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, WATSTORE, to uniquely identify a specific constituent. The codes used in WATSTORE 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:

<u>Classification</u>	<u>Size (mm)</u>	<u>Method of analysis</u>
Clay.....	0.00024 - 0.004	Sedimentation
Silt.....	.004 - .062	Sedimentation
Sand.....	.062 - 2.0	Sedimentation or 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.

Picocurie (PC, pCi) is one trillionth ( $1 \times 10^{-12}$ ) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields  $3.7 \times 10^{10}$  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 qual-

ity 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, the 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<sup>2</sup>.time)] for periphyton and macrophytes and [mg C/(m<sup>3</sup>.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 O/(m<sup>2</sup>.time)] for periphyton and macrophytes and [mg O/(m<sup>3</sup>.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.

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).

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<sup>3</sup>/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.



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

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

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

Solute is any substance that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 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 hardboard) for benthic organism collection, and plexiglass strips for periphyton collection.

Surface area of a lake is that area outlined on the latest U.S.G.S. 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  $\mu$ m 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  $\mu$ m 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.

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

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

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.



Water year in 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, 1989, is called the "water year 1989."

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 ON 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 pages.
- 1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.
- 2-D1. *Application of surface geophysics to ground-water investigations*, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.
- 2-D2. *Application of seismic-refraction techniques to hydrologic studies*, by F. P. Haeni: USGS--TWRI Book 2, Chapter D2. 1988. 86 pages.
- 2-E1. *Application of borehole geophysics to water-resources investigations*, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
- 2-F1. *Application of drilling, coring, and sampling techniques to test holes and wells*, by Eugene Shuter and Warren E. Teasdale: USGS--TWRI Book 2, Chapter F1. 1989. 97 pages.
- 3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.
- 3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.
- 3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3. Chapter A7. 1968. 28 pages.
- 3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.
- 3-A9. *Measurement of time of travel in streams by dye tracing*, by F. A. Kilpatrick and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1989. 27 pages.
- 3-A10. *Discharge ratings at gaging stations*, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A10. 1984. 59 pages.
- 3-A11. *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.
- 3-A12. *Fluorometric procedures for dye tracing*, by J. F. Wilson, Jr., E. D. Cobb, and F. A. Kilpatrick: USGS--TWRI Book 3, Chapter A12. 1986. 41 pages.
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## WESTERN GULF OF MEXICO BASINS

## SAN JACINTO RIVER MAIN STEM

33

08067600 LAKE CONROE NEAR CONROE, TX

LOCATION.--Lat 30°21'30", long 95°33'39", Montgomery County, Hydrologic Unit 12040101, at service outlet tower at Conroe Dam on West Fork San Jacinto River, 140 ft upstream from centerline of dam, and 7.4 mi west of Conroe.

DRAINAGE AREA.--445 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by an earthfill dam 11,300 ft long, including a controlled spillway. The dam was completed Sept. 1, 1972, and deliberate impoundment began Jan. 9, 1973. Water is used for municipal and industrial purposes in the Houston metropolitan area. In addition, a small diversion is made for cooling purposes at the Gulf State Utilities generating plant on Lewis Creek Reservoir near Conroe. During the current year, 1,674 acre-ft was diverted to Lewis Creek Reservoir for that purpose. A spillway with five 40- x 30-foot tainter gates is located near the center of dam. Low-flow releases are made through a separate multi-gated inlet tower. The tower has three gated openings and one uncontrolled opening. It is connected to a stilling basin and a concrete weir by a 14-foot-diameter conduit through the dam. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam.....	212.0	-
Design flood.....	205.5	532,000
Top of tainter gates.....	202.5	462,600
Top of conservation pool (uncontrolled tower outlet).....	201.0	430,300
Crest of spillway (sill of tainter gates).....	173.0	64,960
Lowest gated outlet (invert).....	144.5	300

COOPERATION.--The capacity table, furnished by the San Jacinto River Authority, is based on Geological Survey maps dated 1958-59.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 512,000 acre-ft May 22, 1983 (elevation, 204.66 ft); minimum since normal operating level was reached, 336,900 acre-ft Jan. 11, 1989 (elevation, 196.17 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 445,600 acre-ft May 18 at 1400 hours (elevation, 201.72 ft); minimum, 336,900 acre-ft Jan. 11 (elevation, 196.17 ft).

## Capacity table (elevation, in feet, and total contents, in acre-feet)

196.0	333,900	200.0	409,600
198.0	370,500	202.0	451,600

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	381100	358900	342900	339300	381200	387400	432000	429800	429000	437500	430500	421000
2	380500	357800	342100	339100	383000	388200	431800	428600	428800	436900	430300	420800
3	379300	357200	341800	339300	383900	388600	431100	430500	428600	436200	429400	420600
4	377800	357100	341400	338600	383000	388900	431100	430100	428200	434100	429400	420400
5	376800	355900	340900	338200	384300	389100	430300	433200	430100	433000	429200	419500
6	375800	355000	340200	338000	383200	388900	429200	433000	429600	434100	429200	418900
7	375300	354300	339800	338200	382800	388600	428600	432200	429600	433500	429200	418500
8	373900	353900	338800	337700	382800	388400	430100	430500	430100	432400	429200	418100
9	373700	353200	342900	337300	382800	388400	429600	430900	429200	431800	428600	417700
10	372800	353300	345700	337100	382200	388400	429200	431300	433700	431800	428200	417700
11	372000	352200	345700	337100	382200	388000	428200	430900	433900	431800	428000	417100
12	370500	352200	345400	340500	382400	387800	428200	430300	432400	433700	427200	416200
13	369200	351500	344700	341200	383000	387800	428600	434300	432600	431300	427200	418900
14	368400	350600	344300	342000	383500	388200	430100	436700	441800	431100	426300	417700
15	367300	350400	344300	343800	385100	388900	429800	434700	439000	430700	426300	417100
16	367100	350200	343400	343800	385900	388400	429200	432400	435200	430700	426100	416400
17	366700	349200	342900	343800	386600	388000	429600	443100	432200	430300	425900	416200
18	366200	348400	342000	345700	386800	388600	429800	445400	432400	430100	425300	415800
19	365800	349300	341200	349000	386600	388200	430300	443300	432400	430300	425100	415400
20	365200	348300	341200	351700	387000	389100	430300	440500	432400	429800	424900	415000
21	364900	347700	341100	352600	387800	393300	429800	437500	431300	429200	424700	414800
22	363600	347000	341100	352800	387800	393900	429200	434300	431300	428600	424500	414600
23	363600	346100	340300	353000	387000	394900	428600	432400	431500	428000	424100	413600
24	362600	345400	340500	353000	386400	395300	428600	430500	431500	429200	423900	412700
25	361700	345700	339800	353500	386400	395500	428400	430300	431300	430100	423500	411900
26	361900	346100	339300	355200	386600	398100	428400	430100	433700	430100	423200	411500
27	360800	345600	342000	355800	387400	400700	428400	430300	434500	430500	423000	411100
28	361200	344700	340500	359500	387000	403700	428600	430100	433700	430300	422800	410700
29	360400	344700	340000	368000	---	425900	429200	429200	432400	430300	422000	410700
30	359900	343600	339800	376000	---	434300	429600	429000	435000	430100	421400	410100
31	359900	---	339600	379700	---	434100	---	428400	---	430100	421400	---
MAX	381100	358900	345700	379700	387800	434300	432000	445400	441800	437500	430500	421000
MIN	359900	343600	339300	337100	364300	387400	428200	428400	428200	428000	421400	410100
(↑)	197.43	196.54	196.32	198.48	198.86	201.18	200.97	200.91	201.22	200.99	200.57	200.02
(Φ)	-21900	-16300	-4000	+40100	+7300	+47100	-4500	-1200	+6600	-4900	-8700	-11300
CAL YR 1988	MAX	438400	MIN	339300	(Φ)	-92200						
WTR YR 1989	MAX	445400	MIN	337100	(Φ)	+28300						

(↑) Elevation, in feet, at end of month.  
(Φ) Change in contents, in acre-feet.

SAN JACINTO RIVER MAIN STEM  
08067600 LAKE CONROE NEAR CONROE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: September 1973 to current year.

302127095335501 - LAKE CONROE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

								OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)		HARD- NESS TOTAL (MG/L AS CAC03)	
DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)				
FEB											
14...	1300	1.00	270	8.20	11.5	1.08	9.5		87		96
14...	1302	10.0	270	8.00	11.0	--	9.1		82		--
14...	1304	20.0	270	8.00	11.0	--	9.0		82		--
14...	1306	40.0	270	7.90	10.0	--	8.7		77		--
14...	1308	54.0	270	7.90	10.0	--	8.7		77		96
JUN											
15...	1420	1.00	255	7.90	26.5	1.05	6.0		75		90
15...	1422	10.0	255	7.90	26.5	--	6.0		75		--
15...	1424	20.0	255	7.90	26.5	--	5.9		73		--
15...	1426	30.0	255	7.80	26.5	--	5.9		73		--
15...	1428	40.0	255	7.80	26.5	--	5.7		71		--
15...	1430	49.0	285	7.30	21.0	--	0.1		1		96
SEP											
06...	1114	1.00	245	8.50	31.0	0.93	6.4		86		86
06...	1116	5.00	245	8.20	30.5	--	5.6		75		--
06...	1118	10.0	245	7.30	29.5	--	2.0		26		--
06...	1120	15.0	245	7.20	29.0	--	0.9		12		--
06...	1122	20.0	250	7.20	28.5	--	0		0		--
06...	1124	25.0	250	7.10	28.0	--	0		0		--
06...	1126	30.0	250	7.10	27.5	--	0		0		--
06...	1128	40.0	265	7.00	26.0	--	0		0		--
06...	1130	53.0	330	6.90	23.0	--	0		0		110
DATE		HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CAC03	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	
FEB											
14...	7	34	2.6	15	0.7	3.4	89	8.3	24		--
14...	--	--	--	--	--	--	--	--	--		--
14...	--	--	--	--	--	--	--	--	--		--
14...	--	--	--	--	--	--	--	--	--		--
14...	6	34	2.7	14	0.7	3.4	90	8.4	24		--
JUN											
15...	10	32	2.4	14	0.7	3.2	80	7.0	21		--
15...	--	--	--	--	--	--	--	--	--		--
15...	--	--	--	--	--	--	--	--	--		--
15...	--	--	--	--	--	--	--	--	--		--
15...	--	--	--	--	--	--	--	--	--		--
15...	0	34	2.6	15	0.7	3.4	97	5.0	23		--
SEP											
06...	2	31	2.2	14	0.7	3.4	85	6.0	22		--
06...	--	--	--	--	--	--	--	--	--		--
06...	--	--	--	--	--	--	--	--	--		--
06...	--	--	--	--	--	--	--	--	--		--
06...	--	--	--	--	--	--	--	--	--		--
06...	--	--	--	--	--	--	--	--	--		--
06...	--	--	--	--	--	--	--	--	--		--
06...	--	--	--	--	--	--	--	--	--		--
06...	0	40	2.9	16	0.7	3.7	131	<1.0	22		--

## SAN JACINTO RIVER MAIN STEM

35

08067600 LAKE CONROE NEAR CONROE, TX--Continued

302127095335501 - LAKE CONROE SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB								
14...	0.20	5.0	146	0.300	0.60	0.030	11	29
14...	--	--	--	--	--	--	--	--
14...	--	--	--	0.300	<0.20	0.030	10	70
14...	--	--	--	--	--	--	--	--
14...	--	5.5	146	0.300	1.2	0.100	23	300
JUN								
15...	0.20	4.6	132	<0.100	0.80	0.010	5	26
15...	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--
15...	--	--	--	<0.100	0.60	0.010	80	440
15...	--	6.5	151	<0.100	1.3	0.060	630	2400
SEP								
06...	0.20	6.7	137	<0.100	1.1	0.040	9	70
06...	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--
06...	--	--	--	<0.100	0.80	0.030	40	330
06...	--	--	--	<0.100	0.90	0.050	330	1100
06...	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--
06...	--	15	--	<0.100	4.3	0.440	2800	5900

302132095333701 - LAKE CONROE SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB								
14...	1316	1.00	270	8.10	11.5	1.06	9.3	85
14...	1318	10.0	270	8.10	11.0	--	9.2	83
14...	1320	20.0	270	8.00	10.5	--	9.1	81
14...	1322	40.0	270	8.00	10.0	--	9.0	80
14...	1324	58.0	275	8.10	9.5	--	9.7	85
JUN								
15...	1450	1.00	255	7.90	26.5	1.04	6.0	75
15...	1452	10.0	255	7.90	26.5	--	6.0	75
15...	1454	20.0	255	7.90	26.5	--	5.9	73
15...	1456	30.0	255	7.80	26.5	--	5.9	73
15...	1458	40.0	255	7.70	26.0	--	5.4	67
15...	1500	54.0	290	7.30	21.0	--	0.1	1
SEP								
06...	1150	1.00	245	8.50	30.5	0.91	6.4	85
06...	1152	5.00	245	8.10	30.0	--	5.6	74
06...	1154	10.0	245	7.30	29.5	--	1.8	24
06...	1156	15.0	245	7.20	29.0	--	0.7	9
06...	1158	20.0	245	7.20	28.5	--	0.4	5
06...	1200	30.0	250	7.10	27.5	--	0	0
06...	1202	40.0	260	7.00	26.0	--	0	0
06...	1204	50.0	295	6.90	24.5	--	0	0
06...	1206	63.0	365	6.90	21.5	--	0	0



## SAN JACINTO RIVER MAIN STEM

08067600 LAKE CONROE NEAR CONROE, TX--Continued

## 302245095365301 - LAKE CONROE SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB								
14...	1208	1.00	270	8.20	12.5	1.00	9.5	89
14...	1210	10.0	270	8.20	11.5	--	9.5	87
14...	1212	20.0	270	8.10	11.0	--	9.1	82
14...	1214	29.0	270	8.10	11.0	--	9.2	83
JUN								
15...	1522	1.00	255	7.90	27.0	0.86	6.2	78
15...	1524	10.0	255	7.70	27.0	--	5.6	70
15...	1526	20.0	255	7.40	26.5	--	3.1	39
15...	1528	29.0	260	7.40	26.0	--	0.3	4
SEP								
06...	1220	1.00	245	8.50	31.0	0.84	6.2	83
06...	1222	5.00	245	8.50	31.0	--	5.9	79
06...	1224	10.0	245	8.30	31.0	--	5.7	77
06...	1226	15.0	250	7.90	30.5	--	4.8	64
06...	1228	20.0	255	7.20	28.5	--	0.2	3
06...	1230	25.0	260	7.20	27.5	--	0	0
06...	1232	29.0	260	7.20	27.5	--	0	0

## 302323095341201 - LAKE CONROE SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB								
14...	1350	1.00	270	8.20	11.5	1.06	9.6	88
14...	1352	10.0	270	8.10	11.5	--	9.6	88
14...	1354	20.0	270	8.10	11.0	--	9.6	87
14...	1356	48.0	270	8.10	10.5	--	9.8	88
JUN								
15...	1354	1.00	255	7.90	26.5	1.13	5.9	73
15...	1356	10.0	255	7.80	26.5	--	5.8	72
15...	1358	20.0	255	7.70	26.5	--	5.6	70
15...	1400	30.0	260	7.60	26.0	--	4.7	58
15...	1402	40.0	275	7.30	23.5	--	0.6	7
15...	1404	51.0	285	7.30	21.0	--	0.2	2
SEP								
06...	1324	1.00	245	8.50	30.0	0.92	6.4	85
06...	1326	5.00	245	8.40	30.0	--	6.1	81
06...	1328	10.0	245	8.30	30.0	--	5.6	74
06...	1330	15.0	245	8.10	29.5	--	5.2	68
06...	1332	20.0	245	7.30	29.0	--	2.2	29
06...	1334	30.0	255	7.10	27.0	--	0	0
06...	1336	40.0	270	7.00	26.0	--	0	0
06...	1338	47.0	290	7.10	25.5	--	0	0

## 302320095334001 - LAKE CONROE SITE CL

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB								
14...	1336	1.00	270	8.20	12.0	1.10	9.6	89
14...	1338	10.0	270	8.10	11.5	--	9.5	87
14...	1340	20.0	270	8.10	11.0	--	9.5	86
14...	1342	46.0	270	8.10	11.0	--	9.8	89
JUN								
15...	1330	1.00	255	7.90	26.5	1.17	6.0	75
15...	1332	10.0	255	7.90	26.5	--	5.8	72
15...	1334	20.0	255	7.90	26.5	--	5.7	71
15...	1336	30.0	255	7.80	26.5	--	5.7	71
15...	1338	43.0	275	7.40	23.0	--	0.1	1
SEP								
06...	1348	1.00	245	8.40	30.0	0.97	6.3	83
06...	1350	10.0	245	8.30	30.0	--	5.6	74
06...	1352	15.0	245	8.00	29.5	--	5.1	67
06...	1354	20.0	245	7.40	29.0	--	2.3	30
06...	1356	30.0	255	7.10	27.5	--	0	0
06...	1358	42.0	270	7.20	26.5	--	0	0

## SAN JACINTO RIVER MAIN STEM

37

08067600 LAKE CONROE NEAR CONROE, TX--Continued

302448095374101 - LAKE CONROE SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB								
14...	1136	1.00	265	7.80	13.0	0.92	9.0	85
14...	1138	10.0	265	7.40	12.0	--	8.6	80
14...	1140	20.0	270	7.20	11.0	--	8.5	77
14...	1142	27.0	260	7.00	11.0	--	8.3	75
JUN								
15...	1554	1.00	245	8.10	27.5	0.72	6.3	80
15...	1556	10.0	245	8.00	27.0	--	6.1	77
15...	1558	20.0	245	7.70	27.0	--	4.4	55
15...	1600	30.0	245	7.60	27.0	--	4.3	54
SEP								
06...	1034	1.00	245	8.60	31.0	0.82	6.4	86
06...	1036	5.00	245	8.60	31.0	--	6.3	85
06...	1038	10.0	245	8.50	31.0	--	6.2	83
06...	1040	15.0	245	8.40	31.0	--	5.6	75
06...	1042	20.0	250	7.80	30.5	--	3.9	52
06...	1044	28.0	260	7.10	28.0	--	0	0

302607095360901 - LAKE CONROE SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)
FEB									
14...	1412	1.00	265	8.20	11.5	1.01	9.7	89	93
14...	1414	10.0	265	8.10	11.0	--	9.5	86	--
14...	1416	20.0	260	8.10	11.0	--	9.4	85	--
14...	1418	40.0	260	8.10	10.5	--	9.4	85	90
JUN									
15...	1246	1.00	250	8.10	27.0	1.90	6.4	80	87
15...	1248	15.0	250	8.00	27.0	--	5.9	74	--
15...	1250	25.0	250	7.50	26.0	--	5.2	64	--
15...	1252	35.0	275	7.30	23.5	--	0.1	1	93
SEP									
06...	1416	1.00	245	8.60	31.0	0.85	6.9	93	87
06...	1418	10.0	245	8.50	30.5	--	6.2	83	--
06...	1420	15.0	245	8.20	30.5	--	5.3	71	--
06...	1422	20.0	245	7.40	29.5	--	2.3	30	--
06...	1424	25.0	255	7.20	28.0	--	0	0	--
06...	1426	30.0	260	7.10	27.5	--	0	0	--
06...	1428	41.0	265	7.00	27.0	--	0	0	92

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)
FEB								
14...	6	33	2.5	15	0.7	3.3	87	8.7
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	8	32	2.4	14	0.7	3.3	82	9.3
JUN								
15...	5	31	2.4	14	0.7	3.2	82	7.0
15...	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--
15...	0	33	2.6	14	0.7	3.3	95	5.0
SEP								
06...	3	31	2.3	14	0.7	3.5	84	6.0
06...	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--
06...	0	33	2.4	14	0.7	3.6	102	3.0

## SAN JACINTO RIVER MAIN STEM

08067600 LAKE CONROE NEAR CONROE, TX--Continued

302607095360901 - LAKE CONROE SITE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB								
14...	23	4.9	143	0.200	0.60	0.030	9	1
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	23	5.1	138	0.200	0.60	0.030	21	5
JUN								
15...	21	4.7	133	<0.100	0.60	0.010	5	43
15...	--	--	--	--	--	--	--	--
15...	--	--	--	<0.100	0.60	0.010	10	240
15...	22	6.1	146	<0.100	1.0	0.030	390	2400
SEP								
06...	21	6.8	135	<0.100	1.2	0.050	7	30
06...	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--
06...	--	--	--	<0.100	1.0	0.030	40	340
06...	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--
06...	21	8.4	149	<0.100	1.9	0.120	570	1400

302714095372201 - LAKE CONROE SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB								
14...	1440	1.00	255	8.00	12.5	0.42	9.3	88
14...	1442	10.0	250	7.90	11.5	--	8.5	78
14...	1444	23.0	240	7.90	10.0	--	6.6	59
JUN								
15...	1226	1.00	235	8.00	27.0	0.29	6.4	80
15...	1228	10.0	235	7.90	27.0	--	6.1	76
15...	1230	22.0	235	7.70	27.0	--	5.4	68
SEP								
06...	1450	1.00	245	8.60	31.5	0.74	6.4	87
06...	1452	10.0	245	8.50	31.0	--	6.0	81
06...	1454	15.0	245	8.40	31.0	--	5.3	71
06...	1456	24.0	265	7.30	28.5	--	0	0

303129095360501 - LAKE CONROE SITE GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CaCO3)
FEB									
14...	1528	1.00	170	7.60	13.5	0.41	8.6	83	55
14...	1530	10.0	160	7.60	12.5	--	8.0	75	--
14...	1532	27.0	150	7.60	12.0	--	8.1	75	50
JUN									
15...	1120	1.00	195	7.50	27.0	0.20	5.7	71	66
15...	1122	10.0	190	7.20	26.5	--	5.3	66	--
15...	1124	20.0	140	6.90	25.5	--	4.2	51	--
15...	1126	30.0	130	7.00	25.5	--	4.1	50	48
SEP									
06...	1530	1.00	245	8.30	31.0	0.48	5.2	70	85
06...	1532	10.0	245	7.80	31.0	--	3.6	49	--
06...	1534	15.0	245	7.80	30.5	--	3.6	48	--
06...	1536	20.0	245	7.70	30.5	--	3.4	46	--
06...	1538	31.0	250	7.70	30.5	--	3.2	43	85



## SAN JACINTO RIVER MAIN STEM

39

08067600 LAKE CONROE NEAR CONROE, TX--Continued

303129095360501 - LAKE CONROE SITE GC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CAC03	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS- SOLVED (MG/L AS SO4)
FEB								
14...	8	19	1.9	10	0.6	3.1	47	9.9
14...	--	--	--	--	--	--	--	--
14...	9	17	1.9	11	0.7	3.1	41	21
JUN								
15...	9	23	2.1	12	0.7	3.0	57	8.0
15...	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--
15...	12	16	1.9	8.6	0.6	2.3	36	4.0
SEP								
06...	3	30	2.4	15	0.7	3.6	82	5.0
06...	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--
06...	0	30	2.4	15	0.7	3.7	85	5.0
DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB								
14...	16	9.5	98	0.200	0.80	0.100	120	9
14...	--	--	--	--	--	--	--	--
14...	16	19	114	0.200	0.80	0.090	120	37
JUN								
15...	19	6.1	107	<0.100	1.0	0.050	49	9
15...	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--
15...	12	6.6	73	<0.100	0.90	0.050	180	86
SEP								
06...	22	9.0	136	<0.100	1.4	0.100	5	13
06...	--	--	--	--	--	--	--	--
06...	--	--	--	<0.100	1.4	0.100	20	60
06...	--	--	--	--	--	--	--	--
06...	22	9.3	138	<0.100	1.7	0.110	11	80

## SAN JACINTO RIVER BASIN

## 08067610 LAKE CONROE AT OUTFLOW WEIR NEAR CONROE, TX

LOCATION.--Lat 30°21'23", long 95°33'37", Montgomery County, Hydrologic Unit 12040101, on left side of stilling basin of outflow weir, 620 ft downstream from centerline of dam on West Fork San Jacinto River, 770 ft downstream from service outlet tower, 3.0 mi upstream from State Highway 105, and 7.4 mi west of Conroe.

DRAINAGE AREA.--445 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1973 to September 1989 (discontinued).

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 138.48 ft above National Geodetic Vertical Datum of 1929 (levels by San Jacinto River Authority).

REMARKS.--Records good. Discharge represents controlled outflow from service tower and does not constitute the total outflow from Lake Conroe. Uncontrolled low flows through weir published at West Fork San Jacinto River below Lake Conroe (station 08067650).

AVERAGE DISCHARGE.--16 years, 14.1 ft<sup>3</sup>/s (10,220 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 339 ft<sup>3</sup>/s Feb. 19-25, 1974; no controlled releases for many days.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 245 ft<sup>3</sup>/s Oct. 1; maximum gage height, 7.85 ft June 15 at 1500 to 1900 hours (result of backwater from taintor gate releases); no controlled releases for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	245	218	194	147	.00	.00	.00	.00	.00	.00	.00	.00
2	222	218	194	147	.00	.00	.00	.00	.00	.00	.00	.00
3	224	218	194	147	.00	.00	.00	.00	.00	.00	.00	.00
4	224	218	197	147	.00	.00	.00	.00	.00	.00	.00	.00
5	221	218	200	147	.00	.00	.00	.00	.00	.00	.00	.00
6	219	216	200	147	.00	.00	.00	.00	.00	.00	.00	.00
7	219	215	200	147	.00	.00	.00	.00	.00	.00	.00	.00
8	218	215	202	147	.00	.00	.00	.00	.00	.00	.00	.00
9	218	213	204	147	.00	.00	.00	.00	.00	.00	.00	.00
10	216	211	205	e50	.00	.00	.00	.00	.00	.00	.00	.00
11	216	211	207	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	216	210	210	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	219	210	211	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	219	208	211	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	219	207	211	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	218	205	211	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	218	204	210	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	218	202	208	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	218	204	207	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	218	204	179	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	216	200	148	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	215	200	147	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	222	199	147	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	224	197	147	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	224	197	147	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	224	199	147	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	224	199	147	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	222	196	147	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	221	194	147	.00	---	.00	.00	.00	.00	.00	.00	.00
30	221	194	147	.00	---	.00	.00	.00	.00	.00	.00	.00
31	219	---	147	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	6837	6200	5673	1373.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	221	207	183	44.3	.00	.00	.00	.00	.00	.00	.00	.00
MAX	245	218	211	147	.00	.00	.00	.00	.00	.00	.00	.00
MIN	215	194	147	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	13560	12300	11250	2720	.0	.0	.0	.0	.0	.0	.0	.0

CAL YR 1988 TOTAL 26177.00 MEAN 71.5 MAX 290 MIN .00 AC-FT 51920  
WTR YR 1989 TOTAL 20083.00 MEAN 55.0 MAX 245 MIN .00 AC-FT 39830

e Estimated.

## SAN JACINTO RIVER MAIN STEM

41

08067650 WEST FORK SAN JACINTO RIVER BELOW LAKE CONROE NEAR CONROE, TX

LOCATION.--Lat 30°20'31", long 95°32'34", Montgomery County, Hydrologic Unit 12040101, on right bank at downstream side of bridge on State Highway 105, 3.0 mi downstream from Lake Conroe Dam, and 5.9 mi west of Conroe.

DRAINAGE AREA.--451 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1972 to current year (discharge for periods of outflow from Lake Conroe only).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 116.06 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Discharge is outflow from Lake Conroe, but floodflows may include local runoff. Discharge estimated during periods of backwater.

AVERAGE DISCHARGE.--17 years (water years 1973-89), 226 ft<sup>3</sup>/s (163,700 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,780 ft<sup>3</sup>/s May 22, 1983 (gage height, 35.50 ft); no flow for many days.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in November 1940 reached a stage of 41.94 ft, from information by the State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,930 ft<sup>3</sup>/s June 15 at 1600 hours to June 16 at 0100 hours (gage height, 25.99 ft); no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	259	220	192	139	.00	.00	488	2.9	1.6	855	406	1.3
2	221	219	198	140	.00	.00	536	2.9	1.6	959	1290	1.3
3	224	220	194	140	.00	.00	410	50	1.6	1090	474	1.3
4	222	220	198	141	.00	.00	407	182	1.6	1340	36	1.3
5	221	219	204	140	.00	.00	288	183	2.0	712	3.3	1.3
6	220	217	201	141	.00	.00	14	421	2.0	634	2.9	.92
7	218	216	203	141	.00	.00	3.3	421	2.0	726	2.5	.60
8	217	214	218	139	.00	.00	3.3	419	2.5	717	2.5	.32
9	217	212	212	136	.00	.00	3.3	71	2.5	83	2.5	.00
10	217	213	209	73	.00	.00	3.3	2.9	4.3	3.3	2.0	.00
11	215	210	209	.00	.00	.00	2.9	2.9	e430	2.9	1.6	123
12	217	211	215	.00	.00	.00	2.9	2.9	e970	2.9	1.6	299
13	219	212	217	.00	.00	.00	2.5	3.3	50	2.9	1.6	244
14	218	210	217	.00	.00	.00	98	241	624	2.9	1.3	88
15	218	212	217	.00	.00	.00	184	e1200	1890	2.5	1.3	3.7
16	218	216	217	.00	.00	.00	25	e1300	1920	2.5	.92	.00
17	218	210	217	.00	.00	.00	2.9	e1100	1320	2.5	.92	.00
18	219	209	216	.00	.00	.00	2.9	e1500	51	2.9	.92	.00
19	218	211	212	.00	.00	.00	2.9	e1500	4.8	2.9	.92	.00
20	218	211	201	.00	.00	.00	2.9	e1500	4.8	2.9	.92	.00
21	219	207	140	.00	.00	.00	2.9	e1500	4.8	2.5	.92	.00
22	217	204	142	.00	.00	.00	2.9	e1500	4.3	2.0	.92	.00
23	221	202	142	.00	.00	.00	2.9	e1000	3.3	2.0	.92	.00
24	227	199	141	.00	.00	.00	2.9	e200	179	1.6	.92	.00
25	223	199	141	.00	.00	.00	2.5	2.9	418	1.6	1.3	.00
26	225	198	141	.00	.00	.00	2.0	2.5	382	3.3	1.3	.00
27	225	198	142	.00	.00	.00	2.0	2.5	823	3.3	1.3	.00
28	225	200	141	.00	.00	.00	2.0	2.0	735	3.3	1.3	.00
29	224	193	141	.00	---	.00	2.0	1.6	725	3.3	1.3	.00
30	222	193	141	.00	---	103	2.9	1.6	720	3.3	1.3	.00
31	222	---	141	.00	---	438	---	1.6	---	3.3	1.3	---
TOTAL	6864	6275	5720	1330.00	0.00	541.00	2508.1	14320.5	11280.7	7176.6	2246.48	766.04
MEAN	221	209	185	42.9	.00	17.5	83.6	462	376	232	72.5	25.5
MAX	259	220	218	141	.00	438	536	1500	1920	1340	1290	299
MIN	215	193	140	.00	.00	.00	2.0	1.6	1.6	1.6	.92	.00
AC-FT	13610	12450	11350	2640	.00	1070	4970	28400	22380	14230	4460	1520

CAL YR 1988 TOTAL 40976.60 MEAN 112 MAX 1360 MIN .00 AC-FT 81280  
WTR YR 1989 TOTAL 59028.42 MEAN 162 MAX 1920 MIN .00 AC-FT 117100

e Estimated.



## SAN JACINTO RIVER MAIN STEM

08067650 WEST FORK SAN JACINTO RIVER BELOW LAKE CONROE NEAR CONROE, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1972 to September 1986, October 1987 to August 1989 (discontinued).

REMARKS.--Beginning in October 1987, a change in sampling procedures was initiated, making samples more representative of outflow from Lake Conroe. The sample location for floodflows and controlled releases through the outflow weir is at the bridge on State Highway 105 (station 08067650). The sample location for uncontrolled low flows is at the outflow weir for Lake Conroe (station 08067610). See "REMARKS" section for station 08067610 Lake Conroe at Outflow Weir near Conroe, Tx.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CaCO3)
NOV 30...	1240	194	277	8.00	17.5	8	4.7	9.0	94	2.2	100
JAN 24...	0950	2.4	338	7.50	13.0	--	--	7.2	68	2.0	--
MAR 16...	1215	2.0	450	7.40	19.5	15	6.5	6.4	69	1.1	150
MAY 03...	0844	2.9	370	7.60	22.5	17	5.9	5.3	61	1.4	130
JUL 18...	0925	2.9	380	7.00	28.0	17	3.3	5.5	70	1.5	140
AUG 09...	0909	2.5	395	7.50	24.0	25	2.4	5.5	65	0.9	150

DATE	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
NOV 30...	36	2.7	15	0.6	3.5	94	8.2	23	0.20	7.0	152
JAN 24...	--	--	--	--	--	92	--	--	--	--	--
MAR 16...	53	5.1	29	1	2.9	136	13	52	0.20	12	249
MAY 03...	46	3.8	23	0.9	3.1	114	8.0	38	0.20	9.8	201
JUL 18...	48	3.7	20	0.7	3.4	123	7.0	34	0.10	13	203
AUG 09...	53	4.0	21	0.7	3.2	135	7.0	33	0.80	16	219

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
NOV 30...	12	6	6	0.180	0.020	0.200	0.250	0.45	0.70	0.020	7.6
JAN 24...	--	--	--	0.280	0.020	0.300	0.100	0.90	1.0	0.100	8.3
MAR 16...	12	<1	--	--	<0.010	<0.100	0.060	--	<0.20	0.120	6.5
MAY 03...	12	1	11	--	<0.010	0.100	0.040	0.56	0.60	0.050	5.9
JUL 18...	6	<1	--	0.180	0.020	0.200	0.040	1.6	1.6	0.040	6.2
AUG 09...	6	<1	--	--	<0.010	<0.100	0.030	0.47	0.50	0.040	5.6

DATE	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS Ba)	CADMIUM, DIS-SOLVED (UG/L AS Cd)	CHRO-MIUM, DIS-SOLVED (UG/L AS Cr)	COPPER, DIS-SOLVED (UG/L AS Cu)	IRON, DIS-SOLVED (UG/L AS Fe)	LEAD, DIS-SOLVED (UG/L AS Pb)	MANGA-NESE, DIS-SOLVED (UG/L AS Mn)	MERCURY, DIS-SOLVED (UG/L AS Hg)	SELE-NIUM, DIS-SOLVED (UG/L AS Se)
NOV 30...	1	130	1	<1	1	3	<5	8	--	<1
JAN 24...	<1	50	1	<1	2	34	<5	160	<0.1	<1
MAR 16...	--	--	--	--	--	--	--	--	--	--
MAY 03...	2	140	2	<1	5	21	1	65	<0.1	<1
JUL 18...	--	--	--	--	--	--	--	--	--	--
AUG 09...	2	140	<1	<1	<1	30	<1	66	<0.1	<1

## SAN JACINTO RIVER MAIN STEM

43

08067650 WEST FORK SAN JACINTO RIVER BELOW LAKE CONROE NEAR CONROE, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)	PCB, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
NOV 30...	<1.0	4	--	--	--	--	--	--	--	--
JAN 24...	<1.0	<3	--	--	--	--	--	--	--	--
MAR 16...	--	--	--	--	--	--	--	--	--	--
MAY 03...	<1.0	17	--	--	--	--	--	--	--	--
JUL 18...	--	--	--	--	--	--	--	--	--	--
AUG 09...	<1.0	11	<0.1	<0.10	<0.010	<0.1	<0.010	<0.010	<0.010	0.01
DATE	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)
NOV 30...	--	--	--	--	--	--	--	--	--	--
JAN 24...	--	--	--	--	--	--	--	--	--	--
MAR 16...	--	--	--	--	--	--	--	--	--	--
MAY 03...	--	--	--	--	--	--	--	--	--	--
JUL 18...	--	--	--	--	--	--	--	--	--	--
AUG 09...	<0.010	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01
DATE	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
NOV 30...	--	--	--	--	--	--	--	--	--	--
JAN 24...	--	--	--	--	--	--	--	--	--	--
MAR 16...	--	--	--	--	--	--	--	--	--	--
MAY 03...	--	--	--	--	--	--	--	--	--	--
JUL 18...	--	--	--	--	--	--	--	--	--	--
AUG 09...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	<0.01	<0.01	<0.01

## SAN JACINTO RIVER BASIN

08067900 LAKE CREEK NEAR CONROE, TX  
(Low-flow partial-record station)

LOCATION.--Lat 30°15'12", long 95°34'43", Montgomery County, Hydrologic Unit 12040101, at bridge on county road and 8.3 mi southwest of Conroe.

DRAINAGE AREA.--291 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional discharge measurements: October 1968 to January 1989 (discontinued). Chemical analyses: November 1968 to January 1989 (discontinued). Chemical and biochemical analyses: October 1985 to January 1989 (discontinued). Radiochemical analyses: February 1986 to September 1987.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

		DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	
OCT	19...	1014	2.1	168	7.10	21.5	20	9.0	6.5	73	0.9
NOV	29...	0945	2.3	152	6.80	10.5	17	6.1	9.0	80	0.9
JAN	04...	1010	6.4	254	7.30	14.0	24	5.0	8.0	77	0.9
	24...	1100	280	142	7.30	12.0	130	39	9.2	85	3.1
DATE		COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CAC03	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)
OCT	19...	40	180	21	25	12	<0.010	<0.100	<0.010	--	<0.20
NOV	29...	88	500	22	5	2	<0.010	<0.100	<0.010	--	0.30
JAN	04...	64	160	37	<1	<1	<0.010	<0.100	0.010	0.29	0.30
	24...	340	650	40	44	3	0.030	<0.100	0.080	1.7	1.8
DATE		PHOS-PHOROUS TOTAL (MG/L AS P)	PHOS-PHOROUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS P04)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	PHENOLS TOTAL (UG/L)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
OCT	19...	0.050	0.020	0.06	2.6	2.1	1	1.70	0.100	70	20
NOV	29...	0.060	0.030	0.09	3.0	1.7	2	0.100	<0.100	110	10
JAN	04...	0.040	0.030	0.09	5.5	4.9	<1	0.400	<0.100	200	30
	24...	0.370	0.270	0.83	16	13	1	0.600	<0.100	--	--

## SAN JACINTO RIVER MAIN STEM

45

08068000 WEST FORK SAN JACINTO RIVER NEAR CONROE, TX  
(National stream-quality accounting network)

LOCATION.--Lat 30°14'40", long 95°27'25", Montgomery County, Hydrologic Unit 12040101, near right bank at downstream side of pier of bridge on Interstate Highway 45 and U.S. Highway 75, 300 ft upstream from Missouri Pacific Railroad Co. bridge, 3.5 mi downstream from Lake Creek, 4.2 mi south of Conroe, and at mile 79.

DRAINAGE AREA.--828 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1924 to September 1927, July 1939 to current year.

REVISED RECORDS.--WSP 1058: 1926. WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 95.03 ft above National Geodetic Vertical Datum of 1929. May 7, 1924, to Sept. 30, 1927, nonrecording gage at railroad bridge 285 ft downstream at datum 30.10 ft higher. July 13, 1939, to Sept. 30, 1963, water-stage recorder at datum 5.0 ft higher.

REMARKS.--Records good. Flow has been regulated since Jan. 9, 1973, by Lake Conroe (station 08067600), capacity 532,000 acre-ft, 14.5 mi upstream. There are no large diversions above station. Gage-height telemeter at station.

AVERAGE DISCHARGE.--36 years (water years 1925-27, 1940-72) prior to regulation by Lake Conroe, 477 ft<sup>3</sup>/s (345,600 acre-ft/yr); 17 years (water years 1973-89) regulated, 523 ft<sup>3</sup>/s (378,900 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 110,000 ft<sup>3</sup>/s Nov. 25, 1940 (gage height, 30.85 ft), present datum, from rating curve extended above 43,000 ft<sup>3</sup>/s on basis of velocity-area studies; no flow June 14, 1956, and Sept. 19 to Oct. 1, 1965, result of temporary dams.  
Maximum stage since at least December 1913, that of Nov. 25, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in December 1913 reached a stage of 30.2 ft, present site and datum, from information by Missouri Pacific Railroad Co., discharge 101,000 ft<sup>3</sup>/s, from rating curve as explained above.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,580 ft<sup>3</sup>/s Mar. 31 at 1200 hours (gage height, 19.05 ft); minimum daily, 17 ft<sup>3</sup>/s Sept. 3-6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e273	e241	204	160	2960	58	3270	39	49	1100	207	19
2	e226	e227	204	160	1940	70	1490	34	53	1460	1460	18
3	219	e222	204	159	719	70	728	44	51	1570	977	17
4	e219	e220	207	158	303	86	557	211	54	2070	345	17
5	e219	e219	217	157	198	80	481	253	69	1460	186	17
6	e219	e219	216	157	155	94	188	496	63	894	130	17
7	e219	e218	215	157	138	75	115	537	53	826	81	23
8	e219	e218	246	157	116	68	98	493	68	826	61	20
9	e219	216	250	157	103	67	86	265	58	416	53	27
10	e219	e216	262	152	93	65	78	72	50	169	45	19
11	e220	e216	296	69	83	63	76	53	126	219	41	21
12	e219	e216	248	62	81	e62	69	36	902	131	36	281
13	e219	e216	241	78	80	e59	68	51	350	76	32	328
14	e219	e216	234	79	82	e56	190	373	415	63	32	272
15	e219	216	230	99	76	e52	528	1050	1760	55	79	80
16	e219	215	228	151	74	51	548	1350	1950	50	39	38
17	e219	214	227	190	327	50	264	1420	1960	48	30	35
18	e219	211	226	217	272	49	129	3570	721	48	28	30
19	e219	210	223	338	138	48	93	3180	319	44	26	27
20	e220	208	222	613	111	48	77	2140	134	40	25	25
21	e225	207	177	796	103	60	64	1690	82	35	25	24
22	e222	207	161	958	95	116	54	1600	64	34	24	23
23	e220	206	161	794	83	193	48	1520	e65	29	23	22
24	e227	206	160	372	73	364	44	779	71	30	23	24
25	e226	206	159	174	67	547	41	207	453	50	23	25
26	e233	206	158	127	63	297	36	113	424	123	24	23
27	e237	206	160	956	63	290	35	92	2260	61	23	23
28	e227	206	179	482	60	183	36	80	1290	69	22	22
29	e227	206	162	737	---	647	34	72	974	81	21	22
30	e223	206	160	1670	---	2190	47	66	904	47	19	22
31	e241	---	160	2120	---	5930	---	56	---	39	19	---
TOTAL	6951	6416	6397	12656	8656	12088	9572	21942	15792	12163	4159	1561
MEAN	224	214	206	408	309	390	319	708	526	392	134	52.0
MAX	273	241	296	2120	2960	5930	3270	3570	2260	2070	1460	328
MIN	219	206	158	62	60	48	34	34	49	29	19	17
AC-FT	13790	12730	12690	25100	17170	23980	18990	43520	31320	24130	8250	3100
CAL YR 1988	TOTAL	65277	MEAN	178	MAX	2740	MIN	17	AC-FT	129500		
WTR YR 1989	TOTAL	118353	MEAN	324	MAX	5930	MIN	17	AC-FT	234800		

e Estimated.



## SAN JACINTO RIVER MAIN STEM

08068000 WEST FORK SAN JACINTO RIVER NEAR CONROE, TX--Continued  
(National stream-quality accounting network)

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: March 1959 to current year. Pesticide analyses: May 1975 to June 1982. Sediment records: February 1966 to September 1967, October 1974 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1961 to current year.

WATER TEMPERATURE: October 1961 to current year.

DISSOLVED OXYGEN: August 1979 to May 1981.

INSTRUMENTATION.--From August 1979 to May 1981, a three-parameter water-quality monitor recorded specific conductance, water temperature, and dissolved oxygen at this station. From June 1981 specific conductance and water temperature are recorded continuously at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Where maximum or minimum specific conductance values are not shown, mean value is estimated. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 848 microsiemens June 29, 1985; minimum, 40 microsiemens Nov. 24, 1985.

WATER TEMPERATURE: Maximum, 37.0°C June 26, 1984; minimum daily, 0.0°C Dec. 22, 1963, Jan. 31, 1968.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 667 microsiemens July 19; minimum, 97 microsiemens Mar. 31.

WATER TEMPERATURE: Maximum, none listed due to instrumentation malfunction July-August; minimum, 6.0°C Feb. 8.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

		DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	
NOV 29...	1155	206	291	8.00	15.5	--	7.3	9.4	94	1.9	110	
JAN 11...	1156	65	350	7.20	15.5	17	7.0	9.0	89	1.2	150	
19...	1045	224	159	6.70	12.5	120	100	9.8	92	3.2	2400	
FEB 14...	1140	84	336	7.50	18.0	--	22	8.6	91	1.5	40	
MAR 16...	1010	50	410	7.40	19.0	--	--	9.0	96	1.2	--	
MAY 03...	1045	30	322	7.40	22.5	--	13	7.0	81	1.6	290	
JUL 18...	1128	45	414	7.60	28.0	--	--	7.5	96	2.0	--	
AUG 09...	1115	53	318	7.40	24.5	--	14	7.2	86	1.0	130	
SEP 06...	1245	17	551	7.70	27.5	3	4.6	6.5	82	1.1	120	
DATE		STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
NOV 29...	150	100	8	35	2.9	19		0.9	3.6	92	9.9	27
JAN 11...	84	91	2	31	3.2	33		2	4.1	89	15	42
19...	3800	--	--	--	--	--	--	--	--	--	--	--
FEB 14...	150	85	24	28	3.5	33		2	3.2	61	25	46
MAR 16...	--	90	8	30	3.7	40		2	3.9	82	29	59
MAY 03...	190	90	17	30	3.6	29		1	3.0	73	12	44
JUL 18...	--	89	0	30	3.5	43		2	4.7	90	19	48
AUG 09...	330	82	5	28	2.9	30		2	4.2	77	14	35
SEP 06...	680	84	0	27	4.1	73		4	6.4	108	42	63

## 47

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

[illegible]

## SAN JACINTO RIVER MAIN STEM

08068000 WEST FORK SAN JACINTO RIVER NEAR CONROE, TX--Continued  
(National stream-quality accounting network)

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 29...	<5	<4	12	--	<10	3	<1	<1.0	130	<6	8
JAN 11...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
FEB 14...	<5	7	89	<0.1	<10	<1	<1	<1.0	150	<6	7
MAR 16...	--	--	--	--	--	--	--	--	--	--	--
MAY 03...	<1	6	120	<0.1	<10	1	<1	<1.0	160	<6	6
JUL 18...	--	--	--	--	--	--	--	--	--	--	--
AUG 09...	<1	7	78	<0.1	<10	<1	<1	<1.0	150	<6	13
SEP 06...	--	--	--	--	--	--	--	--	--	--	--

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1988 TO SEPTEMBER 1989

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. 1988	6951	262	153	2860	35	660	11	202	74
NOV. 1988	6416	310	178	3090	43	740	13	221	79
DEC. 1988	6397	302	175	3020	41	715	12	215	79
JAN. 1989	12656	209	122	4170	27	940	8.5	292	63
FEB. 1989	8656	202	118	2760	26	619	8.2	193	61
MAR. 1989	12088	197	114	3730	27	870	8.1	264	54
APR. 1989	9572	219	127	3280	29	758	9.0	232	61
MAY 1989	21942	223	130	7720	29	1740	9.1	540	67
JUNE 1989	15792	203	118	5040	27	1150	8.3	354	59
JULY 1989	12163	420	238	7820	61	2010	18	577	85
AUG. 1989	4159	257	149	1670	35	392	11	119	70
SEPT 1989	1561	409	231	975	60	253	17	72	79
TOTAL	118353	**	**	46200	**	10800	**	3280	**
WTD.AVG.	324	249	144	**	34	**	10	**	67

## SAN JACINTO RIVER MAIN STEM

49

08068000 WEST FORK SAN JACINTO RIVER NEAR CONROE, TX--Continued  
(National stream-quality accounting network)

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	222	205	252	296	280	289	---	---	243	341	255	315
2	235	218	225	305	292	298	---	---	250	345	306	327
3	234	224	230	323	301	310	---	---	255	341	298	324
4	238	223	230	326	315	320	---	---	265	345	294	322
5	241	227	234	314	291	299	---	---	260	345	325	334
6	248	233	241	318	297	305	---	---	267	349	310	332
7	253	236	245	330	303	316	---	---	270	357	314	332
8	261	242	250	337	327	332	337	314	327	353	318	334
9	265	250	258	348	331	339	333	282	318	349	318	331
10	273	255	263	348	340	345	322	282	301	353	318	335
11	275	266	270	346	335	339	314	271	288	424	341	380
12	306	267	278	344	335	340	325	282	313	427	365	396
13	281	249	266	353	340	346	325	298	309	388	290	326
14	278	260	269	364	349	356	314	263	304	310	251	281
15	277	262	269	383	364	372	341	286	315	388	224	291
16	276	264	271	399	382	393	353	271	327	443	243	331
17	277	269	275	404	363	383	337	318	330	318	224	271
18	276	261	270	371	362	364	341	298	328	275	196	221
19	282	264	274	374	359	369	337	259	316	243	161	204
20	285	263	277	359	339	352	337	290	314	192	133	160
21	287	265	277	342	308	323	337	267	308	141	129	138
22	289	267	279	311	304	307	349	310	329	141	122	132
23	292	270	280	---	---	227	341	306	321	259	141	185
24	284	260	274	---	---	226	349	322	336	290	231	250
25	285	266	276	---	---	230	345	325	333	322	255	284
26	281	264	272	---	---	232	349	286	321	337	282	301
27	275	253	264	---	---	235	318	275	295	259	176	201
28	277	256	266	---	---	238	337	282	308	255	173	218
29	280	251	263	---	---	240	337	271	311	286	200	247
30	271	256	263	---	---	245	333	290	316	235	125	189
31	287	259	271	---	---	---	341	306	320	188	125	153
MONTH	306	205	262	404	280	309	353	259	303	443	122	272
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	159	146	152	378	370	373	147	115	126	427	325	363
2	171	156	163	379	368	373	203	150	176	518	349	413
3	194	172	179	375	342	360	236	203	221	569	216	415
4	199	183	190	411	359	383	261	239	249	298	196	269
5	215	199	206	420	405	413	275	238	262	282	196	243
6	237	216	226	451	425	439	325	278	298	267	235	248
7	254	232	242	490	438	456	349	302	324	310	255	283
8	265	250	257	493	468	481	361	314	335	306	271	283
9	279	263	270	600	490	534	396	329	354	353	271	307
10	292	274	280	599	513	553	392	341	373	408	345	373
11	289	276	284	614	471	522	---	---	445	488	341	417
12	300	287	294	579	456	509	---	---	475	486	420	449
13	308	293	298	479	413	456	---	---	550	427	359	390
14	307	296	301	517	428	465	---	---	575	381	233	317
15	321	299	307	503	438	479	275	220	248	245	233	238
16	322	308	316	471	422	455	302	208	239	266	243	247
17	325	284	306	483	432	464	251	220	231	246	192	236
18	288	276	280	492	429	465	290	255	270	197	145	163
19	304	283	298	488	412	456	329	286	301	194	154	178
20	312	301	305	481	413	448	427	318	367	227	196	215
21	319	308	315	451	328	428	408	353	379	276	227	245
22	333	315	321	371	285	322	435	376	403	231	227	229
23	341	329	334	526	301	397	420	369	396	229	227	228
24	354	337	343	525	429	467	416	357	392	238	228	232
25	362	344	352	413	317	345	455	388	413	273	238	252
26	381	365	374	349	316	325	529	408	447	289	263	275
27	379	367	373	336	206	263	510	392	445	331	274	297
28	380	364	371	284	217	246	486	369	429	315	278	297
29	---	---	---	257	198	233	510	388	432	341	291	303
30	---	---	---	182	113	146	463	286	386	360	300	322
31	---	---	---	115	97	105	---	---	---	374	316	338
MONTH	381	146	283	614	97	399	529	115	351	569	145	292



## SAN JACINTO RIVER MAIN STEM

08068000 WEST FORK SAN JACINTO RIVER NEAR CONROE, TX--Continued  
(National stream-quality accounting network)

## SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	350	291	332	427	393	411	462	178	326	649	613	622
2	325	280	309	439	426	433	211	173	191	656	642	651
3	347	285	306	443	437	440	234	170	210	664	647	659
4	334	266	295	449	439	444	326	219	273	661	605	626
5	371	172	295	452	446	450	496	323	398	616	575	594
6	396	170	272	447	440	443	394	302	354	579	515	547
7	382	323	360	439	425	432	358	274	320	565	515	530
8	353	184	293	423	396	406	374	293	328	563	522	540
9	344	260	312	395	374	385	354	273	294	522	501	512
10	437	287	347	373	362	366	333	236	278	498	476	490
11	403	172	337	361	275	329	342	233	267	486	467	471
12	174	143	152	294	260	275	307	247	264	459	317	340
13	290	147	192	316	286	300	324	260	293	326	309	319
14	197	126	161	374	311	337	321	238	269	329	265	299
15	127	117	120	358	314	337	342	141	229	449	336	391
16	117	114	116	337	305	321	294	239	266	497	452	472
17	116	107	111	368	316	337	335	252	274	516	498	505
18	107	99	103	378	325	355	443	299	342	535	515	522
19	143	106	121	667	362	427	556	397	426	546	534	538
20	175	144	157	641	495	566	566	380	439	565	543	549
21	216	176	192	557	371	440	420	375	396	578	561	566
22	257	220	235	566	353	420	477	382	423	584	578	581
23	257	229	243	501	341	403	553	417	476	587	577	581
24	258	212	235	443	291	350	574	484	511	579	573	576
25	218	193	199	390	184	336	558	426	487	575	558	565
26	217	202	210	256	104	201	575	484	535	570	535	553
27	290	214	239	354	187	257	568	442	504	550	523	533
28	372	294	332	355	215	281	531	438	481	528	505	518
29	389	357	375	399	167	297	625	486	536	516	495	504
30	393	371	384	421	363	387	618	594	605	505	480	490
31	---	---	---	606	347	464	613	598	606	---	---	---
MONTH	437	99	244	667	104	375	625	141	374	664	265	521

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	26.5	24.5	25.5	21.5	20.5	21.0	---	---	---	14.0	12.0	13.0
2	26.5	23.5	25.5	21.0	20.0	20.5	---	---	---	15.5	14.0	14.5
3	26.0	24.0	25.0	22.0	20.5	21.5	---	---	---	17.0	15.0	16.0
4	25.0	22.0	24.0	22.5	21.0	22.0	---	---	---	15.5	13.5	14.5
5	24.5	22.5	23.5	21.5	20.0	20.5	---	---	---	16.0	14.5	15.0
6	24.5	22.5	23.5	20.0	18.0	19.5	---	---	---	17.5	15.5	16.5
7	24.0	22.0	23.0	21.0	19.0	20.0	---	---	---	17.0	16.5	17.0
8	23.5	22.0	23.0	22.0	21.0	21.5	16.0	15.0	15.5	16.0	13.5	15.0
9	24.0	22.5	23.0	22.5	21.5	22.0	15.0	13.5	14.0	13.5	12.5	13.0
10	24.5	22.5	23.0	22.5	21.0	22.0	13.5	12.5	13.0	14.0	12.5	13.0
11	23.5	21.0	22.0	22.5	21.0	21.5	13.0	12.5	12.5	17.0	14.0	15.5
12	23.5	21.5	22.5	22.0	21.0	21.5	13.5	12.0	12.5	18.5	15.0	17.0
13	22.5	21.0	22.0	21.0	19.0	20.5	13.0	11.0	12.0	14.5	12.0	13.0
14	22.5	20.5	21.5	22.0	20.0	21.5	14.0	11.5	12.5	11.5	10.0	11.0
15	22.5	21.0	22.0	22.0	21.5	22.0	14.0	13.0	13.5	11.0	9.0	10.0
16	23.0	21.5	22.5	22.0	19.0	20.5	13.5	12.0	13.0	11.0	9.5	10.0
17	23.0	22.5	22.5	19.0	17.0	18.5	12.5	10.5	11.5	10.0	9.0	9.5
18	23.0	22.0	22.5	20.5	19.0	19.5	12.5	10.5	11.5	12.0	10.0	11.0
19	23.5	22.0	23.0	21.0	19.5	20.5	13.5	11.0	12.0	13.0	12.0	12.5
20	23.5	22.0	23.0	19.5	17.5	18.0	14.5	13.5	14.0	14.0	13.0	13.5
21	23.5	22.0	23.0	17.5	16.5	17.0	15.5	14.0	15.0	13.0	12.5	13.0
22	23.0	21.5	22.5	18.0	17.0	17.5	16.0	15.0	15.5	12.5	11.0	11.5
23	23.0	22.0	22.5	---	---	---	15.5	14.5	15.0	11.0	10.5	11.0
24	23.5	22.0	22.5	---	---	---	15.5	13.5	15.0	14.0	11.0	12.5
25	23.0	21.5	22.5	---	---	---	14.0	12.5	13.5	16.0	14.0	15.0
26	23.5	22.5	23.0	---	---	---	16.5	14.0	15.5	16.5	15.0	15.5
27	23.5	21.0	22.5	---	---	---	17.0	15.0	16.5	15.0	13.5	14.0
28	23.5	22.0	22.5	---	---	---	15.0	12.0	13.5	15.5	13.5	14.5
29	23.0	21.5	22.5	---	---	---	13.0	11.0	12.0	15.5	14.5	15.0
30	22.0	21.0	22.0	---	---	---	13.5	12.5	13.0	15.0	14.0	14.5
31	22.0	21.0	21.5	---	---	---	15.0	13.0	14.0	15.0	14.0	14.5
MONTH	26.5	20.5	23.0	22.5	16.5	20.5	17.0	10.5	13.5	18.5	9.0	13.5

## SAN JACINTO RIVER MAIN STEM

51

08068000 WEST FORK SAN JACINTO RIVER NEAR CONROE, TX--Continued  
(National stream-quality accounting network)

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	18.5	15.0	17.0	15.5	14.5	15.0	20.5	18.0	19.5	27.0	21.5	24.0
2	20.0	18.5	19.0	16.5	14.5	15.0	20.0	18.5	19.0	26.0	21.5	24.0
3	18.5	14.0	16.5	18.0	16.0	17.0	21.5	15.0	19.5	24.0	20.5	22.0
4	13.5	10.5	12.0	18.5	13.5	16.5	20.5	19.0	20.0	22.0	20.0	21.0
5	10.0	8.5	9.5	13.5	10.5	12.0	21.5	17.5	19.5	22.0	20.5	21.5
6	8.5	7.0	7.5	13.5	9.5	11.0	22.5	18.0	20.0	24.0	21.0	22.0
7	7.5	6.5	7.0	14.5	9.5	12.0	24.5	19.0	21.5	23.5	21.5	22.5
8	9.5	6.0	7.5	15.5	10.5	13.0	25.5	21.5	23.5	24.5	22.5	23.0
9	11.0	7.5	9.0	15.5	11.0	13.0	23.5	18.5	21.0	25.0	21.5	23.0
10	12.0	8.0	10.0	16.5	11.0	13.5	18.5	16.5	17.5	25.0	23.0	24.0
11	12.5	11.0	12.0	18.0	12.0	15.0	---	---	---	25.0	21.0	23.0
12	15.5	12.5	14.0	20.0	15.0	17.5	---	---	---	23.0	21.0	22.0
13	18.0	15.5	16.5	21.5	16.5	19.0	---	---	---	25.5	20.5	22.5
14	20.0	17.5	18.5	23.0	18.0	20.5	---	---	---	24.0	20.5	22.5
15	21.0	19.0	20.0	20.5	18.5	20.0	18.5	16.0	17.0	24.0	22.0	23.0
16	19.5	17.0	18.5	21.0	17.5	19.0	19.0	16.0	17.5	22.5	22.0	22.5
17	17.0	15.5	16.5	22.0	18.5	20.0	21.0	17.5	19.0	23.5	22.0	22.5
18	15.5	14.0	15.0	23.0	19.0	21.0	23.5	19.5	21.0	24.0	22.5	23.0
19	14.5	13.5	14.0	21.0	20.0	20.5	23.0	20.5	21.5	24.5	23.0	23.5
20	16.5	14.5	15.0	22.5	19.0	20.5	24.5	19.5	22.0	25.0	23.5	24.5
21	16.5	14.5	15.5	20.0	13.5	16.5	25.0	20.0	22.5	25.0	23.5	24.0
22	16.0	12.5	14.0	13.5	12.5	13.0	25.5	20.0	22.5	25.0	23.5	24.5
23	15.0	11.5	13.0	15.5	11.0	13.5	25.5	20.0	23.0	25.0	22.5	24.0
24	12.5	11.0	11.5	15.0	12.0	13.5	25.5	22.0	23.5	26.0	22.0	24.5
25	15.5	12.0	13.5	15.5	14.0	15.0	26.0	22.0	24.0	28.5	25.0	26.5
26	17.5	13.5	15.5	18.0	15.0	16.5	27.0	23.0	25.0	28.5	26.0	27.0
27	19.0	16.0	17.0	19.5	17.5	18.5	26.5	23.0	24.5	28.5	26.0	27.5
28	16.5	15.0	15.5	19.5	19.0	19.0	27.5	23.5	25.0	29.0	26.0	27.5
29	---	---	---	21.0	17.5	19.5	27.5	23.5	25.5	29.0	25.0	27.0
30	---	---	---	22.0	16.5	20.0	25.0	23.0	24.0	28.5	25.5	27.0
31	---	---	---	22.0	20.5	21.5	---	---	---	29.0	25.5	27.0
MONT	21.0	6.0	14.0	23.0	9.5	16.5	27.5	15.0	21.5	29.0	20.0	24.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	28.0	26.0	27.0	---	---	---	---	---	---	---	---	---
2	29.5	25.5	27.5	---	---	---	27.5	26.5	27.0	---	---	---
3	29.5	26.0	28.0	---	---	---	28.0	26.0	27.0	---	---	---
4	29.0	26.0	27.5	---	---	---	29.0	26.0	27.5	---	---	---
5	29.5	25.5	27.5	---	---	---	29.5	26.5	28.0	---	---	---
6	29.5	25.5	27.0	---	---	---	30.5	25.0	28.0	---	---	---
7	28.5	26.5	27.5	---	---	---	---	---	---	---	---	---
8	26.5	20.0	23.5	---	---	---	---	---	---	---	---	---
9	25.0	20.5	23.0	---	---	---	---	---	---	---	---	---
10	25.0	22.0	23.5	---	---	---	---	---	---	30.0	27.0	28.0
11	25.5	21.0	22.5	---	---	---	---	---	---	29.0	26.5	28.0
12	24.5	22.0	22.5	30.0	21.0	24.0	---	---	---	29.5	26.5	28.0
13	29.0	24.5	26.5	31.5	24.0	27.5	---	---	---	28.5	27.5	28.0
14	28.0	25.0	26.0	31.0	24.5	27.5	---	---	---	27.5	24.0	25.5
15	26.5	25.5	26.0	31.5	26.0	28.0	---	---	---	25.0	21.5	23.5
16	26.5	25.5	26.0	33.0	25.0	29.0	---	---	---	25.5	21.5	23.5
17	26.5	25.0	26.0	33.0	25.0	29.0	---	---	---	26.0	21.5	24.0
18	27.0	24.5	26.0	32.5	25.0	29.0	---	---	---	26.0	22.0	24.0
19	29.0	25.0	27.0	32.0	25.5	29.0	---	---	---	26.0	22.0	24.0
20	30.0	26.5	28.0	---	---	---	---	---	---	26.0	21.5	24.0
21	29.0	26.0	27.5	---	---	---	---	---	---	26.0	22.0	24.0
22	29.0	25.5	27.5	---	---	---	---	---	---	25.5	22.0	24.0
23	---	---	---	---	---	---	---	---	---	24.0	21.5	22.5
24	---	---	---	---	---	---	---	---	---	22.5	19.0	21.0
25	---	---	---	---	---	---	---	---	---	22.0	18.0	20.0
26	---	---	---	---	---	---	---	---	---	23.0	19.0	21.0
27	---	---	---	---	---	---	---	---	---	24.0	20.0	22.0
28	26.0	22.0	24.5	---	---	---	---	---	---	24.0	19.0	21.5
29	---	---	---	---	---	---	25.5	24.0	24.5	24.0	21.0	22.5
30	---	---	---	---	---	---	---	---	---	24.5	21.5	22.5
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	30.0	20.0	26.0	33.0	21.0	28.0	30.5	24.0	27.0	30.0	18.0	24.0

## SAN JACINTO RIVER MAIN STEM

08068090 WEST FORK SAN JACINTO RIVER ABOVE LAKE HOUSTON NEAR PORTER, TX

LOCATION.--Lat 30°05'09", long 95°17'59", Montgomery County, Hydrologic Unit 12040101, on left bank, 4.4 mi southwest of Porter, 5.0 mi upstream from Spring Creek and 6.2 mi northwest of Humble.

DRAINAGE AREA.--962 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Occasional low-flow measurements, at site 1.7 mi downstream, water years 1968-72, 1974-75. February to March 1984 (discharge measurements only), May 1984 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 33 ft above National Geodetic Vertical Datum of 1929, from topographic map and levels.

REMARKS.--Records good except those for estimated daily discharges, which are poor. There is considerable regulation during high flow periods by Lake Conroe (capacity 532,000 acre-ft) 34.3 mi upstream. During periods of low base flow in tributaries entering Lake Houston, occasional releases are made from Lake Conroe in order to maintain water levels in Lake Houston, which has several large diversions. There are no large diversions upstream from station. There is only minor sewage effluent discharge from the city of Conroe and other small communities into the river upstream from this station.

AVERAGE DISCHARGE.--5 years, 549 ft<sup>3</sup>/s (397,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (estimated), 30,000 ft<sup>3</sup>/s May 18, 1989 (gage height, 29.76 ft), from statistical studies of areal stations and rainfall data; minimum daily, 26 ft<sup>3</sup>/s Sept. 18, 1984.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (estimated), 30,000 ft<sup>3</sup>/s May 18 at 1900 hours (gage height, 29.76 ft), from statistical studies of areal stations and rainfall data; minimum daily, 28 ft<sup>3</sup>/s Sept. 4, 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	324	274	212	172	2640	81	4310	63	78	1730	70	29
2	288	252	212	170	2400	102	2030	42	81	1860	957	29
3	250	247	215	170	1190	136	1030	41	143	1780	1540	29
4	235	243	217	165	536	127	711	171	97	2120	750	28
5	230	238	219	165	344	125	613	378	71	2000	298	28
6	225	230	223	166	268	126	383	625	104	1230	207	29
7	225	229	228	168	229	125	144	651	75	1050	133	33
8	225	228	233	168	200	103	106	624	82	1120	115	37
9	230	230	280	165	171	89	90	507	81	916	78	35
10	239	232	278	166	152	81	80	150	61	307	63	39
11	226	228	348	134	142	76	72	82	57	298	57	34
12	226	228	331	70	136	73	69	66	537	279	53	103
13	225	224	276	84	139	69	65	57	792	168	47	339
14	226	225	257	121	140	69	78	455	395	125	44	355
15	228	224	249	100	136	68	598	902	1430	107	71	228
16	229	225	239	141	126	66	695	1320	2000	99	75	91
17	228	225	235	178	211	64	482	1630	2050	87	46	61
18	228	227	228	240	457	62	212	e16000	1330	79	40	50
19	228	229	227	478	253	62	131	e12500	510	72	40	44
20	227	230	225	694	173	63	127	e4600	251	66	36	42
21	226	224	217	828	162	68	94	2600	142	59	35	40
22	228	223	175	966	148	139	73	2070	106	56	34	37
23	224	222	170	971	125	279	62	1860	88	53	33	36
24	226	220	167	626	109	313	55	1340	89	48	34	36
25	237	220	165	289	100	604	50	604	275	60	33	36
26	241	224	165	172	92	544	46	259	848	198	34	56
27	267	223	166	819	87	642	43	171	9130	168	34	37
28	253	220	178	972	84	386	39	138	4870	156	33	34
29	263	215	188	803	---	756	39	113	2320	121	32	34
30	251	214	172	2340	---	1440	46	97	1920	129	31	32
31	253	---	173	1920	---	4850	---	85	---	71	30	---
TOTAL	7411	6873	6868	14621	10950	11788	12573	50201	30013	16612	5083	2041
MEAN	239	229	222	472	391	380	419	1619	1000	536	164	68.0
MAX	324	274	348	2340	2640	4850	4310	16000	9130	2120	1540	355
MIN	224	214	165	70	84	62	39	41	57	48	30	28
AC-FT	14700	13630	13620	29000	21720	23380	24940	99570	59530	32950	10080	4050
CAL YR 1988	TOTAL	80476	MEAN	220	MAX	2770	MIN	29	AC-FT	159600		
WTR YR 1989	TOTAL	175034	MEAN	480	MAX	16000	MIN	28	AC-FT	347200		

e Estimated.

## SAN JACINTO RIVER MAIN STEM

53

08068090 WEST FORK SAN JACINTO RIVER ABOVE LAKE HOUSTON NEAR PORTER, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: February 1984 to current year.

INSTRUMENTATION.--Stage-activated water sampler since January 1985 provides water-quality samples over selected runoff events.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	
OCT 12...	0945	225	303	7.60	20.0	--	--	8.6	94	--	--	
NOV 02...	1124	250	298	7.80	20.0	--	--	7.8	86	--	--	
JAN 12...	1200	66	346	7.60	18.5	20	2.7	9.0	95	1.4	24	
20...	0822	711	184	--	13.5	120	190	9.6	91	2.8	650	
JUL 14...	0820	129	313	6.80	28.5	--	--	6.5	83	--	--	
26...	0940	114	401	7.20	26.0	--	--	6.4	78	--	--	
AUG 11...	0740	57	359	6.90	24.5	--	--	7.0	83	--	--	
25...	0900	33	446	7.30	26.5	--	--	7.0	86	--	--	
SEP 06...	1115	29	507	7.30	29.5	25	17	7.3	95	1.2	84	
22...	1330	38	457	7.80	28.0	--	--	9.1	115	--	--	
DATE		STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CaCO3)	HARD-NESS NONCARB WH WAT TOT FLD (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD (MG/L AS CaCO3)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)	
OCT 12...	--	--	--	--	--	--	--	--	--	--	--	
NOV 02...	--	--	--	--	--	--	--	--	--	--	--	
JAN 12...	170	98	8	34	3.2	28	1	3.9	90	15	38	
20...	3600	--	--	--	--	--	--	--	--	--	--	
JUL 14...	--	--	--	--	--	--	--	--	--	--	--	
26...	--	--	--	--	--	--	--	--	--	--	--	
AUG 11...	--	--	--	--	--	--	--	--	--	--	--	
25...	--	--	--	--	--	--	--	--	--	--	--	
SEP 06...	380	96	9	31	4.5	63	3	5.1	87	28	77	
22...	--	--	--	--	--	--	--	--	--	--	--	
DATE		FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)
OCT 12...	--	--	--	--	--	--	0.380	0.370	0.020	0.020	0.400	0.390
NOV 02...	--	--	--	--	--	--	0.480	0.480	0.020	0.020	0.500	0.500
JAN 12...	0.20	9.0	188	51	1	0.470	--	0.030	<0.010	0.500	0.550	
20...	--	--	--	101	<1	0.360	0.440	0.040	0.010	0.400	0.450	
JUL 14...	--	--	--	--	--	0.460	--	0.040	<0.010	0.500	0.490	
26...	--	--	--	--	--	0.270	0.290	0.030	0.010	0.300	0.300	
AUG 11...	--	--	--	--	--	0.770	0.710	0.030	0.010	0.800	0.720	
25...	--	--	--	--	--	0.660	0.560	0.040	0.040	0.700	0.600	
SEP 06...	0.30	20	283	34	<1	0.370	0.350	0.030	0.020	0.400	0.370	
22...	--	--	--	--	--	0.770	0.780	0.030	0.020	0.800	0.800	



## SAN JACINTO RIVER MAIN STEM

08068090 WEST FORK SAN JACINTO RIVER ABOVE LAKE HOUSTON NEAR PORTER, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS- SOLVED (UG/L AS AS)	BIARIUM, DIS- SOLVED (UG/L AS BA)
OCT 12...	0.030	0.020	0.77	0.78	0.80	0.80	0.160	0.160	--	--	--
NOV 02...	0.020	0.020	0.68	0.68	0.70	0.70	0.180	0.150	--	--	--
JAN 12...	0.080	0.050	0.42	0.35	0.40	0.50	0.300	0.160	6.9	--	--
20...	0.130	0.080	1.1	1.0	1.1	1.2	0.250	0.230	14	--	--
JUL 14...	0.090	0.080	0.71	0.72	0.80	0.80	0.290	0.240	--	--	--
26...	0.060	0.040	0.74	0.76	0.80	0.80	0.380	0.250	--	--	--
AUG 11...	0.070	0.050	0.73	0.75	0.80	0.80	0.390	0.290	--	--	--
25...	0.060	0.060	0.54	0.54	0.60	0.60	0.500	0.420	--	--	--
SEP 06...	0.060	0.070	0.44	0.43	0.50	0.50	0.650	0.550	4.7	4	95
22...	0.030	0.020	0.57	0.58	0.60	0.60	0.540	0.470	--	--	--

DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 12...	--	--	--	--	--	--	--	--	--	--
NOV 02...	--	--	--	--	--	--	--	--	--	--
JAN 12...	--	--	--	6	--	81	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
JUL 14...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
AUG 11...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
SEP 06...	3	1	2	20	1	44	0.4	<1	<1.0	4
22...	--	--	--	40	--	20	--	--	--	--

## 08068520 SPRING CREEK AT SPRING, TX

LOCATION.--Lat 30°05'31", long 95°24'21", Harris-Montgomery County line, Hydrologic Unit 12040102, near right bank at upstream side of bridge on Riley-Fussell Road, 1.1 mi northeast of Spring, 2.7 mi downstream from Missouri Pacific Railroad bridge, 3.6 mi downstream from former station 08068500 at Interstate Highway 45, 6.9 mi upstream from Cypress Creek, and 9.9 mi upstream from mouth.

DRAINAGE AREA.--419 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1939 to current year. Prior to 1975, published as "near Spring".

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 62.17 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 5, 1946, nonrecording gage, and Jan. 6, 1946, to Oct. 1, 1965, water-stage recorder at site 3.6 mi upstream at different datum. Oct. 2, 1965, to Feb. 19, 1976, water-stage recorder at former site at datum 10.93 ft higher; unadjusted for land-surface subsidence.

REMARKS.--Records good except those for estimated daily discharges, which are poor. No known diversion above station.

AVERAGE DISCHARGE.--50 years, 222 ft<sup>3</sup>/s (7.19 in/yr), 160,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,700 ft<sup>3</sup>/s Nov. 25, 1940 (gage height, 33.60 ft) former site and datum, from graph based on gage readings; minimum, 1.1 ft<sup>3</sup>/s Oct. 23, 24, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1879, 34.3 ft, former site and datum, May 30, 1929, from floodmarks identified by local residents, discharge, 48,300 ft<sup>3</sup>/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 18	1900	*15,400	*27.43	June 27	about 2400	8,850	22.15

Minimum discharge (estimated), 9.4 ft<sup>3</sup>/s Nov. 6-9, 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	e11	20	11	18	1150	39	961	50	26	e587	144	25		
2	e11	e15	12	16	944	e135	388	32	e34	e562	497	22		
3	15	e12	12	16	329	89	165	35	e37	e550	474	20		
4	e13	e11	12	15	212	57	123	51	26	e280	418	19		
5	e12	e10	12	15	160	70	100	e270	23	e166	188	19		
6	e11	e9.4	12	14	154	57	83	225	22	e102	106	19		
7	e11	e9.4	13	14	122	45	69	146	22	e97	78	19		
8	e10	e9.4	15	15	106	37	67	115	e59	e450	288	31		
9	e12	e9.4	15	15	102	33	58	66	33	e462	355	35		
10	e11	e9.7	23	16	96	31	52	44	21	e299	171	24		
11	e11	e9.4	62	15	94	e28	46	34	18	e180	91	161		
12	e10	e10	39	19	93	e27	42	25	14	e122	65	612		
13	e10	e10	27	e110	90	e26	43	28	15	88	51	249		
14	e10	e10	20	e470	e86	e26	50	e157	e129	e75	41	691		
15	e9.7	e10	19	e300	100	e26	51	117	88	e65	39	270		
16	e9.7	10	18	e150	e93	e25	e165	133	65	56	37	120		
17	e9.7	11	18	e100	83	e25	e210	326	76	52	35	70		
18	e9.7	11	17	e120	277	25	110	10000	39	47	63	51		
19	e9.7	14	16	e150	e215	24	64	8840	25	43	50	40		
20	e10	25	15	e700	e124	30	48	e3110	18	40	58	34		
21	e10	19	15	e1000	e105	58	41	e1290	26	37	40	31		
22	e10	15	28	e700	e83	114	38	e422	25	35	32	29		
23	e9.7	14	20	e300	74	72	33	e201	36	34	30	27		
24	e9.7	13	14	e150	59	93	30	126	52	79	29	25		
25	e9.7	12	13	e100	48	94	26	63	87	91	27	24		
26	e11	13	13	e110	42	168	22	e33	1050	74	28	23		
27	e12	12	14	e300	39	427	20	26	e5300	115	24	22		
28	e11	12	21	e350	38	222	21	e22	e7400	80	25	22		
29	e10	12	19	e400	---	e600	21	e16	e3100	53	26	22		
30	e9.7	11	19	e920	---	525	e80	22	e1300	44	27	21		
31	e30	---	20	e950	---	684	---	23	---	39	31	---		
TOTAL	349.3	368.7	584	7568	5118	3912	3227	26048	19166	5004	3568	2777		
MEAN	11.3	12.3	18.8	244	183	126	108	840	639	161	115	92.6		
MAX	30	25	62	1000	1150	684	961	10000	7400	587	497	691		
MIN	9.7	9.4	11	14	38	24	20	16	14	34	24	19		
AC-FT	693	731	1160	15010	10150	7760	6400	51670	38020	9930	7080	5510		
CFSM	.03	.03	.04	.58	.44	.30	.26	2.01	1.52	.39	.27	.22		
IN.	.03	.03	.05	.67	.45	.35	.29	2.31	1.70	.44	.32	.25		
CAL YR 1988	TOTAL	24703.9	MEAN	67.5	MAX	1700	MIN	9.4	AC-FT	49000	CFSM	.16	IN.	2.19
WTR YR 1989	TOTAL	77690.0	MEAN	213	MAX	10000	MIN	9.4	AC-FT	154100	CFSM	.51	IN.	6.90

e Estimated.

SAN JACINTO RIVER BASIN  
08068520 SPRING CREEK AT SPRING, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: August 1983 to current year.

INSTRUMENTATION.--Stage-activated water sampler since October 1984 provides water-quality samples over selected runoff events.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE,	SPE-CIFIC	PH	TEMPER-	COLOR	TUR-	OXYGEN,	OXYGEN,	OXYGEN	COLI-	
		INST. CUBIC FEET PER SECOND	CON-DUCT-ANCE (US/CM)	(STAND-ARD UNITS)	ATURE WATER (DEG C)	(PLAT-INUM-COBALT UNITS)	BID-ITY (NTU)	DIS-SOLVED (MG/L)	DIS-SOLVED (PER-CENT SATUR-ATION)	DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	
OCT 12...	1115	11	638	7.40	18.5	--	--	8.7	92	--	--	
NOV 01...	1254	20	530	7.80	20.0	--	--	9.2	100	--	--	
JAN 09...	1225	14	597	7.60	12.5	18	5.7	9.0	83	1.0	44	
19...	1356	127	294	7.40	14.5	--	--	9.5	93	4.6	2500	
MAY 17-21	2200	6160	50	--	--	--	--	--	--	--	--	
JUL 13...	0840	88	235	6.60	27.0	--	--	4.0	50	--	--	
27...	0830	118	338	7.10	24.0	--	--	6.6	77	--	--	
AUG 07...	1134	77	262	6.70	28.5	--	--	6.1	78	--	--	
24...	0950	29	419	7.10	27.0	--	--	6.4	80	--	--	
SEP 05...	1025	19	532	7.80	27.0	20	8.2	7.4	93	1.4	150	
21...	1023	31	415	7.10	22.5	--	--	7.4	85	--	--	
DATE		STREP-TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CAC03)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CAC03	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 12...	--	--	--	--	--	--	--	--	--	--	--	--
NOV 01...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 09...	68	74	0	23	4.1	96	5	6.6	141	20	83	--
19...	4600	--	--	--	--	--	--	--	--	--	--	--
MAY 17-21	--	--	--	--	--	--	--	--	--	--	--	--
JUL 13...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
AUG 07...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 05...	170	75	0	23	4.2	77	4	5.0	120	14	74	--
21...	--	--	--	--	--	--	--	--	--	--	--	--
DATE		FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDE (MG/L)	RESIDUE VOLA-TILE, SUS-PENDE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)
OCT 12...	--	--	--	--	--	--	4.75	4.76	0.050	0.040	4.80	4.80
NOV 01...	--	--	--	--	--	--	2.86	2.87	0.040	0.030	2.90	2.90
JAN 09...	0.30	13	345	7	3	3.15	3.26	0.050	0.040	3.20	3.30	3.30
19...	--	--	--	--	--	--	1.21	1.25	0.090	0.150	1.30	1.40
MAY 17-21	--	--	--	--	--	--	0.070	0.200	0.030	0.010	0.100	0.210
JUL 13...	--	--	--	--	--	--	0.520	0.640	0.080	0.060	0.600	0.700
27...	--	--	--	--	--	--	0.940	0.920	0.060	0.050	1.00	0.970
AUG 07...	--	--	--	--	--	--	0.750	0.690	0.050	0.040	0.800	0.730
24...	--	--	--	--	--	--	1.63	1.44	0.070	0.060	1.70	1.50
SEP 05...	0.30	16	295	20	<1	2.22	2.03	0.080	0.070	2.30	2.10	2.10
21...	--	--	--	--	--	--	1.49	1.58	0.110	0.020	1.60	1.60

## SAN JACINTO RIVER BASIN

57

08068520 SPRING CREEK AT SPRING, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)
OCT 12...	0.070	0.070	1.0	0.93	1.0	1.1	3.40	3.30	--	--	--
NOV 01...	0.090	0.090	0.91	0.91	1.0	1.0	2.50	2.40	--	--	--
JAN 09...	0.140	0.130	0.66	0.47	0.60	0.80	3.20	3.10	5.2	--	--
19...	0.380	0.470	0.82	0.53	1.0	1.2	1.20	1.40	11	--	--
MAY 17-21	0.140	0.130	0.76	0.77	0.90	0.90	0.100	0.090	--	--	--
JUL 13...	0.140	0.160	0.86	1.6	1.8	1.0	0.560	0.390	--	--	--
27...	0.180	0.140	0.82	0.86	1.0	1.0	0.810	0.530	--	--	--
AUG 07...	0.150	0.130	1.1	1.2	1.3	1.3	0.660	0.480	--	--	--
24...	0.100	0.100	0.80	0.60	0.70	0.90	1.50	1.10	--	--	--
SEP 05...	0.090	0.100	0.91	0.60	0.70	1.0	1.90	1.70	5.2	3	68
21...	0.200	0.190	0.40	0.41	0.60	0.60	1.10	1.00	--	--	--

DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 12...	--	--	--	--	--	--	--	--	--	--
NOV 01...	--	--	--	--	--	--	--	--	--	--
JAN 09...	--	--	--	44	--	52	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
MAY 17-21	--	--	--	240	--	<10	--	--	--	--
JUL 13...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
AUG 07...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
SEP 05...	2	2	2	19	<1	130	<0.1	<1	3.0	13
21...	--	--	--	30	--	120	--	--	--	--



## 08068720 CYPRESS CREEK AT KATY-HOCKLEY ROAD NEAR HOCKLEY, TX

LOCATION.--Lat 29°57'00", Long 95°48'29", Harris County, Hydrologic Unit 12040102, on left bank at bridge on Katy-Hockley Road, 3.3 mi downstream from station 08068700, 5.6 mi southeast of Hockley, and 6.3 mi upstream from station 08068740.

DRAINAGE AREA.--110 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1975 to July 1983, February 1984 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Concrete weir located 0.9 mi downstream from gage. Datum of gage is 100.00 ft above National Geodetic Vertical Datum of 1929, 1973 adjustment.

REMARKS.--No estimated daily discharges. Records fair. Diversions and return flow for irrigation occur upstream from station. Several observations of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--12 years (water years 1975-82, 1985-89), 56.5 ft<sup>3</sup>/s (40,930 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,370 ft<sup>3</sup>/s Jan. 20, 1979 (gage height, 61.05 ft), but may have been exceeded during period of no record July 29 to Jan. 31, 1984; no flow for many days each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--A flood in June 1960 reached a stage of 62.0 ft, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 587 ft<sup>3</sup>/s May 18 at 1700 hours (gage height, 54.72 ft); no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.09	.79	.00	.00	4.6	.28	.0	4.1	.07	11	31	.08
2	.08	1.5	.00	.00	.39	.55	.0	1.5	.07	7.7	66	.03
3	.08	.85	.00	.00	3.0	.78	.32	.03	.07	6.4	53	.0
4	.05	.00	.00	.00	4.2	.50	.27	.39	.06	5.5	33	.00
5	.01	.00	.00	.00	3.6	.45	.34	5.7	.03	3.3	18	.00
6	.00	.00	.00	.00	1.8	.38	.23	5.3	.01	.02	19	.00
7	.00	.00	.00	.00	.94	.24	.14	.02	.00	.81	12	.00
8	.00	.00	.00	.00	.59	.21	.10	.03	.00	2.9	11	.00
9	.00	.02	.00	.00	.38	.13	.08	.06	.00	5.0	17	.00
10	.00	.07	.00	.00	.28	.10	.06	.00	.00	6.8	12	.00
11	.00	.04	.00	.00	.21	.07	.05	.00	.00	2.5	6.1	.19
12	.00	.01	.00	.00	1.1	.07	.04	.00	.00	.96	2.9	1.0
13	.00	1.2	.00	.00	1.1	.05	.09	.01	.00	2.5	1.1	13
14	.00	1.6	.00	.00	.34	.04	.10	8.5	34	1.4	.66	27
15	.00	.73	.00	.00	.00	.04	.12	33	33	.34	2.9	24
16	.03	.34	.00	.00	.03	.03	.10	4.0	14	.00	1.4	3.5
17	.72	.16	.00	.00	.26	.04	.10	4.6	1.6	.00	1.2	.0
18	1.0	.04	.00	.00	.15	.05	.10	360	.02	.0	1.5	.01
19	.44	.80	.00	.00	.08	.08	.07	302	.00	.07	1.1	.28
20	.00	.68	.00	4.6	.07	.14	.06	73	.10	.21	.45	.19
21	.00	.00	.00	7.5	.21	.41	.05	30	.40	1.6	.22	.13
22	.00	.00	.00	2.6	.23	.89	.05	14	.34	1.6	.11	.08
23	.00	.00	.00	1.2	.20	1.1	.03	7.7	.25	.80	.07	.04
24	.00	.00	.00	.87	.14	1.2	.01	2.3	.30	.30	.04	.02
25	.00	.00	.00	.00	.24	1.2	.00	.49	1.2	.22	.15	.0
26	.00	.00	.00	.00	.32	10	.00	.00	29	.16	.30	.06
27	.00	.00	.00	9.4	.29	3.3	.00	.00	140	6.4	.26	.87
28	.04	.00	.00	31	.24	.00	.00	.00	71	7.9	.30	.58
29	.10	.00	.00	49	---	42	.00	.07	27	9.6	.41	.19
30	.08	.00	.00	106	---	14	.67	.10	14	11	.72	.29
31	.06	---	.00	40	---	1.4	---	.10	---	5.8	.23	---
TOTAL	2.78	8.83	0.00	252.17	24.99	79.73	3.18	857.00	366.52	102.79	294.12	71.54
MEAN	.090	.29	.00	8.13	.89	2.57	.11	27.6	12.2	3.32	9.49	2.38
MAX	1.0	1.6	.00	106	4.6	.42	.67	360	140	11	66	27
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00
AC-FT	5.5	18	.0	500	50	158	6.3	1700	727	204	583	142
CAL YR 1988	TOTAL	1098.68	MEAN	3.00	MAX	133	MIN	.00	AC-FT	2180		
WTR YR 1989	TOTAL	2063.65	MEAN	5.65	MAX	360	MIN	.00	AC-FT	4090		

## SAN JACINTO RIVER BASIN

59

08068740 CYPRESS CREEK AT HOUSE AND HAHN ROAD NEAR CYPRESS, TX

LOCATION.--Lat 29°57'32", long 95°43'03", Harris County, Hydrologic Unit 12040102, on right bank at bridge on House and Hahn Road, 1.4 mi southwest of Cypress, and 6.3 mi downstream from station 08068720.

DRAINAGE AREA.--131 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1975 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 100.00 ft above National Geodetic Vertical Datum of 1929, 1973 adjustment.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Stage discharge relationship affected by seasonal vegetal growth during most years. Considerable diversions and return flow from irrigation occur upstream from station, especially during period April through October.

AVERAGE DISCHARGE.--14 years, 75.1 ft<sup>3</sup>/s (54,410 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,590 ft<sup>3</sup>/s Sept. 22, 1979 (gage height, 46.33 ft); no flow for many days (result of pumping for irrigation).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since about 1908, about 49 ft in 1937, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,030 ft<sup>3</sup>/s May 18 at 1900 hours (gage height, 43.04 ft); no flow on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.93	3.0	.07	.08	e35	e.40	2.0	13	.54	28	50	e.25
2	2.9	7.1	.07	.03	e10	e.80	.53	7.6	.36	20	114	e.15
3	.57	6.0	.06	.02	e12	e1.2	.60	6.6	.35	18	e80	e.12
4	.71	2.0	.05	.01	e12	e1.0	1.2	7.7	.30	16	e60	e.10
5	.39	.84	.05	.00	e7.0	e.60	.57	20	.19	12	e35	e.08
6	.38	.56	.05	.00	e4.0	e.50	.42	26	.19	3.5	e28	e.07
7	.37	2.0	.02	.00	e2.0	.40	.31	4.1	.31	.61	e20	e.06
8	1.1	8.3	.36	.00	e1.4	.31	.28	.53	.87	7.8	e25	e.05
9	.26	8.8	.46	.01	e1.1	.27	.18	.26	.75	4.7	e25	e.05
10	.74	7.3	.44	.03	e.90	.23	.13	.16	.45	14	19	e.05
11	.96	13	1.7	.05	e.80	.22	.08	.15	.43	5.8	e14	e.20
12	.67	8.5	.51	.08	e3.0	.19	.06	.10	.42	6.3	e8.0	60
13	.39	1.2	.25	.49	e4.0	.17	.86	.93	.41	4.9	e4.0	36
14	.64	.92	.13	1.1	e1.5	.12	.72	11	38	6.4	e2.0	83
15	.93	6.5	.11	.55	.65	.08	.44	66	55	1.7	e5.0	57
16	1.2	9.9	.11	.36	e.50	.08	.29	17	34	.74	e3.0	19
17	.69	1.5	.12	.25	e.80	.07	.42	38	13	.46	e2.0	2.4
18	2.0	.43	.10	.27	e.40	.05	.19	711	.83	.25	e3.0	.86
19	2.3	.52	.09	2.0	e.30	.30	.09	797	.30	.13	e2.0	.95
20	.82	2.2	.07	27	e.25	.28	.07	291	.23	.13	e1.2	.81
21	.47	.45	.08	18	e.35	.78	.03	136	.21	.88	e.80	1.3
22	.43	.16	.08	10	e.35	1.5	.0	64	.93	7.6	e.60	.55
23	.44	.12	1.7	.60	e.30	.81	.00	35	.61	4.6	e.40	1.6
24	.38	.10	.32	1.7	e.25	.49	.01	17	.62	2.5	e.30	.77
25	.34	.12	.13	.38	e.30	.40	.00	6.8	2.3	9.5	e.40	.31
26	.34	.29	.04	1.4	e.40	10	.00	1.4	65	32	e.60	.18
27	1.1	.18	.01	37	e.35	20	.00	.66	318	39	e.80	.18
28	.62	.12	.62	80	e.35	1.1	.00	.64	145	30	e2.0	1.2
29	.38	.07	.20	308	---	92	.00	.48	58	29	e1.0	.67
30	.34	.07	.10	281	---	48	5.7	.44	36	21	e1.0	.76
31	5.8	---	.08	155	---	14	---	.57	---	12	e.50	---
TOTAL	29.59	92.25	8.18	925.41	100.25	196.35	15.18	2281.12	773.60	339.50	508.60	268.72
MEAN	.95	3.07	.26	29.9	3.58	6.33	.51	73.6	25.8	11.0	16.4	8.96
MAX	5.8	13	1.7	308	35	92	5.7	797	318	39	114	83
MIN	.26	.07	.01	.00	.25	.05	.00	.10	.19	.13	.30	.05
AC-FT	59	183	16	1840	199	389	30	4520	1530	673	1010	533
CAL YR 1988	TOTAL	1789.58	MEAN	4.89	MAX	142	MIN	.00	AC-FT	3550		
WTR YR 1989	TOTAL	5538.75	MEAN	15.2	MAX	797	MIN	.00	AC-FT	10990		

e Estimated.

08068740 CYPRESS CREEK AT HOUSE AND HAHN ROAD NEAR CYPRESS, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1977 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS TOTAL (MG/L AS CACO3)
NOV 28...	0955	0.12	599	7.60	11.5	25	11	8.6	78	2.2	140
FEB 15...	0945	1.0	282	7.40	18.5	150	66	5.6	59	2.8	66
MAY 01...	0950	17	220	7.20	22.0	130	71	5.2	59	5.5	56
AUG 10...	1106	19	208	7.50	24.0	110	23	6.7	79	1.6	43

DATE	HARD- NESS NONCARB WH TOT MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
NOV 28...	0	44	7.4	71	3	5.2	206	17	63	0.50	10
FEB 15...	0	20	3.9	28	2	8.2	83	20	28	0.20	13
MAY 01...	0	17	3.3	20	1	5.8	64	8.0	20	0.20	9.6
AUG 10...	0	13	2.6	14	1	9.3	57	5.0	19	0.40	9.0

DATE	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	RESIDUE VOLAT- ILE, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
NOV 28...	342	14	7	--	0.020	<0.100	<0.010	--	0.70	0.070	7.8
FEB 15...	172	65	10	0.060	0.040	0.100	0.120	1.3	1.4	0.310	9.4
MAY 01...	123	89	13	0.510	0.090	0.600	0.900	1.2	2.1	0.350	17
AUG 10...	107	42	<1	0.060	0.040	0.100	4.40	1.2	5.6	0.210	10

DATE	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)
NOV 28...	2	390	<1	<1	2	35	<5	21	--	<1
FEB 15...	2	160	<1	<1	2	410	<5	42	0.1	<1
MAY 01...	3	110	<1	1	6	140	2	37	<0.1	<1
AUG 10...	3	83	<1	<1	2	480	1	18	<0.1	<1

DATE	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)	PCB, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
NOV 28...	2.0	4	--	--	--	--	--	--	--	--
FEB 15...	<1.0	5	<0.1	<0.10	<0.010	<0.1	<0.010	<0.010	<0.010	<0.01
MAY 01...	<1.0	8	<0.1	<0.10	<0.010	<0.1	<0.010	<0.010	<0.010	0.01
AUG 10...	<1.0	27	<0.1	<0.10	<0.010	<0.1	<0.010	<0.010	<0.010	0.02

## SAN JACINTO RIVER BASIN

61

08068740 CYPRESS CREEK AT HOUSE AND HAHN ROAD NEAR CYPRESS, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)
NOV 28...	--	--	--	--	--	--	--	--	--	--
FEB 15...	<0.010	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01
MAY 01...	<0.010	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01
AUG 10...	<0.010	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	0.01	<0.01	<0.01
DATE	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
NOV 28...	--	--	--	--	--	--	--	--	--	--
FEB 15...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
MAY 01...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	<0.01	<0.01	<0.01
AUG 10...	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<0.01	0.01	<0.01	<0.01



## SAN JACINTO RIVER BASIN

08068780 LITTLE CYPRESS CREEK NEAR CYPRESS, TX

LOCATION.--Lat 30°00'57", long 95°41'50", Harris County, Hydrologic Unit 12040102, on right bank at downstream side of bridge on Cypress-Rose Hill Road, 3.2 mi north of Cypress, and 6.9 mi upstream from mouth.

DRAINAGE AREA.--41.0 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1982 to current year.

GAGE.--Water-stage and rainfall recorders and crest-stage gage. Datum of gage is 80.00 ft above National Geodetic Vertical Datum of 1929, 1973 adjustment.

REMARKS.--Records good. No known regulation or diversions. Several observations of water temperature were made during the year. Stage and rainfall radio-telemetry operated by Harris County Flood Control District at station.

AVERAGE DISCHARGE.--7 years, 19.5 ft<sup>3</sup>/s (6.46 in/yr), 14,130 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,400 ft<sup>3</sup>/s Nov. 25, 1987 at 1300 hours (gage height, 80.49 ft); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 450 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 18	1700	*418	*74.08				

Minimum, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	7.0	.00	.29	5.8	.10	2.7	4.3	.34	9.7	5.3	.12
2	.00	6.8	.00	.24	3.9	.32	1.7	1.0	.24	6.3	71	e.05
3	.00	2.3	.00	.22	3.0	1.8	.78	8.1	.17	8.2	23	e.05
4	.00	.91	.00	.20	4.4	1.4	.58	22	.15	12	7.1	e.04
5	.00	.50	.00	.21	2.9	.60	.38	23	.10	4.1	2.8	e.04
6	.00	.29	.00	.17	1.3	.34	.28	14	.04	2.1	1.3	e.03
7	.00	.18	.00	.11	.80	.24	.22	3.8	.09	4.2	.76	.13
8	.00	.14	.01	.08	.68	.21	.21	1.1	1.3	4.8	1.8	.18
9	.00	.69	1.5	.09	.57	.16	2.5	.46	.79	4.7	1.8	.19
10	.00	.38	.78	.11	.36	.17	5.1	.26	.14	1.5	.69	.06
11	.00	.13	.43	.11	.27	.14	1.9	.12	.03	.69	.36	.07
12	.00	.06	1.1	.19	.31	.17	.73	.11	.29	.30	.24	24
13	.00	.02	.90	.23	.23	.57	.53	.17	.18	.21	.10	18
14	.00	.02	.48	.57	.32	.72	.99	15	9.3	.41	.06	67
15	.00	.04	.27	1.0	.25	.25	.80	9.5	24	1.4	.18	19
16	.00	.02	.15	.39	.17	.22	.53	3.8	4.2	1.6	.12	6.5
17	.00	.02	.09	.26	.15	.11	.92	3.6	1.2	.44	.07	2.4
18	.00	.01	.06	.19	.12	.12	.53	271	.51	.15	.06	1.3
19	.00	.04	.05	3.5	.12	.09	.22	67	.24	.04	.07	.91
20	.00	.02	.08	34	.19	.14	.13	11	.16	5.0	.06	.61
21	.00	.01	.13	21	.17	.17	.08	3.5	.28	4.8	.06	.45
22	.00	.01	.12	7.1	.21	.22	.05	1.2	.18	3.5	.12	.32
23	.00	.0	.15	3.9	.22	.46	.07	.49	.06	3.3	.12	.27
24	.00	.01	.19	3.1	.14	.42	.04	.22	.05	1.4	e.05	.27
25	.00	.06	.17	1.7	.12	.18	.03	.10	.06	6.3	e.05	.26
26	.00	.07	.19	1.1	.09	7.0	.04	.04	24	6.6	e.04	.14
27	.00	.04	.20	85	.10	23	.04	.02	311	4.3	e.04	.13
28	.00	.03	.25	38	.08	2.1	.05	.02	85	2.2	e.03	.12
29	.00	.02	.54	83	---	95	.04	.02	20	1.1	.06	.12
30	.00	.01	.61	83	---	19	11	.88	12	.59	.17	.12
31	.95	---	.41	16	---	6.1	---	.52	---	.69	.44	---
TOTAL	0.95	19.83	8.86	385.06	26.97	161.52	33.17	466.33	496.10	102.62	118.05	142.88
MEAN	.031	.66	.29	12.4	.96	5.21	1.11	15.0	16.5	3.31	3.81	4.76
MAX	.95	7.0	1.5	85	5.8	95	11	271	311	12	71	67
MIN	.00	.00	.00	.08	.08	.09	.03	.02	.03	.04	.03	.03
AC-FT	1.9	39	18	764	53	320	66	925	984	204	234	283
CFSM	.00	.02	.01	.30	.02	.13	.03	.37	.40	.08	.09	.12
IN.	.00	.02	.01	.35	.02	.15	.03	.42	.45	.09	.11	.13
CAL YR 1988	TOTAL	537.57	MEAN	1.47	MAX	121	MIN	.00	AC-FT	1070	CFSM	.04
WTR YR 1989	TOTAL	1962.34	MEAN	5.38	MAX	311	MIN	.00	AC-FT	3890	CFSM	.13
										IN.	.49	1.78

e Estimated.

## 08068800 CYPRESS CREEK AT GRANT ROAD NEAR CYPRESS, TX

LOCATION.--Lat 29°58'24", long 95°35'54", Harris County, Hydrologic Unit 12040102, on right bank at downstream side of bridge on Grant Road and 6.0 mi east of Cypress.

DRAINAGE AREA.--214 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1982 (discharge measurements only), October 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 80.00 ft above National Geodetic Vertical Datum of 1929, 1973 adjustment.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Base flow sustained by effluent from urbanized areas and drainage from irrigated farming areas in the basin. Several observations of water temperature were made during the year. Stage and rainfall radio-telemetry operated by Harris County Flood Control District station.

AVERAGE DISCHARGE.--7 years, 92.4 ft<sup>3</sup>/s (66,940 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,550 ft<sup>3</sup>/s May 14, 1982, and Nov. 26, 1987; maximum gage height, 43.48 ft May 14, 1982; minimum daily (estimated), 0.05 ft<sup>3</sup>/s Apr. 26, 29, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,140 ft<sup>3</sup>/s May 18 at 1800 hours (gage height, 42.54 ft); minimum daily (estimated), 0.05 ft<sup>3</sup>/s Apr. 26, 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	e9.0	e.48	e1.0	55	e.93	e7.2	19	e3.0	39	102	e1.1
2	14	e6.0	e.45	e.90	22	e3.5	e5.0	17	e2.2	27	165	e.74
3	e5.4	e7.0	e.43	e.82	22	e5.0	e3.5	35	e1.8	17	119	e.62
4	e2.3	e5.0	e.41	e.78	17	e4.5	e3.8	28	e1.5	22	61	e.55
5	e2.0	e3.0	e.40	e.73	e13	e3.0	e3.0	62	e1.2	16	35	e.60
6	e1.7	e2.5	e.39	e1.0	e8.0	e2.2	e2.5	47	e1.0	e11	23	e.58
7	e1.6	e3.5	e1.0	e.80	e5.0	e1.8	e2.1	15	e2.5	e9.0	19	e.80
8	e1.5	e5.0	e6.0	e.60	e3.5	e1.5	e1.8	e8.0	e4.0	e18	31	e1.7
9	e1.6	e4.0	e4.5	e.80	e3.0	e1.3	e3.5	e5.0	e2.5	e20	25	e.50
10	e1.8	e6.0	e5.4	e.90	e2.5	e1.2	e8.0	e3.5	e1.8	e24	20	e.30
11	e1.7	e9.0	e3.5	e.70	e3.0	e1.1	e4.0	e2.5	e1.5	e15	e15	1.6
12	e1.5	e6.0	e2.5	4.6	e6.0	e1.0	e3.0	e2.0	e1.2	e10	e10	5.1
13	e1.4	e3.0	e2.0	19	e7.0	e10	e10	9.7	e.90	e8.0	e6.0	28
14	e1.3	e2.4	e1.6	8.0	e5.5	e1.2	e5.0	69	38	e9.0	e3.5	112
15	e1.4	e4.0	e2.0	e3.0	e4.0	e.60	e3.5	37	68	e7.0	e4.0	74
16	e1.7	e8.0	e1.5	e2.4	e10	e.65	e2.5	28	43	e5.5	e4.5	31
17	e2.0	e3.0	e1.1	e2.0	e3.0	e.70	e3.0	203	23	e4.0	e4.0	14
18	e1.7	e2.0	e.90	5.8	e4.0	e.60	e2.0	2510	e12	e3.0	8.3	e7.5
19	e1.4	e1.5	e.80	14	e2.0	e.90	e1.0	1900	e6.0	e2.0	e6.0	e3.5
20	e1.5	e3.5	e.72	66	e8.0	e3.5	e.50	600	e3.0	e5.0	e4.0	e2.0
21	e1.6	e2.0	e.70	41	e5.0	e7.0	e.25	183	e1.5	e6.0	e.1	e2.5
22	e1.5	e1.3	e1.5	18	e3.0	e10	e.15	74	e1.8	e6.5	e1.8	e1.9
23	e1.6	e1.0	e6.0	7.8	e2.0	e5.0	e.10	36	e2.5	7.5	e1.3	e1.9
24	e1.8	e.80	e2.5	e6.0	e1.5	e2.5	e.08	21	e3.0	18	e1.0	e2.2
25	e1.7	e.70	e1.4	e5.0	e2.0	e2.0	e.06	e14	e8.0	18	e.90	e1.3
26	e8.0	e.90	e1.1	9.6	e1.5	42	e.05	e9.0	362	22	e1.2	e.90
27	e2.0	e.72	e2.0	91	e1.2	40	e.06	e5.0	1150	28	e2.0	e.70
28	e1.4	e.64	e4.0	107	e1.0	e9.6	e.06	e3.0	508	28	e3.0	e3.0
29	e1.8	e.56	e2.5	286	---	223	e.05	e2.0	141	22	e2.0	e2.0
30	e1.5	e.52	e1.6	487	---	88	24	e3.0	63	18	e1.5	e2.0
31	4.5	---	e1.2	221	---	20	---	e2.5	---	e14	e1.8	---
TOTAL	86.9	102.54	60.58	1413.23	220.7	486.28	99.76	5953.2	2458.90	459.5	684.30	305.59
MEAN	2.80	3.42	1.95	45.6	7.88	15.7	3.33	192	82.0	14.8	22.1	10.2
MAX	14	9.0	6.0	487	55	223	24	2510	1150	39	165	112
MIN	1.3	.52	.39	.60	1.0	.60	.05	2.0	.90	2.0	.90	.30
AC-FT	172	203	120	2800	438	965	198	11810	4880	911	1360	606

CAL YR 1988 TOTAL 3578.40 MEAN 9.78 MAX 229 MIN .39 AC-FT 7100  
WTR YR 1989 TOTAL 12331.48 MEAN 33.8 MAX 2510 MIN .05 AC-FT 24460

e Estimated.

## SAN JACINTO RIVER BASIN

08068900 CYPRESS CREEK AT STUEBNER-AIRLINE ROAD NEAR WESTFIELD, TX

LOCATION.--Lat 30°00'23", long 95°30'42", Harris County, Hydrologic Unit 12040102, on right bank at downstream side of bridge on Stuebner-Airline Road, 1.3 mi upstream from Spring Gully, and 6.5 mi west of Westfield.

DRAINAGE AREA.--248 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1982 to May 1986 and February to September 1987 (gage heights and discharge measurements only), October 1987 to September 1989 (converted to flood hydrograph partial record effective Oct. 1, 1989).

GAGE.--Water-stage recorder and crest stage gage. Datum of gage is 70.00 ft above National Geodetic Vertical Datum of 1929, 1973 adjustment.

REMARKS.--No estimated daily discharges. Records good except those below 100 ft<sup>3</sup>/s, which are fair. Low flow is sustained by sewage effluent from urbanized areas and drainage from irrigated farm land. Several measurements of water temperature were obtained during the year. Stage and rainfall radio-telemetry operated by Harris County Flood Control District at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,910 ft<sup>3</sup>/s Oct. 25, 1984 (gage height, 37.88 ft); maximum gage height, 39.15 ft, May 18, 1989; minimum daily, 4.0 ft<sup>3</sup>/s Apr. 28, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,360 ft<sup>3</sup>/s May 18 at 1430 hours (gage height, 39.15 ft); minimum daily, 5.8 ft<sup>3</sup>/s Dec. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	23	6.0	8.7	122	8.8	31	40	31	138	517	14
2	118	11	6.2	8.8	57	27	20	28	37	91	352	9.5
3	18	13	6.4	10	88	12	16	141	15	68	197	8.0
4	12	13	6.2	8.7	43	13	13	95	10	61	97	7.7
5	9.4	10	6.4	8.0	40	13	12	343	11	53	59	8.9
6	8.2	9.3	6.0	8.3	33	11	12	116	9.3	40	35	8.4
7	7.6	9.8	8.7	8.1	26	9.8	11	49	18	33	30	17
8	7.5	8.3	67	7.7	22	9.3	10	25	53	32	222	73
9	7.6	8.1	27	9.5	22	8.6	11	15	17	36	68	17
10	8.2	10	40	9.8	19	8.9	10	13	13	37	39	8.9
11	8.2	14	38	8.5	14	8.6	14	11	11	38	27	164
12	7.4	11	17	18	19	8.9	13	15	11	25	17	54
13	7.3	15	13	172	15	10	58	51	9.5	19	12	296
14	6.8	11	11	84	15	7.9	33	272	379	18	9.8	205
15	7.1	8.8	11	23	14	6.1	16	65	102	20	8.0	128
16	7.3	9.4	9.5	16	32	6.3	12	66	82	17	10	63
17	8.7	13	9.2	13	13	6.7	12	652	44	16	9.5	29
18	7.2	11	10	57	15	6.6	11	5600	24	13	36	18
19	7.2	10	9.6	117	12	7.0	12	3650	16	11	62	14
20	7.5	11	6.4	231	27	22	11	1310	13	10	22	12
21	7.7	9.2	5.8	84	22	60	10	392	9.1	12	16	11
22	7.6	9.4	40	47	14	72	9.2	174	8.3	18	9.9	11
23	7.9	8.8	23	27	10	23	9.3	89	20	20	8.8	11
24	8.3	7.9	10	15	9.0	13	9.7	59	25	22	8.1	10
25	7.7	7.5	8.3	16	9.1	11	8.5	40	51	241	7.8	13
26	30	7.8	7.4	27	9.7	194	8.1	30	1400	59	7.9	11
27	12	6.9	13	170	9.7	155	8.2	21	3510	41	9.0	9.5
28	7.2	6.5	27	143	8.9	45	7.8	16	1270	47	9.5	9.5
29	8.4	7.2	11	638	---	564	7.9	14	353	37	8.8	9.6
30	7.3	6.3	9.6	581	---	175	254	14	153	29	13	9.5
31	104	---	9.6	299	---	63	---	11	---	21	23	---
TOTAL	492.3	307.2	479.3	2874.1	740.4	1586.5	670.7	13417	7705.2	1323	1951.1	1260.5
MEAN	15.9	10.2	15.5	92.7	26.4	51.2	22.4	433	257	42.7	62.9	42.0
MAX	118	23	67	638	122	564	254	5600	3510	241	517	296
MIN	6.8	6.3	5.8	7.7	8.9	6.1	7.8	11	8.3	10	7.8	7.7
AC-FT	976	609	951	5700	1470	3150	1330	26610	15280	2620	3870	2500
CAL YR 1988	TOTAL	10369.4	MEAN	28.3	MAX	479	MIN	4.0	AC-FT	20570		
WTR YR 1989	TOTAL	32807.3	MEAN	89.9	MAX	5600	MIN	5.8	AC-FT	65070		

## 08069000 CYPRESS CREEK NEAR WESTFIELD, TX

LOCATION.--Lat 30°02'08", long 95°25'43", Harris County, Hydrologic Unit 12040102, on left bank at downstream side of downstream bridge on Interstate Highway 45 and U.S. Highway 75, 0.9 mi upstream from Senger Gully, 1.8 mi northwest of Westfield, 2.0 mi upstream from Missouri Pacific Railroad Co. bridge, and 11.0 mi upstream from mouth.

DRAINAGE AREA.--285 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1944 to current year.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 63.89 ft above National Geodetic Vertical Datum of 1929; unadjusted for land-surface subsidence. Prior to Mar. 17, 1951, water-stage recorder at upstream side of bridge at datum 12.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. No large diversions upstream from station. Low flow is maintained by sewage effluent. Channel below gage was rectified in 1950-51, 1975, and 1981. Harris County Flood Control District stage and rainfall radio-telemetry located at station.

AVERAGE DISCHARGE.--45 years, 162 ft<sup>3</sup>/s (117,400 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,100 ft<sup>3</sup>/s Oct. 8, 1949 (gage height, 33.44 ft) present datum, from rating curve extended above 11,000 ft<sup>3</sup>/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1875, 34 ft May 1929 (discharge, 26,000 ft<sup>3</sup>/s), present datum, from information by local resident. Flood in November 1940 reached a stage of about 32 ft, present datum (discharge, 15,000 ft<sup>3</sup>/s), from information by State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,400 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 18	1500	*12,400	*31.25	June 27	0400	9,410	29.51

Minimum daily discharge, 15 ft<sup>3</sup>/s Jan. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	56	25	17	150	21	49	59	18	157	678	32
2	140	28	28	17	77	63	34	40	92	143	605	25
3	42	26	27	20	135	26	29	166	24	108	222	23
4	28	29	28	18	65	26	25	141	18	71	121	22
5	25	25	34	16	61	25	24	594	17	59	78	25
6	24	24	27	16	53	23	23	165	17	42	51	24
7	23	25	35	15	45	20	22	80	20	40	44	32
8	22	24	112	16	37	20	23	47	168	49	362	237
9	23	23	70	21	35	19	25	33	27	32	113	78
10	24	24	95	23	33	18	24	28	20	65	51	23
11	24	27	96	20	29	19	23	27	19	60	38	176
12	22	23	43	42	36	19	26	31	19	36	28	184
13	22	26	33	274	28	21	93	79	19	30	24	360
14	21	26	32	155	27	21	71	436	916	28	22	396
15	22	24	33	50	25	19	33	83	125	28	20	164
16	23	26	30	36	44	20	25	84	95	27	22	94
17	26	29	28	28	27	20	24	932	53	27	22	52
18	23	31	30	96	28	19	24	9990	32	24	66	34
19	22	27	33	153	26	25	22	7380	24	23	79	28
20	22	31	26	329	48	79	25	2370	21	22	36	24
21	23	25	25	109	45	132	22	546	18	23	27	22
22	22	28	79	74	26	164	21	206	18	30	22	22
23	23	28	58	55	22	44	21	103	36	30	20	21
24	24	22	23	38	20	22	22	65	36	45	20	21
25	23	20	18	41	20	18	21	43	111	280	22	23
26	40	31	17	76	22	308	20	31	1820	186	22	21
27	40	27	32	226	24	309	20	25	7710	75	24	19
28	24	28	54	145	21	70	22	21	2610	62	26	19
29	24	25	21	886	---	884	20	19	653	69	24	22
30	23	25	18	668	---	213	390	19	276	52	25	20
31	140	---	19	309	---	88	---	17	---	42	38	---
TOTAL	1016	813	1229	3989	1209	2775	1223	23860	15032	1965	2952	2243
MEAN	32.8	27.1	39.6	129	43.2	89.5	40.8	770	501	63.4	95.2	74.8
MAX	140	56	112	886	150	884	390	9990	7710	280	678	396
MIN	21	20	17	15	20	18	20	17	17	22	20	19
AC-FT	2020	1610	2440	7910	2400	5500	2430	47330	29820	3900	5860	4450

CAL YR 1988	TOTAL	18209	MEAN	49.8	MAX	767	MIN	17	AC-FT	36120
WTR YR 1989	TOTAL	58306	MEAN	160	MAX	9990	MIN	15	AC-FT	115600



08069000 CYPRESS CREEK NEAR WESTFIELD, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: March 1959 to April 1964, October 1977 to June 1978, August 1983 to current year. Chemical, biochemical, and pesticide analyses: August 1983 to current year. Sediment analyses: October 1976 to September 1979. October 1986 to current year.

INSTRUMENTATION.--Stage-activated water sampler since October 1984 provides water-quality samples over selected runoff events.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DTS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)
OCT											
12...	1200	22	867	8.00	22.0	--	--	8.0	91	--	--
NOV											
01...	1443	44	489	7.80	20.0	--	--	7.2	78	--	--
JAN											
09...	1018	16	816	7.80	15.5	13	3.9	9.4	92	1.8	120
19...	1258	168	442	7.90	15.5	--	--	9.2	92	4.0	700
JAN											
29-29	1030	1410	145	--	--	--	--	--	--	--	--
29...	1155	1200	--	--	--	--	--	--	--	--	--
29...	1640	1710	--	--	--	--	--	--	--	--	--
29...	2230	1130	--	--	--	--	--	--	--	--	--
30...	0758	678	--	--	--	--	--	--	--	--	--
31...	1459	274	--	--	--	--	--	--	--	--	--
MAR											
29...	0312	1580	--	--	12.0	--	--	--	--	--	--
29...	0436	1680	--	--	12.0	--	--	--	--	--	--
29...	0607	1630	--	--	12.0	--	--	--	--	--	--
29...	0954	1240	--	--	12.5	--	--	--	--	--	--
29...	1340	803	--	--	12.5	--	--	--	--	--	--
MAY											
05...	0809	859	--	--	25.0	--	--	--	--	--	--
05...	1032	1030	--	--	25.0	--	--	--	--	--	--
05...	1655	714	--	--	25.0	--	--	--	--	--	--
05...	2138	408	--	--	25.0	--	--	--	--	--	--
JUL											
13...	0735	28	557	7.40	29.5	--	--	5.6	73	--	--
27...	0734	57	384	7.10	25.5	--	--	6.2	75	--	--
AUG											
01-02	1300	1230	157	--	--	--	--	--	--	--	--
07...	1026	43	453	7.60	30.0	--	--	6.2	81	--	--
24...	0835	18	699	7.70	29.5	--	--	6.2	81	--	--
SEP											
05...	0920	23	760	8.40	29.0	18	10	6.4	83	2.0	3700
21...	1420	20	730	7.70	26.5	--	--	7.8	96	--	--

[illegible]

SAN JACINTO RIVER BASIN

67

08069000 CYPRESS CREEK NEAR WESTFIELD, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	RESIDUE VOLATILE, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
OCT 12...	--	--	--	--	--	9.92	9.83	0.080	0.070	10.0	9.90
NOV 01...	--	--	--	--	--	4.04	4.04	0.060	0.060	4.10	4.10
JAN 09...	0.40	22	466	8	<1	9.86	5.47	0.140	0.130	10.0	5.60
JAN 19...	--	--	--	--	--	3.65	3.75	0.050	0.050	3.70	3.80
JAN 29-29	--	--	--	--	--	0.640	0.640	0.060	0.010	0.700	0.650
JAN 29...	--	--	--	--	--	--	--	--	--	--	--
JAN 29...	--	--	--	--	--	--	--	--	--	--	--
JAN 29...	--	--	--	--	--	--	--	--	--	--	--
JAN 30...	--	--	--	--	--	--	--	--	--	--	--
JAN 31...	--	--	--	--	--	--	--	--	--	--	--
MAR 29...	--	--	--	--	--	--	--	--	--	--	--
MAR 29...	--	--	--	--	--	--	--	--	--	--	--
MAR 29...	--	--	--	--	--	--	--	--	--	--	--
MAR 29...	--	--	--	--	--	--	--	--	--	--	--
MAR 29...	--	--	--	--	--	--	--	--	--	--	--
MAY 05...	--	--	--	--	--	--	--	--	--	--	--
MAY 05...	--	--	--	--	--	--	--	--	--	--	--
MAY 05...	--	--	--	--	--	--	--	--	--	--	--
MAY 05...	--	--	--	--	--	--	--	--	--	--	--
JUL 13...	--	--	--	--	--	4.13	4.04	0.070	0.060	4.20	4.10
JUL 27...	--	--	--	--	--	2.14	2.16	0.060	0.040	2.20	2.20
AUG 01-02	--	--	--	--	--	0.730	0.710	0.070	0.050	0.800	0.760
AUG 07...	--	--	--	--	--	3.66	3.47	0.040	0.030	3.70	3.50
AUG 24...	--	--	--	--	--	6.35	5.45	0.050	0.050	6.40	5.50
SEP 05...	0.50	21	447	24	<1	6.97	5.77	0.130	0.130	7.10	5.90
SEP 21...	--	--	--	--	--	8.11	6.01	0.090	0.090	8.20	6.10
DATE	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA, DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT 12...	0.110	0.090	1.5	1.5	1.6	1.6	6.30	6.20	--	--	--
NOV 01...	0.220	0.250	1.3	1.2	1.4	1.5	3.60	3.50	--	--	--
JAN 09...	0.240	0.230	0.86	1.1	1.3	1.1	7.00	7.00	6.4	--	--
JAN 19...	0.220	0.240	1.3	1.8	2.0	1.5	3.00	2.90	13	--	--
JAN 29-29	0.210	0.171	1.8	1.8	2.0	2.0	0.840	0.710	--	--	--
JAN 29...	--	--	--	--	--	--	--	--	--	1920	6220
JAN 29...	--	--	--	--	--	--	--	--	--	954	4400
JAN 29...	--	--	--	--	--	--	--	--	--	723	2210
JAN 29...	--	--	--	--	--	--	--	--	--	748	1370
JAN 31...	--	--	--	--	--	--	--	--	--	168	124
MAR 29...	--	--	--	--	--	--	--	--	--	2190	9340
MAR 29...	--	--	--	--	--	--	--	--	--	1670	7580
MAR 29...	--	--	--	--	--	--	--	--	--	1730	7610
MAR 29...	--	--	--	--	--	--	--	--	--	916	3070
MAR 29...	--	--	--	--	--	--	--	--	--	615	1330
MAY 05...	--	--	--	--	--	--	--	--	--	685	1590
MAY 05...	--	--	--	--	--	--	--	--	--	909	2530
MAY 05...	--	--	--	--	--	--	--	--	--	363	700
MAY 05...	--	--	--	--	--	--	--	--	--	223	246
JUL 13...	0.130	0.130	2.2	1.6	1.7	2.3	4.10	3.50	--	--	--
JUL 27...	0.160	0.120	1.4	1.5	1.6	1.6	2.40	2.10	--	--	--
AUG 01-02	0.100	0.100	1.0	0.80	0.90	1.1	0.730	0.720	--	--	--
AUG 07...	0.060	0.060	1.4	1.3	1.4	1.5	2.70	--	--	--	--
AUG 24...	0.090	0.090	1.1	1.0	1.1	1.2	4.90	4.60	--	--	--
SEP 05...	0.120	0.140	1.3	0.96	1.1	1.4	5.30	4.10	5.8	--	--
SEP 21...	0.070	0.060	0.93	0.94	1.0	1.0	1.10	1.00	--	--	--

## SAN JACINTO RIVER BASIN

08069000 CYPRESS CREEK NEAR WESTFIELD, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)
OCT 12...	--	--	--	--	--	--	--	--	--	--	--
NOV 01...	--	--	--	--	--	--	--	--	--	--	--
JAN 09...	--	--	--	--	--	--	--	--	--	--	--
JAN 19...	--	--	--	--	--	--	--	--	--	--	--
JAN 29-29	--	--	--	--	--	--	--	--	--	--	--
JAN 29...	17	20	23	30	36	44	64	95	100	--	--
JAN 29...	26	27	31	38	45	52	68	97	99	--	--
JAN 29...	24	27	29	34	38	46	55	95	100	--	--
JAN 30...	36	38	42	44	48	53	65	96	100	--	--
JAN 31...	57	61	69	74	81	87	91	99	100	--	--
MAR 29...	16	17	20	25	33	44	64	98	100	--	--
MAR 29...	25	26	33	40	50	59	76	98	100	--	--
MAR 29...	22	25	29	35	40	45	57	95	100	--	--
MAR 29...	33	35	38	46	50	54	72	98	100	--	--
MAR 29...	28	30	34	36	41	48	61	97	100	--	--
MAY 05...	22	23	28	31	40	50	71	96	100	--	--
MAY 05...	28	30	34	40	47	53	70	96	100	--	--
MAY 05...	39	42	47	49	55	62	84	88	99	--	--
MAY 05...	42	44	49	54	58	63	73	97	99	--	--
JUL 13...	--	--	--	--	--	--	--	--	--	--	--
JUL 27...	--	--	--	--	--	--	--	--	--	--	--
AUG 01-02	--	--	--	--	--	--	--	--	--	--	--
AUG 07...	--	--	--	--	--	--	--	--	--	--	--
AUG 24...	--	--	--	--	--	--	--	--	--	--	--
SEP 05...	--	--	--	--	--	--	--	--	--	5	110
SEP 21...	--	--	--	--	--	--	--	--	--	--	--

DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 12...	--	--	--	--	--	--	--	--	--	--
NOV 01...	--	--	--	--	--	--	--	--	--	--
JAN 09...	--	--	--	25	--	8	--	--	--	--
JAN 19...	--	--	--	--	--	--	--	--	--	--
JAN 29-29	--	--	--	--	--	--	--	--	--	--
JAN 29...	--	--	--	--	--	--	--	--	--	--
JAN 29...	--	--	--	--	--	--	--	--	--	--
JAN 29...	--	--	--	--	--	--	--	--	--	--
JAN 30...	--	--	--	--	--	--	--	--	--	--
JAN 31...	--	--	--	--	--	--	--	--	--	--
MAR 29...	--	--	--	--	--	--	--	--	--	--
MAR 29...	--	--	--	--	--	--	--	--	--	--
MAR 29...	--	--	--	--	--	--	--	--	--	--
MAR 29...	--	--	--	--	--	--	--	--	--	--
MAR 29...	--	--	--	--	--	--	--	--	--	--
MAY 05...	--	--	--	--	--	--	--	--	--	--
MAY 05...	--	--	--	--	--	--	--	--	--	--
MAY 05...	--	--	--	--	--	--	--	--	--	--
MAY 05...	--	--	--	--	--	--	--	--	--	--
JUL 13...	--	--	--	--	--	--	--	--	--	--
JUL 27...	--	--	--	--	--	--	--	--	--	--
AUG 01-02	--	--	--	110	--	<10	--	--	--	--
AUG 07...	--	--	--	--	--	--	--	--	--	--
AUG 24...	--	--	--	--	--	--	--	--	--	--
SEP 05...	2	1	6	14	1	6	<0.1	<1	3.0	22
SEP 21...	--	--	--	120	--	20	--	--	--	--

## SAN JACINTO RIVER MAIN STEM

69

08069500 WEST FORK SAN JACINTO RIVER NEAR HUMBLE, TX

LOCATION.--Lat 30°01'38", long 95°15'27", Harris County, Hydrologic Unit 12040101, near left bank at service road bridge on U.S. Highway 59, 970 ft upstream from Texas and New Orleans Railroad Co. bridge, 0.5 mi downstream from Spring Creek, and 2.5 mi north of Humble.

DRAINAGE AREA.--1,741 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1928 to September 1954, October 1954 to September 1989 (gage heights only; station discontinued). Annual maximum and minimum gage heights only for October 1954 to September 1966 (published with station 08072000, Lake Houston near Sheldon). Published as San Jacinto River near Humble prior to 1938.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 30.53 ft above National Geodetic Vertical Datum of 1929. Prior to July 17, 1933, nonrecording gage at site 1,800 ft downstream at same datum. July 17, 1933 to Mar. 5, 1939, nonrecording gage at present site and datum.

REMARKS.--No gage-height record Dec. 1 to Feb. 24, Apr. 19 to May 17, and June 6-29. Water surface below intakes on many other days. Station discontinued as a streamflow station Sept. 30, 1954, due to backwater from Lake Houston. No large diversion above station. Gage-height telemeter at station.

AVERAGE DISCHARGE.--26 years (water years 1929-54), 1,097 ft<sup>3</sup>/s (794,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--1928-54: Maximum discharge, 187,000 ft<sup>3</sup>/s May 31, 1929, Nov. 25, 26, 1940; maximum gage height, 32.7 ft May 31, 1929, Nov. 26, 1940, present site and datum, both affected by backwater from East Fork San Jacinto River; minimum discharge, 11 ft<sup>3</sup>/s Aug. 31, Sept. 1, 2, 1951.  
1954-88: Maximum gage height since first appreciable storage at Lake Houston, 25.15 ft Apr. 19, 1979; minimum since first appreciable storage at Lake Houston, 5.5 ft Dec. 12, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1865, occurred in September 1900, May 31, 1929, and Nov. 25, 26, 1940, and all reached about the same stage, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 25.09 ft May 18 at 2400 hours; minimum not recorded.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	12.79	15.91	---	13.00	15.33	13.18	---
2	---	---	---	---	---	12.91	15.10	---	12.98	14.80	13.72	---
3	---	---	---	---	---	12.98	13.91	---	13.06	14.65	13.83	---
4	---	---	---	---	---	12.96	13.47	---	13.01	14.32	13.60	---
5	---	---	---	---	---	12.68	13.27	---	12.95	14.11	13.32	---
6	---	---	---	---	---	12.47	13.13	---	---	13.88	13.18	---
7	---	---	---	---	---	12.48	13.11	---	---	13.80	13.09	---
8	---	---	---	---	---	12.53	13.05	---	---	13.94	13.17	11.39
9	---	---	---	---	---	12.51	13.03	---	---	13.93	13.13	11.77
10	---	---	---	---	---	12.53	12.90	---	---	13.67	12.90	11.07
11	---	---	---	---	---	12.52	12.82	---	---	13.51	12.75	11.07
12	---	---	---	---	---	12.50	12.75	---	---	13.35	12.61	12.15
13	---	---	---	---	---	12.51	12.74	---	---	13.22	12.31	11.65
14	---	---	---	---	---	12.53	12.80	---	---	13.10	11.86	12.39
15	---	---	---	---	---	12.49	12.92	---	---	13.07	11.47	12.02
16	---	---	---	---	---	12.49	13.13	---	---	12.99	11.39	11.39
17	---	---	---	---	---	12.52	13.16	---	---	12.98	11.30	11.21
18	---	---	---	---	---	12.47	13.13	25.09	---	12.95	11.26	11.14
19	---	---	---	---	---	12.48	---	24.98	---	12.90	11.48	11.09
20	---	---	---	---	---	12.47	---	21.70	---	12.85	11.37	11.07
21	---	---	---	---	---	12.46	---	17.66	---	12.82	11.29	---
22	---	---	---	---	---	12.54	---	15.59	---	12.81	11.23	---
23	---	---	---	---	---	12.65	---	14.79	---	12.84	11.18	---
24	---	---	---	---	---	12.85	---	14.35	---	12.80	11.23	---
25	---	---	---	---	12.83	13.04	---	13.79	---	12.91	11.22	---
26	---	---	---	---	12.83	13.55	---	13.46	---	12.95	11.15	---
27	---	---	---	---	12.82	13.68	---	13.28	---	12.96	11.13	---
28	---	---	---	---	12.80	13.65	---	13.19	---	13.05	---	---
29	---	---	---	---	---	13.95	---	13.15	---	12.97	---	---
30	---	---	---	---	---	13.93	---	13.13	15.98	12.96	---	---
31	---	---	---	---	---	15.79	---	13.09	---	12.91	---	---
MAX	---	---	---	---	---	15.79	---	---	---	15.33	---	---



## SAN JACINTO RIVER BASIN

08070000 EAST FORK SAN JACINTO RIVER NEAR CLEVELAND, TX

LOCATION.--Lat 30°20'11", long 95°06'14", Liberty County, Hydrologic Unit 12040103, near left bank at downstream side of bridge on State Highway 105, 1,880 ft downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 1.2 mi west of Cleveland, and 4.3 mi downstream from Winter Creek.

DRAINAGE AREA.--325 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1939 to current year.

GAGE.--Water-stage recorder. Datum of gage is 107.98 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 13, 1955, at site 1,800 ft upstream at datum 5.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. There are no large diversions above station. Rain gage and gage-height telemeter at station.

AVERAGE DISCHARGE.--50 years, 228 ft<sup>3</sup>/s (9.53 in/yr), 165,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 59,000 ft<sup>3</sup>/s Nov. 24, 1940 (gage height, 24.1 ft), present site and datum, from rating curve extended above 27,000 ft<sup>3</sup>/s; minimum daily, 3.0 ft<sup>3</sup>/s Aug. 23, 24, Sept. 27, 28, 1956. Maximum stage since at least 1900, that of Nov. 24, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 5, 1935, reached a stage of 23.6 ft (discharge, 53,500 ft<sup>3</sup>/s), present site and datum, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 19	0200	*9,360	*18.62	July 1	2400	3,990	15.75

Minimum discharge, 10 ft<sup>3</sup>/s Oct. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	20	18	45	1480	60	663	40	53	3680	59	23
2	19	21	19	40	1370	87	261	37	56	3640	81	22
3	14	18	19	35	395	215	167	53	67	3150	82	21
4	14	17	19	33	206	338	134	140	56	2670	67	21
5	13	16	20	31	179	220	113	433	51	1280	69	20
6	12	15	18	29	174	138	98	557	55	626	60	20
7	11	14	20	29	133	106	87	518	61	985	50	20
8	12	13	21	28	111	86	81	321	52	1080	46	24
9	14	15	27	27	100	74	74	128	47	960	44	23
10	14	17	52	28	91	66	68	85	40	851	40	22
11	13	21	72	31	86	61	64	67	37	339	36	26
12	13	30	95	35	84	58	62	57	57	213	36	46
13	12	28	106	60	91	55	59	56	59	154	37	54
14	11	25	74	225	88	54	121	307	118	122	33	32
15	11	21	49	516	89	51	157	784	219	106	32	36
16	12	19	37	391	99	49	102	774	135	94	32	31
17	12	19	31	172	114	47	93	455	99	83	34	27
18	12	20	27	147	107	46	79	4830	62	73	38	24
19	12	21	26	414	116	44	84	7470	45	65	38	23
20	12	24	26	631	104	46	86	4740	37	59	35	22
21	12	24	25	539	135	70	65	3110	31	53	31	21
22	12	21	34	443	138	360	55	1180	27	48	29	20
23	12	20	28	205	128	616	49	314	25	45	28	19
24	11	20	29	118	99	590	45	199	27	44	28	19
25	11	20	28	92	80	276	42	146	29	67	27	19
26	12	24	26	92	71	304	41	116	54	73	27	19
27	14	22	26	176	67	1220	38	96	1410	92	26	19
28	20	22	30	191	64	980	37	83	1930	78	25	19
29	20	20	44	362	---	1130	37	72	2200	77	24	19
30	19	19	40	926	---	1320	38	64	2910	76	23	19
31	20	---	52	1140	---	1210	---	58	---	59	23	---
TOTAL	420	606	1138	7231	5999	9977	3100	27290	10049	20942	1240	730
MEAN	13.5	20.2	36.7	233	214	322	103	880	335	676	40.0	24.3
MAX	20	30	106	1140	1480	1320	663	7470	2910	3680	82	54
MIN	11	13	18	27	64	44	37	37	25	44	23	19
AC-FT	833	1200	2260	14340	11900	19790	6150	54130	19930	41540	2460	1450
CFSM	.04	.06	.11	.72	.66	.99	.32	2.71	1.03	2.08	.12	.07
IN.	.05	.07	.13	.83	.69	1.14	.35	3.12	1.15	2.40	.14	.08
CAL YR 1988	TOTAL	28312	MEAN	77.4	MAX	1510	MIN	10	AC-FT	56160	CFSM	.24
WTR YR 1989	TOTAL	88722	MEAN	243	MAX	7470	MIN	11	AC-FT	176000	CFSM	.75
											IN.	10.16

## SAN JACINTO RIVER BASIN

71

08070000 EAST FORK SAN JACINTO RIVER NEAR CLEVELAND, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: September 1961 to April 1964, January 1968 to September 1989 (discontinued).  
 Biochemical analyses: August 1983 to September (discontinued). Pesticide analyses: January to August 1984.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

		DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML)	
JAN 11...	0820	31	205	6.80	13.0	40	6.0	9.8	92	0.7	88	56	
20...	0815	648	147	7.10	12.0	110	86	9.4	86	3.6	2500	4600	
SEP 06...	1054	20	190	7.20	28.0	25	7.7	6.7	85	0.9	K12	170	
DATE		HARD-NESS TOTAL (MG/L AS CAC03)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CAC03	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SI02)
JAN 11...	42	16	13	2.3	21	1	2.0	26	6.1	39	0.10	14	
20...	--	--	--	--	--	--	--	--	--	--	--	--	
SEP 06...	38	12	12	2.0	21	2	1.3	26	2.0	38	0.10	13	
DATE		SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	
JAN 11...	113	6	3	--	<0.010	<0.100	0.020	0.080	0.28	0.30	0.040	5.1	
20...	--	124	14	0.080	0.020	0.100	0.080	0.92	1.0	0.130	18		
SEP 06...	105	17	<1	--	0.010	<0.100	0.020	0.28	0.30	0.050	3.3		

## SAN JACINTO RIVER BASIN

08070200 EAST FORK SAN JACINTO RIVER NEAR NEW CANEY, TX

LOCATION.--Lat 30°08'43", long 95°06'14", Montgomery County, Hydrologic Unit 12040103, on right bank at downstream side of bridge on Farm Road 1485, 1.0 mi upstream from Church-House Gully, 5.5 mi east of New Caney, and 5.9 mi upstream from Caney Creek.

DRAINAGE AREA.--388 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1952-58, 1969-76, 1983-84, May 1984 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 43.98 ft above National Geodetic Vertical Datum of 1929 (from Texas Highway Department bench mark).

REMARKS.--Records good except those for estimated daily discharges, which are poor. There are no known diversions. Stage and rainfall radio-telemetry owned by Harris County Flood Control District located at station.

AVERAGE DISCHARGE.--5 years, 286 ft<sup>3</sup>/s (10.01 in/yr), 207,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,100 ft<sup>3</sup>/s May 19, 1989 (gage height, 24.67 ft) from rating curve extended above 6,200 ft<sup>3</sup>/s on basis of velocity-area study; minimum, 13 ft<sup>3</sup>/s Oct. 15-17, 1988.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1973 reached a stage of 29.6 ft, from floodmark on left bank, identified by local resident. Flood in November 1940 may have been slightly higher.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,600 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 19	0600	*16,100	*24.67	July 3	Unknown	4,000	unknown

Minimum discharge, 13 ft<sup>3</sup>/s Oct. 15-17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	17	23	20	49	888	70	1080	49	78	3090	72	27		
2	18	23	19	47	1140	79	625	47	71	e2800	85	28		
3	24	23	19	44	1160	104	272	46	71	e3700	97	27		
4	16	22	20	39	398	203	189	65	81	e3600	91	27		
5	15	20	20	37	206	273	152	212	74	e3000	75	26		
6	15	19	20	35	175	191	129	429	71	e2300	72	26		
7	14	18	21	33	161	136	111	469	68	e1300	67	27		
8	14	17	20	32	130	111	101	427	73	e1200	61	26		
9	14	16	21	31	113	94	91	272	64	e1200	56	26		
10	14	17	26	31	102	83	81	141	59	e1100	52	28		
11	17	18	50	31	93	76	76	94	51	771	49	36		
12	15	20	61	33	89	72	72	73	47	e360	46	42		
13	15	25	82	40	87	68	70	65	62	238	44	40		
14	14	27	93	63	91	66	86	106	116	179	48	54		
15	14	26	76	184	109	64	225	305	155	146	43	36		
16	13	22	54	389	116	62	174	593	192	126	40	35		
17	13	19	42	305	141	61	121	637	143	112	39	34		
18	14	19	36	162	e128	59	106	6510	111	99	39	31		
19	14	19	33	196	119	57	93	e12800	78	89	41	28		
20	14	21	32	374	128	e55	105	e7500	58	81	42	27		
21	14	21	32	497	128	e60	95	e5500	48	75	41	26		
22	14	25	32	443	150	e130	77	e2500	42	69	38	25		
23	14	22	37	347	e150	e330	67	e1000	37	65	36	24		
24	14	21	40	181	e130	502	60	e400	36	61	34	23		
25	14	20	32	117	e108	473	56	e250	38	59	33	23		
26	14	20	32	95	e86	256	53	176	174	73	32	23		
27	14	22	32	116	e78	572	51	146	3560	83	31	23		
28	17	24	31	183	73	1100	49	123	2250	100	30	23		
29	22	22	31	196	---	1020	47	108	1970	87	29	23		
30	24	22	41	413	---	1070	50	96	2790	86	28	23		
31	22	---	42	717	---	1200	---	86	---	85	27	---		
TOTAL	487	633	1147	5460	6477	8697	4564	41225	12668	26334	1518	867		
MEAN	15.7	21.1	37.0	176	231	281	152	1330	422	849	49.0	28.9		
MAX	24	27	93	717	1160	1200	1080	12800	3560	3700	97	54		
MIN	13	16	19	31	73	55	47	46	36	59	27	23		
AC-FT	966	1260	2280	10830	12850	17250	9050	81770	25130	52230	3010	1720		
CFSM	.04	.05	.10	.45	.60	.72	.39	3.43	1.09	2.19	.13	.07		
IN.	.05	.06	.11	.52	.62	.83	.44	3.95	1.21	2.52	.15	.08		
CAL YR 1988	TOTAL	32823	MEAN	89.7	MAX	1450	MIN	13	AC-FT	65100	CFSM	.23	IN.	3.15
WTR YR 1989	TOTAL	110077	MEAN	302	MAX	12800	MIN	13	AC-FT	218300	CFSM	.78	IN.	10.55

e Estimated





## SAN JACINTO RIVER BASIN

08070200 EAST FORK SAN JACINTO RIVER NEAR NEW CANEY, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	FLUORIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	RESIDUE VOLATILE, TILE, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
OCT 12...	--	--	--	--	--	0.190	--	0.010	<0.010	0.200	0.270
NOV 02...	--	--	--	--	--	0.390	--	0.010	<0.010	0.400	0.160
JAN 10...	0.10	13	153	13	<1	--	--	<0.010	<0.010	0.300	0.290
JAN 20...	--	--	--	--	--	0.190	--	0.010	<0.010	0.200	0.210
MAY 17-19	--	--	--	--	--	0.079	0.120	0.021	0.010	0.100	0.130
JUL 13...	--	--	--	--	--	0.070	--	0.030	<0.010	0.100	0.150
JUL 28...	--	--	--	--	--	0.190	--	0.010	<0.010	0.200	0.190
AUG 08...	--	--	--	--	--	--	--	<0.010	<0.010	0.100	0.110
AUG 24...	--	--	--	--	--	--	--	<0.010	<0.010	0.200	0.180
SEP 05...	0.10	13	128	14	<1	0.280	--	0.020	<0.010	0.300	0.260
SEP 22...	--	--	--	--	--	--	--	<0.010	<0.010	0.200	0.200

DATE	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)
OCT 12...	<0.010	0.010	--	0.39	0.40	0.40	0.140	0.140	--	--	--
NOV 02...	<0.010	0.010	--	0.29	0.30	0.30	0.200	0.160	--	--	--
JAN 10...	0.040	0.030	0.26	--	<0.20	0.30	0.170	0.110	5.4	--	--
JAN 20...	0.070	0.080	0.73	0.72	0.80	0.80	0.150	0.120	15	--	--
MAY 17-19	0.070	0.070	1.7	1.4	1.5	1.8	0.080	0.080	--	--	--
JUL 13...	0.080	0.080	0.92	0.82	0.90	1.0	0.100	0.040	--	--	--
JUL 28...	0.020	0.010	0.28	0.29	0.30	0.30	0.090	0.030	--	--	--
AUG 08...	0.030	0.030	0.47	0.47	0.50	0.50	0.090	0.040	--	--	--
AUG 24...	0.020	0.020	0.38	0.28	0.30	0.40	0.100	0.040	--	--	--
SEP 05...	0.020	0.030	0.28	0.17	0.20	0.30	0.120	0.060	4.0	<1	72
SEP 22...	0.020	0.010	0.38	0.39	0.40	0.40	0.120	0.060	--	--	--

DATE	CADMIUM, DIS- SOLVED (UG/L AS CD)	CHROMIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGANESE, DIS- SOLVED (UG/L AS MN)	MERCURY, DIS- SOLVED (UG/L AS HG)	SELENIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 12...	--	--	--	--	--	--	--	--	--	--
NOV 02...	--	--	--	--	--	--	--	--	--	--
JAN 10...	--	--	--	120	--	50	--	--	--	--
JAN 20...	--	--	--	--	--	--	--	--	--	--
MAY 17-19	--	--	--	210	--	10	--	--	--	--
JUL 13...	--	--	--	--	--	--	--	--	--	--
JUL 28...	--	--	--	--	--	--	--	--	--	--
AUG 08...	--	--	--	--	--	--	--	--	--	--
AUG 24...	--	--	--	--	--	--	--	--	--	--
SEP 05...	1	<1	1	92	<1	88	<0.1	<1	2.0	8
SEP 22...	--	--	--	130	--	70	--	--	--	--

## SAN JACINTO RIVER BASIN

75

08070200 EAST FORK SAN JACINTO RIVER NEAR NEW CANEY, TX--Continued

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1988 TO SEPTEMBER 1989

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. 1988	487	212	125	165	37	49	12	16	48
NOV. 1988	633	193	116	199	33	56	13	22	46
DEC. 1988	1147	229	130	403	43	135	8.7	27	47
JAN. 1989	5460	163	100	1480	26	386	12	183	41
FEB. 1989	6477	119	75	1320	18	310	11	189	32
MAR. 1989	8697	194	116	2730	33	779	12	284	46
APR. 1989	4564	201	119	1470	35	432	12	144	46
MAY 1989	41225	42	28	3130	5.4	597	5.0	553	13
JUNE 1989	12668	70	47	1600	8.9	305	8.3	284	21
JULY 1989	26334	83	55	3930	11	775	9.5	676	25
AUG. 1989	1518	201	119	489	35	143	12	48	47
SEPT 1989	867	199	119	278	34	80	12	29	47
TOTAL	110077	**	**	17200	**	4050	**	2450	**
WTD.AVG.	302	91	58	**	14	**	8.3	**	25

## SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	243	203	217	230	192	205	228	186	205	265	215	227
2	249	201	217	219	181	200	247	186	218	229	212	221
3	249	202	219	219	179	192	238	202	215	232	210	223
4	224	198	210	212	173	187	236	186	210	241	216	231
5	247	196	212	205	173	186	260	186	213	243	213	224
6	229	191	207	211	175	190	237	202	216	276	247	262
7	219	188	202	211	175	188	225	188	206	275	255	265
8	219	183	200	235	171	186	207	185	194	271	250	262
9	231	179	206	207	173	185	210	190	201	280	260	270
10	239	182	198	218	176	189	209	189	199	293	267	279
11	226	184	199	210	176	189	215	179	192	312	296	304
12	246	184	202	220	179	188	201	178	188	316	263	294
13	284	187	213	233	180	196	196	146	175	281	237	259
14	246	204	224	240	186	203	155	137	147	245	215	235
15	266	204	230	243	186	203	163	122	141	215	183	199
16	271	205	224	237	180	197	212	166	190	227	173	191
17	281	208	234	214	170	187	316	215	255	183	168	179
18	276	202	228	197	164	178	371	322	350	---	---	170
19	248	204	225	225	156	174	397	373	386	---	---	170
20	253	197	223	193	156	169	399	363	391	---	---	170
21	234	197	212	214	158	175	362	342	349	---	---	165
22	230	194	210	202	162	175	347	319	336	---	---	160
23	257	194	217	236	171	194	317	263	309	---	---	155
24	258	196	220	236	199	217	269	257	264	---	---	150
25	233	196	212	252	196	217	277	251	263	---	---	145
26	232	193	208	261	193	220	260	221	246	---	---	140
27	255	193	208	248	182	208	228	200	214	---	---	140
28	257	193	209	222	183	195	232	204	219	---	---	135
29	220	194	205	215	185	195	250	217	234	---	---	130
30	239	190	205	213	185	195	255	221	238	---	---	125
31	230	192	203	---	---	---	270	236	254	130	109	114
MONTH	284	179	213	261	156	193	399	122	239	316	109	200

08070200 EAST FORK SAN JACINTO RIVER NEAR NEW CANEY, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	135	90	121	252	247	249	---	---	165	306	298	301
2	109	54	77	253	249	250	---	---	175	302	287	294
3	77	42	67	257	243	249	---	---	180	290	273	282
4	79	72	76	251	230	241	---	---	190	279	271	275
5	87	78	83	290	206	253	---	---	200	271	181	228
6	99	88	94	272	252	264	218	213	215	181	153	163
7	108	99	103	251	237	247	230	218	224	163	151	156
8	118	109	113	236	227	232	237	229	233	173	163	170
9	124	118	121	230	227	228	244	237	240	177	169	173
10	127	123	125	235	229	231	250	244	246	183	175	179
11	131	126	128	255	230	235	252	250	251	189	178	183
12	135	129	132	280	236	240	255	252	254	201	188	192
13	144	134	139	242	239	241	256	254	255	214	177	204
14	156	144	149	247	243	246	257	251	253	199	142	178
15	167	156	161	254	247	252	251	143	185	241	117	171
16	172	167	169	257	251	254	185	155	171	136	95	118
17	176	171	173	260	255	258	183	166	173	94	66	91
18	182	174	179	264	255	259	187	170	178	58	24	33
19	190	182	186	272	262	266	221	188	202	24	21	22
20	194	190	192	---	---	250	255	222	242	27	24	25
21	199	193	195	---	---	230	269	255	264	34	24	28
22	210	200	204	---	---	210	259	246	251	46	26	35
23	219	210	214	227	179	201	257	245	251	52	43	49
24	220	217	218	249	197	214	260	254	256	69	52	59
25	259	218	222	231	188	205	275	260	267	75	68	70
26	230	223	225	189	185	187	287	275	281	71	68	69
27	238	230	233	---	---	180	294	287	289	104	69	83
28	247	238	242	---	---	175	296	291	294	116	104	110
29	---	---	---	---	---	170	306	295	299	124	114	119
30	---	---	---	---	---	165	309	298	304	132	124	128
31	---	---	---	---	---	160	---	---	---	134	131	132
MONTH	259	42	155	290	179	227	309	143	233	306	21	139
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	140	133	135	61	53	57	163	141	153	243	236	242
2	147	139	143	58	54	57	177	139	151	238	235	236
3	152	143	148	66	57	62	151	143	147	241	233	236
4	156	148	152	77	68	72	171	153	161	232	230	231
5	156	151	153	93	77	85	183	167	178	231	228	230
6	155	145	149	101	90	95	185	178	183	231	214	226
7	166	155	162	90	79	83	183	175	178	225	221	223
8	169	164	167	89	82	86	184	175	179	224	222	223
9	166	155	162	97	85	92	186	175	181	223	220	221
10	162	153	159	108	97	102	205	185	196	219	217	218
11	150	133	141	116	106	110	223	206	216	221	93	200
12	131	126	130	122	116	120	260	224	238	197	138	177
13	135	128	132	133	120	125	276	259	267	199	188	193
14	133	127	131	161	135	149	267	256	263	208	198	204
15	132	128	130	171	163	166	250	233	241	197	187	189
16	138	131	134	182	167	172	250	238	244	187	181	183
17	134	127	130	188	179	182	248	213	229	184	175	180
18	129	119	127	202	184	188	261	227	245	173	162	167
19	141	120	128	208	177	187	239	221	234	162	156	159
20	146	138	142	205	176	182	223	212	218	173	157	165
21	148	142	145	202	174	188	217	212	214	176	172	174
22	146	142	145	198	159	178	219	214	216	173	167	170
23	143	127	134	195	160	178	218	215	217	180	169	173
24	143	130	135	212	162	185	221	196	211	182	177	179
25	154	140	148	250	202	218	252	174	208	184	179	181
26	168	133	158	251	220	229	262	163	222	193	185	189
27	109	39	55	229	216	223	257	197	226	202	194	197
28	64	50	54	221	186	202	235	163	190	206	199	202
29	61	50	56	184	149	161	279	247	256	206	201	203
30	61	52	57	157	139	143	251	245	247	211	204	207
31	---	---	---	164	153	159	245	242	243	---	---	---
MONTH	169	39	131	251	53	143	279	139	211	243	93	199

## SAN JACINTO RIVER BASIN

77

08070200 EAST FORK SAN JACINTO RIVER NEAR NEW CANEY, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	25.0	23.0	24.0	19.5	18.0	19.0	12.0	10.0	11.5	13.5	11.5	12.5
2	25.0	23.0	24.0	19.5	17.5	18.5	11.5	9.5	11.0	14.5	13.0	13.5
3	23.5	21.0	22.5	20.5	18.0	19.5	12.0	9.5	11.0	16.5	14.5	15.5
4	22.5	20.0	21.5	21.5	19.5	20.5	12.0	9.5	11.0	15.0	13.5	14.5
5	21.5	19.0	20.5	20.5	18.0	19.0	12.0	10.0	11.0	16.5	14.5	15.5
6	21.0	19.0	20.0	18.0	16.0	17.0	11.5	9.5	10.5	18.0	16.0	17.0
7	20.5	18.5	19.5	19.5	16.5	18.0	13.0	11.0	12.0	18.0	17.5	18.0
8	20.5	18.0	19.5	21.0	19.0	20.0	13.5	13.0	13.0	17.5	15.0	16.0
9	20.5	19.0	20.0	21.5	20.0	20.5	13.0	11.0	12.0	14.5	13.5	14.0
10	21.5	19.5	20.5	22.0	20.5	21.5	11.0	11.0	11.0	14.0	13.0	13.5
11	20.0	17.5	19.5	22.0	20.5	21.5	11.0	11.0	11.0	15.0	13.5	14.5
12	20.0	18.0	19.0	22.0	20.5	21.5	11.0	10.0	10.5	16.0	14.5	15.5
13	19.5	17.0	18.5	21.5	19.5	20.5	10.5	9.0	10.0	14.5	12.5	13.0
14	19.0	16.5	18.0	22.5	20.5	21.5	10.5	8.5	9.5	12.5	11.0	12.0
15	19.5	17.5	18.5	22.5	21.0	22.0	12.0	10.0	11.0	11.0	10.0	10.5
16	21.0	18.5	19.5	22.0	18.0	20.0	11.5	10.0	10.5	10.5	9.5	10.0
17	21.0	19.0	20.5	17.5	16.0	17.0	10.5	8.5	9.5	9.5	9.0	9.5
18	21.0	19.5	20.5	20.0	17.5	18.5	10.0	8.0	9.0	---	---	---
19	22.0	20.0	21.0	21.0	19.0	20.5	11.0	8.0	9.5	---	---	---
20	22.0	20.5	21.5	19.0	16.0	17.0	12.0	10.5	11.5	---	---	---
21	22.0	21.0	21.5	15.5	14.0	15.0	13.5	11.5	12.5	---	---	---
22	22.0	20.0	21.0	15.5	14.0	15.0	15.0	13.5	14.5	---	---	---
23	22.5	20.5	21.5	14.0	12.0	13.5	15.0	14.5	14.5	---	---	---
24	22.5	21.0	22.0	14.0	11.5	12.5	16.5	15.0	15.5	---	---	---
25	22.0	20.0	21.0	17.0	14.0	15.5	15.0	13.5	14.5	---	---	---
26	22.5	22.0	22.0	18.0	16.5	17.5	17.0	15.0	16.0	---	---	---
27	22.5	21.0	21.5	16.5	14.5	16.0	18.0	16.5	17.0	---	---	---
28	22.5	21.5	22.0	14.5	12.5	13.5	16.5	13.5	15.0	---	---	---
29	22.0	21.0	21.5	13.5	10.5	12.5	13.0	11.5	12.5	---	---	---
30	20.5	20.0	20.5	14.0	12.5	13.0	13.0	12.5	13.0	---	---	---
31	20.5	19.0	19.5	---	---	---	13.5	12.5	13.0	14.5	14.0	14.0
MONTH	25.0	16.5	21.0	22.5	10.5	18.0	18.0	8.0	12.0	18.0	9.0	14.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	16.0	14.5	15.0	14.5	14.0	14.0	---	---	---	25.5	22.0	23.5
2	17.5	16.0	16.5	15.5	13.0	14.0	---	---	---	25.0	22.0	23.5
3	17.5	14.0	16.0	15.5	14.0	15.0	---	---	---	23.5	22.0	22.5
4	13.5	10.5	12.0	16.0	14.5	15.5	---	---	---	23.0	21.5	22.5
5	10.5	8.5	9.5	14.5	11.0	12.5	---	---	---	22.5	21.5	22.0
6	8.0	6.5	7.5	11.5	9.5	10.5	22.0	19.5	20.5	22.5	20.5	21.5
7	6.5	5.5	6.0	11.0	8.5	9.5	22.0	19.0	20.5	22.5	21.0	22.0
8	6.5	5.0	5.5	11.5	8.5	10.0	23.0	20.0	21.5	23.5	21.5	22.5
9	7.5	5.0	6.0	12.5	9.0	10.5	22.0	19.5	21.0	24.5	22.5	23.5
10	8.5	5.5	7.0	13.5	9.5	11.5	19.5	17.5	18.5	25.0	23.5	24.0
11	9.0	7.5	8.5	15.0	10.5	13.0	19.0	15.5	17.5	24.5	22.0	23.0
12	12.0	9.0	10.5	17.5	12.5	15.0	17.0	15.5	16.0	22.5	21.5	22.0
13	14.0	12.0	13.0	22.0	14.0	17.5	16.5	15.0	16.0	24.5	21.0	22.5
14	16.5	14.0	15.5	25.5	18.0	21.0	16.5	15.5	16.0	23.5	21.0	22.0
15	18.5	16.5	17.5	22.0	17.0	19.5	18.0	15.5	16.5	24.0	22.0	23.0
16	18.0	16.5	17.5	23.0	15.0	19.0	19.5	16.5	17.5	23.0	22.0	22.5
17	16.5	15.5	16.0	26.5	18.5	21.5	20.5	17.5	19.0	24.0	23.0	23.5
18	15.5	13.5	14.5	26.5	17.5	21.5	22.0	19.5	20.5	23.0	21.5	22.0
19	13.5	13.0	13.5	24.0	17.5	20.5	22.5	20.5	21.5	22.0	21.5	21.5
20	14.0	13.0	13.5	---	---	---	23.5	20.0	21.5	24.0	22.0	23.0
21	15.0	13.5	14.0	---	---	---	23.5	20.0	21.5	25.5	24.0	24.5
22	14.5	12.5	13.0	---	---	---	24.0	20.0	22.0	26.0	25.5	25.5
23	13.5	11.5	12.5	---	---	---	24.5	20.0	22.0	26.5	25.5	26.0
24	11.5	10.5	11.0	14.0	12.5	13.0	24.5	21.0	23.0	27.0	25.5	26.0
25	12.0	10.5	11.0	15.0	13.5	14.0	26.0	22.5	24.0	26.5	26.0	26.5
26	13.5	11.0	12.0	17.0	14.5	16.0	26.0	23.0	24.5	28.5	26.0	27.0
27	15.5	12.5	14.0	---	---	---	26.0	23.0	24.5	28.0	26.0	27.0
28	14.5	14.0	14.0	---	---	---	26.0	23.5	25.0	28.5	26.0	27.0
29	---	---	---	---	---	---	26.5	23.5	25.0	28.5	25.5	27.0
30	---	---	---	---	---	---	25.5	23.0	24.0	28.5	25.5	27.0
31	---	---	---	---	---	---	---	---	---	29.0	25.5	27.5
MONTH	18.5	5.0	12.0	26.5	8.5	15.0	26.5	15.0	21.0	29.0	20.5	24.0



## SAN JACINTO RIVER BASIN

08070200 EAST FORK SAN JACINTO RIVER NEAR NEW CANEY, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	28.0	26.0	27.0	24.5	24.0	24.5	27.5	26.0	26.5	29.0	27.0	28.0
2	28.5	26.0	27.5	25.5	24.5	25.0	28.5	25.5	27.0	29.5	26.5	28.0
3	28.5	26.0	27.5	26.0	25.5	26.0	29.0	26.0	27.0	29.5	27.0	28.5
4	28.5	26.0	27.5	27.0	26.0	26.5	29.0	26.0	27.5	30.0	27.5	28.5
5	29.0	26.0	27.5	27.5	27.0	27.0	29.5	26.5	28.0	29.5	27.0	28.5
6	29.5	26.0	27.5	27.0	24.5	26.0	30.0	27.0	28.5	28.5	27.5	28.0
7	28.5	26.5	27.5	25.5	24.5	25.0	29.5	27.5	28.5	28.5	26.5	27.5
8	29.0	26.0	27.5	25.5	25.0	25.5	28.5	26.0	27.5	28.0	26.5	27.5
9	28.5	25.5	27.0	26.0	25.5	25.5	---	---	---	29.0	26.5	27.5
10	28.0	25.5	27.0	27.0	26.0	26.5	---	---	---	29.0	27.0	28.0
11	28.0	25.5	27.0	27.5	26.5	27.0	---	---	---	28.5	25.5	27.5
12	28.5	26.5	27.5	28.0	26.5	27.0	---	---	---	28.5	25.5	27.0
13	29.0	26.5	28.0	28.0	26.5	27.0	---	---	---	27.0	26.0	26.5
14	28.0	25.0	26.0	28.5	27.0	27.5	---	---	---	26.0	24.0	25.0
15	26.0	24.0	25.0	29.0	27.0	28.0	---	---	---	25.0	22.5	24.0
16	25.5	23.0	24.0	29.5	27.0	28.0	---	---	---	24.5	22.0	23.5
17	25.5	22.5	24.0	30.0	27.0	28.5	---	---	---	24.5	22.0	23.0
18	26.0	23.5	24.5	30.5	27.5	29.0	---	---	---	24.5	21.5	23.0
19	28.0	24.5	26.0	30.5	27.5	29.0	---	---	---	24.5	21.5	23.0
20	29.0	25.5	27.0	30.0	27.5	28.5	---	---	---	24.5	21.5	23.0
21	29.0	26.0	27.5	29.5	26.5	28.0	---	---	---	24.5	22.0	23.5
22	29.5	26.0	27.5	29.0	26.0	27.5	---	---	---	24.5	22.0	23.5
23	28.0	26.5	27.0	28.0	26.0	27.0	---	---	---	23.5	21.5	22.5
24	26.5	26.0	26.5	27.5	25.5	26.5	---	---	---	21.5	19.5	21.0
25	26.0	25.5	26.0	26.5	25.5	26.0	---	---	---	21.0	19.0	20.0
26	25.5	23.5	25.0	26.0	25.0	25.5	---	---	---	22.0	19.5	20.5
27	23.5	23.5	23.5	27.5	25.0	26.0	---	---	---	22.5	20.0	21.5
28	24.0	23.5	23.5	28.0	25.0	26.5	---	---	---	21.5	19.5	20.5
29	24.0	24.0	24.0	28.0	25.5	26.5	29.0	27.0	28.0	22.0	20.0	21.0
30	24.0	24.0	24.0	29.0	25.5	27.0	28.5	26.5	27.5	22.5	20.5	21.5
31	---	---	---	29.0	26.0	27.5	29.5	26.5	28.0	---	---	---
MONTH	29.5	22.5	26.0	30.5	24.0	27.0	30.0	25.5	27.5	30.0	19.0	24.5

## SAN JACINTO RIVER BASIN

/9

08070500 CANEY CREEK NEAR SPLENDORA, TX

LOCATION.--Lat 30°15'34", Long 95°18'08", Montgomery County, Hydrologic Unit 12040103, on left bank at downstream side of bridge on Farm Road 2090, 4 mi downstream from Gelf, Colorado, and Santa Fe Railway Co. bridge, and 8 mi west of Splendora.

DRAINAGE AREA.--105 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1943 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 118.44 ft above National Geodetic Vertical Datum of 1929. Prior to June 17, 1965, at site 170 ft upstream at datum 5.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No diversion above station.

AVERAGE DISCHARGE.--46 years, 76.6 ft<sup>3</sup>/s (9.90 in/yr), 55,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,000 ft<sup>3</sup>/s June 14, 1973 (gage height, 26.30 ft); minimum, 4.1 ft<sup>3</sup>/s Oct. 26, 1956 (caused by construction upstream).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1885, 27.0 ft in November 1940, present site and datum, from information by local resident. Flood in May 1935 reached a stage of 24.3 ft, present site and datum, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 18	1400	*3,570	*17.87	June 27	0700	1,620	13.48

Minimum discharge, 9.7 ft<sup>3</sup>/s Nov. 8, 10, 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	14	13	12	18	97	22	56	19	26	737	26	16		
2	14	13	12	16	68	26	45	18	31	488	42	16		
3	13	13	12	15	55	83	40	24	61	126	95	15		
4	13	12	12	13	47	52	36	61	29	96	47	15		
5	12	11	13	13	41	38	31	186	27	76	34	15		
6	12	10	13	13	38	31	28	314	32	63	28	16		
7	12	10	14	13	36	28	26	78	25	160	25	17		
8	12	10	15	12	34	25	24	49	22	168	24	18		
9	12	10	60	12	31	24	23	37	20	79	24	17		
10	12	11	50	12	30	24	22	31	19	57	22	17		
11	11	10	183	13	29	22	22	28	25	52	21	16		
12	11	11	199	15	30	22	20	25	56	47	21	16		
13	11	12	42	165	33	22	21	25	27	41	21	16		
14	11	12	26	224	32	21	50	224	137	37	20	29		
15	11	11	20	108	34	21	64	620	374	35	20	27		
16	11	11	17	53	e34	20	40	99	72	33	20	18		
17	11	11	16	35	e33	19	31	182	36	31	20	15		
18	11	11	15	43	e32	19	26	2450	26	29	20	14		
19	11	12	14	414	e32	19	23	2420	22	27	19	14		
20	12	12	14	252	e31	19	26	265	19	26	19	13		
21	12	11	14	222	e31	21	24	110	17	25	19	13		
22	12	11	14	72	e29	283	21	74	15	24	18	13		
23	11	11	13	48	e28	215	20	58	14	23	17	13		
24	11	10	13	39	26	95	19	49	15	23	17	12		
25	11	11	e13	34	e25	59	19	43	16	40	17	12		
26	12	13	e14	36	e25	65	18	38	64	67	17	12		
27	13	12	e14	98	24	90	17	34	1390	53	17	12		
28	18	12	e15	72	23	68	17	31	768	42	16	12		
29	14	12	e15	156	---	150	17	29	251	39	16	12		
30	14	12	e30	761	---	201	18	27	427	30	16	12		
31	13	---	28	456	---	81	---	25	---	26	16	---		
TOTAL	378	341	942	3453	1008	1885	844	7673	4063	2800	754	463		
MEAN	12.2	11.4	30.4	111	36.0	60.8	28.1	248	135	90.3	24.3	15.4		
MAX	18	13	199	761	97	283	64	2450	1390	737	95	29		
MIN	11	10	12	12	23	19	17	18	14	23	16	12		
AC-FT	750	676	1870	6850	2000	3740	1670	15220	8060	5550	1500	918		
CFSM	.12	.11	.29	1.06	.34	.58	.27	2.36	1.29	.86	.23	.15		
IN.	.13	.12	.33	1.22	.36	.67	.30	2.72	1.44	.99	.27	.16		
CAL YR 1988	TOTAL	12198	MEAN	33.3	MAX	900	MIN	10	AC-FT	24190	CFSM	.32	IN.	4.32
WTR YR 1989	TOTAL	24604	MEAN	67.4	MAX	2450	MIN	10	AC-FT	48800	CFSM	.64	IN.	8.72

e Estimated.

## SAN JACINTO RIVER BASIN

08070500 CANEY CREEK NEAR SPLENDORA, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.-- Chemical analyses: October 1962 to April 1964. Chemical, biochemical, and pesticide analyses: August 1983 to current year. Sediment analyses: February 1966, April 1973 to March 1975.

INSTRUMENTATION.--Stage-activated water sampler since November 1984 provides water-quality samples over selected runoff events.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)
OCT 12...	0845	11	83	7.00	16.5	--	--	8.6	87	--	--
NOV 02...	0730	13	82	7.20	16.0	--	--	8.2	83	--	--
JAN 11...	1000	13	112	6.60	13.5	24	3.9	9.8	93	0.7	120
19...	1215	586	84	6.60	12.0	--	--	9.6	88	5.1	3100
MAY 17-20	2100	1740	84	--	--	--	--	--	--	--	--
JUL 13...	1025	40	148	6.80	25.5	--	--	7.0	85	--	--
28...	0810	42	116	6.50	23.5	--	--	7.1	83	--	--
AUG 08...	0740	23	131	6.70	25.5	--	--	6.7	81	--	--
24...	1115	17	112	6.50	25.5	--	--	7.2	87	--	--
SEP 06...	0855	14	100	7.10	26.0	22	8.0	7.0	86	0.8	29
21...	1245	13	104	6.70	21.5	--	--	9.3	104	--	--

DATE	STREP-TOCOCCI, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CaCO3)	HARD-NESS NONCARB WH TOT FLD (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)
OCT 12...	--	--	--	--	--	--	--	--	--	--	--
NOV 02...	--	--	--	--	--	--	--	--	--	--	--
JAN 11...	150	29	6	8.7	1.8	9.7	0.8	1.5	23	5.6	16
19...	10000	--	--	--	--	--	--	--	--	--	--
MAY 17-20	--	--	--	--	--	--	--	--	--	--	--
JUL 13...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
AUG 08...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
SEP 06...	1500	27	6	8.0	1.7	8.7	0.8	1.1	21	3.0	15
21...	--	--	--	--	--	--	--	--	--	--	--

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)
OCT 12...	--	--	--	--	--	--	--	<0.010	<0.010	0.300	0.300
NOV 02...	--	--	--	--	--	--	0.220	<0.010	0.010	0.200	0.230
JAN 11...	0.10	14	73	2	<1	--	--	<0.010	<0.010	0.400	0.370
19...	--	--	--	--	--	0.050	0.130	0.050	0.010	0.100	0.140
MAY 17-20	--	--	--	--	--	0.059	0.079	0.041	0.021	0.100	0.100
JUL 13...	--	--	--	--	--	0.190	--	0.010	<0.010	0.200	0.200
28...	--	--	--	--	--	0.190	--	0.010	<0.010	0.200	0.180
AUG 08...	--	--	--	--	--	--	--	<0.010	<0.010	0.300	0.250
24...	--	--	--	--	--	--	--	<0.010	<0.010	0.300	0.250
SEP 06...	0.10	13	65	11	<1	0.290	0.290	0.010	0.010	0.300	0.300
21...	--	--	--	--	--	--	0.190	<0.010	0.010	0.200	0.200

## SAN JACINTO RIVER BASIN

81

08070500 CANEY CREEK NEAR SPLENDORA, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)
OCT 12...	<0.010	<0.010	--	--	0.30	0.30	0.030	0.030	--	--	--
NOV 02...	<0.010	<0.010	--	--	0.20	0.20	0.040	0.030	--	--	--
JAN 11...	0.030	0.030	--	--	<0.20	<0.20	0.050	0.030	3.1	--	--
JAN 19...	0.120	0.070	1.1	1.1	1.2	1.2	0.190	0.140	20	--	--
MAY 17-20	0.070	0.070	0.73	0.73	0.80	0.80	0.110	0.120	--	--	--
JUL 13...	0.040	0.041	2.7	2.5	2.5	2.7	0.040	0.030	--	--	--
JUL 28...	0.020	0.010	0.48	0.49	0.50	0.50	0.060	0.030	--	--	--
AUG 08...	0.030	0.040	0.47	0.46	0.50	0.50	0.050	0.040	--	--	--
AUG 24...	0.020	0.021	0.28	0.28	0.30	0.30	0.040	0.040	--	--	--
SEP 06...	0.020	0.030	0.28	0.17	0.20	0.30	0.040	0.020	2.6	<1	43
SEP 21...	0.020	0.010	2.6	--	<0.20	2.6	0.030	0.030	--	--	--

DATE	CADMIUM, DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 12...	--	--	--	--	--	--	--	--	--	--
NOV 02...	--	--	--	--	--	--	--	--	--	--
JAN 11...	--	--	--	94	--	25	--	--	--	--
JAN 19...	--	--	--	--	--	--	--	--	--	--
MAY 17-20	--	--	--	240	--	<10	--	--	--	--
JUL 13...	--	--	--	--	--	--	--	--	--	--
JUL 28...	--	--	--	--	--	--	--	--	--	--
AUG 08...	--	--	--	--	--	--	--	--	--	--
AUG 24...	--	--	--	--	--	--	--	--	--	--
SEP 06...	<1	2	1	160	3	44	<0.1	<1	<1.0	5
SEP 21...	--	--	--	30	--	40	--	--	--	--



## SAN JACINTO RIVER BASIN

08071280 LUCE BAYOU ABOVE LAKE HOUSTON NEAR HUFFMAN, TX

LOCATION.--Lat 30°06'34", long 95°03'35", Liberty County, Hydrologic Unit 12040103, on left bank, in Tricontinental Pipeline Co. right-of-way, 1.1 mi upstream from Key Gully, 3.1 mi east of Huffman-Cleveland Road, and 6.3 mi north-east of Huffman.

DRAINAGE AREA.--218 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Occasional low-flow measurements, at site 2.2 mi downstream, water years, 1970, 1972, 1975; February to April 1984 (discharge measurements only), May 1984 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 39.91 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversions above station for irrigation purposes. Harris County Flood Control District stage and rainfall radio-telemetry at station.

AVERAGE DISCHARGE.--5 years, 212 ft<sup>3</sup>/s (13.21 in/yr), 153,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,400 ft<sup>3</sup>/s May 19, 1989 (gage height, 33.45 ft); no flow for many days.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 19	2200	*21,400	*33.45	June 27	about 0900	6,000	25.98

Minimum discharge, no flow on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	1.8	.00	6.7	59	1.3	236	3.4	14	e2400	20	1.7
2	.01	1.2	.00	5.3	49	6.1	174	1.8	14	e1200	29	1.6
3	.00	.70	.00	3.9	10	2.8	87	1.6	44	e600	37	1.4
4	.00	.40	.00	2.9	2.2	4.2	35	2.8	142	e300	51	1.3
5	.00	.25	.00	2.4	10	11	11	11	58	e150	56	1.2
6	.00	.18	.00	2.0	12	5.0	3.8	71	43	e200	39	1.2
7	.00	.18	.00	1.8	8.8	3.1	2.4	145	35	e500	21	1.6
8	.00	.17	.00	1.7	6.6	1.3	2.8	166	20	e1000	12	2.9
9	.00	.10	.00	1.8	5.5	.79	2.9	125	11	e500	8.9	8.4
10	.00	.06	.02	1.7	4.5	.56	2.4	61	7.0	e200	6.6	4.2
11	.00	.04	.08	1.4	3.8	.40	2.1	29	4.9	e150	5.1	2.7
12	.00	.02	.03	1.2	3.6	.27	2.1	5.4	4.6	e200	3.9	3.1
13	.00	.01	.33	1.1	3.3	.22	2.4	3.2	6.1	e120	3.2	9.3
14	.00	.01	7.9	1.2	2.9	.18	1.9	12	44	81	4.6	9.8
15	.00	.00	4.9	1.1	2.7	.14	1.7	11	119	54	4.2	5.7
16	.00	.00	2.8	5.7	2.4	.13	88	72	123	37	3.3	5.1
17	.00	.00	1.3	5.9	2.3	.12	98	129	71	28	3.1	3.9
18	.00	.00	.78	4.9	2.1	.11	63	12800	42	20	3.5	2.5
19	.00	.00	.51	2.7	1.4	.10	32	19600	63	15	3.7	1.6
20	.00	.00	.41	20	1.1	.52	12	19500	60	12	2.7	1.1
21	.00	.00	.36	25	4.9	.74	2.8	11700	26	9.6	2.3	.88
22	.00	.00	.31	5.6	3.6	1.8	2.1	5450	11	8.9	2.3	.73
23	.00	.00	.24	2.5	2.5	1.5	2.2	2840	6.7	8.2	2.1	.73
24	.00	.00	.20	1.8	9.7	4.9	1.5	1500	5.2	6.1	2.1	.76
25	.00	.00	.14	4.6	7.3	6.6	1.3	855	4.9	5.9	2.1	.80
26	.00	.00	2.2	5.8	5.6	6.0	2.1	377	145	7.5	2.1	.78
27	.00	.00	5.5	2.4	4.4	1.5	1.6	106	e5100	11	2.0	.77
28	.00	.00	4.0	1.7	2.8	46	1.1	57	e4300	9.1	1.7	.77
29	7.0	.00	3.0	31	---	191	.78	44	e3300	19	1.6	.76
30	4.4	.00	3.1	12	---	238	8.7	40	e3300	16	1.6	.70
31	2.7	---	6.3	25	---	245	---	21	---	12	1.7	---
TOTAL	14.14	5.12	44.41	192.8	234.0	781.38	884.68	75740.2	17124.4	7880.3	339.4	77.98
MEAN	.46	.17	1.43	6.22	8.36	25.2	29.5	2443	571	254	10.9	2.60
MAX	7.0	1.8	7.9	31	59	245	236	19600	5100	2400	56	9.8
MIN	.00	.00	.00	1.1	1.1	.10	.78	1.6	4.6	5.9	1.6	.70
AC-FT	28	10	88	382	464	1550	1750	150200	33970	15630	673	155
CFSM	.00	.00	.01	.03	.04	.12	.14	11.2	2.62	1.17	.05	.01
IN.	.00	.00	.01	.03	.04	.13	.15	12.92	2.92	1.34	.06	.01
CAL YR 1988	TOTAL	17353.39	MEAN	47.4	MAX	1110	MIN	.00	AC-FT	34420	CFSM	.22
WTR YR 1989	TOTAL	103318.81	MEAN	283	MAX	19600	MIN	.00	AC-FT	204900	CFSM	1.30
											IN.	2.96
												17.63

e Estimated.

08071280 LUCE BAYOU ABOVE LAKE HOUSTON NEAR HUFFMAN, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: February 1984 to current year.

INSTRUMENTATION.--Stage-activated water sampler since May 1984 provides water-quality samples over selected runoff events.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

		DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION)	OXYGEN DEMAND, BIO-CHEMICAL, 5 DAY (MG/L)	COLIFORM, FECA, 0.7 UM-MF (COLS./100 ML)
JAN											
10...	1104	1.6	266	7.20	11.5	150	44	6.1	55	1.3	120
20...	1018	4.5	225	--	13.0	--	--	8.0	75	1.3	520
JUL											
14...	1050	81	75	6.10	27.5	--	--	4.2	53	--	--
26...	1150	7.5	196	--	25.0	--	--	4.4	52	--	--
AUG											
11...	0910	5.2	160	6.50	23.5	--	--	4.5	52	--	--
25...	1050	2.2	233	6.60	24.0	--	--	3.4	40	--	--
SEP											
06...	0900	1.2	320	6.70	26.5	34	1.9	2.2	27	0.9	80
22...	1100	0.73	176	6.70	21.0	--	--	4.5	50	--	--
DATE	STREP-TOCOCI FECA, KF AGAR (COLS. PER 100 ML)	HARDNESS TOTAL (MG/L AS CaCO3)	HARDNESS NONCARB WH TOT FLD (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	ALKALINITY TOT WH FLD (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)
JAN											
10...	230	36	0	11	2.0	44	3	4.8	82	15	26
20...	600	--	--	--	--	--	--	--	--	--	--
JUL											
14...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
AUG											
11...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
SEP											
06...	270	110	0	38	4.4	23	1	1.8	115	5.0	26
22...	--	--	--	--	--	--	--	--	--	--	--
DATE	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	RESIDUE VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRATE DIS-SOLVED (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N)
JAN											
10...	0.30	4.0	156	18	<1	--	--	0.020	<0.010	<0.100	--
20...	--	--	--	--	--	0.780	0.790	0.020	0.020	0.800	0.810
JUL											
14...	--	--	--	--	--	0.180	0.180	0.020	0.010	0.200	0.190
26...	--	--	--	--	--	0.090	--	0.010	<0.010	0.100	0.100
AUG											
11...	--	--	--	--	--	--	--	<0.010	<0.010	0.100	0.120
25...	--	--	--	--	--	--	--	<0.010	<0.010	<0.100	<0.100
SEP											
06...	0.20	10	178	6	<1	--	--	0.010	<0.010	<0.100	<0.100
22...	--	--	--	--	--	--	--	<0.010	<0.010	<0.100	0.100
DATE	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHOROUS TOTAL (MG/L AS P)	PHOSPHOROUS DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)
JAN											
10...	0.060	0.030	0.74	0.57	0.60	0.80	0.580	0.450	13	--	--
20...	0.060	0.040	0.74	0.76	0.80	0.80	0.540	0.510	15	--	--
JUL											
14...	0.110	0.120	2.1	1.9	2.0	2.2	0.080	0.040	--	--	--
26...	0.020	0.030	1.1	0.87	0.90	1.1	0.110	0.070	--	--	--
AUG											
11...	0.040	0.040	0.86	0.56	0.60	0.90	0.100	0.050	--	--	--
25...	0.050	0.050	1.0	0.85	0.90	1.1	0.080	0.040	--	--	--
SEP											
06...	0.010	0.010	0.49	0.49	0.50	0.50	0.040	0.020	7.4	1	130
22...	0.030	0.030	0.47	0.47	0.50	0.50	0.100	0.100	--	--	--

## SAN JACINTO RIVER BASIN

08071280 LUCE BAYOU ABOVE LAKE HOUSTON NEAR HUFFMAN, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN										
10...	--	--	--	150	--	25	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
JUL										
14...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
AUG										
11...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
SEP										
06...	<1	1	1	210	1	470	<0.1	<1	<1.0	<3
22...	--	--	--	340	--	190	--	--	--	--

## 08072000 LAKE HOUSTON NEAR SHELDON, TX

LOCATION.--Lat 29°54'58", long 95°08'28", Harris County, Hydrologic Unit 12040101, at intake structure on San Jacinto River near right bank 100 ft upstream from Lake Houston Dam, 4.0 mi north of Sheldon, 4.6 mi upstream from bridge on U.S. Highway 90, and 18 mi northeast of Houston.

DRAINAGE AREA.--2,828 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1954 to current year.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage at dam is 0.70 ft below National Geodetic Vertical Datum of 1929; unadjusted for land-surface subsidence.

REMARKS.--The lake is formed by two earthfill embankment sections and a 3,160-foot long concrete spillway midway between the embankment sections. The dam was completed and storage began Apr. 9, 1954. The spillway includes two tainter gates, 18.0 x 20.5 ft, that can be used for control of releases below gage heights of 44.5 ft and above 28.0 ft. In addition, there is a 36-inch-diameter sluice gate that is used for low-flow releases. Water is used for irrigation, municipal, and industrial supply in the Houston metropolitan area. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Gage height (feet)	Capacity (acre-feet)
Top of dam.....	63.0	-
Design flood.....	57.0	-
Crest of spillway.....	44.5	146,700
Crest of tainter gates (sill).....	28.0	22,800
Lowest gated outlet (invert).....	22.0	6,180

COOPERATION.--The capacity table, furnished by the city of Houston, is based on a sedimentation study made in 1965. Records of diversions were furnished by the San Jacinto River Authority and the city of Houston.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 219,400 acre-ft May 19, 1989 (gage height, 49.60 ft); minimum since first filling of lake in August 1954, 53,380 acre-ft Dec. 1, 1971 (gage height, 34.08 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 219,400 acre-ft May 19 at 1200 hours (gage height, 49.60 ft); minimum, 106,400 acre-ft Dec. 7 (gage height, 40.84 ft).

## Capacity table (gage height, in feet, and total contents, in acre-feet)

40.0	98,270	43.0	129,100	48.0	194,200
41.0	107,900	45.0	152,900	49.0	209,600
42.0	118,200	47.0	179,600	50.0	226,000

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	115100	114300	107500	115300	160800	150100	162500	150800	152800	170400	151700	126700
2	115800	114100	107500	115500	160700	151200	159700	149800	152400	168600	155900	126000
3	115700	113800	107200	116000	157700	151700	156900	150800	152700	162300	157400	125700
4	115500	114100	107000	115800	155100	152000	155500	150900	152500	155200	156800	125100
5	115300	113300	106900	115900	154300	147800	153900	154600	152500	158400	155800	124500
6	115000	112700	106600	115800	152500	147400	153400	156500	152000	161000	154700	124500
7	115000	112400	106700	116600	150900	147000	152700	156700	151700	162000	154100	124000
8	114800	112000	107200	116600	151200	146900	153200	156100	151800	162100	153800	123900
9	114900	111700	107100	116400	151100	146600	152200	156100	151300	160800	152300	124000
10	114700	111800	108200	116300	151100	146700	150600	155000	150800	158900	150800	123900
11	114600	111500	108000	116300	151200	146600	149600	153900	150300	157400	149100	123900
12	114300	111300	108600	117100	150700	146400	149700	153400	150600	156000	145600	125000
13	114000	111000	108900	117000	151400	146300	149100	153900	151800	155000	139800	127400
14	114000	110600	109500	118200	151400	146100	150300	155200	156500	154100	134600	129800
15	114100	110500	111400	119000	151600	146600	151400	157100	157400	153600	131500	130800
16	113800	110900	111600	120200	151700	146100	153200	157700	158100	152900	131100	130800
17	113900	110800	111400	121100	151400	145700	154200	162000	158500	152500	130800	130800
18	114100	109800	111200	123000	151900	145900	154200	212100	158400	152200	130800	130600
19	114100	110600	111500	126000	152700	145300	153800	211200	156000	152000	130700	130300
20	114300	110100	112000	130000	153300	146100	153000	188800	154800	151800	130800	129800
21	114400	109700	112100	133900	152000	147000	152700	175800	153800	151400	130600	129400
22	114100	109100	112200	137000	151300	147000	151800	168000	153200	150600	130600	129300
23	114300	108700	112500	140400	150700	148900	151900	163900	152900	150400	130400	129000
24	113900	108600	113300	142300	150800	150700	151200	161000	153600	150100	130000	128000
25	113800	108200	112900	143100	150600	152300	150700	158500	155100	151200	129700	127500
26	114500	109100	112800	144000	150800	154300	149700	156500	176200	152000	129000	127000
27	114500	108400	115300	146400	151100	158100	149600	155200	187900	152500	128800	126400
28	114600	107700	114700	150100	150500	158400	149200	154600	174100	152000	128200	125900
29	114300	108100	114600	155200	---	159900	149000	153800	170400	152000	127900	125500
30	114300	107600	114900	160300	---	160400	150900	153300	171900	151800	127500	124700
31	114400	---	115200	160400	---	161700	---	152900	---	151400	127100	---
MAX	115800	114300	115300	160400	160800	161700	162500	212100	187900	170400	157400	130800
MIN	113800	107600	106600	115300	150500	145300	149000	149800	150300	150100	127100	123900
(↑)	41.63	40.97	41.71	45.58	44.80	45.68	44.84	45.00	46.44	44.88	42.82	42.60
(Φ)	-600	-6800	+7600	+45200	-9900	+11200	-10800	+2000	+19000	-20500	-24300	-2400
(↑↑)	18600	22030	19010	13490	12840	14430	14970	14810	15620	16290	16200	16660
CAL YR 1988	MAX	163700	MIN	106600	(Φ)	-39700	(↑↑)	214680				
WTR YR 1989	MAX	212100	MIN	106600	(Φ)	+97000	(↑↑)	195100				

(↑) Elevation, in feet, at end of month.

(Φ) Change in contents, in acre-feet.

(↑↑) Diversions, in acre-feet, for municipal and industrial use by the city of Houston and by the San Jacinto River Authority.



## SAN JACINTO RIVER BASIN

08072000 LAKE HOUSTON NEAR SHELTON, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1961 to April 1964, December 1969 to current year. Biochemical analyses: August 1983 to current year. Pesticide analyses: May 1968 to August 1972, August 1983 to current year.

295505095083101 - LAKE HOUSTON SITE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAMPLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE	PH	TEMPER- ATURE	TRANS- PAR- ENCY (SECCHI DISK)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)
			(US/CM)	(STAND- ARD UNITS)	(DEG C)	(M)					
JAN											
10...	1502	1.00	335	8.20	14.5	0.40	8.6	84	0.010	0.010	<0.100
10...	1504	14.0	335	8.10	14.5	--	8.3	81	0.010	<0.010	<0.100
SEP											
07...	0847	1.00	155	7.30	30.0	0.40	5.3	70	0.020	0.010	<0.100
07...	0849	5.00	155	7.20	30.0	--	5.1	67	--	--	--
07...	0851	10.0	155	7.00	29.5	--	3.4	44	--	--	--
07...	0853	16.0	155	6.90	29.0	--	2.0	26	0.020	0.010	<0.100
DATE		NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN											
10...	<0.100	0.050	0.060	0.55	0.44	0.50	0.60	0.180	0.130	<10	<10
10...	<0.100	0.060	0.100	0.74	0.70	0.80	0.80	0.200	0.200	20	<10
SEP											
07...	<0.100	0.040	0.041	0.76	0.76	0.80	0.80	0.250	0.230	660	250
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	<0.100	0.020	0.030	0.68	0.67	0.70	0.70	0.200	0.140	360	30

## SAN JACINTO RIVER BASIN

87

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

295516095080801-- LAKE HOUSTON SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT												
12...	1042	1.00	310	7.90	23.5	0.54	--	--	7.0	82	--	--
12...	1043	0.88	--	--	--	--	--	--	--	--	--	--
12...	1044	5.00	310	7.80	23.5	--	--	--	7.0	82	--	--
12...	1046	10.0	310	7.80	23.0	--	--	--	6.8	79	--	--
12...	1048	15.0	310	7.70	23.0	--	--	--	6.8	79	--	--
12...	1050	20.0	310	7.70	23.0	--	--	--	6.8	79	--	--
12...	1052	25.0	310	7.70	23.0	--	--	--	6.9	80	--	--
12...	1054	30.0	315	7.70	23.0	--	--	--	6.8	79	--	--
12...	1056	43.0	315	7.70	23.0	--	--	--	6.8	79	--	--
NOV												
01...	1000	1.00	325	7.60	21.5	0.50	--	--	6.5	73	--	--
01...	1001	0.82	--	--	--	--	--	--	--	--	--	--
01...	1002	5.00	325	7.70	21.5	--	--	--	6.5	73	--	--
01...	1004	10.0	325	7.70	21.5	--	--	--	6.6	74	--	--
01...	1006	15.0	325	7.70	21.5	--	--	--	6.6	74	--	--
01...	1008	20.0	325	7.80	21.5	--	--	--	6.6	74	--	--
01...	1010	30.0	325	7.90	21.5	--	--	--	6.9	77	--	--
01...	1012	44.0	325	8.30	21.5	--	--	--	7.0	79	--	--
JAN												
10...	1418	1.00	335	8.10	14.5	0.45	24	12	8.3	81	1.8	820
10...	1419	0.74	--	--	--	--	--	--	--	--	--	--
10...	1420	10.0	335	8.00	14.5	--	--	--	8.0	78	--	--
10...	1422	20.0	335	8.00	14.5	--	--	--	8.0	78	--	--
10...	1424	43.0	335	7.90	14.5	--	25	23	8.0	78	1.8	--
20...	1330	1.00	315	8.20	13.0	0.44	23	16	9.1	85	2.2	550
20...	1331	0.72	--	--	--	--	--	--	--	--	--	--
20...	1332	10.0	315	8.10	13.0	--	--	--	9.1	85	--	--
20...	1334	20.0	315	8.10	13.0	--	--	--	9.1	85	--	--
20...	1336	46.0	315	8.10	13.0	--	21	17	9.1	85	2.1	--
JUN												
16...	0932	1.00	85	7.00	27.0	0.40	150	20	5.2	65	1.2	K4
16...	0933	0.66	--	--	--	--	--	--	--	--	--	--
16...	0934	10.0	85	7.00	27.0	--	--	--	5.2	65	--	--
16...	0936	20.0	85	7.00	27.0	--	--	--	5.2	65	--	--
16...	0938	30.0	85	7.00	27.0	--	--	--	5.2	65	--	--
16...	0940	42.0	85	7.00	27.0	--	150	22	5.2	65	1.2	--
29...	0950	1.00	55	6.40	24.5	0.23	--	--	5.8	70	--	--
29...	0951	0.38	--	--	--	--	--	--	--	--	--	--
29...	0952	10.0	55	6.40	24.5	--	--	--	5.9	71	--	--
29...	0954	20.0	55	6.40	24.5	--	--	--	5.9	71	--	--
29...	0956	30.0	55	6.40	24.0	--	--	--	5.9	70	--	--
29...	0958	43.0	55	6.40	24.0	--	--	--	6.0	72	--	--
JUL												
13...	0922	1.00	85	6.60	28.0	0.50	--	--	3.6	46	--	--
13...	0923	0.82	--	--	--	--	190	17	--	--	--	--
13...	0924	5.00	85	6.50	28.0	--	--	--	3.2	41	--	--
13...	0926	10.0	85	6.50	27.5	--	--	--	2.6	33	--	--
13...	0928	15.0	85	6.40	27.0	--	--	--	1.3	16	--	--
13...	0930	20.0	75	6.30	26.0	--	--	--	0.6	7	--	--
13...	0932	25.0	75	6.30	26.0	--	--	--	0.6	7	--	--
13...	0934	30.0	75	6.30	25.5	--	--	--	0.6	7	--	--
13...	0936	44.0	75	6.20	25.5	--	--	--	0.6	7	--	--
27...	0952	1.00	100	6.90	28.5	0.52	--	--	4.3	55	--	--
27...	0953	0.86	--	--	--	--	180	15	--	--	--	--
27...	0954	5.00	100	6.90	28.0	--	--	--	4.0	51	--	--
27...	0956	10.0	100	6.80	28.0	--	--	--	3.9	49	--	--
27...	0958	15.0	100	6.80	28.0	--	--	--	3.8	48	--	--
27...	1000	20.0	100	6.80	28.0	--	--	--	3.8	48	--	--
27...	1002	25.0	100	6.80	28.0	--	--	--	3.8	48	--	--
27...	1004	28.0	95	6.60	27.0	--	--	--	0.7	9	--	--
27...	1006	30.0	95	6.60	26.5	--	--	--	0.5	6	--	--
27...	1008	43.0	95	6.60	26.0	--	--	--	0.5	6	--	--

295516095080801 - LAKE HOUSTON SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	STREP- TOCOCI FECAL KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET MG/L AS CAC03	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
OCT												
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
10...	620	73	24	3.2	38	2	3.9	77	14	45	0.10	6.7
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	73	24	3.2	37	2	3.8	78	14	45	0.20	6.7
20...	370	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
16...	22	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--

## SAN JACINTO RIVER BASIN

89

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

295516095080801 - LAKE HOUSTON SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	RESIDUE VOLATILE, SUS- PENDED (MG/L)	RESIDUE FIXED NON FILTER- ABLE (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
OCT												
12...	--	--	--	--	--	--	0.010	<0.010	<0.100	0.380	<0.010	<0.010
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	<0.010	--	<0.100	--	<0.010	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	0.010	<0.010	<0.100	0.970	0.010	0.020
NOV												
01...	--	--	--	--	--	--	<0.010	<0.010	<0.100	<0.100	0.030	0.040
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	<0.010	--	<0.100	--	0.010	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	<0.010	<0.010	<0.100	<0.100	<0.010	0.010
JAN												
10...	181	27	<1	--	--	--	<0.010	0.010	<0.100	<0.100	0.050	0.120
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	<0.010	0.010	<0.100	<0.100	0.330	0.060
10...	181	37	1	36	--	--	0.010	<0.010	<0.100	<0.100	0.060	0.070
20...	--	2	1	1	--	--	<0.010	<0.010	<0.100	<0.100	0.020	0.021
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	32	3	29	--	--	<0.010	<0.010	<0.100	<0.100	0.030	0.030
JUN												
16...	--	22	19	3	0.050	0.100	0.050	0.040	0.100	0.140	0.040	0.030
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	0.050	0.090	0.050	0.040	0.100	0.130	0.050	0.060
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	25	13	12	0.050	0.080	0.050	0.050	0.100	0.130	0.040	0.070
29...	--	--	--	--	--	--	0.020	0.010	<0.100	<0.100	0.080	0.070
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	0.020	0.010	<0.100	<0.100	0.080	0.110
JUL												
13...	--	--	--	--	--	--	0.020	<0.010	<0.100	<0.100	0.050	0.050
13...	--	13	4	9	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	0.020	--	<0.100	--	0.070	--
13...	--	--	--	--	--	--	0.020	--	<0.100	--	0.100	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	0.020	<0.010	<0.100	<0.100	0.170	0.200
27...	--	--	--	--	--	--	0.010	<0.010	<0.100	<0.100	0.080	0.060
27...	--	9	<1	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	0.010	--	<0.100	--	0.080	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	0.010	--	<0.100	--	0.250	--
27...	--	--	--	--	--	--	0.010	<0.010	<0.100	<0.100	0.510	0.500



SAN JACINTO RIVER BASIN  
08G72000 LAKE HOUSTON NEAR SHELDON, TX--Continued

295516095080801 - LAKE HOUSTON SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
OCT											
12...	--	--	0.30	0.50	0.150	0.110	--	--	--	<10	<10
12...	--	--	--	--	--	--	--	7.80	0.300	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	4.00	0.200	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	0.50	0.120	--	--	6.70	0.300	<10	10
12...	--	--	--	--	--	--	--	--	--	--	--
12...	0.39	0.38	0.40	0.40	0.180	0.180	--	--	--	10	30
NOV											
01...	0.77	0.66	0.70	0.80	0.160	0.110	--	--	--	<10	20
01...	--	--	--	--	--	--	--	17.0	0.800	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	0.59	--	--	0.60	0.140	--	--	--	--	<10	<10
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	0.49	0.50	0.80	0.170	0.100	--	--	--	20	<10
JAN											
10...	0.95	0.88	1.0	1.0	0.160	0.160	7.9	--	--	19	1
10...	--	--	--	--	--	--	--	13.0	0.500	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	2.9	0.54	0.60	3.2	0.220	0.180	--	--	--	20	<10
10...	0.94	0.73	0.80	1.0	0.160	0.160	7.8	--	--	15	11
20...	0.88	0.88	0.90	0.90	0.190	0.190	7.9	--	--	10	10
20...	--	--	--	--	--	--	--	7.70	0.300	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	0.77	0.77	0.80	0.80	0.220	0.220	7.3	--	--	20	120
JUN											
16...	0.76	0.47	0.50	0.80	0.120	0.090	12	--	--	220	30
16...	--	--	--	--	--	--	--	2.40	0.100	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	0.75	0.74	0.80	0.80	0.120	0.120	--	--	--	250	20
16...	--	--	--	--	--	--	--	--	--	--	--
16...	0.56	0.53	0.60	0.60	0.130	0.090	13	--	--	300	30
29...	0.72	0.53	0.60	0.80	0.070	0.060	--	--	--	200	40
29...	--	--	--	--	--	--	--	0.600	<0.100	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	0.72	0.69	0.80	0.80	0.140	0.080	--	--	--	260	30
JUL											
13...	1.5	0.95	1.0	1.6	0.120	0.120	--	--	--	160	50
13...	--	--	--	--	--	--	17	5.30	0.300	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	0.53	--	--	0.60	0.130	--	--	--	--	180	110
13...	0.70	--	--	0.80	0.130	--	--	--	--	270	220
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	0.63	0.50	0.70	0.80	0.210	0.210	--	--	--	460	310
27...	1.0	0.84	0.90	1.1	0.150	0.110	--	--	--	630	290
27...	--	--	--	--	--	--	14	2.10	<0.100	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	0.72	--	--	0.80	0.150	--	--	--	--	700	250
27...	--	--	--	--	--	--	--	--	--	--	--
27...	0.85	--	--	1.1	0.320	--	--	--	--	1100	630
27...	0.69	0.70	1.2	1.2	0.470	0.490	--	--	--	2400	820

## 91

295516095080801.- LAKE HOUSTON SITE AC--Continued

[illegible]

## SAN JACINTO RIVER BASIN

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

295516095080801 - LAKE HOUSTON SITE AC--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	RESIDUE VOLATILE, SUS- PENDED (MG/L)	RESIDUE FIXED NON FILTER- ABLE (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
AUG											
10...	--	--	--	--	0.090	--	0.010	<0.010	0.100	0.120	0.030
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	0.090	--	0.010	--	0.100	--	0.050
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	0.180	--	0.020	<0.010	0.200	0.200	0.100
22...	--	12	<1	--	--	--	0.020	0.020	<0.100	<0.100	0.020
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	0.170	--	0.030	--	0.200	--	0.040
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	0.060	0.070	0.040	0.030	0.100	0.100	0.160
SEP											
07...	93	33	<1	--	--	--	0.020	0.010	<0.100	<0.100	0.020
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	0.080	--	0.020	<0.010	0.100	<0.100	0.020
07...	--	--	--	--	0.080	--	0.020	<0.010	0.100	0.100	0.030
07...	--	--	--	--	--	--	--	--	--	--	--
07...	91	20	<1	--	--	--	0.020	0.010	<0.100	<0.100	0.150
20...	--	23	3	20	0.080	--	0.020	<0.010	0.100	<0.100	0.010
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	0.020	--	<0.100	--	0.010
20...	--	--	--	--	--	--	0.020	<0.010	<0.100	<0.100	0.040
20...	--	--	--	--	--	--	--	--	--	--	--
DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	ARSENIC DIS- SOLVED (UG/L AS AS)
AUG											
10...	0.030	0.97	0.67	0.70	1.0	0.200	0.170	--	--	--	--
10...	--	--	--	--	--	--	--	--	4.80	0.400	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	0.75	--	--	0.80	0.190	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	0.100	0.90	0.80	0.90	1.0	0.220	0.170	--	--	--	--
22...	0.021	0.78	0.58	0.60	0.80	0.220	0.170	--	--	--	--
22...	--	--	--	--	--	--	--	14	5.20	0.300	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	0.76	--	--	0.80	0.250	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	0.160	0.64	0.64	0.80	0.80	0.380	0.320	--	--	--	--
SEP											
07...	0.030	0.78	0.77	0.80	0.80	0.210	0.170	12	--	--	2
07...	--	--	--	--	--	--	--	--	2.50	0.100	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	0.030	0.98	0.97	1.0	1.0	0.250	0.160	--	--	--	--
07...	0.030	0.97	0.67	0.70	1.0	0.290	0.140	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	0.160	0.85	0.64	0.80	1.0	0.360	0.200	12	--	--	3
20...	0.010	0.59	0.39	0.40	0.60	0.110	0.110	--	--	--	--
20...	--	--	--	--	--	--	--	11	1.60	0.100	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	0.59	--	--	0.60	0.200	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	0.040	0.76	0.46	0.50	0.80	0.280	0.100	--	--	--	--





## SAN JACINTO RIVER BASIN

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

295527095074501 - LAKE HOUSTON SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)
JAN											
10...	1400	1.00	335	8.20	14.0	0.44	8.5	82	0.010	<0.010	<0.100
10...	1402	10.0	335	8.00	14.0	--	8.0	77	--	--	--
10...	1404	22.0	335	8.00	14.0	--	8.0	77	0.020	<0.010	<0.100
SEP											
07...	1000	1.00	155	7.40	30.5	0.43	5.7	76	0.020	<0.010	<0.100
07...	1002	5.00	155	7.20	30.0	--	5.3	70	--	--	--
07...	1004	10.0	155	7.10	30.0	--	5.1	67	--	--	--
07...	1006	15.0	150	6.90	29.0	--	2.5	32	--	--	--
07...	1008	20.0	150	6.80	28.5	--	0.4	5	--	--	--
07...	1010	27.0	150	6.80	28.5	--	0.4	5	0.020	0.010	<0.100
DATE		NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN											
10...		<0.100	0.050	0.050	0.65	0.55	0.60	0.190	0.140	20	<10
10...		--	--	--	--	--	--	--	--	--	--
10...		<0.100	0.050	0.540	0.45	4.5	5.0	0.210	0.210	20	20
SEP											
07...		<0.100	0.020	0.020	0.98	0.68	0.70	1.0	0.230	80	50
07...		--	--	--	--	--	--	--	--	--	--
07...		--	--	--	--	--	--	--	--	--	--
07...		--	--	--	--	--	--	--	--	--	--
07...		--	--	--	--	--	--	--	--	--	--
07...		<0.100	0.070	0.070	0.73	0.73	0.80	0.80	0.290	210	460

295708095092901 - LAKE HOUSTON SITE BR

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP								
07...	1118	1.00	160	7.40	30.5	0.43	5.9	78
07...	1120	5.00	160	7.30	30.0	--	5.5	72
07...	1122	12.0	170	7.30	30.0	--	5.1	67

## SAN JACINTO RIVER BASIN

95

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

295702095091401 - LAKE HOUSTON SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
OCT										
12...	1122	1.00	315	8.20	23.0	0.50	--	--	7.7	89
12...	1124	5.00	315	8.20	23.0	--	--	--	7.7	89
12...	1126	10.0	315	8.20	23.0	--	--	--	7.6	88
12...	1128	15.0	315	8.20	23.0	--	--	--	7.6	88
12...	1130	20.0	320	8.20	23.0	--	--	--	7.6	88
12...	1132	25.0	320	8.20	23.0	--	--	--	7.6	88
12...	1134	35.0	320	8.20	23.0	--	--	--	7.5	87
NOV										
01...	1032	1.00	325	7.70	21.5	0.50	--	--	6.7	75
01...	1034	5.00	325	7.70	21.5	--	--	--	6.6	74
01...	1036	10.0	325	7.70	21.0	--	--	--	6.6	73
01...	1038	15.0	325	7.60	21.0	--	--	--	6.5	72
01...	1040	20.0	325	7.70	21.0	--	--	--	6.5	72
01...	1042	36.0	325	7.70	20.5	--	--	--	6.7	74
JAN										
20...	1310	1.00	320	8.10	13.0	0.44	--	--	8.8	83
20...	1312	5.00	320	8.10	13.0	--	--	--	8.8	83
20...	1314	15.0	320	8.00	13.0	--	--	--	8.8	83
20...	1316	37.0	320	8.00	13.0	--	--	--	8.8	83
JUN										
16...	1010	1.00	90	7.10	27.0	0.40	--	--	5.4	67
16...	1012	10.0	90	7.10	27.0	--	--	--	5.0	62
16...	1014	20.0	90	7.10	27.0	--	--	--	4.8	60
16...	1016	30.0	90	7.10	27.0	--	--	--	5.2	65
16...	1018	40.0	90	7.10	26.5	--	--	--	5.4	67
29...	1025	1.00	55	6.40	24.5	0.20	--	--	4.5	54
29...	1027	10.0	55	6.40	24.5	--	--	--	4.5	54
29...	1029	20.0	55	6.40	24.5	--	--	--	4.5	54
29...	1031	30.0	55	6.40	24.0	--	--	--	4.5	54
29...	1033	39.0	55	6.50	24.0	--	--	--	4.6	55
JUL										
13...	1030	1.00	95	6.70	28.5	0.48	--	--	4.0	51
13...	1032	5.00	95	6.60	28.5	--	--	--	3.5	45
13...	1034	10.0	95	6.50	28.0	--	--	--	2.4	30
13...	1036	12.0	95	6.40	27.5	--	--	--	2.1	26
13...	1038	14.0	85	6.40	27.0	--	--	--	1.6	20
13...	1040	15.0	85	6.30	27.0	--	--	--	0.7	9
13...	1042	20.0	80	6.30	26.5	--	--	--	0.5	6
13...	1044	30.0	80	6.30	26.0	--	--	--	0.5	6
13...	1046	38.0	80	6.40	25.0	--	--	--	0.5	6
27...	1045	1.00	100	7.10	28.5	0.42	--	--	5.4	69
27...	1046	0.69	--	--	--	--	190	14	--	--
27...	1047	5.00	105	6.90	28.0	--	--	--	4.2	53
27...	1049	10.0	105	6.90	28.0	--	--	--	4.0	51
27...	1051	20.0	105	6.90	28.0	--	--	--	3.8	48
27...	1053	25.0	105	6.70	27.5	--	--	--	3.4	43
27...	1055	28.0	95	6.60	27.0	--	--	--	0.9	11
27...	1057	30.0	90	6.60	26.0	--	--	--	0.6	7
27...	1059	36.0	100	6.60	25.0	--	--	--	0.6	7
AUG										
10...	1002	1.00	140	7.30	28.0	0.35	--	--	5.3	67
10...	1004	5.00	140	7.20	28.0	--	--	--	5.1	65
10...	1006	10.0	140	7.20	28.0	--	--	--	5.1	65
10...	1008	15.0	145	7.20	28.0	--	--	--	5.1	65
10...	1010	20.0	145	7.20	28.0	--	--	--	5.0	63
10...	1012	25.0	145	7.20	27.5	--	--	--	4.9	61
10...	1014	30.0	140	7.20	27.5	--	--	--	4.7	59
10...	1016	37.0	140	7.20	27.5	--	--	--	4.5	56
22...	1010	1.00	150	7.30	29.5	0.40	--	--	4.7	61
22...	1011	0.66	--	--	--	--	110	22	--	--
22...	1012	5.00	150	7.10	29.0	--	--	--	4.1	53
22...	1014	10.0	155	7.00	29.0	--	--	--	3.0	39
22...	1016	15.0	160	6.90	28.5	--	--	--	2.1	27
22...	1018	20.0	160	6.90	28.0	--	--	--	1.1	14
22...	1020	25.0	160	6.90	28.0	--	--	--	0.6	8
22...	1022	30.0	160	6.90	27.5	--	--	--	0.4	5
22...	1024	37.0	160	6.90	27.5	--	--	--	0.4	5

295702095091401 - LAKE HOUSTON SITE BC--Continued

[illegible]

## 9/

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

295702095091401 - LAKE HOUSTON SITE BC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

[illegible]

## SAN JACINTO RIVER BASIN

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

295702095091401 - LAKE HOUSTON SITE BC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	
SEP												
07...	1052	1.00	160	7.40	30.5	0.35	--	--	6.1	81	--	
07...	1054	5.00	160	7.20	30.0	--	--	--	5.1	67	--	
07...	1056	10.0	160	7.10	30.0	--	--	--	4.6	60	--	
07...	1058	15.0	155	6.80	29.5	--	--	--	1.7	22	--	
07...	1100	20.0	155	6.80	29.0	--	--	--	0.5	6	--	
07...	1102	25.0	155	6.80	28.5	--	--	--	0.4	5	--	
07...	1104	36.0	175	6.80	27.5	--	--	--	0.4	5	--	
20...	1010	1.00	180	7.60	26.5	0.41	--	--	7.3	90	--	
20...	1011	0.68	--	--	--	--	90	27	--	--	17	
20...	1012	10.0	185	7.60	26.0	--	--	--	7.3	89	--	
20...	1014	15.0	190	7.50	26.0	--	--	--	7.2	88	--	
20...	1016	25.0	185	7.40	26.0	--	--	--	6.5	80	--	
20...	1018	35.0	175	7.30	26.0	--	--	--	5.8	71	--	
DATE		RESIDUE VOLA- TILE, SUS- PENDED (MG/L)	RESIDUE FIXED NON- FILTER- ABLE (MG/L)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)
SEP												
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	11	6	--	<0.010	<0.100	0.020	0.48	0.50	0.120	12	5.80	0.300
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--

295656095090201 - LAKE HOUSTON SITE BL

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP								
07...	1028	1.00	160	7.30	30.5	0.43	5.7	76
07...	1030	5.00	160	7.10	30.0	--	5.0	66
07...	1032	10.0	160	7.00	30.0	--	4.1	54
07...	1034	15.0	155	6.80	29.5	--	1.8	23
07...	1036	20.0	155	6.80	28.5	--	0.6	8
07...	1038	25.0	155	6.80	28.5	--	0.4	5
07...	1040	35.0	155	6.80	28.0	--	0.4	5

295902095075301 - LAKE HOUSTON SITE CR

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN								
10...	1306	1.00	330	8.20	14.0	0.36	8.6	83
10...	1308	12.0	330	8.20	14.0	--	8.5	82
SEP								
07...	1236	1.00	175	7.40	31.0	0.35	5.9	79
07...	1238	5.00	200	7.10	30.0	--	4.4	58
07...	1240	10.0	195	7.00	30.0	--	3.6	47
07...	1242	15.0	170	6.80	29.5	--	0.8	10
07...	1244	22.0	160	6.90	29.0	--	0.4	5



08072000 LAKE HOUSTON NEAR SHELTON, TX--Continued

295902095075301 - LAKE HOUSTON SITE CR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)
JAN							
10...	0.180	0.020	0.200	0.050	0.55	0.60	0.330
10...	0.280	0.020	0.300	0.050	0.45	0.50	0.360
SEP							
07...	--	0.020	<0.100	0.020	0.78	0.80	0.280
07...	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--
07...	--	0.030	<0.100	0.120	0.68	0.80	0.410

295902095074201 - LAKE HOUSTON SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)
OCT											
12...	1210	1.00	325	8.40	23.0	0.41	--	--	7.7	89	--
12...	1211	0.68	--	--	--	--	--	--	--	--	--
12...	1212	5.00	325	8.30	23.0	--	--	--	7.7	89	--
12...	1214	10.0	325	8.30	23.0	--	--	--	7.2	83	--
12...	1216	15.0	330	8.30	23.0	--	--	--	7.2	83	--
12...	1218	20.0	330	8.30	23.0	--	--	--	7.1	82	--
12...	1220	27.0	335	8.20	23.0	--	--	--	6.8	79	--
NOV											
01...	1100	1.00	335	8.00	21.0	0.39	--	--	6.8	76	--
01...	1101	0.64	--	--	--	--	--	--	--	--	--
01...	1102	5.00	340	7.90	21.0	--	--	--	6.8	76	--
01...	1104	10.0	340	7.90	20.5	--	--	--	6.7	74	--
01...	1106	15.0	340	7.90	20.5	--	--	--	6.4	70	--
01...	1108	20.0	340	7.90	20.5	--	--	--	6.6	73	--
01...	1110	28.0	340	7.90	20.5	--	--	--	6.6	73	--
JAN											
10...	1250	1.00	330	8.20	14.0	0.33	28	21	8.6	82	2.5
10...	1251	0.54	--	--	--	--	--	--	--	--	--
10...	1252	10.0	330	8.10	14.0	--	--	--	8.3	80	--
10...	1254	27.0	330	8.10	14.0	--	30	20	8.3	80	2.3
20...	1222	1.00	315	8.00	12.5	0.42	24	20	8.8	82	3.0
20...	1223	0.69	--	--	--	--	--	--	--	--	--
20...	1224	5.00	315	8.00	12.5	--	--	--	8.8	82	--
20...	1226	15.0	315	7.90	12.5	--	--	--	8.8	82	--
20...	1228	29.0	315	8.00	12.5	--	25	28	8.8	82	3.1
JUN											
16...	1034	1.00	130	7.50	27.0	0.35	150	17	6.1	76	2.7
16...	1035	0.58	--	--	--	--	--	--	--	--	--
16...	1036	10.0	135	7.40	27.0	--	--	--	5.6	70	--
16...	1038	20.0	145	7.40	27.0	--	--	--	5.6	70	--
16...	1040	30.0	160	7.40	26.5	--	120	19	5.5	68	2.0
29...	1036	1.00	40	6.10	24.0	0.30	--	--	4.9	58	--
29...	1037	0.49	--	--	--	--	--	--	--	--	--
29...	1038	10.0	40	6.10	24.0	--	--	--	4.9	58	--
29...	1040	20.0	35	6.10	24.0	--	--	--	4.8	57	--
29...	1042	31.0	35	6.20	24.0	--	--	--	4.8	57	--
JUL											
13...	1130	1.00	105	6.80	29.5	0.36	--	--	4.3	56	--
13...	1131	0.59	--	--	--	--	--	--	--	--	--
13...	1132	10.0	105	6.70	29.0	--	--	--	3.9	50	--
13...	1134	15.0	105	6.60	29.0	--	--	--	3.2	41	--
13...	1136	20.0	95	6.40	28.0	--	--	--	1.8	23	--
13...	1138	28.0	95	6.40	27.5	--	--	--	1.5	19	--
27...	1204	1.00	110	6.90	28.5	0.36	--	--	3.5	45	--
27...	1205	0.59	--	--	--	--	220	29	--	--	--
27...	1206	5.00	130	6.90	28.0	--	--	--	3.5	44	--
27...	1208	10.0	130	6.90	27.5	--	--	--	3.4	43	--
27...	1210	15.0	130	6.90	27.5	--	--	--	3.2	40	--
27...	1212	20.0	130	6.90	27.5	--	--	--	3.1	39	--
27...	1214	25.0	125	6.80	27.5	--	--	--	2.9	36	--
27...	1216	30.0	100	6.60	26.5	--	--	--	0.4	5	--
AUG											
10...	1044	1.00	155	7.20	28.5	0.33	--	--	4.7	60	--
10...	1045	0.54	--	--	--	--	--	--	--	--	--
10...	1046	5.00	155	7.20	28.0	--	--	--	4.5	57	--
10...	1048	10.0	150	7.20	28.0	--	--	--	4.5	57	--
10...	1050	15.0	150	7.20	28.0	--	--	--	4.5	57	--
10...	1052	20.0	150	7.20	28.0	--	--	--	4.5	57	--
10...	1054	29.0	150	7.20	28.0	--	--	--	4.5	57	--
22...	1050	1.00	155	7.60	30.0	0.41	--	--	5.5	72	--
22...	1051	0.68	--	--	--	--	110	24	--	--	--
22...	1052	5.00	160	7.20	29.5	--	--	--	4.0	52	--
22...	1054	10.0	170	7.10	29.0	--	--	--	3.1	40	--
22...	1056	15.0	170	7.00	29.0	--	--	--	2.8	36	--
22...	1058	20.0	175	7.00	29.0	--	--	--	2.0	26	--
22...	1100	27.0	175	7.00	28.5	--	--	--	1.6	21	--

295902095074201 - LAKE HOUSTON SITE CC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

[illegible]

## SAN JACINTO RIVER BASIN

101

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

295902095074201 - LAKE HOUSTON SITE CC--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L)	RESIDUE FIXED NON FILTER- ABLE (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
OCT											
12...	--	--	--	--	--	<0.010	--	<0.100	--	<0.010	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	<0.010	--	<0.100	--	<0.010	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	0.010	--	<0.100	--	<0.010	--
NOV											
01...	--	--	--	--	--	0.010	--	<0.100	--	0.020	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	<0.010	--	<0.100	--	0.050	--
JAN											
10...	179	16	<1	--	0.280	0.020	--	0.300	--	0.050	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	179	43	3	40	0.280	0.020	--	0.300	--	0.050	--
20...	--	29	4	25	0.190	0.010	--	0.200	--	0.040	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	44	17	27	0.180	0.020	--	0.200	--	0.070	--
JUN											
16...	--	16	<1	--	--	0.020	--	<0.100	--	0.020	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	0.010	--	<0.100	--	0.030	--
16...	--	24	4	20	--	0.020	--	<0.100	--	0.030	--
29...	--	--	--	--	--	0.020	--	<0.100	--	0.040	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	0.030	--	<0.100	--	0.050	--
JUL											
13...	--	--	--	--	--	0.020	--	<0.100	--	0.040	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	0.030	--	<0.100	--	0.060	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	0.030	--	<0.100	--	0.110	--
27...	--	--	--	--	--	0.020	<0.010	<0.100	<0.100	0.090	0.060
27...	--	30	3	27	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	0.030	--	<0.100	--	0.090	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	0.020	--	<0.100	--	0.570	--
AUG											
10...	--	--	--	--	0.080	0.020	--	0.100	--	0.040	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	0.180	0.020	--	0.200	--	0.060	--
22...	--	--	--	--	--	0.010	<0.010	<0.100	<0.100	0.020	0.010
22...	--	14	12	2	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	0.020	--	<0.100	--	0.120	--

SAN JACINTO RIVER BASIN  
08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

295902095074201 - LAKE HOUSTON SITE CC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
OCT											
12...	--	--	--	0.60	0.180	--	--	--	--	<10	<10
12...	--	--	--	--	--	--	--	14.0	0.600	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	0.60	0.210	--	--	14.0	0.700	10	<10
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	0.50	0.260	--	--	15.0	0.600	<10	10
NOV											
01...	0.58	--	--	0.60	0.270	--	--	--	--	<10	10
01...	--	--	--	--	--	--	--	40.0	1.70	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	0.65	--	--	0.70	0.360	--	--	--	--	70	20
JAN											
10...	0.85	--	--	0.90	0.320	--	7.7	--	--	10	<1
10...	--	--	--	--	--	--	--	21.0	0.600	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	0.65	--	--	0.70	0.290	--	8.3	--	--	8	1
20...	0.56	--	--	0.60	0.310	--	7.8	--	--	30	110
20...	--	--	--	--	--	--	--	6.80	0.300	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	0.93	--	--	1.0	0.390	--	8.6	--	--	120	640
JUN											
16...	1.1	--	--	1.1	0.200	--	18	--	--	190	<10
16...	--	--	--	--	--	--	--	9.10	0.400	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	0.87	--	--	0.90	0.200	--	--	--	--	160	10
16...	0.57	--	--	0.60	0.220	--	12	--	--	160	20
29...	0.66	--	--	0.70	0.050	--	--	--	--	200	40
29...	--	--	--	--	--	--	--	1.00	<0.100	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	0.85	--	--	0.90	0.050	--	--	--	--	210	40
JUL											
13...	0.96	--	--	1.0	0.120	--	--	--	--	360	40
13...	--	--	--	--	--	--	--	4.10	0.200	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	0.84	--	--	0.90	0.140	--	--	--	--	500	150
13...	--	--	--	--	--	--	--	--	--	--	--
13...	0.99	--	--	1.1	0.160	--	--	--	--	720	240
27...	0.91	0.54	0.60	1.0	0.190	0.110	--	--	--	340	130
27...	--	--	--	--	--	--	16	2.10	<0.100	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	0.81	--	--	0.90	0.240	--	--	--	--	440	280
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	0.63	--	--	1.2	0.640	--	--	--	--	1800	680
AUG											
10...	0.76	--	--	0.80	0.240	--	--	--	--	250	30
10...	--	--	--	--	--	--	--	5.80	0.400	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	0.74	--	--	0.80	0.230	--	--	--	--	270	50
22...	0.88	0.59	0.60	0.90	0.220	0.120	--	--	--	200	110
22...	--	--	--	--	--	--	14	7.80	0.600	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	0.68	--	--	0.80	0.290	--	--	--	--	260	180

## SAN JACINTO RIVER BASIN

103

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

295902095074201 - LAKE HOUSTON SITE CC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

		SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	
SEP												
07...	1200	1.00	170	7.50	31.0	0.26	65	26	6.2	83	2.7	
07...	1201	0.42	--	--	--	--	--	--	--	--	--	
07...	1202	5.00	200	7.10	30.0	--	--	--	4.1	54	--	
07...	1204	10.0	185	6.90	30.0	--	--	--	2.4	32	--	
07...	1206	15.0	165	6.80	29.5	--	--	--	1.5	20	--	
07...	1208	20.0	165	6.80	29.5	--	--	--	0.7	9	--	
07...	1210	28.0	155	6.80	28.5	--	140	23	0.4	5	0.9	
20...	1055	1.00	175	7.20	25.5	0.36	--	--	5.8	70	--	
20...	1056	0.59	--	--	--	--	55	35	--	--	--	
20...	1057	5.00	180	7.20	25.5	--	--	--	5.7	69	--	
20...	1059	10.0	185	7.20	25.5	--	--	--	5.6	68	--	
20...	1101	15.0	185	7.20	25.5	--	--	--	5.3	64	--	
20...	1103	20.0	180	7.10	25.5	--	--	--	4.9	59	--	
20...	1105	25.0	240	7.00	25.0	--	--	--	2.6	31	--	
		HARD- NESS TOTAL (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
SEP												
07...	48	16	2.0	15	0.9	2.7	44	7.0	18	0.10	12	
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	45	15	1.9	12	0.8	2.5	46	5.0	15	0.10	11	
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
		SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L)	RESIDUE FIXED NON FILTER- ABLE (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
SEP												
07...	99	26	4	22	--	0.020	--	--	<0.100	--	0.020	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	0.020	--	--	<0.100	--	0.050	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	91	18	<1	--	--	0.020	--	--	<0.100	--	0.130	--
20...	--	--	--	--	--	0.080	0.020	<0.010	0.100	0.100	0.010	0.010
20...	--	26	3	23	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	0.180	0.020	--	0.200	--	0.010	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	0.370	0.130	--	0.500	--	0.070	--



## SAN JACINTO RIVER BASIN

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

295902095074201 - LAKE HOUSTON SITE CC--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
SEP											
07...	0.88	--	--	0.90	0.280	--	12	--	--	270	38
07...	--	--	--	--	--	--	--	11.0	0.500	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	0.65	--	--	0.70	0.300	--	--	--	--	70	570
07...	--	--	--	--	--	--	--	--	--	--	--
07...	0.67	--	--	0.80	0.380	--	11	--	--	63	760
20...	0.59	0.59	0.60	0.60	0.240	0.220	--	--	--	40	<10
20...	--	--	--	--	--	--	11	1.50	<0.100	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	0.59	--	--	0.60	0.260	--	--	--	--	350	30
20...	--	--	--	--	--	--	--	--	--	--	--
20...	0.63	--	--	0.70	0.460	--	--	--	--	30	20

295902095073001 - LAKE HOUSTON SITE CL

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN								
10...	1240	1.00	330	8.20	14.0	0.36	8.4	80
10...	1242	10.0	330	8.20	14.0	--	8.4	80
SEP								
07...	1145	1.00	165	7.20	31.0	0.35	4.6	61
07...	1147	5.00	170	7.10	30.0	--	4.2	55
07...	1149	12.0	165	7.00	30.0	--	1.8	24

DATE	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)
JAN							
10...	0.180	0.020	0.200	0.050	0.75	0.80	0.270
10...	0.180	0.020	0.200	0.060	0.44	0.50	0.280
SEP							
07...	--	0.020	<0.100	0.020	0.58	0.60	0.260
07...	--	--	--	--	--	--	--
07...	--	0.020	<0.100	0.030	0.57	0.60	0.260

300016095075601 - LAKE HOUSTON SITE DR

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP								
07...	1306	1.00	200	7.30	31.0	0.25	5.2	70
07...	1308	5.00	200	7.20	30.5	--	4.3	57
07...	1310	10.0	200	7.10	30.0	--	3.6	47
07...	1312	15.0	195	7.10	30.0	--	3.6	47
07...	1314	20.0	195	7.20	30.0	--	3.6	47

## SAN JACINTO RIVER BASIN

105

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

300016095073401 - LAKE HOUSTON SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
OCT										
12...	1236	1.00	340	8.60	23.0	0.40	--	--	7.9	91
12...	1238	5.00	340	8.60	23.0	--	--	--	7.9	91
12...	1240	10.0	340	8.60	22.5	--	--	--	7.3	84
12...	1242	15.0	340	8.70	22.5	--	--	--	7.7	88
12...	1244	22.0	340	8.70	22.5	--	--	--	8.0	92
NOV										
01...	1136	1.00	335	7.80	21.5	0.39	--	--	6.6	74
01...	1138	5.00	340	7.80	21.5	--	--	--	6.4	72
01...	1140	10.0	340	7.80	21.0	--	--	--	6.3	70
01...	1142	15.0	340	7.80	21.0	--	--	--	6.2	69
01...	1144	23.0	340	7.80	21.0	--	--	--	6.2	69
JAN										
20...	1204	1.00	315	8.10	12.5	0.42	--	--	8.8	82
20...	1206	5.00	315	8.10	12.5	--	--	--	8.8	82
20...	1208	15.0	315	8.00	12.5	--	--	--	8.8	82
20...	1210	25.0	310	7.90	12.5	--	--	--	8.8	82
JUN										
16...	1109	1.00	210	7.80	27.0	0.35	--	--	6.3	78
16...	1111	10.0	225	7.80	27.0	--	--	--	6.0	75
16...	1113	20.0	235	7.70	27.0	--	--	--	5.8	72
16...	1115	26.0	245	7.60	27.0	--	--	--	5.7	71
29...	1100	1.00	35	6.10	24.0	0.27	--	--	4.8	57
29...	1102	10.0	35	6.10	24.0	--	--	--	4.8	57
29...	1104	27.0	35	6.10	24.0	--	--	--	4.8	57
JUL										
13...	1216	1.00	130	6.90	29.5	0.32	--	--	4.7	61
13...	1218	10.0	120	6.80	29.0	--	--	--	3.6	46
13...	1220	15.0	120	6.60	28.5	--	--	--	2.6	33
13...	1222	20.0	115	6.50	28.0	--	--	--	1.6	20
13...	1224	27.0	95	6.40	27.5	--	--	--	1.2	15
27...	1240	1.00	120	6.90	29.0	0.29	--	--	3.5	45
27...	1241	0.48	--	--	--	--	210	32	--	--
27...	1242	5.00	125	6.90	28.0	--	--	--	3.4	43
27...	1244	10.0	125	6.90	27.5	--	--	--	3.4	43
27...	1246	15.0	125	6.90	27.5	--	--	--	3.3	41
27...	1248	20.0	125	6.80	27.5	--	--	--	2.6	33
27...	1250	23.0	125	6.80	27.5	--	--	--	2.5	31
27...	1252	25.0	100	6.60	27.0	--	--	--	0.6	7
AUG										
10...	1106	1.00	165	7.30	28.5	0.29	--	--	4.8	61
10...	1108	5.00	170	7.20	28.0	--	--	--	4.7	59
10...	1110	15.0	175	7.20	28.0	--	--	--	4.7	59
10...	1112	25.0	175	7.30	28.0	--	--	--	4.7	59
22...	1144	1.00	170	7.50	29.5	0.35	--	--	5.5	72
22...	1145	0.58	--	--	--	--	70	27	--	--
22...	1146	5.00	170	7.30	29.5	--	--	--	4.6	60
22...	1148	10.0	170	7.30	29.0	--	--	--	4.3	56
22...	1150	15.0	170	7.30	29.0	--	--	--	4.3	56
22...	1152	22.0	175	7.20	29.0	--	--	--	3.4	44
SEP										
07...	1323	1.00	190	7.30	31.0	0.23	--	--	5.3	71
07...	1325	5.00	190	7.10	30.5	--	--	--	4.2	56
07...	1327	10.0	190	7.10	30.0	--	--	--	3.8	50
07...	1329	15.0	180	7.00	29.5	--	--	--	2.3	30
07...	1331	23.0	165	6.90	29.5	--	--	--	0.4	5
20...	1210	1.00	225	7.30	26.0	0.32	--	--	5.4	66
20...	1211	0.52	--	--	--	--	80	40	--	--
20...	1212	5.00	225	7.20	25.5	--	--	--	5.2	63
20...	1214	10.0	230	7.00	25.5	--	--	--	4.3	52
20...	1216	15.0	235	7.10	25.0	--	--	--	3.5	42
20...	1218	20.0	235	7.10	25.0	--	--	--	3.5	42

## SAN JACINTO RIVER BASIN

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

300016095073401 - LAKE HOUSTON SITE DC--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

[illegible]

## SAN JACINTO RIVER BASIN

10/

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

300016095073401 - LAKE HOUSTON SITE DC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)
OCT									
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
NOV									
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
JAN									
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
JUN									
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
JUL									
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
27...	0.93	0.85	0.90	1.0	0.220	0.140	--	--	--
27...	--	--	--	--	--	--	15	3.40	<0.100
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
AUG									
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
22...	--	1.5	1.5	--	--	0.160	--	--	--
22...	--	--	--	--	--	--	16	16.0	0.700
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
SEP									
07...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
20...	--	0.78	0.80	--	--	0.270	--	--	--
20...	--	--	--	--	--	--	9.4	2.50	0.100
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--

300016095072301 - LAKE HOUSTON SITE DL

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP								
07...	1344	1.00	180	7.20	31.0	0.30	5.0	67
07...	1346	5.00	185	7.10	30.0	--	4.4	58
07...	1348	10.0	175	6.90	30.0	--	2.5	33
07...	1350	15.0	175	6.90	29.5	--	2.4	31
07...	1352	20.0	175	6.90	29.5	--	1.6	21
07...	1354	27.0	170	6.90	29.0	--	0.4	5

## SAN JACINTO RIVER BASIN

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

300202095075701 - LAKE HOUSTON SITE ER

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)
JAN												
10...	1014	1.00	260	8.00	14.0	0.34	8.4	80	0.080	0.020	<0.010	0.100
10...	1016	11.0	260	8.00	14.0	--	8.6	82	0.080	0.020	0.010	0.100
SEP												
07...	1455	1.00	185	7.40	31.5	0.25	5.8	78	--	0.020	<0.010	<0.100
07...	1457	5.00	185	7.20	31.5	--	5.3	72	--	--	--	--
07...	1459	10.0	185	7.00	30.0	--	3.0	39	--	0.020	<0.010	<0.100
DATE		NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN												
10...		<0.100	0.050	0.040	0.65	0.66	0.70	0.70	0.200	0.160	30	<10
10...		<0.100	0.050	0.060	0.45	0.44	0.50	0.50	0.200	0.140	100	<10
SEP												
07...		<0.100	0.010	<0.010	0.79	--	0.50	0.80	0.210	0.100	20	40
07...		--	--	--	--	--	--	--	--	--	--	--
07...		<0.100	0.040	0.040	0.66	0.46	0.50	0.70	0.230	0.100	30	100



## SAN JACINTO RIVER BASIN

109

08072000 LAKE HOUSTON NEAR SHELTON, TX--Continued

300158095074601 - LAKE HOUSTON SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT												
12...	1308	1.00	285	8.20	23.5	0.39	--	--	7.9	92	--	--
12...	1309	0.64	--	--	--	--	--	--	--	--	--	--
12...	1310	5.00	285	8.10	23.0	--	--	--	7.6	88	--	--
12...	1312	10.0	290	8.10	23.0	--	--	--	7.2	83	--	--
12...	1314	18.0	300	8.10	22.5	--	--	--	6.7	77	--	--
NOV												
01...	1212	1.00	300	7.80	21.0	0.46	--	--	7.1	79	--	--
01...	1213	0.76	--	--	--	--	--	--	--	--	--	--
01...	1214	5.00	300	7.70	21.0	--	--	--	6.8	76	--	--
01...	1216	10.0	300	7.60	20.5	--	--	--	6.5	72	--	--
01...	1218	15.0	290	7.60	20.5	--	--	--	6.4	70	--	--
01...	1220	20.0	290	7.70	20.5	--	--	--	6.3	69	--	--
JAN												
10...	0942	1.00	265	8.00	14.0	0.33	45	24	8.7	83	2.5	K8
10...	0943	0.54	--	--	--	--	--	--	--	--	--	--
10...	0944	10.0	265	7.90	14.0	--	--	--	8.6	82	--	--
10...	0946	19.0	265	7.90	14.0	--	43	26	8.6	82	5.7	--
20...	1045	1.00	175	7.50	12.0	0.37	70	29	8.6	79	2.1	120
20...	1046	0.60	--	--	--	--	--	--	--	--	--	--
20...	1047	10.0	175	7.50	12.0	--	--	--	8.5	78	--	--
20...	1049	20.0	175	7.60	12.5	--	75	32	8.4	78	2.0	--
JUN												
16...	1238	1.00	135	7.50	28.5	0.25	120	22	6.4	82	5.1	K2
16...	1239	0.41	--	--	--	--	--	--	--	--	--	--
16...	1240	10.0	145	7.30	27.0	--	--	--	5.0	62	--	--
16...	1242	22.0	145	7.30	26.5	--	120	28	5.0	62	1.7	--
29...	1208	1.00	40	6.10	24.0	0.21	--	--	5.3	63	--	--
29...	1209	0.34	--	--	--	--	--	--	--	--	--	--
29...	1210	10.0	40	6.20	24.0	--	--	--	5.3	63	--	--
29...	1212	24.0	40	6.30	24.0	--	--	--	5.3	63	--	--
JUL												
13...	1320	1.00	100	6.70	30.0	0.29	--	--	5.0	66	--	--
13...	1321	0.48	--	--	--	--	--	--	--	--	--	--
13...	1322	5.00	95	6.60	29.0	--	--	--	3.8	49	--	--
13...	1324	10.0	90	6.50	28.5	--	--	--	3.2	41	--	--
13...	1326	15.0	90	6.50	28.0	--	--	--	3.2	41	--	--
13...	1328	20.0	85	6.70	28.0	--	--	--	3.2	41	--	--
27...	1406	1.00	130	7.00	30.0	0.33	--	--	4.1	54	--	--
27...	1407	0.54	--	--	--	--	220	34	--	--	--	--
27...	1408	5.00	130	7.00	28.5	--	--	--	3.9	50	--	--
27...	1410	10.0	130	7.00	28.0	--	--	--	3.9	49	--	--
27...	1412	15.0	130	7.00	28.0	--	--	--	3.9	49	--	--
27...	1414	21.0	130	7.10	28.0	--	--	--	3.9	49	--	--
AUG												
10...	1224	1.00	165	7.40	30.0	0.34	--	--	5.5	72	--	--
10...	1225	0.56	--	--	--	--	--	--	--	--	--	--
10...	1226	5.00	165	7.10	28.5	--	--	--	4.1	52	--	--
10...	1228	10.0	160	7.10	28.0	--	--	--	4.1	52	--	--
10...	1230	15.0	160	7.20	28.0	--	--	--	4.1	52	--	--
10...	1232	21.0	160	7.20	28.0	--	--	--	3.9	49	--	--
22...	1255	1.00	175	7.40	30.5	0.37	--	--	4.7	62	--	--
22...	1256	0.60	--	--	--	--	70	23	--	--	--	--
22...	1257	5.00	175	7.10	30.0	--	--	--	3.5	46	--	--
22...	1259	10.0	175	6.90	29.5	--	--	--	1.6	21	--	--
22...	1301	15.0	170	6.80	29.0	--	--	--	1.1	14	--	--
22...	1303	17.0	165	6.90	29.0	--	--	--	1.0	13	--	--
SEP												
07...	1425	1.00	185	7.20	31.0	0.24	70	27	5.3	71	1.7	K8
07...	1426	0.40	--	--	--	--	--	--	--	--	--	--
07...	1427	5.00	185	7.10	31.0	--	--	--	4.5	60	--	--
07...	1429	10.0	185	6.90	30.0	--	--	--	3.0	39	--	--
07...	1431	15.0	185	6.90	30.0	--	--	--	2.0	26	--	--
07...	1433	20.0	185	6.80	30.0	--	120	38	1.4	18	1.3	--
20...	1330	1.00	200	7.20	26.0	0.32	--	--	5.8	71	--	--
20...	1331	0.52	--	--	--	--	80	35	--	--	--	--
20...	1332	5.00	200	7.20	25.5	--	--	--	5.4	66	--	--
20...	1334	12.0	210	7.20	25.5	--	--	--	4.8	58	--	--
20...	1336	17.0	215	7.20	25.0	--	--	--	4.3	52	--	--

## SAN JACINTO RIVER BASIN

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

300158095074601 - LAKE HOUSTON SITE EC--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	STREP- TOCOCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT											
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
NOV											
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
JAN											
10...	K16	59	19	2.7	29	2	3.1	57	16	39	0.10
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	61	20	2.7	30	2	3.2	61	13	36	0.10
20...	130	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
JUN											
16...	K4	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
JUL											
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
AUG											
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
SEP											
07...	120	47	15	2.2	17	1	2.5	45	7.0	22	0.10
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	47	15	2.3	17	1	2.7	46	7.0	21	0.10
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--

## SAN JACINTO RIVER BASIN

111

08072000 LAKE HOUSTON NEAR SHELTON, TX--Continued

300158095074601 - LAKE HOUSTON SITE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L)	RESIDUE FIXED NON FILTER- ABLE (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
OCT											
12...	--	--	--	--	--	--	0.010	<0.010	<0.100	0.120	0.010
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	0.010	<0.010	<0.100	<0.100	0.040
NOV											
01...	--	--	--	--	--	--	<0.010	<0.010	<0.100	<0.100	<0.010
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	<0.010	<0.010	<0.100	<0.100	0.020
JAN											
10...	8.4	152	30	3	27	0.080	0.020	<0.010	0.100	<0.100	0.050
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	8.2	152	42	1	41	0.080	0.020	<0.010	0.100	0.530	0.060
20...	--	--	16	10	6	0.090	0.010	<0.010	0.100	0.100	0.080
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	9	7	2	0.130	0.010	<0.010	0.140	0.130	0.070
JUN											
16...	--	--	35	<1	--	--	0.010	<0.010	<0.100	<0.100	0.020
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	33	2	31	--	0.010	<0.010	<0.100	0.100	0.040
29...	--	--	--	--	--	--	0.020	<0.010	<0.100	<0.100	0.070
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	0.030	0.010	<0.100	<0.100	0.090
JUL											
13...	--	--	--	--	--	--	0.020	<0.010	<0.100	<0.100	0.040
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	0.020	<0.010	<0.100	<0.100	0.110
27...	--	--	--	--	--	--	0.020	<0.010	<0.100	<0.100	0.060
27...	--	--	27	<1	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	0.020	<0.010	<0.100	<0.100	0.070
AUG											
10...	--	--	--	--	--	--	0.010	<0.010	<0.100	<0.100	0.040
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	0.080	0.020	<0.010	0.100	0.110	0.080
22...	--	--	--	--	--	--	<0.010	0.010	<0.100	<0.100	0.010
22...	--	--	12	1	11	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	<0.010	<0.010	<0.100	<0.100	0.020
SEP											
07...	13	106	30	<1	--	--	0.020	<0.010	<0.100	<0.100	0.020
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	13	106	53	6	47	--	0.030	0.020	<0.100	<0.100	0.090
20...	--	--	--	--	--	0.080	0.020	<0.010	0.100	<0.100	0.030
20...	--	--	38	14	24	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	0.180	0.020	<0.010	0.200	0.150	0.020

## SAN JACINTO RIVER BASIN

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

300158095074601 - LAKE HOUSTON SITE EC--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	ARSENIC DIS- SOLVED (UG/L AS AS)
OCT											
12...	<0.010	0.39	--	0.30	0.40	0.130	0.100	--	--	--	--
12...	--	--	--	--	--	--	--	--	12.0	0.600	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	<0.010	0.36	--	0.30	0.40	0.200	0.110	--	--	--	--
NOV											
01...	<0.010	--	--	0.50	0.60	0.190	0.110	--	--	--	--
01...	--	--	--	--	--	--	--	--	29.0	1.20	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	0.010	0.58	0.49	0.50	0.60	0.130	0.100	--	--	--	--
JAN											
10...	0.060	0.75	0.74	0.80	0.80	0.210	0.180	7.6	--	--	--
10...	--	--	--	--	--	--	--	--	20.0	0.600	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	0.130	0.54	0.37	0.50	0.60	0.230	0.210	7.8	--	--	--
20...	0.060	1.2	0.74	0.80	1.3	0.120	0.060	11	--	--	--
20...	--	--	--	--	--	--	--	--	1.40	<0.100	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	0.060	0.73	0.64	0.70	0.80	0.130	0.120	10	--	--	--
JUN											
16...	<0.010	1.3	--	0.30	1.3	0.110	0.030	15	--	--	--
16...	--	--	--	--	--	--	--	--	4.30	0.200	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	0.010	0.36	0.39	0.40	0.40	0.100	0.070	12	--	--	--
29...	0.060	0.73	0.64	0.70	0.80	0.040	0.040	--	--	--	--
29...	--	--	--	--	--	--	--	--	0.300	<0.100	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	0.110	0.71	0.69	0.80	0.80	0.050	0.040	--	--	--	--
JUL											
13...	0.030	1.4	0.87	0.90	1.4	0.100	0.040	--	--	--	--
13...	--	--	--	--	--	--	--	--	6.90	0.700	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	0.100	1.1	1.0	1.1	1.2	0.090	0.120	--	--	--	--
27...	0.060	1.5	0.44	0.50	1.6	0.230	0.090	--	--	--	--
27...	--	--	--	--	--	--	--	15	5.80	0.200	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	0.060	1.2	0.84	0.90	1.3	0.200	0.080	--	--	--	--
AUG											
10...	0.020	0.96	0.48	0.50	1.0	0.190	0.090	--	--	--	--
10...	--	--	--	--	--	--	--	--	9.20	0.500	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	0.050	0.82	0.65	0.70	0.90	0.240	0.140	--	--	--	--
22...	0.010	0.49	0.49	0.50	0.50	0.080	0.080	--	--	--	--
22...	--	--	--	--	--	--	--	11	5.00	0.300	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	0.021	0.78	0.58	0.60	0.80	0.170	0.100	--	--	--	--
SEP											
07...	0.030	0.68	0.67	0.70	0.70	0.180	0.110	9.9	--	--	2
07...	--	--	--	--	--	--	--	--	7.60	0.700	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	0.110	0.71	0.39	0.50	0.80	0.280	0.090	11	--	--	2
20...	0.030	0.57	0.57	0.60	0.60	0.200	0.190	--	--	--	--
20...	--	--	--	--	--	--	--	8.7	4.50	0.200	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	0.021	0.58	0.38	0.40	0.60	0.270	0.160	--	--	--	--

08072000 LAKE HOUSTON NEAR SHELTON, TX--Continued

300158095074601 - LAKE HOUSTON SITE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM, DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY, DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT											
12...	--	--	--	--	<10	--	<10	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	<10	--	<10	--	--	--	--
NOV											
01...	--	--	--	--	<10	--	10	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	20	--	20	--	--	--	--
JAN											
10...	--	--	--	--	89	--	2	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	20	--	11	--	--	--	--
20...	--	--	--	--	160	--	20	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	200	--	260	--	--	--	--
JUN											
16...	--	--	--	--	160	--	<10	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	130	--	<10	--	--	--	--
29...	--	--	--	--	340	--	30	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	390	--	40	--	--	--	--
JUL											
13...	--	--	--	--	350	--	120	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	410	--	150	--	--	--	--
27...	--	--	--	--	380	--	110	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	540	--	80	--	--	--	--
AUG											
10...	--	--	--	--	110	--	30	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	80	--	30	--	--	--	--
22...	--	--	--	--	150	--	60	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	520	--	280	--	--	--	--
SEP											
07...	62	1	1	3	50	1	43	0.1	<1	2.0	<3
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	69	1	<1	2	57	<1	330	<0.1	<1	2.0	<3
20...	--	--	--	--	110	--	<10	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	30	--	20	--	--	--	--

300156095074001 - LAKE HOUSTON SITE EL

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)
JAN													
10...	0920	1.00	260	7.60	13.5	0.34	9.1	86	0.080	0.020	<0.010	0.100	0.100
10...	0922	9.00	260	7.50	13.5	--	9.0	85	0.080	0.020	<0.010	0.100	0.100
SEP													
07...	1408	1.00	185	7.10	31.5	0.25	4.9	66	--	0.020	0.010	<0.100	<0.100
07...	1410	5.00	185	7.00	31.0	--	4.0	53	--	--	--	--	--
07...	1412	10.0	180	7.00	30.0	--	2.9	38	--	0.030	<0.010	<0.100	<0.100



## SAN JACINTO RIVER BASIN

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

300156095074001 - LAKE HOUSTON SITE EL--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN											
10...	--	0.050	--	0.45	--	0.50	0.50	0.290	0.220	20	20
10...	--	0.050	--	0.35	--	1.1	0.40	0.230	--	40	70
SEP											
07...	<0.100	0.020	0.010	0.68	0.69	0.70	0.70	0.210	0.130	60	50
07...	--	--	--	--	--	--	--	--	--	--	--
07...	<0.100	0.030	0.030	0.67	0.67	0.70	0.70	0.230	0.230	80	90

300202095091701 - LAKE HOUSTON SITE FR

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
JAN													
10...	1042	1.00	395	8.30	12.5	0.44	8.9	82	1.27	1.28	0.030	0.020	0.020
10...	1044	5.00	395	8.20	12.5	--	8.9	82	1.17	1.28	0.030	0.020	0.020
SEP													
07...	1520	1.00	360	8.10	31.5	0.11	6.0	81	0.060	--	0.040	0.020	0.020
07...	1522	6.00	415	7.50	30.5	--	1.8	24	0.060	0.070	0.040	0.030	0.030
DATE		NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN													
10...	1.30	1.30	0.050	0.020	0.75	0.48	0.50	0.80	1.10	0.990	0.990	20	<10
10...	1.20	1.30	0.030	0.030	0.57	0.57	0.60	0.60	0.990	0.990	0.990	40	<10
SEP													
07...	0.100	<0.100	0.110	0.090	1.2	0.41	0.50	1.3	0.650	0.440	0.440	20	30
07...	0.100	0.100	0.230	0.230	0.97	0.67	0.90	1.2	0.560	0.460	0.460	20	110

## SAN JACINTO RIVER BASIN

115

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

300209095091201 - LAKE HOUSTON SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT												
12...	1340	1.00	370	8.60	23.0	0.29	--	--	9.3	107	--	--
12...	1341	0.48	--	--	--	--	--	--	--	--	--	--
12...	1342	5.00	370	8.60	22.5	--	--	--	8.7	100	--	--
12...	1344	10.0	375	8.60	22.0	--	--	--	8.4	95	--	--
NOV												
01...	1250	1.00	365	7.90	20.0	0.30	--	--	7.4	81	--	--
01...	1251	0.49	--	--	--	--	--	--	--	--	--	--
01...	1252	5.00	365	7.80	19.5	--	--	--	6.9	74	--	--
01...	1254	12.0	360	7.80	19.5	--	--	--	7.0	76	--	--
JAN												
10...	1050	1.00	400	8.30	12.5	0.45	18	11	8.6	80	2.1	20
10...	1051	0.74	--	--	--	--	--	--	--	--	--	--
10...	1052	11.0	400	8.20	12.5	--	16	17	8.5	79	1.9	--
20...	1120	1.00	305	7.60	13.5	0.22	90	68	8.0	76	2.9	720
20...	1121	0.36	--	--	--	--	--	--	--	--	--	--
20...	1122	5.00	305	7.60	13.0	--	--	--	8.0	75	--	--
20...	1124	12.0	320	7.60	13.0	--	70	55	8.0	75	2.6	--
JUN												
16...	1150	1.00	235	7.60	26.5	0.11	90	50	6.1	75	3.3	190
16...	1151	0.18	--	--	--	--	--	--	--	--	--	--
16...	1152	5.00	235	7.40	25.5	--	--	--	5.2	63	--	--
16...	1154	13.0	230	7.40	25.0	--	120	65	4.9	59	2.3	--
29...	1138	1.00	90	6.50	25.0	0.17	--	--	5.1	62	--	--
29...	1139	0.28	--	--	--	--	--	--	--	--	--	--
29...	1140	14.0	90	6.50	25.0	--	--	--	5.1	62	--	--
JUL												
13...	1254	1.00	215	7.90	30.5	0.32	--	--	6.8	90	--	--
13...	1255	0.52	--	--	--	--	--	--	--	--	--	--
13...	1256	5.00	215	7.60	30.0	--	--	--	6.0	79	--	--
13...	1258	13.0	215	7.10	29.5	--	--	--	4.5	59	--	--
27...	1330	1.00	280	8.60	29.5	0.40	--	--	8.1	105	--	--
27...	1331	0.66	--	--	--	--	90	11	--	--	--	--
27...	1332	5.00	350	7.80	27.0	--	--	--	5.0	62	--	--
27...	1334	10.0	390	7.80	27.0	--	--	--	4.9	61	--	--
27...	1336	13.0	390	7.70	27.0	--	--	--	4.8	60	--	--
AUG												
10...	1150	1.00	255	7.60	28.5	0.28	--	--	5.8	74	--	--
10...	1151	0.46	--	--	--	--	--	--	--	--	--	--
10...	1152	5.00	270	7.40	28.0	--	--	--	4.6	58	--	--
10...	1154	10.0	255	7.30	27.5	--	--	--	4.3	54	--	--
10...	1156	13.0	240	7.30	27.5	--	--	--	4.2	53	--	--
22...	1220	1.00	325	7.80	30.5	0.25	--	--	4.8	64	--	--
22...	1221	0.41	--	--	--	--	35	31	--	--	--	--
22...	1222	5.00	355	7.80	30.0	--	--	--	4.7	62	--	--
22...	1224	11.0	400	7.60	30.0	--	--	--	4.0	53	--	--
SEP												
07...	1530	1.00	360	8.40	32.0	0.12	40	29	7.2	98	5.5	20
07...	1531	0.20	--	--	--	--	--	--	--	--	--	--
07...	1532	5.00	385	7.60	30.5	--	--	--	3.5	46	--	--
07...	1534	11.0	405	7.60	30.0	--	30	50	2.6	34	3.9	--
20...	1256	1.00	230	7.80	27.0	0.24	--	--	6.7	84	--	--
20...	1257	0.40	--	--	--	--	80	65	--	--	--	--
20...	1258	5.00	230	7.60	26.5	--	--	--	5.9	73	--	--
20...	1300	10.0	230	7.50	26.0	--	--	--	4.9	60	--	--

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

300209095091201 - LAKE HOUSTON SITE FC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

[illegible]

## SAN JACINTO RIVER BASIN

117

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

300209095091201 - LAKE HOUSTON SITE FC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L)	RESIDUE FIXED NON FILTER- ABLE (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
OCT											
12...	--	--	--	--	0.960	0.970	0.040	0.030	1.00	1.00	<0.010
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	0.950	1.07	0.050	0.030	1.00	1.10	0.020
NOV											
01...	--	--	--	--	0.970	0.970	0.030	0.030	1.00	1.00	0.060
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	0.870	1.07	0.030	0.030	0.900	1.10	0.060
JAN											
10...	222	22	2	20	1.37	1.38	0.030	0.020	1.40	1.40	0.060
10...	--	--	--	--	--	--	--	--	--	--	--
10...	224	36	<1	--	1.36	1.38	0.040	0.020	1.40	1.40	0.070
20...	--	71	8	63	1.56	1.58	0.040	0.020	1.60	1.60	0.160
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	53	3	50	1.57	1.58	0.030	0.020	1.60	1.60	0.170
JUN											
16...	--	74	5	69	0.360	0.370	0.040	0.030	0.400	0.400	0.080
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	89	42	47	0.260	0.280	0.040	0.020	0.300	0.300	0.110
29...	--	--	--	--	0.070	--	0.030	<0.010	0.100	<0.100	0.040
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	0.030	0.010	<0.100	<0.100	0.040
JUL											
13...	--	--	--	--	--	--	0.010	<0.010	<0.100	<0.100	0.030
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	0.030	<0.010	<0.100	<0.100	0.090
27...	--	--	--	--	--	--	0.010	<0.010	<0.100	<0.100	<0.010
27...	--	28	1	27	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	0.370	0.380	0.030	0.020	0.400	0.400	0.170
AUG											
10...	--	--	--	--	0.270	0.260	0.030	0.020	0.300	0.280	0.090
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	0.170	0.170	0.030	0.020	0.200	0.190	0.170
22...	--	--	--	--	0.360	0.310	0.040	0.030	0.400	0.340	0.140
22...	--	31	19	12	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	0.740	0.650	0.060	0.060	0.800	0.710	0.290
SEP											
07...	203	59	<1	--	0.150	0.090	0.050	0.030	0.200	0.120	0.090
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	232	85	5	80	0.340	0.310	0.060	0.040	0.400	0.350	0.290
20...	--	--	--	--	0.160	0.190	0.040	0.020	0.200	0.210	0.050
20...	--	2	2	0	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	0.250	0.300	0.050	0.030	0.300	0.330	0.140

## SAN JACINTO RIVER BASIN

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

300209095091201 - LAKE HOUSTON SITE FC--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	ARSENIC DIS- SOLVED (UG/L AS AS)
OCT											
12...	<0.010	--	--	0.50	0.50	0.870	0.710	--	--	--	--
12...	--	--	--	--	--	--	--	--	25.0	2.10	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	0.010	0.68	0.69	0.70	0.70	0.920	0.670	--	--	--	--
NOV											
01...	0.060	0.74	0.54	0.60	0.80	0.780	0.720	--	--	--	--
01...	--	--	--	--	--	--	--	--	28.0	2.60	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	0.080	0.54	0.52	0.60	0.60	0.670	0.670	--	--	--	--
JAN											
10...	0.050	0.64	0.55	0.60	0.70	1.10	1.10	7.5	--	--	--
10...	--	--	--	--	--	--	--	--	20.0	1.10	--
10...	0.060	0.63	0.64	0.70	0.70	1.10	1.10	7.5	--	--	--
20...	0.130	0.74	0.77	0.90	0.90	1.10	1.00	12	--	--	--
20...	--	--	--	--	--	--	--	--	1.30	0.100	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	0.140	0.63	0.46	0.60	0.80	1.20	1.10	11	--	--	--
JUN											
16...	0.040	0.52	0.36	0.40	0.60	0.370	0.300	9.4	--	--	--
16...	--	--	--	--	--	--	--	--	4.70	0.300	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	0.080	0.69	0.72	0.80	0.80	0.270	0.270	9.7	--	--	--
29...	0.040	2.8	0.66	0.70	2.8	0.100	0.050	--	--	--	--
29...	--	--	--	--	--	--	--	--	1.50	<0.100	--
29...	0.041	0.46	0.46	0.50	0.50	0.090	0.050	--	--	--	--
JUL											
13...	0.040	1.6	0.56	0.60	1.6	0.280	0.210	--	--	--	--
13...	--	--	--	--	--	--	--	--	15.0	0.900	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	0.080	0.71	0.42	0.50	0.80	0.320	0.220	--	--	--	--
27...	0.010	--	1.5	1.5	2.6	0.520	0.360	--	--	--	--
27...	--	--	--	--	--	--	--	18	40.0	2.70	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	0.160	1.8	0.94	1.1	2.0	0.710	0.550	--	--	--	--
AUG											
10...	0.070	1.2	0.53	0.60	1.3	0.420	0.330	--	--	--	--
10...	--	--	--	--	--	--	--	--	20.0	1.30	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	0.160	1.0	0.64	0.80	1.2	0.460	0.330	--	--	--	--
22...	0.130	1.2	0.67	0.80	1.3	0.670	0.410	--	--	--	--
22...	--	--	--	--	--	--	--	10	13.0	0.900	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	0.280	1.4	0.92	1.2	1.7	0.780	0.520	--	--	--	--
SEP											
07...	0.040	0.91	0.46	0.50	1.0	0.760	0.480	9.7	--	--	4
07...	--	--	--	--	--	--	--	--	17.0	1.50	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	0.290	1.0	1.0	1.3	1.3	1.10	0.960	10	--	--	5
20...	0.030	1.4	0.37	0.40	1.4	0.530	0.310	--	--	--	--
20...	--	--	--	--	--	--	--	11	15.0	1.00	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	0.130	1.2	0.47	0.60	1.3	0.650	0.380	--	--	--	--



## SAN JACINTO RIVER BASIN

119

08072000 LAKE HOUSTON NEAR SHELTON, TX--Continued

300209095091201 - LAKE HOUSTON SITE FC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM, DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY, DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT											
12...	--	--	--	--	<10	--	<10	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	<10	--	<10	--	--	--	--
NOV											
01...	--	--	--	--	<10	--	<10	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	<10	--	<10	--	--	--	--
JAN											
10...	--	--	--	--	7	--	<1	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	7	--	2	--	--	--	--
20...	--	--	--	--	50	--	20	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	100	--	20	--	--	--	--
JUN											
16...	--	--	--	--	40	--	<10	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	40	--	10	--	--	--	--
29...	--	--	--	--	120	--	10	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	170	--	60	--	--	--	--
JUL											
13...	--	--	--	--	80	--	10	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	160	--	60	--	--	--	--
27...	--	--	--	--	90	--	10	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	80	--	110	--	--	--	--
AUG											
10...	--	--	--	--	70	--	40	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	60	--	50	--	--	--	--
22...	--	--	--	--	110	--	70	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	40	--	120	--	--	--	--
SEP											
07...	69	<1	<1	2	11	<1	8	<0.1	<1	3.0	6
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	75	<1	1	3	8	<1	44	<0.1	<1	2.0	5
20...	--	--	--	--	30	--	20	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	40	--	30	--	--	--	--

300214095090901 - LAKE HOUSTON SITE FL

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
JAN												
10...	1122	1.00	395	8.40	13.0	0.45	8.9	83	1.27	1.28	0.030	0.020
10...	1124	8.00	395	8.40	13.0	--	8.9	83	1.27	1.28	0.030	0.020
SEP												
07...	1600	1.00	330	8.30	32.0	0.11	7.4	101	--	--	0.040	0.020
07...	1602	7.00	330	8.20	32.0	--	7.0	95	0.060	--	0.040	0.020

## SAN JACINTO RIVER BASIN

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

300214095090901 - LAKE HOUSTON SITE FL--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN												
10...	1.30	1.30	0.040	0.040	0.36	0.36	0.40	0.40	1.20	1.00	20	<10
10...	1.30	1.30	0.040	0.050	0.46	0.45	0.50	0.50	1.10	1.00	20	<10
SEP												
07...	<0.100	<0.100	0.030	0.020	1.3	0.38	0.40	1.3	0.610	0.390	10	10
07...	0.100	<0.100	0.060	0.050	1.3	0.55	0.60	1.4	0.680	0.280	20	10

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

Lake Houston AC (295516095080801)

## Phytoplankton Analyses September 1988 to October 1989

Date	1-10-89
Time	1419

TOTAL CELLS/mL	14,719
NUMBER OF SPECIES	25
DEPTH COLLECTED (ft.)	0.74

<u>Organisms</u>	<u>Cells/mL</u>
CHLOROPHYTA (Green algae)	
<i>Ankistrodesmus falcatus</i>	550
<i>Chlamydomonas</i> sp.	92
<i>Dictyosphaerium pulchellum</i>	1,100
<i>Euastrum</i> sp.	46
<i>Golenkinia radiata</i>	92
<i>Kirchneriella lunaris</i>	642
<i>Pediastrum tetras</i>	734
<i>Scenedesmus dimorphus</i>	734
<i>Scenedesmus quadricauda</i>	1,651
<i>Tetraedron triangulare</i>	92
<i>Tetrastrum komarekii</i>	367
<i>Tetrastrum staurogeniaeforme</i>	183
unidentified green coccoids	1,192
CYANOPHYTA (Blue-green algae)	
<i>Chroococcus limneticus</i>	2,109
<i>Merismopedia tenuissima</i>	1,466
<i>Schizothrix calcicola</i>	92
EUGLENOPHYTA (Euglenoids)	
<i>Trachelomonas</i> sp.	92
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
<i>Cyclotella atomus</i>	550
<i>Cyclotella meneghiniana</i>	917
<i>Cyclotella pseudostelligera</i>	367
<i>Skeletonema potamos</i>	183
<i>Stephanodiscus</i> sp.	550
Order Pennales	
<i>Navicula</i> sp.	92
<i>Nitzschia</i> sp.	459
<i>Synedra delicatissima</i>	367

## Phytoplankton Analyses September 1988 to October 1989

Date	1-10-89
Time	1251

TOTAL CELLS/mL	20,496
NUMBER OF SPECIES	28
DEPTH COLLECTED (ft.)	0.54

<u>Organisms</u>	<u>Cells/mL</u>
<b>CHLOROPHYTA (Green algae)</b>	
<i>Ankistrodesmus falcatus</i>	550
<i>Chlamydomonas</i> sp.	92
<i>Crucigenia tetrapedia</i>	367
<i>Dictyosphaerium pulchellum</i>	183
<i>Euastrum</i> sp.	92
<i>Golenkinia radiata</i>	92
<i>Kirchneriella lunaris</i>	1,284
<i>Scenedesmus dimorphus</i>	183
<i>Scenedesmus quadricauda</i>	1,467
<i>Schroederia setigera</i>	92
<i>Tetraedron minimum</i>	92
<i>Tetrastrum staurogeniaeforme</i>	183
unidentified green coccoids	2,293
<b>CYANOPHYTA (Blue-green algae)</b>	
<i>Chroococcus limneticus</i>	1,100
<i>Merismopedia tenuissima</i>	7,336
<b>EUGLENOPHYTA (Euglenoids)</b>	
<i>Euglena</i> sp.	183
<i>Phacus</i> sp.	92
<b>PYRRHOPHYTA (Dinoflagellates)</b>	
<i>Peridinium willei</i>	46
<b>BACILLARIOPHYTA (Diatoms)</b>	
Order Centrales	
<i>Cyclotella atomus</i>	550
<i>Cyclotella meneghiniana</i>	917
<i>Cyclotella pseudostelligera</i>	367
<i>Melosira granulata</i>	46
<i>Skeletonema potamos</i>	917
<i>Stephanodiscus</i> sp.	550
Order Pennales	
<i>Cocconeis placentula</i>	46
<i>Navicula</i> sp.	92
<i>Nitzschia</i> sp.	917
<i>Synedra delicatissima</i>	367

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

Lake Houston EC (300158095074601)

## Phytoplankton Analyses September 1988 to October 1989

Date	1-10-89
Time	0943

TOTAL CELLS/mL	17,280
NUMBER OF SPECIES	28
DEPTH COLLECTED (ft.)	0.54

<u>Organisms</u>	<u>Cells/mL</u>
CHLOROPHYTA (Green algae)	
<i>Ankistrodesmus falcatus</i>	183
<i>Ankistrodesmus hantzschii</i>	366
<i>Dictyosphaerium pulchellum</i>	1,100
<i>Kirchneriella lunaris</i>	92
<i>Scenedesmus dimorphus</i>	183
<i>Scenedesmus quadricauda</i>	2,293
<i>Tetraedron minimum</i>	183
<i>Tetraedron heteracanthum</i>	367
<i>Tetraedron triangulare</i>	92
unidentified green coccoids	825
CYANOPHYTA (Blue-green algae)	
<i>Merismopedia tenuissima</i>	3,298
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
<i>Cyclotella atomus</i>	183
<i>Cyclotella meneghiniana</i>	1,100
<i>Cyclotella pseudostelligera</i>	183
<i>Melosira distans</i>	183
<i>Melosira granulata</i>	183
<i>Skeletonema potamos</i>	1,834
<i>Stephanodiscus hantzschii</i>	275
<i>Stephanodiscus invisitatus</i>	92
<i>Stephanodiscus</i> sp.	1,009
Order Pennales	
<i>Gomphonema parvulum</i>	46
<i>Navicula</i> sp.	92
<i>Nitzschia acicularis</i>	92
<i>Nitzschia holsatica</i>	275
<i>Nitzschia palea</i>	183
<i>Nitzschia sigma</i>	92
<i>Nitzschia</i> sp.	2,109
<i>Synedra delicatissima</i>	367



## Phytoplankton Analyses September 1988 to October 1989

Date	1-10-89
Time	1051

TOTAL CELLS/mL	13,316
NUMBER OF SPECIES	28
DEPTH COLLECTED (ft.)	0.74

<u>Organisms</u>	<u>Cells/mL</u>
CHLOROPHYTA (Green algae)	
<i>Ankistrodesmus falcatus</i>	780
<i>Chlamydomonas</i> sp.	30
<i>Dictyosphaerium pulchellum</i>	780
<i>Kirchneriella lunaris</i>	780
<i>Pediastrum tetras</i>	780
<i>Polydriopsis spinulosa</i>	195
<i>Scenedesmus dimorphus</i>	780
<i>Scenedesmus quadricauda</i>	1,950
<i>Staurastrum</i> sp.	30
unidentified green coccoids	585
CYANOPHYTA (Blue-green algae)	
<i>Chroococcus limneticus</i>	1,170
<i>Schizothrix calcicola</i>	195
EUGLENOPHYTA (Euglenoids)	
<i>Euglena</i> sp.	195
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
<i>Cyclotella atomus</i>	195
<i>Cyclotella meneghiniana</i>	780
<i>Cyclotella pseudostelligera</i>	195
<i>Melosira distans</i>	59
<i>Melosira granulata</i>	207
<i>Skeletonema potamos</i>	975
<i>Stephanodiscus hantzschii</i>	195
<i>Stephanodiscus</i> sp.	780
Order Pennales	
<i>Achnanthes minutissima</i>	30
<i>Navicula</i> sp.	30
<i>Nitzschia acicularis</i>	30
<i>Nitzschia holsatica</i>	585
<i>Nitzschia palea</i>	390
<i>Nitzschia sigma</i>	30
<i>Nitzschia</i> sp.	585

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

Lake Houston AC (295516095080801)

## Phytoplankton Analyses September 1988 to October 1989

Date	9-07-89
Time	0911

TOTAL CELLS/mL	28,587
NUMBER OF SPECIES	36
DEPTH COLLECTED (ft.)	.72

<u>Organisms</u>	<u>Cells/mL</u>
<b>BACILLARIOPHYTA (diatoms)</b>	
Order Centrales	
<i>Cyclotella meneghiniana</i>	245
<i>Cyclotella stelligera</i>	49
<i>Melosira granulata</i> var. <i>angustissima</i> f. <i>spiralis</i>	65
<i>Melosira granulata</i> var. <i>angustissima</i>	82
<i>Melosira granulata</i>	65
<i>Melosira lirata</i>	425
<i>Stephanodiscus astrea</i> var. <i>minutula</i>	65
<i>Stephanodiscus dubius</i>	114
<i>Stephanodiscus</i> sp.	33
Order Pennales	
<i>Achnanthes minutissima</i>	72
<i>Cymbella minuta</i>	18
<i>Nitzschia acicularis</i>	54
<i>Nitzschia subtilis</i>	18
<b>CHLOROPHYTA (green algae)</b>	
<i>Ankistrodesmus falcatus</i>	327
<i>Chlamydomonas</i> sp.	490
<i>Chlorococcum humicola</i>	490
<i>Chodatella quadriseta</i>	163
<i>Kirchneriella lunaris</i>	1,960
<i>Oocystis pusillus</i>	327
<i>Scenedesmus bijuga</i>	490
<i>Schroederia setigera</i>	163
<i>Tetraedron muticum</i>	163
<i>Tetrastrum staurogeniaeforme</i>	327
<b>CYANOPHYTA (blue-green algae)</b>	
<i>Aphanocapsa delicatissima</i>	6,045
<i>Aphanothece saxicola</i>	3,104
<i>Chroococcus multicoloratus</i>	1,307
<i>Chroococcus pallidus</i>	327
<i>Dactylococcopsis fascicularis</i>	3,921
<i>Merismopedia tenuissima</i>	817
<i>Microcystis incerta</i>	4,574
<i>Oscillatoria angustissima</i>	817
<i>Pseudanabaena catenata</i>	490
<i>Synechococcus</i> sp.	327
<b>CRYPTOPHYTA (cryptomonads)</b>	
<i>Chroomonas</i> sp.	327
<b>EUGLENOPHYTA</b>	
<i>Trachelomonas volvocina</i>	163
<b>PYRRHOPHYTA</b>	
<i>Gymnodinium palustre</i>	163

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

Lake Houston CC (295902095074201)

## Phytoplankton Analyses September 1988 to October 1989

Date	9-07-89
Time	1201
<hr/>	
TOTAL CELLS/mL	10,675
NUMBER OF SPECIES	39
DEPTH COLLECTED (ft.)	.42
<hr/>	

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (diatoms)	
Order Centrales	
<i>Cyclotella meneghiniana</i>	109
<i>Cyclotella stelligera</i>	31
<i>Melosira granulata</i> var. <i>angustissima</i>	23
<i>Melosira granulata</i>	16
<i>Melosira islandica</i>	31
<i>Melosira lirata</i>	140
<i>Stephanodiscus dubius</i>	78
<i>Stephanodiscus tenuis</i>	39
<i>Stephanodiscus</i> sp.	8
Order Pennales	
<i>Diploneis</i> sp.	17
<i>Nitzschia acicularis</i>	34
<i>Nitzschia kutzlingiana</i>	17
<i>Nitzschia palea</i>	17
<i>Nitzschia</i> sp.	34
<i>Synedra</i> sp.	17
CHLOROPHYTA (green algae)	
<i>Ankistrodesmus falcatus</i>	68
<i>Ankistrodesmus falcatus</i> var. <i>mirabilis</i>	68
<i>Ankistrodesmus nannoselene</i>	135
<i>Chlamydomonas</i> sp.	68
<i>Chlorococcum humicola</i>	338
<i>Chodatella quadriseta</i>	68
<i>Kirchneriella lunaris</i>	540
<i>Nephrocytium agardhianum</i>	270
<i>Pediastrum tetras</i>	270
<i>Phacotus lenticularis</i>	270
<i>Scenedesmus quadricauda</i>	135
<i>Schroederia setigera</i>	68
CYANOPHYTA (blue-green algae)	
<i>Aphanocapsa delicatissima</i>	405
<i>Aphanothece saxicola</i>	946
<i>Chroococcus limneticus</i>	135
<i>Chroococcus multicoloratus</i>	270
<i>Chroococcus pallidus</i>	1,418
<i>Merismopedia punctata</i>	540
<i>Merismopedia tenuissima</i>	2,161
<i>Pseudanabaena catenata</i>	810
<i>Synechococcus lineare</i>	405
<i>Synechococcus</i> sp.	473
EUGLENOPHYTA	
<i>Euglena</i> sp.	135
<i>Trachelomonas hispida</i>	68

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

Lake Houston EC (300158095074601)

## Phytoplankton Analyses September 1988 to October 1989

Date	9-07-89
Time	1426

TOTAL CELLS/mL	23,144
NUMBER OF SPECIES	38
DEPTH COLLECTED (ft.)	.40

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (diatoms)	
Order Centrales	
<i>Cyclotella meneghiniana</i>	90
<i>Cyclotella stelligera</i>	10
<i>Melosira granulata</i>	30
<i>Melosira islandica</i>	25
<i>Melosira lirata</i>	85
<i>Stephanodiscus dubius</i>	10
<i>Stephanodiscus niagarae</i>	20
<i>Stephanodiscus hantzschii</i>	10
<i>Stephanodiscus tenuis</i>	10
Order Pennales	
<i>Achnanthes minutissima</i>	58
<i>Achnanthes</i> sp.	173
<i>Navicula arvensis</i>	58
CHLOROPHYTA (green algae)	
<i>Ankistrodesmus nannoselene</i>	289
<i>Chlamydomonas</i> sp.	193
<i>Chlorococcum humicola</i>	386
<i>Chodatella quadriseta</i>	289
<i>Coelastrum</i> sp.	772
<i>Kirchneriella lunaris</i>	1,254
<i>Phacotus lenticularis</i>	96
<i>Scenedesmus bijuga</i> var. <i>alternans</i>	386
<i>Schroederia setigera</i>	193
<i>Tetraedron minimum</i>	96
<i>Tetraedron muticum</i>	96
CYANOPHYTA (blue-green algae)	
<i>Aphanocapsa elachista</i> var. <i>conferta</i>	3,377
<i>Aphanothece saxicola</i>	675
<i>Chroococcus limneticus</i>	193
<i>Chroococcus multicoloratus</i>	772
<i>Chroococcus pallidus</i>	1,536
<i>Dactylococcopsis fascicularis</i>	96
<i>Merismopedia tenuissima</i>	7,333
<i>Microcystis incerta</i>	1,544
<i>Oscillatoria</i> sp.	482
<i>Pseudanabaena catenata</i>	675
<i>Raphidiopsis curvata</i>	772
<i>Synechococcus lineare</i>	386
<i>Synechococcus</i> sp.	482
EUGLENOPHYTA	
<i>Trachelomonas hispida</i>	96
PYRRHOPHYTA	
<i>Gymnodinium</i> sp.	96

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

Lake Houston FC (300209095091201)

Phytoplankton Analyses September 1988 to October 1989

Date	9-07-89
Time	1531

TOTAL CELLS/mL	135,072
NUMBER OF SPECIES	43
DEPTH COLLECTED (ft.)	.2

<u>Organisms</u>	<u>Cells/mL</u>
<b>BACILLARIOPHYTA (diatoms)</b>	
Order Centrales	
<i>Cyclotella meneghiniana</i>	532
<i>Cyclotella stelligera</i>	203
<i>Melosira granulata</i> var. <i>angustissima</i> f. <i>spiralis</i>	76
<i>Melosira islandica</i>	51
<i>Melosira lirata</i>	25
<i>Stephanodiscus dubius</i>	25
<i>Stephanodiscus tenuis</i>	76
<i>Stephanodiscus</i> sp.	25
Order Pennales	
<i>Amphora</i> sp.	40
<i>Anomoeoneis</i> sp.	79
<i>Cymbella</i> sp.	40
<i>Fragilaria leptostauron</i> var. <i>dubia</i>	40
<i>Navicula</i> sp.	198
<i>Nitzschia kutzlingiana</i>	119
<i>Nitzschia palea</i>	40
<i>Nitzschia subtilis</i>	40
<i>Nitzschia</i> sp.	79
<b>CHLOROPHYTA (green algae)</b>	
<i>Ankistrodesmus falcatus</i> var. <i>mirabilis</i>	675
<i>Ankistrodesmus nanoselene</i>	675
<i>Chlamydomonas</i> sp.	1,013
<i>Chlorococcum humicola</i>	1,351
<i>Chodatella</i> sp.	338
<i>Elakatothrix viridis</i>	338
<i>Kirchneriella lunaris</i>	1,688
<i>Pandorina morum</i>	2,026
<i>Scenedesmus bijuga</i> var. <i>altmans</i>	675
<i>Scenedesmus quadricauda</i>	1,351
<i>Schroederia setigera</i>	1,013
<i>Tetraedron trigonum</i>	338
<b>CYANOPHYTA (blue-green algae)</b>	
<i>Aphanocapsa delicatissima</i>	2,701
<i>Aphanothece saxicola</i>	1,688
<i>Chroococcus limneticus</i>	675
<i>Chroococcus multicoloratus</i>	2,701
<i>Chroococcus pallidus</i>	2,026
<i>Merismopedia tenuissima</i>	89,824
<i>Microcystis</i> sp.	7,429
<i>Oscillatoria angustissima</i>	4,390
<i>Pseudanabaena catenata</i>	6,416
<i>Raphidiopsis curvata</i>	1,351
<i>Synechococcus lineare</i>	675
<i>Synechococcus</i> sp.	1,351
<b>EUGLENOPHYTA</b>	
<i>Trachelomonas</i> sp.	338
<b>PYRRHOPHYTA</b>	
<i>Gymnodinium palustre</i>	338



## SAN JACINTO RIVER MAIN STEM

129

08072050 SAN JACINTO RIVER NEAR SHELDON, TX

LOCATION.--Lat 29°52'34", long 95°05'37", Harris County, Hydrologic Unit 12040104, on left bank at U.S. Highway 90 bridge, 0.3 mi downstream from Southern Pacific Railway Co. bridge, 1.5 mi east of Sheldon, 4.6 mi downstream from Lake Houston, and 21 mi northeast of Houston.

DRAINAGE AREA.--2,879 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1970 to current year (elevations prior to 1973, beginning 1973 gage heights . Discharge measurement, May 19, 1989.  
Water-quality records.--Chemical and biochemical analyses: February 1970 to September 1972. Pesticide analyses: May 1971 to September 1972.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 0.69 ft below National Geodetic Vertical Datum of 1929, adjustment of 1973. Prior records unadjusted for land-surface subsidence.

REMARKS.--Records good. Gage heights reflect tidal fluctuations. Stage and rainfall radio-telemetry operated by Harris County Flood Control District at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 20.12 ft June 15, 1973; minimum recorded elevation, -2.52 ft Oct. 28, 1985. A discharge measurement of 111,000 ft<sup>3</sup>/s was made near the peak of May 19, 1989 (gage height, 20.08 ft). other measurements have been made at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation since at least 1875, 31.5 ft Nov. 26, 1940, at site 0.3 mi upstream at Southern Pacific Railway Co. bridge.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 20.10 ft May 19 at 1700 hours; minimum, -2.48 ft Mar. 6.

DAY	GAGE HEIGHT, FEET, WATER YEAR		OCTOBER 1988 TO SEPTEMBER 1989									
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
		OCTOBER	NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	2.56	.81	1.62	.55	1.32	.38	2.20	.76	2.85	1.36	2.37	.53
2	2.42	.18	2.31	.55	1.28	.22	2.15	.58	2.93	1.39	2.66	.66
3	2.14	.18	2.79	1.22	1.62	.58	2.00	.42	3.08	-.19	3.09	1.17
4	2.37	.63	2.73	1.10	1.25	-.08	2.64	.03	1.30	-.75	3.06	1.08
5	2.68	.70	1.27	-.12	1.55	-.33	2.75	.97	1.78	-.02	1.08	-2.04
6	2.78	1.37	1.60	-.07	2.02	.23	---	---	1.66	-.49	-.36	-2.48
7	2.52	1.22	2.36	1.03	2.40	.31	---	---	1.21	-.57	1.30	-.51
8	2.62	1.52	2.33	.60	2.22	.50	---	---	1.77	.14	1.69	.33
9	2.51	1.17	2.62	.82	1.86	-.40	---	---	2.12	.67	1.67	.15
10	1.94	.31	2.67	.52	2.13	.10	---	---	2.14	.98	1.69	-.10
11	2.05	.29	2.58	.60	2.55	.25	---	1.23	2.21	.66	1.70	-.18
12	2.05	.21	3.37	1.22	1.77	-.40	2.77	.44	2.65	.39	1.95	-.03
13	2.33	.64	2.74	.42	1.53	.12	1.54	.04	2.94	1.17	2.33	.10
14	2.42	.90	2.29	.75	1.97	.37	1.68	.34	2.68	.82	2.80	.52
15	2.67	1.16	3.14	1.71	2.00	-.10	1.97	.39	2.32	.55	2.48	.72
16	2.80	.88	3.03	.01	.72	-.24	1.83	.03	2.05	.08	2.49	.55
17	2.70	.72	2.37	.22	1.15	.07	2.28	.11	1.68	.14	2.54	1.07
18	2.52	.53	3.65	1.75	1.70	-.25	2.67	.70	1.64	.06	2.18	.86
19	2.35	.58	3.31	1.66	2.27	.42	2.49	.72	2.19	.31	2.55	.83
20	2.44	.58	1.78	-.88	2.38	.57	2.47	.04	2.92	1.52	2.58	1.39
21	2.54	.88	1.81	-.22	2.15	-.07	2.02	.07	2.61	-.24	1.88	-.47
22	3.32	.95	2.12	.05	2.33	.61	2.39	.78	.94	-1.01	1.44	-.33
23	3.27	1.65	2.13	.00	2.62	.47	2.37	.82	1.24	-1.94	1.75	.26
24	3.02	.56	2.49	.25	2.63	.17	2.63	1.06	1.90	.51	2.05	.41
25	3.18	1.16	2.74	1.13	2.15	1.27	2.44	1.08	1.70	.52	2.37	.63
26	3.18	.87	3.47	1.12	---	1.18	2.27	.73	1.74	.02	2.95	.83
27	3.01	1.19	2.44	-.60	2.65	1.10	2.22	.70	2.42	.60	3.52	1.42
28	3.01	.43	1.04	-.62	1.25	-.29	2.64	1.39	2.02	.47	3.66	1.99
29	2.61	.60	2.14	.86	2.16	.83	2.12	1.36	---	---	3.05	1.60
30	2.62	.90	1.89	.18	2.39	1.45	2.20	.51	---	---	2.72	.98
31	2.50	.52	---	---	2.05	.72	2.66	.88	---	---	2.08	.13
MONTH	3.32	.18	3.65	-.88	---	-.40	---	---	3.08	-1.94	3.66	-2.48

## SAN JACINTO RIVER MAIN STEM

08072050 SAN JACINTO RIVER NEAR SHELDON, TX--Continued

DAY	MAX MIN		GAGE HEIGHT, FEET, WATER YEAR		OCTOBER 1988		TO SEPTEMBER 1989		MAX MIN		MAX MIN	
			MAX	MIN	MAX	MIN	MAX	MIN				
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	3.68	1.35	2.19	.71	---	---	---	---	4.89	.83	2.71	1.62
2	3.67	2.34	2.52	1.02	---	---	---	---	3.92	2.00	2.33	1.34
3	2.75	1.46	3.10	1.11	---	---	---	---	3.22	1.54	2.40	.65
4	2.92	1.27	3.14	1.26	---	---	---	---	2.85	1.44	2.57	1.46
5	1.93	.64	3.07	1.11	---	---	---	---	2.48	1.27	3.00	1.70
6	2.48	1.60	2.12	.05	---	---	---	---	2.08	1.13	3.20	1.76
7	2.11	.44	2.18	.28	---	---	---	---	2.12	.44	3.19	1.55
8	2.73	.27	2.73	.38	---	---	---	---	2.25	.88	3.10	1.38
9	1.98	.27	2.92	1.19	---	---	---	---	2.52	1.06	3.06	.92
10	1.59	-.18	1.90	.02	---	---	---	---	2.62	.82	2.85	.91
11	2.85	.24	2.81	.62	---	---	---	---	2.60	.80	2.67	.90
12	2.73	.97	3.23	1.10	---	---	---	---	2.63	.70	2.92	.65
13	2.92	1.20	3.03	1.55	---	---	---	---	3.17	.76	3.07	1.23
14	2.40	1.04	2.89	1.65	---	---	---	---	2.99	1.15	2.13	.88
15	2.05	.45	2.98	1.87	---	---	---	---	2.78	1.03	2.97	.38
16	2.52	1.02	3.12	1.75	---	---	---	---	2.88	.82	2.87	.91
17	2.45	1.49	4.08	2.67	---	---	---	---	2.78	.95	2.93	.83
18	2.23	1.15	16.75	4.05	---	---	---	---	2.67	.97	2.92	1.13
19	2.12	.78	20.10	16.75	---	---	---	---	2.58	1.05	3.11	1.59
20	2.02	.22	19.30	15.50	---	---	---	---	2.57	1.25	3.08	1.52
21	1.97	.15	15.50	10.50	---	---	2.07	---	2.69	1.24	3.18	1.15
22	2.55	.45	10.50	4.35	---	---	2.38	.58	2.86	.93	2.80	.48
23	2.86	.75	4.35	2.10	---	---	2.69	1.05	2.77	.89	1.72	-.50
24	2.85	.75	2.10	---	---	---	2.65	.90	2.65	.70	1.78	-.60
25	2.98	1.01	---	---	---	---	2.28	.86	2.67	.65	2.08	.50
26	2.69	.90	---	---	---	---	3.66	.86	2.71	.63	2.49	.93
27	2.79	.68	---	---	15.80	8.00	2.87	.94	2.65	.83	3.02	.96
28	2.77	.67	---	---	15.76	11.60	2.68	.72	2.53	.73	2.62	1.46
29	2.72	.72	---	---	11.60	7.00	2.60	.30	2.37	1.60	2.98	1.35
30	2.72	.20	---	---	7.00	4.00	2.86	.50	2.52	.72	2.92	1.10
31	---	---	---	---	---	---	3.03	.86	2.73	1.50	---	---
MONTH	3.68	-.18	---	---	---	---	---	---	4.89	.44	3.20	-.60
CAL YR 1988	MAX	--	MIN	-.88								
WTR YR 1989	MAX	--	MIN	--								

## 08072300 BUFFALO BAYOU NEAR KATY, TX

LOCATION.--Lat 29°44'35", long 95°48'24", Fort Bend County, Hydrologic Unit 12040104, on left bank at bridge on county road, 2.5 mi downstream from confluence of Willow Fork and Cane Island Branch of Buffalo Bayou, and 3.1 mi southeast of Katy.

DRAINAGE AREA.--63.3 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1977 to current year.

Water-quality records: Chemical and biochemical analyses: June 1978 to September 1981.

GAGE.--Water-stage recorder. Datum of gage is 75.02 ft above National Geodetic Vertical Datum of 1929, 1973 adjustment. Gage located at temporary site 250 ft upstream Jan. 18 to Sept. 30, 1985; all records adjusted to original site and datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Stage-discharge relationship affected by seasonal vegetal growths during most years. Several measurements of water temperature were obtained during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--12 years, 46.4 ft<sup>3</sup>/s (33,620 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,920 ft<sup>3</sup>/s Sept. 20, 1979 (gage height, 37.54 ft); minimum daily, estimated 0.30 ft<sup>3</sup>/s Dec. 26-29, 1984 (result of regulation).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,150 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 18	1800	1,320	33.60	Aug. 1	2100	*1,360	*33.76

Minimum daily discharge, 0.93 ft<sup>3</sup>/s Mar. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	18	2.5	1.6	52	1.4	13	e29	5.6	17	525	3.1
2	35	17	2.2	1.6	37	1.6	6.6	e10	4.9	11	758	2.4
3	24	17	1.7	1.6	81	3.6	4.8	40	4.2	10	334	2.0
4	14	18	1.8	1.6	54	3.0	3.0	66	4.7	6.7	195	2.0
5	9.8	20	1.3	1.5	e20	1.8	2.6	104	6.6	4.4	116	2.9
6	7.3	17	2.0	1.5	e9.6	1.6	2.9	85	5.3	35	71	3.3
7	4.6	8.1	2.0	1.5	e7.1	1.5	2.0	24	4.9	45	48	3.2
8	2.8	12	35	1.4	5.3	1.3	1.7	13	5.6	21	48	5.7
9	2.6	19	53	1.6	5.2	1.4	1.9	7.4	5.1	13	78	3.8
10	2.6	23	26	1.7	3.4	1.1	2.1	6.1	4.9	11	48	3.1
11	2.5	25	24	1.4	13	.93	2.2	3.7	4.9	9.5	30	3.4
12	3.1	22	14	1.6	14	1.2	1.9	3.5	4.7	6.2	17	3.8
13	3.0	16	8.3	7.2	10	1.4	6.2	8.6	4.7	4.4	8.3	3.4
14	3.0	7.7	4.5	10	8.0	1.6	4.2	174	255	6.4	7.7	9.5
15	2.4	5.9	3.4	4.2	5.1	1.6	3.2	75	216	7.2	8.3	13
16	2.0	5.9	2.8	2.8	3.7	1.4	3.9	37	82	5.1	11	8.2
17	2.2	5.6	1.9	2.5	2.5	1.6	2.8	74	e35	3.6	9.7	6.5
18	2.9	5.1	1.4	245	1.9	1.4	2.1	940	e25	2.9	6.9	5.3
19	3.2	5.6	1.3	128	1.6	1.3	1.8	863	e20	3.2	5.8	4.1
20	2.6	6.3	1.6	258	1.8	1.5	1.8	401	e15	7.2	2.8	3.7
21	2.7	4.2	1.3	102	2.7	7.7	2.5	174	e12	9.5	2.8	3.2
22	2.3	3.3	1.3	42	13	20	2.0	90	e10	6.3	3.1	2.6
23	2.1	4.9	1.9	23	3.2	7.6	2.0	54	e8.0	4.3	2.1	2.2
24	1.8	9.4	1.9	13	1.6	3.4	1.8	37	e7.0	4.2	7.4	2.3
25	1.6	7.8	1.5	9.6	1.6	2.2	1.5	e29	e6.0	7.0	13	2.9
26	1.7	5.6	1.7	7.0	2.0	2.6	1.4	e24	e17	10	4.4	2.6
27	5.4	4.0	1.5	20	1.6	38	2.0	e19	64	21	3.8	2.1
28	5.3	4.8	3.0	25	1.3	12	1.9	e16	37	41	3.8	1.7
29	3.8	4.5	3.0	380	---	163	3.4	12	22	34	3.5	1.6
30	2.8	3.1	1.9	351	---	53	67	8.3	18	29	2.9	1.7
31	15	---	1.5	111	---	18	---	6.9	---	22	2.8	---
TOTAL	226.1	325.8	211.2	1759.9	363.2	359.73	156.2	3434.5	915.1	418.1	2378.1	115.3
MEAN	7.29	10.9	6.81	56.8	13.0	11.6	5.21	111	30.5	13.5	76.7	3.84
MAX	52	25	53	380	81	163	67	940	255	45	758	13
MIN	1.6	3.1	1.3	1.4	1.3	.93	1.4	3.5	4.2	2.9	2.1	1.6
AC-FT	448	646	419	3490	720	714	310	6810	1820	829	4720	229

CAL YR 1988 TOTAL 4348.06 MEAN 11.9 MAX 247 MIN .68 AC-FT 8620  
WTR YR 1989 TOTAL 10663.23 MEAN 29.2 MAX 940 MIN .93 AC-FT 21150

e Estimated.

## SAN JACINTO RIVER BASIN

## 08072500 BARKER RESERVOIR NEAR ADDICKS, TX

LOCATION.--Lat 29°46'11", long 95°38'49", Harris County, Hydrologic Unit 12040104, at dam on Buffalo Bayou, 45 ft upstream from reservoir outlet works, 1.160 ft upstream from Addicks-Howell county road, 1.1 mi south of Addicks, and 1.2 mi upstream from South Mayde Creek.

DRAINAGE AREA.--128 mi<sup>2</sup>. Prior to August 1977, 134 mi<sup>2</sup>. Basin boundary change due to relocation of drainage ditches. During extreme floods, basin may receive and (or) lose runoff due to basin interchange.

PERIOD OF RECORD.--August 1945 to current year. On October 1973, the upper gage was converted to a flood-hydrograph partial-record station.

Water-quality records.--Chemical and biochemical analyses: June 1978 to September 1981.

GAGE.--Water-stage recorders. Datum of gage is National Geodetic Vertical Datum of 1929, 1973 adjustment; unadjusted for land-surface subsidence (since 1973). Prior to Oct 1, 1980, 0.33 ft below National Geodetic Vertical Datum of 1929, unadjusted for land-surface subsidence.

REMARKS.--The reservoir is formed by a rolled earthfill dam 72,900 ft long. The dam was completed Feb. 3, 1946, but was used as early as the spring of 1945 for flood control. The reservoir is operated for flood protection for the city of Houston. The controlled outlet works consist of five concrete conduits, 9 x 7 ft wide, each controlled by a vertical slide gate. U.S. Army Corps of Engineers gage-height telemeter at station. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam.....	112.5	-
Ground elevation at ends of dam.....	106.0	209,000
Design flood.....	105.4	199,000
Crest of spillway (invert).....	73.2	0

COOPERATION.--The capacity table, furnished by the U.S. Army Corps of Engineers, is based on extensive releveling survey made in 1974 using National Geodetic Vertical Datum, 1973 adjustment as base.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 39,200 acre-ft May 15, 1968 (gage height, 94.60 ft, former datum and former capacity table); minimum, reservoir was dry at times.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 12,900 acre-ft May 22 at 1200 hours to May 23 at 1100 hours (elevation, 89.32 ft); minimum, 0.11 acre-ft Oct. 28, 29, June 12, 13, 14 (elevation, 73.65 ft).

Capacity table (elevation, in feet, and total contents, in acre-feet)

73.2	0	78.4	14	81.6	193	86.0	3,980
75.8	1	79.2	22	82.2	331	87.0	6,000
76.3	2	79.8	32	83.0	671	88.0	8,580
76.9	4	80.4	49	84.0	1,370	89.0	11,760
77.6	8	81.0	100	85.0	2,430	90.0	15,620

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.28	.24	.13	.14	810	.12	235	.32	5170	1480	415	.12
2	.28	.20	.12	.14	667	.12	311	.30	3590	1560	4100	.12
3	.25	.19	.12	.16	73.0	.12	184	.30	2000	1640	6000	.12
4	.22	.19	.12	.15	.41	.12	197	.40	487	1660	6360	.12
5	.19	.17	.12	.14	.32	.12	215	1.80	.18	1680	6180	.12
6	.17	.17	.12	.14	.25	.13	225	8.00	.19	1750	5560	.12
7	.16	.17	.12	.14	.26	.13	57.0	6.40	.14	1710	4610	.12
8	.14	.16	.38	.14	.20	.13	.40	.38	.15	1510	3690	.24
9	.14	.16	.33	.16	.18	.12	.15	.23	.12	1220	2660	.18
10	.13	.19	.32	.19	.17	.44	.13	.18	.12	589	1620	.14
11	.13	.20	.29	.17	.16	1.80	.12	.15	.12	28.4	599	.12
12	.13	.21	.24	.17	.19	.15	.12	.14	.11	.17	1.34	.12
13	.13	.21	.21	2.90	.20	.15	.22	.16	.11	.16	.22	.17
14	.13	.19	.17	.44	.19	.15	.19	1.27	56.8	.13	.19	.17
15	.13	.16	.15	.32	.18	.15	.15	29.6	154	.13	.17	.15
16	.13	.15	.14	.24	.17	.14	.13	70.5	62.6	.13	.17	.16
17	.13	.14	.14	.19	.15	.14	.12	173	5.86	.12	.17	.14
18	.12	.13	.14	41.0	.15	.14	.12	4240	.31	.12	.30	.13
19	.12	.13	.14	951	.14	.15	.12	8810	.23	.12	.20	.12
20	.12	.13	.14	2330	.16	.22	.12	11160	.19	.15	.21	.12
21	.12	.13	.14	3180	.16	.26	.12	12460	.17	.13	.17	.12
22	.12	.13	.14	3540	.17	.32	.12	12900	.13	.13	.14	.12
23	.12	.12	.22	3730	.16	.23	.12	12540	.17	.13	.14	.12
24	.12	.12	.15	3670	.15	.17	.12	11790	12.3	.13	.13	.12
25	.12	.17	.14	3600	.14	.14	.12	11030	39.8	.13	.16	.12
26	.12	.16	.14	2680	.14	.31	.12	10390	182	.18	.20	.12
27	.12	.14	.14	1570	.13	.31	.12	10010	877	.18	.15	.12
28	.11	.13	.16	496	.12	.28	.12	9600	1110	.21	.13	.12
29	.12	.13	.14	101	---	221	.12	9210	1120	.24	.13	.12
30	.14	.13	.14	541	---	555	.32	8200	1340	.28	.13	.12
31	.29	---	.14	645	---	369	---	6650	---	.26	.13	---
MAX	.29	.24	.38	3730	810	555	311	12900	5170	1750	6360	.24
MIN	.11	.12	.12	.14	.12	.12	.12	.14	.11	.12	.13	.12
CAL YR 1988	MAX	4220	MIN	.11								
WTR YR 1989	MAX	12900	MIN	.11								

## 08072730 BEAR CREEK NEAR BARKER, TX

LOCATION.--Lat 29°49'50", long 95°41'12", Harris County, Hydrologic Unit 12040104, on right bank at upstream side of bridge on Clay Road, 2.5 mi west of State Highway 6, and 4.1 mi upstream from mouth of Langham Creek.

DRAINAGE AREA.--21.5 mi<sup>2</sup>. Prior to Oct. 1, 1988, 19.8 mi<sup>2</sup>. Change due to road and ditch relocations.

PERIOD OF RECORD.--July 1977 to current year. Gage at temporary location 1,100 ft downstream Mar. 1, 1984, to Mar. 12, 1985.

Water-quality records.--Chemical and biochemical analyses: June 1978 to September 1981.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 100.00 ft above National Geodetic Vertical Datum of 1929, 1973 adjustment. Mar. 1, 1984, to Mar. 12, 1985, at site 1,100 ft downstream, same datum.

REMARKS.--Records poor. Channel was rectified in 1981 and 1987 water years. Considerable diversions and return of irrigation water from area above station. Several observation of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--12 years, 19.0 ft<sup>3</sup>/s (13,770 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,060 ft<sup>3</sup>/s Aug. 31, 1981 (gage height, 15.86 ft); maximum gage height, 16.72 ft Sept. 20, 1979, occurred prior to channel rectifications; no flow for many days.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 17	2400	*570	*9.54	No other peak greater than base discharge.			

Minimum discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.92	.00	.20	23	.03	3.0	1.6	.06	26	100	.82
2	.01	.10	.00	.15	15	.02	.86	.82	.06	15	98	.35
3	.01	.01	.00	.13	14	.02	.27	5.5	.03	11	63	.19
4	.0	.0	.00	.10	10	.02	.09	8.5	.01	7.6	39	.12
5	.0	.0	.00	.07	5.3	.02	.03	12	.0	3.6	26	.08
6	.0	.00	.00	.05	2.6	.03	.01	12	.0	1.8	19	.05
7	.0	.00	e.00	.05	1.3	.04	.01	7.0	.00	1.3	12	.04
8	.00	.00	e15	.05	.96	.05	.01	3.3	.00	.73	11	.02
9	.00	.00	e5.0	.05	.79	.06	.0	1.3	.00	.39	19	.02
10	.00	.00	e2.0	.05	.68	.07	.0	.60	.00	.23	11	.01
11	.00	.00	e5.0	.05	1.6	.03	.0	.35	.00	.16	6.1	.01
12	.00	.00	e2.0	.07	2.1	.02	.0	.21	.00	.10	3.3	.0
13	.00	.00	e1.5	4.2	1.7	.01	.01	.97	.00	.06	1.8	2.0
14	.00	.00	e1.0	13	.73	.01	.01	41	35	.03	1.0	16
15	.00	.00	e.60	3.3	.24	.01	.02	35	31	.02	.61	4.8
16	.00	.00	e.40	1.3	.19	.01	.01	18	15	.01	.36	1.8
17	.00	.00	e.30	.73	.20	.01	.01	56	5.6	.0	.28	1.4
18	.00	.00	e.20	16	1.6	.01	.01	447	1.4	.0	1.3	1.4
19	.00	.00	e.15	27	.95	.01	.01	247	.60	.00	4.1	1.2
20	.00	.00	e.10	61	.83	.01	.0	144	.25	.00	1.9	1.2
21	.00	.00	e.07	12	1.0	1.2	.0	106	28	.00	.90	.99
22	.00	.00	e.05	4.8	.37	6.5	.0	73	11	.00	.55	.77
23	.00	.00	e1.0	2.3	.18	1.7	.0	46	3.3	.00	.41	.53
24	.00	.00	e.50	1.3	.14	.29	.0	26	26	.00	.32	.34
25	.00	.00	e.20	.89	.08	.09	.0	14	30	.0	.37	.22
26	.00	.00	e.10	.59	.05	2.7	.0	6.8	121	.40	.92	.13
27	.00	.00	e.25	.54	.04	6.8	.0	3.3	195	.39	1.1	.09
28	.00	.00	.59	.30	.03	3.2	.0	1.4	105	4.5	.82	.06
29	.00	.00	.73	35	---	41	.0	.49	65	4.1	.82	.04
30	.00	.00	.47	77	---	29	.04	.17	41	1.6	.90	.03
31	.23	---	.29	39	---	12	---	.08	---	1.0	.92	---
TOTAL	0.30	1.03	37.50	301.27	85.66	104.97	4.40	1319.39	714.31	80.02	426.78	34.71
MEAN	.010	.034	1.21	9.72	3.06	3.39	.15	42.6	23.8	2.58	13.8	1.16
MAX	.23	.92	15	77	23	41	3.0	447	195	26	100	16
MIN	.00	.00	.00	.05	.03	.01	.00	.08	.00	.00	.28	.00
AC-FT	.6	2.0	74	598	170	208	8.7	2620	1420	159	847	69

CAL YR 1988 TOTAL 1073.10 MEAN 2.93 MAX 88 MIN .00 AC-FT 2130  
WTR YR 1989 TOTAL 3110.34 MEAN 8.52 MAX 447 MIN .00 AC-FT 6170

e Estimated.



## SAN JACINTO RIVER BASIN

08073000 ADDICKS RESERVOIR NEAR ADDICKS, TX

LOCATION.--Lat 29°47'28", long 95°37'24", Harris County, Hydrologic Unit 12040104, at dam on South Mayde Creek, 65 ft upstream from reservoir outlet works, 2,700 ft upstream from U.S. Highway 90 and Interstate Highway 10, 1.2 mi east of Addicks, and 1.4 mi upstream from mouth.

DRAINAGE AREA.--129 mi<sup>2</sup>. Prior to Aug. 1, 1977, 133 mi<sup>2</sup>. Basin boundary change due to relocation of drainage ditches. During extreme floods, basin may receive and (or) lose runoff due to basin interchange.

PERIOD OF RECORD.--June 1948 to current year. In October 1973, the upper gages were converted to flood-hydrograph partial-record stations.

Water-quality records.--Chemical and biochemical analyses: June 1978 to September 1981.

GAGE.--Water-stage recorders. Datum of gage is National Geodetic Vertical Datum of 1929, 1973 adjustment; unadjusted for land-surface subsidence (since 1973). Prior to Oct. 1, 1980, datum of gage was National Geodetic Vertical Datum of 1929, unadjusted for land-surface subsidence that occurred prior to that date.

REMARKS.--The reservoir is formed by a rolled earthfill dam 61,166 ft long. The dam was completed in December 1948. The reservoir is operated for flood protection for the city of Houston. The outlet works consist of five concrete conduits 8 x 6 ft wide, each controlled by a vertical slide gate. Runoff in excess of maximum design capacity will be discharged around both ends of dam. Gage-height telemeter at station. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam.....	121.6	-
Design flood.....	112.7	212,500
Ground elevation at ends of dam.....	112.0	200,800
Crest of spillway (invert).....	71.0	0

COOPERATION.--The capacity table, furnished by the U.S. Army Corps of Engineers, was based on extensive releveing survey in 1974, using National Geodetic Vertical Datum, 1973 adjustment.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 37,460 acre-ft May 15, 1968 (elevation, 100.02 ft, former datum and former capacity table); minimum, reservoir was dry at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in December 1935 reached a stage of 89.9 ft, former datum, at bridge on U.S. Highway 90, 2,700 ft downstream from gage, from information by the U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 18,970 acre-ft May 22 at 1000 hours (elevation, 94.54 ft); minimum, 0.33 acre-ft Apr. 20, 21 (elevation, 71.63).

Capacity table (elevation, in feet, and total contents, in acre-feet)

71.1	0	77.2	54	83.0	598	91.0	7,560
73.6	2	78.0	85	84.5	1,030	92.5	11,370
75.1	8	79.0	134	86.0	1,680	94.0	16,680
75.7	16	80.0	202	88.0	3,190	95.0	21,080
76.4	30	81.5	351	89.5	4,970		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.44	.70	.35	.55	223	.35	272	.58	3890	7410	753	.41
2	.38	.46	.35	.53	26	.37	301	.41	2400	7480	3130	.41
3	.41	.41	.35	.40	28	.37	317	15	1030	7560	3560	.41
4	.41	.43	.35	.39	1.9	.35	328	.93	47	7370	3240	.40
5	.37	.40	.35	.41	1.2	.35	333	11	.49	6620	2720	.40
6	.37	.37	.35	.38	1.0	.36	334	1.2	.43	5870	2130	.41
7	.39	.38	.35	.37	.45	.36	189	.54	.39	398	1500	.48
8	.39	.38	16	.37	.43	.36	31	.44	.39	5110	1050	.45
9	.40	.41	.91	.37	.38	.36	.58	.41	.37	4710	625	1.1
10	.43	.41	.47	.38	.37	6.1	.35	.38	.34	3640	214	.59
11	.39	.73	.74	.37	.37	29	.35	.38	.35	2120	.98	.53
12	.39	.48	.44	.36	.43	.37	.35	.37	.37	529	.57	1.9
13	.39	.41	.39	8.4	.44	.37	.63	.47	.36	.43	.49	47
14	.40	.41	.37	1.9	24	.37	.44	83	368	.40	.37	193
15	.39	.41	.36	.50	49	.37	.39	124	475	.34	.36	53
16	.39	.39	.49	.41	91	.39	.35	104	152	.36	.35	.95
17	.41	.37	.46	.39	116	.41	.35	265	.74	.36	.37	.55
18	.40	.37	.49	441	134	.41	.34	12700	.48	.36	64	.50
19	.41	.37	.49	1070	157	.41	.34	16480	.47	.49	1.8	.48
20	.41	.37	.50	1880	193	.80	.33	18110	.44	.55	.60	.46
21	.42	.40	.48	2040	17	6.3	.34	18800	1.3	.43	.44	.44
22	.39	.37	.48	1790	.46	2.5	.34	18190	.43	.36	.40	.44
23	.39	.36	9.3	1030	.44	1.0	.35	16600	.46	.36	.39	.43
24	.41	.36	10	132	.41	.58	.35	14920	118	.37	.38	.43
25	.43	.36	.58	.60	.42	.50	.36	13240	281	1.2	.39	.43
26	.41	.36	.53	.44	.43	29	.36	11770	1030	1.8	.69	.43
27	.82	.36	.69	.76	.44	41	.36	10500	6010	.46	.46	.43
28	.48	.36	.96	.58	.43	.84	.36	9260	6790	.57	.45	.42
29	.48	.35	.58	306	---	620	.36	8050	6920	.49	.44	.43
30	.46	.35	.47	981	---	623	.91	6790	7250	.41	.44	.43
31	1.1	---	.54	659	---	281	---	5340	---	.43	.41	---
MAX	1.1	.73	16	2040	223	623	334	18800	7250	7560	3560	193
MIN	.37	.35	.35	.36	.37	.35	.33	.37	.34	.34	.35	.40
CAL YR 1988	MAX	2810	MIN	.35								
WTR YR 1989	MAX	18800	MIN	.33								

## SAN JACINTO RIVER BASIN

135

08073500 BUFFALO BAYOU NEAR ADDICKS, TX

LOCATION.--Lat 29°45'42", long 95°36'20", Harris County, Hydrologic Unit 12040104, near right bank at bridge on Dairy-Ashford Road over rectified channel, 1.8 mi downstream from South Mayde Creek, and 2.6 mi southeast of Addicks.

DRAINAGE AREA.--293 mi<sup>2</sup>, unadjusted for basin boundary changes.

PERIOD OF RECORD.--August 1945 to current year.

Water-quality records.--Chemical analyses: October 1962 to March 1963. Chemical, biochemical, and pesticide analyses: August 1970 to September 1982.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 1.40 ft below National Geodetic Vertical Datum of 1929, 1973 adjustment; records unadjusted to land-surface subsidence. Prior to Feb. 2, 1948, water-stage recorder at bridge on natural channel 1,200 ft to right at same datum. Feb. 2 to May 21, 1948, nonrecording gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Estimated daily discharges include backwater affected days. Floodflows are regulated by Barker and Addicks Reservoirs (stations 08072500 and 08073000) 3.2 and 3.0 mi upstream, respectively (total capacity 315,900 acre-ft). Extreme low flow is sustained by drainage from irrigated lands, and minor sewage effluent. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--44 years, 213 ft<sup>3</sup>/s (154,300 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,200 ft<sup>3</sup>/s Aug. 29, 1945 (gage height, 81.23 ft), former site; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1896, 85.6 ft in December 1935, adjusted to former site from floodmark 0.5 mi downstream, on basis of slope of flood of Aug. 29, 1945, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (estimated), 3,580 ft<sup>3</sup>/s May 18 at 1500 hours (gage height, 69.63 ft, influenced by backwater); minimum daily, 21 ft<sup>3</sup>/s Sept. 27, 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	86	27	36	687	35	240	128	1590	57	e830	36
2	51	51	27	35	405	47	49	102	1570	45	e570	36
3	50	39	25	35	453	41	133	153	1490	57	676	36
4	47	39	24	36	307	41	34	238	e1200	94	1080	35
5	40	36	24	35	120	41	32	260	e500	429	1020	35
6	36	32	25	34	71	42	33	247	e90	715	966	35
7	35	34	25	36	56	49	179	147	e50	391	928	45
8	30	33	104	34	52	47	211	96	e55	377	956	39
9	29	32	187	36	43	47	58	53	e40	369	871	99
10	29	36	82	39	38	41	43	58	e32	707	813	59
11	28	44	82	35	37	26	41	56	e32	1020	690	48
12	28	57	68	34	37	46	38	53	e35	825	447	83
13	28	52	48	67	43	36	69	94	e33	449	103	e220
14	28	47	43	228	40	34	79	e340	e500	48	62	e310
15	28	42	41	92	32	35	59	317	e250	38	55	262
16	29	37	34	61	31	42	44	173	e550	38	56	85
17	28	32	31	50	27	37	36	e600	e450	37	73	36
18	28	29	29	e630	26	37	33	e3100	e150	39	e500	32
19	29	28	31	236	25	40	32	e1150	e80	47	e360	28
20	29	31	28	e380	32	54	31	222	e55	65	90	28
21	29	39	28	401	133	101	31	99	e50	57	58	25
22	29	36	29	365	58	236	32	526	52	46	46	25
23	29	32	58	484	38	127	33	1210	61	42	42	24
24	30	30	55	576	37	75	34	1330	109	41	41	22
25	30	30	37	276	36	60	34	1320	44	86	45	22
26	30	41	32	385	36	116	33	1210	e500	167	89	23
27	35	30	35	509	35	277	32	931	e550	76	56	21
28	35	28	42	478	35	147	33	907	332	59	46	23
29	30	28	44	467	---	492	35	899	444	69	41	23
30	32	27	37	244	---	303	141	1070	e130	71	42	21
31	50	---	35	743	---	524	---	1390	---	75	38	---
TOTAL	1045	1138	1417	7097	2970	3276	1912	18479	11024	6636	11690	1816
MEAN	33.7	37.9	45.7	229	106	106	63.7	596	367	214	377	60.5
MAX	56	86	187	743	687	524	240	3100	1590	1020	1080	310
MIN	28	27	24	34	25	26	31	53	32	37	38	21
AC-FT	2070	2260	2810	14080	5890	6500	3790	36650	21870	13160	23190	3600

CAL YR 1988 TOTAL 26745 MEAN 73.1 MAX 650 MIN 20 AC-FT 53050  
WTR YR 1989 TOTAL 68500 MEAN 188 MAX 3100 MIN 21 AC-FT 135900

e Estimated.

## SAN JACINTO RIVER BASIN

08073600 BUFFALO BAYOU AT WEST BELT DRIVE, HOUSTON, TX

LOCATION.--Lat 29°45'43", long 95°33'27", Harris County, Hydrologic Unit 12040104, at downstream side of bridge on West Belt Drive in west Houston, 100 ft downstream from Rummel Creek, 3.5 mi downstream from station 08073500, and 3.7 mi upstream from station 08073700.

DRAINAGE AREA.--307 mi<sup>2</sup>, unadjusted for basin boundary changes.

## WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorders and crest-stage gage. Datum of gage is 0.67 ft below National Geodetic Vertical Datum of 1929, 1973 adjustment.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Stage discharge relationship is affected by seasonal vegetal growth during most years. High water flow is a combination of regulated flow from Barker and Addicks Reservoirs (08072500 and 08073000, located 10.1 and 10.3 mi upstream, respectively) and runoff from highly urbanized area below these reservoirs. Low flow is mostly sustained by sewage effluent. Gage-height telemeter at station.

AVERAGE DISCHARGE.--18 years, 302 ft<sup>3</sup>/s (218,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,350 ft<sup>3</sup>/s Aug. 31, 1981 (gage height, 64.58 ft); minimum daily, 23 ft<sup>3</sup>/s Sept. 26, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,850 ft<sup>3</sup>/s May 18 at 1500 hours (gage height, 63.32 ft); minimum daily, 23 ft<sup>3</sup>/s Sept. 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	103	141	52	56	735	e45	283	152	1650	168	1460	60
2	92	87	51	54	420	e120	43	112	1560	92	1200	56
3	85	68	50	55	494	e60	139	255	1470	106	627	55
4	80	70	47	56	344	e60	46	261	1310	109	1120	53
5	69	69	48	53	176	e55	44	358	662	521	1070	54
6	62	63	50	53	138	e60	41	306	92	838	1030	59
7	59	64	51	53	110	e55	184	204	61	508	1000	82
8	57	60	146	50	95	e52	263	153	68	452	1100	77
9	54	59	250	57	79	e50	90	88	56	438	958	138
10	58	63	156	59	65	e50	57	69	47	700	896	94
11	53	73	151	54	62	e40	55	61	48	1130	783	79
12	51	89	120	50	70	e60	51	61	51	955	530	114
13	50	82	84	132	74	e50	119	117	49	623	169	599
14	51	76	69	263	68	e47	101	550	738	88	88	488
15	51	69	62	132	53	e50	75	378	359	65	75	322
16	52	64	55	79	53	e45	58	176	646	61	80	156
17	53	59	53	62	48	e45	54	669	506	62	102	80
18	52	59	52	1010	50	e45	51	3720	232	61	655	74
19	51	55	53	427	47	e45	48	1810	119	70	749	63
20	50	54	51	556	71	e110	46	331	82	119	148	66
21	51	59	51	433	156	e180	46	166	80	86	94	61
22	51	58	51	393	102	e330	43	502	80	69	69	53
23	50	55	98	489	57	e180	44	1230	197	60	82	54
24	51	52	91	604	55	e100	47	1340	348	60	65	51
25	51	51	61	326	56	e75	46	1320	126	180	66	53
26	54	65	53	389	55	e130	47	1230	1170	221	120	23
27	61	56	69	514	55	e280	45	928	1230	123	80	35
28	65	53	77	486	e52	e200	45	912	394	83	67	45
29	54	54	72	603	---	685	42	906	585	101	62	49
30	58	53	61	243	---	302	197	1030	723	105	66	50
31	118	---	57	728	---	525	---	1370	---	116	57	---
TOTAL	1897	1980	2392	8519	3840	4131	2450	20765	14739	8370	14668	3243
MEAN	61.2	66.0	77.2	275	137	133	81.7	670	491	270	473	108
MAX	118	141	250	1010	735	685	283	3720	1650	1130	1460	599
MIN	50	51	47	50	47	40	41	61	47	60	57	23
AC-FT	3760	3930	4740	16900	7620	8190	4860	41190	29230	16600	29090	6430
CAL YR 1988	TOTAL	40607	MEAN	111	MAX	923	MIN	39	AC-FT	80540		
WTR YR 1989	TOTAL	86994	MEAN	238	MAX	3720	MIN	23	AC-FT	172600		

e Estimated.

## SAN JACINTO RIVER BASIN

137

08073600 BUFFALO BAYOU AT WEST BELT DRIVE, HOUSTON, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: June 1978 to current year. Chemical and biochemical analyses: June 1978 to August 1986. Pesticide analyses: June 1978 to March 1983. Sediment analyses: May 1979 to August 1986.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: June 1979 to September 1981.

WATER TEMPERATURES: June 1979 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 922 microsiemens June 25, 1979; minimum daily, 78 microsiemens Aug. 31, 1981.

WATER TEMPERATURE: Maximum daily, 30.5°C July 1, 1978; minimum daily, 1.0°C Nov. 27, 1980.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

		DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION)	OXYGEN DEMAND, BIO-CHEMICAL, 5 DAY (MG/L)	HARDNESS TOTAL (MG/L AS CaCO3)
NOV 07...	1140	71	763	7.90	23.0	20	17	8.8	102	1.5	140
FEB 16...	0942	50	724	7.80	21.0	50	45	7.6	84	1.3	120
MAY 02...	0955	110	494	7.50	23.0	65	80	7.4	86	1.9	100
AUG 10...	0900	900	190	7.20	26.0	230	22	6.5	79	2.3	52
DATE	HARDNESS NONCARBONIC, WH TOT FLD (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM ADSORPTION RATIO	POTASSIUM DIS-SOLVED (MG/L AS K)	ALKALINITY, WAT WH TOT FLD (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)
NOV 07...	0	43	8.5	100	4	8.2	190	31	91	0.40	22
FEB 16...	0	37	7.6	96	4	7.8	176	29	91	0.40	17
MAY 02...	0	31	5.4	62	3	6.9	125	23	50	0.30	14
AUG 10...	0	16	2.9	17	1	5.0	60	7.0	16	0.10	11
DATE	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	RESIDUE VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHOROUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
NOV 07...	418	32	4	6.30	0.100	6.40	0.250	1.2	1.4	4.50	6.6
FEB 16...	391	43	8	4.76	0.140	4.90	0.780	1.2	2.0	3.50	8.8
MAY 02...	268	109	7	1.94	0.160	2.10	0.540	0.76	1.3	0.050	11
AUG 10...	111	15	<1	0.470	0.030	0.500	0.090	0.91	1.0	0.640	11

## SAN JACINTO RIVER BASIN

## 08073700 BUFFALO BAYOU AT PINEY POINT, TX

LOCATION.--Lat 29°44'48", long 95°31'24", Harris County, Hydrologic Unit 12040104, on right bank at upstream side of bridge on Piney Point Road, village of Piney Point, 3.7 mi downstream from Rummel Creek, 7.2 mi downstream from gage near Addicks (station 08073500), and 12.5 mi upstream from gage at Houston (station 08074000).

DRAINAGE AREA.--317 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1963 to September 1976 and October 1984 to current year. October 1976 to September 1984 (gage heights only).

Water-quality records.--Chemical, biochemical, and pesticide analyses: October 1970 to September 1978.

GAGE.--Water-stage recorder. Datum of gage is 1.35 ft below National Geodetic Vertical Datum of 1929, 1973 adjustment.

REMARKS.--Records fair. High-water flow is a combination of regulated flow from Barker and Addicks Reservoirs (stations 08072500 and 08073000, located 14.0 and 13.8 mi upstream from gage, respectively) and runoff from highly urbanized area below these reservoirs. Low flow is mostly sustained by sewage effluent. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--18 years (water years 1964-76, 1985-89), 260 ft<sup>3</sup>/s (196,300 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (estimated), 5,700 ft<sup>3</sup>/s Aug. 31, 1981 (gage height, 57.20 ft, from floodmark); maximum gage height, 57.31 ft May 18, 1989; minimum daily discharge, 6.0 ft<sup>3</sup>/s Dec. 6, 7, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,930 ft<sup>3</sup>/s May 18 at 1600 hours (gage height, 57.31 ft); minimum daily, 37 ft<sup>3</sup>/s Sept. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	115	140	54	57	846	51	354	153	1640	272	1720	64
2	103	102	53	54	439	134	53	116	1590	102	1600	64
3	95	75	52	55	549	63	148	316	1480	112	624	59
4	88	70	48	54	403	63	54	246	1360	90	1210	56
5	75	67	49	52	201	58	49	386	765	510	1150	58
6	64	62	51	52	164	63	46	308	96	879	1110	73
7	61	65	55	53	e140	60	174	219	63	630	1070	115
8	58	63	132	49	115	57	278	174	68	488	1210	93
9	56	61	245	56	99	56	111	114	56	455	1030	142
10	59	64	161	59	87	55	64	91	45	688	960	107
11	55	73	153	54	79	41	58	79	45	1220	861	82
12	51	92	134	49	84	65	54	83	48	1040	576	113
13	50	90	99	141	83	56	129	127	45	732	212	625
14	51	82	73	257	76	51	110	724	808	103	97	655
15	53	75	64	160	58	53	79	472	299	68	79	339
16	52	68	56	92	60	50	60	171	630	61	85	193
17	53	64	53	71	53	51	57	571	486	63	111	92
18	52	67	52	1170	54	50	51	3900	202	59	658	84
19	51	62	53	575	52	50	51	2370	113	68	1010	71
20	50	58	51	653	86	124	50	327	78	131	195	71
21	50	62	51	461	160	195	47	160	72	88	121	66
22	49	61	52	410	123	345	44	402	77	68	91	62
23	49	58	95	473	68	199	45	1240	210	72	115	60
24	49	56	99	623	68	110	48	1370	413	66	82	55
25	51	54	62	375	58	81	48	1350	149	310	69	58
26	51	67	52	389	58	150	48	1300	1310	233	134	44
27	62	61	66	568	57	311	47	963	1800	141	97	37
28	75	58	89	544	56	233	46	929	361	85	77	45
29	61	56	76	746	---	796	44	922	668	104	68	50
30	63	55	64	242	---	306	220	1020	1100	108	71	51
31	137	---	57	759	---	582	---	1340	---	113	65	---
TOTAL	1989	2088	2451	9353	4376	4559	2667	21943	16077	9159	16558	3684
MEAN	64.2	69.6	79.1	302	156	147	88.9	708	536	295	534	123
MAX	137	140	245	1170	846	796	354	3900	1800	1220	1720	655
MIN	49	54	48	49	52	41	44	79	45	59	65	37
AC-FT	3950	4140	4860	18550	8680	9040	5290	43520	31890	18170	32840	7310
CAL YR 1988	TOTAL	46669	MEAN	128	MAX	1170	MIN	46	AC-FT	92570		
WTR YR 1989	TOTAL	94904	MEAN	260	MAX	3900	MIN	37	AC-FT	188200		

e Estimated.



## 08074000 BUFFALO BAYOU AT HOUSTON, TX

LOCATION.--Lat 29°45'36", Long 95°24'30", Harris County, Hydrologic Unit 12040104, on right bank at downstream side of bridge on Shepherd Drive in Houston and 0.8 mi upstream from Waugh Drive.

DRAINAGE AREA.--358 mi<sup>2</sup>, unadjusted for basin boundary changes.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1936 to September 1957, October 1957 to December 1961 (high-water records and discharge measurements), January 1962 to September 1975, October 1975 to current year (high-water records and discharge measurements).

REVISED RECORDS.--WSP 1732: Drainage area (former site).

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 1.36 ft below National Geodetic Vertical Datum of 1929, 1973 adjustment; records unadjusted for land-surface subsidence. Prior to June 19, 1936, nonrecording gage, and June 19, 1936, to Jan. 16, 1962, water-stage recorder at site 0.8 mi downstream at 4.08-foot lower datum. Jan. 17, 1962, to Sept. 30, 1973, auxiliary water-stage recorder 0.8 mi downstream. Water-stage recorder at Main Street (station 08074600) used as auxiliary gage after Sept. 30, 1973.

REMARKS.--Records good. Although floodflows are regulated by Barker and Addicks Reservoirs (stations 08072500 and 08073000) located 26.3 and 26.8 mi upstream, respectively, flood peaks from the urbanized areas below these reservoirs are often independent of the regulation. Discharge is computed using a stage-fall-discharge relationship for all storms that produce peak discharges above 2,000 ft<sup>3</sup>/s. Discharges below 1,000 ft<sup>3</sup>/s are computed or estimated following designated storm periods only. Low flow is mostly sustained by sewage effluent from Houston suburbs. Gage heights are affected by tides, backwater from Whiteoak Bayou, and other streams. Gage-height telemeter at station.

AVERAGE DISCHARGE.--8 years (water years 1936-44) unregulated, 272 ft<sup>3</sup>/s (197,100 acre-ft/yr); 26 years (water years 1944-57, 1962-75) regulated, 274 ft<sup>3</sup>/s (198,500 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,900 ft<sup>3</sup>/s Aug. 30, 1945 (gage height, 28.82 ft), at site 0.8 mi downstream at present datum; maximum gage height, 30.00 ft May 18, 1989, at current site; minimum daily, 1.3 ft<sup>3</sup>/s May 24, 1939, Nov. 5, 1950, occurred prior to urban development and accompanying sewage effluent releases.

EXTREMES OUTSIDE PERIOD OF RECORD.--All flood data at site 0.8 mi downstream at present datum. Maximum gage height since at least 1835, 49.0 ft Dec. 9, 1935 (discharge, 40,000 ft<sup>3</sup>/s); furnished by engineer for Harris County. Flood of May 31, 1929, reached a gage height of 43.5 ft (discharge, 19,000 ft<sup>3</sup>/s), at bridge on Capitol Avenue, affected by bridge; furnished by city of Houston.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,000 ft<sup>3</sup>/s May 18 at 1800 hours (gage height, 30.00 ft); minimum discharge not determined (affected by tides).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	1660	1160	2510	---
2	---	---	---	---	---	---	---	---	1800	210	3220	---
3	---	---	---	---	---	---	---	---	1560	---	620	---
4	---	---	---	---	---	---	---	---	1440	---	---	---
5	---	---	---	---	---	---	---	---	1040	---	---	---
6	---	---	---	---	---	---	---	---	210	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	450	---	---	---	---
18	---	---	---	1860	---	---	---	5880	---	---	350	---
19	---	---	---	1690	---	---	---	4860	---	---	1670	---
20	---	---	---	1280	---	---	---	840	---	---	280	---
21	---	---	---	---	---	---	---	300	---	---	---	---
22	---	---	---	---	---	---	---	220	---	---	---	---
23	---	---	---	---	---	---	---	1130	---	---	---	---
24	---	---	---	---	---	---	---	1390	---	---	---	---
25	---	---	---	---	---	---	---	1400	---	---	---	---
26	---	---	---	---	---	---	---	1370	2940	---	---	---
27	---	---	---	---	---	---	---	1030	4830	---	---	---
28	---	---	---	---	---	---	---	871	530	---	---	---
29	---	---	---	---	---	---	---	871	750	---	---	---
30	---	---	---	---	---	---	---	926	1920	---	---	---
31	---	---	---	---	---	---	---	1260	---	---	---	---
TOTAL	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---
AC-FT	---	---	---	---	---	---	---	---	---	---	---	---
CAL YR 1988	TOTAL	--	MEAN	--	MAX	--	MIN	--	AC-FT	--		
WTR YR 1989	TOTAL	--	MEAN	--	MAX	--	MIN	--	AC-FT	--		

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1968 to July 1981. Pesticide analyses: February 1969 to July 1981.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1986 to current year.

WATER TEMPERATURE: April 1986 to current year.

DISSOLVED OXYGEN: April 1986 to current year.

INSTRUMENTATION.--Since April 1986, a three-parameter water-quality monitor continuously records specific conductance, water temperature, and dissolved oxygen at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrumentation.

## EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, >1,020 microsiemens Oct. 16, 1987, Mar. 14, 1988; minimum, 68 microsiemens July 27, 1988.

WATER TEMPERATURE: Maximum, 31.5°C on several days during 1988-89; minimum, 6.0°C Jan. 10, 1988.

DISSOLVED OXYGEN: Maximum, 12.0 mg/L Jan. 7, 1988; minimum, 1.1 mg/L Aug. 9, 1988.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 997 microsiemens July 9; minimum, 86 microsiemens July 28.

WATER TEMPERATURE: Maximum, 31.5°C July 18; minimum, 7.0°C Feb. 7, 8.

DISSOLVED OXYGEN: Maximum, 10.0 mg/L Feb. 7; minimum, 1.2 mg/L Sept. 6.

## SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	576	307	460	625	373	468	785	757	767	690	679	683
2	633	467	534	605	436	510	795	761	779	716	690	703
3	631	581	611	616	500	551	803	778	790	726	716	720
4	653	600	617	681	618	654	796	775	786	727	723	726
5	693	651	664	716	672	687	788	771	780	732	719	726
6	721	683	704	735	693	718	782	762	771	796	724	766
7	758	722	734	---	---	---	779	590	760	798	784	792
8	772	746	759	752	732	744	789	614	738	799	787	792
9	775	694	760	775	746	754	612	325	456	791	748	773
10	744	384	662	775	666	743	403	319	362	760	724	747
11	736	671	721	791	762	776	472	406	448	780	722	751
12	784	729	751	765	713	749	523	456	493	790	762	777
13	787	767	779	754	699	728	558	500	529	782	372	580
14	814	772	788	719	672	692	620	558	587	499	331	414
15	799	780	790	725	707	719	670	617	644	373	335	355
16	796	780	787	737	696	720	715	670	688	541	358	460
17	828	779	789	747	734	741	742	716	726	620	542	577
18	801	782	792	764	744	750	763	741	751	640	96	324
19	803	769	782	755	721	737	764	751	757	210	127	169
20	811	791	796	767	736	746	775	755	765	269	158	196
21	803	777	785	764	750	758	794	772	779	295	201	231
22	854	786	820	776	755	771	802	776	788	234	214	224
23	811	781	796	769	760	764	791	729	771	245	215	231
24	808	770	794	758	738	745	782	578	684	234	204	215
25	784	763	774	766	744	756	708	557	606	294	226	255
26	783	371	677	786	766	776	671	628	647	389	255	318
27	701	496	638	771	757	764	684	313	580	234	210	220
28	778	705	746	764	727	746	633	475	551	255	230	244
29	760	643	701	746	732	738	577	479	516	278	170	229
30	733	659	698	770	735	751	658	581	639	422	209	312
31	728	329	585	---	---	---	684	660	670	473	188	254
MONTH	854	307	719	791	373	716	803	313	665	799	96	476

## SAN JACINTO RIVER BASIN

141

08074000 BUFFALO BAYOU AT HOUSTON, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	200	179	187	768	738	755	258	231	243	683	353	505
2	281	201	246	744	421	557	449	263	373	674	476	571
3	266	221	240	612	420	505	724	445	551	771	164	486
4	272	249	262	716	571	671	740	356	455	388	264	331
5	407	274	348	760	725	747	742	435	569	426	389	406
6	449	379	418	771	760	765	792	747	766	424	401	412
7	564	441	504	789	756	774	790	752	773	513	425	461
8	586	525	556	786	776	782	788	390	481	583	516	553
9	626	587	603	814	758	784	490	396	446	619	587	603
10	654	618	632	802	782	792	684	464	550	627	584	607
11	672	646	659	806	793	801	780	689	748	633	596	611
12	718	673	693	816	786	797	796	771	781	640	630	635
13	776	712	723	847	777	817	784	595	703	659	94	620
14	723	698	708	818	780	799	662	456	546	267	139	194
15	735	705	718	835	806	819	660	529	599	206	127	173
16	753	721	732	845	814	828	678	610	636	965	207	597
17	744	714	728	827	809	816	713	680	691	---	---	---
18	743	688	720	824	808	817	799	716	749	800	455	612
19	743	688	720	835	814	826	914	803	842	795	478	510
20	748	544	696	832	381	647	996	923	979	---	---	---
21	625	510	588	638	519	593	858	818	841	---	---	---
22	648	562	593	---	---	---	836	809	824	---	---	---
23	667	578	613	---	---	---	844	828	835	---	---	---
24	705	669	689	550	484	510	845	833	838	---	---	---
25	737	696	717	649	531	588	837	802	827	---	---	---
26	769	733	751	700	573	638	838	812	820	---	---	---
27	778	761	770	569	293	433	841	816	825	---	---	---
28	773	760	766	377	327	348	852	816	838	524	364	413
29	---	---	---	307	151	219	847	834	841	617	311	389
30	---	---	---	473	283	352	834	258	456	977	429	822
31	---	---	---	320	233	253	---	---	---	---	---	---
MONTH	778	179	592	847	151	656	996	231	681	977	94	501
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	---	---	---	---	---	---	840	395	599	862	838	849
2	---	---	---	---	---	---	864	401	642	874	847	863
3	---	---	---	---	---	---	---	---	---	892	860	869
4	---	---	---	---	---	---	989	154	325	894	763	820
5	258	159	223	---	---	---	171	154	160	840	815	827
6	406	250	319	---	---	---	168	145	158	836	513	755
7	500	413	462	452	190	242	171	143	158	711	460	613
8	554	497	514	993	175	631	174	139	156	859	521	686
9	674	532	599	997	997	997	241	147	183	960	871	920
10	557	529	546	---	---	---	206	176	189	979	720	834
11	559	539	546	802	269	439	270	152	225	729	579	678
12	550	538	542	256	119	178	307	275	294	741	643	703
13	556	532	540	138	117	128	413	305	348	749	189	591
14	987	307	595	208	141	174	556	317	467	292	121	212
15	799	276	377	278	211	241	687	568	637	313	266	288
16	431	245	269	350	281	313	744	688	716	355	276	315
17	281	262	270	412	351	379	751	682	725	611	360	471
18	388	282	342	463	414	435	755	93	621	678	623	649
19	508	383	444	509	464	485	236	132	175	685	646	666
20	573	370	515	540	511	525	294	202	244	728	674	702
21	697	525	619	554	531	541	425	297	362	737	714	725
22	736	687	718	576	556	564	489	426	458	742	720	732
23	736	457	606	605	577	591	537	486	506	736	724	730
24	937	429	725	641	606	624	556	486	524	773	733	750
25	948	465	622	729	95	538	563	488	524	878	760	809
26	461	147	316	565	155	352	572	559	565	897	800	824
27	866	200	473	463	404	432	556	499	532	840	794	808
28	913	526	834	619	86	484	723	502	597	848	803	825
29	---	---	---	558	287	455	758	716	726	838	814	825
30	---	---	---	707	564	632	809	759	791	875	822	839
31	---	---	---	809	613	710	858	809	830	---	---	---
MONTH	987	147	501	997	86	462	989	93	448	979	121	706

SAN JACINTO RIVER BASIN  
08074000 BUFFALO BAYOU AT HOUSTON, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	26.0	24.5	25.0	21.5	20.5	21.0	16.0	14.5	15.5	17.5	16.0	17.0
2	26.0	24.5	25.0	21.0	19.5	20.5	16.0	14.0	15.0	19.0	17.0	18.0
3	25.0	23.5	24.0	22.5	20.5	21.0	16.5	14.5	15.5	21.5	19.0	20.0
4	24.0	22.5	23.5	24.0	22.0	23.0	17.0	15.0	16.0	20.0	18.5	19.0
5	23.5	21.5	22.5	23.0	21.0	22.0	17.0	15.5	16.5	20.5	18.0	19.5
6	23.0	21.5	22.0	20.5	19.0	20.0	17.0	15.5	16.0	21.5	20.0	20.5
7	23.0	21.0	22.0	21.5	19.0	20.5	19.0	16.5	17.5	22.0	21.0	21.5
8	23.0	21.0	22.0	24.0	21.5	22.5	19.5	18.5	19.0	21.5	18.0	20.0
9	24.0	21.5	23.0	24.5	23.0	23.5	19.5	16.0	17.5	18.0	15.5	16.5
10	24.5	22.5	23.5	25.5	23.5	24.5	16.0	15.0	15.5	16.0	15.0	15.5
11	23.5	21.0	22.5	25.0	24.0	24.5	15.0	14.5	15.0	18.5	16.0	17.0
12	23.0	21.0	22.0	24.5	24.0	24.0	14.5	13.5	14.0	20.5	18.5	19.5
13	22.5	20.5	21.5	24.0	22.5	23.5	14.0	12.5	13.5	18.5	14.5	16.0
14	22.5	20.0	21.0	24.0	23.0	23.5	15.5	13.5	14.0	14.5	12.0	13.5
15	23.0	20.5	22.0	24.5	24.0	24.0	17.5	15.0	16.5	12.5	11.0	11.5
16	24.5	22.0	23.0	24.0	20.5	22.5	16.5	14.5	15.5	13.5	11.5	12.5
17	24.5	23.0	23.5	20.5	18.5	19.5	14.5	13.0	14.0	14.0	13.0	13.5
18	25.5	23.5	24.0	21.5	19.0	20.0	14.0	12.5	13.5	16.0	14.0	15.5
19	25.5	24.0	24.5	23.0	21.5	22.5	15.5	13.0	14.5	16.0	15.5	16.0
20	26.0	24.0	25.0	22.0	18.0	20.0	18.5	15.5	17.0	16.0	15.5	16.0
21	25.5	24.0	25.0	18.0	16.5	17.0	20.0	18.0	19.0	15.5	13.5	14.5
22	25.0	24.0	24.5	17.5	16.5	17.0	21.0	20.0	20.5	13.5	13.0	13.5
23	25.5	24.0	24.5	17.0	15.0	16.0	21.0	20.0	20.5	14.0	13.0	13.5
24	25.0	23.5	24.0	17.5	15.5	16.5	20.5	19.0	20.0	15.0	13.5	14.5
25	24.5	23.0	24.0	20.5	17.5	19.0	19.0	18.0	18.5	17.0	15.0	16.5
26	25.0	23.5	24.5	22.0	20.5	21.0	20.0	18.0	19.0	17.5	17.0	17.5
27	25.0	24.0	24.5	21.0	18.5	20.0	21.5	20.0	20.5	16.5	16.5	16.5
28	25.5	24.0	24.5	18.5	16.0	17.0	20.0	16.0	18.5	17.0	16.5	16.5
29	24.5	23.5	24.0	16.5	14.5	15.5	16.0	14.5	15.0	18.5	17.5	18.0
30	24.0	23.0	23.5	17.0	16.0	16.5	16.0	14.5	15.0	18.0	17.0	17.5
31	23.5	20.5	22.0	---	---	---	17.5	16.0	17.0	17.5	16.0	16.5
MONTH	26.0	20.0	23.5	25.5	14.5	20.5	21.5	12.5	16.5	22.0	11.0	16.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	18.5	16.5	17.5	17.5	16.5	17.0	22.0	21.0	21.5	25.5	21.0	24.0
2	20.5	18.5	19.5	17.0	15.0	16.5	22.5	21.0	21.5	25.5	23.5	24.5
3	20.5	15.5	18.0	19.5	16.5	18.0	24.5	22.0	23.0	25.0	21.0	23.0
4	15.0	10.0	12.5	20.0	16.5	19.0	24.5	22.5	23.5	24.0	22.0	23.0
5	10.0	8.0	9.0	16.0	12.0	14.0	24.5	22.0	23.0	23.5	22.0	22.5
6	8.5	7.5	8.0	13.5	11.0	12.0	24.0	21.0	22.0	24.5	22.0	23.0
7	8.0	7.0	7.5	14.5	11.0	12.5	23.5	20.0	22.0	25.5	23.0	24.0
8	9.5	7.0	8.0	15.5	12.5	13.5	24.0	22.0	23.0	27.0	24.0	25.5
9	11.0	9.0	10.0	17.0	13.5	15.0	23.5	21.0	22.5	27.0	25.0	26.0
10	12.5	10.5	11.5	18.5	15.0	16.5	21.0	18.5	19.5	26.5	25.0	26.0
11	14.5	12.5	13.5	20.5	16.5	18.0	19.5	17.5	18.5	25.5	24.0	25.0
12	17.5	14.5	16.0	22.0	18.0	20.0	19.0	17.5	18.0	24.5	23.0	23.5
13	19.5	17.5	18.5	22.5	20.0	21.0	18.5	17.0	17.5	25.5	21.5	23.5
14	21.0	19.5	20.5	24.0	21.0	22.5	19.0	17.5	18.0	25.0	22.0	23.0
15	22.0	21.0	21.5	23.0	22.0	22.5	20.5	18.0	19.0	25.0	23.5	24.0
16	21.5	19.5	20.5	22.5	21.0	22.0	22.5	19.0	21.0	25.5	24.5	25.0
17	19.5	17.5	18.5	23.5	21.5	22.5	24.0	21.5	22.5	26.0	23.0	25.5
18	17.5	16.0	16.5	23.5	22.5	23.0	25.0	22.5	23.5	23.5	22.5	23.0
19	16.5	15.0	16.0	23.0	22.5	23.0	24.5	23.0	24.0	23.5	22.5	23.0
20	18.5	16.0	17.5	22.5	21.0	22.0	25.5	22.5	24.0	26.0	23.5	24.5
21	19.0	17.5	18.5	21.5	14.0	19.0	26.0	23.0	24.5	27.0	25.5	26.0
22	17.5	15.0	16.5	16.5	14.0	15.0	26.0	23.5	24.5	27.0	26.5	27.0
23	15.5	14.0	15.0	16.0	14.0	15.0	26.0	23.5	24.5	27.5	25.0	26.0
24	14.5	13.5	14.0	19.0	15.0	17.0	26.5	24.5	25.0	26.5	26.0	26.5
25	16.0	14.0	15.0	20.0	18.5	19.0	27.0	24.5	25.5	27.5	26.5	27.0
26	18.5	16.0	17.0	22.0	19.5	21.0	27.5	25.0	26.5	27.5	27.0	27.0
27	20.0	17.5	19.0	22.5	22.0	22.0	27.0	25.0	26.0	28.0	27.0	27.5
28	19.5	17.5	18.5	22.5	22.0	22.0	27.0	25.5	26.5	28.0	27.0	27.5
29	---	---	---	21.5	20.0	21.0	27.5	25.5	26.5	28.0	27.0	27.5
30	---	---	---	24.0	20.5	22.0	26.5	22.5	24.0	28.5	27.0	28.0
31	---	---	---	22.5	21.5	22.0	---	---	---	28.5	27.5	28.0
MONTH	22.0	7.0	15.5	24.0	11.0	19.0	27.5	17.0	22.5	28.5	21.0	25.0

## SAN JACINTO RIVER BASIN

143

08074000 BUFFALO BAYOU AT HOUSTON, TX--Continued

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	28.5	27.5	28.0	26.5	24.5	25.5	29.5	25.0	26.5	30.5	28.5	29.5
2	28.5	27.5	28.0	28.0	26.5	27.0	25.5	25.5	25.5	30.5	28.5	29.5
3	29.0	28.0	28.5	28.0	27.0	27.5	28.5	25.5	27.0	30.5	28.5	29.5
4	28.5	27.5	28.0	28.0	26.5	27.0	28.0	27.0	27.5	30.5	29.0	30.0
5	28.5	27.5	28.0	28.0	27.5	27.5	28.5	27.5	28.0	30.0	29.0	29.5
6	29.5	27.0	28.5	27.5	26.5	27.0	29.5	28.0	28.5	30.0	28.5	29.0
7	30.0	28.0	29.0	28.0	26.5	27.0	29.5	29.0	29.0	28.5	28.0	28.5
8	29.0	27.0	28.0	27.5	27.0	27.5	29.0	27.0	28.0	29.0	28.0	28.5
9	28.0	26.5	27.5	28.0	27.0	27.5	27.5	26.5	27.0	29.5	28.0	29.0
10	29.0	27.0	28.0	28.5	27.0	27.5	27.5	26.5	27.0	29.0	28.0	28.5
11	29.0	27.5	28.5	29.0	28.0	28.5	27.5	26.5	27.0	29.0	28.0	28.5
12	29.5	28.0	28.5	29.5	28.0	28.5	27.5	26.0	27.0	29.0	27.5	28.0
13	30.0	28.0	29.0	29.5	28.5	29.0	28.0	26.0	27.0	29.0	26.5	28.0
14	29.5	23.5	25.0	29.5	27.5	28.5	27.0	26.0	26.5	27.0	25.0	26.0
15	26.5	23.0	25.0	30.0	28.5	29.0	28.0	26.0	27.0	25.0	23.5	24.5
16	25.5	24.0	25.0	31.0	28.5	29.5	28.0	26.5	27.5	25.0	23.0	24.0
17	26.5	24.5	25.5	31.0	29.0	30.0	29.0	26.5	27.5	26.0	23.5	24.5
18	28.0	25.5	26.5	31.5	29.0	30.0	29.0	26.0	27.5	26.0	24.0	25.0
19	29.5	26.5	28.0	30.5	29.0	29.5	27.0	26.0	26.5	26.0	24.0	25.0
20	29.5	28.0	28.5	30.0	28.5	29.5	29.5	26.5	28.0	26.5	24.5	25.5
21	29.5	27.5	28.5	29.0	27.0	28.0	29.5	27.5	28.5	26.5	24.5	25.5
22	29.5	28.0	28.5	29.0	27.0	28.0	29.0	28.0	28.5	26.5	24.5	25.5
23	29.0	26.5	27.5	28.5	27.0	27.5	29.0	27.5	28.5	25.5	23.5	24.5
24	26.5	25.5	25.5	27.5	26.5	27.0	29.5	28.5	29.0	23.5	21.5	22.5
25	26.0	25.5	25.5	27.0	25.5	26.5	29.5	28.0	28.5	23.0	21.0	22.0
26	26.0	25.0	25.5	26.5	25.5	26.0	29.5	28.0	28.5	23.5	21.5	22.5
27	25.5	25.0	25.0	26.5	25.5	26.0	30.0	27.5	28.5	24.0	22.5	23.0
28	26.5	25.5	26.0	28.5	25.5	27.0	30.0	28.0	29.0	24.0	22.0	23.0
29	26.5	25.5	26.0	28.5	27.0	27.5	29.5	28.5	29.0	24.5	23.0	23.5
30	25.5	24.5	25.0	29.0	27.5	28.5	29.0	28.5	29.0	24.5	23.0	24.0
31	---	---	---	30.0	28.0	29.0	29.5	28.0	29.0	---	---	---
MONTH	30.0	23.0	27.0	31.5	24.5	28.0	30.0	25.0	28.0	30.5	21.0	26.0

## OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	5.3	4.9	5.2	4.2	4.0	4.1	8.6	7.7	8.2	6.2	5.5	5.9
2	5.2	4.9	5.1	4.1	3.8	4.0	8.6	7.8	8.2	5.9	5.3	5.6
3	5.2	4.9	5.1	4.6	3.8	4.2	8.5	7.8	8.1	5.8	5.0	5.3
4	5.1	4.8	5.0	5.7	4.5	5.1	8.5	7.8	8.0	5.6	4.4	5.1
5	5.2	4.8	4.9	6.9	5.4	5.7	8.6	7.7	8.1	5.7	4.8	5.2
6	5.4	4.8	5.1	7.3	5.9	6.4	8.6	6.4	8.0	6.4	4.6	5.6
7	5.4	5.0	5.2	8.1	6.1	7.4	8.0	6.9	7.6	5.7	4.9	5.3
8	5.7	5.3	5.5	8.2	6.7	7.5	7.1	5.2	6.4	6.4	4.9	5.7
9	5.5	5.1	5.3	7.0	6.2	6.6	7.5	5.5	6.6	7.0	6.2	6.6
10	5.7	4.9	5.4	6.6	4.7	5.9	8.1	7.5	7.8	7.1	5.9	6.5
11	6.3	5.6	6.0	6.7	5.6	6.1	8.0	7.4	7.7	7.2	5.6	6.4
12	6.4	5.6	6.1	6.6	4.9	5.9	8.1	7.7	8.0	6.5	5.8	6.2
13	6.1	5.6	5.9	6.8	6.1	6.4	8.8	7.9	8.4	7.2	5.5	6.4
14	5.9	5.6	5.8	6.9	6.2	6.6	8.5	7.9	8.4	8.2	6.9	7.4
15	5.9	5.5	5.7	6.7	5.8	6.3	7.9	7.3	7.6	8.8	8.2	8.6
16	6.1	5.6	5.9	6.9	5.8	6.3	7.7	7.2	7.4	8.7	8.0	8.4
17	6.2	5.8	6.0	7.8	6.7	7.2	8.0	7.5	7.7	8.2	7.6	8.0
18	6.3	5.8	6.1	7.5	6.9	7.2	8.0	7.7	7.9	8.9	7.2	7.7
19	6.1	5.7	6.0	7.0	5.3	6.0	7.8	7.2	7.5	7.9	6.0	7.5
20	6.1	5.7	5.9	7.3	6.2	6.8	7.2	6.4	6.8	8.1	7.5	7.8
21	6.0	5.6	5.8	8.1	7.4	7.7	6.6	6.0	6.2	8.3	7.6	8.0
22	5.7	5.4	5.5	8.4	7.5	8.0	6.0	5.1	5.7	8.5	8.3	8.4
23	5.6	5.3	5.4	8.7	7.8	8.2	5.9	4.1	5.0	8.8	8.4	8.6
24	5.6	5.3	5.4	8.4	7.8	8.1	6.0	4.6	5.4	8.6	8.3	8.4
25	5.5	5.2	5.4	7.9	7.2	7.5	6.4	5.7	6.1	8.3	7.3	7.8
26	5.4	4.6	5.2	7.2	6.0	6.7	6.0	5.5	5.7	7.7	7.2	7.5
27	5.3	3.0	4.6	7.4	6.1	6.7	7.0	5.0	5.5	7.6	7.5	7.6
28	5.2	4.9	5.1	8.1	7.0	7.5	5.4	4.2	4.9	7.6	7.3	7.5
29	5.0	4.7	4.8	8.3	7.4	7.9	6.8	5.1	6.0	7.3	6.7	7.0
30	4.7	4.5	4.6	8.3	7.6	8.0	7.1	6.3	6.8	7.2	6.2	6.6
31	4.7	4.1	4.3	---	---	---	6.3	5.7	6.1	8.0	6.5	7.6
MONTH	6.4	3.0	5.4	8.7	3.8	6.6	8.8	4.1	7.0	8.9	4.4	7.0



SAN JACINTO RIVER BASIN  
08074000 BUFFALO BAYOU AT HOUSTON, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	7.9	7.4	7.6	7.0	6.3	6.6	7.3	7.1	7.2	9.6	4.3	5.7
2	7.4	7.1	7.2	7.4	6.4	6.8	7.1	6.0	6.7	6.4	5.8	6.1
3	7.9	7.2	7.4	6.3	5.8	6.1	6.3	5.5	6.0	8.4	5.8	6.3
4	9.3	8.0	8.6	6.3	5.4	5.8	6.9	6.0	6.5	6.5	5.3	6.1
5	9.7	9.3	9.4	8.1	6.4	7.3	6.6	6.0	6.2	6.9	6.2	6.5
6	9.9	9.6	9.7	8.9	7.9	8.4	6.5	6.3	6.4	6.7	6.4	6.6
7	10.0	9.6	9.8	9.0	8.1	8.5	7.2	6.4	6.7	6.8	6.5	6.7
8	9.9	9.2	9.6	9.3	7.7	8.4	7.2	6.6	6.9	6.7	6.2	6.5
9	9.4	8.8	9.2	9.3	7.7	8.4	6.8	6.5	6.7	6.5	5.7	6.2
10	8.8	8.2	8.6	9.4	7.1	8.2	7.6	6.6	7.2	6.1	5.7	6.0
11	8.2	7.4	7.8	9.1	6.8	7.9	8.1	7.3	7.7	6.4	5.9	6.1
12	7.4	6.2	6.9	9.0	6.7	7.7	7.8	7.5	7.7	6.8	5.5	6.3
13	6.7	6.1	6.4	8.9	6.0	7.5	8.0	7.0	7.5	9.2	5.5	6.0
14	6.2	5.6	6.0	8.3	6.2	7.3	7.5	6.7	7.2	7.6	5.9	6.6
15	5.7	5.1	5.4	7.1	5.9	6.5	7.9	7.1	7.5	7.2	5.3	6.7
16	5.7	5.2	5.4	8.0	5.8	6.7	7.5	7.2	7.3	6.8	5.7	6.2
17	6.0	5.6	5.8	7.5	5.7	6.6	7.1	6.6	6.9	8.3	6.0	6.4
18	6.5	5.8	6.2	7.6	5.4	6.4	6.9	6.2	6.6	---	---	---
19	6.8	5.8	6.3	7.2	5.8	6.5	6.7	5.8	6.2	---	---	---
20	6.5	5.4	6.2	8.4	4.1	5.5	6.9	6.1	6.4	---	---	---
21	6.2	5.3	5.6	7.6	4.0	5.4	7.6	6.1	6.7	---	---	---
22	7.8	6.0	7.3	---	---	---	7.4	6.1	6.6	---	---	---
23	7.5	7.1	7.3	---	---	---	7.4	5.8	6.4	---	---	---
24	7.5	6.7	7.1	8.2	7.4	8.0	7.9	5.8	6.6	---	---	---
25	7.3	6.8	7.1	7.4	6.6	7.2	8.6	6.1	7.1	---	---	---
26	6.8	6.3	6.6	6.9	6.0	6.7	8.9	5.9	7.2	---	---	---
27	6.4	5.6	5.9	6.2	4.8	5.5	8.8	5.9	7.2	---	---	---
28	6.7	5.4	6.1	6.5	6.1	6.3	8.9	6.1	7.4	4.6	3.0	3.7
29	---	---	---	8.0	5.1	6.2	8.5	6.1	7.4	4.4	3.9	4.1
30	---	---	---	6.6	6.0	6.2	8.5	3.5	5.3	4.0	3.6	3.9
31	---	---	---	7.2	6.5	6.9	---	---	---	4.4	2.3	3.9
MONTH	10.0	5.1	7.2	9.4	4.0	6.9	8.9	3.5	6.8	9.6	2.3	5.8
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	5.4	4.0	4.7	---	---	---	8.0	5.6	6.4	5.2	3.3	4.2
2	5.3	4.4	4.9	---	---	---	---	---	---	5.3	4.0	4.5
3	---	---	---	---	---	---	5.8	5.2	5.5	5.0	3.7	4.3
4	---	---	---	---	---	---	6.4	5.2	6.2	5.1	3.3	4.0
5	---	---	---	---	---	---	6.3	5.8	6.0	5.2	3.9	4.4
6	3.1	2.3	2.6	---	---	---	6.0	5.8	5.9	4.5	1.2	3.5
7	4.2	3.2	3.7	6.3	5.3	5.6	6.0	5.5	5.8	3.7	2.0	2.7
8	4.4	3.3	4.0	6.4	4.9	5.5	5.8	5.0	5.5	1.8	1.3	1.4
9	4.6	3.7	4.3	5.9	5.5	5.7	6.1	4.1	5.5	3.7	2.9	3.0
10	5.4	4.6	4.9	5.9	5.6	5.7	6.0	5.6	5.8	3.9	3.5	3.8
11	6.2	4.6	5.2	5.6	5.4	5.5	6.3	5.8	6.0	5.7	3.6	4.4
12	6.4	5.0	5.6	5.5	5.1	5.3	6.2	5.9	6.0	5.4	4.0	4.7
13	7.3	4.9	5.9	5.0	4.5	4.7	6.1	5.3	5.8	5.3	4.1	4.8
14	5.6	5.5	5.6	4.6	4.1	4.4	7.0	4.8	5.4	6.0	4.7	5.4
15	5.7	5.3	5.5	5.3	4.5	4.9	5.9	4.9	5.6	6.6	6.0	6.3
16	6.4	5.8	6.3	5.8	5.0	5.4	6.1	5.5	5.7	6.7	6.1	6.5
17	6.4	6.0	6.3	6.2	5.2	5.6	5.8	4.5	5.4	6.3	5.8	6.2
18	6.3	5.7	6.0	6.6	5.4	5.9	6.9	4.4	5.5	6.3	5.6	6.0
19	5.8	3.4	4.6	6.1	5.6	5.9	5.2	4.9	5.1	6.3	5.6	6.0
20	5.8	3.9	4.7	5.5	3.1	4.5	5.6	4.9	5.2	6.6	5.5	6.0
21	---	---	---	5.5	2.8	4.4	5.4	4.4	5.0	6.6	5.6	6.1
22	---	---	---	5.9	5.3	5.6	5.5	4.4	5.0	6.7	5.6	6.1
23	---	---	---	6.2	4.8	5.8	5.7	3.5	4.4	7.0	5.9	6.4
24	---	---	---	5.4	2.3	3.9	---	---	---	7.6	6.3	6.8
25	---	---	---	6.2	4.0	5.0	---	---	---	7.3	6.6	6.9
26	---	---	---	5.9	3.1	4.4	---	---	---	7.5	6.6	7.0
27	---	---	---	6.3	5.8	6.0	---	---	---	7.2	6.2	6.7
28	---	---	---	8.7	5.5	6.1	6.1	5.0	5.8	7.5	6.2	6.7
29	---	---	---	5.9	4.3	5.3	5.2	4.6	4.9	7.2	6.3	6.7
30	---	---	---	5.9	5.0	5.6	4.9	4.1	4.5	6.5	5.3	6.0
31	---	---	---	6.3	4.9	5.7	5.1	4.0	4.5	---	---	---
MONTH	7.3	2.3	5.0	8.7	2.3	5.3	8.0	3.5	5.5	7.6	1.2	5.2

## SAN JACINTO RIVER BASIN

145

- 08074500 WHITEOAK BAYOU AT HOUSTON, TX

LOCATION.--Lat 29°46'30", long 95°23'49", Harris County, Hydrologic Unit 12040104, at downstream side of downstream bridge on Heights Boulevard in Houston, 560 ft downstream from Texas and New Orleans Railroad Co. bridge, 2.4 mi upstream from Little Whiteoak Bayou, and 4.0 mi upstream from mouth.

DRAINAGE AREA.--86.3 mi<sup>2</sup>. Prior to Oct. 1, 1976, 84.7 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1936 to current year (October 1965 to September 1966, monthly discharge only).

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 7.35 ft below National Geodetic Vertical Datum of 1929; unadjusted for land-surface subsidence. Prior to June 17, 1936, nonrecording gage, and June 17, 1936, to Apr. 28, 1965, water-stage recorder at site 480 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Low flow is sustained by sewage effluent and industrial waste. No diversion above station. Stage and rainfall radio-telemetry operated by Harris County Flood Control District at station.

AVERAGE DISCHARGE.--53 years, 89.7 ft<sup>3</sup>/s (64,990 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,300 ft<sup>3</sup>/s June 26, 1989 (gage height, 44.48 ft); no flow for many days during 1965 water year (result of construction dams).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1919, 51.5 ft Dec. 9, 1935, prior to channel rectification, present site and datum (discharge, 14,750 ft<sup>3</sup>/s), furnished by the engineer for Harris County. The flood of May 31, 1929, reached a stage of 47.0 + 0.5 ft, prior to channel rectification, present site and datum (discharge, 9,360 ft<sup>3</sup>/s), computed on basis of current-meter measurement at stage 1.0 ft below crest, furnished by city of Houston.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,400 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jan. 18	1130	4,830	27.94	June 26	2000	*18,300	*44.48
May 18	1430	17,900	44.08	Aug. 1	1400	5,610	29.15

Minimum daily discharge, 26 ft<sup>3</sup>/s on a few days in April and September.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	103	29	32	39	31	31	64	45	212	2130	36
2	35	38	31	32	35	243	28	31	65	66	682	35
3	32	38	31	36	197	37	28	550	34	45	94	35
4	30	35	32	33	42	47	27	215	33	40	41	35
5	30	31	32	36	40	36	26	488	33	35	36	37
6	30	31	33	33	38	33	26	157	32	95	38	115
7	30	30	49	31	37	38	27	37	31	134	38	419
8	33	30	200	31	37	30	27	28	55	119	138	135
9	54	31	175	47	35	30	30	28	37	330	50	109
10	62	33	105	37	37	29	27	31	35	69	34	39
11	32	31	173	31	34	28	26	30	62	52	32	37
12	31	31	50	39	52	29	26	53	35	34	31	230
13	31	31	41	309	36	30	110	355	33	31	31	497
14	32	32	39	207	35	29	49	862	1080	30	87	480
15	31	32	48	42	31	29	32	87	161	30	49	83
16	33	37	39	33	39	30	27	36	42	29	46	36
17	33	32	32	34	33	30	26	1100	31	30	38	30
18	32	31	35	978	35	33	26	10700	167	33	278	27
19	32	32	36	754	30	31	27	1320	74	30	303	29
20	30	30	35	768	110	177	36	460	38	70	67	26
21	33	30	45	79	72	227	28	208	38	33	39	31
22	30	28	35	45	32	329	27	77	33	29	38	30
23	32	32	85	35	32	65	26	104	138	29	47	31
24	32	31	38	34	30	41	28	53	462	35	41	33
25	30	30	34	45	30	34	28	37	414	149	39	31
26	32	30	30	34	30	245	28	34	5800	70	42	30
27	36	29	69	77	31	267	27	32	3830	39	37	29
28	32	29	111	41	33	55	28	32	522	77	37	30
29	34	29	36	746	---	935	28	31	246	36	38	31
30	32	28	35	205	---	140	698	33	991	31	40	30
31	327	---	33	50	---	52	---	32	---	49	38	---
TOTAL	1345	1015	1796	4934	1262	3390	1608	17305	14597	2091	4679	2776
MEAN	43.4	33.8	57.9	159	45.1	109	53.6	558	487	67.5	151	92.5
MAX	327	103	200	978	197	935	698	10700	5800	330	2130	497
MIN	30	28	29	31	30	28	26	28	31	29	31	26
AC-FT	2670	2010	3560	9790	2500	6720	3190	34320	28950	4150	9280	5510
CAL YR 1988	TOTAL	27960	MEAN	76.4	MAX	1190	MIN	28	AC-FT	55460		
WTR YR 1989	TOTAL	56798	MEAN	156	MAX	10700	MIN	26	AC-FT	112700		

SAN JACINTO RIVER BASIN  
08074500 WHITEOAK BAYOU AT HOUSTON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1968 to current year. Pesticide analyses: February 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI, KF AGAR (COLS. PER 100 ML)	
JAN 18...	0915	859	208	8.60	15.0	30	230	10.4	102	3.8	11000	32000	
MAR 07...	1124	42	802	8.40	12.0	19	97	13.6	124	6.5	3200	3100	
AUG 07...	1314	34	783	8.70	32.5	25	4.2	15.8	218	2.4	250	520	
DATE		HARD-NESS TOTAL (MG/L AS CaCO3)	HARD-NESS NONCARB WH WAT TOT FLD (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)
JAN 18...	52	0	17	2.2	24	2	3.0	57	16	17	0.20	5.7	
MAR 07...	--	--	--	--	--	--	--	--	--	--	--	--	
AUG 07...	170	0	53	9.2	100	3	6.7	225	28	88	0.40	21	
DATE		SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)
JAN 18...	119	232	23	0.960	0.040	1.00	0.180	0.72	0.90	0.640	20	3	
MAR 07...	--	219	30	5.21	0.190	5.40	0.270	1.0	1.3	3.70	9.9	--	
AUG 07...	441	13	<1	5.63	0.070	5.70	0.070	0.83	0.90	3.20	5.1	12	
DATE		BARIUM, DIS-SOLVED (UG/L AS Ba)	CADMIUM DIS-SOLVED (UG/L AS Cd)	CHRO-MIUM, DIS-SOLVED (UG/L AS Cr)	COPPER, DIS-SOLVED (UG/L AS Cu)	IRON, DIS-SOLVED (UG/L AS Fe)	LEAD, DIS-SOLVED (UG/L AS Pb)	MANGA-NESE, DIS-SOLVED (UG/L AS Mn)	MERCURY DIS-SOLVED (UG/L AS Hg)	SELE-NIUM, DIS-SOLVED (UG/L AS Se)	SILVER, DIS-SOLVED (UG/L AS Ag)	ZINC, DIS-SOLVED (UG/L AS Zn)	
JAN 18...	19	<1	<1	29	76	<5	27	0.3	<1	<1.0	27		
MAR 07...	--	--	--	--	--	--	--	--	--	--	--		
AUG 07...	190	<1	2	3	12	<1	10	<0.1	1	<1.0	20		
DATE		AME-TRYNE TOTAL	ATRA-ZINE, TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	METHO-MYL TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)	
JAN 18...	<0.10	0.20	<0.10	<0.5	0.5	<0.1	<0.10	<0.5	<0.50	0.10	<0.1		
MAR 07...	--	--	--	--	--	--	--	--	--	--	--		
AUG 07...	<0.10	<0.10	<0.10	<0.5	0.1	<0.1	<0.10	<0.5	<0.50	0.10	<0.1		

## SAN JACINTO RIVER BASIN

147

08074600 BUFFALO BAYOU AT MAIN STREET, HOUSTON, TX

LOCATION.--Lat 29°45'54", long 95°21'32", Harris County, Hydrologic Unit 12040104, on left bank at mouth of Whiteoak Bayou at upstream side of Main Street viaduct in Houston and 3.2 mi downstream from station 08074000.

DRAINAGE AREA.--469 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1962 to current year. (Gage removed for bridge repairs Apr. 5, 1982, to Dec. 2, 1983).

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 1.47 ft below National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers), 1973 adjustment; unadjusted for land-surface subsidence.

REMARKS.--Records good. Most days are influenced by tidal fluctuations. Gage heights during rises reflect releases from Barker and Addicks Reservoirs (stations 08072500 and 08073000, respectively) or runoff from urban areas. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 28.4 ft June 26, 1989; minimum recorded, -3.5 ft Jan. 13, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum gage height since at least 1835, 38.5 ft Dec. 9, 1935, present site and datum, unadjusted for land-surface subsidence.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 28.4 ft June 26 at 2200 hours; minimum (estimated), -0.9 ft Mar. 6.

DAY	MAX		MIN		GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989		MAX		MIN		MAX		MIN	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH			
1	4.2	2.4	3.3	2.3	3.0	2.0	3.8	2.4	4.3	2.7	4.2	2.2		
2	4.2	1.9	3.9	2.3	2.9	1.9	3.6	2.2	4.3	2.5	4.2	2.5		
3	3.8	2.1	4.3	3.0	3.2	2.2	3.6	2.0	4.3	1.2	4.7	2.7		
4	3.9	2.3	4.1	2.8	3.0	1.5	4.1	1.8	3.0	.9	4.7	2.6		
5	4.2	2.4	2.8	1.6	3.2	1.3	4.3	2.3	3.5	1.7	2.6	---		
6	4.3	2.9	3.2	1.7	3.6	1.9	4.3	2.1	3.3	1.3	1.2	---		
7	4.1	2.9	3.9	2.5	4.0	1.9	4.2	2.3	2.9	1.3	3.0	1.2		
8	4.1	3.1	3.6	1.7	3.9	2.3	3.9	1.8	3.5	2.0	3.4	2.0		
9	4.0	2.8	4.1	2.3	3.6	1.3	3.6	1.4	3.6	2.4	3.2	1.7		
10	3.4	2.0	4.1	2.2	4.0	1.8	4.3	2.5	3.8	2.7	3.2	1.5		
11	3.7	2.0	4.1	2.2	4.3	1.8	4.3	2.8	3.8	2.4	3.3	1.6		
12	3.5	2.0	4.9	2.7	3.4	1.4	4.2	2.1	4.4	2.1	3.6	1.6		
13	4.1	2.4	4.5	2.1	3.2	1.8	3.4	1.8	4.6	2.8	3.8	1.7		
14	4.1	2.6	3.9	2.4	3.6	2.1	3.4	2.0	4.3	2.5	4.3	2.1		
15	4.2	2.8	4.6	3.2	3.5	1.6	3.5	2.2	4.0	2.3	4.0	2.3		
16	4.4	2.5	4.6	1.7	2.4	1.5	3.4	1.8	3.7	1.8	4.0	2.1		
17	4.3	2.4	4.0	2.1	2.9	1.8	3.9	1.8	3.5	1.9	4.1	2.6		
18	4.2	2.1	5.2	3.7	3.3	1.4	10.4	3.0	3.3	1.6	3.9	2.4		
19	3.9	2.3	4.7	3.2	3.8	2.0	5.8	3.3	3.7	1.9	4.2	2.4		
20	4.1	2.3	3.3	.8	3.9	2.3	6.3	2.4	4.5	3.1	4.2	2.9		
21	4.1	2.6	3.5	1.4	3.8	1.7	3.6	1.8	4.1	1.4	3.6	1.2		
22	4.9	2.6	3.7	1.7	3.9	2.2	4.0	2.5	2.5	.6	3.2	1.7		
23	4.8	3.3	3.8	1.8	4.4	2.2	4.1	2.5	2.8	---	3.4	2.0		
24	4.5	2.2	4.0	2.0	4.1	1.8	4.3	2.9	3.5	2.1	3.7	2.1		
25	4.8	3.1	4.3	2.8	3.7	2.1	4.2	2.8	3.2	2.3	3.9	2.4		
26	4.7	2.5	4.9	2.7	4.2	2.8	3.9	2.4	3.3	1.7	4.7	2.6		
27	4.6	2.8	4.1	1.1	4.2	2.2	4.0	2.4	4.0	2.2	5.1	3.1		
28	4.5	2.0	2.8	1.2	3.3	1.2	4.2	3.1	3.6	2.2	5.2	4.4		
29	4.2	2.2	3.7	2.6	3.9	2.6	5.0	3.4	---	---	6.2	3.5		
30	4.3	2.5	3.5	1.8	4.0	3.0	3.7	2.0	---	---	4.0	2.2		
31	4.4	2.3	---	---	3.6	2.1	4.2	2.2	---	---	3.3	1.2		
MONTH	4.90	1.90	5.20	.80	4.40	1.20	10.40	1.40	4.60	---	6.20	---		

## SAN JACINTO RIVER BASIN

08074600 BUFFALO BAYOU AT MAIN STREET, HOUSTON, TX--Continued

DAY	GAGE HEIGHT FEET, WATER YEAR		OCTOBER 1988		TO SEPTEMBER 1989							
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	4.9	2.1	3.8	2.3	4.9	3.0	5.4	3.4	13.3	2.7	4.1	3.1
2	5.0	3.4	4.1	2.6	4.8	3.1	4.7	2.7	9.6	4.3	3.9	2.9
3	4.3	2.8	6.4	2.8	4.7	2.7	4.6	2.4	4.6	3.1	3.8	2.3
4	4.5	2.8	4.7	3.2	5.1	3.0	3.9	2.0	4.3	3.1	4.1	3.0
5	3.6	2.2	5.0	2.7	4.7	2.6	3.8	1.8	4.1	3.0	4.6	3.2
6	4.0	2.3	3.8	1.9	4.1	1.8	4.6	2.0	3.6	2.8	5.1	3.3
7	3.7	2.1	3.9	1.9	4.9	2.3	4.0	2.4	3.7	2.2	4.9	3.2
8	4.2	1.9	4.3	1.8	4.0	2.5	5.8	2.7	4.1	2.7	4.6	3.0
9	3.7	2.1	4.5	2.8	4.2	2.0	5.4	3.4	4.2	2.8	4.5	2.5
10	3.6	1.5	3.7	1.5	4.6	2.7	4.8	3.4	4.3	2.5	4.7	2.5
11	4.5	1.9	4.1	2.4	4.5	3.5	5.4	3.2	4.2	2.5	4.2	2.6
12	4.5	1.6	4.8	2.8	4.6	3.3	4.4	2.6	4.1	2.4	4.5	2.2
13	4.6	2.7	7.4	3.1	4.8	3.3	4.2	1.9	4.6	2.2	5.4	2.9
14	4.0	2.6	8.5	3.9	7.0	3.0	3.8	1.9	4.4	2.6	4.7	2.9
15	3.5	2.2	4.5	3.4	3.3	1.9	4.0	2.0	4.3	2.4	4.1	2.2
16	4.1	2.7	4.6	3.1	3.6	1.6	3.6	1.8	4.4	2.4	4.3	2.6
17	4.1	3.1	11.4	4.1	4.2	2.2	3.9	1.5	4.3	2.6	4.4	2.5
18	3.8	2.8	22.9	---	4.4	2.3	4.1	1.7	4.7	2.5	4.4	2.8
19	3.7	2.5	---	5.4	4.0	2.1	3.8	1.8	4.7	3.0	4.6	3.0
20	3.7	1.9	5.4	3.8	3.8	1.7	3.3	1.2	4.0	2.8	4.6	3.1
21	3.6	1.8	5.0	3.0	4.2	1.9	3.6	1.4	4.1	2.7	4.7	2.8
22	4.1	2.1	4.8	2.6	4.9	2.3	3.8	2.2	4.3	2.6	4.3	2.1
23	4.4	2.4	4.7	2.8	6.5	3.1	4.4	2.6	5.7	2.5	3.2	1.1
24	4.5	2.4	4.7	2.7	6.9	4.6	4.2	2.4	4.3	2.1	3.6	1.1
25	4.5	2.7	4.9	3.0	5.7	4.0	4.3	2.7	4.3	2.0	3.6	2.2
26	4.2	2.6	4.9	3.3	28.4	4.5	5.2	2.9	4.2	2.2	4.1	2.4
27	4.5	2.2	4.0	2.6	27.6	5.2	4.7	2.4	4.2	2.5	4.5	2.6
28	4.5	2.3	3.8	2.4	5.2	3.1	4.4	2.3	4.0	2.3	4.1	3.1
29	4.3	2.3	4.2	2.7	4.6	2.6	4.1	1.9	4.0	2.1	4.4	3.0
30	6.2	2.3	4.2	3.2	10.7	3.0	4.3	2.1	4.1	2.3	4.4	2.7
31	---	---	4.9	3.0	---	---	4.7	2.4	4.2	2.7	---	---
MONTH	6.20	1.50	---	---	28.40	1.60	5.80	1.20	13.30	2.00	5.40	1.10



## SAN JACINTO RIVER BASIN

149

08074600 BUFFALO BAYOU AT MAIN STREET, HOUSTON, TX--Continued

## WATER-QUALITY RECORDS

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1986 to current year.  
 WATER TEMPERATURE: April 1986 to current year.  
 DISSOLVED OXYGEN: April 1986 to current year.

INSTRUMENTATION.--Since April 1986, a three-parameter water-quality monitor continuously records specific conductance, water temperature, and dissolved oxygen at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrumentation. Several days the specific conductance exceeded the upper recording limit of 2,000 microsiemens. Data for maximum, minimum, and mean were not computed for days that exceeded this limit. On January 10, 1989, the upper limit on specific conductance was changed to 3,000 microsiemens. Due to tidal effects, backwater from Whiteoak Bayou, probe location, channel morphology, the water-quality data collected at this location may not be representative of the entire flow through the cross-section.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, >3,000 microsiemens on several days in January, 1989; minimum, 72 microsiemens June 26, 1989.  
 WATER TEMPERATURE: Maximum, 32.5°C Aug. 8, 1988; minimum, 5.5°C Jan. 10, 1988.  
 DISSOLVED OXYGEN: Maximum, 13.1 mg/L June 24, 1989; minimum, 0.0 mg/L July 25, Sept. 7, 9, 1989.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, >3,000 microsiemens on several days in January; minimum, 72 microsiemens June 26.  
 WATER TEMPERATURE: Maximum, 30.5°C on several days in July and September; minimum, 6.5°C Feb. 7.  
 DISSOLVED OXYGEN: Maximum, 13.1 mg/L June 24; minimum, 0.0 mg/L July 24, Sept. 7, 9.

## SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	571	250	363	561	413	477	---	---	---	1820	1290	1600
2	579	477	514	648	499	591	---	---	---	1990	1480	1710
3	659	526	593	1670	521	937	---	---	---	1940	1470	1680
4	650	587	616	1980	1590	1780	---	---	---	---	---	---
5	661	608	643	1970	1130	1690	1900	1210	1560	---	---	---
6	719	656	689	1600	1460	1540	1970	1150	1420	---	---	---
7	891	691	759	1790	1110	1440	1920	1100	1480	1940	1790	1880
8	1850	737	942	1870	1110	1420	1930	706	1100	---	---	---
9	1700	808	1020	1970	884	1310	724	386	549	---	---	---
10	795	686	726	1730	874	1360	452	331	358	2490	1850	2040
11	1410	529	732	1760	742	992	475	355	428	2870	2240	2680
12	1190	749	914	1260	770	995	535	457	482	2340	2120	2180
13	1670	843	1250	1200	763	854	628	516	579	2940	2010	2680
14	1690	1060	1240	1130	709	803	965	600	719	1970	1480	1750
15	1930	959	1570	1380	718	856	1920	1070	1580	1500	1270	1390
16	1660	971	1360	1210	722	841	1790	880	1270	1260	1180	1210
17	1980	958	1360	1770	753	972	1480	900	1250	1170	1090	1150
18	1830	1020	1330	1740	800	1060	1890	1360	1570	1130	137	583
19	1910	923	1400	1930	748	1010	1980	1450	1800	212	151	186
20	1870	1070	1580	998	733	815	1780	1170	1500	241	197	213
21	1860	1150	1520	923	775	833	1910	979	1400	289	229	253
22	1690	1490	1630	959	755	819	1920	1090	1420	248	229	240
23	1910	1150	1630	1130	789	876	1870	1110	1440	251	218	237
24	1820	932	1280	1140	779	922	1020	737	905	232	205	214
25	1910	950	1400	1850	888	1140	1580	722	1070	273	221	249
26	1970	594	1240	1610	830	1120	1210	631	896	390	272	318
27	1070	650	901	1310	782	934	943	518	736	305	210	230
28	1230	685	821	1730	816	1190	785	654	693	256	212	241
29	1250	940	1120	---	---	---	688	652	670	267	168	227
30	1220	704	1030	---	---	---	714	649	674	311	211	263
31	984	439	739	---	---	---	1900	716	1250	458	188	270
MONTH	1980	250	1060	1980	413	1060	1980	331	1070	2940	137	987

## SAN JACINTO RIVER BASIN

08074600 BUFFALO BAYOU AT MAIN STREET, HOUSTON, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	197	178	185	1720	758	896	392	232	250	651	336	434
2	280	199	235	810	456	641	417	250	319	615	444	497
3	261	214	240	589	428	494	542	314	433	583	141	415
4	271	247	261	606	448	517	832	450	645	444	220	278
5	377	268	324	764	536	706	829	376	508	423	224	300
6	533	377	441	779	752	767	770	458	612	341	246	305
7	545	462	484	1130	762	799	868	722	782	374	313	341
8	596	545	564	1530	799	951	818	407	591	396	330	357
9	692	555	620	1290	793	939	508	390	444	470	394	421
10	716	619	654	1020	773	864	625	451	514	604	473	531
11	713	650	675	1840	807	1010	710	508	614	640	530	598
12	788	683	718	2640	888	1390	818	636	727	719	607	642
13	817	706	749	2660	900	1320	785	673	727	658	196	606
14	771	692	728	2590	950	1590	697	446	578	348	153	220
15	774	689	715	2700	1120	1520	676	500	608	265	115	194
16	836	697	737	2270	971	1320	708	535	610	397	242	296
17	832	713	753	2940	886	1280	771	607	665	538	157	353
18	756	678	717	2310	830	1040	853	660	720	160	89	114
19	1180	675	796	1760	807	1030	836	687	755	142	97	115
20	992	588	801	1280	417	795	979	753	813	268	146	209
21	662	527	587	554	284	436	1300	783	875	385	272	303
22	648	563	597	421	289	358	977	776	842	462	375	399
23	676	583	606	489	289	353	979	784	837	470	141	214
24	705	585	645	488	385	421	1090	793	895	152	134	144
25	737	677	699	604	498	546	1250	815	900	147	133	140
26	769	711	735	795	528	612	1080	809	907	148	136	142
27	1090	734	830	640	351	513	1100	791	868	166	148	156
28	963	760	817	528	307	376	952	785	851	169	148	159
29	---	---	---	360	155	230	1160	770	886	166	149	160
30	---	---	---	382	240	306	808	140	499	179	160	171
31	---	---	---	470	234	286	---	---	---	174	153	161
MONTH	1180	178	604	2940	155	784	1300	140	676	719	89	302
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	172	152	159	325	116	193	641	106	310	814	767	790
2	187	166	172	453	340	393	174	105	137	830	758	797
3	199	178	185	575	453	526	258	169	211	849	799	827
4	228	200	214	738	558	600	259	170	194	869	813	841
5	508	226	259	621	198	478	186	171	180	865	785	836
6	582	272	333	234	160	202	187	176	182	884	522	766
7	872	363	499	259	156	208	199	179	190	815	286	629
8	955	538	668	267	143	205	231	178	198	670	243	451
9	908	659	716	289	168	257	215	193	207	700	363	490
10	967	703	749	295	264	282	226	214	221	790	602	698
11	986	717	756	264	201	218	251	224	238	670	560	603
12	998	707	776	243	211	221	302	249	283	741	373	594
13	1060	763	807	248	233	241	349	295	317	714	155	600
14	884	141	335	410	262	318	574	355	438	265	121	200
15	345	201	290	638	415	526	616	376	490	323	247	292
16	406	240	276	826	582	679	689	618	650	348	284	314
17	269	248	260	938	712	778	747	677	711	497	343	409
18	390	261	305	848	732	776	743	149	659	700	424	557
19	443	361	397	891	761	790	223	110	158	752	685	711
20	505	431	474	852	746	799	378	229	286	770	711	731
21	526	264	422	733	486	613	540	332	400	788	740	763
22	713	495	600	853	547	692	674	496	557	806	780	795
23	676	262	530	1030	664	716	707	125	527	823	779	802
24	286	141	195	744	100	523	714	288	560	821	782	805
25	313	196	259	616	196	471	687	520	577	849	801	818
26	286	72	202	364	156	274	778	478	642	852	833	842
27	160	84	111	557	398	456	801	709	763	864	810	846
28	347	167	257	528	175	418	784	579	697	855	799	826
29	376	205	270	564	229	398	735	654	697	972	801	849
30	234	104	184	689	582	648	795	706	743	971	836	867
31	---	---	---	755	631	680	799	746	775	---	---	---
MONTH	1060	72	389	1030	100	470	801	105	426	972	121	678

## SAN JACINTO RIVER BASIN

151

08074600 BUFFALO BAYOU AT MAIN STREET, HOUSTON, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	26.0	24.5	25.0	21.0	20.0	20.5	16.5	15.0	15.5	16.5	16.0	16.0
2	25.5	24.5	25.0	21.0	20.0	20.5	15.5	14.5	15.0	17.5	16.0	16.5
3	25.0	24.0	24.5	21.5	20.5	20.5	16.0	14.5	15.0	20.0	17.0	18.5
4	24.0	23.0	23.5	22.5	21.0	22.0	16.0	14.5	15.5	19.0	18.0	19.0
5	23.5	22.5	23.0	22.5	21.5	22.0	16.5	15.0	16.0	18.5	18.0	18.5
6	22.5	21.5	22.0	21.5	19.5	20.0	16.0	15.5	16.0	20.5	18.5	19.5
7	22.5	21.5	22.0	20.5	19.5	20.0	19.0	15.5	17.0	21.0	20.0	20.5
8	22.5	21.0	22.0	23.0	20.5	21.5	18.5	17.0	18.0	20.5	18.0	19.5
9	23.5	21.5	22.5	23.5	22.0	23.0	18.5	15.5	17.0	18.5	14.5	17.0
10	24.0	22.5	23.0	24.5	23.5	24.0	15.5	14.5	15.0	15.0	14.5	15.0
11	23.0	22.5	22.5	24.5	24.0	24.0	14.5	14.0	14.5	17.0	14.5	15.5
12	22.5	21.5	22.5	24.0	23.5	24.0	14.0	13.5	13.5	19.5	16.5	17.5
13	22.5	21.0	22.0	23.5	23.0	23.5	13.5	12.5	13.0	18.5	14.0	16.5
14	21.5	21.0	21.5	24.0	23.0	23.0	14.0	13.0	13.5	14.0	12.5	13.5
15	22.0	21.0	21.5	24.0	23.5	23.5	18.0	14.0	15.0	12.5	11.0	11.5
16	23.5	21.5	22.5	24.0	21.5	23.0	17.0	14.5	15.5	12.5	11.5	11.5
17	24.0	23.0	23.5	21.5	19.0	20.0	14.5	13.5	14.0	13.0	12.0	12.5
18	25.0	23.5	24.0	20.0	19.0	19.5	14.0	12.5	13.0	15.5	12.5	14.5
19	25.0	24.0	24.5	22.0	20.0	21.0	14.5	13.0	13.5	15.5	15.0	15.5
20	25.0	24.5	25.0	21.5	18.5	20.0	16.5	14.0	15.0	16.0	15.5	15.5
21	25.0	24.5	25.0	19.0	17.0	17.5	19.0	16.0	17.5	15.0	13.5	14.5
22	25.0	24.0	24.5	17.0	16.0	16.5	20.0	18.5	19.0	13.5	12.5	13.0
23	25.0	24.5	24.5	16.5	16.0	16.0	20.0	19.0	19.5	13.5	12.5	13.0
24	25.0	24.0	24.5	16.0	15.5	16.0	20.0	19.0	19.5	14.5	13.5	14.0
25	24.0	23.5	24.0	19.5	16.0	17.5	19.0	17.5	18.5	16.5	14.5	15.5
26	24.5	23.5	24.0	21.5	19.0	19.5	19.0	17.5	18.0	17.5	16.5	17.0
27	24.5	24.0	24.0	21.5	19.5	20.0	20.5	18.5	19.5	17.0	16.0	16.5
28	25.0	24.0	24.5	19.0	16.5	17.5	20.0	17.0	18.5	17.0	16.0	16.5
29	24.5	23.5	24.0	16.5	15.5	16.0	17.0	14.0	15.5	18.0	16.5	17.5
30	23.5	23.0	23.0	16.5	15.0	16.0	14.5	14.0	14.0	17.0	16.5	17.0
31	23.0	20.5	22.0	---	---	---	16.0	14.5	15.5	17.0	15.5	16.5
MONTH	26.0	20.5	23.5	24.5	15.0	20.5	20.5	12.5	16.0	21.0	11.0	16.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	18.0	16.0	17.0	17.5	16.0	16.5	22.0	20.0	21.0	25.0	22.5	23.5
2	20.0	18.0	19.0	16.0	15.5	16.0	21.5	21.0	21.0	25.0	23.5	24.0
3	20.0	14.5	17.5	17.5	16.0	16.5	23.0	21.0	22.0	25.0	21.0	23.5
4	14.5	10.5	12.5	19.0	17.0	18.0	24.0	23.0	23.5	23.5	22.0	22.5
5	10.0	8.5	9.0	17.0	13.5	14.5	23.0	22.5	22.5	23.5	22.0	22.5
6	8.5	7.0	7.5	12.5	11.5	12.0	22.5	22.0	22.5	24.0	22.0	23.0
7	7.0	6.5	6.5	12.5	11.0	12.0	22.5	21.5	22.0	24.5	23.0	23.5
8	7.5	7.0	7.0	13.5	12.0	13.0	24.0	22.0	23.0	25.5	24.0	24.5
9	10.5	7.5	9.0	15.0	13.0	14.0	23.5	21.5	22.5	26.0	25.5	25.5
10	11.5	9.5	10.5	16.0	14.5	15.5	21.0	18.5	19.5	26.5	25.5	26.0
11	13.0	11.0	12.0	17.5	15.5	16.5	18.5	17.0	18.0	26.5	24.5	25.0
12	16.5	12.5	14.5	19.0	17.0	18.0	18.0	17.5	17.5	24.5	23.5	24.0
13	18.5	16.0	17.5	21.0	19.0	20.0	17.5	17.0	17.0	24.0	22.0	23.0
14	20.5	18.0	19.0	22.5	20.5	21.0	18.0	17.0	17.5	25.0	21.5	22.5
15	21.5	19.5	20.5	22.5	21.0	22.0	19.0	18.0	18.5	24.5	23.0	24.0
16	21.0	20.0	20.5	22.0	21.0	21.5	21.0	19.0	20.0	25.5	24.5	25.0
17	19.5	17.5	18.5	22.0	21.0	21.5	23.0	21.0	21.5	25.5	23.5	25.5
18	18.0	15.5	16.5	23.0	22.0	22.5	24.0	22.5	23.0	23.5	21.5	22.5
19	15.5	15.0	15.5	23.0	22.5	22.5	24.0	23.0	23.5	23.5	21.5	22.5
20	18.0	15.0	16.0	22.5	21.0	22.0	24.5	23.0	24.0	27.0	23.5	25.0
21	18.0	17.0	17.5	21.0	13.5	18.5	25.0	23.5	24.5	27.5	26.5	27.0
22	17.5	15.5	16.0	15.0	13.5	14.0	25.5	24.0	25.0	28.0	25.0	27.5
23	15.5	13.5	14.0	15.0	12.5	13.5	25.5	24.0	24.5	27.5	25.0	26.0
24	14.0	13.0	13.5	17.0	15.0	15.5	25.5	24.0	25.0	26.5	25.5	26.0
25	14.5	13.0	13.5	19.0	17.0	18.5	26.5	25.0	25.5	27.0	26.0	26.5
26	16.5	14.5	15.5	22.5	18.5	19.5	27.0	25.0	26.0	27.5	26.5	27.0
27	18.0	16.5	17.5	22.5	20.5	21.5	27.0	25.5	26.0	27.5	27.0	27.0
28	18.0	17.5	18.0	22.0	21.5	22.0	27.0	25.5	26.5	28.0	27.0	27.5
29	---	---	---	22.0	20.0	21.0	27.5	25.5	26.5	28.0	27.0	27.5
30	---	---	---	22.5	20.5	21.0	26.5	21.0	23.5	28.0	27.0	27.5
31	---	---	---	23.0	21.0	22.0	---	---	---	28.5	27.5	28.0
MONTH	21.5	6.5	14.5	23.0	11.0	18.0	27.5	17.0	22.5	28.5	21.0	25.0

08074600 BUFFALO BAYOU AT MAIN STREET, HOUSTON, TX--Continued

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	28.0	27.5	28.0	26.5	24.5	25.0	28.5	24.5	26.0	30.0	28.5	29.5
2	28.0	27.0	27.5	28.5	26.5	27.0	25.0	24.5	24.5	30.5	29.0	29.5
3	28.5	27.5	28.0	28.0	27.5	27.5	28.0	25.0	26.0	30.5	29.0	30.0
4	28.5	27.5	28.0	29.0	26.5	27.5	28.0	26.5	27.5	30.5	29.5	30.0
5	28.5	27.0	28.0	28.5	27.0	28.0	28.5	27.0	28.0	30.5	29.5	30.0
6	29.0	27.0	28.0	27.0	26.0	26.5	29.0	28.0	28.5	30.0	29.0	29.5
7	30.0	28.5	29.0	27.5	26.0	27.0	29.5	28.5	29.0	29.0	27.5	28.5
8	29.0	27.5	28.5	27.5	24.5	26.5	28.5	26.5	28.0	29.5	28.0	28.5
9	29.0	27.5	28.0	27.5	27.0	27.5	27.5	26.5	27.0	29.5	28.5	29.0
10	29.0	27.0	28.0	28.0	27.0	27.5	27.5	26.0	26.5	29.0	28.5	29.0
11	29.0	27.5	28.0	28.5	26.5	28.0	27.5	25.5	26.5	29.0	28.0	28.5
12	29.5	28.5	29.0	29.0	28.0	28.5	27.5	25.5	26.5	30.0	27.5	28.0
13	29.5	28.5	29.0	29.5	28.0	28.5	27.5	26.0	26.5	28.5	26.5	28.0
14	29.5	23.0	25.0	28.5	27.5	28.0	28.0	26.5	27.0	26.5	25.0	26.0
15	28.0	23.5	24.5	29.5	28.5	29.0	26.5	26.0	26.5	25.0	23.5	24.0
16	25.5	24.0	25.0	30.0	29.0	29.5	28.0	26.5	27.0	24.0	23.0	23.5
17	26.5	24.0	25.0	30.5	29.5	30.0	28.0	27.0	27.5	25.0	24.0	24.5
18	27.5	25.0	26.0	30.5	29.5	30.0	28.5	26.0	28.0	25.5	24.5	25.0
19	29.0	27.0	27.5	30.0	29.5	30.0	26.5	25.5	26.0	25.5	24.5	25.5
20	29.0	28.5	29.0	30.0	29.0	29.5	28.5	26.5	27.0	26.0	25.0	25.5
21	29.0	27.5	28.5	29.0	28.5	28.5	29.5	28.0	28.5	26.0	25.0	25.5
22	30.0	28.5	29.0	29.0	28.0	28.5	29.0	28.0	28.5	26.0	25.0	25.5
23	29.5	26.5	28.0	28.5	27.5	28.0	28.5	25.5	28.0	26.0	24.0	24.5
24	26.5	24.5	25.0	27.5	26.5	27.0	28.5	27.5	28.0	24.0	22.5	23.0
25	26.0	25.0	25.5	27.5	25.5	26.5	29.0	28.0	28.5	22.5	21.5	22.0
26	25.5	24.5	25.0	26.0	25.0	25.5	29.0	28.0	28.5	22.5	21.5	22.0
27	25.0	24.5	24.5	26.5	25.5	26.0	29.5	28.5	29.0	23.5	22.5	23.0
28	26.0	24.5	25.0	28.0	26.0	26.5	29.5	27.5	29.0	23.5	22.5	23.0
29	26.0	25.5	25.5	27.5	26.5	27.0	30.0	29.0	29.5	24.0	23.0	23.5
30	25.5	24.5	25.0	28.5	27.5	28.0	29.5	29.0	29.0	24.0	23.0	23.5
31	---	---	---	29.0	28.0	28.5	29.0	28.5	29.0	---	---	---
MONTH	30.0	23.0	27.0	30.5	24.5	28.0	30.0	24.5	27.5	30.5	21.5	26.5

## OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	5.8	3.5	4.3	5.8	4.3	5.0	7.4	6.8	7.2	5.3	4.7	5.0
2	5.6	4.8	5.1	6.3	5.4	6.0	7.7	5.8	7.1	5.3	4.5	4.9
3	5.6	5.0	5.3	6.0	5.2	5.7	7.6	3.4	6.9	4.8	3.0	3.9
4	6.5	5.2	5.5	5.5	4.6	5.1	7.5	5.7	7.0	4.0	3.1	3.7
5	6.7	5.2	5.6	5.3	4.2	4.9	7.4	4.5	6.6	3.4	.4	2.3
6	7.2	5.1	5.6	5.6	4.1	5.1	7.3	5.7	6.5	2.5	.7	1.9
7	8.8	4.9	5.7	5.9	3.6	5.3	6.9	4.3	6.2	2.2	.1	.8
8	5.6	4.3	5.1	5.6	4.3	5.0	5.6	3.5	5.0	3.9	.9	2.6
9	7.1	4.9	5.6	5.2	2.8	4.4	6.9	4.5	5.8	7.5	3.3	4.5
10	5.5	2.4	4.4	4.3	.7	3.4	7.9	6.9	7.4	6.1	3.7	5.2
11	4.6	1.1	3.6	3.9	.9	2.3	8.0	7.5	7.8	5.5	4.7	5.1
12	5.4	3.7	4.7	4.7	.9	3.1	8.4	7.4	7.9	5.9	3.7	4.7
13	6.3	2.7	5.1	5.6	3.1	4.7	8.0	7.7	7.9	6.7	4.1	5.3
14	5.9	4.2	5.2	6.1	5.0	5.3	7.6	6.6	7.3	7.9	6.2	7.0
15	6.7	2.7	5.2	5.3	4.6	4.9	7.0	6.0	6.6	8.7	8.0	8.5
16	6.9	4.1	5.3	5.6	4.6	4.8	6.1	5.7	5.9	8.8	7.9	8.5
17	6.4	4.7	5.4	8.5	4.7	5.6	6.0	4.0	5.5	8.4	7.0	7.8
18	6.2	3.7	5.0	6.0	4.6	5.3	6.2	2.5	5.6	8.9	7.3	7.7
19	6.2	4.4	5.1	6.0	4.5	5.4	6.5	1.4	5.9	8.1	7.5	7.8
20	6.3	3.5	4.4	6.1	4.2	5.2	6.1	4.6	5.5	8.4	8.0	8.2
21	4.6	1.8	3.7	6.6	5.6	6.0	5.2	3.6	4.7	8.6	8.0	8.4
22	5.7	2.3	3.9	7.5	5.7	6.7	4.2	1.3	3.5	8.9	8.6	8.7
23	4.1	1.5	3.1	7.6	6.4	7.0	4.2	1.4	3.0	9.0	8.8	8.9
24	6.4	2.8	3.9	7.7	6.7	7.1	4.1	1.7	3.4	9.0	8.4	8.6
25	4.8	2.5	4.0	7.3	6.1	6.8	4.9	3.8	4.4	8.4	7.4	8.0
26	5.7	3.1	4.3	6.5	5.8	6.1	5.0	4.3	4.8	7.7	7.0	7.3
27	3.6	.2	2.2	8.0	4.8	5.9	4.9	3.7	4.4	7.8	7.6	7.8
28	4.7	.1	2.6	8.3	5.4	6.5	4.8	3.3	4.1	7.9	7.4	7.7
29	5.4	3.2	4.3	7.4	.7	4.8	4.7	2.9	3.6	7.6	6.9	7.3
30	5.2	3.7	4.2	7.9	3.2	6.7	5.8	3.7	5.0	7.5	6.5	7.1
31	6.3	4.1	5.3	---	---	---	6.0	5.2	5.6	8.2	6.3	7.6
MONTH	8.8	.1	4.6	8.5	.7	5.3	8.4	1.3	5.7	9.0	.1	6.2

## SAN JACINTO RIVER BASIN

153

08074600 BUFFALO BAYOU AT MAIN STREET, HOUSTON, TX--Continued

## OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	8.2	7.6	7.8	4.8	3.0	4.0	6.8	6.4	6.6	4.5	1.6	2.7
2	7.6	7.0	7.2	7.5	3.6	5.8	6.4	5.1	5.9	4.4	3.6	4.1
3	7.9	7.1	7.4	6.1	4.6	5.5	5.6	2.6	3.9	7.3	3.7	4.9
4	9.6	8.0	8.8	5.2	3.7	4.4	4.8	3.1	4.4	5.0	4.1	4.7
5	10.0	9.6	9.8	7.4	4.3	6.1	4.9	3.4	4.3	5.8	4.9	5.3
6	10.5	10.0	10.2	9.3	7.5	8.0	4.8	3.1	3.7	5.6	5.3	5.5
7	10.7	10.2	10.4	9.4	7.9	8.4	5.0	2.7	3.9	5.6	5.2	5.4
8	10.5	10.2	10.4	8.8	7.4	8.1	5.9	4.2	5.5	5.3	4.8	5.0
9	10.4	9.6	9.9	8.0	7.2	7.6	5.6	5.0	5.4	4.9	3.9	4.4
10	9.6	8.8	9.2	7.5	6.4	7.0	5.4	4.8	5.1	4.4	2.7	3.6
11	8.8	7.8	8.4	7.6	6.1	6.8	6.4	4.7	5.4	5.1	2.8	3.6
12	7.8	6.3	7.0	6.0	3.7	5.0	5.6	3.4	4.7	4.4	3.0	3.6
13	6.5	5.1	6.0	7.3	4.1	6.0	6.2	3.6	5.4	6.9	2.6	3.6
14	5.8	3.8	4.9	6.3	1.0	4.8	6.0	4.5	5.2	7.0	5.1	5.8
15	5.1	4.1	4.7	5.2	4.2	4.7	5.8	5.1	5.5	5.9	5.1	5.6
16	5.4	3.9	4.4	5.1	3.6	4.4	5.7	5.0	5.4	5.9	4.4	5.2
17	5.8	4.3	5.0	5.7	3.4	4.6	5.8	4.5	5.2	7.2	4.5	5.3
18	6.0	4.5	5.3	5.1	4.1	4.7	5.8	4.1	4.7	7.7	5.5	6.4
19	6.4	5.1	5.6	5.5	4.1	4.8	6.0	3.5	4.4	6.0	4.7	5.4
20	6.4	4.7	5.6	5.3	3.0	4.5	6.3	2.9	4.0	5.0	4.4	4.7
21	6.7	5.1	5.6	7.9	2.3	4.2	5.6	3.6	4.3	5.1	4.6	4.9
22	8.3	5.2	7.2	8.5	7.0	7.8	6.7	3.6	4.7	4.5	3.8	4.1
23	9.3	7.3	7.7	8.9	8.3	8.7	6.0	4.1	4.9	5.7	4.7	5.4
24	7.6	6.8	7.1	8.3	7.5	7.8	5.4	3.7	4.3	5.7	5.4	5.6
25	7.5	6.9	7.1	7.3	5.7	6.4	5.4	3.5	4.4	5.5	5.0	5.2
26	7.5	6.1	6.6	6.8	4.5	5.4	6.0	3.6	5.0	5.0	4.6	4.8
27	6.4	5.5	6.0	5.4	3.7	4.4	6.4	4.3	5.3	4.7	4.4	4.5
28	6.5	4.3	5.0	5.2	5.0	5.1	7.7	3.6	5.2	4.5	4.1	4.3
29	---	---	---	6.4	4.3	5.4	8.3	4.5	6.2	4.1	3.6	3.9
30	---	---	---	6.4	4.4	5.3	8.3	1.8	5.0	3.6	3.3	3.5
31	---	---	---	6.6	5.3	6.2	---	---	---	3.5	3.1	3.3
MONTH	10.7	3.8	7.2	9.4	1.0	5.9	8.3	1.8	4.9	7.7	1.6	4.7
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	3.4	2.5	3.0	11.4	9.2	10.1	7.5	4.2	6.0	6.6	4.3	5.0
2	2.4	1.7	2.3	9.1	7.9	8.4	6.2	5.4	5.9	7.5	3.6	4.9
3	2.3	1.4	1.8	7.9	6.4	7.1	5.5	5.3	5.4	6.2	4.4	5.1
4	1.4	.9	1.1	11.7	7.0	8.5	6.2	5.6	6.0	6.0	4.4	5.2
5	1.0	.1	.7	10.3	7.6	8.7	6.2	6.0	6.1	7.3	4.2	5.1
6	2.9	1.1	1.5	11.6	9.1	10.5	6.2	6.0	6.1	5.6	.1	4.1
7	3.1	1.2	1.9	10.2	8.6	9.1	6.1	5.9	6.0	5.0	.0	1.1
8	5.1	2.3	3.3	12.9	6.5	9.2	6.0	5.3	5.7	4.9	1.7	2.8
9	4.7	2.1	3.4	11.7	8.2	9.2	6.1	5.8	6.0	4.0	.0	2.1
10	7.8	2.9	4.8	9.5	7.7	8.6	6.3	6.1	6.2	4.5	3.6	4.1
11	6.8	3.5	4.7	9.5	5.1	6.6	8.3	5.8	6.2	5.1	3.3	3.9
12	6.6	3.8	4.9	5.3	4.8	5.1	5.9	5.5	5.7	5.0	3.3	4.1
13	5.9	4.0	5.0	4.8	4.2	4.5	5.7	4.9	5.5	5.4	3.4	4.0
14	7.9	4.6	5.8	4.2	3.5	3.9	7.0	3.5	4.6	5.3	3.7	4.8
15	5.4	3.9	4.8	6.5	2.8	3.8	3.9	1.6	2.5	5.9	5.1	5.6
16	5.9	4.4	5.5	5.8	3.4	4.2	4.9	4.0	4.4	6.2	5.7	6.0
17	6.0	5.5	5.8	7.5	4.1	4.9	5.1	3.7	4.5	5.9	3.7	5.1
18	5.6	4.9	5.4	6.0	3.8	4.7	5.0	2.9	3.8	5.1	4.6	4.9
19	4.8	2.8	3.9	6.3	4.4	5.2	5.5	4.6	5.0	5.3	4.3	4.8
20	3.7	2.0	2.7	7.0	2.2	4.6	5.3	4.6	5.0	5.4	4.1	4.6
21	3.9	.9	2.2	3.3	1.9	2.5	5.9	4.4	4.7	6.0	3.9	4.7
22	5.2	2.2	3.8	7.5	3.3	4.4	5.4	4.3	4.5	5.9	4.6	5.2
23	6.8	3.7	5.2	5.1	4.5	4.8	7.5	4.0	5.0	6.5	4.9	5.6
24	13.1	4.8	7.9	5.4	.0	2.5	5.0	1.8	3.8	7.2	5.3	5.9
25	8.8	8.2	8.5	5.6	1.3	2.9	4.1	2.3	3.1	7.2	5.2	6.0
26	11.7	8.0	9.4	5.4	2.7	4.0	4.5	2.3	3.3	7.3	5.5	6.2
27	9.9	8.1	8.9	5.1	4.2	4.7	5.3	4.3	4.7	6.9	5.0	5.9
28	8.2	7.9	8.0	6.6	3.5	4.5	8.1	4.1	5.3	5.8	4.5	5.0
29	10.1	8.1	9.4	6.1	1.0	3.0	7.1	4.6	5.1	5.2	4.4	4.8
30	11.8	10.1	10.7	4.7	3.3	4.0	6.2	4.4	5.0	6.2	4.3	4.8
31	---	---	---	5.1	3.6	4.3	6.0	4.2	4.8	---	---	---
MONTH	13.1	.1	4.9	12.9	.0	5.8	8.3	1.6	5.0	7.5	.0	4.7



## SAN JACINTO RIVER BASIN

08074710 BUFFALO BAYOU AT TURNING BASIN, HOUSTON, TX

LOCATION.--Lat 29°44'57", long 95°17'27", Harris County, Hydrologic Unit 12040104, on left bank at Wharf No. 5 at end of private road, 1.0 mi downstream from station 08074700, 1.8 mi upstream from Brays Bayou and 4.9 mi east of downtown Houston.

DRAINAGE AREA.--Not determined.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1987 to current year.

GAGE.--Data logger, float operated encoder and pressure transducer. Datum of gage is National Geodetic Vertical Datum of 1929, 1978 adjustment, unadjusted for land-surface subsidence.

REMARKS.--Records fair. Only very large storms or hurricane surge produces elevations above normal tidal fluctuations. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 9.1 ft June 26, 1989; minimum, -3.1 ft Mar. 6, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 9.1 ft June 26 at 1930 hours; minimum, -3.1 ft Mar. 6.

DAY	ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989											
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	2.2	.5	1.5	1.2	.2	.8	.9	.0	.4	1.6	.3	1.1
2	2.1	-.1	1.0	1.8	.3	1.3	.8	-.2	.4	1.5	.1	1.0
3	1.8	.0	1.1	2.2	.9	1.7	1.2	.1	.8	1.5	-.1	.8
4	1.9	.3	1.2	2.1	.7	1.5	.9	-.4	.4	2.2	-.3	.7
5	2.2	.4	1.6	.8	-.4	.3	1.1	-.7	.3	2.2	.4	1.5
6	2.3	1.0	1.7	1.1	-.3	.3	1.6	-.2	.8	2.2	.1	1.3
7	2.0	.9	1.6	1.8	.5	1.1	1.9	-.1	1.0	2.1	.2	1.3
8	2.1	1.1	1.6	1.6	-.3	.7	1.8	.2	1.1	1.8	-.2	1.0
9	2.0	.8	1.4	2.1	.3	1.2	1.5	-.8	.4	1.4	-.7	.5
10	1.5	.1	.8	2.0	.2	1.2	1.6	-.2	.9	2.2	.5	1.4
11	1.6	.0	.8	2.1	.2	1.2	2.1	-.2	1.1	2.2	.8	1.6
12	1.5	.0	.9	2.8	.7	1.9	1.3	-.7	.5	2.1	.1	1.3
13	1.9	.4	1.2	2.3	.1	1.2	1.1	-.2	.6	1.1	-.2	.5
14	2.1	.6	1.5	1.9	.8	1.4	1.6	.1	1.0	1.2	-.1	.7
15	2.2	.8	1.6	2.5	1.5	2.1	1.5	-.4	.6	1.5	.0	.9
16	2.4	.6	1.6	2.5	.5	1.6	.3	-.5	.0	1.3	-.3	.6
17	2.3	.4	1.6	1.9	.4	1.3	.8	-.3	.3	1.8	-.2	.9
18	2.2	.2	1.4	3.1	1.6	2.6	1.2	-.6	.3	2.3	.6	1.4
19	1.9	.3	1.2	2.7	1.3	2.0	1.7	.0	1.0	2.2	.4	1.5
20	2.1	.4	1.5	1.3	-1.2	-.2	1.9	.2	1.2	2.3	-.1	1.0
21	2.1	.6	1.4	1.5	-.6	.3	1.6	-.5	.7	1.6	-.4	.7
22	2.8	.7	1.8	1.7	-.3	.9	1.8	.1	1.1	2.0	.4	1.4
23	2.7	1.3	2.1	1.7	-.3	.9	2.2	.1	1.4	2.0	.4	1.2
24	2.5	.2	1.4	1.9	-.1	1.0	2.0	-.2	.9	2.1	.7	1.5
25	2.7	.9	1.8	2.3	.7	1.7	1.7	.1	.9	2.0	.8	1.4
26	2.6	.7	1.7	2.8	.7	1.9	2.1	.7	1.6	1.8	.4	1.1
27	2.5	.8	1.8	2.0	-.9	.6	2.1	.2	1.5	1.9	.3	1.0
28	2.4	.1	1.5	.6	-.5	-.1	1.1	-.7	-.1	2.1	1.0	1.7
29	2.2	.2	1.4	1.7	.5	1.2	1.8	.7	1.1	2.1	1.0	1.4
30	2.2	.5	1.6	1.4	-.3	.6	2.0	1.0	1.5	1.5	-.1	.9
31	2.1	.2	1.4	---	---	---	1.5	.2	1.1	2.0	.0	1.0
MONTH	2.8	-.1	1.4	3.1	-1.2	1.1	2.2	-.8	.8	2.3	-.7	1.1

## 155

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	2.1	.4	1.4	2.1	.2	1.1	2.7	.0	1.3	1.7	.4	1.2
2	2.2	.5	1.4	2.2	.3	1.4	2.8	1.3	2.2	2.0	.6	1.3
3	2.1	-1.1	.2	2.6	.7	1.8	2.2	.8	1.5	3.0	.9	1.8
4	.8	-1.2	-.2	2.6	.3	1.4	2.4	.8	1.6	2.6	.9	1.9
5	1.3	-.4	.7	-.2	-2.7	-1.1	1.5	.3	.9	2.6	.6	1.4
6	1.2	-.9	.3	-.8	-3.1	-2.2	1.9	.3	1.2	1.7	-.3	1.0
7	.8	-.8	.1	.9	-.9	-.1	1.6	.1	.9	1.8	-.2	1.0
8	1.4	-.1	.6	1.3	-.1	.6	2.1	-.1	1.2	2.2	-.1	1.3
9	1.6	.3	.9	1.1	-.3	.4	1.6	.1	1.0	2.3	.7	1.5
10	1.6	.7	1.2	1.2	-.5	.5	1.4	-.4	.5	1.5	-.4	.7
11	1.7	.3	1.1	1.2	-.5	.5	2.4	-.1	1.2	2.4	.4	1.3
12	2.3	.0	1.1	1.5	-.4	.7	2.5	.7	1.7	2.7	.8	1.8
13	2.4	.7	1.7	1.8	-.3	.8	2.6	.7	1.8	2.6	1.1	2.0
14	2.1	.4	1.4	2.2	.1	1.2	2.0	.7	1.5	2.5	1.2	1.9
15	1.8	.2	1.1	2.0	.3	1.3	1.5	.2	1.0	2.4	1.4	1.7
16	1.6	-.3	.7	2.0	.2	1.2	2.0	.7	1.3	2.6	1.1	2.2
17	1.3	-.2	.7	2.0	.6	1.4	2.0	1.1	1.5	4.0	2.1	3.2
18	1.1	-.4	.6	1.7	.5	1.3	1.8	.8	1.3	4.2	2.9	3.8
19	1.7	-.1	.8	2.0	.4	1.1	1.6	.3	.9	3.7	2.3	3.1
20	2.4	1.1	1.8	2.0	.9	1.6	1.6	-.2	.8	2.8	1.7	2.3
21	1.9	-.6	.5	1.1	-.9	.1	1.5	-.2	.9	2.8	.9	1.9
22	.2	-1.4	-.6	1.0	-.6	.3	2.1	.1	1.2	2.5	.7	1.7
23	.7	-2.2	-1.0	1.3	-.1	.7	2.3	.4	1.4	2.5	.3	1.5
24	1.4	.1	1.0	1.5	.1	1.0	2.4	.4	1.5	2.4	.3	1.5
25	1.1	.2	.7	1.9	.3	1.3	2.4	.7	1.6	2.6	.6	1.7
26	1.2	-.4	.5	2.5	.6	1.7	2.2	.6	1.4	2.6	.9	1.7
27	1.9	.2	1.1	2.9	1.0	2.1	2.3	.3	1.4	1.8	.3	1.1
28	1.5	.1	.9	3.1	1.4	2.3	2.4	.3	1.4	1.6	.2	.8
29	---	---	---	2.5	.8	1.6	2.3	.3	1.3	2.0	.4	1.1
30	---	---	---	1.9	.1	1.1	1.8	-.1	1.1	2.0	1.0	1.5
31	---	---	---	1.1	-1.0	.2	---	---	---	2.7	.6	1.8
MONTH	2.4	-2.2	.7	3.1	-3.1	.9	2.8	-.4	1.3	4.2	-.4	1.7
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	2.6	.7	1.8	2.7	.7	1.9	4.6	.0	2.0	2.1	1.1	1.6
2	2.4	.4	1.5	2.6	.5	1.8	3.2	1.5	2.5	1.8	1.0	1.4
3	2.4	.2	1.6	2.3	.3	1.4	2.5	1.0	1.9	1.8	.3	1.0
4	2.8	.6	1.8	1.7	-.1	.9	2.2	.9	1.6	2.1	1.1	1.7
5	2.4	.2	1.4	1.7	-.3	.9	1.9	.7	1.3	2.6	1.2	2.0
6	2.0	-.3	1.1	1.7	-.1	.8	1.5	.7	1.1	2.7	1.3	2.2
7	2.8	.3	1.7	1.8	.1	1.0	1.6	.				

## WATER-QUALITY RECORDS

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1986 to current year.

WATER TEMPERATURE: April 1986 to current year.

DISSOLVED OXYGEN: April 1986 to current year.

INSTRUMENTATION.--Beginning April 1986, a three-parameter water-quality monitor continuously records specific conductance, water temperature, and dissolved oxygen at this station.

REMARKS.--Water-quality monitor data were collected using a submersible pump from a fixed-point intake located approximately 6.5 ft. below National Geodetic Vertical Datum of 1929. The fixed-point intake was raised to 5.5 ft. below same datum on Jan. 22, 1987. On February 3, 1988, a raft was anchored in same general vicinity and probe package was placed insitu at a constant elevation of 1.0 ft. below the water-surface. Dissolved oxygen data are not corrected for salinity. When specific conductance exceeded upper recording limit of 20,000 microsiemens, no data were published. Due to tidal effects, location of probe units, and channel morphology, the water-quality data collected at this location may not be representative of the entire flow through the cross-section.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, &gt;20,000 microsiemens Oct. 12-14, 1987, Dec. 13, 1988, Jan. 23, 1989; minimum, 60 microsiemens June 26, 1989.

WATER TEMPERATURE: Maximum, 33.5°C July 3, 1987, Aug. 26, 27, 1988, Sept. 3, 4, 1989; minimum, 9.0°C Jan. 7-10, 1988, Jan. 29, 1989.

DISSOLVED OXYGEN: Maximum, 12.9 mg/L Jan. 24, 1989; minimum, 0.0 mg/L on several days during 1987 and 1988 water years.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, &gt;20,000 microsiemens Dec. 13, Jan. 23; minimum, 60 microsiemens June 26.

WATER TEMPERATURE: Maximum, 33.5°C Sept. 3, 4; minimum, 9.0°C Jan. 29.

DISSOLVED OXYGEN: Maximum, 12.9 mg/L Jan. 24; minimum, 0.1 mg/L June 6, 7, 10.

## SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	8500	1540	3860	13800	4060	7120	18400	11200	14800	11300	4370	6870
2	8320	2620	5070	10000	5570	7510	16600	6800	12400	13000	4580	7280
3	10900	3390	7580	13500	5160	7870	18300	7780	13200	17800	5710	11400
4	14300	6130	10700	10500	4420	7730	19600	12900	15600	19400	9790	15500
5	14800	6070	11400	19400	8300	11600	18900	10700	15600	19800	9580	14500
6	14800	7500	11000	15500	7790	11000	18400	9350	14000	17400	7930	11500
7	18100	7760	12200	16000	8620	13100	17000	8990	13400	12400	7310	10100
8	15700	10800	13400	14700	8530	11800	12500	6390	9790	15200	6980	9730
9	13900	8150	11000	18100	12200	14100	13800	6280	9290	18700	10000	13100
10	16200	6260	10200	17400	11500	13700	14300	5280	9680	19900	11000	14600
11	17200	10200	13900	15000	8550	11100	10200	4190	6890	18200	11600	15900
12	14400	8380	12300	14800	7360	10900	11300	6010	7940	16900	9720	13400
13	18400	10800	13700	11900	8380	10200	20000	6720	12100	17100	7790	10200
14	15200	11100	12600	13600	6550	8830	19200	8920	14500	10200	4460	7690
15	14100	8440	10700	13400	6720	10500	17100	14100	15500	11300	2950	5380
16	12400	7770	9720	11000	7720	9310	19800	13800	17100	13400	3900	9380
17	19200	9320	12700	14400	7990	11400	19200	13800	16800	12500	7390	9280
18	13300	10500	12100	14400	10000	12700	18200	14500	16700	10200	690	5930
19	19500	11200	13600	12200	8010	9960	19800	12700	15700	710	380	511
20	17800	9170	13700	19700	9160	13200	18600	14000	16200	860	270	507
21	16000	6850	10200	18400	10300	14600	18100	11500	14500	870	420	649
22	15900	7780	11800	18400	10800	14000	16400	6270	11100	2990	640	1290
23	14400	9330	11400	16500	7580	12700	14000	7450	9510	20000	1530	6060
24	16300	9130	13000	16100	7150	11800	17000	5960	8040	19700	1150	5110
25	14600	9380	11500	16000	9200	11200	12500	5200	7520	8260	1560	3140
26	12700	7910	10500	16600	6990	10700	16800	6650	9470	4270	1370	2550
27	12700	8880	11500	19400	7170	10300	12900	4970	7980	5130	1640	2680
28	12800	5740	8340	19000	10100	14600	14100	6190	9390	2070	1120	1460
29	12500	6490	9550	17500	11600	14900	16800	10600	13600	2920	730	1560
30	14000	6350	9960	18900	9780	13400	14800	7300	11400	3960	670	2010
31	15200	6420	9490	---	---	---	19800	6760	10800	4380	1230	2450
MONTH	19500	1540	10900	19700	4060	11400	20000	4190	12300	20000	270	7150

## SAN JACINTO RIVER BASIN

157

08074710 BUFFALO BAYOU AT TURNING BASIN, HOUSTON, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	5280	1750	2890	15900	5890	9360	3370	1880	2530	4580	1040	2590
2	2850	1010	1810	9540	5850	7780	6350	870	2170	5550	1870	3000
3	4360	1130	2490	14700	4190	6800	4000	1710	2980	3360	730	2180
4	5790	2220	3420	7930	3740	5470	3970	2550	3270	1330	430	769
5	8430	1330	3040	16300	7540	10300	6520	2900	4190	3180	570	1170
6	10200	3130	4630	15300	6350	9480	7650	4110	5790	1680	500	1050
7	10500	3510	5270	15500	7150	11700	5860	3950	4890	2860	920	1720
8	9190	2800	5680	13600	8250	10800	4900	3210	3930	3930	1110	2000
9	7710	3980	5660	13700	7490	10700	5050	2490	3710	5820	1490	2420
10	16000	6270	8960	14400	6380	10700	8180	3320	4870	4520	1220	2390
11	12800	4930	8260	14500	6220	9230	8180	2620	5090	4220	1690	3090
12	14300	2480	6200	14700	5700	10300	5450	3020	3700	3860	2420	3030
13	19600	4640	8020	10400	6340	8270	4400	2770	3580	5960	1870	2640
14	14200	3130	5360	10000	6300	8440	4350	2250	3290	2790	300	857
15	15000	3760	7530	17800	6590	8640	7750	2390	3650	920	290	476
16	16000	4820	7760	13700	6250	10900	5770	2100	3630	720	370	528
17	12600	6420	10000	11800	7260	9120	5260	3340	4210	1350	450	709
18	12000	4970	8080	10100	5780	7790	12000	3460	5030	1800	130	276
19	13300	5710	8490	9310	4420	6520	8760	3950	5830	160	130	137
20	11600	8110	10200	10500	5630	7680	9090	3060	5730	230	150	189
21	14100	6800	9850	11600	4910	8150	7390	4910	6110	340	210	247
22	12200	5580	7920	4900	2260	3430	8560	4540	6070	450	280	316
23	11700	3980	6590	7660	2290	3900	6370	4370	5480	450	340	383
24	10200	5850	8600	4150	2010	3410	7470	5030	5970	390	280	341
25	6570	2710	4750	3620	2290	2950	6900	4710	5680	310	230	260
26	8790	2210	4770	5740	2550	3810	5950	4320	5080	250	210	226
27	11700	2740	7480	3480	1860	2750	6010	4150	4940	270	200	223
28	13000	5010	8140	3700	1670	2420	6920	3230	4650	290	230	238
29	---	---	---	2800	820	1420	6030	3990	4800	260	240	249
30	---	---	---	5240	640	1900	5630	540	2100	270	240	252
31	---	---	---	6840	2270	3810	---	---	---	260	230	250
MONTH	19600	1010	6490	17800	640	7030	12000	540	4430	5960	130	1100
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	260	220	240	200	150	167	8790	250	3240	11300	2760	5130
2	240	220	231	390	190	225	240	120	160	8440	2460	4530
3	---	---	---	370	250	291	230	150	178	4570	1770	2880
4	---	---	---	430	320	365	310	210	253	8110	1710	3600
5	---	---	---	490	350	408	280	230	257	10300	3960	6240
6	290	260	278	520	340	451	260	220	234	7550	2820	5230
7	480	260	347	420	300	373	270	230	242	4420	1170	2890
8	530	340	409	330	270	301	300	230	257	3170	950	1510
9	440	380	414	290	270	281	300	260	274	5860	1550	3000
10	540	400	463	330	270	291	800	260	326	5380	2620	3770
11	1260	470	620	490	270	306	1050	450	717	9530	2800	4060
12	990	850	906	330	270	300	840	470	679	4170	2890	3630
13	1390	830	1100	500	280	320	2010	560	1160	5090	1460	3400
14	1720	300	914	470	340	403	7820	1270	2410	2240	700	1190
15	350	210	277	510	380	443	4650	1870	2770	3220	1250	1930
16	380	240	280	480	450	472	3850	1780	2980	5220	1660	3080
17	370	300	331	560	460	500	4290	2440	3430	4490	1260	2420
18	420	300	340	570	500	538	5410	2400	3730	6460	1930	3390
19	1220	380	742	630	560	578	3030	390	1090	6310	3780	4800
20	2830	710	1250	710	610	646	1150	520	752	7960	4230	5550
21	2530	730	1560	1210	690	831	1510	780	1040	7060	3330	5060
22	2820	890	1530	1750	1010	1450	3140	2230	2720	8370	4300	6350
23	2190	600	1280	2340	1260	1790	3220	690	2210	8680	5710	7050
24	1000	520	756	3270	1430	2310	2480	1010	1790	12500	6770	8820
25	940	250	379	11900	1520	3670	2780	1250	1990	9750	5640	8170
26	360	60	258	3860	1210	1590	4100	1310	2250	11100	6540	8050
27	120	70	97	3500	770	1890	3930	1530	2410	10900	6580	9060
28	210	140	169	5120	660	2650	5450	2560	3470	11500	6540	8760
29	330	210	260	3140	810	1760	5280	2550	3680	12600	5020	8280
30	360	180	280	3580	2310	2850	18800	2920	4860	9890	5090	7480
31	---	---	---	6130	2490	4130	7210	3330	4520	---	---	---
MONTH	2830	60	582	11900	150	1050	18800	120	1810	12600	700	4980

## SAN JACINTO RIVER BASIN

08074710 BUFFALO BAYOU AT TURNING BASIN, HOUSTON, TX--Continued

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	28.0	25.0	26.5	23.5	22.0	23.0	20.5	19.0	19.5	18.0	16.0	17.0
2	27.5	26.0	27.0	24.0	22.0	23.0	21.0	18.5	19.5	19.5	18.0	18.5
3	28.5	26.0	27.0	25.0	23.0	24.0	20.0	18.5	19.5	19.5	15.5	18.5
4	28.0	26.0	27.0	25.5	22.0	24.0	20.0	19.0	19.5	18.5	16.5	17.5
5	28.5	25.5	27.0	25.0	22.5	24.0	20.0	18.5	19.0	20.0	17.0	19.0
6	27.5	24.0	26.5	25.0	23.0	24.0	19.5	18.5	19.0	21.0	18.5	20.0
7	27.5	24.5	26.5	25.0	23.5	24.5	20.5	18.0	19.5	22.0	20.0	21.0
8	27.5	25.5	26.5	25.5	24.0	25.0	21.0	19.5	20.0	21.0	17.0	18.5
9	27.0	25.5	26.5	25.0	24.0	24.5	19.5	18.0	18.5	18.0	16.5	17.0
10	27.5	25.0	26.0	25.5	24.5	25.0	19.0	17.0	18.0	19.5	15.5	17.0
11	27.0	25.5	26.5	26.0	24.0	25.0	19.0	16.0	17.0	19.0	16.5	17.5
12	27.0	25.0	26.0	25.5	24.0	25.0	17.5	16.0	16.5	20.0	16.0	18.5
13	26.5	24.5	25.5	25.5	24.0	24.5	18.0	16.5	17.0	17.5	11.0	16.5
14	26.0	24.5	25.5	26.0	24.5	25.0	18.5	16.5	17.0	15.5	13.0	14.5
15	26.5	24.5	25.5	25.5	24.5	25.0	18.5	17.0	17.5	17.0	13.0	15.0
16	27.5	25.0	26.0	25.0	22.5	24.0	17.5	16.0	17.0	16.5	14.5	15.5
17	27.0	25.0	26.5	23.0	22.0	22.5	17.0	16.0	16.5	16.5	15.0	15.5
18	27.5	25.0	26.5	24.0	22.0	23.5	17.0	15.5	16.5	17.5	15.0	16.0
19	27.5	25.5	26.5	24.5	23.0	24.0	17.5	16.5	17.0	16.0	15.5	15.5
20	28.0	26.0	26.5	22.5	21.0	22.0	18.0	17.0	17.5	16.0	15.5	16.0
21	27.5	26.5	27.0	22.0	20.0	21.5	19.0	17.0	18.0	16.0	15.0	15.5
22	27.5	23.5	26.5	22.0	20.5	21.5	20.0	17.5	19.0	15.5	14.5	15.0
23	27.5	26.0	26.5	22.0	19.5	21.0	20.5	17.0	19.0	16.0	14.5	15.0
24	27.0	24.5	26.0	21.5	20.0	20.5	20.0	18.0	19.5	16.5	15.0	15.5
25	27.0	25.0	26.0	22.5	20.0	21.5	19.5	17.5	18.5	17.0	15.5	16.5
26	27.5	22.5	26.0	22.5	21.5	22.0	20.5	17.5	19.0	19.0	16.5	18.0
27	26.5	25.5	26.0	22.0	19.5	21.0	21.0	17.5	20.0	18.0	17.0	17.5
28	26.5	25.5	26.0	20.5	18.5	20.0	19.0	17.0	18.0	18.5	17.5	18.0
29	26.5	24.5	25.5	21.0	19.0	20.0	17.5	16.5	17.0	18.5	9.0	17.0
30	26.0	24.5	25.0	20.5	19.0	20.0	17.5	16.0	17.0	18.0	16.5	17.5
31	25.0	22.0	24.5	---	---	---	18.0	16.5	17.0	18.5	16.0	17.5
MONTH	28.5	22.0	26.0	26.0	18.5	23.0	21.0	15.5	18.0	22.0	9.0	17.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	18.5	17.0	17.5	17.5	15.5	16.5	22.5	21.0	21.5	24.5	22.5	23.5
2	20.0	18.0	19.0	18.0	16.0	17.0	22.5	21.0	22.0	25.5	23.0	24.5
3	20.0	13.0	17.5	19.5	15.5	17.5	23.5	22.0	23.0	25.0	22.5	24.0
4	16.0	14.0	15.0	19.5	10.5	17.5	24.0	22.5	23.0	23.5	22.0	23.0
5	14.5	12.0	13.5	16.0	13.5	15.0	23.5	21.5	22.0	24.0	23.0	23.5
6	15.0	10.5	12.5	16.0	13.0	14.0	23.0	21.0	21.5	27.0	22.5	24.0
7	14.5	10.5	12.0	16.0	12.5	14.5	25.0	21.5	22.5	28.5	23.5	24.5
8	14.5	10.5	12.5	17.0	13.5	15.0	25.0	22.5	23.5	26.0	24.0	25.0
9	15.0	11.5	13.0	18.0	13.0	15.5	24.0	22.0	22.5	26.5	24.5	25.5
10	15.0	12.0	13.5	19.0	15.0	16.5	21.5	20.5	21.0	26.5	25.0	25.5
11	15.5	13.0	14.5	20.0	15.5	17.5	21.5	19.5	20.5	26.0	24.5	25.5
12	16.0	14.5	15.5	20.0	16.0	18.0	21.5	19.0	20.5	25.5	25.0	25.0
13	18.5	15.5	17.0	21.5	18.0	19.5	21.0	19.5	20.0	27.0	25.0	25.5
14	19.5	17.5	19.0	21.0	19.0	20.5	20.5	19.5	20.0	25.5	22.0	23.5
15	21.0	15.5	18.5	21.0	16.0	20.0	21.5	19.0	20.0	26.5	22.5	24.0
16	20.0	17.0	18.5	20.0	17.5	19.0	23.0	20.0	21.0	25.5	24.5	25.0
17	18.0	15.5	17.0	21.5	19.0	20.5	24.0	21.5	22.5	26.0	24.5	25.5
18	18.0	12.5	16.5	22.0	19.5	21.0	24.0	20.5	22.5	24.5	21.5	22.5
19	17.5	15.0	16.0	22.5	20.0	21.5	23.0	21.5	22.5	24.0	22.0	22.5
20	17.5	15.0	16.5	22.0	20.0	21.0	25.5	21.5	23.0	26.5	24.0	25.0
21	17.5	14.5	16.0	21.0	17.5	19.0	25.5	21.5	23.5	27.0	25.5	26.0
22	17.0	14.0	16.0	18.5	15.0	16.5	25.5	22.5	24.0	28.0	26.5	27.0
23	18.5	14.5	16.0	18.0	14.5	16.0	25.5	20.0	23.5	29.0	27.5	28.0
24	16.5	13.5	15.0	20.0	16.0	17.5	25.0	24.0	24.5	28.5	27.0	27.5
25	17.5	15.0	16.5	19.5	17.5	18.0	26.5	24.5	25.0	28.0	27.0	27.5
26	18.5	16.0	17.0	21.0	19.0	19.5	27.0	25.0	25.5	28.0	27.0	27.5
27	19.0	16.0	17.5	22.0	19.5	20.5	27.5	25.0	26.0	31.5	27.0	28.5
28	18.0	16.0	17.0	22.5	21.0	21.5	26.5	25.5	26.0	31.5	28.0	29.0
29	---	---	---	22.0	21.0	21.5	28.0	25.0	26.5	30.0	28.5	29.0
30	---	---	---	22.5	21.0	21.5	26.0	22.5	23.5	29.5	28.0	28.5
31	---	---	---	21.5	20.5	21.0	---	---	---	29.5	28.0	28.5
MONTH	21.0	10.5	16.0	22.5	10.5	18.5	28.0	19.0	23.0	31.5	21.5	25.5



## SAN JACINTO RIVER BASIN

159

08074710 BUFFALO BAYOU AT TURNING BASIN, HOUSTON, TX--Continued

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	30.0	28.5	28.5	26.5	25.0	25.5	29.5	25.0	27.0	32.0	30.0	31.0
2	28.5	28.0	28.0	28.0	26.0	27.0	26.5	25.0	25.5	33.0	30.0	31.0
3	---	---	---	27.5	27.0	27.5	28.5	26.0	27.0	33.5	29.5	31.5
4	---	---	---	29.0	27.0	28.0	29.5	27.0	28.0	33.5	30.5	32.0
5	---	---	---	29.0	28.0	28.5	30.5	28.0	29.0	32.5	30.5	31.0
6	30.5	27.5	28.5	29.0	27.5	28.5	30.5	28.5	29.0	31.0	29.5	30.5
7	29.5	29.0	29.5	30.0	28.0	28.5	30.0	29.0	29.5	32.0	28.5	30.5
8	30.5	29.0	29.5	28.5	27.5	28.0	29.0	29.0	29.0	30.5	28.0	29.5
9	30.5	29.0	29.5	29.5	27.5	28.0	29.5	28.5	29.0	31.0	28.5	29.5
10	31.0	29.5	30.0	29.5	26.5	28.5	29.5	28.0	28.5	32.0	28.5	30.0
11	30.5	29.0	29.5	30.0	28.5	29.0	29.0	27.0	28.0	31.5	28.0	30.0
12	31.0	29.5	30.0	31.0	28.5	29.5	29.0	27.0	28.0	32.0	29.0	30.5
13	31.0	29.5	30.0	30.0	28.0	29.0	29.5	27.5	28.5	31.5	29.0	30.0
14	30.0	24.5	27.5	30.5	28.5	29.5	30.0	26.5	28.5	29.0	26.0	27.0
15	26.0	22.5	24.5	31.0	28.0	29.5	30.0	28.0	28.5	28.0	25.5	26.5
16	28.0	25.0	26.0	33.0	28.5	30.5	30.0	28.0	29.0	28.5	26.0	27.0
17	28.0	26.0	26.5	32.0	28.5	30.5	30.5	28.5	29.5	29.0	26.0	27.5
18	28.0	26.5	27.0	32.0	28.0	30.5	30.0	28.5	29.0	30.0	27.0	28.0
19	29.0	26.5	28.0	31.5	30.0	30.5	28.5	27.0	28.0	29.5	26.5	28.0
20	30.0	27.0	28.5	31.5	29.0	30.5	30.5	27.0	28.5	29.5	27.0	28.5
21	29.5	26.5	28.0	32.0	28.0	30.0	32.5	28.0	30.0	29.5	24.5	28.0
22	30.0	26.5	28.5	32.0	28.0	30.5	30.0	28.5	29.5	29.0	27.0	28.0
23	29.0	27.5	28.5	31.0	28.0	30.0	31.0	28.5	29.5	28.0	26.0	27.0
24	28.5	25.5	27.5	30.5	29.0	29.5	30.5	28.5	29.0	28.0	25.5	27.0
25	26.5	25.5	26.0	30.0	28.0	29.0	30.5	28.0	29.0	28.5	25.0	26.5
26	26.0	24.5	25.5	28.0	27.0	28.0	31.5	28.5	29.5	28.5	25.5	26.5
27	25.0	24.5	24.5	28.5	26.5	27.5	32.0	29.0	30.0	28.5	25.0	27.0
28	26.0	25.0	25.5	31.0	27.0	28.5	32.5	29.5	30.5	28.0	25.0	26.5
29	26.5	25.5	26.0	30.5	27.5	28.5	32.0	29.5	30.5	27.5	25.5	26.5
30	26.5	25.5	26.0	32.0	28.5	30.0	31.0	29.5	30.5	27.0	25.5	26.0
31	---	---	---	31.0	28.5	30.0	32.0	29.5	30.5	---	---	---
MONTH	31.0	22.5	27.5	33.0	25.0	29.0	32.5	25.0	29.0	33.5	24.5	28.5

## OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	4.5	1.5	3.2	4.2	2.1	3.1	4.3	2.6	3.4	5.6	2.9	4.0
2	3.4	1.8	2.5	4.1	2.2	3.2	5.2	1.8	3.4	6.4	4.3	5.6
3	3.7	1.9	2.8	4.8	2.1	3.4	4.9	2.3	3.1	6.1	4.1	5.2
4	4.4	1.2	3.0	4.5	2.6	3.7	3.8	2.4	3.1	6.2	4.9	5.4
5	4.3	2.0	3.1	4.1	1.6	3.1	4.4	2.6	3.1	6.6	5.1	6.0
6	4.2	2.1	3.0	4.3	2.1	3.6	4.8	2.8	3.6	6.4	4.9	5.6
7	4.4	1.6	3.3	5.1	1.3	3.3	4.9	3.1	3.8	6.7	4.8	5.8
8	3.7	.9	2.1	4.5	2.7	3.7	5.7	3.0	4.1	6.1	3.9	5.1
9	5.3	2.1	3.6	3.9	1.8	3.2	4.6	2.9	3.6	6.3	4.1	5.3
10	4.8	1.9	3.6	3.8	2.0	3.1	5.3	3.4	4.0	5.8	3.9	5.1
11	3.9	1.4	2.3	4.2	2.5	3.6	6.0	4.2	5.0	5.8	3.9	4.8
12	3.5	2.3	3.0	4.3	2.7	3.5	6.2	4.8	5.6	5.5	3.8	4.8
13	4.9	1.5	3.6	3.7	2.6	3.2	6.4	4.4	5.5	5.8	4.3	5.3
14	5.0	3.4	4.0	5.2	2.9	4.1	6.6	5.0	5.8	7.0	4.6	5.5
15	6.2	3.7	4.9	5.4	3.2	4.2	6.1	5.1	5.7	7.6	6.0	6.8
16	6.5	4.2	5.4	4.7	3.0	3.9	6.1	5.0	5.6	7.7	5.7	6.7
17	5.3	1.9	4.1	4.4	2.0	3.5	6.4	4.9	5.5	7.7	6.1	7.2
18	4.6	3.4	3.9	4.6	2.7	3.7	6.1	4.5	5.4	8.5	4.7	7.4
19	3.8	1.8	3.0	4.8	3.0	4.1	6.5	4.9	5.9	9.3	8.3	8.8
20	4.2	1.5	3.0	4.7	2.3	3.1	5.9	5.1	5.5	9.6	8.9	9.4
21	5.0	2.7	3.8	4.9	2.6	3.5	5.8	4.8	5.4	9.4	8.6	9.1
22	5.1	1.8	3.6	4.4	2.4	3.6	6.4	4.9	5.7	9.0	8.3	8.7
23	5.5	3.0	4.2	4.7	2.0	3.7	6.3	4.8	5.6	9.0	7.9	8.4
24	4.9	2.5	3.7	5.2	2.9	4.1	5.5	3.5	4.4	12.9	3.0	8.2
25	4.8	3.3	4.2	5.5	3.6	4.8	5.8	4.3	5.1	8.1	6.0	7.4
26	5.0	3.2	4.1	5.8	3.4	4.9	6.8	4.9	6.3	7.7	6.4	7.0
27	4.7	2.8	3.5	5.4	3.4	4.6	6.8	5.4	6.3	6.5	5.7	6.1
28	4.1	2.0	3.4	5.1	3.0	4.2	5.7	4.2	4.9	6.7	6.2	6.4
29	3.8	2.1	3.1	5.1	3.3	4.4	5.5	4.2	4.8	6.6	5.9	6.2
30	4.6	2.0	3.0	4.7	2.6	3.7	6.0	3.4	4.5	6.7	5.9	6.3
31	5.9	1.6	3.4	---	---	---	4.6	2.9	3.6	8.6	5.4	6.2
MONTH	6.5	.9	3.5	5.8	1.3	3.7	6.8	1.8	4.8	12.9	2.9	6.4

## SAN JACINTO RIVER BASIN

08074710 BUFFALO BAYOU AT TURNING BASIN, HOUSTON, TX--Continued

## OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	6.9	5.5	6.3	6.4	5.1	5.8	4.9	3.6	4.3	4.7	1.6	2.9
2	6.8	6.3	6.6	6.7	4.4	5.3	5.6	3.5	5.1	3.5	1.8	2.6
3	6.5	5.4	6.0	6.5	4.6	5.6	5.2	3.8	4.7	4.8	1.8	2.8
4	6.2	5.2	5.7	6.7	4.6	5.6	4.9	4.0	4.5	5.1	3.2	4.2
5	7.6	4.9	6.7	6.4	4.7	5.4	4.7	3.0	3.9	4.0	2.3	3.1
6	7.6	4.0	6.9	7.2	5.1	6.2	4.5	2.9	3.5	4.6	3.1	3.8
7	7.7	4.6	7.0	7.8	6.0	6.8	4.4	3.0	3.5	4.1	2.4	3.4
8	8.1	6.2	7.1	7.4	5.6	6.5	4.4	3.5	4.0	4.3	3.0	3.5
9	7.9	6.4	7.2	7.0	4.3	5.7	4.1	2.7	3.5	4.4	.9	3.3
10	7.1	5.9	6.7	8.5	4.0	5.6	4.3	1.9	3.4	3.3	2.0	2.8
11	7.4	5.9	6.8	7.0	4.6	5.9	5.0	2.0	3.7	3.5	2.0	3.0
12	7.6	6.2	7.1	7.8	4.2	6.1	5.6	3.9	4.8	3.7	2.7	3.1
13	6.9	6.1	6.6	9.0	4.8	6.5	5.6	3.7	4.4	3.6	2.1	2.9
14	7.2	6.0	6.6	6.9	5.7	6.4	4.6	3.2	4.0	6.1	2.1	4.7
15	6.2	4.3	5.1	6.6	4.7	6.2	4.3	2.5	3.6	5.1	4.0	4.6
16	5.8	3.9	4.7	5.8	4.9	5.4	5.2	3.1	4.5	4.4	3.6	4.0
17	5.9	4.3	5.1	6.4	5.2	6.0	5.4	4.4	4.9	5.0	3.6	4.2
18	5.5	4.3	4.8	6.3	5.2	5.9	5.4	3.6	4.6	5.8	2.9	4.6
19	6.0	4.8	5.2	6.4	5.1	5.9	5.2	3.5	4.6	5.6	4.9	5.5
20	5.7	4.6	5.2	5.8	4.4	5.0	5.0	3.7	4.5	4.9	4.4	4.8
21	5.3	3.8	4.7	4.3	2.7	3.4	6.0	4.1	5.0	4.7	3.9	4.2
22	5.3	4.1	4.8	5.5	2.9	4.5	7.7	4.1	5.9	4.8	3.4	4.1
23	6.7	4.4	5.3	5.7	4.1	5.2	8.1	5.3	6.5	4.6	3.2	3.8
24	6.5	5.2	5.9	6.6	5.2	5.8	8.4	5.4	6.4	4.9	2.7	3.6
25	7.2	6.4	6.9	6.4	5.3	5.8	10.8	5.2	7.2	4.9	3.8	4.3
26	7.3	5.5	6.6	6.0	5.0	5.6	11.3	5.3	8.0	4.8	3.2	4.2
27	7.4	5.0	6.3	5.4	4.6	5.0	9.4	5.5	6.8	4.0	1.8	2.9
28	6.5	4.6	5.9	5.4	4.1	4.6	6.7	4.9	5.8	4.7	2.5	3.1
29	---	---	---	5.7	3.7	4.6	7.8	5.1	6.1	4.0	2.6	3.3
30	---	---	---	4.9	3.5	4.3	5.8	2.6	4.3	4.3	2.7	3.3
31	---	---	---	4.1	3.1	3.5	---	---	---	3.5	2.4	2.9
MONTH	8.1	3.8	6.1	9.0	2.7	5.5	11.3	1.9	4.9	6.1	.9	3.7
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	4.4	2.0	2.5	5.8	5.2	5.5	5.9	1.3	3.4	5.9	3.1	4.2
2	2.2	1.5	1.6	5.6	4.6	5.0	6.1	4.8	5.3	6.9	3.1	4.6
3	---	---	---	5.0	3.5	4.1	4.8	3.9	4.4	8.4	4.6	5.7
4	---	---	---	4.4	2.7	3.5	4.4	3.6	4.0	9.0	2.1	6.1
5	---	---	---	3.6	2.1	3.0	4.3	3.1	3.6	6.6	3.7	5.0
6	1.5	.1	.4	4.6	2.4	3.4	4.6	3.6	4.2	5.3	3.9	4.6
7	2.3	.1	1.0	4.5	2.9	3.4	4.9	3.7	4.3	4.6	.5	3.7
8	2.8	.2	1.3	4.1	2.2	3.0	5.0	4.3	4.6	3.2	.6	1.9
9	1.7	.5	1.0	3.3	2.1	2.5	4.4	2.9	3.4	3.2	1.5	2.3
10	3.9	.1	1.8	4.9	2.3	3.4	5.1	2.3	3.5	3.7	1.2	2.5
11	3.1	.8	2.1	4.1	3.1	3.6	5.2	3.8	4.6	7.6	1.4	3.0
12	4.0	2.4	3.2	4.2	2.9	3.5	6.3	4.5	5.0	4.6	1.9	3.2
13	4.7	2.6	3.7	4.0	2.5	3.6	5.2	4.1	4.6	4.5	1.8	3.5
14	5.6	3.5	4.7	4.5	1.8	3.1	4.9	1.3	3.9	4.5	1.8	3.4
15	5.5	4.5	5.0	4.3	1.7	2.6	4.8	2.6	3.7	4.1	2.9	3.7
16	6.2	4.3	5.0	4.6	1.7	2.8	4.6	3.1	3.8	4.0	2.3	3.2
17	6.0	4.1	4.8	4.7	.8	2.6	3.6	2.3	3.0	4.6	2.4	3.7
18	6.5	4.5	5.4	4.6	.9	2.7	3.4	1.3	2.5	4.6	2.3	3.7
19	5.6	2.1	3.9	5.4	2.1	3.9	4.6	3.0	3.7	4.4	2.7	3.4
20	3.5	1.0	2.4	7.6	2.5	4.5	4.7	3.9	4.3	4.3	1.8	3.4
21	3.4	1.6	2.1	9.6	1.8	4.7	4.9	3.3	4.1	6.5	2.7	4.2
22	3.6	2.0	2.8	6.9	3.3	4.9	3.4	2.1	2.8	5.5	2.2	3.7
23	3.6	2.1	2.8	6.6	3.9	5.4	4.5	2.1	3.0	4.5	2.6	3.6
24	3.4	2.2	2.7	5.6	3.6	4.8	4.8	1.6	2.4	4.3	.5	3.0
25	5.0	2.6	4.4	5.1	2.4	3.8	2.7	1.1	1.9	4.5	2.3	3.4
26	5.6	4.3	4.8	2.2	.9	1.6	3.7	.4	2.0	4.4	1.5	3.3
27	5.6	5.3	5.5	4.1	.4	1.7	4.3	.6	2.4	4.4	1.4	2.9
28	5.5	4.9	5.2	2.6	.8	1.9	6.1	1.2	3.1	5.3	2.7	3.6
29	5.7	4.5	4.9	2.9	.7	1.8	5.1	1.8	3.9	6.5	2.0	4.5
30	5.7	4.2	4.7	3.7	1.0	2.2	5.6	3.2	4.2	6.2	3.9	5.0
31	---	---	---	2.8	.9	1.8	4.8	3.4	4.1	---	---	---
MONTH	6.5	.1	3.3	9.6	.4	3.4	6.3	.4	3.7	9.0	.5	3.7

## SAN JACINTO RIVER BASIN

161

08075000 BRAYS BAYOU AT HOUSTON, TX

LOCATION.--Lat 29°41'49", long 95°24'43", Harris County, Hydrologic Unit 12040104, near right bank at downstream side of Main Street Bridge in southwest Houston, 1.6 mi upstream from Harris Gully, and 11.6 mi upstream from Buffalo Bayou.

DRAINAGE AREA.--94.9 mi<sup>2</sup>. Prior to October 1976, 88.4 mi<sup>2</sup>. Changes due to drainage ditch relocations.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1936 to current year.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 7.16 ft below National Geodetic Vertical Datum of 1929, 1973 adjustment; unadjusted for land-surface subsidence. Prior to June 20, 1936, nonrecording gage, and June 20, 1936, to Nov. 25, 1959, water-stage recorder at site 0.8 mi downstream at same datum.

REMARKS.--No estimated daily discharges. Records good. No diversion above station. Low flow is mostly sewage effluent from Houston suburbs. Gage-height telemeter at station.

AVERAGE DISCHARGE.--53 years, 137 ft<sup>3</sup>/s (99,260 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,000 ft<sup>3</sup>/s June 15, 1976, and Sept. 19, 1983 (gage height, 52.13 ft); minimum daily, 0.1 ft<sup>3</sup>/s Oct. 11, 12, 1937, Mar. 14, Apr. 1, 1958.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1911, 56.0 ft in June 1919 before channel rectification, former site, from information by engineer for city of Houston.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,300 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jan. 18	1245	18,100	45.68	June 26	1900	21,400	47.76
May 18	0100	12,600	41.67	June 30	1515	9,590	39.19
May 18	1545	17,100	44.96	Aug. 1	1530	*21,500	*47.81

Minimum daily discharge, 91 ft<sup>3</sup>/s on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	122	141	99	95	102	93	95	107	722	974	9660	108
2	105	101	97	95	99	227	98	95	241	332	2180	103
3	102	98	95	98	383	105	97	634	106	166	352	98
4	97	96	103	93	113	102	95	223	107	134	183	98
5	93	93	98	94	109	95	94	449	105	120	137	106
6	96	92	96	95	112	96	95	151	102	769	118	216
7	94	96	108	97	115	95	97	104	105	300	114	140
8	96	96	181	93	107	93	99	100	158	186	268	147
9	201	95	219	109	100	92	98	96	102	119	153	107
10	130	95	132	97	100	92	96	98	98	113	111	102
11	98	97	152	94	100	91	99	96	98	124	106	131
12	93	112	103	101	118	92	108	161	99	111	103	135
13	95	104	97	282	115	94	273	224	97	108	101	832
14	96	100	97	165	105	92	128	1120	1390	108	106	362
15	100	100	97	100	101	91	104	465	183	105	105	115
16	100	101	96	96	102	91	101	128	107	105	106	104
17	97	94	94	94	94	93	102	833	100	107	106	101
18	96	119	96	4690	113	91	98	7710	99	104	163	102
19	100	103	97	938	98	92	97	931	102	106	166	99
20	95	97	97	1590	180	254	96	240	316	214	103	98
21	96	98	98	180	141	384	101	138	125	107	108	97
22	96	100	103	121	98	525	94	118	100	106	105	100
23	99	100	113	114	95	143	96	108	852	174	108	98
24	100	97	100	111	93	97	99	104	1470	145	115	98
25	98	94	92	134	93	92	95	101	663	1120	106	104
26	150	99	92	106	95	110	94	103	6470	328	101	104
27	114	98	138	106	98	118	94	98	1290	127	100	97
28	101	98	149	101	91	95	95	97	262	124	102	95
29	102	100	97	713	---	876	94	96	186	123	99	99
30	125	99	102	214	---	126	322	103	2940	103	100	97
31	344	---	98	115	---	100	---	99	---	106	106	---
TOTAL	3531	3013	3436	11131	3270	4837	3354	15130	18795	6968	15591	4293
MEAN	114	100	111	359	117	156	112	488	626	225	503	143
MAX	344	141	219	4690	383	876	322	7710	6470	1120	9660	832
MIN	93	92	92	93	91	91	94	95	97	103	99	95
AC-FT	7000	5980	6820	22080	6490	9590	6650	30010	37280	13820	30920	8520
CAL YR 1988	TOTAL	57050	MEAN	156	MAX	1730	MIN	90	AC-FT	113200		
WTR YR 1989	TOTAL	93349	MEAN	256	MAX	9660	MIN	91	AC-FT	185200		

SAN JACINTO RIVER BASIN  
08075000 BRAYS BAYOU AT HOUSTON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1968 to September 1985, October 1986 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAI, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAI, KF AGAR (COLS. PER 100 ML)	
JAN 18...	1325	17200	72	8.50	16.0	40	72	10.8	108	3.0	6000	17000	
MAR 07...	1405	101	800	8.00	18.0	14	13	13.0	135	4.8	K2	K1	
AUG 08...	1040	406	578	7.90	26.0	55	32	6.5	80	8.0	780	11000	
DATE		HARD-NESS TOTAL (MG/L AS CaCO3)	HARD-NESS NONCARB WH WAT TOT FLD (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)
JAN 18...	21	0	7.0	0.96	5.7	0.6	1.9	21	9.2	5.3	0.10	2.3	
MAR 07...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 08...	130	0	38	7.5	70	3	5.5	159	30	55	0.40	17	
DATE		SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)
JAN 18...	45	93	59	0.470	0.030	0.500	0.160	0.64	0.80	0.380	8.1		2
MAR 07...	--	24	6	7.28	0.520	7.80	1.00	1.1	2.1	2.60	7.9		--
AUG 08...	319	58	13	3.84	0.160	4.00	0.320	1.5	1.8	2.30	11		3
DATE		BARIUM, DIS-SOLVED (UG/L AS Ba)	CADMIUM, DIS-SOLVED (UG/L AS Cd)	CHRO-MIUM, DIS-SOLVED (UG/L AS Cr)	COPPER, DIS-SOLVED (UG/L AS Cu)	IRON, DIS-SOLVED (UG/L AS Fe)	LEAD, DIS-SOLVED (UG/L AS Pb)	MANGA-NESE, DIS-SOLVED (UG/L AS Mn)	MERCURY, DIS-SOLVED (UG/L AS Hg)	SELE-NIUM, DIS-SOLVED (UG/L AS Se)	SILVER, DIS-SOLVED (UG/L AS Ag)	ZINC, DIS-SOLVED (UG/L AS Zn)	
JAN 18...	14		<1	<1	1	63	<5	7	<0.1	<1	<1.0		17
MAR 07...	--		--	--	--	--	--	--	--	--	--		--
AUG 08...	110		<1	8	3	30	<1	13	<0.1	<1	<1.0		29
DATE		AME-TRYNE TOTAL	ATRA-ZINE, TOTAL (UG/L)	CYAN-AZINE, TOTAL (UG/L)	METHO-MYL, TOTAL (UG/L)	PROME-TONE, TOTAL (UG/L)	PROME-TRYNE, TOTAL (UG/L)	PRO-PAZINE, TOTAL (UG/L)	PROPHAM, TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA-ZINE, TOTAL (UG/L)	SIME-TRYNE, TOTAL (UG/L)	
JAN 18...	<0.10	0.10	<0.10	<0.5	0.3	<0.1	<0.10	<0.5	<0.50	0.20	<0.1		
MAR 07...	--	--	--	--	--	--	--	--	--	--	--		--
AUG 08...	<0.10	<0.10	<0.10	<0.5	0.1	<0.1	<0.10	<0.5	<0.50	0.10	<0.1		

## SAN JACINTO RIVER BASIN

163

08075400 SIMS BAYOU AT HIRAM CLARKE STREET, HOUSTON, TX

LOCATION.--Lat 29°37'07", long 95°26'45", Harris County, Hydrologic Unit 12040104, on right bank at downstream side of bridge on Hiram Clarke Street in southwest Houston, 12.7 mi upstream from gage Sims Bayou at Houston, and 19.7 mi upstream from mouth.

DRAINAGE AREA.--20.2 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1964 to current year (discharge measurements and supplemental peak discharges only Dec. 6, 1978, to Aug. 31, 1979).

Water-quality records.--Chemical, biochemical, and pesticide analyses: October 1970 to September 1985.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is National Geodetic Vertical Datum of 1929, 1959 adjustment; unadjusted for land-surface subsidence.

REMARKS.--Records fair. Channel bed was lowered 5 to 6 ft during rectification in 1978. Stage discharge relationship is affected by seasonal vegetal growth during most years. No known diversion above station. Low flow is partly sustained by sewage effluent from Houston suburbs. Records furnished by Houston Lighting and Power Co. show that during the current year about 38.0 acre-ft of ground water was used for cooling purposes then released to the Bayou about 200 ft upstream from this station. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--24 years (water years 1965-78, 1980-89), 30.0 ft<sup>3</sup>/s (21,740 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,190 ft<sup>3</sup>/s Aug. 1, 1989 (elevation, 54.32 ft); maximum elevation, 57.12 ft June 15, 1976, occurred prior to 1978 channel rectification; minimum daily discharge, 1.5 ft<sup>3</sup>/s July 26, 1965.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Elevation (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Elevation (ft)
Jan. 18	1400	1,060	43.60	June 26	1845	2,880	49.31
May 18	Unknown	1,050	43.64	Aug. 1	1600	*5,190	*54.32

Minimum daily discharge, 7.5 ft<sup>3</sup>/s May 30, July 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	25	13	11	11	8.9	11	12	137	37	2260	9.8
2	14	16	12	10	11	12	11	11	30.0	25	675	11
3	12	14	16	12	18	10	10	58	9.2	11	56	11
4	12	13	17	11	12	10	11	e40	8.4	10	22	11
5	11	12	16	13	12	9.8	10	e30	7.9	10	16	11
6	11	13	11	11	12	10	12	e20	9.7	12	14	18
7	11	11	13	9.9	11	10	10	e10	9.2	9.8	13	16
8	11	12	12	10	11	9.6	10	e9.5	9.6	11	34	11
9	14	13	19	11	11	8.8	11	e10	8.4	8.5	14	11
10	15	14	16	11	11	8.5	9.6	e10	8.1	8.6	11	13
11	14	14	17	10	12	8.8	9.5	e9.0	8.1	9.2	11	14
12	14	23	14	10	13	9.6	12	e10	8.5	8.3	9.5	15
13	12	26	11	14	11	11	50	e15	9.0	8.8	9.3	21
14	11	22	11	16	9.7	9.0	18	e80	256	7.8	9.1	15
15	11	15	14	13	10	8.9	13	e20	16	8.0	9.6	10
16	11	13	12	11	11	10	11	e10	9.8	8.2	9.8	9.6
17	12	15	11	10	9.9	9.1	11	e40	9.2	7.5	11	11
18	11	15	11	332	9.6	9.3	11	e650	9.6	9.1	10	11
19	11	17	11	116	9.3	8.6	12	e110	9.5	10	10	9.4
20	14	13	11	268	13	14	15	e25	44	20	9.3	9.3
21	12	13	10	22	13	38	10	e12	25	8.8	9.5	9.3
22	12	12	10	13	10	49	9.7	e9.5	9.0	15	10	9.7
23	13	12	21	12	9.2	17	10	e10	74	14	9.8	9.3
24	12	14	17	11	9.4	11	11	e9.5	241	13	10	9.3
25	11	14	13	12	10	9.4	11	e9.0	217	64	9.1	9.2
26	11	13	11	19	11	9.9	9.8	e8.5	1070	42	9.4	8.8
27	14	14	16	15	9.9	11	10	e9.0	438	14	10	9.3
28	14	12	16	10	8.7	11	12	e8.2	38	12	9.0	9.5
29	12	12	13	50	---	81	11	e7.8	19	12	9.4	9.9
30	12	14	11	43	---	14	15	e7.5	48	12	10	10
31	29	---	11	13	---	11	---	10	---	12	12	---
TOTAL	409	446	417	1129.9	309.7	458.2	377.6	1280.5	2796.2	458.6	3321.8	342.4
MEAN	13.2	14.9	13.5	36.4	11.1	14.8	12.6	41.3	93.2	14.8	107	11.4
MAX	29	26	21	332	18	81	50	650	1070	64	2260	21
MIN	11	11	10	9.9	8.7	8.5	9.5	7.5	7.9	7.5	9.0	8.8
AC-FT	811	885	827	2240	614	909	749	2540	5550	910	6590	679
CAL YR 1988	TOTAL	6195.6	MEAN	16.9	MAX	304	MIN	7.1	AC-FT	12290		
WTR YR 1989	TOTAL	11746.9	MEAN	32.2	MAX	2260	MIN	7.5	AC-FT	23300		

e Estimated.



## SAN JACINTO RIVER BASIN

08075500 SIMS BAYOU AT HOUSTON, TX

LOCATION.--Lat 29°40'27", long 95°17'21", Harris County, Hydrologic Unit 12040104, on left bank between bridges on State Highway 35 in southeast Houston and 7.0 mi upstream from mouth.

DRAINAGE AREA.--63.0 mi<sup>2</sup>. Prior to Oct. 1, 1976, 64.0 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1922: 1960. 1975(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 3.09 ft below National Geodetic Vertical Datum of 1929, 1973 adjustment; unadjusted for land-surface subsidence.

REMARKS.--No estimated daily discharges. Records good except those for Jan. 18 to Mar. 29, which are fair. Low flow is largely sustained by sewage effluent from Houston suburbs and from industrial wastes. Stage-discharge relationship is affected by seasonal vegetal growth during most years. Gage-height telemeter at station.

AVERAGE DISCHARGE.--37 years, 88.9 ft<sup>3</sup>/s (64,410 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,400 ft<sup>3</sup>/s Aug. 18, 1983, Hurricane Alicia (gage height, 33.23 ft); minimum daily, 0.9 ft<sup>3</sup>/s Aug. 7, 1955.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,700 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 18	0300	4,040	23.95	Aug. 1	1800	*9,120	*31.24
June 26	2000	8,910	31.01				

Minimum daily discharge, 32 ft<sup>3</sup>/s Sept. 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	83	47	43	61	43	43	45	145	202	4570	38
2	49	53	44	39	63	57	42	41	261	122	2910	36
3	45	47	49	48	71	43	43	251	49	70	287	35
4	47	47	45	46	57	41	45	131	42	62	102	34
5	45	45	43	46	52	39	47	92	41	58	71	37
6	45	40	46	48	54	38	44	66	46	59	60	58
7	44	40	44	44	54	41	47	39	45	71	56	65
8	43	43	45	42	54	41	43	36	46	66	69	45
9	77	43	55	51	55	38	40	40	43	99	58	43
10	105	86	57	48	53	39	40	40	43	51	46	39
11	52	60	56	46	50	38	44	34	33	48	44	44
12	50	51	48	45	54	38	50	40	44	44	40	52
13	46	63	44	54	54	41	139	56	44	43	37	57
14	44	50	46	56	55	43	80	261	543	42	42	82
15	42	49	46	46	54	39	50	69	101	39	43	43
16	40	46	39	44	54	39	41	41	48	37	42	37
17	43	44	35	45	48	39	42	133	43	38	43	36
18	47	48	33	744	45	38	40	2060	41	43	76	39
19	44	48	33	526	42	35	45	356	43	50	43	39
20	46	45	38	719	51	42	55	82	90	84	38	38
21	47	41	46	82	61	131	45	46	104	51	37	37
22	41	41	44	51	43	160	38	40	37	45	40	36
23	46	41	52	46	35	69	35	45	215	55	40	35
24	43	44	52	48	39	49	38	40	1110	62	42	33
25	51	42	42	53	39	37	43	33	544	117	39	34
26	47	41	38	118	41	34	44	35	3420	163	37	32
27	68	42	58	90	44	37	39	43	2650	61	36	37
28	55	42	62	57	41	41	40	36	276	76	37	34
29	48	45	48	153	---	189	39	34	139	64	38	35
30	42	45	49	197	---	63	99	38	274	39	46	34
31	194	---	45	75	---	47	---	43	---	37	42	---
TOTAL	1703	1455	1429	3750	1424	1669	1480	4346	10560	2098	9111	1244
MEAN	54.9	48.5	46.1	121	50.9	53.8	49.3	140	352	67.7	294	41.5
MAX	194	86	62	744	71	189	139	2060	3420	202	4570	82
MIN	40	40	33	39	35	34	35	33	33	37	36	32
AC-FT	3380	2890	2830	7440	2820	3310	2940	8620	20950	4160	18070	2470
CAL YR 1988	TOTAL	23185	MEAN	63.3	MAX	647	MIN	33	AC-FT	45990		
WTR YR 1989	TOTAL	40269	MEAN	110	MAX	4570	MIN	32	AC-FT	79870		

SAN JACINTO RIVER BASIN  
08075500 SIMS BAYOU AT HOUSTON, TX--Continued

165

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI, KF AGAR (COLS. PER 100 ML)	
		HARD-NESS TOTAL (MG/L AS CAC03)	HARD-NESS NONCARB WH TOT FLD (MG/L AS CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD (MG/L AS CAC03)	SULFATE DIS-SOLVED (MG/L AS S04)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SI02)
JAN 19...	0934	515	432	8.00	16.5	70	140	7.7	78	5.2	2200	3000	
MAR 07...	1300	38	974	7.60	12.0	15	7.8	9.0	82	4.9	22	K8	
AUG 08...	0850	46	1390	7.80	29.0	55	7.8	3.0	39	6.3	9700	3600	
DATE		SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)
JAN 19...		251	218	16	1.33	0.070	1.40	0.370	1.4	1.8	0.580	14	5
MAR 07...		--	13	4	6.70	1.10	7.80	2.40	2.0	4.4	2.70	7.6	--
AUG 08...		857	21	<1	2.90	1.20	4.10	4.30	1.1	5.4	2.50	8.0	4
DATE		BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)	
JAN 19...		46	<1	4	7	73	<5	16	<0.1	<1	<1.0	7	
MAR 07...		--	--	--	--	--	--	--	--	--	--	--	
AUG 08...		120	<1	40	5	19	3	30	<0.1	<1	<1.0	21	
DATE		AME-TRYNE TOTAL	ATRA-ZINE, TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	METHO-MYL TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)	
JAN 19...		<0.10	0.20	<0.10	<0.5	0.5	<0.1	<0.10	<0.5	<0.50	0.30	<0.1	
MAR 07...		--	--	--	--	--	--	--	--	--	--	--	
AUG 08...		<0.10	0.10	<0.10	<0.5	0.1	<0.1	<0.10	<0.5	<0.50	<0.10	<0.1	

## SAN JACINTO RIVER BASIN

08075650 BERRY BAYOU AT FOREST OAKS STREET, HOUSTON, TX

LOCATION.--Lat 29°40'35", long 95°14'37", Harris County, Hydrologic Unit 12040104, on left bank at downstream side of bridge at Forest Oaks Street in southeast Houston, 0.8 mi upstream from mouth of Berry Creek, and 1.7 mi upstream from Sims Bayou.

DRAINAGE AREA.--10.7 mi<sup>2</sup>. Prior to Oct. 1, 1973, 11.1 mi<sup>2</sup>. Oct. 1, 1976, to Dec. 31, 1977, 10.1 mi<sup>2</sup>. Drainage ditch relocations resulted in drainage area changes.

PERIOD OF RECORD.--October 1967 to current year (stage only beginning October 1982). October 1966 to September 1982 operated as partial discharge or flood-hydrograph partial-record station. April 1964 to September 1966 operated as a daily discharge station.

Water-quality records.--Chemical, biochemical, and pesticide analyses: October 1968 to September 1981. Water temperatures: April 1964 to September 1981.

REVISED RECORDS.--WDR TX-80-2: 1979(P).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2.72 ft below National Geodetic Vertical Datum of 1929, 1973 adjustment prior to Oct. 1, 1982, auxiliary water-stage recorder 0.8 mi downstream at same datum. June 25, 1964 to Jan. 11, 1965, auxiliary nonrecording gage 0.8 mi downstream at same datum.

REMARKS.--Records good. Low stages affected by tidal surge. Rises sometimes affected by backwater from Sims Bayou. The reports "Hydrologic Data for Urban Studies in the Houston, Texas Metropolitan area," for the water years 1965-82 contain additional storm runoff data for this station. Stage and rainfall radio-telemetry operated by Harris County Flood Control District at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,080 ft<sup>3</sup>/s June 9, 1975; maximum gage height, 23.85 ft Sept. 20, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 20.15 ft June 26 at 1900 hours; minimum, 3.67 ft June 9, 21, 22.

DAY	GAGE HEIGHT, FEET, WATER YEAR		OCTOBER 1988		TO SEPTEMBER 1989							
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	5.59	4.07	4.59	3.95	4.32	3.88	5.05	3.92	5.38	e3.98	5.29	3.73
2	5.50	3.97	5.18	3.95	4.23	3.85	4.92	3.88	5.52	3.95	5.42	3.99
3	5.12	3.96	5.62	4.35	4.56	3.86	4.88	3.90	5.52	3.97	5.91	3.97
4	5.25	3.95	5.45	4.07	4.26	3.82	5.41	3.85	4.18	3.87	5.80	3.85
5	5.58	3.94	4.21	3.83	4.59	3.83	5.62	3.90	4.73	3.85	3.85	3.71
6	5.72	4.40	4.45	3.85	4.97	3.87	5.61	3.90	4.58	3.88	3.98	3.72
7	5.39	4.28	5.19	3.93	5.28	3.86	5.43	3.91	4.12	3.85	4.26	3.73
8	5.42	4.42	4.85	3.88	5.25	3.90	5.23	3.90	4.65	3.85	4.62	3.78
9	6.92	4.16	5.39	3.89	4.97	3.89	4.98	4.03	4.88	3.80	4.38	3.73
10	6.70	4.13	5.64	3.87	5.40	3.95	5.42	3.97	5.00	3.93	4.43	3.72
11	4.95	3.94	5.57	4.06	5.52	3.98	5.55	4.20	5.00	---	4.49	3.74
12	4.92	3.90	6.15	4.02	4.76	3.93	5.43	4.05	5.52	3.77	4.74	3.71
13	5.28	3.95	5.67	3.96	4.52	3.92	4.67	3.90	5.70	---	4.98	3.71
14	5.43	3.96	5.25	3.92	4.98	3.91	4.68	4.00	5.18	3.85	5.45	3.71
15	5.59	4.10	5.86	4.45	4.87	3.90	4.88	3.89	5.05	3.85	5.17	3.75
16	5.73	3.94	5.89	3.88	3.90	3.86	4.70	3.87	4.85	3.84	5.20	3.74
17	5.66	3.92	5.28	3.88	4.18	3.88	5.23	3.87	4.60	3.78	5.20	3.87
18	5.48	3.89	6.50	5.17	4.59	3.85	12.67	4.31	4.45	3.82	4.96	3.82
19	5.22	3.89	6.14	4.60	5.03	3.88	6.50	5.06	4.99	3.80	5.25	3.78
20	5.42	3.90	4.60	3.83	5.20	3.93	8.05	4.42	5.66	4.38	5.28	4.07
21	5.41	3.98	4.90	3.86	5.00	3.89	4.95	4.07	5.28	3.89	6.08	3.74
22	6.17	4.04	5.08	3.88	5.10	3.90	5.30	4.00	3.89	3.78	4.83	4.13
23	6.08	4.67	5.10	3.88	5.63	4.02	5.32	3.98	4.01	3.77	4.70	3.95
24	5.82	3.87	5.55	3.92	5.43	3.94	5.49	4.10	4.65	3.78	4.88	3.83
25	6.05	4.18	5.67	4.02	4.98	3.92	5.31	4.10	4.43	3.76	5.18	3.89
26	5.97	4.01	6.25	4.06	5.42	4.04	8.78	4.26	4.44	3.73	5.90	3.93
27	5.87	4.48	5.35	3.91	5.41	4.02	5.40	e4.40	5.16	3.73	6.20	4.21
28	5.82	3.94	4.12	3.82	4.54	3.84	5.45	e4.45	4.83	3.73	6.40	4.63
29	5.57	3.91	5.02	3.97	5.00	3.93	5.67	e4.50	---	---	5.96	4.47
30	5.59	3.95	4.85	3.88	5.38	4.38	6.38	e4.50	---	---	5.25	3.84
31	5.92	4.21	---	---	4.93	3.90	5.37	e3.95	---	---	4.45	3.75
MONTH	6.92	3.87	6.50	3.82	5.63	3.82	12.67	3.85	5.70	---	6.40	3.71

e Estimated.

## SAN JACINTO RIVER BASIN

16/

08075650 BERRY BAYOU AT FOREST OAKS STREET, HOUSTON, TX--Continued

DAY	GAGE HEIGHT, FEET, WATER		YEAR OCTOBER 1988		TO SEPTEMBER 1989							
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	6.02	3.75	4.98	3.82	5.88	3.91	6.08	4.52	16.40	4.10	5.39	4.35
2	6.11	4.52	5.24	3.88	5.67	3.92	5.97	4.16	10.75	5.40	5.12	4.25
3	5.42	4.05	7.75	4.08	5.62	3.76	5.82	3.99	5.85	4.41	5.11	3.83
4	4.88	4.07	5.85	4.39	6.05	3.82	5.15	3.95	5.53	4.24	5.38	4.33
5	4.76	3.78	6.08	4.02	5.65	3.72	5.07	3.90	5.22	4.10	5.86	4.50
6	5.15	3.74	5.02	3.92	5.20	3.69	5.10	3.90	4.83	4.00	6.75	4.72
7	4.83	3.73	5.12	3.79	6.00	3.69	5.23	3.89	4.93	3.92	6.02	4.41
8	5.31	3.71	5.48	3.80	5.25	3.74	5.38	3.91	5.10	3.93	5.93	4.36
9	4.87	3.69	5.60	4.07	5.36	3.67	5.73	4.57	5.39	4.01	5.86	3.91
10	4.60	3.68	4.77	3.69	5.73	4.08	5.98	4.72	5.52	3.92	5.98	3.95
11	5.68	3.70	5.63	3.76	5.48	4.60	6.52	4.22	5.49	3.91	5.65	3.94
12	5.73	3.97	6.00	4.06	5.72	4.45	5.48	3.92	5.41	3.91	5.86	3.95
13	5.84	4.23	6.25	4.36	5.88	4.33	5.37	3.90	5.90	3.90	6.01	4.30
14	5.28	4.07	6.28	4.74	6.68	4.02	4.98	3.89	5.79	3.97	5.00	3.98
15	4.80	3.80	5.73	4.68	4.55	3.78	5.24	3.88	5.57	3.92	5.33	3.83
16	5.28	3.95	5.88	4.31	4.77	3.73	4.95	3.84	5.73	4.02	5.67	3.99
17	5.20	4.28	7.95	6.44	5.33	3.73	5.14	3.83	5.62	4.07	5.80	3.93
18	5.03	4.01	12.55	6.37	5.50	3.72	5.33	3.82	5.50	3.95	5.80	4.13
19	4.88	3.82	7.13	5.62	5.13	3.69	5.10	3.81	5.31	4.00	5.93	4.38
20	4.85	3.82	6.10	4.89	4.93	3.68	4.58	3.91	5.36	4.08	5.94	4.45
21	4.73	3.72	6.07	4.10	5.36	3.67	4.98	3.81	5.42	4.10	6.03	4.12
22	5.27	3.76	5.93	3.82	5.92	3.67	5.16	3.83	5.58	3.94	5.61	3.84
23	5.57	3.74	5.73	3.81	7.58	4.35	5.64	3.97	5.61	3.95	4.60	3.83
24	5.60	3.75	5.63	3.76	13.28	5.95	5.58	3.90	5.61	4.00	4.90	3.83
25	5.66	3.89	5.85	3.84	6.80	5.30	5.98	4.12	5.60	3.91	5.10	3.84
26	5.43	3.80	5.85	4.09	20.15	5.60	6.53	4.28	5.55	3.91	5.53	3.95
27	5.55	3.70	5.05	3.75	15.55	5.58	5.77	3.94	5.56	3.91	6.08	4.08
28	5.67	3.73	4.85	3.76	6.02	4.46	5.42	3.90	5.29	3.88	5.60	4.46
29	5.49	3.72	5.18	3.83	5.85	4.48	5.40	3.88	5.25	3.87	5.85	4.40
30	5.11	4.06	5.25	4.30	7.09	4.90	5.60	3.86	5.36	3.85	5.70	4.12
31	---	---	5.93	3.90	---	---	6.03	3.90	5.42	4.04	---	---
MONTH	6.11	3.68	12.55	3.69	20.15	3.67	6.53	3.81	16.40	3.85	6.75	3.83
CAL YR 1988	MAX	---	MIN	---								
WTR YR 1989	MAX	20.15	MIN	---								

## SAN JACINTO RIVER BASIN

08075730 VINCE BAYOU AT PASADENA, TX

LOCATION.--Lat 29°41'40", long 95°12'58", Harris County, Hydrologic Unit 12040104, on right bank of concrete lined channel at end of West Ellaine Avenue in Pasadena and 2.4 mi upstream from mouth.

DRAINAGE AREA.--8.26 mi<sup>2</sup>. Prior to Jan. 1, 1978, 8.21 mi<sup>2</sup>. Jan. 1 to Sept. 30, 1978, 7.61 mi<sup>2</sup>. Oct. 1, 1978, to Sept. 30, 1987, 7.32 mi<sup>2</sup>. Drainage area revisions due to drainage ditch changes.

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

Water-quality records.--Chemical, biochemical, and pesticide analyses: May 1971 to September 1973 and October 1976 to July 1979.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2.54 ft below National Geodetic Vertical Datum of 1929, 1973 adjustment; unadjusted for land-surface subsidence (levels by the U.S. Army Corps of Engineers).

REMARKS.--No estimated daily discharges. Records fair. Several observations of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--18 years, 16.3 ft<sup>3</sup>/s (11,810 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,720 ft<sup>3</sup>/s May 3, 1981 (gage height, 18.30 ft); no flow Aug. 5, 6, 18, 1972, and July 28, 1986.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jan. 18	1200	1,970	14.31	June 26	1930	*4,540	*18.09
May 18	0130	1,500	13.47	Aug. 1	1315	2,990	15.99
June 24	0500	1,730	13.88	Sept. 6	1400	1,620	13.69

Minimum daily discharge, 0.18 ft<sup>3</sup>/s Sept. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	3.0	.69	1.0	2.6	1.1	1.2	2.2	7.4	23	892	2.2
2	2.5	.96	.95	.87	1.9	9.1	1.2	1.1	3.1	5.0	39	2.1
3	2.2	.63	.73	.97	5.1	1.3	1.5	57	2.0	2.3	4.6	2.4
4	2.2	.59	.63	.69	1.5	.94	1.5	7.6	.91	1.8	1.9	2.2
5	1.5	.62	.57	.59	2.5	.78	1.6	9.3	1.0	1.7	1.5	1.9
6	1.5	.64	.96	.69	3.7	.79	1.3	2.0	1.4	10	1.2	168
7	1.7	.62	.58	.76	2.3	.80	1.4	1.2	1.1	2.7	.95	4.4
8	1.4	1.1	.78	.78	2.0	.89	1.5	1.0	1.0	6.5	2.3	3.3
9	28	1.0	2.0	6.7	1.6	1.7	1.4	1.1	1.2	4.0	2.3	.19
10	27	16	2.9	1.2	1.7	1.5	1.5	1.4	.96	2.1	2.0	.18
11	2.4	6.3	3.9	7.2	1.7	.67	1.6	1.2	.97	1.4	2.0	16
12	1.6	2.9	1.3	2.7	2.2	.69	6.0	2.6	1.3	1.2	2.0	1.1
13	1.4	2.7	1.1	10	1.6	.50	13	16	1.6	1.2	1.7	1.4
14	1.4	1.1	.87	2.7	1.7	.67	6.9	37	43	1.5	1.4	1.4
15	1.3	1.1	.91	1.0	1.9	.37	2.1	3.7	3.8	1.3	30	.52
16	1.3	1.9	.80	.79	3.7	.30	1.8	1.0	1.3	1.3	29	.49
17	1.3	.78	.81	.78	1.3	.47	4.0	28	.72	2.7	6.2	.50
18	1.0	1.7	.98	355	2.3	.33	2.8	268	.74	3.4	8.3	.72
19	1.2	1.1	.86	74	1.6	.31	3.9	12	.71	1.3	1.8	.72
20	1.3	1.0	1.6	120	28	.35	1.3	3.0	.56	3.2	.89	.63
21	1.5	.88	3.3	4.3	5.2	56	.62	1.3	.58	1.7	.89	.63
22	1.7	1.1	1.5	1.9	1.6	21	.58	1.3	4.9	1.7	.79	.79
23	1.3	.82	5.8	1.3	.97	2.3	.53	.81	122	1.9	.95	.79
24	1.1	.70	1.8	1.8	.84	1.3	.58	.58	421	2.0	9.4	1.7
25	11	.56	.96	1.6	.79	1.1	.72	.48	54	64	7.1	.80
26	2.6	.51	.87	95	.79	1.3	.72	.49	1610	7.5	4.3	.73
27	8.6	.56	1.4	12	.99	1.3	.85	.53	152	2.3	1.8	1.1
28	3.5	.88	1.3	2.8	1.0	1.9	.89	.54	26	1.3	1.4	.55
29	1.3	1.1	.74	74	---	38	1.0	.48	54	1.1	1.3	.57
30	.63	1.1	2.9	83	---	1.8	40	.96	92	1.3	2.1	.50
31	32	---	1.7	5.3	---	1.3	---	1.4	---	2.6	2.2	---
TOTAL	152.23	53.95	46.19	871.42	83.08	150.86	103.99	465.27	2611.25	165.0	1063.27	218.51
MEAN	4.91	1.80	1.49	28.1	2.97	4.87	3.47	15.0	87.0	5.32	34.3	7.28
MAX	32	16	5.8	355	28	56	40	268	1610	64	892	168
MIN	.63	.51	.57	.59	.79	.30	.53	.48	.56	1.1	.79	.18
AC-FT	302	107	92	1730	165	299	206	923	5180	327	2110	433
CAL YR 1988	TOTAL	1565.98	MEAN	4.28	MAX	110	MIN	.12	AC-FT	3110		
WTR YR 1989	TOTAL	5985.02	MEAN	16.4	MAX	1610	MIN	.18	AC-FT	11870		



## SAN JACINTO RIVER BASIN

169

08075770 HUNTING BAYOU AT INTERSTATE HIGHWAY 610, HOUSTON, TX

LOCATION.--Lat 29°47'35", long 95°16'04", Harris County, Hydrologic Unit 12040104, on left bank at downstream side of downstream service road bridge of Interstate Highway 610 in northeast Houston and 8.8 mi upstream from mouth.

DRAINAGE AREA.--16.1 mi<sup>2</sup>. Prior to Oct. 1, 1973, 16.8 mi<sup>2</sup>. Oct. 1, 1973, to Sept. 30, 1978, 14.7 mi<sup>2</sup>. Oct. 1, 1978, to Sept. 30, 1987, 15.8 mi<sup>2</sup>. Changes due to storm sewer relocations and addition or relocation of ditches.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1964 to current year. Prior to October 1973, published as "U.S. Highway 90-A, Houston".

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is National Geodetic Vertical Datum of 1929, 1959 adjustment; unadjusted for land-surface subsidence. Prior to Oct. 1, 1972, water-stage recorder at site 1,800 ft upstream at same datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Low flow is largely maintained by sewage and industrial effluent. The stage-discharge relationship is affected by seasonal vegetal growth during most years. Recording rain gage at station. Stage and rainfall radio-telemeter operated by Harris County Flood Control District at station.

AVERAGE DISCHARGE.--25 years, 23.6 ft<sup>3</sup>/s (17,100 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,470 ft<sup>3</sup>/s June 26, 1989 (elevation, 39.91 ft); minimum daily discharge, 0.88 ft<sup>3</sup>/s Aug. 24, 1971.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Elevation (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Elevation (ft)
May 18	0300	1,790	34.29	June 26	2230	*3,470	*39.91

Minimum daily discharge (estimated), 2.3 ft<sup>3</sup>/s Dec. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e12	10	e2.7	3.5	5.4	4.7	4.8	11	3.9	138	410	4.3
2	e6.0	5.8	e2.6	3.2	5.0	15	4.6	5.9	3.7	37	211	4.2
3	e5.0	5.6	e2.5	3.0	13	5.5	4.4	68	3.6	19	24	4.2
4	e4.5	5.6	e2.4	e2.9	6.0	8.0	4.2	18	3.4	13	13	4.2
5	e4.0	4.8	e2.4	e2.8	5.7	6.6	4.2	37	3.3	10	9.2	4.1
6	e3.8	4.5	e2.3	e2.7	6.7	4.3	4.0	12	3.1	17	7.8	41
7	e3.6	e4.0	6.1	e2.6	6.5	4.0	3.9	6.7	3.1	9.5	7.0	25
8	e3.5	e3.7	3.6	e2.5	5.7	3.9	4.3	5.5	5.1	13	8.1	13
9	e5.0	e3.6	9.6	4.9	5.3	3.8	4.4	5.1	3.6	15	6.7	8.5
10	e10	e3.5	8.1	4.9	4.7	3.6	4.4	4.5	3.3	8.5	5.6	6.7
11	e7.0	e3.7	10	3.4	4.8	3.5	3.9	4.9	3.2	7.1	5.1	5.7
12	e5.0	e3.8	5.1	3.3	5.4	3.5	5.0	6.0	3.3	6.6	5.6	4.7
13	e4.0	e3.6	4.2	8.0	5.1	3.5	17	14	3.3	5.9	5.8	20
14	3.3	e3.5	e3.8	6.0	4.3	3.3	24	80	190	5.6	19	22
15	3.1	e3.5	e3.8	3.1	4.5	3.1	9.0	10	13	5.4	14	5.5
16	3.1	7.1	3.2	2.6	4.3	3.2	5.9	6.7	5.6	5.1	21	5.2
17	3.2	4.6	e3.0	2.8	4.1	3.3	5.0	55	4.4	5.3	11	4.3
18	3.3	4.3	e2.7	112	8.9	3.4	4.4	1130	8.9	4.8	36	4.2
19	3.6	6.0	e2.5	53	5.1	3.3	4.6	207	12	4.9	23	4.1
20	3.5	4.2	e2.4	108	8.6	13	4.3	22	4.6	9.3	17	3.7
21	3.5	3.6	3.6	14	8.4	33	4.2	10	3.9	5.1	7.6	3.8
22	3.5	e3.5	4.8	7.7	5.2	33	3.8	9.2	4.2	4.4	5.8	3.4
23	3.5	e3.5	4.4	6.0	4.7	8.7	3.7	6.6	19	4.1	31	3.5
24	3.4	e3.4	4.0	6.2	4.3	5.7	3.6	5.7	102	10	35	3.6
25	6.3	e3.3	3.4	7.7	4.3	4.7	3.6	5.1	94	27	45	3.6
26	5.4	e3.2	2.9	6.1	4.3	5.9	3.6	4.7	1250	22	31	3.6
27	8.2	e3.1	13	5.6	4.2	5.9	3.6	4.2	1720	63	8.4	3.5
28	14	e3.0	8.4	5.0	4.0	4.3	3.7	4.1	100	31	6.3	3.4
29	5.0	e2.9	e4.4	33	---	52	3.8	3.9	113	11	5.1	3.6
30	3.8	e2.8	e4.7	12	---	8.0	165	3.8	234	7.0	6.1	3.4
31	38	---	4.4	6.8	---	5.3	---	3.7	---	5.9	5.2	---
TOTAL	191.1	127.7	141.0	445.3	158.5	269.0	324.9	1770.3	3924.5	530.5	1046.4	230.0
MEAN	6.16	4.26	4.55	14.4	5.66	8.68	10.8	57.1	131	17.1	33.8	7.67
MAX	38	10	13	112	13	52	165	1130	1720	138	410	41
MIN	3.1	2.8	2.3	2.5	4.0	3.1	3.6	3.7	3.1	4.1	5.1	3.4
AC-FT	379	253	280	883	314	534	644	3510	7780	1050	2080	456
CAL YR 1988	TOTAL	3747.9	MEAN	10.2	MAX	160	MIN	2.3	AC-FT	7430		
WTR YR 1989	TOTAL	9159.2	MEAN	25.1	MAX	1720	MIN	2.3	AC-FT	18170		

e Estimated.

## SAN JACINTO RIVER BASIN

08075770 HUNTING BAYOU AT INTERSTATE HIGHWAY 610, HOUSTON, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1968 to current year.

INSTRUMENTATION.--Stage-activated water sampler from July 1983 to September 1988 provided water-quality samples over selected runoff events.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JAN 17...	1400	3.0	722	8.30	12.5	17	7.0	8.8	82	5.3	88	500
MAR 07...	1005	4.0	780	7.40	9.0	17	3.3	6.0	51	23	150	84
MAY 18...	1215	826	200	7.10	22.0	65	84	5.9	68	6.9	820	6200
MAY 19...	0850	210	211	7.00	21.0	70	28	5.2	59	4.3	780	6600
AUG 07...	1137	6.5	907	8.00	28.5	35	14	6.7	86	2.2	1300	150
DATE	HARD-NESS TOTAL (MG/L AS CAC03)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CAC03	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS-SOLVED (MG/L AS S04)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SI02)
JAN 17...	140	0	44	8.1	93	4	8.2	156	48	82	0.70	12
MAR 07...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 18...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 19...	--	--	--	--	--	--	--	--	--	--	--	--
AUG 07...	240	0	68	16	100	3	5.1	288	58	72	0.20	16
DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)
JAN 17...	390	3	5	7.85	0.250	8.10	0.710	1.5	2.2	2.60	14	6
MAR 07...	--	11	10	4.16	0.640	4.80	13.0	4.0	17	2.20	26	--
MAY 18...	--	195	23	0.920	0.080	1.00	0.730	1.2	1.9	0.850	25	--
MAY 19...	--	55	6	0.730	0.070	0.800	0.280	1.1	1.4	0.430	30	--
AUG 07...	508	31	10	3.33	0.070	3.40	0.180	0.82	1.0	0.960	8.7	9
DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)	
JAN 17...	84	<1	20	17	22	11	81	<0.1	<1	<1.0	28	
MAR 07...	--	--	--	--	--	--	--	--	--	--	--	
MAY 18...	--	--	--	--	--	--	--	--	--	--	--	
MAY 19...	--	--	--	--	--	--	--	--	--	--	--	
AUG 07...	150	<1	<1	3	12	1	82	<0.1	<1	<1.0	20	
DATE	AME-TRYNE TOTAL	ATRA-ZINE, TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	METHO-MYL TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)	
JAN 17...	<0.10	0.20	<0.10	<0.5	0.3	<0.1	<0.10	<0.5	<0.50	0.10	<0.1	
MAR 07...	--	--	--	--	--	--	--	--	--	--	--	
MAY 18...	--	--	--	--	--	--	--	--	--	--	--	
MAY 19...	--	--	--	--	--	--	--	--	--	--	--	
AUG 07...	<0.10	1.3	<0.10	<0.5	0.2	<0.1	<0.10	<0.5	<0.50	<0.10	<0.1	

08075900 GREENS BAYOU NEAR U.S. HIGHWAY 75 NEAR HOUSTON, TX

LOCATION.--Lat 29°57'22", long 95°24'57", Harris County, Hydrologic Unit 12040104, on right bank at upstream side of bridge on Knobcrest Street, 600 ft downstream from U.S. Highway 75 access road bridge, 8.9 mi upstream from station 08076000, and 20.9 mi upstream from Hall's Bayou.

DRAINAGE AREA.--36.6 mi<sup>2</sup>. At former site: August 1965 to September 1973, 34.8 mi<sup>2</sup>; October 1973 to July 19, 1989, 36.1 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1965 to current year (discharge measurements and supplemental peak discharges only, Oct. 1, 1980, to Mar. 26, 1981). formerly published as "at U.S. Highway 75".

REVISED RECORDS.--WDR TX-76-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is National Geodetic Datum of 1929, 1959 adjustment; unadjusted for land-surface subsidence. Prior to July 19, 1989, water-stage recorder at site 600 ft upstream at present datum.

REMARKS.-- Records good except those for July 19 to Sept. 30, which are fair and those for estimated daily discharges, which are poor. Stage discharge relationship is affected by seasonal vegetal growth during most years. Channel was rectified (widened and bed lowered about 2 ft) in 1980-81. Records furnished by Houston Lighting and Power Co. show that about 2,760 acre-ft of ground water was used for cooling purposes, then released to Greens Bayou about 8 mi upstream from this station during the current year. No known diversion above station. Several observations of water temperature were obtained during the year. Stage and rainfall radio-telemetry were operated by Harris County Flood Control District at station.

AVERAGE DISCHARGE.--23 years (water years 1966-80, 1982-1989), 37.1 ft<sup>3</sup>/s (26,880 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,000 ft<sup>3</sup>/s June 26, 1989 (elevation, 90.20 ft, from peak mark at former site); maximum elevation, 91.09 ft Feb. 21, 1969 at former site, occurred prior to 1980-81 channel rectification; minimum daily discharge, 0.16 ft<sup>3</sup>/s Oct. 21, 22, 1969.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Elevation (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Elevation (ft)
May 18	1130	10,000	a88.21	June 26	about 2230	*13,000	b*90.20
June 14	0530	2,650	a80.47				

a At former site.

b From peak mark, at former site.

Minimum daily discharge, 9.8 ft<sup>3</sup>/s Sept. 28

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	27	11	12	13	14	16	44	13	e50	385	13
2	98	14	12	13	11	39	15	20	17	e22	207	14
3	19	13	11	14	32	17	16	67	18	e17	31	15
4	16	13	11	12	20	18	15	64	16	e16	16	14
5	15	13	11	13	18	17	15	215	14	e15	15	14
6	14	12	11	13	18	16	14	66	13	e14	14	15
7	13	12	11	14	17	16	12	21	23	e14	13	25
8	13	13	33	13	17	15	14	18	102	e16	52	247
9	13	14	21	16	17	16	14	16	22	e14	33	124
10	13	14	17	15	18	19	14	18	13	e20	16	18
11	13	15	26	14	16	16	13	16	15	e16	14	135
12	12	14	14	15	19	15	e15	17	13	e15	13	179
13	12	14	12	80	18	15	e65	38	13	e14	13	212
14	12	14	12	56	16	13	29	272	732	e14	16	212
15	12	14	12	18	15	13	22	35	76	e14	15	29
16	13	14	12	14	17	15	16	20	19	e15	14	15
17	13	13	12	13	15	13	15	691	13	e14	14	14
18	13	14	12	75	16	12	14	6320	13	e14	13	12
19	13	13	12	107	15	15	14	563	13	16	19	11
20	13	12	11	179	24	32	15	110	13	15	17	13
21	13	12	11	24	27	39	15	36	12	14	19	11
22	13	14	13	16	14	91	14	20	12	14	15	11
23	13	14	23	15	13	36	14	17	24	14	14	11
24	13	14	16	15	14	17	11	15	30	20	13	11
25	12	13	12	19	15	15	11	14	69	60	13	12
26	20	15	12	30	15	190	12	13	3210	68	15	11
27	22	14	12	62	15	109	12	14	2350	17	13	11
28	15	12	17	20	14	23	13	13	237	14	13	9.8
29	15	11	12	324	---	394	13	13	70	15	13	10
30	16	11	13	58	---	34	e270	13	e250	15	13	10
31	81	---	13	23	---	19	---	12	---	13	13	---
TOTAL	592	412	438	1312	479	1313	748	8811	7435	609	1084	1438.8
MEAN	19.1	13.7	14.1	42.3	17.1	42.4	24.9	284	248	19.6	35.0	48.0
MAX	98	27	33	324	32	394	270	6320	3210	68	385	247
MIN	12	11	11	12	11	12	11	12	12	13	13	9.8
AC-FT	1170	817	869	2600	950	2600	1480	17480	14750	1210	2150	2850
CAL YR 1988	TOTAL	7535	MEAN	20.6	MAX	334	MIN	11	AC-FT	14950		
WTR YR 1989	TOTAL	24671.8	MEAN	67.6	MAX	6320	MIN	9.8	AC-FT	48940		

e Estimated.

## SAN JACINTO RIVER BASIN

08076000 GREENS BAYOU NEAR HOUSTON, TX

LOCATION.--Lat 29°55'05", long 95°18'24", Harris County, Hydrologic Unit 12040104, on left bank at downstream side of bridge on U.S. Highway 59 access road, 10.5 mi northeast of Houston, 12.0 mi upstream from Hall's Bayou, and 23.4 mi upstream from mouth.

DRAINAGE AREA.--68.7 mi<sup>2</sup>. October 1952 to Sept. 30, 1973, 72.7 mi<sup>2</sup>; Oct. 1, 1973 to Sept. 30, 1988, 69.6 mi<sup>2</sup>. Basin boundary changes due to relocation of drainage ditches.

## WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 0.66 ft below National Geodetic Vertical Datum of 1929, 1957 adjustment; unadjusted for land-surface subsidence.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Channel was rectified during water years 1974-75. No known diversion above station. Low flow is sustained by Houston Lighting and Power Co. effluent, (which is obtained from ground-water sources) and sewage effluent from Houston suburbs. Gage-height telemeter at station.

AVERAGE DISCHARGE.--37 years, 67.0 ft<sup>3</sup>/s (48,540 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,500 ft<sup>3</sup>/s June 27, 1989 (gage height, 66.04 ft); no flow at times during early years of station operation.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,300 ft<sup>3</sup>/s (revised) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 18	1630	16,200	65.98	June 27	0230	*16,500	*66.04

Minimum daily discharge, 14 ft<sup>3</sup>/s Apr. 27

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	67	17	21	29	23	29	70	33	183	684	18
2	213	28	19	21	19	88	26	27	44	69	440	18
3	36	23	17	22	80	29	27	133	39	48	63	18
4	24	23	18	21	41	41	26	103	34	47	28	18
5	22	21	19	23	31	29	25	343	30	35	23	18
6	20	21	18	23	34	24	22	106	29	33	21	33
7	21	22	22	22	31	26	20	25	43	32	20	25
8	18	22	54	21	30	25	20	19	236	37	55	150
9	19	24	49	31	28	23	22	16	53	30	55	280
10	19	24	38	28	27	24	22	17	30	44	24	29
11	18	24	88	22	26	23	20	16	37	35	21	53
12	17	25	32	23	36	23	19	18	30	28	19	248
13	17	22	23	113	29	23	102	45	30	25	18	250
14	17	22	22	118	26	21	49	620	e1200	24	19	352
15	17	22	22	33	24	21	30	54	e250	23	26	55
16	18	25	22	26	25	23	22	22	e70	23	21	32
17	18	21	20	22	24	22	24	178	e40	22	20	28
18	18	23	21	129	24	21	22	10700	e50	22	19	28
19	18	25	22	173	22	20	21	1700	e40	24	25	25
20	18	20	21	359	36	46	22	230	e35	31	20	26
21	18	20	21	45	48	62	21	87	e32	24	23	26
22	18	21	24	23	23	160	15	55	e29	23	19	25
23	18	22	42	21	21	63	15	45	55	21	18	24
24	19	20	30	23	23	28	15	39	89	45	19	25
25	18	18	21	27	23	23	15	35	162	139	19	25
26	18	21	19	27	23	263	15	33	3850	142	21	24
27	32	21	26	99	23	247	14	33	7330	35	19	24
28	19	19	60	35	22	49	16	31	460	23	18	23
29	18	19	26	568	---	575	15	28	267	21	18	24
30	21	17	24	167	---	71	502	30	564	24	19	24
31	104	---	23	43	---	35	---	30	---	22	18	---
TOTAL	902	702	880	2329	828	2151	1213	14888	15191	1334	1832	1948
MEAN	29.1	23.4	28.4	75.1	29.6	69.4	40.4	480	506	43.0	59.1	64.9
MAX	213	67	88	568	80	575	502	10700	7330	183	684	352
MIN	17	17	17	21	19	20	14	16	29	21	18	18
AC-FT	1790	1390	1750	4620	1640	4270	2410	29530	30130	2650	3630	3860

CAL YR 1988	TOTAL	16489	MEAN	45.1	MAX	695	MIN	16	AC-FT	32710
WTR YR 1989	TOTAL	44198	MEAN	121	MAX	10700	MIN	14	AC-FT	87670

e Estimated.

## SAN JACINTO RIVER BASIN

173

08076000 GREENS BAYOU NEAR HOUSTON, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1968 to current year. Pesticide analyses: February 1969 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

		DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JAN 17...	1140	20	710	8.00	12.0	11	9.5	9.4	86	1.5	52	26
MAR 07...	0905	24	846	7.80	8.0	13	8.3	11.0	92	3.4	40	K1
MAY 18...	1030	8740	83	7.40	22.0	450	370	7.0	80	6.0	2000	8400
MAY 19...	0950	1480	115	7.10	21.0	280	69	6.0	68	4.2	48	4500
AUG 07...	1017	20	736	8.20	29.0	55	26	6.2	81	3.0	13000	270
DATE	HARD-NESS TOTAL (MG/L AS CAC03)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CAC03	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS-SOLVED (MG/L AS S04)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SI02)
JAN 17...	140	0	44	6.2	93	4	8.1	164	40	83	0.30	22
MAR 07...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 18...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 19...	--	--	--	--	--	--	--	--	--	--	--	--
AUG 07...	150	0	50	7.0	89	3	7.3	180	39	83	0.30	21
DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)
JAN 17...	395	21	<1	5.96	0.440	6.40	0.660	1.4	2.1	5.70	8.2	10
MAR 07...	--	6	1	4.62	0.280	4.90	1.50	0.80	2.3	4.80	6.9	--
MAY 18...	--	1380	79	0.200	0.100	0.300	0.170	0.63	0.80	0.250	13	--
MAY 19...	--	117	<1	0.160	0.040	0.200	0.090	0.61	0.70	0.190	8.9	--
AUG 07...	405	52	4	4.17	0.130	4.30	0.150	1.0	1.2	2.70	6.1	8
DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)	
JAN 17...	210	<1	<1	11	19	<5	19	<0.1	<1	<1.0	16	
MAR 07...	--	--	--	--	--	--	--	--	--	--	--	
MAY 18...	--	--	--	--	--	--	--	--	--	--	--	
MAY 19...	--	--	--	--	--	--	--	--	--	--	--	
AUG 07...	240	<1	<1	<1	15	2	12	<0.1	<1	<1.0	17	
DATE	AME-TRYNE TOTAL	ATRA-ZINE, TOTAL (UG/L)	CYAN-AZINE, TOTAL (UG/L)	METHO-MYL, TOTAL (UG/L)	PROME-TONE, TOTAL (UG/L)	PROME-TRYNE, TOTAL (UG/L)	PRO-PAZINE, TOTAL (UG/L)	PROPHAM, TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA-ZINE, TOTAL (UG/L)	SIME-TRYNE, TOTAL (UG/L)	
JAN 17...	<0.10	0.10	<0.10	<0.5	0.1	<0.1	<0.10	<0.5	<0.50	0.10	<0.1	
MAR 07...	--	--	--	--	--	--	--	--	--	--	--	
MAY 18...	--	--	--	--	--	--	--	--	--	--	--	
MAY 19...	--	--	--	--	--	--	--	--	--	--	--	
AUG 07...	<0.10	<0.10	<0.10	<0.5	0.1	<0.1	<0.10	<0.5	<0.50	0.10	<0.1	



## SAN JACINTO RIVER BASIN

08076180 GARNERS BAYOU NR HUMBLE, TX

LOCATION.--LAT 29°51'03", long 95°20'05", Harris County, Hydrologic Unit 12040104, on left bank at downstream side of upstream bridge on Beltway 8, 0.2 mi downstream from Williams Gully, 1.2 mi upstream from Greens Bayou, and 4.5 mi southeast of Humble.

DRAINAGE AREA.--31.0 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1986 to current year.

GAGE.--Water-stage recorder and crest stage gage. Datum of gage is National Geodetic Vertical Datum, 1978 adjustment, furnished by Harris County Flood Control District.

REMARKS.--Records good except those for estimated daily discharges, which are poor. No known diversion above station. Low flow is sustained by sewage effluent from Humble suburbs. Minor channel rectification made in 1988. Several measurements of water temperature were made during the year. Stage and rainfall radio-telemetry operated by Harris County Flood Control District are located at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,030 ft<sup>3</sup>/s June 27, 1989 (elevation 56.77 ft); minimum daily, 4.0 ft<sup>3</sup>/s Nov. 24, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Elevation (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Elevation (ft)
May 18	1600	7,700	56.65	June 30	1700	1,440	49.07
June 27	0100	*8,030	*56.77				

Minimum daily discharge, 4.6 ft<sup>3</sup>/s Nov. 6, 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.9	12	4.7	8.0	8.3	6.4	7.2	11	9.1	448	169	7.4
2	31	5.8	5.0	7.7	7.9	54	7.0	6.7	9.8	104	106	7.5
3	6.3	5.0	5.0	8.2	20	9.6	7.2	35	8.8	27	12	7.3
4	5.7	4.9	4.7	7.5	9.1	23	6.8	21	6.5	17	e8.0	7.3
5	5.6	4.7	4.7	7.4	8.6	15	6.3	142	7.2	12	7.0	7.3
6	4.9	4.6	4.9	8.5	8.9	7.1	6.0	22	7.2	9.9	6.7	8.9
7	5.0	4.6	8.0	7.6	9.0	6.8	6.1	7.6	9.8	7.6	6.5	12
8	5.2	4.8	8.6	7.6	8.7	6.8	5.9	6.7	20	9.1	13	16
9	5.1	4.9	8.1	10	8.1	6.4	6.4	6.6	16	e6.5	10	45
10	5.1	5.0	8.9	11	7.7	6.4	6.3	6.1	16	8.0	8.6	9.7
11	5.2	4.8	19	8.3	6.8	6.7	6.0	6.1	16	11	e8.2	8.6
12	5.3	5.0	7.3	8.7	7.7	6.7	6.5	7.5	17	e7.0	e7.9	8.6
13	4.9	5.3	5.6	32	7.7	6.8	10	26	17	e6.8	e7.6	40
14	4.8	5.2	5.1	25	6.9	6.7	15	192	349	e6.7	e7.4	31
15	4.9	6.0	5.1	10	7.3	6.7	7.7	14	42	e6.6	e7.2	10
16	5.0	5.8	5.2	8.4	6.7	6.6	6.3	8.2	12	e6.6	e7.0	8.1
17	5.1	5.3	5.1	8.1	6.9	6.7	6.7	63	9.8	e6.5	e6.8	7.6
18	5.1	5.6	5.1	49	6.8	6.5	6.0	5510	12	e6.7	e6.7	7.5
19	5.1	6.9	5.3	71	6.9	6.7	5.9	1770	7.8	e7.0	e6.6	7.3
20	5.0	5.4	5.7	129	13	16	5.6	189	6.4	e7.0	e6.6	7.4
21	5.0	4.9	5.6	14	16	15	5.5	49	5.4	e6.7	e6.5	7.1
22	4.9	5.3	5.8	9.8	6.9	58	5.4	25	4.7	e6.5	e6.5	7.1
23	5.0	5.7	6.6	9.0	6.5	15	5.5	17	26	e6.5	e8.0	6.9
24	5.0	5.1	6.4	11	6.6	8.9	6.0	11	32	e7.0	8.6	7.0
25	4.9	4.7	5.6	14	6.6	8.2	5.7	9.5	145	45	8.5	7.1
26	4.8	4.8	5.5	10	6.7	57	5.5	9.8	1990	35	e8.0	6.9
27	5.1	4.6	12	33	7.0	139	5.3	8.3	4660	9.0	e7.5	7.0
28	5.1	4.7	21	11	7.0	17	5.4	7.3	507	7.4	e7.2	6.8
29	5.3	4.8	8.3	158	---	200	5.3	7.0	653	7.9	e7.0	7.0
30	4.9	4.8	8.6	43	---	18	111	8.6	936	7.5	e8.5	7.1
31	13	---	9.3	10	---	8.8	---	9.5	---	7.0	7.3	---
TOTAL	193.2	161.0	225.8	755.8	236.3	762.5	301.5	8212.5	9558.5	866.5	502.4	334.5
MEAN	6.23	5.37	7.28	24.4	8.44	24.6	10.0	265	319	28.0	16.2	11.1
MAX	31	12	21	158	20	200	111	5510	4660	448	169	45
MIN	4.8	4.6	4.7	7.4	6.5	6.4	5.3	6.1	4.7	6.5	6.5	6.8
AC-FT	383	319	448	1500	469	1510	598	16290	18960	1720	997	663

CAL YR 1988 TOTAL 6876.9 MEAN 18.8 MAX 466 MIN 4.6 AC-FT 13640  
WTR YR 1989 TOTAL 22110.5 MEAN 60.6 MAX 5510 MIN 4.6 AC-FT 43860

e Estimated.

## SAN JACINTO RIVER BASIN

175

08076500 HALLS BAYOU AT HOUSTON, TX

LOCATION.--Lat 29°51'42", long 95°20'05", Harris County, Hydrologic Unit 12040104, on right bank, at downstream side of bridge on Jensen Drive in northeast section of Houston, and 11.0 mi upstream from mouth.

DRAINAGE AREA.--28.7 mi<sup>2</sup>. Oct. 1, 1973, to Sept. 30, 1977, 28.3 mi<sup>2</sup>. Oct. 1, 1977 to Sept. 30, 1988, 27.6 mi<sup>2</sup>. Prior to Oct. 1, 1973, 24.7 mi<sup>2</sup>. Changes were the result of drainage ditch extensions or relocations.

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

Water-quality records.--Chemical, biochemical, and pesticide analyses: October 1968 to September 1984.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 0.66 ft below National Geodetic Vertical Datum of 1929, 1957 adjustment; unadjusted for land-surface subsidence.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Stage discharge relationship is affected by seasonal vegetal growth during most years. No known diversion above station. Low flow is sustained by sewage effluent from Houston suburbs. Several measurements of water temperature were obtained during the year. Stage and rainfall radio-telemetry operated by Harris County Flood Control District at station.

AVERAGE DISCHARGE.--37 years, 29.8 ft<sup>3</sup>/s (21,590 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,000 ft<sup>3</sup>/s June 27, 1989 (gage height, 62.86 ft, from peak mark); no flow at times prior to 1956.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft<sup>3</sup>/s (revised) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 18	1830	3,850	61.66	June 27	about 0200	*5,000	a*62.86

a From peak mark.

Minimum daily discharge, 5.0 ft<sup>3</sup>/s Jan. 4, 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	9.9	7.5	5.3	8.5	6.4	7.1	23	9.9	126	353	7.3
2	34	6.6	7.3	5.2	7.2	35	7.4	10	9.6	36	160	6.9
3	11	7.9	6.9	6.2	16	9.6	7.6	53	9.0	22	26	7.1
4	7.8	9.4	7.2	5.0	8.4	21	7.3	42	9.1	e16	15	6.8
5	7.1	9.3	7.6	5.4	8.6	9.6	6.8	93	8.6	e12	11	7.4
6	7.6	7.9	7.0	5.2	8.8	7.8	6.5	31	7.2	e15	9.7	14
7	7.1	6.3	13	5.0	7.9	7.3	6.8	12	9.2	e12	8.9	14
8	6.9	6.6	12	5.3	8.7	7.4	7.0	10	51	e15	16	18
9	8.8	7.2	9.6	6.9	7.4	7.3	7.8	8.7	11	42	11	16
10	9.1	8.3	11	8.1	7.0	7.0	7.1	8.3	7.0	32	9.4	9.9
11	6.4	8.8	15	9.3	6.8	7.0	6.6	8.0	16	e16	11	9.0
12	7.2	8.9	7.9	10	10	7.4	8.3	9.8	e10	e12	9.3	8.9
13	6.1	7.9	7.2	27	8.5	7.5	38	e25	e8.0	e10	8.7	64
14	6.6	7.8	6.6	15	7.4	7.1	12	e180	203	e12	9.5	34
15	8.2	7.2	6.3	7.1	7.3	6.8	8.3	e20	21	e10	18	9.3
16	7.8	7.2	6.3	5.2	7.2	6.8	7.6	e10	e12	e9.5	28	6.8
17	7.9	6.9	6.1	5.1	6.9	7.0	7.3	e80	e10	e9.0	12	6.5
18	7.2	8.3	6.5	71	7.9	6.1	7.1	e2800	e20	e9.0	8.6	6.6
19	6.8	8.2	6.8	80	7.4	6.8	7.2	811	e12	e10	7.9	5.9
20	7.5	7.8	7.4	117	13	23	10	101	e10	e12	9.3	6.0
21	7.6	7.8	6.8	13	14	21	6.9	31	e9.0	e10	8.9	6.0
22	6.4	7.0	8.3	8.6	6.8	37	6.9	17	e8.5	e9.0	7.7	6.0
23	6.8	6.8	7.9	8.0	6.6	12	7.3	15	e25	e8.5	8.2	5.6
24	6.7	7.1	8.1	9.4	6.4	8.4	8.0	12	e100	e20	13	5.9
25	7.3	7.0	7.8	11	6.4	7.6	7.4	10	e110	60	20	6.1
26	7.0	7.8	6.5	8.0	6.8	30	7.1	9.8	e1400	35	15	5.8
27	6.0	7.0	18	8.7	7.8	42	7.2	9.0	2670	e12	8.0	5.7
28	6.8	7.4	12	9.9	6.8	11	7.0	13	194	e10	7.9	5.7
29	6.1	6.9	5.9	125	---	123	6.9	9.6	96	e9.0	7.5	5.9
30	6.3	7.4	5.9	31	---	15	225	8.3	333	e8.0	7.3	5.6
31	27	---	5.3	10	---	8.3	---	8.4	---	7.6	7.4	---
TOTAL	277.1	230.6	257.7	646.9	232.5	519.2	473.5	4478.9	5399.1	626.6	853.2	322.7
MEAN	8.94	7.69	8.31	20.9	8.30	16.7	15.8	144	180	20.2	27.5	10.8
MAX	34	9.9	18	125	16	123	225	2800	2670	126	353	64
MIN	6.0	6.3	5.3	5.0	6.4	6.1	6.5	8.0	7.0	7.6	7.3	5.6
AC-FT	550	457	511	1280	461	1030	939	8880	10710	1240	1690	640

CAL YR 1988 TOTAL 5886.6 MEAN 16.1 MAX 298 MIN 4.5 AC-FT 11680  
WTR YR 1989 TOTAL 14318.0 MEAN 39.2 MAX 2800 MIN 5.0 AC-FT 28400

e Estimated.

## SAN JACINTO RIVER BASIN

08076700 GREENS BAYOU AT LEY ROAD, HOUSTON, TX

LOCATION.--Lat 29°50'13", long 95°13'59", Harris County, Hydrologic Unit 12040104, on right bank at downstream side of Ley Road Bridge in northeast Houston and 300 ft downstream from mouth of Hall's Bayou.

DRAINAGE AREA.--182 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1962 to December 1964, May to September 1971 (discharge measurements only), October 1971 to current year.

Water-quality records.--Chemical, biochemical, and pesticide analyses: October 1970 to September 1981.

GAGE.--Water-stage recorder. Datum of gage is 2.13 ft below National Geodetic Vertical Datum of 1929, 1973 adjustment.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Discharges for rises with peak discharges below 2,000 ft<sup>3</sup>/s are not computed. Estimates for days affected by tides are made only during storm periods that produce peak discharges greater than 2,000 ft<sup>3</sup>/s. Stage and rainfall radio-telemetry operated by Harris County Flood Control District at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,500 ft<sup>3</sup>/s June 27, 1979 (gage height, 39.40 ft, from peak mark); minimum not determined (affected by tides).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,200 ft<sup>3</sup>/s and maximum (\*)

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 18	2400	23,600	36.75	June 27	0900	*32,500	a*39.40

a From peak mark.

Minimum discharge not determined (affected by tides).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	1820	1220	---
2	---	---	---	---	---	---	---	---	---	e660	e1640	---
3	---	---	---	---	---	---	---	---	---	e200	e420	---
4	---	---	---	---	---	---	---	---	---	---	e140	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	1790	---	---	---
15	---	---	---	---	---	---	---	---	e600	---	---	---
16	---	---	---	---	---	---	---	---	e170	---	---	---
17	---	---	---	---	---	---	---	e220	---	---	---	---
18	---	---	---	---	---	---	---	14100	---	---	---	---
19	---	---	---	---	---	---	---	12400	---	---	---	---
20	---	---	---	---	---	---	---	1440	---	---	---	---
21	---	---	---	---	---	---	---	e450	---	---	---	---
22	---	---	---	---	---	---	---	e150	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	e730	---	---	---
26	---	---	---	---	---	---	---	---	5160	---	---	---
27	---	---	---	---	---	---	---	---	24900	---	---	---
28	---	---	---	---	---	---	---	---	4640	---	---	---
29	---	---	---	---	---	---	---	---	1840	---	---	---
30	---	---	---	---	---	---	---	---	2420	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

CAL YR 1988	TOTAL	MEAN	MAX	MIN	AC-FT
WTR YR 1989	TOTAL	MEAN	MAX	MIN	AC-FT

e Estimated.

## CLEAR CREEK BASIN

177

08077000 CLEAR CREEK NEAR PEARLAND, TX

LOCATION.--Lat 29°35'50", long 95°17'11", Harris-Brazoria County line, Hydrologic Unit 12040204, on left bank at downstream side of bridge on State Highway 35, 0.7 mi downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 1.2 mi upstream from Hickory Slough, 2.3 mi north of Pearland, and about 30 mi upstream from head of Clear Lake.

DRAINAGE AREA.--38.8 mi<sup>2</sup>.

PERIOD OF RECORD.--July to October 1944, March to October 1946, April 1947 to December 1959, March 1963 to current year. Discharge for some high-water periods in 1944 and 1946 published in WSP 1392.

REVISED RECORDS.--WSP 1392: 1947(M).

GAGE.--Water-stage recorder. Datum of gage is 26.58 ft above National Geodetic Vertical Datum of 1929, 1973 adjustment; prior records unadjusted for land-surface subsidence. Prior to June 9, 1948, nonrecording gage, and June 9, 1948, to Apr. 22, 1952, water-stage recorder at same site and datum 5.80 ft higher.

REMARKS.--No estimated daily discharges. Records fair. During most years, the stage-discharge relationship is affected by seasonal vegetal growth. A small amount of the drainage area is currently irrigated with water from the Brazos River. Low flow from April to October is largely drainage from these irrigated areas. Many small diversions are made for irrigation above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--38 years (water years 1948-59, 1964-89), 36.7 ft<sup>3</sup>/s (26,590 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,170 ft<sup>3</sup>/s Mar. 18, 1957; maximum gage height, 18.57 ft July 26, 1979; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 26, 1960, stage and discharge unknown, may have exceeded that of Mar. 18, 1957. Channel was rectified in 1933, 1952, 1968, and 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
June 27	0300	*1,190	17.12	Aug. 2	0600	1,170	*17.91

Minimum daily discharge, 0.24 ft<sup>3</sup>/s Sept. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.7	13	1.6	1.6	8.5	1.3	.87	6.0	11	91	608	2.5
2	3.5	3.6	.99	.96	3.9	1.4	1.5	7.4	47	63	1160	2.4
3	3.0	2.1	.79	.75	2.1	1.1	1.7	22	25	30	1080	2.1
4	2.3	1.6	.61	.53	1.3	.78	1.6	19	20	18	903	.98
5	1.9	1.5	.54	.44	.99	.62	1.5	15	12	12	384	.34
6	1.9	1.3	.71	.44	.94	.56	1.4	10	8.9	11	90	.70
7	1.9	.93	2.1	.44	.94	.53	1.4	5.0	6.0	9.3	30	1.5
8	1.9	.80	2.3	.41	.87	.83	1.4	3.3	6.1	7.4	27	1.5
9	3.1	.69	2.7	.62	.82	1.2	1.3	2.9	5.2	8.8	25	2.4
10	6.0	1.8	3.5	.83	.71	1.2	1.2	3.0	5.0	7.6	16	2.3
11	1.9	4.1	2.6	.76	.69	1.1	1.2	2.4	4.9	7.5	12	3.0
12	1.3	2.3	2.4	.70	1.2	.78	1.2	1.6	4.8	6.8	9.5	7.8
13	1.2	2.6	1.7	1.1	1.3	.58	3.0	2.1	4.5	6.8	7.6	2.0
14	1.8	2.5	1.6	2.5	1.4	.41	3.5	21	52	9.2	7.3	1.8
15	1.8	2.1	1.7	1.9	1.3	.43	3.5	18	37	13	11	1.8
16	1.5	2.1	1.4	1.7	1.3	.45	2.2	18	25	12	10	1.5
17	1.4	2.1	1.3	1.5	1.2	.41	4.8	14	18	8.9	9.0	.75
18	1.4	2.3	1.2	105	1.3	.40	15	312	12	10	8.3	.45
19	1.2	2.1	1.1	112	1.5	.41	10	275	9.8	11	4.3	.38
20	.62	1.3	1.1	209	2.5	.49	2.9	118	12	14	2.8	.72
21	.40	1.0	1.1	68	4.2	5.7	2.0	38	30	17	2.1	1.4
22	.56	.82	1.1	20	1.6	15	2.8	19	20	16	1.7	1.0
23	1.3	.77	1.2	8.7	1.3	3.7	1.3	11	54	16	1.5	.86
24	1.8	2.2	2.3	5.1	1.3	1.1	.79	7.4	257	22	1.5	.50
25	1.8	2.4	1.9	3.7	1.2	1.3	.62	5.9	291	27	1.3	.24
26	2.2	2.5	1.7	22	1.2	.91	.51	5.0	625	36	1.1	.26
27	28	2.8	1.9	26	1.3	.75	.40	4.7	1130	40	.71	.45
28	66	2.6	6.6	7.3	1.2	.84	2.3	4.4	607	37	1.2	.73
29	8.0	2.6	2.2	18	---	14	1.9	4.4	187	26	1.0	.88
30	3.7	2.5	1.5	56	---	2.6	2.6	5.1	125	22	.87	.51
31	13	---	1.7	22	---	.83	---	4.8	---	19	1.9	---
TOTAL	176.08	71.01	55.14	699.98	48.06	61.71	76.39	985.4	3652.2	635.3	4419.68	43.75
MEAN	5.68	2.37	1.78	22.6	1.72	1.99	2.55	31.8	122	20.5	143	1.46
MAX	66	13	6.6	209	8.5	15	15	312	1130	91	1160	7.8
MIN	.40	.69	.54	.41	.69	.40	.40	1.6	4.5	6.8	.71	.24
AC-FT	349	141	109	1390	95	122	152	1950	7240	1260	8770	87
CAL YR 1988	TOTAL	3183.54	MEAN	8.70	MAX	167	MIN	.19	AC-FT	6310		
WTR YR 1989	TOTAL	10924.70	MEAN	29.9	MAX	1160	MIN	.24	AC-FT	21670		

## 08077650 MOSES LAKE-GALVESTON BAY NEAR TEXAS CITY, TX

LOCATION.--Lat 29°26'50", long 94°55'12", Galveston County, Hydrologic Unit 12040204, on right side of gate abutment of Texas City Flood Control Dike, one orifice located upstream and one downstream, at mouth of Moses Lake, and 4.5 mi north of Texas City.

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

GAGE.--Duplex water-stage recorder and crest-stage gages. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by county engineer, Galveston County), 1978 adjustment. Prior to May 19, 1983, datum of gage was 0.49 ft below National Geodetic Vertical Datum of 1929, 1973 adjustment. Prior records unadjusted for land-surface subsidence.

REMARKS.--Records good. Moses Lake is connected to Galveston Bay by gated opening through levee. These gates are open during periods of normal tide and are closed during periods of high tide and hurricane surge. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height (Moses Lake), 4.4 ft Sept. 20, 1979; minimum, -4.2 ft Feb. 28, 1983. Maximum elevation (Galveston Bay), about 10.0 ft (Hurricane Alicia) Aug. 18, 1983; minimum, about -4.2 ft Feb. 28, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum elevation (Moses Lake), 3.4 ft June 26 at 2000 to 2400 hours; minimum, -3.1 ft Mar. 6. Maximum elevation (Galveston Bay), 3.5 ft June 26 at 1330 and 1500 hours; minimum, -3.4 ft Mar. 6.

## ELEVATION (FEET, NFVD), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MOSES LAKE	GALV. BAY	GALV. BAY	MOSES LAKE	GALV. BAY	GALV. BAY	MOSES LAKE	GALV. BAY	GALV. BAY	MOSES LAKE	GALV. BAY	GALV. BAY
	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX	MIN
1	1.2	1.2	-.3	.6	.6	-.3	.1	.1	-.6	.7	.6	-.3
2	.9	1.0	-.6	.8	.9	.1	.0	.0	-.7	.7	.7	-.5
3	.8	.8	-.4	1.0	1.1	.4	.2	.3	-.4	.7	.7	-.6
4	.9	.9	-.3	.9	1.0	.0	.2	.2	-.8	.8	1.0	-.9
5	1.2	1.2	.0	.2	.1	-.5	.1	.3	-1.1	1.1	1.1	-.5
6	1.2	1.2	.3	.1	.1	-.9	.5	.6	-.7	1.2	1.3	-.5
7	1.0	1.0	.4	.5	.5	-.7	.7	.9	-.7	.9	.9	-.6
8	.8	.8	.5	.5	.5	-.8	1.0	1.0	-.3	1.0	1.0	-.4
9	.8	.8	.3	.7	.9	-.5	.9	.9	-.9	.8	-.7	-.9
10	.5	.8	-.5	1.0	1.0	-.6	.7	.9	-.4	1.1	1.1	.0
11	.3	.4	-.5	1.2	.8	-.6	1.3	1.3	-.2	1.3	1.2	.0
12	.4	.6	-.6	1.3	1.3	.0	.7	.6	-1.0	.8	.8	.4
13	.7	.7	-.4	1.2	1.2	-.5	.3	.3	-.9	.4	.5	-.2
14	1.0	1.0	-.2	.9	1.0	-.5	.7	.7	-.5	.4	.5	-.2
15	1.2	1.2	-.2	1.2	1.3	.2	.5	.5	-.6	.5	.5	-.4
16	1.3	1.4	-.2	1.4	1.5	-.4	-.2	-.2	-.8	.5	.6	-.6
17	1.2	1.3	-.3	.9	1.1	.0	.0	.0	-.7	.8	.9	-.6
18	.9	1.0	-.5	1.8	1.8	1.1	.3	.4	-1.2	1.0	1.2	-.4
19	.8	.9	-.6	1.4	1.7	.6	.7	.6	-.6	1.1	1.3	-.1
20	.9	1.0	-.1	1.0	.6	-1.4	.8	.8	-.3	1.1	1.1	-.4
21	.9	1.0	.0	.6	.7	-.9	.8	.6	-1.0	.6	.8	-.7
22	1.3	1.4	.0	.8	.8	-.7	.8	.8	-.7	1.0	1.0	-.2
23	1.5	1.5	.9	.8	.8	-.8	1.1	1.3	-.4	.8	.8	-.1
24	1.0	1.1	-.2	.7	1.0	-.7	1.1	-1.1	-.7	1.1	1.2	.0
25	1.2	1.6	.3	1.3	1.4	-.2	.6	.6	-.6	.7	.8	.1
26	1.5	1.6	.0	1.6	1.6	.2	1.1	1.0	-.1	.6	.6	-.1
27	1.6	1.6	.1	1.0	1.1	-.9	1.1	1.2	.1	.8	.8	-.2
28	1.4	1.5	-.4	.0	.0	-1.3	.9	1.1	-1.3	1.1	1.1	.5
29	1.2	1.3	-.1	.7	.7	-.3	.6	.7	-.1	1.1	1.1	.4
30	1.3	1.4	.0	.8	.9	-.6	1.1	1.0	.5	.6	.7	-.3
31	1.2	1.2	-.1	---	---	---	.7	.7	.1	.8	1.0	-.2
MONTH	1.6	1.6	-.6	1.8	1.8	-1.4	1.3	1.3	-1.3	1.3	1.3	-.9



08077650 MOSES LAKE-GALVESTON BAY NEAR TEXAS CITY, TX--Continued

ELEVATION (FEET, NGVD), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	FEBRUARY			MARCH			APRIL			MAY		
	MOSES LAKE	GALV. BAY	GALV. BAY	MOSES LAKE	GALV. BAY	GALV. BAY	MOSES LAKE	GALV. BAY	GALV. BAY	MOSES LAKE	GALV. BAY	GALV. BAY
	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX	MIN
1	.9	1.0	-.1	1.0	.9	-.4	1.2	1.3	-.9	.9	.8	-.1
2	1.1	1.2	-.2	1.2	1.1	-.2	1.4	1.4	.3	.5	.4	-.1
3	1.1	1.1	-.6	1.5	1.5	-.1	1.1	.9	-.2	1.1	1.2	.0
4	.1	.3	-1.2	1.6	1.6	-.2	1.0	.9	.2	1.1	1.1	-.1
5	.5	.5	-.5	.5	-.2	-2.8	.7	.6	-.2	1.0	1.1	-.8
6	.8	.6	-.7	-1.6	-1.4	-3.4	.5	.4	-.4	.7	.6	-.9
7	.2	.1	-.9	-.4	-.3	-1.4	.4	.3	-1.0	.6	.5	-.9
8	.4	.4	-.5	.2	.1	-.7	.7	.6	-1.2	.8	.7	-1.0
9	.5	.5	-.1	-.1	-.3	-.8	.9	.7	-.6	.7	.8	-.7
10	.7	.7	.2	.0	-.2	-1.0	.6	.4	-.6	.5	.4	-1.0
11	.7	.7	-.1	.1	.0	-1.1	1.1	1.0	-.7	1.0	.9	-.4
12	1.1	1.2	-.6	.3	.2	-1.0	1.6	1.4	.0	1.2	1.2	.0
13	1.4	1.5	.2	.5	.4	-1.1	1.5	1.3	.2	1.2	1.0	.4
14	1.3	1.3	-.1	.9	.8	-.7	1.2	1.0	.1	1.1	1.0	.0
15	1.0	1.0	-.3	.9	.8	-.3	.8	.6	-.4	.9	.8	.5
16	.8	.8	-.7	1.0	.9	-.5	.7	.6	.0	1.3	1.3	.3
17	.5	.4	-.8	1.0	.8	-.3	.7	.6	.1	2.0	1.9	.6
18	.5	.4	-.7	.9	.8	-.2	.7	.6	-.1	1.5	2.4	.7
19	.5	.6	-.7	.6	.5	-.5	.5	.4	-.5	1.6	1.7	.2
20	1.2	1.2	.3	.9	.8	-.2	.4	.3	-.6	1.3	1.3	.0
21	1.1	1.1	-.8	.6	.4	-.9	.5	.3	-.7	1.3	1.3	-.2
22	-.4	-.6	-2.0	.1	-.1	-.9	.8	.7	-.5	1.2	1.3	-.4
23	-.7	-.6	-2.3	.2	.1	-.6	.9	.8	-.6	1.0	1.0	-.3
24	.2	.0	-.6	.4	.3	-.5	1.0	.9	-.4	.9	.8	-.6
25	.0	-.2	-.7	.9	.7	-.3	1.1	1.0	-.4	1.0	1.0	-.6
26	.1	.0	-1.1	1.3	1.1	-.2	1.0	.9	-.5	1.0	.9	-.3
27	.8	.8	-.6	1.5	1.4	.1	1.0	.9	---	.7	.5	-.4
28	.8	.7	-.5	1.6	1.5	.3	.9	.9	-.5	.3	.1	-.4
29	---	---	---	1.2	.9	.1	.8	.7	-.3	.5	.4	-.2
30	---	---	---	.8	.8	-.7	.8	.8	-.5	.7	.6	-.1
31	---	---	---	.5	.2	-1.2	---	---	---	1.2	1.2	-.3
MONTH	1.4	1.5	-2.3	1.6	1.6	-3.4	1.6	1.4	---	2.0	2.4	-1.0

DAY	JUNE			JULY			AUGUST			SEPTEMBER		
	MOSES LAKE	GALV. BAY	GALV. BAY	MOSES LAKE	GALV. BAY	GALV. BAY	MOSES LAKE	GALV. BAY	GALV. BAY	MOSES LAKE	GALV. BAY	GALV. BAY
	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MAX	MIN
1	1.4	1.3	-.3	1.5	1.4	-.2	2.0	1.7	-1.7	.9	.6	.2
2	1.2	1.2	-.5	1.3	1.3	-.3	1.8	1.7	.4	.7	.6	.2
3	1.1	1.0	-.6	1.2	1.1	-.4	1.2	1.1	.2	.7	.6	-.4
4	1.3	1.3	-.5	.6	.5	-.7	.9	.8	.2	1.1	.9	.3
5	1.1	1.1	-.5	.7	.6	-.9	.6	.5	.0	1.6	1.5	.4
6	.8	.7	-.8	.3	.5	-.8	.3	.2	-.3	1.8	1.7	.4
7	1.2	1.2	-.6	.3	.4	-.6	.4	.3	-.5	1.7	1.7	.3
8	1.0	.8	-.2	.6	.5	-.4	.9	.8	-.2	1.6	1.5	.1
9	.8	.7	-.7	.9	.8	.3	1.1	1.0	-.2	1.5	1.4	-.2
10	.9	.8	.1	1.4	1.4	.6	1.2	1.1	-.4	1.3	1.3	-.2
11	.9	.8	.2	1.7	1.6	.0	1.1	1.0	-.4	1.2	1.2	-.3
12	1.0	.9	.0	1.1	1.0	-.4	1.0	1.0	-.5	1.4	1.3	-.2
13	1.1	1.1	-.1	.8	.8	-1.0	1.3	1.2	-.2	1.6	1.4	.1
14	1.2	1.3	-.3	.5	.4	-1.0	1.4	1.3	-.3	.9	.6	.0
15	.4	.4	-1.0	.6	.6	-1.0	1.2	1.1	-.4	.8	.7	-.2
16	.5	.4	-1.0	.4	.3	-1.2	1.2	1.1	-.4	1.0	.9	.0
17	.8	.8	-.7	.5	.5	-1.1	1.1	1.0	-.1	1.0	1.0	-.1
18	.9	.9	-.6	.7	.6	-1.0	.8	.8	---	1.3	1.2	.1
19	.8	.7	-.7	.6	.5	-1.0	.7	.6	.0	1.7	1.6	.2
20	.4	.3	-1.1	.2	.1	-1.1	---	---	---	1.8	1.7	.1
21	.7	.7	-1.0	.6	.5	-1.0	---	---	-.1	1.8	1.7	-.1
22	1.1	1.1	-.6	.5	.4	-.5	1.3	1.2	-.2	1.3	1.3	-.5
23	2.0	2.1	.3	.7	.6	1.0	1.3	1.2	-.4	.5	.4	-1.1
24	2.0	2.2	1.3	.6	.6	-.1	1.2	1.1	-.6	.7	.6	-1.1
25	2.0	2.0	1.1	.8	.8	-.1	1.1	1.0	-.6	.9	.8	-.3
26	3.4	3.5	1.6	1.8	1.7	.3	1.1	1.0	-.4	1.1	1.0	.0
27	3.4	2.9	.5	1.4	1.3	-.3	1.1	1.0	-.4	1.4	1.3	.1
28	1.4	1.3	-.3	1.0	.9	-.6	.9	.8	-.4	1.2	.9	.4
29	1.2	1.1	-.2	1.0	1.0	-.7	.9	.8	-.5	1.2	1.2	.4
30	1.6	1.6	-.2	1.2	1.1	-.7	.9	.8	-.3	1.3	1.2	.2
31	---	---	---	1.4	1.4	-.2	.9	.8	.0	---	---	---
MONTH	3.4	3.5	-1.1	1.8	1.7	-1.2	---	---	---	1.8	1.7	-1.1

## HIGHLAND BAYOU BASIN

## 08077740 LAMARQUE LEVEE PUMP STATION NEAR LAMARQUE, TX

LOCATION.--Lat 29°20'44", long 94°57'47", Galveston County, Hydrologic Unit 12040204, in the LaMarque Levee pumping station on the LaMarque hurricane protection levee, one orifice located landward and one seaward, 0.5 mi southwest of Interstate Highway 45, 0.9 mi south of LaMarque, 4.8 mi northwest of Virginia Point. Supplementary gage (station 08077752): Lat 29°20'26", long 94°51'00", 4,000 ft southeast along LaMarque Levee from LaMarque Levee Pumping Station.

PERIOD OF RECORD.--November 1986 to current year.

GAGE.--Data loggers and pressure transducers. Datum of gages are National Geodetic Vertical Datum, 1978 adjustment (levels by Galveston County Engineer).

REMARKS.--Records fair. Landward orifice records elevation of flood runoff behind levee. This runoff is pumped into Jones Bay. Only maximum landward elevations equal or exceeding, -3.0 ft are shown. Seaward records are tidal but influenced by runoff in Highlands Bayou. Telemeter and rain gage located at station. Supplementary gage: landward orifice records elevation of flood runoff behind levee. Seaward records are equivalent to seaward records at primary station. A channel connects site to pumping station. Water will be pumped, or drained by gravity, into Jones Bay depending on elevation of seaward water-surface. Only elevations equal or exceeding -2.0 ft are shown. Telemeter and barometer at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation (landward) 3.5 ft July 26, 1989; maximum elevation (seaward) 3.5 ft June 26, 1989; minimum, -2.0 ft Apr. 11, 1988. Supplementary gage: Maximum elevation (landward) 0.4 ft Sept. 3, 1988; minimum not determined.

EXTREMES FOR CURRENT YEAR.--Maximum elevation (landward), 3.5 ft July 26, 1989 at 1015 hours; maximum elevation (seaward), 3.5 ft June 26 at 1645 hours; minimum, -1.8 ft Mar. 6 at 2230 hours (from equivalent sensor at supplementary station).  
Supplemental gage: Maximum elevation (landward), -0.2 ft June 26 at 1900 hours; minimum not determined.

## ELEVATION (FEET, NGVD), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	OCTOBER				NOVEMBER				DECEMBER			
	LAND- WARD MAX	SEA- WARD MAX	SEA- WARD MIN	SUPPLE- MENTARY MAX	LAND- WARD MAX	SEA- WARD MAX	SEA- WARD MIN	SUPPLE- MENTARY MAX	LAND- WARD MAX	SEA- WARD MAX	SEA- WARD MIN	SUPPLE- MENTARY MAX
1	---	1.4	.2	---	---	.7	-.1	---	---	.3	-.5	---
2	---	1.0	-.2	---	---	.8	.3	---	---	.1	-.4	---
3	---	1.2	.1	---	---	1.1	.6	---	---	.3	-.2	---
4	---	1.0	.2	---	---	1.1	.1	---	---	.3	-.5	---
5	---	1.4	.3	---	---	.3	-.4	---	---	.4	-.7	---
6	---	1.4	.6	---	---	.2	-.6	---	---	.7	-.4	---
7	---	1.2	.6	---	---	.5	-.1	---	---	.9	-.2	---
8	---	1.1	.7	---	---	.4	-.4	---	---	1.0	-.1	---
9	---	1.1	.6	---	---	.9	.0	---	---	.9	-.4	---
10	---	.6	.0	---	---	1.0	-.1	---	---	1.2	-.1	---
11	---	.6	-.1	---	---	1.2	-.1	---	---	1.5	.1	---
12	---	.7	-.1	---	---	1.5	.4	---	---	.8	-.4	---
13	---	1.0	.1	---	---	1.0	.0	---	---	.5	-.5	---
14	---	1.2	.3	---	---	1.0	.0	---	---	.8	-.1	---
15	---	1.4	.4	---	---	1.3	.5	---	---	.6	-.6	---
16	---	1.5	.3	---	---	1.3	-.3	---	---	-.1	-.5	---
17	---	1.4	.2	---	---	1.2	.2	---	---	.0	-.5	---
18	---	1.2	.1	---	---	1.8	1.2	---	---	.4	-.7	---
19	---	1.0	.1	---	---	1.6	.7	---	---	.6	-.3	---
20	---	1.2	.3	---	---	.7	-.7	---	---	.8	-.1	---
21	---	1.1	.3	---	---	.8	-.4	---	---	.7	-.5	---
22	---	1.6	.3	---	---	.9	-.2	---	---	.8	-.2	---
23	---	1.7	1.1	---	---	.8	-.3	---	---	1.0	.0	---
24	---	1.3	.3	---	---	1.2	-.2	---	---	1.0	-.4	---
25	---	1.5	.5	---	---	1.4	.4	---	---	.7	-.3	---
26	---	1.6	.3	---	---	1.7	.3	---	---	1.0	.2	---
27	---	1.5	.4	---	---	.9	-.5	---	---	1.0	.4	---
28	---	1.4	.0	---	---	.3	-.7	---	---	.6	-.8	---
29	---	1.2	.1	---	---	.8	.1	---	---	.8	.0	---
30	---	1.3	.3	---	---	.7	-.3	---	---	1.1	.6	---
31	---	1.2	.2	---	---	---	---	---	---	.7	.2	---
MONTH	---	1.7	-.2	---	---	1.8	-.7	---	---	1.5	-.8	---

## HIGHLAND BAYOU BASIN

181

08077740 LAMARQUE LEVEE PUMP STATION NEAR LAMARQUE, TX--Continued

ELEVATION (FEET, NFVD), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989												
DAY	JANUARY				FEBRUARY				MARCH			
	LAND- WARD	SEA- WARD	SEA- WARD	SUPPLE- MENTARY	LAND- WARD	SEA- WARD	SEA- WARD	SUPPLE- MENTARY	LAND- WARD	SEA- WARD	SEA- WARD	SUPPLE- MENTARY
	MAX	MAX	MIN	MAX	MAX	MAX	MIN	MAX	MAX	MAX	MIN	MAX
1	---	.7	.0	---	---	.9	.0	---	---	.8s	-.1s	---
2	---	.7	-.2	---	---	1.0	.0	---	---	.9s	.1s	---
3	---	.7	-.3	---	---	1.0	-.7	---	---	1.2s	.3s	---
4	---	1.1	-.6	---	---	.4	-.8	---	---	1.2s	.3s	---
5	---	1.1	.1	---	---	.7	-.2	---	---	.3s	-1.3s	---
6	---	1.2	-.1	---	---	.8	-.3	---	---	-1.3s	-1.8s	---
7	---	1.0	-.1	---	---	.3	-.6	---	---	-.2s	-1.6s	---
8	---	.8	-.2	---	---	.5	-.2	---	---	.1s	-.3s	---
9	---	.9	-.1	---	---	.6	.0	---	---	.0s	-.4s	---
10	---	1.2	.3	---	---	.7	.2	---	---	.0s	-.6s	---
11	---	1.3	.4	---	---	.7	.0	---	---	.1s	-.6s	---
12	---	.9	.2	---	---	1.1	-.3	---	---	.2s	-.6s	---
13	---	.6	-.2	---	---	1.3	.3	---	---	.4s	-.5s	---
14	---	.5	-.1	---	---	1.2	.1	---	---	.7s	-.3s	---
15	---	.5	-.2	---	---	.9	-.1	---	---	.6s	-.1s	---
16	---	.5	-.4	---	---	.7	-.5	---	---	.7s	-.2s	---
17	---	1.0	-.4	---	---	.5	-.3	---	---	.6s	.0s	---
18	---	1.1	-.1	---	---	.5	-.4	---	---	.7s	.0s	---
19	---	1.1	.2	---	---	.8	-.3	---	---	.5s	-.2s	---
20	-2.8	1.0	-.2	---	---	1.3	.5	---	---	.6s	.2s	---
21	---	.8	-.2	---	---	.7s	-.3s	---	---	.2s	-.4s	---
22	---	1.0	.1	---	---	-.1s	-.9s	---	---	.0	-.5	---
23	---	.8	.0	---	---	-.3s	-1.4s	---	---	.3s	-.2s	---
24	---	1.0	.2	---	---	.3s	-.4s	---	---	.3s	-.3s	---
25	---	.8	.2	---	---	.1s	-.2s	---	---	.5s	-.1s	---
26	---	.5	-.1	---	---	.2s	-.5s	---	---	.9s	.0s	---
27	---	.8	-.1	---	---	.6s	-.3s	---	---	1.0s	.3s	---
28	---	1.1	.6	---	---	.6s	-.2s	---	---	1.2s	.5s	---
29	---	1.0	.4	---	---	---	---	---	---	.9s	.3s	---
30	---	.6	-.2	---	---	---	---	---	---	.4s	-.2s	---
31	---	.8	-.3	---	---	---	---	---	---	.2s	-.7s	---
MONTH	-2.8	1.3	-.6	---	---	1.2	-1.4s	---	---	1.2s	-1.8s	---

DAY	APRIL				MAY				JUNE			
	LAND- WARD	SEA- WARD	SEA- WARD	SUPPLE- MENTARY	LAND- WARD	SEA- WARD	SEA- WARD	SUPPLE- MENTARY	LAND- WARD	SEA- WARD	SEA- WARD	SUPPLE- MENTARY
	MAX	MAX	MIN	MAX	MAX	MAX	MIN	MAX	MAX	MAX	MIN	MAX
1	---	1.0s	-.4s	---	---	.9s	.3s	---	---	1.4	.3s	---
2	---	1.1s	.5s	---	---	.6s	.2s	---	---	1.4	.4	---
3	---	.8s	.2s	---	---	.9s	.4s	---	---	1.3	.2	---
4	---	.8s	.1s	---	---	1.2s	.4s	---	---	1.4	.3	---
5	---	.4s	.0s	---	---	1.0s	.1s	---	---	1.4	.2	---
6	---	.5s	.0s	---	---	.7s	-.1s	---	---	1.1	.0	---
7	---	.3s	-.3s	---	---	.6s	-.2s	---	---	1.3	.2	---
8	---	.5s	-.3s	---	---	.9s	-.2s	---	---	1.0	.3	---
9	---	.5s	-.4s	---	---	.7s	.2s	---	---	.9	-.1	---
10	---	.6s	-.4s	---	---	.5s	-.4s	---	---	1.1	.5	---
11	---	.9s	-.2s	---	---	.9s	.0s	---	---	1.1	.7	---
12	---	1.1s	.2s	---	---	1.0s	.3s	---	---	1.1	.7	---
13	---	1.1s	.5s	---	---	1.0s	.6s	---	---	1.2	.5	---
14	---	1.0s	.4s	---	---	1.0s	.6s	---	---	1.2	.2	---
15	---	.6s	.0s	---	---	.9s	.5s	---	---	.7	-.2	---
16	---	.6s	.2s	---	---	1.1s	.5s	---	---	.7	-.3	---
17	---	.7s	.3s	---	---	1.6s	.7s	---	---	1.0	-.1	---
18	---	.5s	.2s	---	---	1.7s	.8s	---	---	1.1	.1	---
19	---	.5s	-.2s	---	---	1.4s	.4s	---	---	1.0	.0	---
20	---	.4s	-.2s	---	---	1.0s	.3s	---	---	.8	-.3	---
21	---	.4s	-.2s	---	---	1.2s	.2s	---	---	.9	-.2	---
22	---	.6s	-.2s	---	---	1.1s	.2s	---	---	1.2	.0	---
23	---	.7s	-.1s	---	---	1.0s	.2s	---	---	1.9	.7	---
24	---	.7s	.0s	---	---	.9s	.1s	---	---	2.2	1.5	-1.5
25	---	.8s	.1s	---	---	1.0s	.2s	---	---	1.9	1.5	---
26	---	.7s	.0s	---	---	.9s	.3s	---	-1.1	3.5	1.8	-0.2
27	---	.8s	-.1s	---	---	.6s	.1s	---	-2.0	3.2	.9	-0.7
28	---	.9s	.1s	---	---	.4s	.0s	---	---	1.3	.1	---
29	---	.7s	.1s	---	---	.6s	.2s	---	---	1.2	.1	---
30	---	.7s	.1s	---	---	.8s	.3s	---	-2.6	1.7	.3	-1.9
31	---	---	---	---	---	1.1s	.3s	---	---	---	---	---
MONTH	---	1.1s	-.4s	---	---	1.7s	-.4s	---	-1.1	3.5	-.3	-0.2

## HIGHLAND BAYOU BASIN

08077740 LAMARQUE LEVEE PUMP STATION NEAR LAMARQUE, TX--Continued

ELEVATION (FEET, NGVD), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	JULY				AUGUST				SEPTEMBER			
	LAND- WARD MAX	SEA- WARD MAX	SEA- WARD MIN	SUPPLE- MENTARY MAX	LAND- WARD MAX	SEA- WARD MAX	SEA- WARD MIN	SUPPLE- MENTARY MAX	LAND- WARD MAX	SEA- WARD MAX	SEA- WARD MIN	SUPPLE- MENTARY MAX
1	---	1.4	.4	---	0.9	3.1	.8	---	---	1.0	.5	---
2	---	1.4	.3	---	-1.8	1.8	1.1	---	---	.8	.4	---
3	---	1.1	.1	---	---	1.3	.6	---	---	.7	-.1	---
4	-2.7	.6	-.1	---	---	1.1	.6	---	---	1.1	.6	---
5	---	1.0	.0	---	---	.7	.3	---	---	1.6	.8	---
6	---	.5	-.2	---	---	.5	.1	---	---	1.8	.8	---
7	---	.6	-.2	---	---	.4	-.2	---	---	1.8	.7	---
8	---	.6	.0	---	---	.8	.2	---	---	1.6	.6	---
9	---	.9	.5	---	---	1.1	.3	---	---	1.5	.3	---
10	---	1.4	.7	---	---	1.2	.1	---	---	1.3	.3	---
11	---	1.6	.4	---	---	1.1	.0	---	---	1.4	.2	---
12	---	1.0	.1	---	---	1.1	.0	---	---	1.5	.2	---
13	---	1.0	-.1	---	---	1.4	.0	---	---	1.7	.6	---
14	---	.6	-.4	---	---	1.4	.3	---	---	1.1	.4	---
15	---	.8	-.4	---	---	1.3	.2	---	---	1.0	.1	---
16	---	.5	-.4	---	---	1.3	.1	---	---	1.3	.5	---
17	---	.7	-.6	---	---	1.2	.3	---	---	1.4	.4	---
18	---	.8	-.5	---	---	1.0	.2	---	---	1.5	.6	---
19	---	.6	-.4	---	---	.8	.2	---	---	1.8	.8	---
20	---	.2	-.5	---	---	.9	.3	---	---	2.0	.8	---
21	---	.6	-.6	---	---	1.0	.3	---	---	1.9	.6	---
22	---	.6	-.2	---	---	1.2	.3	---	---	1.5	.1	---
23	---	.7	.2	---	---	1.4	.2	---	---	.8	-.6	---
24	---	.7	.0	---	---	1.2	-.1	---	---	.9	-.6	---
25	1.2	.8	.2	---	---	1.2	-.1	---	---	1.2	.2	---
26	3.5	1.6	.5	---	---	1.2	.0	---	---	1.3	.5	---
27	---	1.4	.1	---	---	1.2	.1	---	---	1.6	.6	---
28	---	1.0	-.2	---	---	.9	.1	---	---	1.3	.9	---
29	---	1.1	-.2	---	---	.9	.0	---	---	1.5	.7	---
30	---	1.2	-.1	---	---	1.0	.1	---	---	1.4	.7	---
31	---	1.5	.1	---	---	1.1	.4	---	---	---	---	---
MONTH	3.5	1.6	-.6	---	0.9	3.1	-.2	---	---	2.0	-.6	---

s No data at primary station, elevation at supplementary station shown.

## 08078000 CHOCOLATE BAYOU NEAR ALVIN, TX

LOCATION.--Lat 29°22'09", long 95°19'14", Brazoria County, Hydrologic Unit 12040204, on right bank 800 ft downstream from bridge on Farm Road 1462, 5.9 mi southwest of Alvin, and 6.9 mi upstream from State Highway 35.

DRAINAGE AREA.--87.7 mi<sup>2</sup>. During extreme flooding, overflow from about 11 mi<sup>2</sup> of the Mustang Bayou drainage basin enters the Chocolate Bayou basin upstream from gage.

PERIOD OF RECORD.--August to October 1944 and March to December 1946 (low-water records during irrigation season), January 1947 to February 1958, March 1958 to February 1959 (discharge measurements only), March 1959 to current year. Water-quality records.--Chemical and biochemical analyses: May 1971 to September 1985. Pesticide analyses: May 1971 to September 1981.

GAGE.--Water-stage recorder. Datum of gage is 0.31 ft above National Geodetic Vertical Datum of 1929. Prior to May 3, 1959, nonrecording gage or water-stage recorders located at various sites from 900 to 1,400 ft upstream and at datum 3.00 ft higher. May 3, 1959, to Sept. 30, 1987, present site, at datum 10.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Stage-discharge relationship is affected by seasonal vegetal growth during most years. Large area of riceland above station is irrigated with water from the Brazos River. Low flow from April to October is largely drainage from these irrigated lands. Diversions for irrigation occur above station. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--40 years (water years 1948-57, 1960-89), 107 ft<sup>3</sup>/s (77,520 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,500 ft<sup>3</sup>/s July 26, 1979 (gage height, 33.88 ft); no flow at times. Flood of Oct. 8, 1949, reached a stage of 31.45 ft, present site and datum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 14, 1939, reached a stage of 32.5 ft, present site and datum, adjusted from floodmark 1,700 ft to right and 550 ft upstream from present gage, on basis of slope of flood of Oct. 8, 1949, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jan. 30	0900	1,650	23.92	Aug. 3	0300	*5,650	*30.98
June 27	1300	2,810	28.44				

Minimum daily discharge, 1.0 ft<sup>3</sup>/s Jan. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	8.5	1.6	1.0	203	4.7	e15	8.8	e20	642	1210	15
2	43	8.1	1.6	1.1	93	4.6	e10	19	e50	950	4280	11
3	23	7.6	1.6	1.1	60	4.6	e8.0	22	e60	365	5270	13
4	16	7.1	1.6	1.1	50	5.0	e7.0	56	e45	171	3920	8.8
5	15	5.8	1.6	1.1	32	5.0	e6.5	42	e40	104	2520	5.1
6	12	4.4	1.6	1.1	24	e4.5	e6.0	22	e35	79	1190	4.2
7	5.3	3.3	1.7	1.1	18	e4.2	e5.7	18	33	81	255	3.8
8	7.1	2.7	1.7	1.1	15	e5.0	e5.5	12	33	116	137	2.9
9	6.1	2.6	1.7	1.2	12	e6.0	e5.3	6.8	31	106	143	4.2
10	6.2	2.6	1.8	1.2	10	e5.0	e5.2	2.7	33	89	98	13
11	7.9	2.4	1.9	1.2	9.4	e4.5	e5.1	3.6	31	81	70	27
12	8.2	2.5	1.9	1.2	9.3	e4.2	e5.0	3.7	28	71	64	29
13	7.7	2.6	1.9	1.1	9.1	e4.0	e30	3.0	26	74	69	9.6
14	9.2	2.5	1.9	1.1	8.4	e3.8	e20	76	43	74	65	6.0
15	8.8	2.4	1.9	1.2	8.0	e3.7	e15	67	80	78	75	4.8
16	7.4	1.8	1.9	1.1	7.3	e3.6	e10	37	74	68	64	4.9
17	4.6	1.3	1.8	1.2	6.7	e3.5	e12	20	56	72	55	5.0
18	3.4	1.3	1.8	102	6.0	e3.5	e12	31	42	68	46	4.3
19	4.0	1.5	1.8	177	5.7	e3.5	e10	118	29	68	42	7.8
20	2.7	1.8	1.8	612	5.9	e10	e9.0	52	20	112	42	6.2
21	2.3	1.7	1.9	279	7.1	e70	7.3	26	17	127	40	5.4
22	2.7	1.5	2.1	87	7.1	e80	6.9	21	25	120	37	5.3
23	3.7	1.5	28	47	6.3	e40	6.8	20	31	109	33	e4.0
24	3.9	1.6	15	30	5.7	e20	6.9	15	138	120	34	e5.0
25	3.4	1.6	3.8	22	5.4	e10	4.7	14	545	126	45	e6.0
26	3.5	1.6	2.2	15	5.2	e7.0	6.3	14	1560	196	31	e5.0
27	3.6	1.7	1.7	61	4.9	e6.0	5.1	9.7	2720	235	21	e4.5
28	5.2	1.7	1.4	70	4.9	e6.0	7.1	9.8	2090	352	12	e4.0
29	6.2	1.6	1.2	180	---	e100	17	15	808	200	10	e3.8
30	6.6	1.6	1.1	1480	---	e40	13	e10	420	136	15	e3.6
31	7.6	---	1.1	710	---	e25	---	e8.0	---	99	21	---
TOTAL	310.3	88.9	94.6	3891.2	639.4	496.9	283.4	783.1	9163	5289	19914	232.2
MEAN	10.0	2.96	3.05	126	22.8	16.0	9.45	25.3	305	171	642	7.74
MAX	64	8.5	28	1480	203	100	30	118	2720	950	5270	29
MIN	2.3	1.3	1.1	1.0	4.9	3.5	4.7	2.7	17	68	10	2.9
AC-FT	615	176	188	7720	1270	986	562	1550	18170	10490	39500	461
CAL YR 1988	TOTAL	13009.95	MEAN	35.5	MAX	934	MIN	.34	AC-FT	25810		
WTR YR 1989	TOTAL	41186.0	MEAN	113	MAX	5270	MIN	1.0	AC-FT	81690		

e Estimated.



## BRAZOS RIVER BASIN

08079575 NORTH FORK DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR POST, TX

LOCATION.--Lat 33°14'52", long 101°20'24", Garza County, Hydrologic Unit 12050003, at right upstream end of bridge on Farm Road 651 and 4.4 mi northeast of Post.

DRAINAGE AREA.--438 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1983 to current year.

GAGE.--Non-recording gage. Elevation of gage is 2,440 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Mar. 10, 1988, water-stage recorder at same site and datum.

REMARKS.--Records fair except those for estimated daily discharges and those above 100 ft<sup>3</sup>/s, which are poor. No known diversion above station.

AVERAGE DISCHARGE.--6 years, 33.5 ft<sup>3</sup>/s (24,270 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,500 ft<sup>3</sup>/s Oct. 2, 1986 (gage height, 9.10 ft, from floodmarks), on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,100 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Sept. 14	2000	*1,190	a*6.22				

a From graph of observer's readings.

Minimum daily discharge, no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	6.3	4.4	5.0	24	4.4	11	3.4	.68	.44	.00	23
2	26	3.9	5.0	4.4	24	3.9	9.0	1.6	3.9	.28	.00	e34
3	26	2.6	7.1	5.0	17	2.6	5.0	1.2	50	.00	.00	e40
4	21	1.9	8.0	6.3	5.8	3.9	3.0	1.4	135	.13	.00	36
5	18	1.2	7.1	5.6	2.2	2.6	1.6	.98	166	.00	.00	23
6	16	1.9	7.1	6.3	5.9	16	.82	.98	99	.00	.00	23
7	19	4.4	9.0	5.6	26	11	3.0	1.4	43	.00	.00	19
8	23	8.0	14	5.0	38	7.1	3.9	.98	18	.00	.00	21
9	19	8.0	11	6.3	16	8.0	3.4	.10	16	.00	.00	15
10	18	5.6	14	9.1	21	e8.0	3.4	.36	34	.00	44	9.0
11	19	15	10	6.3	19	e9.0	5.6	2.6	89	.00	8.0	17
12	19	10	9.0	3.9	26	10	5.6	1.4	38	.00	5.6	18
13	21	9.0	9.0	3.0	32	11	14	.98	53	.00	4.4	43
14	16	8.0	11	2.2	30	5.6	12	.68	116	.00	1.9	212
15	21	7.1	9.0	3.9	26	5.0	8.0	.82	148	.00	3.0	349
16	28	6.3	6.3	3.0	37	6.3	8.0	1.4	64	.00	11	96
17	19	3.0	9.0	1.6	82	8.0	9.0	40	40	.00	9.0	53
18	19	2.6	5.6	1.4	58	6.3	9.0	30	18	.00	9.8	34
19	19	2.2	5.0	1.4	85	5.0	8.0	45	12	.00	5.0	28
20	18	2.2	4.4	1.6	43	5.0	7.1	32	11	.00	1.9	24
21	16	1.9	5.6	1.9	21	9.0	9.0	18	8.0	.00	5.0	21
22	15	2.6	5.0	3.0	19	5.6	9.0	8.0	4.4	.00	8.0	21
23	16	2.2	5.6	2.6	11	8.0	9.0	5.6	1.6	.00	7.1	16
24	16	1.9	5.0	1.2	21	8.0	8.0	5.0	1.6	.00	10	16
25	15	1.6	8.0	6.7	15	6.3	5.0	1.9	1.2	.02	15	11
26	14	1.4	5.6	12	10	7.1	3.4	1.2	.55	.02	16	10
27	12	1.9	5.6	28	5.6	6.3	3.4	.82	.82	.00	10	9.0
28	12	2.2	8.0	e28	4.4	5.0	3.4	1.9	.55	.00	6.3	7.1
29	11	1.9	9.0	24	---	7.1	5.0	1.2	.44	.00	1.9	7.1
30	14	2.6	5.6	28	---	8.0	3.9	.55	.44	.00	1.2	9.0
31	15	---	5.0	30	---	9.0	---	.44	---	.00	12	---
TOTAL	559	129.4	233.0	252.3	724.9	218.1	189.52	211.89	1174.18	0.89	196.10	1244.2
MEAN	18.0	4.31	7.52	8.14	25.9	7.04	6.32	6.84	39.1	.029	6.33	41.5
MAX	28	15	14	30	85	16	14	45	166	.44	44	349
MIN	11	1.2	4.4	1.2	2.2	2.6	.82	.10	.44	.00	.00	7.1
AC-FT	1110	257	462	500	1440	433	376	420	2330	1.8	389	2470
CAL YR 1988	TOTAL	6492.38	MEAN	17.7	MAX	224	MIN	.00	AC-FT	12880		
WTR YR 1989	TOTAL	5133.48	MEAN	14.1	MAX	349	MIN	.00	AC-FT	10180		

e Estimated.

08079575 NORTH FORK DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR POST, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1983 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1983 to current year.

WATER TEMPERATURES: October 1983 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily 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 Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 9,870 microsiemens May 10, 1987; minimum daily, 385 microsiemens Aug. 15, 1986.

WATER TEMPERATURES: Maximum daily, 36.0°C Aug. 13, 1987; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 3,930 microsiemens May 10; minimum daily, 1,020 microsiemens Sept. 13.

WATER TEMPERATURES: Maximum daily, 31.0°C July 1, Aug. 29, 30; minimum daily, 1.0°C Jan. 14, Feb. 3, 5, 7, Mar. 5.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 05...	1010	18	2470	13.5	530	230	55	96	330
NOV 22...	0840	2.8	3190	2.0	630	250	69	110	490
DEC 14...	1315	13	2850	14.0	590	240	73	100	380
APR 11...	0935	7.5	2970	7.5	670	300	71	120	430
MAY 31...	1010	0.96	3550	23.5	690	330	77	120	510
AUG 29...	0850	4.4	2050	22.0	390	190	52	63	290

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
OCT 05...	6	15	302	440	530	3.6	15	1670
NOV 22...	9	18	371	490	570	4.2	14	1990
DEC 14...	7	14	353	420	500	4.2	20	1720
APR 11...	7	20	369	450	570	4.7	22	1910
MAY 31...	9	24	358	580	670	5.0	17	2220
AUG 29...	7	14	203	310	380	3.2	10	1240

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1988 TO SEPTEMBER 1989

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. 1988	559	2560	1560	2360	420	637	390	596	560
NOV. 1988	129.4	2850	1760	616	470	165	460	160	610
DEC. 1988	233.0	2860	1770	1120	470	298	460	290	610
JAN. 1989	252.3	2870	1780	1210	470	323	460	315	610
FEB. 1989	724.9	2710	1670	3260	450	876	430	837	580
MAR. 1989	218.1	2920	1820	1070	480	285	470	279	630
APR. 1989	189.52	3240	2050	1050	540	275	550	281	680
MAY 1989	211.89	2440	1500	856	400	230	380	219	530
JUNE 1989	1174.18	2360	1430	4530	390	1230	360	1130	510
JULY 1989	0.89	3330	2110	5.1	550	1.3	570	1.4	700
AUG. 1989	196.10	2750	1690	897	450	241	440	231	590
SEPT 1989	1244.2	2120	1270	4260	350	1170	310	1040	470
TOTAL	5133.48	**	**	21200	**	5730	**	5380	**
WTD. AVG.	14	2510	1530	**	410	**	390	**	540

## BRAZOS RIVER BASIN

08079575 NORTH FORK DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR POST, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2630	2560	3460	2820	2780	2790	2900	3460	3170	3300	---	2440
2	2510	2740	3190	2790	2810	2750	3100	3620	3000	3330	---	e2350
3	2530	2930	3150	2780	2860	2930	3100	3460	1170	---	---	e2290
4	2540	2930	3100	2760	3490	2940	3200	3530	2050	3410	---	2220
5	2540	3020	2930	2810	3570	3280	3200	3610	2500	---	---	2330
6	2550	2980	2940	2820	3290	2820	3200	3620	2620	---	---	2380
7	2520	2740	2940	2840	2810	2860	3100	3600	2700	---	---	2380
8	2490	2700	2680	2840	2570	2900	3200	3810	2740	---	---	2290
9	2520	2720	2750	2800	2700	2920	3200	3880	2730	---	---	2350
10	2520	2720	2710	2840	2760	2950	3200	3930	2660	---	2810	2490
11	2560	2710	2800	2840	2860	2940	3150	3640	2460	---	2900	1800
12	2560	2670	2880	2990	2840	2940	3100	3590	2650	---	2890	1460
13	2590	2730	2860	3130	2870	2940	3000	3550	1410	---	2790	1020
14	2610	2750	2860	3470	2800	3000	3100	3590	2370	---	3000	1950
15	2560	2870	2860	3140	2810	2950	3000	3610	2380	---	3020	2070
16	2520	2920	3000	3120	2580	2920	3100	2490	2490	---	2690	2110
17	2580	3050	2830	3180	2620	2920	3300	1220	2510	---	2760	2180
18	2560	3030	2790	3190	2800	3010	3200	1620	2560	---	2860	2300
19	2540	3060	2830	3320	2540	2990	3200	2650	2620	---	2860	2320
20	2530	3010	2820	3220	2560	3010	3400	2730	2650	---	3060	2320
21	2550	3160	2790	3260	2620	2810	3200	2880	2660	---	2680	2300
22	2520	3230	2820	3250	2640	2890	3500	3130	2750	---	2690	2310
23	2590	3230	2820	3310	2680	2900	3500	3230	2900	---	2720	2320
24	2620	3160	2870	3280	2660	2970	3600	3450	2910	---	2700	2540
25	2580	3170	2800	3580	2700	3040	3700	3510	3040	3500	2650	2590
26	2610	3320	2730	3010	2710	2940	3700	3600	3230	3280	2610	2620
27	2640	3310	2790	2740	2760	2870	3600	3560	3260	---	2690	2660
28	2640	3260	2770	2650	2780	2950	3500	3460	3320	---	2930	2710
29	2630	3370	2790	2930	---	2950	3400	3780	3380	---	2760	2710
30	2590	3240	2830	2780	---	2960	3500	3660	3390	---	2910	2680
31	2520	---	2910	2790	---	2920	---	3590	---	---	2480	---
MEAN	2560	2980	2880	3010	2800	2930	3270	3320	2680	3360	2790	2280

e Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.0	17.0	3.0	2.5	13.0	9.0	13.0	23.0	23.0	31.0	---	25.0
2	14.5	18.0	3.0	7.0	7.0	9.0	16.0	25.0	26.0	29.0	---	---
3	23.0	17.0	14.0	10.0	1.0	15.0	23.0	26.0	17.0	---	---	---
4	23.0	13.0	7.0	12.0	4.0	2.0	18.0	29.0	20.0	23.0	---	27.0
5	22.0	14.0	14.0	10.0	1.0	1.0	22.0	30.0	25.0	---	---	26.0
6	22.0	7.0	13.0	5.0	3.0	10.0	22.0	30.0	23.0	---	---	27.0
7	13.0	19.0	6.0	6.0	1.0	13.0	12.0	18.0	---	---	---	29.0
8	23.0	19.0	2.0	5.0	3.0	15.0	12.0	26.0	---	---	---	28.0
9	23.0	20.0	7.0	7.0	7.0	17.0	16.0	21.0	---	---	---	22.0
10	22.0	15.0	5.0	11.0	12.0	20.0	17.0	23.0	---	---	28.0	19.0
11	20.0	11.0	5.0	13.0	4.0	8.0	15.0	17.0	---	---	27.0	21.0
12	20.0	11.0	9.0	6.0	13.0	12.0	10.0	25.0	---	---	20.0	21.0
13	21.0	13.0	9.0	4.0	14.0	15.0	10.0	21.0	---	---	20.0	17.0
14	22.0	18.0	10.0	1.0	8.0	18.0	23.0	19.0	23.0	---	25.0	22.0
15	17.0	12.0	5.0	5.0	7.0	14.0	12.0	23.0	26.0	---	28.0	24.0
16	20.0	12.0	2.0	10.0	6.0	20.0	17.0	25.0	25.0	---	26.0	20.0
17	23.0	10.0	4.0	11.0	7.0	25.0	25.0	22.0	22.0	---	25.0	20.0
18	18.0	8.0	7.0	10.0	5.0	15.0	24.0	25.0	23.0	---	24.0	25.0
19	19.0	8.0	10.0	3.0	10.0	19.0	25.0	26.0	28.0	---	26.0	25.0
20	20.0	6.0	10.0	11.0	7.0	7.0	23.0	18.0	26.0	---	30.0	25.0
21	24.0	11.0	11.0	12.0	13.0	12.0	16.0	24.0	24.0	---	26.0	25.0
22	20.0	12.0	9.0	2.0	14.0	16.0	21.0	27.0	25.0	---	29.0	17.0
23	15.0	13.0	10.0	13.0	13.0	5.0	23.0	25.0	25.0	---	28.0	23.0
24	19.0	8.0	5.0	15.0	20.0	13.0	24.0	25.0	23.0	---	27.0	15.0
25	22.0	8.0	10.0	12.0	14.0	17.0	25.0	26.0	27.0	23.0	29.0	21.0
26	20.0	8.0	16.0	10.0	20.0	18.0	23.0	23.0	28.0	30.0	23.0	11.0
27	20.0	11.0	8.0	10.0	15.0	19.5	21.0	22.0	28.0	---	25.0	25.0
28	16.0	9.0	6.0	7.0	9.0	21.0	12.0	21.0	26.0	---	30.0	24.0
29	14.0	13.0	8.0	5.0	---	22.0	12.0	24.0	27.0	---	31.0	29.0
30	15.0	8.0	14.0	15.0	---	19.0	25.0	22.0	27.0	---	31.0	15.0
31	20.0	---	3.0	14.0	---	22.0	---	22.0	---	---	30.0	---
MEAN	19.5	12.5	8.0	8.5	9.0	14.5	18.5	23.5	24.5	27.0	26.5	22.5

## BRAZOS RIVER MAIN STEM

187

## 08079600 DOUBLE MOUNTAIN FORK BRAZOS RIVER AT JUSTICEBURG, TX

LOCATION.--Lat 33°02'18", long 101°11'50", Garza County, Hydrologic Unit 12050004, on right bank at downstream side of bridge on U.S. Highway 84 at Justiceburg, 250 ft downstream from Panhandle and Santa Fe Railroad, and at mile 143.4 measured from confluence with Salt Fork Brazos River at mile 923.2 on the Brazos River.

DRAINAGE AREA.--1,466 mi<sup>2</sup>, of which 1,222 mi<sup>2</sup> probably is noncontributing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1961 to current year. Prior to October 1963, published as Sand Creek or South Fork Double Mountain Fork Brazos River at Justiceburg.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,222.47 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--27 years (water years 1963-89), 27.4 ft<sup>3</sup>/s (1.52 in/yr), 19,850 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,600 ft<sup>3</sup>/s May 6, 1969 (gage height, 19.8 ft, from floodmarks); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stages since at least 1895, 25.8 ft in 1914 and 22.2 ft in September 1955, from information by local resident. Flood in July 1961 reached a stage of 18.2 ft, from floodmark.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,100 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
June 1	1800	4,750	9.47	Aug. 3	0300	3,020	8.49
June 2	0830	2,320	8.12	Aug. 29	0430	3,240	8.63
June 2	2300	3,320	8.67	Sept. 11	0700	2,660	8.28
June 4	0400	3,870	9.00	Sept. 13	0400	*5,270	*9.75

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.00	.00	.00	e.02	.23	.00	.00	1380	.00	.00	.53
2	.10	.00	.00	.00	.00	.30	.00	.00	1150	.00	.65	.23
3	.07	.00	.00	.00	e.02	.23	.00	.00	963	.00	496	e.18
4	.05	.00	.00	.00	e.01	e.18	.00	.00	1330	.00	.86	e.07
5	.03	.00	.00	.00	e.01	e.15	.00	.00	59	.00	.02	e.02
6	.05	.00	.00	.00	e.01	e.12	.00	.00	12	.00	.00	.00
7	.05	.00	.00	.00	.00	e.08	.00	.00	2.2	.00	.72	.00
8	.05	.00	.00	.00	.00	e.04	.00	.00	.73	.00	.10	.00
9	.05	.00	.00	e.01	.00	e.02	.00	.00	.30	.00	e.07	6.6
10	.05	.00	.09	e.02	.00	e.01	.00	.00	92	.00	e.02	.16
11	.05	.00	.13	.03	.00	.00	.00	.00	261	.00	e.01	448
12	.05	.00	.05	e.02	.00	.00	.00	.00	1.8	.00	.00	100
13	.03	.00	.03	e.01	.00	.00	.00	.00	3.0	.00	.00	1010
14	.03	.00	.03	.00	.00	.00	.00	.00	1.6	.00	.68	27
15	.03	.00	.02	.00	.00	.00	.00	.00	.62	.00	.02	2.0
16	e.01	.00	.00	.00	.27	.00	.00	.00	.36	.00	.01	.44
17	.00	.00	.00	.00	202	.00	.00	.23	.10	.00	.03	.13
18	.00	.00	.00	.00	9.1	.00	.00	.12	.10	.00	.01	.07
19	.00	.00	.00	.00	1.1	.00	.00	.06	.02	.00	.01	e.03
20	.00	.00	.00	.00	.53	.00	.00	.01	.01	.00	.00	e.02
21	.00	.00	.00	.00	.30	.00	.00	.00	.01	.00	.08	e.01
22	.00	.01	.00	.00	.23	.00	.00	.00	.00	.00	6.5	.00
23	.00	.00	.00	.00	.23	.00	251	.00	.00	.00	2.6	.00
24	.00	.00	.00	.00	.18	.00	196	.00	.00	.00	e.05	.00
25	.00	.00	.00	.00	.18	.00	.73	.00	.00	.00	e.03	.00
26	.00	.00	.00	.00	.10	.00	.36	.00	.00	.00	e.02	.00
27	.00	.00	.00	.00	e.08	.00	.23	.00	.00	.00	e.01	.00
28	.00	.00	.00	.20	e.10	.00	.13	.00	.00	.00	.00	.00
29	.00	.00	.00	.05	---	.00	e.05	.00	.00	.00	366	.00
30	.00	.00	.00	.05	---	.00	e.01	.00	.00	.00	3.2	.00
31	.00	---	.00	.03	---	.00	---	.00	---	.00	.86	---
TOTAL	0.80	0.01	0.35	0.42	214.49	1.36	448.51	0.42	5257.85	0.00	1014.19	1595.49
MEAN	.026	.000	.011	.014	7.66	.044	15.0	.014	175	.00	32.7	53.2
MAX	.10	.01	.13	.20	202	.30	251	.23	1380	.00	496	1010
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	1.6	.02	.7	.8	425	2.7	890	.8	10430	.0	2010	3160
CFSM	.00	.00	.00	.00	.01	.00	.01	.00	.12	.00	.02	.04
IN.	.00	.00	.00	.00	.01	.00	.01	.00	.13	.00	.03	.04

CAL YR 1988 TOTAL 2079.98 MEAN 5.68 MAX 905 MIN .00 AC-FT 4130 CFSM .00 IN. .05  
WTR YR 1989 TOTAL 8533.89 MEAN 23.4 MAX 1380 MIN .00 AC-FT 16930 CFSM .02 IN. .22

e Estimated.

08079600 DOUBLE MOUNTAIN FORK BRAZOS RIVER AT JUSTICEBURG, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.-- Chemical analyses: December 1964 to September 1965, October 1975 to current year. Sediment analyses: June 1977 to June 1982.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1975 to current year.  
WATER TEMPERATURES: October 1975 to current year.

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

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 26,800 microsiemens Mar. 5, 1982; minimum daily, 370 microsiemens Oct. 20, 1983.  
WATER TEMPERATURES: Maximum daily, 32.5°C July 4, 1978; minimum daily, 0.0°C on many days during winter months.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 19,300 microsiemens Nov. 22; minimum daily, 595 microsiemens June 4.  
WATER TEMPERATURE: Maximum daily, 30.0°C June 11; minimum daily, 3.5°C Dec. 15.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 05...	1130	0.03	13300	19.5	870	680	210	85	2800
NOV 22...	1025	0.01	19300	7.5	1500	1300	330	160	3900
JAN 11...	1130	0.03	17300	7.0	1400	1100	320	140	3500
FEB 22...	1130	0.24	11300	12.0	740	520	180	71	2100
AUG 29...	1035	119	842	24.0	22	0	5.9	1.8	160

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)
OCT 05...	43	9.8	200	530	4200	1.3	12	7970
NOV 22...	45	13	220	800	6700	0.90	11	12000
JAN 11...	42	10	231	780	6200	1.0	11	11100
FEB 22...	35	8.2	223	420	4000	1.3	11	6930
AUG 29...	15	2.4	79	95	140	1.3	8.4	462

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1988 TO SEPTEMBER 1989

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. 1988	0.80	13300	7990	17	4300	9.3	550	1.2	*
NOV. 1988	0.01	19300	11900	0.3	6500	0.2	870	0.02	*
DEC. 1988	0.35	12900	7790	7.4	4200	4.0	530	0.5	*
JAN. 1989	0.42	14300	8690	9.9	4700	5.3	600	0.7	*
FEB. 1989	214.49	1100	635	368	330	194	38	22	67
MAR. 1989	1.36	11800	7080	26	3800	14	480	1.8	*
APR. 1989	448.51	705	407	493	210	259	24	29	43
MAY 1989	0.42	11300	6840	7.8	3700	4.2	480	0.5	*
JUNE 1989	5257.85	1000	580	8240	300	4330	34	488	61
JULY 1989	0.00	*	*	0.00	*	0.00	*	0.00	*
AUG. 1989	1014.19	1560	902	2470	470	1300	54	147	95
SEPT 1989	1595.49	775	447	1930	230	1010	26	113	47
TOTAL	8533.89	**	**	13600	**	7120	**	804	**
WTD. AVG.	23	1020	589	**	310	**	35	**	62



## 08079600 DOUBLE MOUNTAIN FORK BRAZOS RIVER AT JUSTICEBURG, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11700	---	---	---	e15200	e12400	---	---	1200	---	---	14000
2	12300	---	---	---	e15300	11200	---	---	1220	---	e4000	15700
3	12600	---	---	---	e15400	e11600	---	---	655	---	1400	e16000
4	12900	---	---	---	e15500	e11800	---	---	595	---	3850	e16400
5	13100	---	---	---	e15600	e11900	---	---	760	---	11500	e16600
6	13500	---	---	---	e15700	e12000	---	---	1380	---	---	---
7	13800	---	---	---	---	e12100	---	---	3320	---	3150	---
8	13600	---	---	---	---	e12200	---	---	6630	---	4500	---
9	13600	---	---	e18000	---	e12200	---	---	8160	---	13600	1500
10	13600	---	10700	e18100	---	e12300	---	---	6000	---	17500	8000
11	13900	---	11800	18300	---	---	---	---	605	---	e17600	690
12	13900	---	15500	e18400	---	---	---	---	1260	---	---	1200
13	14500	---	15100	e18500	---	---	---	---	860	---	---	736
14	14800	---	15600	---	---	---	---	---	2340	---	3300	1040
15	15300	---	16500	---	---	---	---	---	1680	---	5000	2460
16	15400	---	---	---	5100	---	---	---	1030	---	e6500	4520
17	---	---	---	---	900	---	---	---	1220	---	7420	8000
18	---	---	---	---	2220	---	---	17000	1270	---	e8100	10600
19	---	---	---	---	6880	---	---	e5000	1380	---	e9200	e11500
20	---	---	---	---	11800	---	---	e7000	1430	---	---	e12600
21	---	---	---	---	10900	---	---	---	1490	---	4000	e13200
22	---	19300	---	---	10800	---	---	---	---	---	2000	---
23	---	---	---	---	11500	---	e600	---	---	---	5000	---
24	---	---	---	---	11600	---	772	---	---	---	10000	---
25	---	---	---	---	12400	---	5580	---	---	---	e11000	---
26	---	---	---	---	13400	---	11400	---	---	---	e12000	---
27	---	---	---	---	e13500	---	14000	---	---	---	e13000	---
28	---	---	---	12500	e12800	---	15100	---	---	---	---	---
29	---	---	---	13900	---	---	e15800	---	---	---	950	---
30	---	---	---	14600	---	---	e16500	---	---	---	2050	---
31	---	---	---	15100	---	---	---	---	---	---	e8000	---
MEAN	13700	19300	14200	16400	11400	12000	9970	8210	2120	---	7380	8600

e Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.0	---	---	---	---	---	---	---	---	---	---	22.5
2	14.0	---	---	---	---	9.0	---	---	21.0	---	---	23.0
3	14.0	---	---	---	---	---	---	---	24.0	---	22.5	---
4	12.5	---	---	---	---	---	---	---	24.0	---	21.0	---
5	14.0	---	---	---	---	---	---	---	21.0	---	22.5	---
6	26.5	---	---	---	---	---	---	---	24.0	---	---	---
7	14.5	---	---	---	---	---	---	---	24.0	---	20.5	---
8	15.0	---	---	---	---	---	---	---	25.0	---	17.0	---
9	---	---	---	---	---	---	---	---	18.5	---	17.5	24.0
10	11.5	---	5.0	---	---	---	---	---	20.0	---	19.0	18.0
11	13.0	---	6.5	7.0	---	---	---	---	30.0	---	---	19.0
12	12.0	---	4.0	---	---	---	---	---	25.5	---	---	19.5
13	13.0	---	4.5	---	---	---	---	---	21.0	---	---	16.0
14	15.0	---	6.5	---	---	---	---	---	23.5	---	20.5	17.0
15	15.5	---	3.5	---	---	---	---	---	21.0	---	21.0	15.0
16	---	---	---	---	5.0	---	---	---	24.5	---	---	16.0
17	---	---	---	---	4.0	---	---	---	17.5	---	21.5	21.0
18	---	---	---	---	4.5	---	---	20.0	21.0	---	---	17.5
19	---	---	---	---	7.0	---	---	---	20.5	---	---	---
20	---	---	---	---	8.0	---	---	---	22.0	---	---	---
21	---	---	---	---	5.0	---	---	---	20.0	---	22.5	---
22	---	---	---	---	6.0	---	---	---	---	---	22.0	---
23	---	---	---	---	4.0	---	---	---	---	---	22.0	---
24	---	---	---	---	6.0	---	21.5	---	---	---	22.5	---
25	---	---	---	---	8.0	---	21.5	---	---	---	---	---
26	---	---	---	---	10.0	---	17.0	---	---	---	---	---
27	---	---	---	---	---	---	18.0	---	---	---	---	---
28	---	---	---	6.0	---	---	11.5	---	---	---	---	---
29	---	---	---	4.0	---	---	---	---	---	---	23.0	---
30	---	---	---	5.0	---	---	---	---	---	---	22.5	---
31	---	---	---	5.0	---	---	---	---	---	---	22.0	---
MEAN	14.5	---	5.0	5.5	6.0	9.0	18.0	18.5	22.5	---	21.0	19.0

## BRAZOS RIVER MAIN STEM

08080500 DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR ASPERMONT, TX  
(National stream-quality accounting network)

LOCATION.--Lat 33°00'29", long 100°10'49", Stonewall County, Hydrologic Unit 12050004, on right bank at downstream side of bridge on U.S. Highway 83, 0.3 mi downstream from Hitson Creek, 10 mi south of Aspermont, and at mile 34.5 measured from confluence with Salt Fork Brazos River which is at mile 923.2 on the Brazos River.

DRAINAGE AREA.--8,796 mi<sup>2</sup>, of which 6,932 mi<sup>2</sup> probably is noncontributing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1923 to September 1934, June 1939 to current year.

REVISED RECORDS.--WSP 733: 1927(M). WRD TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,624.79 ft above National Geodetic Vertical Datum of 1929. Dec. 3, 1923, to Sept. 30, 1934, nonrecording gage at site 90 ft downstream at datum 2.0 ft higher, and June 8, 1939, to Aug. 12, 1972, water-stage recorder at present site and datum 2.0 ft higher.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. There are small diversions above station for oil field operations.

AVERAGE DISCHARGE.--60 years (water years 1925-34, 1940-89), 158 ft<sup>3</sup>/s (1.15 in/yr), 114,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 91,400 ft<sup>3</sup>/s Sept. 26, 1955 (gage height, 29.5 ft present datum); no flow at times most years.  
Maximum stage since at least 1899, that of Sept. 26, 1955.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,800 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
June 3	0300	*5,070	*8.21				

Minimum discharge, no flow for several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	2.2	.24	2.6	5.9	16	4.7	15	.00	19	.00	.00
2	17	2.0	.24	2.6	4.7	16	5.0	9.2	.00	17	2.5	.00
3	14	2.0	.24	3.0	4.4	15	4.7	7.3	3230	16	53	.00
4	12	1.8	.24	3.3	4.4	14	3.3	4.4	2530	14	14	.00
5	11	1.8	.24	2.8	3.8	17	2.4	2.8	1630	14	8.8	.00
6	10	1.8	.28	2.6	4.1	12	2.4	2.0	767	14	6.5	.00
7	9.2	1.7	.24	2.4	4.1	14	2.2	1.4	605	14	6.0	.00
8	10	1.1	.24	e2.6	4.4	13	2.0	.56	236	11	4.1	.12
9	9.2	.80	.56	e2.8	5.0	12	2.0	.33	152	9.5	2.6	13
10	8.0	.56	2.6	e2.8	5.0	10	1.8	.17	889	7.6	1.4	3.1
11	7.6	.44	6.6	3.0	5.0	10	1.8	.09	810	5.3	.80	5.5
12	6.6	.38	5.9	e3.0	5.0	10	1.7	.07	407	4.1	.99	21
13	5.9	.38	5.3	e3.0	5.0	9.6	1.8	.44	1200	3.0	3.0	564
14	5.9	.38	4.4	e2.8	141	8.8	2.0	21	604	2.8	2.6	782
15	5.9	.33	2.6	2.8	102	8.0	2.0	2.6	327	2.6	2.0	281
16	5.6	.24	2.4	2.6	32	7.3	2.0	12	226	2.2	1.7	136
17	4.4	.28	2.4	2.4	193	7.3	2.0	45	154	1.8	102	102
18	3.8	.28	2.8	2.4	66	6.2	2.0	11	157	1.9	296	121
19	3.8	.28	3.6	2.4	33	5.6	1.8	5.0	98	15	14	75
20	3.6	.33	3.8	2.4	23	5.9	1.8	.99	88	6.6	5.4	48
21	3.6	.38	3.6	2.4	28	6.6	1.5	.17	67	2.2	2.9	33
22	3.3	.33	3.0	2.4	28	6.2	1.2	.00	54	2.4	2.0	26
23	3.0	.28	2.8	2.4	24	6.2	.90	.00	45	e2.0	1.2	20
24	2.8	.24	2.6	2.4	22	6.2	.72	2.0	39	3.7	.65	16
25	2.8	.24	2.4	2.6	21	5.9	42	.64	35	36	.31	14
26	2.6	.28	2.2	2.4	19	5.3	112	.58	30	7.8	.12	12
27	2.6	.28	2.2	2.4	18	12	79	.00	27	e2.0	.02	9.6
28	2.4	.28	2.2	5.3	17	9.3	41	.00	26	e.38	.00	8.2
29	2.4	.28	2.4	5.9	---	5.9	25	.00	23	e.03	.00	7.2
30	2.4	.28	2.6	8.0	---	5.0	22	.00	21	e.01	.00	6.0
31	2.2	---	2.8	6.9	---	4.7	---	.00	---	.00	.00	---
TOTAL	204.6	21.95	73.72	97.4	827.8	291.0	374.72	144.74	14477.00	237.92	534.59	2303.72
MEAN	6.60	.73	2.38	3.14	29.6	9.39	12.5	4.67	483	7.67	17.2	76.8
MAX	21	2.2	6.6	8.0	193	17	112	45	3230	36	296	782
MIN	2.2	.24	.24	2.4	3.8	4.7	.72	.00	.00	.00	.00	.00
AC-FT	406	44	146	193	1640	577	743	287	28720	472	1060	4570
CFSM	.00	.00	.00	.00	.02	.01	.01	.00	.26	.00	.01	.04
IN.	.00	.00	.00	.00	.02	.01	.01	.00	.29	.00	.01	.05
CAL YR 1988	TOTAL	16654.62	MEAN	45.5	MAX	1450	MIN	.00	AC-FT	33030	CFSM	.02
WTR YR 1989	TOTAL	19589.16	MEAN	53.7	MAX	3230	MIN	.00	AC-FT	38860	CFSM	.03

e Estimated

08080500 DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR ASPERMONT, TX--Continued  
(National stream-quality accounting network)

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1948 to November 1951, September 1956 to September 1977. Chemical and biochemical analyses: June 1978 to current year. Sediment analyses: September 1944 to November 1951, June 1978 to current year. Pesticide analyses: March to June 1979.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1948 to November 1951, September 1956 to current year.

WATER TEMPERATURE: November 1949 to November 1951, September 1956 to current year.

SUSPENDED-SEDIMENT DISCHARGE: November 1949 to September 1951.

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 regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 13,100 microsiemens July 29, 1980; minimum daily, 720 microsiemens Oct. 18, 1985.

WATER TEMPERATURE: Maximum daily, 38.0°C July 18, 1966; minimum daily, 0.0°C on many days during winter months.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 11,100 microsiemens Feb. 6; minimum daily, 1,150 microsiemens June 5.

WATER TEMPERATURE: Maximum daily, 35.0°C on several days during May, July, and August; minimum daily, 1.0°C Jan. 14, Feb. 3-6.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOC- CI, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CAC03)
NOV 16...	1420	0.28	8510	8.10	17.0	3.5	10.6	118	0.8	68	62	2700
JAN 11...	1320	2.6	9440	8.10	13.0	0.60	8.6	90	1.0	K4	K7	2200
MAR 08...	1240	24	7140	8.20	10.0	19	13.3	126	2.2	K5	K7	1500
JUN 21...	1510	100	3600	8.20	30.0	260	8.9	127	2.4	320	K130	760
JUL 12...	1120	10	7670	8.00	26.5	2.7	8.8	118	0.8	87	150	2200
AUG 09...	1550	0.48	8230	8.10	32.0	29	8.1	120	2.1	42	K18	2700
DATE	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CAC03	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS-SOLVED (MG/L AS S04)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
NOV 16...	2600	780	180	1000	9	12	130	2000	2000	0.50	10	6260
JAN 11...	2100	610	160	1400	14	12	119	2100	2400	0.60	6.9	7010
MAR 08...	1300	380	130	1000	12	14	151	1400	1600	1.6	9.4	4780
JUN 21...	630	170	80	440	7	17	133	700	650	2.7	16	2270
JUL 12...	2100	670	140	1000	10	16	115	1900	1700	0.70	14	5770
AUG 09...	2600	790	170	850	7	15	118	2000	1600	0.60	13	6220
DATE	SOLIDS, SUM OF CONSTITU-ENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	PHOS-PHOROUS DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS P04)	SEDI-MENT, SUS-PENDED (MG/L)
NOV 16...	6070	<0.010	<0.100	0.300	0.350	0.30	0.60	<0.010	<0.010	<0.010	--	19
JAN 11...	6770	<0.010	<0.100	0.180	0.160	0.42	0.60	<0.010	<0.010	<0.010	--	8
MAR 08...	4630	<0.010	0.100	0.080	0.070	0.22	0.30	0.010	<0.010	0.020	0.06	97
JUN 21...	2160	<0.010	<0.100	0.050	0.040	0.45	0.50	0.170	0.010	<0.010	--	496
JUL 12...	5510	<0.010	<0.100	0.140	0.140	0.26	0.40	0.010	<0.010	<0.010	--	22
AUG 09...	5520	<0.010	<0.100	0.210	0.270	0.29	0.50	0.060	0.010	<0.010	--	201

## BRAZOS RIVER MAIN STEM

08080500 DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR ASPERMONT, TX--Continued  
(National stream-quality accounting network)

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. STIEVE DIAM. % FINER THAN .062 MM	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
NOV 16...	0.01	70	<10	3	400	<10	<1	3	<1	1	40
JAN 11...	0.06	82	10	1	<100	<10	<1	3	1	<1	50
MAR 08...	6.3	96	--	--	--	--	--	--	--	--	--
JUN 21...	134	93	<10	5	100	<10	<1	1	1	2	20
JUL 12...	0.59	80	--	--	--	--	--	--	--	--	--
AUG 09...	0.26	30	<10	3	100	<10	<1	4	1	1	40

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 16...	<5	190	560	<0.1	4	<1	<1	<1.0	10000	47	10
JAN 11...	<5	160	190	<0.1	5	1	1	1.0	12000	25	10
MAR 08...	--	--	--	--	--	--	--	--	--	--	--
JUN 21...	<1	190	10	<0.1	14	3	2	<1.0	5200	24	<10
JUL 12...	--	--	--	--	--	--	--	--	--	--	--
AUG 09...	<1	190	620	<0.1	4	3	<1	<1.0	13000	16	<10

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1988 TO SEPTEMBER 1989

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. 1988	204.6	6350	4290	2370	1400	780	1300	739	1600
NOV. 1988	21.95	8490	5810	344	2000	121	1700	102	2200
DEC. 1988	73.72	9420	6480	1290	2300	466	1900	374	2400
JAN. 1989	97.4	9400	6470	1700	2300	613	1900	494	2400
FEB. 1989	827.8	4450	2980	6670	940	2100	960	2150	1100
MAR. 1989	291.0	7910	5400	4240	1900	1470	1600	1270	2000
APR. 1989	374.72	4980	3360	3400	1100	1110	1100	1070	1200
MAY 1989	144.74	6190	4180	1630	1400	533	1300	511	1500
JUNE 1989	14477.00	1700	1110	43500	310	11900	390	15200	390
JULY 1989	237.92	6370	4310	2770	1400	914	1300	861	1600
AUG. 1989	534.59	2230	1480	2130	430	615	500	722	520
SEPT 1989	2303.72	2040	1340	8320	370	2320	460	2880	470
TOTAL	19589.16	**	**	78400	**	23000	**	26400	**
WTD.AVG.	54	2240	1480	**	430	**	500	**	520

## BRAZOS RIVER MAIN STEM

193

08080500 DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR ASPERMONT, TX--Continued  
(National stream-quality accounting network)

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e4080	8520	8520	9210	10200	6210	9800	4970	---	6280	---	---
2	4470	8510	8510	9350	10900	6220	10300	7700	---	e6540	e1850	---
3	5600	8510	8500	9350	10800	6640	10300	7810	1750	e6960	1650	---
4	5640	8640	8420	9820	10900	6650	10300	7820	1300	e7180	2580	---
5	5610	8640	8540	9830	10900	6610	10300	7840	1150	7640	2600	---
6	5630	8650	8440	9830	11100	6620	9900	7810	1250	7650	5700	---
7	6070	8380	8460	9960	9550	7070	9900	8170	1280	6820	7150	---
8	6090	8370	8450	9890	9630	7090	9900	9220	1290	6810	7200	e5000
9	6380	8360	7960	9720	9610	7430	9900	9310	1760	7490	8300	3480
10	7020	8470	7300	9810	9280	7440	9900	9400	1790	7480	8360	3320
11	7030	8470	7960	9860	9410	7700	9900	9420	2080	7900	8200	3860
12	7040	8230	9830	9870	9360	7710	8800	8950	2010	7910	8000	e3000
13	7200	8230	9860	9410	9390	8460	10100	8540	1720	7810	7950	1860
14	7320	8230	9870	9430	3160	8470	10100	6610	1850	8400	8200	1950
15	7440	8600	9850	9550	4640	8470	10800	8290	1960	8420	8600	1720
16	7530	8620	9730	9560	5000	8470	10800	6450	1970	8410	8680	1500
17	7690	8220	9840	9590	2320	8470	10100	5210	1960	8420	2800	1420
18	7830	8210	10300	9600	4940	8890	10100	4720	2460	8100	1510	1920
19	7850	8350	10400	9520	5560	8910	10100	8000	2630	6480	2030	1980
20	7870	8370	10400	9570	5920	9010	10100	8150	4170	5520	2970	2500
21	7880	8400	9960	9880	6260	9080	10100	9250	4200	6470	3250	2750
22	8310	8390	9350	9870	4730	9070	10100	---	4330	6480	3300	3150
23	8310	8330	9190	9880	4400	9630	9800	---	4330	e6500	5800	3850
24	8270	8330	9190	9830	4580	9630	9800	5500	4970	e6600	6590	4250
25	8280	8420	9220	9800	4840	9910	8000	7950	4980	e3200	6600	5210
26	8290	8430	9220	8540	5300	9580	3500	8010	4970	e4900	7270	5230
27	8290	8720	9270	8500	5310	9580	3050	---	4970	e5500	e7800	5220
28	8400	8720	9320	8500	5310	9590	2900	---	5950	e6500	---	6310
29	8400	8720	9330	8500	---	9970	5000	---	6310	e7500	---	6370
30	8110	8570	9340	9630	---	9970	5000	---	6300	e8500	---	7040
31	8400	---	9390	8500	---	9970	---	---	---	---	---	---
MEAN	7170	8450	9160	9490	7260	8340	8950	7710	3060	7010	5570	3600

e Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	16.0	9.0	4.0	14.0	13.0	22.0	24.0	---	33.0	---	---
2	19.0	19.0	8.0	12.0	5.0	16.0	22.0	27.0	---	---	---	---
3	22.0	20.0	9.0	9.0	1.0	17.0	20.0	27.0	20.0	---	27.0	---
4	21.0	19.0	10.0	11.0	1.0	2.0	24.0	25.0	20.0	---	30.0	---
5	24.0	16.0	12.0	13.0	1.0	6.0	26.0	28.0	22.0	31.0	31.0	---
6	24.0	14.0	12.0	12.0	1.0	8.0	26.0	22.0	24.0	33.0	30.0	---
7	22.0	18.0	10.0	11.0	4.0	11.0	25.0	30.0	21.0	34.0	25.0	---
8	16.0	18.0	6.0	6.0	7.0	17.0	22.0	33.0	23.0	33.0	26.0	---
9	22.0	19.0	8.0	9.0	10.0	17.0	16.0	32.0	22.0	32.0	30.0	29.0
10	23.0	17.0	7.0	13.0	13.0	19.0	16.0	23.0	23.0	32.0	31.0	30.0
11	23.0	15.0	7.0	13.0	15.0	19.0	15.0	22.0	25.0	30.0	29.0	25.0
12	24.0	18.0	8.0	4.0	8.0	20.0	14.0	20.0	27.0	32.0	28.0	26.0
13	24.0	20.0	8.0	6.0	12.0	21.0	18.0	21.0	22.0	31.0	23.0	15.0
14	26.0	22.0	6.0	1.0	5.0	22.0	20.0	22.0	24.0	32.0	30.0	18.0
15	27.0	20.0	6.0	9.0	6.0	22.0	26.0	24.0	25.0	30.0	34.0	27.0
16	30.0	13.0	9.0	10.0	8.0	18.0	24.0	25.0	26.0	33.0	34.0	28.0
17	28.0	14.0	10.0	13.0	8.0	21.0	25.0	29.0	22.0	35.0	31.0	26.0
18	25.0	7.0	8.0	15.0	10.0	20.0	25.0	31.0	29.0	28.0	30.0	27.0
19	22.0	6.0	9.0	8.0	8.0	20.0	23.0	33.0	21.0	31.0	25.0	27.0
20	25.0	14.0	13.0	13.0	10.0	21.0	25.0	35.0	31.0	26.0	34.0	27.0
21	17.0	11.0	12.0	14.0	15.0	11.0	29.0	35.0	32.0	31.0	34.0	27.0
22	18.0	10.0	12.0	13.0	12.0	7.0	29.0	---	32.0	32.0	35.0	24.0
23	18.0	15.0	13.0	15.0	10.0	19.0	28.0	---	30.0	---	34.0	24.0
24	23.0	16.0	13.0	15.0	15.0	21.0	29.0	33.0	32.0	---	35.0	22.0
25	22.0	15.0	12.0	13.0	13.0	26.0	29.0	35.0	33.0	---	32.0	22.0
26	21.0	12.0	16.0	13.0	13.0	26.0	30.0	31.0	33.0	---	30.0	24.0
27	21.0	6.0	8.0	12.0	12.0	24.0	17.0	---	33.0	---	---	26.0
28	13.0	8.0	9.0	10.0	11.0	21.0	15.0	---	33.0	---	---	26.0
29	13.0	9.0	9.0	9.0	---	21.0	18.0	---	32.0	---	---	27.0
30	15.0	10.0	13.0	11.0	---	22.0	28.0	---	33.0	---	---	27.0
31	16.0	---	8.0	14.0	---	23.0	---	---	---	---	---	---
MEAN	21.5	14.5	9.5	10.5	9.0	18.0	23.0	28.0	27.0	31.5	30.5	25.0



## BRAZOS RIVER BASIN

08080950 DUCK CREEK NEAR GIRARD, TX

LOCATION.--Lat 33°21'22", long 100°42'17", Kent County, Hydrologic Unit 12050007, near right bank at downstream side of bridge on Farm Road 643, 2.5 mi west of Girard, and 10.7 mi upstream from mouth.

DRAINAGE AREA.--431 mi<sup>2</sup>, of which 152 mi<sup>2</sup> probably is noncontributing.

PERIOD OF RECORD.--September 1964 to September 1989 (discontinued).

REVISED RECORDS.--WDR TX-72-1: 1971. WDR TX-76-2: Drainage area.

GAGE.--Non-recording gage, crest-stage gage, and daily observer. Datum of gage is 2,006.08 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 24, 1988, water-stage recorder at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair below 5 ft<sup>3</sup>/s and poor above. There are several small diversions upstream from gage. Flow is affected at times by discharge from the flood-detention pools of 12 floodwater-retarding structures with a combined detention capacity of 24,710 acre-ft. These structures control runoff from 108 mi<sup>2</sup>. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--25 years, 8.36 ft<sup>3</sup>/s (6,060 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,000 ft<sup>3</sup>/s June 4, 1974 (gage height, 15.22 ft); maximum gage height, 15.77 ft May 21, 1987; no flow at times in 1966, 1969, 1971, 1974, and 1980-84.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1902 occurred in March or April 1918 (stage and discharge unknown); the second highest stage, 19.8 ft in September 1955, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 618 ft<sup>3</sup>/s June 14, time unknown (gage height, 11.86 ft, from floodmark); minimum daily, 0.04 ft<sup>3</sup>/s Sept. 1, 2, 5-7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1.5	e1.0	1.3	e1.8	1.2	e1.3	1.1	.80	.19	.89	.06	.04
2	e1.5	e1.0	1.3	1.8	1.2	e1.3	1.1	.80	.15	.71	.06	.04
3	e1.5	e1.0	e1.3	1.8	1.2	e1.3	1.1	.80	5.7	.63	.06	.06
4	e1.4	e1.0	e1.3	1.7	e1.2	e1.3	1.1	.80	e1.2	.48	.06	.06
5	e1.4	e1.0	1.3	1.7	e1.2	e1.4	1.1	.89	.89	.48	.06	.04
6	e1.3	e1.0	1.3	1.6	1.4	e1.4	1.1	.89	.80	.48	.06	.04
7	e1.3	e1.0	1.4	e1.6	1.2	e1.4	1.1	.80	.71	.48	.06	.04
8	e1.2	e1.0	1.3	e1.5	1.2	e1.4	1.1	.80	.71	.63	.06	e4.8
9	e1.2	e1.0	1.4	1.4	1.2	e1.3	1.1	.71	2.5	.71	.06	1.3
10	e1.1	e1.0	e1.8	1.4	1.2	e1.3	1.1	.63	2.2	.71	.06	.88
11	e1.1	e1.0	e1.8	1.3	e1.3	e1.3	1.1	.71	11	.63	.06	1.7
12	e1.1	e1.5	2.1	1.2	e1.3	e1.3	1.1	2.3	17	.48	.06	.85
13	e1.1	e1.4	2.0	1.2	e1.3	e1.3	1.1	1.9	44	.48	.06	50
14	e1.1	e1.4	1.9	e1.8	e1.3	e1.3	1.1	1.2	256	.42	.06	6.4
15	e1.1	e1.4	1.9	e1.6	e1.3	e1.2	1.1	1.2	54	.31	.06	1.0
16	e1.1	e1.3	1.9	1.4	e1.4	e1.2	1.1	164	90	.31	.06	.80
17	e1.1	e1.3	e1.9	1.4	e1.4	e1.3	1.1	84	20	.26	e.06	.63
18	e1.1	e1.3	e1.9	1.4	e1.4	e1.3	1.1	223	16	.19	.06	.63
19	1.1	e1.3	1.9	1.4	e1.4	e1.3	1.1	81	16	.10	.06	.48
20	e1.1	e1.3	1.9	1.4	e1.4	1.3	1.1	7.3	8.6	.08	.06	.42
21	e1.1	1.3	1.9	e1.3	e1.4	e1.3	1.1	14	6.5	e.06	.08	.42
22	e1.1	1.1	1.9	e1.3	e1.3	e1.3	1.1	13	6.3	.06	.06	.42
23	e1.1	1.3	1.9	1.3	e1.3	e1.3	1.1	4.3	3.4	.06	.06	.42
24	e1.1	e1.3	e1.9	1.4	e1.3	e1.2	1.1	4.0	2.8	.06	.08	.42
25	e1.1	e1.8	e1.9	1.4	e1.3	e1.2	.99	2.7	2.1	.06	.08	.42
26	e1.0	e1.3	1.9	1.2	e1.3	e1.2	.99	1.8	1.5	.06	.06	.42
27	e1.0	e1.3	1.9	1.2	e1.3	e1.3	.99	.89	1.3	.06	e.06	.42
28	e1.0	1.3	1.9	e8.6	e1.3	e1.3	.89	.63	1.2	.06	.08	.42
29	e1.0	1.3	1.9	e2.8	---	e1.3	.80	.36	1.2	.06	.08	.42
30	e1.0	1.3	1.9	1.3	---	1.3	.80	.26	.99	.06	e.06	.42
31	e1.0	---	e1.8	1.2	---	1.2	---	.22	---	.06	.06	---
TOTAL	35.9	36.5	69.9	53.4	36.2	40.1	31.86	616.69	574.94	10.12	1.96	74.41
MEAN	1.16	1.22	2.25	1.72	1.29	1.29	1.06	19.9	19.2	.33	.063	2.48
MAX	1.5	1.8	18	8.6	1.4	1.4	1.1	223	256	.89	.08	50
MIN	1.0	1.0	1.3	1.2	1.2	1.2	.80	.22	.15	.06	.06	.04
AC-FT	71	72	139	106	72	80	63	1220	1140	20	3.9	148

CAL YR 1988 TOTAL 1360.26 MEAN 3.72 MAX 150 MIN .03 AC-FT 2700  
WTR YR 1989 TOTAL 1581.98 MEAN 4.33 MAX 256 MIN .04 AC-FT 3140

e Estimated.

08082000 SALT FORK BRAZOS RIVER NEAR ASPERMONT, TX  
(National stream-quality accounting network)

LOCATION.--Lat 33°20'02", long 100°14'16", Stonewall County, Hydrologic Unit 12050007, on left bank at downstream side of bridge on U.S. Highway 83, 5.5 mi downstream from Salt Croton Creek, 13.2 mi north of Aspermont, and at mile 27.3 measured from confluence with Double Mountain Fork Brazos River which is at mile 923.2 on the Brazos River.

DRAINAGE AREA.--5,130 mi<sup>2</sup>, of which 2,634 mi<sup>2</sup> probably is noncontributing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1923 to August 1925, June 1939 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,588.70 ft above National Geodetic Vertical Datum of 1929. Dec. 5, 1923, to Aug. 29, 1925, nonrecording gage at site 6.7 mi downstream at different datum. June 15, 1939, to July 13, 1972, water-stage recorder at present site. July 14, 1972, to July 14, 1975, at site 0.1 mi upstream at same datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Daily discharges below 160 ft<sup>3</sup>/s were based on a graph of once daily wire-weight gage readings. There are no large diversions above station. Some regulation by White River Reservoir (capacity, 44,900 acre-ft), 106 mi upstream.

AVERAGE DISCHARGE.--50 years (water years 1940-89), 105 ft<sup>3</sup>/s (76,070 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 52,200 ft<sup>3</sup>/s Sept. 25, 1955 (gage height, 14.92 ft), from rating curve extended above 29,000 ft<sup>3</sup>/s; no flow at times most years. Maximum stage since at least 1900, that of Sept. 25, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in December 1913 reached a stage of 14.4 ft, and flood in November 1934 reached a stage of 13.7 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 12,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 16	1030	*2,970	*5.71				

Minimum daily discharge, 0.10 ft<sup>3</sup>/s Sept. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	.41	1.2	e3.2	6.5	7.8	4.0	.56	.65	2.9	.48	.56
2	e4.0	.35	1.4	e3.2	10	7.8	e2.0	.48	1.4	e12	.56	.48
3	4.0	.30	1.4	3.6	18	7.1	1.8	.35	55	16	65	e.35
4	3.2	.21	e1.4	2.9	3.0	5.9	2.3	.30	e110	e14	2.2	e.25
5	2.9	.12	1.4	2.0	e2.3	e5.4	1.8	18	118	36	.41	.18
6	2.6	e.15	1.6	2.6	2.6	5.4	1.8	6.5	93	1.2	e.35	.35
7	2.6	.21	2.6	1.8	3.6	5.9	1.8	e7.1	72	.65	.70	.35
8	2.3	.35	3.2	e1.6	2.9	6.5	1.8	6.3	128	.65	1.9	.41
9	e2.0	.30	7.1	1.4	3.6	5.9	e1.8	.41	73	e.76	.65	.56
10	e2.0	.25	11	2.6	4.9	5.4	.80	.30	65	.65	.41	e.41
11	1.8	e.25	e14	3.6	4.9	4.9	1.8	.30	959	.48	.35	.35
12	1.4	6.6	12	2.6	e5.4	e4.4	1.8	.25	304	.25	.30	3.2
13	1.2	e1.6	10	2.6	20	4.4	3.6	3.0	550	.21	e.35	592
14	.89	4.9	7.8	2.3	10	4.4	5.9	e.80	997	.21	.41	301
15	.89	3.2	6.5	e2.0	9.2	4.0	3.6	5.4	538	.25	.48	201
16	e.89	2.6	4.9	e1.8	11	4.0	e2.9	856	265	e.25	.41	78
17	.76	2.0	4.0	1.8	16	3.6	2.9	336	153	.41	17	e31
18	.48	1.6	e2.9	2.9	59	3.2	2.6	454	e109	.56	14	18
19	.41	1.4	2.0	3.6	e55	e3.6	2.0	295	75	.48	.76	7.8
20	.30	e1.8	2.3	3.2	e10	4.4	2.0	187	36	.35	e.76	3.2
21	.35	2.3	3.2	3.2	7.8	4.4	2.9	e106	42	.41	.65	2.0
22	.41	1.8	2.9	e3.2	8.5	4.9	3.2	76	17	.56	.48	.65
23	e.35	1.8	2.3	2.9	8.5	5.4	e3.2	42	26	e.56	7.9	.25
24	.30	e1.8	2.9	3.6	7.8	4.9	4.4	27	12	.56	5.6	e.21
25	.25	1.8	e2.9	4.4	7.8	4.0	12	16	e11	.56	.65	.25
26	.30	1.8	e3.2	4.0	e7.1	e4.4	3.6	48	13	.56	.56	.25
27	.25	e1.6	3.6	4.4	5.9	4.4	2.6	7.1	8.1	.56	e.48	.18
28	.25	1.4	3.2	8.5	7.1	4.4	1.6	e4.9	9.2	.48	.48	.15
29	.30	1.0	2.3	e11	---	4.0	1.0	e3.2	13	.35	.56	.10
30	e.30	.89	2.9	7.8	---	4.0	e.65	31	3.2	e.35	.48	.12
31	.35	---	3.2	7.1	---	3.6	---	25	---	.35	.48	---
TOTAL	42.43	44.79	131.3	111.4	318.4	152.4	84.15	2564.25	4856.55	93.56	125.80	1243.61
MEAN	1.37	1.49	4.24	3.59	11.4	4.92	2.80	82.7	162	3.02	4.06	41.5
MAX	4.4	6.6	14	11	59	7.8	12	856	997	36	65	592
MIN	.25	.12	1.2	1.4	2.3	3.2	.65	.25	.65	.21	.30	.10
AC-FT	84	89	260	221	632	302	167	5090	9630	186	250	2470

CAL YR 1988 TOTAL 4740.79 MEAN 13.0 MAX 363 MIN .04 AC-FT 9400  
WTR YR 1989 TOTAL 9768.64 MEAN 26.8 MAX 997 MIN .10 AC-FT 19380

e Estimated.

## BRAZOS RIVER BASIN

08082000 SALT FORK BRAZOS RIVER NEAR ASPERMONT, TX--Continued  
(National stream-quality accounting network)

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1941 to October 1951, October 1956 to September 1974. Chemical and biochemical analyses: October 1974 to current year. Pesticide analyses: March to June 1979. Sediment analyses: June 1961 to September 1965, October 1974 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1948 to October 1951, October 1956 to September 1982.

WATER TEMPERATURE: October 1948 to October 1951, October 1956 to September 1982.

INSTRUMENTATION.--Specific conductance was recorded continuously from January 1969 to September 1982.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 173,000 microsiemens Apr. 12, 1974; minimum daily, 1,690 microsiemens July 8, 1960.

WATER TEMPERATURE: Maximum daily, 38.0°C Aug. 2, 1973; minimum daily, 0.0°C on many days during winter months.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

		DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CaCO3)	
NOV 16...	1045	2.3	62000	7.90	11.0	5.8	8.7	108	1.4	50	64	3500	
JAN 11...	1030	4.0	68000	8.00	5.0	2.5	10.2	115	1.2	K2	K7	3900	
JUN 21...	1100	18	14000	8.20	24.0	110	9.2	122	1.9	84	K180	1800	
AUG 09...	1120	1.6	78300	7.80	23.5	4.6	7.9	135	2.0	K3	K11	4700	
DATE		CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
NOV 16...	930	290	15000	110	43	118	3000	26000	0.30	6.1	45700	45400	
JAN 11...	950	360	17000	120	61	132	3100	26000	0.30	6.1	51800	47600	
JUN 21...	520	110	2800	29	15	106	1500	4500	0.70	13	9690	9530	
AUG 09...	1300	350	19000	120	60	115	3700	31000	0.50	10	60700	55500	
DATE		NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOROUS DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	SEDI-MENT, SUS-PENDED (MG/L)	
NOV 16...	--	<0.010	0.240	0.540	0.440	0.26	0.80	<0.010	<0.010	<0.010	--	18	
JAN 11...	0.450	0.020	0.470	0.620	0.590	0.38	1.0	<0.010	<0.010	<0.010	--	80	
JUN 21...	--	<0.010	<0.100	0.120	0.120	0.38	0.50	0.020	<0.010	<0.010	--	106	
AUG 09...	--	0.010	<0.100	0.560	0.590	3.4	4.0	0.040	0.200	0.080	0.25	18	
DATE		SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SIEVE, % FINER THAN .062 MM	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	
NOV 16...	0.11	89	20	3	400	<10	2	1	<1	1	330		
JAN 11...	0.86	99	20	2	200	10	<1	2	<1	<1	410		
JUN 21...	5.2	97	<10	4	200	<10	1	2	<1	2	60		
AUG 09...	0.08	56	<10	5	100	20	<10	<10	20	20	590		
DATE		LEAD, DIS-SOLVED (UG/L AS Pb)	LITHIUM DIS-SOLVED (UG/L AS Li)	MANGA-NESE, DIS-SOLVED (UG/L AS Mn)	MERCURY DIS-SOLVED (UG/L AS Hg)	MOLYB-DENUM, DIS-SOLVED (UG/L AS Mo)	NICKEL, DIS-SOLVED (UG/L AS Ni)	SELE-NIUM, DIS-SOLVED (UG/L AS Se)	SILVER, DIS-SOLVED (UG/L AS Ag)	STRON-TIUM, DIS-SOLVED (UG/L AS Sr)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS Zn)	
NOV 16...	<5	140	290	<0.1	5	2	7	<1.0	16000	420	30		
JAN 11...	<5	150	180	2.9	3	1	8	<1.0	18000	350	40		
JUN 21...	<1	80	30	<0.1	5	1	2	<1.0	6100	<50	<10		
AUG 09...	<10	140	620	0.9	5	--	<1	<10	23000	280	40		

## BRAZOS RIVER MAIN STEM

19/

.08082500 BRAZOS RIVER AT SEYMOUR, TX

LOCATION.--Lat 33°34'51", long 99°16'02", Baylor County, Hydrologic Unit 12060101, on left bank at downstream side of bridge on U.S. Highways 277 and 283, 0.8 mi upstream from Wichita Valley Railway bridge, 1.0 mi southwest of court-house in Seymour, and at mile 847.4.

DRAINAGE AREA.--15,538 mi<sup>2</sup>, approximately, of which 9,566 mi<sup>2</sup> probably is noncontributing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1923 to current year.

REVISED RECORDS.--WSP 808: 1924-29. WSP 1312: 1933. WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,238.97 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 6, 1972, at datum 2.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. There are small diversions upstream from station for irrigation and oil field operation. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08080950. Gage-height telemeter at station via Handar data collection platform.

AVERAGE DISCHARGE.--65 years (water years 1925-89), 372 ft<sup>3</sup>/s (269,500 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 95,400 ft<sup>3</sup>/s Oct. 16, 1926 (gage height, 17.16 ft, from floodmark, present datum), from rating curve extended above 48,000 ft<sup>3</sup>/s on basis of slope-area measurement of 95,400 ft<sup>3</sup>/s; maximum gage height, 23.00 ft, present datum, Sept. 28, 1955 (discharge, 71,200 ft<sup>3</sup>/s); no flow at times. Since 1906, the maximum stage was that of Sept. 28, 1955, and maximum discharge was that of Oct. 16, 1926.

EXTREMES OUTSIDE PERIOD OF RECORD.--A flood in 1906 reached about the same stage as the flood in 1955.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 11,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 16	0900	*15,600	*12.47	Sept. 11	1200	13,300	10.87
May 17	0730	11,400	10.77	Sept. 13	1000	11,400	10.15

Minimum discharge, 0.09 ft<sup>3</sup>/s Sept. 6-8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	124	23	14	21	34	67	43	65	56	69	3.4	.85
2	107	24	14	22	28	65	32	57	78	62	21	.57
3	94	23	14	22	e20	64	27	57	747	56	13	.37
4	84	19	14	21	e17	49	23	78	1820	50	37	.26
5	75	17	13	22	e17	e37	22	110	2260	45	14	.16
6	69	16	14	20	e18	e35	21	206	1640	40	48	.12
7	62	15	13	19	e19	e36	20	180	1630	37	248	.09
8	57	15	15	18	e20	45	18	95	1160	35	269	.10
9	53	15	17	18	e22	47	16	67	831	31	77	4.4
10	50	13	32	17	e25	44	15	57	498	29	43	.65
11	47	18	42	17	30	39	15	51	444	25	25	4650
12	44	78	33	15	27	37	16	50	1170	21	16	1310
13	41	133	34	16	28	35	20	59	2320	21	14	6000
14	38	134	37	22	110	34	24	54	1620	88	12	2550
15	36	77	33	18	149	29	24	173	2120	29	10	1870
16	34	49	32	18	105	29	24	8950	1260	22	7.9	1590
17	31	36	31	17	177	29	21	5890	826	16	6.1	807
18	27	31	31	16	493	26	20	1970	632	14	4.7	455
19	26	28	30	17	487	26	18	1180	447	12	3.9	311
20	26	26	27	17	348	25	17	906	351	9.9	48	243
21	25	23	26	16	291	25	18	451	301	8.6	124	222
22	25	21	26	16	208	28	17	317	230	8.7	88	178
23	21	19	23	17	161	27	16	226	190	52	38	144
24	21	18	21	16	122	28	27	173	162	27	25	122
25	21	17	20	17	108	27	22	132	138	24	26	108
26	19	16	23	16	93	26	19	102	118	32	11	100
27	20	15	28	24	76	32	26	94	102	17	6.1	92
28	16	15	21	46	70	58	24	85	93	15	3.8	85
29	17	14	20	32	---	47	20	69	86	14	2.8	76
30	17	14	20	33	---	34	74	62	78	7.7	2.1	71
31	21	---	20	38	---	46	---	61	---	4.9	1.4	---
TOTAL	1348	962	738	644	3303	1176	699	22027	23408	922.8	1249.2	20991.57
MEAN	43.5	32.1	23.8	20.8	118	37.9	23.3	711	780	29.8	40.3	700
MAX	124	134	42	46	493	67	74	8950	2320	88	269	6000
MIN	16	13	13	15	17	25	15	50	56	4.9	1.4	.09
AC-FT	2670	1910	1460	1280	6550	2330	1390	43690	46430	1830	2480	41640
CAL YR 1988	TOTAL	37948.67	MEAN	104	MAX	4920	MIN	.00	AC-FT	75270		
WTR YR 1989	TOTAL	77468.57	MEAN	212	MAX	8950	MIN	.09	AC-FT	153700		

e Estimated.

## BRAZOS RIVER MAIN STEM

08082500 BRAZOS RIVER AT SEYMOUR, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: August 1942 to current year. Chemical and biochemical analyses: October 1974 to September 1977. Sediment analyses: October 1974 to September 1977. Pesticide analyses: April 1975 to August 1977.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: August 1959 to current year.

WATER TEMPERATURES: August 1959 to current year.

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

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 80,400 microsiemens May 24, 1971; minimum daily, 47 microsiemens May 16, 1989.

WATER TEMPERATURES (1959-84): Maximum daily, 38.0°C Aug. 1, 1983; minimum daily, 0.0°C on many days during winter months.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 23,000 microsiemens Dec. 19, 20; minimum daily, 417 microsiemens May 16.

WATER TEMPERATURE: Maximum daily, 36.0°C July 31, Aug. 16; minimum daily, 0.0°C Feb. 5.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CAC03)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CAC03	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT 03...	1120	93	7940	8.60	17.0	930	820	260	67
NOV 14...	1125	148	2540	7.80	15.5	580	520	170	38
DEC 27...	1150	25	15700	8.00	10.5	1800	1600	470	150
MAR 06...	1015	32	13700	8.30	0.5	1600	1400	410	130
MAY 16...	1615	6670	471	8.10	21.0	100	25	31	6.5
JUL 31...	1015	6.1	10100	8.00	26.5	1400	1300	380	110
DATE		SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
OCT 03...	1400	21	9.6	111	930	2000	0.90	10	4740
NOV 14...	390	7	5.5	66	490	570	0.40	7.0	1710
DEC 27...	3000	32	12	144	1700	4700	0.60	2.7	10100
MAR 06...	2600	30	11	167	1500	4000	0.80	4.5	8760
MAY 16...	48	2	5.7	79	39	63	0.30	6.4	247
JUL 31...	1600	19	13	115	1500	2500	0.80	7.0	6180



## BRAZOS RIVER MAIN STEM

199

08082500 BRAZOS RIVER AT SEYMOUR, TX--Continued

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1988 TO SEPTEMBER 1989

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. 1988	1348	9660	6140	22400	2700	9790	1200	4320	1400
NOV. 1988	962	7560	4780	12400	2100	5410	940	2440	1100
DEC. 1988	738	14800	9700	19300	4400	8810	1600	3280	*
JAN. 1989	644	14900	9710	16900	4400	7650	1700	2930	*
FEB. 1989	3303	7680	4910	43800	2200	19300	930	8250	1100
MAR. 1989	1176	14300	9290	29500	4200	13300	1600	5160	*
APR. 1989	699	16500	10800	20500	5000	9370	1800	3420	*
MAY 1989	22027	1880	1170	69500	490	29400	250	14800	290
JUNE 1989	23408	3660	2260	143000	950	60300	490	30800	570
JULY 1989	922.8	9400	5970	14900	2600	6500	1200	2890	1400
AUG. 1989	1249.2	3370	2100	7080	890	3010	440	1490	520
SEPT 1989	20991.57	1960	1210	68800	510	29000	260	14800	310
TOTAL	77468.57	**	**	468000	**	202000	**	94600	**
WTD.AVG.	212	3560	2240	**	970	**	450	**	530

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9900	9380	12700	e15100	12300	e13000	17800	e13000	8800	e8800	e9200	e6300
2	8410	10100	12800	14900	e13000	12700	e15600	12700	e8500	e8800	9250	6510
3	8030	10100	12600	15000	13700	12500	13200	e12800	1170	8880	e9260	6950
4	8200	10300	e12500	15000	12500	e13000	14400	9660	6490	e9500	9270	6630
5	8890	10300	12400	e14900	e16000	13300	14400	3190	e4000	9930	6130	e6800
6	8890	e10000	12200	14800	20600	13300	14400	8740	4630	9890	5250	7030
7	9590	9800	12100	15000	18800	13700	e15000	e6000	2090	10200	e1400	e7040
8	9600	9800	11600	15000	19800	14100	15500	3740	4250	10200	1380	7050
9	e9680	9970	11500	15100	21500	14600	15900	6600	2140	e10200	1960	7020
10	9760	e9970	e10900	15100	e20700	e15500	16100	6780	2590	10300	2080	6830
11	9940	5640	e9800	e15300	20000	16400	16300	e8000	e3000	10400	2790	490
12	10200	5700	9840	15500	19900	e16000	16000	9380	e2900	10400	4100	960
13	10400	4650	10800	15700	17900	15000	e15800	10200	4050	e10400	4100	650
14	10400	4940	11600	15200	e14300	15000	e15600	e10400	3140	9950	4380	660
15	10400	e5230	e12200	e15300	e10700	15300	15400	10500	2060	9940	5020	e4900
16	e10600	5530	13600	15400	6950	15200	15400	417	e3050	9690	5520	5960
17	10800	5520	14800	15400	e3000	e15400	e15700	702	4040	9940	e5800	e6100
18	e10800	6230	16400	15400	2880	15600	16100	2640	3210	9420	6220	2840
19	10800	8180	23000	15300	2850	e15400	16100	3690	2940	9420	e6500	3020
20	10700	e8220	23000	15400	5870	15300	16100	e3900	3190	10100	9140	3710
21	10500	8260	e21700	e15400	4910	15300	16200	e4500	3770	10100	5930	e3720
22	10500	e9470	e20400	e15400	7630	e15200	e16900	5100	4810	10100	2510	3730
23	e10700	10700	19000	15400	e10600	15200	e17500	4270	4810	e8700	2510	3730
24	10800	13500	19200	15400	13500	15500	18300	4280	5220	e9000	3210	4200
25	10800	15400	e18000	15000	12600	15900	e19100	5380	e5900	9150	3960	4520
26	e10800	14300	e16800	e15100	e12700	15900	19900	5380	6670	8810	4030	4940
27	10900	15000	15700	15200	12700	16200	17600	e5800	7710	4780	e4500	5240
28	10900	14000	15900	12700	13000	14500	17900	e6400	7700	7270	5080	5440
29	10800	13700	15800	e13600	---	7430	18300	7070	e8200	7260	5540	5600
30	e10300	13400	15200	14500	---	15400	18200	7600	8790	e8660	5670	5970
31	10000	---	15200	15300	---	15400	---	8200	---	10100	5900	---
MEAN	10100	9580	14800	15100	12900	14600	16400	6680	4660	9360	5080	4820

e Estimated

## BRAZOS RIVER MAIN STEM

08082500 BRAZOS RIVER AT SEYMOUR, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
INSTANTANEOUS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.0	25.0	15.0	e14.0	15.0	e11.0	22.0	e22.0	26.0	e32.0	e33.0	e24.0
2	24.0	23.0	12.0	12.0	e4.0	12.0	e23.0	24.0	e25.0	e32.0	32.0	25.0
3	23.0	25.0	16.0	16.0	2.0	17.0	25.0	e26.0	24.0	32.0	e31.0	30.0
4	20.0	18.0	e16.0	13.0	2.0	e4.0	22.0	27.0	24.0	e32.0	31.0	24.0
5	20.0	16.0	15.0	e16.0	e.0	4.0	20.0	27.0	e25.0	32.0	35.0	e27.0
6	20.5	e20.0	15.0	18.0	1.0	7.0	24.0	23.0	26.0	32.0	25.0	30.0
7	20.0	25.0	14.5	9.0	e3.0	13.0	e20.0	e27.0	22.0	26.0	e23.0	e30.0
8	20.0	25.0	8.0	7.5	8.0	16.0	15.0	32.0	24.0	26.0	22.0	30.0
9	e22.0	26.0	11.0	12.0	9.0	19.0	22.0	28.0	24.0	e28.0	30.0	30.0
10	25.0	e20.0	e11.0	15.0	e10.0	e17.0	19.0	24.0	22.5	32.0	24.0	22.0
11	25.0	16.0	e12.0	e13.0	10.0	14.0	19.0	e22.0	e23.0	34.0	28.0	20.0
12	19.0	18.0	13.0	11.0	10.0	e18.0	13.0	20.0	e23.0	32.0	22.0	22.0
13	19.0	19.0	15.0	8.0	10.0	22.0	e15.0	22.0	22.5	e32.0	22.0	19.0
14	25.0	21.0	17.0	12.0	e9.0	25.0	e16.0	e24.0	25.0	32.0	28.0	17.0
15	19.0	e17.0	e13.0	e11.0	e8.0	18.0	20.0	26.0	23.0	32.0	31.0	e18.0
16	e26.0	12.0	10.0	10.0	5.0	22.0	20.0	19.0	e23.0	26.0	36.0	19.0
17	30.0	13.0	12.0	16.0	e4.0	e20.0	e24.0	20.0	22.0	33.0	e34.0	e22.0
18	e27.0	20.0	14.0	17.0	4.0	18.0	28.0	24.0	29.0	25.0	32.0	25.0
19	24.0	11.0	14.0	16.0	6.0	e16.0	21.0	25.0	27.0	25.0	e33.0	19.5
20	21.0	e13.0	13.0	15.0	6.0	14.0	21.0	e24.0	31.0	25.0	33.0	25.0
21	19.0	15.0	e12.0	e15.0	7.0	11.0	25.0	e23.0	30.0	25.0	30.0	e24.0
22	19.0	e16.0	e11.0	e16.0	11.0	e9.0	e25.0	22.0	30.0	25.0	31.0	22.5
23	e22.0	18.0	10.0	16.0	e11.0	7.0	e25.0	25.0	30.0	e28.0	26.0	14.0
24	25.0	13.0	9.0	16.0	12.0	25.0	e25.0	25.0	24.0	e28.0	27.0	18.0
25	29.0	13.0	e10.0	15.0	8.0	25.0	e26.0	23.0	e28.0	32.0	32.0	32.5
26	e27.0	15.0	e11.0	e15.0	e10.0	23.0	27.0	22.0	32.0	29.0	23.0	23.0
27	25.0	16.0	13.0	14.0	12.0	24.0	27.0	e22.0	32.0	35.0	e24.0	24.5
28	15.0	15.0	13.0	e15.0	10.0	24.0	31.0	e22.0	26.0	26.0	25.0	e26.0
29	15.0	15.0	11.0	e15.0	---	28.0	21.0	22.0	29.0	25.0	32.0	27.0
30	e17.0	15.0	14.0	e15.0	---	24.0	22.0	21.0	34.0	e30.0	35.0	19.0
31	20.0	---	15.0	15.0	---	22.0	---	26.0	---	36.0	23.0	---
MEAN	22.0	18.0	13.0	14.0	7.5	17.0	22.0	24.0	26.0	29.5	29.0	23.5

e Estimated

## BRAZOS RIVER BASIN

201

08082700 MILLERS CREEK NEAR MUNDAY, TX

LOCATION.--Lat 33°19'45", long 99°27'53", Throckmorton County, Hydrologic Unit 12060101, near right bank at downstream side of bridge on Farm Road 1720, 12.7 mi southeast of Munday, and 24.6 mi upstream from mouth.

DRAINAGE AREA.--104 mi<sup>2</sup>.

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

Water-quality records.--Sediment records: October 1976 to September 1978.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,350 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--26 years (water years 1964-89), 7.22 ft<sup>3</sup>/s (0.94 in/yr), 5,230 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,600 ft<sup>3</sup>/s Aug. 4, 1978 (gage height, 17.53 ft); no flow most of time.  
Maximum stage since 1930, 18.0 ft in October 1962, from information by local resident.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1883 occurred June 13, 1930, and exceeded 18.0 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Sept. 13	0650	*47	*2.34				

Minimum discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.22	.01	.00	.00	.00	.24	.14	.00	.00	.00	.00	.00
2	.21	.01	.00	.00	.00	.24	.11	.00	.00	.00	.00	.00
3	.20	.01	.00	.00	.00	.23	.07	.00	.19	.00	.00	.00
4	.17	.00	.00	.00	.00	.17	.04	.00	.18	.00	.00	.00
5	.14	.00	.00	.00	.00	e.08	.02	.00	.02	.00	.00	.00
6	.13	.00	.00	.00	.00	e.02	.01	.00	.37	.00	.00	.00
7	.13	.00	.00	.00	.00	e.01	.00	.00	.76	.00	.00	.00
8	.13	.00	.00	.00	.00	e.03	.00	.00	.02	.00	.00	.00
9	.10	.00	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00
10	.08	.00	.00	.00	.00	.15	.00	.00	1.6	.00	.00	.00
11	.08	.00	.00	.00	.00	.13	.00	.00	.31	.00	.00	1.0
12	.08	.00	.00	.00	.00	.10	.00	.00	.02	.00	.00	.10
13	.08	.00	.00	.00	.00	.10	.00	.00	2.5	.00	.00	25
14	.07	.00	.00	.00	.17	.10	.00	.00	3.2	.00	.00	9.7
15	.07	.00	.00	.00	.28	.07	.00	.00	4.8	.00	.00	2.1
16	.07	.00	.00	.00	.57	.05	.00	.00	2.0	.00	.00	.26
17	.07	.00	.00	.00	26	.04	.00	.00	.64	.00	.00	.04
18	.05	.00	.00	.00	24	.02	.00	.00	.17	.00	.00	.01
19	.05	.00	.00	.00	20	.02	.00	.00	.04	.00	.00	.00
20	.05	.00	.00	.00	5.6	.01	.00	.00	.01	14	.00	.00
21	.05	.00	.00	.00	2.3	.01	.00	.00	.00	2.6	.00	.00
22	.04	.00	.00	.00	1.1	.02	.00	.00	.00	.40	.00	.00
23	.04	.00	.00	.00	.63	.02	.00	.00	.00	.08	.00	.00
24	.04	.00	.00	.00	.44	.01	.00	.00	.00	.05	.00	.00
25	.04	.00	.00	.00	.36	.00	.00	.00	.00	.03	.00	.00
26	.04	.00	.00	.00	.31	.00	.00	.00	.00	.00	.00	.00
27	.03	.00	.00	.00	.29	.02	.00	.00	.00	.00	.00	.00
28	.02	.00	.00	.00	.25	.25	.00	.00	.00	.00	.00	.00
29	.02	.00	.00	.00	---	.20	.00	.00	.00	.00	.00	.00
30	.01	.00	.00	.00	---	.20	.00	.00	.00	.00	.00	.00
31	.01	---	.00	.00	---	.18	---	.00	---	.00	.00	---
TOTAL	2.52	0.03	0.00	0.00	82.30	2.82	0.39	0.00	16.83	17.16	0.00	38.21
MEAN	.081	.001	.00	.00	2.94	.091	.013	.00	.56	.55	.00	1.27
MAX	.22	.01	.00	.00	26	.25	.14	.00	4.8	14	.00	25
MIN	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	5.0	.06	.0	.0	163	5.6	.8	.0	33	34	.0	76
CFSM	.00	.00	.00	.00	.03	.00	.00	.00	.01	.01	.00	.01
IN.	.00	.00	.00	.00	.03	.00	.00	.00	.01	.01	.00	.01

CAL YR 1988	TOTAL	2232.59	MEAN	6.10	MAX	1380	MIN	.00	AC-FT	4430	CFSM	.06	IN.	.80
WTR YR 1989	TOTAL	160.26	MEAN	.44	MAX	26	MIN	.00	AC-FT	318	CFSM	.00	IN.	.06

e Estimated.

## BRAZOS RIVER BASIN

## 08082800 MILLERS CREEK RESERVOIR NEAR BOMARTON, TX

LOCATION.--Lat 33°24'32", long 99°23'19", Baylor County, Hydrologic Unit 12060101, at intake tower on left bank of Millers Creek, 1.1 mi upstream from dam, 7.1 mi southeast of Bomarton, and 13.2 mi upstream from mouth.

DRAINAGE AREA.--240 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1974 to current year.

Water-quality records.--Chemical analyses: October 1975 to September 1984.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Freese and Nichols, Inc., Consulting Engineers bench mark).

REMARKS.--The reservoir is formed by an earthfill dam 9,250 ft long. The dam was completed in 1974 and storage began in July 1974. Dead storage, 1,240 acre-ft below elevation, 1,303.4 ft. The reservoir is used for municipal and industrial water supply. The uncontrolled spillway is an open cut 3,000 ft wide located on left bank about 800 ft upstream from levee. The service spillway is an uncontrolled morning-glory-type drop inlet, 16.5 ft square, that discharges through a 5.0-foot-square concrete conduit. Low-flow releases are made by valves in the outlet vault of the drop inlet. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam.....	1,355.0	-
Crest of spillway.....	1,340.1	49,080
Crest of spillway.....	1,334.4	32,230
Lowest gated outlet (invert).....	1,305.0	1,660
Dead storage.....	1,303.4	1,240

COOPERATION.--The area-capacity tables, prepared from data of Sept. 17, 1965, were provided by Freese and Nichols, Inc., Consulting Engineers. Record of diversions provided by North Central Texas Municipal Water Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 53,850 acre-ft June 26, 1982 (elevation, 1,341.42 ft); minimum contents were below dead storage elevation prior to Apr. 20, 1977, and July 17 to Aug. 3, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 28,670 acre-ft Oct. 1 at 1500 hours (elevation, 1,332.88 ft); minimum, 21,120 acre-feet Sept. 10, 11 (elevation, 1,328.93 ft).

Capacity table (elevation, in feet, and total contents, in acre-feet)

1,328.0	19,630	1,330.0	22,950	1,332.0	26,800
1,329.0	21,230	1,331.0	24,800	1,333.0	28,930

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28590	27520	26780	26560	26140	27060	26580	25240	24540	24360	22830	21560
2	28530	27500	26780	26560	26040	27080	26520	25220	24520	24260	22850	21510
3	28500	27460	26720	26540	26020	26950	26440	25180	24610	24260	22810	21470
4	28420	27440	26660	26560	26000	26820	26360	25240	24670	24210	22740	21400
5	28420	27310	26720	26560	25940	26890	26340	25260	24650	24130	22690	21370
6	28380	27330	26700	26540	25960	26930	26360	25220	24670	24080	22620	21320
7	28310	27270	26600	26440	25940	26890	26260	25180	24710	24020	22610	21260
8	28310	27270	26540	26400	25940	26910	26060	25200	24650	23970	22520	21250
9	28250	27250	26580	26400	25980	26910	25940	25060	24610	23890	22500	21150
10	28250	27180	26640	26420	26000	26910	25940	25040	24730	23840	22430	21120
11	28160	27180	26720	26320	25940	26930	25940	25000	24800	23800	22420	21450
12	28140	27310	26820	26280	25940	26890	25900	24980	24840	23760	22370	e21450
13	28120	27310	26840	26260	25940	26890	25880	24940	25040	23690	22330	e22720
14	28100	27270	26760	26320	26200	26760	25900	24940	25020	23710	22310	e22830
15	28060	27180	26700	26280	26240	26760	25920	24980	24980	23690	22310	e22930
16	28080	27140	26660	26280	26280	26840	25900	25160	24960	23650	22240	e22970
17	27990	27140	26700	26300	26640	26780	25860	25160	24960	23580	22260	e22900
18	27890	27120	26720	26280	26930	26700	25840	25140	24920	23490	22300	22850
19	27890	27030	26680	26280	27030	26740	25800	25140	24880	23430	22260	22800
20	27820	27010	26660	26240	27060	26560	25780	25080	24840	23360	22210	22780
21	27780	27010	26700	26220	27060	26600	25780	25040	24800	23300	22090	22780
22	27860	27010	26640	26260	27060	26600	25700	25020	24710	23230	22040	22690
23	27760	26990	26660	26220	27060	26600	25660	25000	24690	23210	21970	22590
24	27740	27010	26600	26240	27060	26620	25600	24980	24650	23210	21940	22500
25	27690	26950	26600	26160	27100	26560	25580	24860	24610	23150	21880	22520
26	27650	26860	26640	26160	27080	26560	25560	24740	24600	23120	21850	22500
27	27570	26860	26560	26180	27010	26680	25500	24780	24540	23100	21780	22420
28	27520	26840	26540	26320	27010	26680	25440	24780	24520	23060	21750	22470
29	27550	26800	26560	26260	---	26660	25320	24690	24410	23010	21710	22380
30	27480	26800	26600	26280	---	26560	25300	24630	24390	22950	21680	22430
31	27480	---	26560	26360	---	26540	---	24600	---	22900	21630	---
MAX	28590	27520	26840	26560	27100	27080	26580	25260	25040	24360	22850	22970
MIN	27480	26800	26540	26160	25940	26540	25300	24600	24390	22900	21630	21120
(+)	1332.32	1332.00	1331.88	1331.78	1332.10	1331.87	1331.25	1330.89	1330.78	1329.97	1329.23	1329.70
(Φ)	-1150	-680	-240	-200	+650	-470	-1240	-700	-210	-1490	-1270	+800
(+)	92.9	87.2	80.5	95.0	80.8	88.6	108	112	104	163	134	116

CAL YR 1988 MAX 29050 MIN 21300 (Φ) -710 (+) 1355  
WTR YR 1989 MAX 28590 MIN 21120 (Φ) -6200 (+) 1262

(+) Elevation, in feet, at end of month.

(Φ) Change in contents, in acre-feet.

(+) Diversions, in acre-feet, for municipal use by North Central Texas Municipal Water Authority.

e Estimated.

## BRAZOS RIVER BASIN

203

08083100 CLEAR FORK BRAZOS RIVER NEAR ROBY, TX

LOCATION.--Lat 32°47'15", long 100°23'18", Fisher County, Hydrologic Unit 12060102, on right bank at downstream side of pile bent of bridge on State Highway 70, 3.0 mi north of Roby, 3.2 mi upstream from Cottonwood Creek, and 255.7 mi upstream from mouth.

DRAINAGE AREA.--228 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1961 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,885.09 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. There are several small diversions above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--27 years (water years 1963-89), 10.4 ft<sup>3</sup>/s (0.62 in/yr), 7,530 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,050 ft<sup>3</sup>/s Oct. 18, 1965 (gage height, 21.48 ft); maximum gage height, 21.52 ft Sept. 19, 1969; no flow at times in 1963-67.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since the 1890's, about 22 ft in May and June 1935, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Sept. 13	1300	*72	*5.59				
Minimum daily discharge, 0.09 ft <sup>3</sup> /s Sept. 2-8.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	1.1	1.2	1.2	1.6	2.2	2.4	2.4	1.4	.80	.30	.20	.11		
2	1.1	1.1	1.2	1.7	2.0	2.4	2.3	1.4	.79	.30	.18	.09		
3	1.1	1.1	1.2	1.7	2.0	2.4	2.1	1.3	.87	.30	.20	.09		
4	1.1	1.1	1.2	1.7	1.9	2.3	2.1	1.3	1.2	.30	.23	.09		
5	1.1	1.1	1.2	1.7	1.9	2.4	2.1	1.3	9.1	.29	.24	.09		
6	1.1	1.1	1.2	1.7	1.9	2.4	2.1	1.3	2.1	.27	.24	.09		
7	1.1	1.0	1.2	1.7	1.8	2.4	2.0	1.2	2.5	.24	.24	.09		
8	1.1	1.0	1.3	1.7	1.8	2.4	1.9	1.2	1.5	.24	.22	.09		
9	1.1	1.0	1.3	1.7	1.8	2.5	1.8	1.2	1.2	.26	.21	.11		
10	1.2	1.0	1.4	1.7	1.9	2.4	1.8	1.1	1.0	.27	.19	.12		
11	1.1	1.1	1.4	1.7	1.9	2.4	1.8	1.1	19	.29	.20	.24		
12	1.1	1.1	1.4	1.7	1.9	2.4	1.8	1.1	12	.28	.21	5.5		
13	1.1	1.0	1.3	1.7	2.0	2.3	1.8	1.1	1.6	.29	.20	39		
14	1.1	1.1	1.3	1.7	2.4	2.4	1.9	1.1	1.1	.29	.20	12		
15	1.2	1.1	1.3	1.7	34	2.3	2.0	1.1	.93	.29	.20	2.3		
16	1.2	1.0	1.3	1.7	14	2.4	1.9	1.1	.76	.29	.19	1.0		
17	1.1	1.0	1.3	1.8	7.4	2.5	1.9	1.4	.65	.28	.19	.77		
18	1.1	1.1	1.3	1.8	21	2.5	1.9	1.5	.60	.30	.18	.60		
19	1.1	1.1	1.3	1.9	9.0	2.6	1.8	2.3	.58	.31	.18	.50		
20	1.1	1.1	1.3	1.9	3.5	2.6	1.8	1.4	.54	.29	.17	.42		
21	1.1	1.1	1.3	1.9	2.9	2.5	1.7	1.1	.50	.29	.16	.39		
22	1.1	1.2	1.3	1.9	2.6	2.6	1.7	1.0	.46	.29	.15	.35		
23	1.0	1.2	1.3	1.9	2.4	2.7	1.7	.98	.44	.28	.13	.31		
24	1.0	1.2	1.0	1.9	2.4	2.7	1.7	.94	.43	.30	.13	.29		
25	1.0	1.2	1.1	2.0	2.3	2.8	1.6	.88	.43	.30	.13	.31		
26	1.0	1.2	1.4	1.9	2.4	2.8	1.6	.83	.39	.26	.13	.31		
27	1.1	1.2	2.0	2.0	2.3	2.8	1.6	.82	.35	.28	.13	.31		
28	1.1	1.2	1.6	2.2	2.3	2.8	1.6	.81	.32	.27	.12	.32		
29	1.1	1.2	1.6	2.2	---	2.6	1.5	.79	.30	.24	.12	.31		
30	1.1	1.2	1.6	2.2	---	2.6	1.5	.79	.30	.22	.12	.31		
31	1.2	---	1.6	2.2	---	2.4	---	.79	---	.21	.12	---		
TOTAL	34.1	33.3	41.4	56.8	135.9	77.7	55.4	35.63	62.74	8.62	5.51	66.51		
MEAN	1.10	1.11	1.34	1.83	4.85	2.51	1.85	1.15	2.09	.28	.18	2.22		
MAX	1.2	1.2	2.0	2.2	34	2.8	2.4	2.3	19	.31	.24	.39		
MIN	1.0	1.0	1.0	1.6	1.8	2.3	1.5	.79	.30	.21	.12	.09		
AC-FT	68	66	82	113	270	154	110	71	124	17	11	132		
CFSM	.00	.00	.01	.01	.02	.01	.01	.01	.01	.00	.00	.01		
IN.	.01	.01	.01	.01	.02	.01	.01	.01	.01	.00	.00	.01		
CAL YR 1988	TOTAL	1644.28	MEAN	4.49	MAX	320	MIN	.70	AC-FT	3260	CFSM	.02	IN.	.27
WTR YR 1989	TOTAL	613.61	MEAN	1.68	MAX	39	MIN	.09	AC-FT	1220	CFSM	.01	IN.	.10



## BRAZOS RIVER BASIN

08083240 CLEAR FORK BRAZOS RIVER AT HAWLEY, TX

LOCATION.--Lat 32°35'53", long 99°48'53", Jones County, Hydrologic Unit 12060102, on right bank 90 ft upstream from upstream bridge on U.S. Highways 83 and 277, 0.8 mi south of Hawley, 7.4 mi upstream from Mulberry Creek, and 188.6 mi upstream from mouth.

DRAINAGE AREA.--1,416 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1967 to September 1989 (discontinued).

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,612.45 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 21, 1973, at datum 0.80 ft higher.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Lake Sweetwater (capacity, 11,900 acre-ft) is located on a tributary upstream from gage.

AVERAGE DISCHARGE.--22 years, 57.0 ft<sup>3</sup>/s (41,300 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,540 ft<sup>3</sup>/s Sept. 30, 1980 (gage height, 21.07 ft, present datum); no flow July 30, 31, 1978, and Aug. 26, 29-31, Sept. 2, 3, 5-8, 1989.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1915, occurred in 1932; second highest stage in 1957, 25.0 ft, present datum, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
June 7	1030	*1,210	*12.78	No other peak greater than base discharge.			
Minimum daily discharge, no flow Aug. 26, 29-31, Sept. 2, 3, 5-8.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	15	10	16	17	19	17	8.7	3.2	6.6	3.2	.12
2	31	14	10	13	16	18	17	8.7	3.5	8.7	1.7	.00
3	24	14	10	11	14	18	16	8.2	8.8	14	4.5	.00
4	20	14	10	10	13	17	15	7.5	66	15	6.0	.04
5	18	14	10	10	12	17	14	7.4	120	15	2.1	.00
6	17	14	12	10	8.9	18	14	7.3	173	13	5.9	.00
7	16	14	13	10	11	19	14	5.8	705	10	2.5	.00
8	16	14	15	9.6	11	19	14	e5.5	70	9.4	1.9	.00
9	16	15	16	9.6	11	19	13	e5.3	29	12	3.0	15
10	16	15	21	9.6	11	19	13	e5.2	28	16	.91	2.3
11	16	15	24	9.6	11	19	13	e5.1	49	20	1.9	16
12	15	15	23	9.2	12	18	13	5.0	45	17	3.0	56
13	15	15	24	8.7	12	16	21	5.9	106	16	4.7	106
14	14	15	25	9.2	15	16	31	9.6	218	14	3.0	462
15	13	15	22	9.6	21	15	28	8.2	54	15	.93	546
16	13	16	20	9.6	27	14	22	8.8	30	12	2.5	123
17	12	16	19	9.6	80	14	20	9.3	21	10	7.5	44
18	12	15	18	10	87	14	19	8.0	16	8.5	5.2	26
19	12	16	18	10	73	14	17	7.0	13	9.2	1.5	17
20	13	16	18	10	58	13	16	9.1	10	11	1.3	12
21	13	16	17	11	46	14	16	10	7.8	11	2.8	7.8
22	13	16	17	11	35	14	15	11	5.5	9.9	2.1	4.7
23	13	e16	16	11	28	14	15	8.9	4.5	6.1	1.5	2.9
24	13	e16	16	12	25	14	14	6.1	3.3	6.3	.20	2.4
25	13	e15	16	12	22	14	13	4.4	3.3	15	.01	2.1
26	13	e15	16	12	20	14	12	3.6	3.5	21	.00	2.0
27	13	e14	16	12	20	15	12	3.1	3.4	12	.01	2.0
28	13	e13	17	18	19	19	12	3.4	3.5	8.5	.07	2.2
29	12	e12	16	18	---	23	11	3.5	3.5	4.4	.00	2.2
30	12	e11	15	17	---	19	9.6	2.7	4.5	2.7	.00	2.5
31	18	---	17	17	---	17	---	2.5	---	5.2	.00	---
TOTAL	497	441	517	355.3	735.9	513	476.6	204.8	1811.3	354.5	69.93	1456.26
MEAN	16.0	14.7	16.7	11.5	26.3	16.5	15.9	6.61	60.4	11.4	2.26	48.5
MAX	42	16	25	18	87	23	31	11	705	21	7.5	546
MIN	12	11	10	8.7	8.9	13	9.6	2.5	3.2	2.7	.00	.00
AC-FT	986	875	1030	705	1460	1020	945	406	3590	703	139	2890

CAL YR 1988 TOTAL 13507.16 MEAN 36.9 MAX 1550 MIN .89 AC-FT 26790  
WTR YR 1989 TOTAL 7432.59 MEAN 20.4 MAX 705 MIN .00 AC-FT 14740

e Estimated.

## BRAZOS RIVER BASIN

205

08083245 MULBERRY CREEK NEAR HAWLEY, TX

LOCATION.--Lat 32°34'04", long 99°47'32", Jones County, Hydrologic Unit 12060102, on right bank at downstream side of downstream bridge on U.S. Highways 83 and 277, 3.3 mi south of Hawley, and 5.8 mi upstream from mouth.

DRAINAGE AREA.--205 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1967 to September 1989 (discontinued).

Water-quality records: Chemical analyses: December 1967 to September 1983.

REVISED RECORDS.--WRD TX-74-1: 1972(M).

GAGE.--Water-stage recorder. Datum of gage is 1,615.98 ft above National Geodetic Vertical Datum of 1929.

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

AVERAGE DISCHARGE.--21 years (water years 1969-89), 10.4 ft<sup>3</sup>/s (0.69 in/yr), 7,530 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,750 ft<sup>3</sup>/s May 28, 1980 (gage height, 16.00 ft); no flow at times most years. Maximum stage since 1932, that of May 28, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1957 reached a stage of about 16.0 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
June 5	0730	375	7.83	June 12	2400	516	9.43
June 7	0430	567	9.96	Sept. 14	1130	*574	*10.03
June 11	0930	396	8.07				

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.9	.06	.00	.48	1.3	1.5	2.4	e.23	.00	.10	.00	.00
2	1.6	.03	.00	.52	.94	1.5	1.7	e.51	.00	.05	.00	.00
3	.60	.05	.00	.52	.76	1.7	1.4	e.04	.00	.49	.00	.00
4	.25	.06	.00	.51	.53	1.8	1.3	e.02	183	.59	.00	.00
5	.15	.03	.00	.53	.55	2.4	1.2	e.02	235	.09	.00	.00
6	.10	.02	.00	.53	.54	2.3	1.2	e.01	107	.02	.00	.00
7	.09	.01	.00	.46	.58	2.9	1.1	e.01	278	.01	.00	.00
8	.08	.00	.05	.41	.65	3.9	e.00	e.01	38	.00	.00	.00
9	.07	.00	.15	.43	.71	3.8	e.00	e.01	15	.00	.00	.00
10	.05	.00	.60	.40	.71	3.1	e3.0	e.01	16	.00	.00	.00
11	.04	.00	.94	.36	.81	2.6	2.3	e.01	255	.00	.00	20
12	.06	.00	.70	.45	.87	2.1	1.9	2.3	270	.00	.00	128
13	.07	.00	.93	.42	.95	1.6	e2.6	e6.2	270	.00	.00	157
14	.10	.00	.86	.57	1.3	1.4	e3.9	16	62	.00	.00	421
15	.15	.00	.64	.69	3.0	1.1	e1.5	17	30	.00	.00	71
16	.09	.00	.43	.71	10	1.1	e.64	21	15	.00	.00	34
17	.07	.00	.36	.71	48	1.1	e.46	22	8.8	.00	.00	22
18	.09	.00	.32	.84	48	1.0	e.32	10	6.5	.00	.00	9.7
19	.07	.00	.28	.87	15	.96	e.24	8.2	4.7	.00	.00	2.9
20	.03	.00	.36	.81	7.4	1.1	e.18	10	3.2	.00	.00	.55
21	.02	.00	.36	.69	4.8	1.1	e.26	8.7	2.4	.00	.00	.08
22	.02	.00	.36	.64	3.2	1.2	e.18	5.8	1.8	.00	.00	.02
23	.02	.00	.36	.64	2.2	1.3	e.05	2.1	1.4	.00	.00	.01
24	.02	.00	.37	.64	1.7	1.4	e.03	.30	1.1	.00	.00	.00
25	.01	.00	.35	.67	1.6	1.4	e.03	.05	.77	.00	.00	.00
26	.01	.00	.36	.71	1.6	1.3	e.03	.02	.72	.00	.00	.00
27	.01	.00	.46	.73	1.6	1.5	e.02	.01	.63	.00	.00	.00
28	.00	.00	.51	1.4	1.6	2.9	e.02	.00	.52	.00	.00	.00
29	.00	.00	.43	1.1	---	26	e.02	.00	.31	.00	.00	.00
30	.00	.00	.43	1.7	---	8.7	e.02	.00	.16	.00	.00	.00
31	1.3	---	.46	1.6	---	3.8	---	.00	---	.00	.00	---
TOTAL	11.07	0.26	11.07	21.74	160.90	89.56	28.00	130.56	1807.01	1.35	0.00	866.26
MEAN	.36	.009	.36	.70	5.75	2.89	.93	4.21	60.2	.044	.00	28.9
MAX	5.9	.06	.94	1.7	48	26	3.9	22	278	.59	.00	421
MIN	.00	.00	.00	.36	.53	.96	.00	.00	.00	.00	.00	.00
AC-FT	22	.5	22	43	319	178	56	259	3580	2.7	.0	1720
CFSM	.00	.00	.00	.00	.03	.01	.00	.02	.29	.00	.00	.14
IN.	.00	.00	.00	.00	.03	.02	.01	.02	.33	.00	.00	.16

CAL YR 1988	TOTAL	2956.76	MEAN	8.08	MAX	652	MIN	.00	AC-FT	5860	CFSM	.04	IN.	.54
WTR YR 1989	TOTAL	3127.78	MEAN	8.57	MAX	421	MIN	.00	AC-FT	6200	CFSM	.04	IN.	.57

e Estimated.

## BRAZOS RIVER BASIN

08084000 CLEAR FORK BRAZOS RIVER AT NUGENT, TX

LOCATION.--Lat 32°41'24", long 99°40'09", Jones County, Hydrologic Unit 12060102, on right bank 33 ft downstream from bridge on Farm Road 600 at Nugent, 2 mi downstream from Elm Creek, 4 mi upstream from Deadman Creek, and 167.8 mi upstream from mouth.

DRAINAGE AREA.--2,199 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1924 to current year.

Water-quality records.--Chemical analyses: August 1948 to September 1953. Chemical and biochemical analyses: February 1968 to September 1981.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,531.91 ft above National Geodetic Vertical Datum of 1929 (levels by Brazos River Authority). Prior to Dec. 12, 1933, nonrecording gage at site 575 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Flow is affected by four upstream reservoirs with a total capacity of 103,600 acre-ft. There are numerous diversions above station for municipal supply and oil-field operation that materially affect streamflow.

AVERAGE DISCHARGE.--14 years (water years 1925-38) prior to completion of Fort Phantom Hill Reservoir, 186 ft<sup>3</sup>/s (134,800 acre-ft/yr); 51 years (water years 1939-89) partially regulated, 82.3 ft<sup>3</sup>/s (59,630 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 47,000 ft<sup>3</sup>/s Sept. 8, 1932 (gage height, 27.05 ft), site then in use, from rating curve extended above 25,000 ft<sup>3</sup>/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 30 ft in 1876; floods in 1900 and May 1923 reached stages of 24 and 24.5 ft, respectively, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,330 ft<sup>3</sup>/s June 7 at 1230 hours (gage height, 6.42 ft); minimum daily, no flow Sept. 6-8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	18	13	13	18	21	18	9.8	4.4	4.9	.50	.02
2	39	13	13	12	16	21	16	8.8	5.4	4.7	.44	.02
3	28	13	13	13	14	21	16	9.3	16	4.0	.22	.02
4	24	13	13	12	13	20	15	9.6	284	4.1	.18	.02
5	21	12	13	13	12	21	15	9.4	395	5.1	.20	.01
6	20	12	12	12	11	22	14	8.8	211	4.2	.12	.00
7	19	12	11	12	11	22	14	8.4	757	3.9	.12	.00
8	19	13	12	12	12	21	14	9.0	100	3.3	.75	.00
9	21	13	12	12	12	22	13	9.2	50	2.5	2.1	.05
10	20	13	15	11	12	22	12	8.6	36	1.9	.78	.15
11	20	13	17	12	13	22	12	8.4	212	1.7	.14	5.4
12	19	14	16	12	13	22	13	8.7	224	4.2	.09	74
13	18	13	17	12	13	21	19	8.6	499	4.4	.22	138
14	18	13	18	12	15	20	25	10	263	3.7	.32	567
15	17	13	17	12	19	19	29	13	107	3.1	1.1	550
16	17	13	15	13	25	18	24	12	44	2.0	1.6	214
17	16	13	13	13	92	18	19	14	28	1.4	2.0	56
18	15	13	13	13	144	18	18	14	19	.94	1.8	27
19	15	12	12	13	92	18	16	11	15	.78	1.9	15
20	15	12	12	13	65	17	15	7.9	13	.53	2.3	9.4
21	14	12	12	13	52	18	15	7.4	11	.54	2.2	6.2
22	14	13	12	13	39	18	15	7.0	9.9	.46	1.3	4.7
23	14	13	12	13	32	18	14	9.0	8.7	1.1	.56	3.4
24	13	13	12	13	27	18	13	9.3	7.9	1.1	.90	2.7
25	14	14	11	14	24	18	13	7.4	7.1	.96	.47	2.4
26	15	14	12	13	23	19	12	6.6	6.8	.75	.40	2.4
27	14	14	12	13	22	19	11	5.5	6.3	3.8	.23	2.2
28	13	13	12	16	22	24	11	5.0	5.3	4.4	.07	2.1
29	13	12	12	17	---	23	10	4.5	5.1	1.9	.04	2.3
30	13	13	12	17	---	34	9.7	4.6	4.9	.47	.03	2.4
31	19	---	12	17	---	21	---	4.3	---	.43	.03	---
TOTAL	569	392	408	406	863	636	460.7	269.1	3355.8	77.26	23.11	1686.89
MEAN	18.4	13.1	13.2	13.1	30.8	20.5	15.4	8.68	112	2.49	.75	56.2
MAX	39	18	18	17	144	34	29	14	757	5.1	2.3	567
MIN	13	12	11	11	11	17	9.7	4.3	4.4	.43	.03	.00
AC-FT	1130	778	809	805	1710	1260	914	534	6660	153	46	3350
CAL YR 1988	TOTAL	12391.5	MEAN	33.9	MAX	1200	MIN	2.1	AC-FT	24580		
WTR YR 1989	TOTAL	9146.86	MEAN	25.1	MAX	757	MIN	.00	AC-FT	18140		

## BRAZOS RIVER BASIN

20/

08084100 DEADMAN CREEK NEAR NUGENT, TX  
(Reconnaissance partial-record station)

LOCATION.--Lat 32°40'36", long 99°37'00", Jones County, Hydrologic Unit 12060102, at low-water crossing on county road, 3.2 mi east of Nugent, and 4.4 mi upstream from Clear Fork Brazos River.

DRAINAGE AREA.--168 mi<sup>2</sup>.

PERIOD OF RECORD.--Periodic discharge measurements: October 1967 to August 1989 (discontinued). Chemical and biochemical analyses: October 1967 to August 1989 (discontinued).

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3
NOV 17...	1030	18	1420	8.20	13.0	11.8	118	1.9	260	140
JAN 11...	1615	9.6	1660	8.20	13.0	12.9	131	2.4	290	190
MAR 08...	1615	22	1400	8.20	13.0	13.0	129	5.8	250	160
JUN 22...	0950	20	1690	8.00	26.0	9.9	130	3.0	340	170
JUL 12...	1540	12	1600	8.30	32.0	11.1	161	5.0	270	120
AUG 08...	1845	9.1	1370	8.50	26.5	9.0	118	5.0	240	110

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV 17...	52	32	180	5	14	123	170	220	1.3
JAN 11...	55	37	220	6	15	103	210	280	1.0
MAR 08...	47	33	170	5	13	97	180	230	0.70
JUN 22...	74	38	200	5	13	175	160	300	1.1
JUL 12...	53	33	190	5	15	147	170	240	0.80
AUG 08...	50	29	180	5	15	130	170	210	1.2

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)
NOV 17...	5.5	749	17.9	0.080	18.0	0.050	1.7	1.8	8.20
JAN 11...	8.8	889	18.9	0.050	19.0	0.100	1.8	1.9	6.80
MAR 08...	6.2	738	14.9	0.060	15.0	0.100	1.7	1.8	5.90
JUN 22...	11	902	9.96	0.040	10.0	0.030	0.97	1.0	4.50
JUL 12...	7.9	798	14.9	0.070	15.0	0.040	1.4	1.4	7.50
AUG 08...	9.2	742	15.9	0.050	16.0	0.040	1.6	1.6	7.40

## 08084800 CALIFORNIA CREEK NEAR STAMFORD, TX

LOCATION.--Lat 32°55'51", long 99°38'32", Jones County, Hydrologic Unit 12060103, near right bank at downstream side of bridge on Farm Road 142, 9 mi east of Stamford, and 19.4 mi upstream from Paint Creek.

DRAINAGE AREA.--478 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1962 to current year.

Water-quality records.--Specific conductance: October 1962 to September 1979. Water temperature: October 1962 to September 1979.

REVISED RECORDS.--WSP 2122: 1965. WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,470 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair. There are three small diversions upstream from station.

AVERAGE DISCHARGE.--27 years, 33.8 ft<sup>3</sup>/s (0.96 in/yr), 24,490 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,000 ft<sup>3</sup>/s Aug. 4, 1978 (gage height, 31.00 ft, from floodmark), from rating curve extended above 21.0 ft on basis of field discharge estimates of peak flows; no flow at times. Maximum stage since at least 1897, that of Aug. 4, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 10, 1962, reached a stage of 29.6 ft, from floodmark; flood of July 1961 (stage unknown) was third highest. Other large floods are reported to have occurred in June 1909, June 24, 1915, and May 1957; flood of September 1962 reached a stage of 28.1 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft<sup>3</sup>/s and maximum (\*).

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
June 4	1825	829	14.70	June 13	1930	692	13.78
June 8	2000	*885	*15.04				

Minimum daily discharge, 0.06 ft<sup>3</sup>/s Sept. 28-30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	43	3.3	3.3	4.4	5.8	10	2.2	.28	3.2	.56	.35
2	8.9	19	2.7	3.3	e3.8	5.6	7.9	2.1	.28	3.0	.50	.35
3	7.6	9.0	2.8	3.1	e3.3	5.6	6.2	1.9	24	2.9	.49	.35
4	6.9	5.4	3.0	3.1	e3.2	5.4	5.8	2.4	363	2.8	.43	.30
5	6.1	4.1	2.8	3.2	e3.1	e5.0	4.9	2.3	342	2.5	.35	.28
6	5.7	3.2	2.8	3.1	e3.1	e5.4	4.1	1.8	154	2.4	.35	.28
7	5.2	3.2	2.8	3.5	e3.2	e5.6	4.3	1.6	98	2.2	.35	.25
8	4.8	3.5	3.0	3.3	3.3	5.9	3.8	1.5	621	2.1	.33	.23
9	4.5	3.2	3.2	3.2	3.3	6.4	3.3	1.3	405	2.0	.29	.26
10	4.2	3.2	3.7	3.1	3.2	6.0	3.1	1.1	87	1.7	.28	.28
11	3.9	3.2	6.8	3.1	3.1	5.6	3.3	1.0	89	2.0	.28	.44
12	3.7	3.5	5.9	3.1	3.2	5.5	3.4	1.6	109	1.7	.28	.54
13	3.6	3.3	5.2	3.1	3.3	5.2	4.3	106	398	1.3	.29	68
14	3.5	3.3	4.4	3.4	4.1	4.8	4.8	32	500	1.2	.50	174
15	3.3	3.3	4.4	3.6	5.4	4.3	4.8	9.0	313	1.2	.70	117
16	3.4	3.4	3.6	3.4	9.1	4.3	4.6	2.9	94	1.1	.81	60
17	3.2	2.3	3.1	3.3	169	4.0	4.6	1.6	51	1.1	1.5	33
18	2.7	3.1	3.0	3.2	170	3.7	4.7	2.6	38	.88	1.5	10
19	2.6	3.4	2.6	3.1	65	3.7	4.3	3.2	33	.86	1.4	4.7
20	2.7	2.8	3.0	3.1	36	3.9	4.3	8.2	29	.98	1.1	2.9
21	2.7	3.0	6.8	3.1	27	4.1	9.9	4.5	25	.78	1.2	1.5
22	2.5	3.5	7.9	3.1	18	4.0	8.3	3.1	20	.63	1.3	.79
23	2.4	3.4	5.1	3.1	13	3.9	4.2	2.2	17	.66	1.2	.34
24	2.4	3.6	4.0	3.1	11	4.0	3.4	1.5	13	.80	1.2	.19
25	5.6	3.9	3.6	3.1	9.3	3.8	3.1	1.0	11	.65	1.0	.12
26	6.8	3.6	3.3	3.3	8.4	4.0	2.7	.66	8.4	.70	.78	.09
27	2.2	3.5	3.3	3.3	7.2	4.2	2.2	.44	6.3	.78	.61	.08
28	2.1	4.1	3.3	4.3	6.4	5.6	2.0	.40	4.9	.71	.45	.06
29	1.9	4.0	3.6	4.3	---	19	2.1	.35	3.7	.88	.42	.06
30	2.1	3.9	3.5	3.9	---	25	2.1	.30	3.5	1.1	.37	.06
31	70	---	3.3	3.8	---	16	---	.28	---	.75	.35	---
TOTAL	198.2	164.9	119.8	103.0	602.4	195.3	136.5	201.03	3861.36	45.56	21.17	476.80
MEAN	6.39	5.50	3.86	3.32	21.5	6.30	4.55	6.48	129	1.47	.68	15.9
MAX	70	43	7.9	4.3	170	25	10	106	621	3.2	1.5	174
MIN	1.9	2.3	2.6	3.1	3.1	3.7	2.0	.28	.28	.63	.28	.06
AC-FT	393	327	238	204	1190	387	271	399	7660	90	42	946
CFSM	.01	.01	.01	.01	.05	.01	.01	.01	.27	.00	.00	.03
IN.	.02	.01	.01	.01	.05	.02	.01	.02	.30	.00	.00	.04

CAL YR 1988	TOTAL	7020.06	MEAN	19.2	MAX	1570	MIN	.01	AC-FT	13920	CFSM	.04	IN.	.55
WTR YR 1989	TOTAL	6126.02	MEAN	16.8	MAX	621	MIN	.06	AC-FT	12150	CFSM	.04	IN.	.48

e Estimated.



BRAZOS RIVER BASIN

209

08085500 CLEAR FORK BRAZOS RIVER AT FORT GRIFFIN, TX

LOCATION.--Lat 32°56'04", long 99°13'27", Shackelford County, Hydrologic Unit 12060104, on right bank just downstream from pier of bridge on old Fort Griffin-Throckmorton Road, 0.4 mi northeast of Fort Griffin, 1.0 mi upstream from bridge on U.S. Highway 283, 1.7 mi upstream from Mill Creek, and 74.6 mi upstream from mouth.

DRAINAGE AREA.--3,988 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1923 to current year.

REVISED RECORDS.--WSP 1392: 1949. WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,174.09 ft above National Geodetic Vertical Datum of 1929. Prior to June 23, 1932, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. There are diversions upstream from station for irrigation, municipal supply, and for oil field operation that materially affect low flow. Gage-height telemeter at station.

AVERAGE DISCHARGE.--65 years (water years 1925-89), 222 ft<sup>3</sup>/s (160,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 149,000 ft<sup>3</sup>/s Aug. 4, 1978 (gage height, 38.88 ft, from floodmark), from rating curve extended above 33,600 ft<sup>3</sup>/s on basis of contracted-opening and flow-over-road measurement of peak flow; no flow at times.  
Maximum stage since 1876, that of Aug. 4, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in September 1900 reached a stage of 38.0 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,900 ft<sup>3</sup>/s and maximum (\*).

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
June 5	1530	*1,770	*8.02				

Minimum discharge, no flow for several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	31	28	31	37	61	75	30	14	26	1.6	.00
2	62	74	27	34	e34	55	97	31	14	24	1.4	.00
3	52	102	28	37	e33	54	84	69	17	23	1.3	.00
4	47	75	27	37	e32	53	71	161	138	31	1.0	.00
5	60	58	27	34	e31	e47	62	100	1230	22	.75	.00
6	55	46	29	34	e32	e45	57	62	948	18	.66	.00
7	47	38	30	32	e33	49	52	47	552	16	.94	.00
8	44	31	30	30	34	51	49	42	723	15	.93	.00
9	42	31	31	31	37	53	47	39	863	13	.56	.00
10	37	29	37	28	42	54	46	34	585	11	.49	.00
11	34	29	46	29	41	56	45	30	452	9.4	.33	.15
12	33	29	49	29	38	55	43	29	206	8.9	.17	.13
13	33	30	54	25	41	57	43	29	688	8.4	.07	117
14	34	29	56	23	44	54	47	26	1140	8.1	.06	122
15	33	31	51	24	56	51	46	178	972	7.1	.03	335
16	32	31	48	25	62	49	52	130	598	6.4	.29	665
17	30	28	43	24	150	48	72	95	290	5.5	1.6	409
18	29	26	43	27	257	47	69	75	181	4.7	1.2	240
19	26	28	44	27	479	46	66	89	135	3.9	.76	145
20	26	27	44	25	354	48	60	76	105	3.4	.56	96
21	25	25	43	25	220	42	52	63	89	2.9	.41	70
22	25	28	42	25	157	45	47	50	76	2.6	.30	52
23	26	27	40	24	121	46	46	40	62	3.7	.18	40
24	26	27	36	25	103	46	48	31	51	11	.06	33
25	25	28	37	25	87	52	49	26	42	8.7	.01	27
26	23	28	35	24	77	55	43	24	36	6.3	.00	23
27	22	28	36	29	70	54	40	20	32	5.4	.00	20
28	22	28	37	38	66	57	39	18	31	4.2	.00	19
29	23	30	37	38	---	62	35	18	31	2.9	.00	18
30	23	29	37	36	---	68	31	17	29	2.3	.00	17
31	29	---	32	35	---	70	---	15	---	1.9	.00	---
TOTAL	1089	1081	1184	910	2768	1630	1613	1694	10330	316.7	15.66	2448.28
MEAN	35.1	36.0	38.2	29.4	98.9	52.6	53.8	54.6	344	10.2	.51	81.6
MAX	64	102	56	38	479	70	97	178	1230	31	1.6	665
MIN	22	25	27	23	31	42	31	15	14	1.9	.00	.00
AC-FT	2160	2140	2350	1800	5490	3230	3200	3360	20490	628	31	4860

CAL YR 1988	TOTAL	24795.7	MEAN	67.7	MAX	2240	MIN	3.9	AC-FT	49180
WTR YR 1989	TOTAL	25079.64	MEAN	68.7	MAX	1230	MIN	.00	AC-FT	49750

e Estimated.

## BRAZOS RIVER BASIN

08086150 NORTH FORK HUBBARD CREEK NEAR ALBANY, TX

LOCATION.--Lat 32°42'27", long 99°16'29", Shackelford County, Hydrologic Unit 12060105, on left bank at downstream side of bridge on State Highway 6, 1.7 mi southeast of Albany, and 2.0 mi upstream from Salt Prong Hubbard Creek.

DRAINAGE AREA.--39.3 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1962 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,340.54 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. No diversion above station.

AVERAGE DISCHARGE.--26 years (water years 1964-89), 6.15 ft<sup>3</sup>/s (2.13 in/yr), 4,460 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 103,000 ft<sup>3</sup>/s Aug. 4, 1978 (gage height, 23.3 ft, from floodmarks), from rating curve extended above 1,500 ft<sup>3</sup>/s on basis of slope-area measurement of 4,570 ft<sup>3</sup>/s, contracted-opening measurement of 9,520 ft<sup>3</sup>/s, and computation of flow-through-culvert, contracted-opening, and flow-over-road determination of 103,000 ft<sup>3</sup>/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood information begins in 1940. Floods of June 10, 1940, and July 18, 1953, reached stages of about 21 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
June 4	1100	393	4.31	June 13	1100	234	3.82
June 10	2330	*816	*5.40	Sept. 13	1300	266	3.93
June 12	1430	118	3.38				

Minimum daily discharge, 0.03 ft<sup>3</sup>/s Oct. 1-22, 25-30, Sept. 24, 26-30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.03	.05	.06	.11	.17	.24	.32	.20	.19	.46	.22	.08		
2	.03	.05	.07	.11	.17	.24	.27	.22	.19	.46	.22	.05		
3	.03	.04	.08	.11	.17	.24	.24	.22	3.8	.69	.22	.04		
4	.03	.04	.08	.11	.17	.24	.24	.27	107	.61	.22	.04		
5	.03	.04	.08	.09	.17	.29	.24	.30	10	.49	.19	.04		
6	.03	.04	.08	.08	.17	.30	.24	.30	1.3	.44	.17	.04		
7	.03	.04	.08	.08	.17	.31	.26	.27	13	.42	.17	.04		
8	.03	.04	.08	.08	.17	.36	.25	.26	2.0	.42	.17	.05		
9	.03	.04	.08	.08	.17	.37	.24	.22	.83	.42	.17	.06		
10	.03	.05	.09	.08	.17	.36	.23	.17	43	.40	.15	.06		
11	.03	.05	.09	.08	.17	.31	.23	.18	140	.36	.15	1.2		
12	.03	.05	.09	.09	.18	.30	.24	.33	45	.34	.15	.91		
13	.03	.05	.09	.11	.21	.30	.86	14	95	.34	.15	27		
14	.03	.05	.09	.11	.28	.30	1.4	5.5	20	.34	.15	1.6		
15	.03	.05	.09	.11	.47	.30	.47	.66	6.3	.34	.17	.19		
16	.03	.04	.09	.11	1.0	.30	.33	.47	2.9	.34	.17	.06		
17	.03	.04	.09	.13	12	.30	.27	1.1	1.7	.34	.17	.06		
18	.03	.04	.09	.13	1.6	.29	.27	.91	1.2	.30	.17	.05		
19	.03	.05	.09	.13	.64	.27	.27	.43	.98	.24	.17	.05		
20	.03	.05	.09	.14	.42	.26	.27	.37	.85	.24	.17	.06		
21	.03	.05	.09	.15	.34	.24	.24	.36	.69	.24	.15	.05		
22	.03	.05	.09	.15	.30	.24	.24	.27	.63	.24	.13	.05		
23	.04	.05	.09	.15	.30	.27	.22	.27	.57	2.4	.13	.04		
24	.04	.05	.09	.15	.29	.30	.22	.26	.56	.85	.12	.03		
25	.03	.05	.09	.15	.27	.30	.22	.24	.56	.42	.11	.04		
26	.03	.05	.10	.15	.26	.30	.22	.24	.56	.33	.09	.03		
27	.03	.05	.09	.15	.24	.31	.21	.22	.53	.30	.09	.03		
28	.03	.06	.09	.19	.24	.41	.19	.22	.50	.33	.09	.03		
29	.03	.06	.09	.19	---	.63	.18	.22	.46	.27	.08	.03		
30	.03	.06	.09	.19	---	.49	.17	.20	.46	.24	.08	.03		
31	.05	---	.11	.18	---	.36	---	.19	---	.22	.08	---		
TOTAL	0.97	1.43	2.70	3.87	20.91	9.73	9.25	29.07	500.76	13.83	4.67	32.04		
MEAN	.031	.048	.087	.12	.75	.31	.31	.94	16.7	.45	.15	1.07		
MAX	.05	.06	.11	.19	12	.63	1.4	14	140	2.4	.22	.27		
MIN	.03	.04	.06	.08	.17	.24	.17	.17	.19	.22	.08	.03		
AC-FT	1.9	2.8	5.4	7.7	41	19	18	58	993	27	9.3	64		
CFSM	.00	.00	.00	.00	.02	.01	.01	.02	.42	.01	.00	.03		
IN.	.00	.00	.00	.00	.02	.01	.01	.03	.47	.01	.00	.03		
CAL YR 1988	TOTAL	109.09	MEAN	.30	MAX	9.2	MIN	.03	AC-FT	216	CFSM	.01	IN.	.10
WTR YR 1989	TOTAL	629.23	MEAN	1.72	MAX	140	MIN	.03	AC-FT	1250	CFSM	.04	IN.	.60

08086150 NORTH FORK HUBBARD CREEK NEAR ALBANY, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: December 1961 to current year. Sediment analyses: January 1966 to November 1974.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1962 to current year.

WATER TEMPERATURES: November 1962 to current year.

INSTRUMENTATION.--From 1970 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 regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 9,750 microsiemens Sept. 28-30, 1968; minimum measured daily, 408 microsiemens Sept. 16, 1974; minimum estimated daily, 149 microsiemens Aug. 4, 1978.

WATER TEMPERATURES: Maximum daily, 36.0°C June 5, 1980; minimum daily, 0.0°C Jan. 12, 1963, Jan. 29, 1966.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 5,180 microsiemens Dec. 29; minimum daily, 564 microsiemens June 11.

WATER TEMPERATURE: Maximum daily, 32.0°C Sept. 1, 7; minimum daily, 4.0°C Feb. 3.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 18...	1800	0.03	4870	21.0	1100	880	260	99	590
DEC 06...	0915	0.08	4940	10.5	1100	870	270	95	610
JAN 24...	1510	0.15	5060	13.5	1100	920	280	96	590
MAR 21...	1555	0.23	3840	10.0	810	650	210	70	470
MAY 09...	0915	0.25	4120	22.0	850	700	220	73	480
JUN 29...	0945	0.48	2860	27.0	630	420	170	49	340

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)
OCT 18...	8	3.8	179	170	1500	0.30	19	2750
DEC 06...	8	2.9	194	180	1400	0.30	12	2690
JAN 24...	8	3.7	178	190	1500	0.30	10	2780
MAR 21...	7	3.6	165	150	1100	0.30	8.6	2110
MAY 09...	7	3.4	154	170	1100	0.40	12	2150
JUN 29...	6	4.0	204	110	750	0.30	12	1560

## BRAZOS RIVER BASIN

08086150 NORTH FORK HUBBARD CREEK NEAR ALBANY, TX--Continued

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1988 TO SEPTEMBER 1989

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. 1988	0.97	4860	2690	7.0	1500	3.8	150	0.4	1100
NOV. 1988	1.43	4910	2720	10	1500	5.7	150	0.6	1100
DEC. 1988	2.70	5020	2780	20	1500	11	150	1.1	1100
JAN. 1989	3.87	5040	2790	29	1500	16	150	1.6	1100
FEB. 1989	20.91	2410	1310	74	670	38	76	4.3	520
MAR. 1989	9.73	3490	1910	50	1000	26	110	2.9	760
APR. 1989	9.25	3880	2130	53	1100	28	120	3.0	850
MAY 1989	29.07	2860	1560	123	810	63	90	7.1	620
JUNE 1989	500.76	1070	576	779	280	374	35	47	220
JULY 1989	13.83	3130	1710	64	880	33	99	3.7	670
AUG. 1989	4.67	3510	1920	24	1000	13	110	1.4	760
SEPT 1989	32.04	1640	887	77	430	38	53	4.6	340
TOTAL	629.23	**	**	1300	**	649	**	78	**
WTD.AVG.	1.7	1430	772	**	380	**	46	**	300

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e4840	e4890	e4930	4920	e5010	3020	4300	e4120	e3220	3070	3220	3630
2	e4840	e4890	e4930	5080	e5000	3100	4300	4050	3390	3080	3230	2870
3	e4840	e4890	e4930	e5070	5000	3000	4400	4120	2800	2780	3580	2840
4	e4840	e4890	e4940	e5060	e4980	3100	4100	4040	1210	2750	3550	2900
5	e4840	e4890	e4940	e5050	e4970	3200	4300	e4050	1080	3210	3530	3030
6	e4850	e4900	4940	e5040	e4960	2800	4400	e4100	1300	3080	3520	3030
7	e4850	e4900	e4840	5030	e4940	2800	4400	4120	869	3190	3550	3560
8	e4850	e4900	e4800	e5030	e4920	3300	4400	e4080	954	3270	3590	3920
9	e4850	e4900	e4750	e5030	e4900	3000	4400	4060	2050	3290	3530	3840
10	e4850	e4900	e4700	e5040	e4890	3100	4400	e4050	1310	3390	3550	3820
11	e4860	e4900	e4850	e5040	e4870	3600	4400	e4000	564	3320	3500	2600
12	e4860	e4900	5060	e5040	4860	e3620	4300	e3950	867	3360	3530	2240
13	e4860	e4910	e5070	e5030	4970	e3640	e4100	3450	1340	3420	3600	e1500
14	e4860	e4910	e5080	e5030	e4660	e3660	4000	1150	1100	3410	3630	1960
15	e4860	e4910	e5100	e5040	e4500	3700	3000	2250	2020	3340	3250	1940
16	e4860	e4910	e5120	e5040	4350	e3730	3100	2160	2040	3390	3310	2160
17	e4870	e4910	e5140	e5050	1710	e3760	e3050	1840	1810	3510	3380	2040
18	4870	e4910	5170	e5050	1290	e3800	3000	e2090	2140	3470	3250	2700
19	e4870	e4910	5120	e5040	2020	e3850	4100	e2670	2670	3410	3670	2850
20	e4870	e4920	e5120	e5050	2030	3900	4100	2710	e2700	3470	3630	2890
21	e4870	e4920	e5130	e5050	2680	3870	4100	e2800	2750	3480	3660	3010
22	e4870	e4920	5130	e5050	2860	3300	4100	2950	2560	3520	3600	2540
23	e4880	e4920	e5090	e5060	2800	e3200	3200	3030	2580	2430	3510	2520
24	e4880	e4920	e5060	5060	3070	3300	3100	2950	3030	3430	3600	3210
25	e4880	e4920	5030	e5050	e3100	3100	3100	3120	3160	3460	3550	3260
26	e4880	e4920	e5040	e5040	3160	3100	3200	3060	2910	e3480	3650	3330
27	e4880	e4920	5050	e5030	3180	3200	3200	2910	3030	3470	3610	e3350
28	e4880	e4930	5140	e5030	3190	3200	3200	3000	2750	3310	3570	3380
29	e4880	e4930	5180	e5020	---	4300	4100	2990	3020	3310	3750	e3400
30	e4890	e4930	e5060	e5020	---	4400	4200	3060	3000	3440	3660	3410
31	e4890	---	e4980	e5010	---	4100	---	3040	---	3470	3760	---
MEAN	4860	4910	5010	5040	3890	3440	3870	3220	2140	3290	3530	2920

e Estimated

## BRAZOS RIVER BASIN

213

08086150 NORTH FORK HUBBARD CREEK NEAR ALBANY, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	11.0	14.0	10.0	9.0	23.0	---	26.0	26.0	32.0
2	---	---	26.0	10.0	11.0	13.0	12.0	21.0	27.0	25.0	26.0	30.0
3	---	---	---	12.0	4.0	10.0	13.0	24.0	24.0	29.0	27.0	29.0
4	---	---	---	11.0	5.0	7.0	11.0	23.0	22.0	27.0	26.0	31.0
5	---	---	---	15.0	6.0	5.0	10.0	20.0	21.0	26.0	27.0	31.0
6	---	---	10.5	12.0	7.0	7.0	13.0	23.0	21.0	27.0	28.0	28.0
7	---	---	---	12.0	10.0	7.0	13.0	25.0	25.0	28.0	27.0	32.0
8	---	---	7.0	9.0	9.0	8.0	12.0	24.0	26.0	29.0	26.0	28.0
9	---	---	9.0	7.0	5.0	13.0	13.0	27.0	22.0	31.0	27.0	25.0
10	---	---	6.0	7.0	7.0	14.0	12.0	26.0	22.0	29.0	28.0	24.0
11	---	---	8.0	9.0	11.0	14.0	14.0	18.0	21.0	30.0	24.0	24.0
12	---	---	10.0	8.0	15.0	17.0	9.0	22.0	20.0	29.0	24.0	26.0
13	---	---	9.0	6.0	10.0	---	11.0	22.0	22.0	29.0	28.0	20.0
14	---	---	10.0	5.0	10.0	---	12.0	22.0	23.0	30.0	27.0	18.0
15	---	---	9.0	8.0	7.0	13.0	17.0	18.0	24.0	29.0	26.0	19.0
16	---	---	6.0	6.0	7.0	11.0	16.0	23.0	24.0	30.0	28.0	24.0
17	---	---	6.0	6.0	5.0	16.0	---	20.0	23.0	26.0	27.0	26.0
18	21.0	---	8.0	9.0	5.0	12.0	20.0	21.0	29.0	28.0	26.0	28.0
19	---	---	11.0	9.0	10.0	18.0	23.0	23.0	30.0	31.0	25.0	27.0
20	---	---	12.0	11.0	12.0	17.0	24.0	22.0	27.0	29.0	27.0	28.0
21	---	---	9.0	---	---	10.0	22.0	24.0	28.0	27.0	26.0	20.0
22	---	---	12.0	9.0	9.0	12.0	24.0	28.0	25.0	30.0	28.0	18.0
23	---	---	10.0	11.0	9.0	---	25.0	27.0	27.0	28.0	30.0	19.0
24	---	---	9.0	7.0	11.0	14.0	24.0	28.0	25.0	28.0	29.0	15.0
25	---	---	10.0	14.0	---	15.0	27.0	28.0	30.0	25.0	26.0	16.0
26	---	---	11.0	10.0	12.0	12.0	26.0	26.0	29.0	---	29.0	20.0
27	---	---	10.0	9.0	11.0	14.0	22.0	22.0	31.0	27.0	31.0	22.0
28	---	---	12.0	10.0	10.0	12.0	21.0	23.0	28.0	26.0	30.0	24.0
29	---	---	9.0	11.0	---	10.0	24.0	22.0	29.0	29.0	30.0	23.0
30	---	---	---	12.0	---	14.0	23.0	22.0	25.0	25.0	31.0	24.0
31	---	---	11.0	10.0	---	10.0	---	26.0	---	29.0	28.0	---
MEAN	21.0	---	10.0	9.5	9.0	12.0	17.5	23.5	25.0	28.0	27.5	24.5



## BRAZOS RIVER BASIN

08086212 HUBBARD CREEK BELOW ALBANY, TX

LOCATION.--Lat 32°43'58", long 99°08'25", Shackelford County, Hydrologic Unit 12060105, on left bank 0.5 mi downstream from Salt Prong Hubbard Creek, 2.8 mi upstream from Newcomb Creek, 4.5 mi upstream from U.S. Highway 180, 9.1 mi east of Albany, 22.6 mi upstream from Hubbard Creek Reservoir, and 35.2 mi upstream from mouth.

DRAINAGE AREA.--613 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1966 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,184.99 ft above National Geodetic Vertical Datum of 1929. Prior to June 12, 1968, water-stage recorder at site 2.1 mi downstream at datum 7.63 ft lower.

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

AVERAGE DISCHARGE.--23 years, 60.4 ft<sup>3</sup>/s (1.34 in/yr), 43,760 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 330,000 ft<sup>3</sup>/s Aug. 4, 1978 (gage height, 41.41 ft, from floodmark), from rating curve extended above 110 ft<sup>3</sup>/s on basis of step-backwater method and computation of flow-through-culverts, contracted-openings, and flow-over-road determination of 330,000 ft<sup>3</sup>/s at site 4.5 mi downstream; no flow for many days.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
June 4	2330	*4,120	*13.32	June 12	2300	3,100	11.62
June 11	1800	3,910	13.02	June 13	2000	2,540	10.60

Minimum discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.00	.00	.00	.00	.00	.00	.00	.00	.01	.74	.00	.00		
2	.00	.00	.00	.00	.00	.00	.00	.00	.01	.35	.00	.00		
3	.00	.00	.00	.00	.00	.00	.00	.00	1.7	.09	.00	.00		
4	.00	.00	.00	.00	.00	.00	.00	.02	1430	.03	.00	.00		
5	.00	.00	.00	.00	.00	.00	.00	2.5	748	.02	.00	.00		
6	.00	.00	.00	.00	.00	.00	.00	.80	71	.01	.61	.00		
7	.00	.00	.00	.00	.00	.00	.00	.07	131	.00	.02	.00		
8	.00	.00	.00	.00	.00	.00	.00	.03	35	.00	.00	.00		
9	.00	.00	.00	.00	.00	.00	.00	.03	18	.00	.00	.00		
10	.00	.00	.00	.00	.00	.00	.00	.03	19	.00	.00	.00		
11	.00	.00	.00	.00	.00	.00	.00	.02	2190	.00	.00	.00		
12	.00	.00	.00	.00	.00	.00	.00	.01	1020	.00	.00	.65		
13	.00	.00	.00	.00	.00	.00	.00	4.9	1670	.00	.00	386		
14	.00	.00	.00	.00	.00	.00	.00	4.5	429	.01	.00	372		
15	.00	.00	.00	.00	.00	.00	.00	6.4	118	.01	.00	56		
16	.00	.00	.00	.00	.00	.00	.00	2.7	53	.00	.00	19		
17	.00	.00	.00	.00	.00	.00	.00	3.0	33	.00	.00	9.1		
18	.00	.00	.00	.00	.00	.00	.00	.73	23	.00	.00	4.8		
19	.00	.00	.00	.00	.00	.00	.00	24	18	.00	.00	2.6		
20	.00	.00	.00	.00	.00	.00	.00	8.4	12	.00	.00	1.6		
21	.00	.00	.00	.00	.00	.00	.00	3.8	6.9	.00	.00	1.1		
22	.00	.00	.00	.00	.00	.00	.00	1.7	4.5	.00	.00	.63		
23	.00	.00	.00	.00	.00	.00	.00	.81	3.5	.00	.00	.19		
24	.00	.00	.00	.00	.00	.00	.00	.13	2.5	.00	.00	.08		
25	.00	.00	.00	.00	.00	.00	.00	.02	1.9	.00	.00	.02		
26	.00	.00	.00	.00	.00	.00	.00	.02	1.6	.00	.00	.00		
27	.00	.00	.00	.00	.00	.00	.00	.01	1.5	.00	.00	.00		
28	.00	.00	.00	.00	.00	.00	.00	.01	1.2	.00	.00	.00		
29	.00	.00	.00	.00	---	.00	.00	.01	1.1	.00	.00	.00		
30	.00	.00	.00	.00	---	.00	.00	.01	.91	.00	.00	.00		
31	.00	---	.00	.00	---	.00	---	.01	---	.00	.00	---		
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	136.94	8045.33	1.26	0.63	918.12		
MEAN	.00	.00	.00	.00	.00	.00	.00	4.42	268	.041	.020	30.6		
MAX	.00	.00	.00	.00	.00	.00	.00	.73	2190	.74	.61	386		
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00		
AC-FT	.0	.0	.0	.0	.0	.0	.0	272	15960	2.5	1.2	1820		
CFSM	.00	.00	.00	.00	.00	.00	.00	.01	.44	.00	.00	.05		
IN.	.00	.00	.00	.00	.00	.00	.00	.01	.49	.00	.00	.06		
CAL YR 1988	TOTAL	250.64	MEAN	.68	MAX	11	MIN	.00	AC-FT	497	CFSM	.00	IN.	.02
WTR YR 1989	TOTAL	9102.28	MEAN	24.9	MAX	2190	MIN	.00	AC-FT	18050	CFSM	.04	IN.	.55

08086212 HUBBARD CREEK BELOW ALBANY, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1966 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1966 to current year.

WATER TEMPERATURE: October 1966 to current year.

INSTRUMENTATION.--Since December 1970, specific conductance was continuously recorded at this station. Since March 1982, specific conductance and water temperature are continuously recorded at this station.

REMARKS.--Estimated mean specific conductance values and interruptions in the mean temperature values were due to malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 21,200 microsiemens Feb. 15, 21, 1978; minimum measured, 180 microsiemens Oct. 27, 1984, May 13, 1985 and Oct. 6, 1986; minimum estimated, 129 microsiemens Aug. 4, 1978.

WATER TEMPERATURE (1966-80, 1983-89): Maximum, 37.5°C July 20, 1986; minimum, 0.0°C on several days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 7,600 microsiemens May 5; minimum, 472 microsiemens Sept. 14.

WATER TEMPERATURE: Maximum, 35.5°C July 6; minimum, 13.5°C Sept. 25.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
MAY 09...	1440	0.03	7340	27.5	1200	1100	290	110	1100
JUN 28...	1445	1.2	1520	32.0	320	180	88	24	170
DATE		SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
MAY 09...	14		8.9	84	380	2300	0.30	5.3	4240
JUN 28...	4		5.7	144	67	360	0.20	12	813

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1988 TO SEPTEMBER 1989

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. 1988	0.00	*	*	0.00	*	0.00	*	0.00	*
NOV. 1988	0.00	*	*	0.00	*	0.00	*	0.00	*
DEC. 1988	0.00	*	*	0.00	*	0.00	*	0.00	*
JAN. 1989	0.00	*	*	0.00	*	0.00	*	0.00	*
FEB. 1989	0.00	*	*	0.00	*	0.00	*	0.00	*
MAR. 1989	0.00	*	*	0.00	*	0.00	*	0.00	*
APR. 1989	0.00	*	*	0.00	*	0.00	*	0.00	*
MAY 1989	136.94	2810	1560	578	750	277	160	60	600
JUNE 1989	8045.33	921	508	11000	230	4930	57	1240	210
JULY 1989	1.26	1530	847	2.9	380	1.3	93	0.3	340
AUG. 1989	0.63	1310	725	1.2	330	0.6	81	0.1	300
SEPT 1989	918.12	1630	905	2240	420	1040	97	241	360
TOTAL	9102.28	**	**	13900	**	6250	**	1540	**
WTD.AVG.	25	1020	564	**	250	**	63	**	230

## BRAZOS RIVER BASIN

08086212 HUBBARD CREEK BELOW ALBANY, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
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	---	---	---	---	---	---	---	---	---	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	7600	6380	e7000 6800
6	---	---	---	---	---	---	---	---	---	6830	6320	6580
7	---	---	---	---	---	---	---	---	---	7270	6410	6900
8	---	---	---	---	---	---	---	---	---	7370	6730	7010
9	---	---	---	---	---	---	---	---	---	---	---	e7200
10	---	---	---	---	---	---	---	---	---	---	---	e7300
11	---	---	---	---	---	---	---	---	---	---	---	e7400
12	---	---	---	---	---	---	---	---	---	---	---	e7350
13	---	---	---	---	---	---	---	---	---	5120	3120	3940
14	---	---	---	---	---	---	---	---	---	3360	2900	3260
15	---	---	---	---	---	---	---	---	---	2940	2660	2820
16	---	---	---	---	---	---	---	---	---	2920	2740	2810
17	---	---	---	---	---	---	---	---	---	2900	2740	2820
18	---	---	---	---	---	---	---	---	---	3380	1780	2540
19	---	---	---	---	---	---	---	---	---	3340	2200	2620
20	---	---	---	---	---	---	---	---	---	4160	2540	2920
21	---	---	---	---	---	---	---	---	---	3940	2700	3010
22	---	---	---	---	---	---	---	---	---	3160	2860	2970
23	---	---	---	---	---	---	---	---	---	3220	2860	3060
24	---	---	---	---	---	---	---	---	---	3200	2980	3120
25	---	---	---	---	---	---	---	---	---	3360	3040	3200
26	---	---	---	---	---	---	---	---	---	3640	3140	3360
27	---	---	---	---	---	---	---	---	---	3500	3060	3240
28	---	---	---	---	---	---	---	---	---	3520	3320	3410
29	---	---	---	---	---	---	---	---	---	3540	3240	3430
30	---	---	---	---	---	---	---	---	---	3620	3380	3510
31	---	---	---	---	---	---	---	---	---	3640	3480	3550
MONTH	---	---	---	---	---	---	---	---	---	7600	1780	4400

e Estimated

## 217

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	3700	3480	3590	---	---	e1530	---	---	---	---	---	---
2	3760	3520	3620	---	---	e1530	---	---	---	---	---	---
3	3580	1880	2910	---	---	e1540	---	---	---	---	---	---
4	3340	780	1820	---	---	e1540	---	---	---	---	---	---
5	840	720	787	---	---	e1550	---	---	---	---	---	---
6	---	---	830	---	---	1560	---	---	1310	---	---	---
7	---	---	e800	---	---	---	1580	1280	1390	---	---	---
8	---	---	e850	---	---	---	---	---	---	---	---	---
9	---	---	e900	---	---	---	---	---	---	---	---	---
10	---	---	e1000	---	---	---	---	---	---	---	---	---
11	---	---	e800	---	---	---	---	---	---	---	---	---
12	---	---	e650	---	---	---	---	---	---	4350	1610	2660
13	---	---	e600	---	---	---	---	---	---	4110	490	2510
14	---	---	e700	1860	1320	1510	---	---	---	905	472	754
15	---	---	e800	2300	1340	1740	---	---	---	878	684	746
16	---	---	e900	---	---	---	---	---	---	910	730	819
17	---	---	e1000	---	---	---	---	---	---	938	782	874
18	---	---	e1100	---	---	---	---	---	---	1020	705	916
19	---	---	e1150	---	---	---	---	---	---	1050	978	1010
20	---	---	e1200	---	---	---	---	---	---	1140	988	1060
21	---	---	e1250	---	---	---	---	---	---	1200	1110	1150
22	---	---	e1300	---	---	---	---	---	---	1300	1110	1220
23	---	---	e1350	---	---	---	---	---	---	2070	1160	1360
24	---	---	e1400	---	---	---	---	---	---	2300	1620	1850
25	---	---	e1450	---	---	---	---	---	---	2300	1430	1740
26	---	---	e1500	---	---	---	---	---	---	---	---	---
27	---	---	e1500	---	---	---	---	---	---	---	---	---
28	---	---	1520	---	---	---	---	---	---	---	---	---
29	---	---	e1520	---	---	---	---	---	---	---	---	---
30	---	---	e1520	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	3760	720	1340	2300	1320	1560	1580	1280	1350	4350	472	1330

[illegible]

## BRAZOS RIVER BASIN

08086212 HUBBARD CREEK BELOW ALBANY, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	28.0	17.0	22.5
5	---	---	---	---	---	---	---	---	---	28.0	20.0	24.0
6	---	---	---	---	---	---	---	---	---	27.5	21.0	24.0
7	---	---	---	---	---	---	---	---	---	26.0	21.0	23.5
8	---	---	---	---	---	---	---	---	---	27.5	23.0	25.5
9	---	---	---	---	---	---	---	---	---	27.5	23.0	25.0
10	---	---	---	---	---	---	---	---	---	25.5	21.5	23.0
11	---	---	---	---	---	---	---	---	---	23.0	21.0	22.0
12	---	---	---	---	---	---	---	---	---	22.5	20.5	21.0
13	---	---	---	---	---	---	---	---	---	24.0	19.5	21.5
14	---	---	---	---	---	---	---	---	---	24.5	20.5	22.5
15	---	---	---	---	---	---	---	---	---	27.0	21.0	24.0
16	---	---	---	---	---	---	---	---	---	26.0	22.5	24.5
17	---	---	---	---	---	---	---	---	---	24.0	21.5	22.5
18	---	---	---	---	---	---	---	---	---	23.5	21.0	22.5
19	---	---	---	---	---	---	---	---	---	26.5	22.0	24.0
20	---	---	---	---	---	---	---	---	---	29.5	24.0	26.0
21	---	---	---	---	---	---	---	---	---	28.5	24.5	26.5
22	---	---	---	---	---	---	---	---	---	32.5	24.5	28.0
23	---	---	---	---	---	---	---	---	---	31.0	26.5	29.0
24	---	---	---	---	---	---	---	---	---	30.0	25.5	28.0
25	---	---	---	---	---	---	---	---	---	30.0	24.0	27.5
26	---	---	---	---	---	---	---	---	---	33.0	26.5	28.5
27	---	---	---	---	---	---	---	---	---	29.5	24.0	26.0
28	---	---	---	---	---	---	---	---	---	27.0	24.5	26.0
29	---	---	---	---	---	---	---	---	---	26.5	23.0	24.5
30	---	---	---	---	---	---	---	---	---	27.0	23.5	25.0
31	---	---	---	---	---	---	---	---	---	26.5	23.5	25.0
MONTH	---	---	---	---	---	---	---	---	---	33.0	17.0	25.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	29.5	24.0	26.0	32.5	25.0	28.5	---	---	---	---	---	---
2	28.5	25.5	27.0	31.0	26.5	28.5	---	---	---	---	---	---
3	28.0	21.5	25.5	34.5	26.0	29.5	---	---	---	---	---	---
4	27.0	19.0	22.5	34.5	26.5	30.5	---	---	---	---	---	---
5	22.0	19.0	21.0	35.0	26.0	30.0	---	---	---	---	---	---
6	---	---	---	35.5	26.5	30.5	31.0	24.5	27.0	---	---	---
7	---	---	---	---	---	---	25.5	22.5	23.5	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	24.0	19.0	22.5
13	---	---	---	---	---	---	---	---	---	23.5	15.0	20.0
14	---	---	---	32.0	26.0	28.5	---	---	---	16.0	15.0	15.5
15	---	---	---	35.0	26.5	30.0	---	---	---	17.0	15.5	16.0
16	---	---	---	---	---	---	---	---	---	23.0	16.5	19.0
17	---	---	---	---	---	---	---	---	---	23.0	17.5	20.0
18	---	---	---	---	---	---	---	---	---	24.0	18.0	21.0
19	---	---	---	---	---	---	---	---	---	27.5	19.0	22.0
20	---	---	---	---	---	---	---	---	---	25.5	19.0	22.0
21	---	---	---	---	---	---	---	---	---	27.5	19.0	22.5
22	---	---	---	---	---	---	---	---	---	24.5	20.0	22.0
23	---	---	---	---	---	---	---	---	---	20.5	16.0	18.0
24	---	---	---	---	---	---	---	---	---	23.0	14.0	18.0
25	---	---	---	---	---	---	---	---	---	22.5	13.5	18.0
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	31.5	26.0	28.5	---	---	---	---	---	---	---	---	---
30	32.0	25.5	28.5	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	32.0	19.0	25.5	35.5	25.0	29.5	31.0	22.5	25.5	27.5	13.5	19.5



## 08086290 BIG SANDY CREEK ABOVE BRECKENRIDGE, TX

LOCATION.--Lat 32°38'54", Long 99°00'15", Stephens County, Hydrologic Unit 12060105, on left bank 600 ft downstream from Battle Creek, 1.6 mi upstream from bridge on Farm Road 576, 9.8 mi southwest of Breckenridge, and about 14.6 mi upstream from Hubbard Creek Dam.

DRAINAGE AREA.--280 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1962 to current year. Prior to October 1975, published as "near Breckenridge."

REVISED RECORDS.--WDR TX-76-2: Drainage area at former site.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,185.83 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1975, at site 1.6 mi downstream at datum 7.41 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--27 years (water years 1963-89), 26.4 ft<sup>3</sup>/s (1.28 in/yr), 19,130 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,000 ft<sup>3</sup>/s Oct. 13, 1981 (gage height, 28.60 ft, from floodmark), from field estimate, based on 2-section slope-area determination of peak flow; no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--According to information from State Department of Highways and Public Transportation, the floods of May 16, 1949, July 20, 1953, and Apr. 29, 1957, each reached a stage of 24.6 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Sept. 13	1700	*3,670	a*18.18	No other peak greater than base discharge.			

a From graph.

Minimum discharge, no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
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	.15	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.03	.00	.14	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	e.02	.13	.05	.00
4	.00	.00	.00	.00	.00	.00	.00	1.6	e572	.13	.03	.00
5	.00	.00	.00	.00	.00	.00	.00	15	e103	.11	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.87	e31	.09	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.20	e171	.09	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.11	e87	.11	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.07	e26	.58	.00	.00
10	.00	.00	.00	.00	.01	.00	.00	.05	e15	.19	.00	.00
11	.00	.00	.00	.00	.02	.00	.00	.05	e325	.13	.00	175
12	.00	.00	.00	.00	.03	.00	.00	.31	e363	.10	.00	113
13	.00	.00	.00	.00	.04	.00	.01	73	e255	.09	.00	e1420
14	.00	.00	.00	.00	.04	.00	.03	3.7	e77	.09	.00	e496
15	.00	.00	.00	.00	.07	.00	.00	.47	e15	.09	.00	26
16	.00	.00	.00	.00	.08	.00	.00	e.25	e1.5	.09	.00	3.1
17	.00	.00	.00	.00	3.2	.00	.00	e58	e.40	.08	.00	.46
18	.00	.00	.00	.00	22	.00	.00	e107	e.25	.07	.00	.13
19	.00	.00	.00	.00	.46	.00	.00	e6.2	e.21	.07	.00	.04
20	.00	.00	.00	.00	.05	.00	.00	e.08	e.18	.06	.00	.01
21	.00	.00	.00	.00	.00	.00	.00	e.03	e.18	.05	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	e.02	e.18	.04	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	e.01	e.18	.09	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	e.01	e.18	.09	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	e.01	e.18	.06	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	e.15	.05	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	e.15	.05	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.15	.05	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.15	.04	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.14	.02	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	26.00	0.00	0.04	267.07	2044.20	3.13	0.08	2233.74
MEAN	.00	.00	.00	.00	.93	.00	.001	8.62	68.1	.10	.003	74.5
MAX	.00	.00	.00	.00	22	.00	.03	107	572	.58	.05	1420
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.0	.0	.0	.0	52	.0	.08	530	4050	6.2	.2	4430
CFSM	.00	.00	.00	.00	.00	.00	.00	.03	.24	.00	.00	.27
IN.	.00	.00	.00	.00	.00	.00	.00	.04	.27	.00	.00	.30
CAL YR 1988	TOTAL	846.28	MEAN	2.31	MAX	473	MIN	.00	AC-FT	1680	CFSM	.01
WTR YR 1989	TOTAL	4574.26	MEAN	12.5	MAX	1420	MIN	.00	AC-FT	9070	CFSM	.04
											IN.	.61

e Estimated.

08086290 BIG SANDY CREEK ABOVE BRECKENRIDGE, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: November 1975 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1975 to current year.

WATER TEMPERATURE: November 1975 to current year.

INSTRUMENTATION.--Since December 1970, specific conductance was continuously recorded at this station. Since March 1982, specific conductance and water temperature are continuously recorded at this station.

REMARKS.--Estimated mean specific conductance values and interruptions in the mean temperature values were due to malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request. Prior to November 1975, this station was formerly published as 08086300 Big Sandy Creek near Breckenridge.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 28,700 microsiemens Apr. 5, 10, 1976; minimum, 59 microsiemens Nov. 21, 1963.

WATER TEMPERATURE: Maximum, 37.0°C Aug. 9, 1987, July 16, 1989; minimum, 0.0°C Jan. 9, 10, 1977 and Dec. 2, 3, 1985.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 18,600 microsiemens Feb. 12; minimum, 223 microsiemens Sept. 13, 14.

WATER TEMPERATURE: Maximum, 37.0°C July 16; minimum, 5.0°C Feb. 17.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CAC03)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CAC03	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
MAY 09...	1335	0.06	2380	28.0	400	290	120	25	310
JUN 28...	1325	0.16	7960	32.5	1500	1300	440	88	1200
DATE		SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
MAY 09...	7	7.4	115	99	620	0.20	5.6	1260	
JUN 28...	14	8.0	155	470	2400	0.20	11	4710	

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1988 TO SEPTEMBER 1989

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. 1988	0.00	*	*	0.00	*	0.00	*	0.00	*
NOV. 1988	0.00	*	*	0.00	*	0.00	*	0.00	*
DEC. 1988	0.00	*	*	0.00	*	0.00	*	0.00	*
JAN. 1989	0.00	*	*	0.00	*	0.00	*	0.00	*
FEB. 1989	26.00	1510	883	62	460	32	82	5.7	270
MAR. 1989	0.00	*	*	0.00	*	0.00	*	0.00	*
APR. 1989	0.04	15400	9490	1.0	5200	0.6	800	0.09	*
MAY 1989	267.07	627	354	256	180	130	34	25	110
JUNE 1989	2044.20	782	441	2440	220	1240	43	237	140
JULY 1989	3.13	9510	5680	48	3000	26	510	4.3	1700
AUG. 1989	0.08	11400	6900	1.5	3700	0.8	600	0.1	*
SEPT 1989	2233.74	927	525	3160	270	1610	51	307	160
TOTAL	4574.26	**	**	6000	**	3030	**	579	**
WTD.AVG.	13	854	483	**	250	**	47	**	150

BRAZOS RIVER BASIN

221

08086290 BIG SANDY CREEK ABOVE BRECKENRIDGE, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
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	---	---	---	---	---	---	---	---	---	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	17000	15600	16500
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	15200	740	4600
5	---	---	---	---	---	---	---	---	---	2460	1380	1990
6	---	---	---	---	---	---	---	---	---	2040	1920	1980
7	---	---	---	---	---	---	---	---	---	---	---	e2100
8	---	---	---	---	---	---	---	---	---	---	---	e2200
9	---	---	---	---	---	---	---	---	---	---	---	2400
10	18300	17200	17800	---	---	---	---	---	---	2900	2500	2630
11	18500	17100	17600	---	---	---	---	---	---	3060	2860	2940
12	18600	17800	18100	---	---	---	---	---	---	3600	3100	3310
13	18300	16200	17500	---	---	---	---	---	e15000	940	280	643
14	17700	16900	17300	---	---	---	---	---	e15500	660	420	515
15	17900	14600	16100	---	---	---	---	---	---	1060	680	850
16	15600	13200	14400	---	---	---	---	---	---	2680	380	1260
17	13300	2900	6930	---	---	---	---	---	---	520	400	472
18	2400	320	550	---	---	---	---	---	---	460	400	427
19	800	500	644	---	---	---	---	---	---	540	460	507
20	960	780	852	---	---	---	---	---	---	620	540	582
21	---	---	---	---	---	---	---	---	---	700	620	666
22	---	---	---	---	---	---	---	---	---	780	700	737
23	---	---	---	---	---	---	---	---	---	840	780	806
24	---	---	---	---	---	---	---	---	---	900	820	868
25	---	---	---	---	---	---	---	---	---	960	900	929
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	18600	320	11600	---	---	---	---	---	15200	17000	280	2170

e Estimated

08086290 BIG SANDY CREEK ABOVE BRECKENRIDGE, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

[illegible]

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

[illegible]

## BRAZOS RIVER BASIN

223

08086290 BIG SANDY CREEK ABOVE BRECKENRIDGE, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	27.5	22.0	24.0
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	25.5	20.0	23.5
5	---	---	---	---	---	---	---	---	---	24.0	21.5	22.5
6	---	---	---	---	---	---	---	---	---	25.0	21.5	23.5
7	---	---	---	---	---	---	---	---	---	26.5	21.5	23.5
8	---	---	---	---	---	---	---	---	---	29.5	23.0	26.0
9	---	---	---	---	---	---	---	---	---	29.5	24.5	27.0
10	10.5	5.5	8.0	---	---	---	---	---	---	27.0	22.0	24.5
11	15.5	7.5	11.0	---	---	---	---	---	---	23.5	20.5	22.5
12	12.5	11.0	11.5	---	---	---	---	---	---	23.5	21.0	22.0
13	13.5	10.5	12.0	---	---	---	---	---	---	22.5	17.5	20.0
14	12.5	9.5	10.5	---	---	---	---	---	---	23.5	19.5	21.5
15	10.0	8.5	9.0	---	---	---	---	---	---	28.5	20.5	24.0
16	8.5	5.5	7.0	---	---	---	---	---	---	26.5	21.5	24.5
17	7.0	5.0	6.0	---	---	---	---	---	---	21.5	21.0	21.5
18	7.0	6.0	6.5	---	---	---	---	---	---	21.5	21.5	21.5
19	8.5	7.0	7.5	---	---	---	---	---	---	22.5	21.5	22.0
20	15.5	8.5	11.5	---	---	---	---	---	---	23.5	22.0	22.5
21	---	---	---	---	---	---	---	---	---	23.5	23.0	23.0
22	---	---	---	---	---	---	---	---	---	24.5	23.5	23.5
23	---	---	---	---	---	---	---	---	---	24.5	24.0	24.5
24	---	---	---	---	---	---	---	---	---	25.0	24.5	24.5
25	---	---	---	---	---	---	---	---	---	25.0	24.5	24.5
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	15.5	5.0	9.0	---	---	---	---	---	---	29.5	17.5	23.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	---	---	---	36.5	27.0	31.0	---	---	---	---	---	---
2	---	---	---	36.5	29.0	32.0	---	---	---	---	---	---
3	25.0	24.0	24.5	36.5	28.5	32.0	32.5	26.5	29.0	---	---	---
4	25.0	20.0	23.0	35.5	28.5	31.5	34.0	28.0	31.0	---	---	---
5	23.5	21.0	22.0	34.5	27.5	31.0	---	---	---	---	---	---
6	25.0	23.0	24.0	35.5	28.0	31.5	---	---	---	---	---	---
7	24.5	24.0	24.0	31.5	27.5	29.5	---	---	---	---	---	---
8	24.5	23.5	24.0	34.5	27.0	29.5	---	---	---	---	---	---
9	23.5	23.0	23.5	35.0	26.0	30.0	---	---	---	---	---	---
10	24.5	23.0	23.5	35.5	27.0	31.0	---	---	---	---	---	---
11	24.0	23.5	24.0	36.0	28.0	32.0	---	---	---	24.5	24.0	24.0
12	24.0	23.5	24.0	35.5	29.0	32.0	---	---	---	25.0	24.5	24.5
13	---	---	---	32.0	29.5	30.5	---	---	---	25.0	18.5	22.5
14	---	---	---	33.5	28.0	30.5	---	---	---	20.0	18.0	19.0
15	---	---	---	35.5	28.0	31.5	---	---	---	22.5	18.5	20.5
16	---	---	---	37.0	29.5	33.0	---	---	---	25.0	19.5	22.0
17	---	---	---	35.5	30.0	33.0	---	---	---	27.0	21.0	23.5
18	---	---	---	36.5	30.0	32.5	---	---	---	28.5	21.0	24.0
19	---	---	---	35.5	29.5	32.5	---	---	---	28.5	21.5	24.5
20	---	---	---	34.0	27.0	30.5	---	---	---	28.0	20.5	23.5
21	---	---	---	33.0	25.5	29.5	---	---	---	---	---	---
22	---	---	---	33.5	25.0	29.0	---	---	---	---	---	---
23	---	---	---	32.0	26.0	28.5	---	---	---	---	---	---
24	---	---	---	33.0	26.0	29.0	---	---	---	---	---	---
25	---	---	---	32.0	26.0	29.0	---	---	---	---	---	---
26	---	---	---	30.5	26.0	28.5	---	---	---	---	---	---
27	---	---	---	32.5	26.5	29.0	---	---	---	---	---	---
28	---	---	---	33.0	26.5	30.0	---	---	---	---	---	---
29	34.5	27.5	31.0	34.0	28.0	31.0	---	---	---	---	---	---
30	34.0	27.5	30.5	35.0	28.5	31.5	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	34.5	20.0	25.0	37.0	25.0	30.5	34.0	26.5	30.0	28.5	18.0	23.0



## 08086400 HUBBARD CREEK RESERVOIR NEAR BRECKENRIDGE, TX

LOCATION.--Lat 32°49'53", long 98°58'03", Stephens County, Hydrologic Unit 12060105, on left bank just upstream from dam on Hubbard Creek, 1.4 mi upstream from U.S. Highway 183, 6.5 mi northwest of Breckenridge, and 12.6 mi upstream from mouth.

DRAINAGE AREA.--1,085 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1962 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The reservoir is formed by a rolled earthfill dam 5,630 ft long. There are two additional levees, the north and south, making an overall length of 3.5 mi. Storage began September 1962 and the dam was completed in December 1962. The emergency spillway is a 2,000-foot-wide cut through natural ground near the left end of dam. The service spillway is a partially controlled morning-glory type, with 12 lift gates designed to discharge 30,000 ft<sup>3</sup>/s with a 17.5-foot head through a 22.0-foot-diameter concrete conduit. The dam is the property of the West Central Texas Municipal Water District. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam.....	1,208.0	-
Crest of emergency spillway.....	1,194.0	515,800
Top of gates.....	1,185.1	350,900
Top of conservation pool.....	1,183.0	317,800
Crest of spillway.....	1,176.6	230,100
Sill of gate.....	1,138.0	5,580
Lowest gated outlet (invert).....	1,136.0	3,470

COOPERATION.--The diversions and capacity table were furnished by the West Central Texas Municipal Water District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 441,200 acre-ft Oct. 14, 1981, for several hours (elevation, 1,190.22 ft); minimum since normal operating level was reached in May 1969, 157,400 acre-ft Oct. 1, 1984 (elevation, 1,169.89 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 247,500 acre-ft June 17 at 0900 hours (elevation, 1,177.99 ft); minimum, 213,900 acre-ft June 3 (elevation, 1,175.25 ft).

Capacity table (elevation, in feet, and total contents, in acre-feet)

1,175.0	211,000	1,177.0	235,000
1,176.0	222,800	1,178.0	247,600

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	233400	227200	221500	220700	218700	221400	219800	215800	214700	243700	234600	226200
2	233000	227300	221400	220400	218200	221100	219100	216300	214300	243100	235100	226200
3	232800	226800	221400	220400	217800	220200	218800	215700	215700	242800	235100	225800
4	232600	226600	221100	220300	217400	220400	218400	216800	221900	242700	234800	225400
5	232400	226100	221100	220400	217500	221000	218600	217300	224900	242300	234500	225000
6	232200	225800	221000	220400	217600	221000	218600	217000	226000	241900	233000	224600
7	231800	226000	220400	220400	217600	221100	218300	216800	227800	241600	232700	224400
8	231600	226100	220900	220400	217300	221100	217300	216700	227800	241300	232600	224300
9	230900	225200	221000	220400	217500	221300	216700	215800	227700	241200	232300	223000
10	230600	225100	221500	220400	217600	221300	216900	215600	228200	240700	231900	223300
11	230400	225000	221600	219500	217600	221300	216800	215400	234500	240400	231800	223900
12	230400	225500	221900	219100	217600	221300	216700	215400	237800	240000	231600	224800
13	229900	225000	221900	219000	217600	221300	217300	215400	245200	239700	231100	232900
14	229500	225500	221900	219000	217700	220700	217500	215600	246800	239700	231500	234500
15	229300	225000	221400	218800	218300	220700	217500	215500	246800	239400	231100	234500
16	229300	224800	221500	218800	219800	220600	217600	215600	247100	239400	230900	234500
17	229300	224100	221500	219000	221300	220700	217300	218300	247100	238900	230400	234600
18	228400	223900	221500	218900	221500	220400	217300	218100	246800	238000	230400	234300
19	228300	223300	221300	218800	221700	220600	217100	218000	246700	237900	230100	233900
20	228200	223400	221300	218700	221600	219300	217600	217800	246500	237600	229800	233800
21	228000	223300	221100	218700	221600	219700	217400	217700	246100	237300	229500	233500
22	228300	223000	221300	218700	221400	219700	217300	217600	245800	236600	229100	233000
23	227600	222900	221000	218600	221400	219700	216800	217700	245600	236300	228800	231900
24	227600	222800	220900	218700	221500	220000	216900	217700	245300	237800	228700	232100
25	228000	222700	220700	218400	221500	219800	216500	217500	245100	237100	228300	231800
26	227900	222200	221100	218400	221500	220000	216800	216400	245000	236000	228000	231500
27	227200	222100	220700	218600	221300	219500	216500	216300	244600	235800	227700	231500
28	226900	222300	220700	219300	221300	220000	216200	216100	244200	235500	227400	231300
29	226900	221600	220600	219100	---	220000	215700	215500	243800	236000	227200	231100
30	226900	221700	220600	219300	---	219300	215200	215200	243700	235800	226800	231000
31	227200	---	220600	219100	---	219500	---	214800	---	235000	226500	---
MAX	233400	227300	221900	220700	221700	221400	219800	218300	247100	243700	235100	234600
MIN	226900	221600	220400	218400	217300	219300	215200	214800	214300	235000	226500	223000
(+)	1176.36	1175.91	1175.81	1175.69	1175.87	1175.72	1175.36	1175.32	1177.69	1177.00	1176.30	1176.67
(Φ)	-6800	-5500	-1100	-1500	+2200	-1800	-4300	-400	+28900	-8700	-8500	+4500
CAL YR 1988	MAX	273700	MIN	220400	(Φ)	-52500						
WTR YR 1989	MAX	247100	MIN	214300	(Φ)	-3000						

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

BRAZOS RIVER BASIN

225

08086400 HUBBARD CREEK RESERVOIR NEAR BRECKENRIDGE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: September 1963 to current year.

324932098575101 - HUBBARD CR RES SITE P01

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION	HARD- NESS TOTAL (MG/L AS CACO3)
JAN									
19...	1005	1.00	1190	8.20	8.5	1.50	9.6	86	270
19...	1007	10.0	1190	8.20	8.5	--	9.6	86	--
19...	1009	20.0	1190	8.20	8.5	--	9.6	86	--
19...	1011	30.0	1190	8.20	8.5	--	9.5	85	--
19...	1013	40.0	1190	8.20	8.5	--	9.5	85	--
19...	1015	50.0	1190	8.20	8.5	--	9.5	85	--
19...	1017	59.0	1190	8.20	8.5	--	9.5	85	260
AUG									
28...	1530	1.00	1170	8.10	30.0	1.60	6.3	88	250
28...	1532	10.0	1170	8.10	28.0	--	6.4	86	--
28...	1534	20.0	1170	8.00	28.0	--	6.1	82	--
28...	1536	30.0	1170	8.00	28.0	--	5.8	78	--
28...	1538	40.0	1170	7.70	27.0	--	4.6	61	--
28...	1540	50.0	1170	7.40	26.5	--	2.8	37	--
28...	1542	58.0	1180	7.40	25.5	--	2.3	30	260

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT WH TOT FET MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN									
19...	160	72	21	120	3	8.0	110	55	270
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	150	71	21	120	3	8.0	110	56	270
AUG									
28...	160	67	20	120	3	8.8	94	54	270
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	160	71	20	120	3	8.8	100	49	270

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
19...	0.40	4.0	616	<0.100	0.40	0.010	<3	<1
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	--	--	--	<0.100	0.30	0.020	<10	<10
19...	--	--	--	--	--	--	--	--
19...	--	4.0	616	<0.100	0.40	0.030	16	6
AUG								
28...	0.40	5.4	602	<0.100	0.60	<0.010	14	6
28...	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--
28...	--	--	--	<0.100	0.40	<0.010	10	20
28...	--	--	--	<0.100	0.40	<0.010	<10	90
28...	--	--	--	--	--	--	--	--
28...	--	6.9	607	<0.100	0.80	0.020	28	1000

## BRAZOS RIVER BASIN

08086400 HUBBARD CREEK RESERVOIR NEAR BRECKENRIDGE, TX--Continued

324649099000501 - HUBBARD CR RES SITE P09

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CAC03)
JAN									
19...	0937	1.00	1190	8.20	8.5	1.30	9.8	88	270
19...	0939	10.0	1190	8.20	8.5	--	9.8	88	--
19...	0941	20.0	1190	8.20	8.5	--	9.8	88	--
19...	0943	30.0	1200	8.10	8.0	--	9.8	86	--
19...	0945	41.0	1200	8.10	8.0	--	9.7	86	270
AUG									
28...	1446	1.00	1180	8.10	29.0	0.90	6.4	88	260
28...	1448	10.0	1180	8.10	28.5	--	6.3	86	--
28...	1450	20.0	1180	8.00	28.0	--	5.9	79	--
28...	1452	30.0	1180	7.70	27.5	--	4.6	61	--
28...	1454	41.0	1180	7.60	27.0	--	3.3	44	260

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CAC03	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT WH TOT FET MG/L AS CAC03	SULFATE DIS- SOLVED (MG/L AS SO4)
JAN								
19...	160	72	21	120	3	8.0	110	56
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	160	72	21	120	3	7.8	111	57
AUG								
28...	160	71	20	120	3	8.9	100	54
28...	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--
28...	150	70	20	120	3	9.1	105	53

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
19...	270	4.0	617	<0.100	0.40	0.010	7	2
19...	--	--	--	--	--	--	--	--
19...	--	--	--	<0.100	0.30	0.010	10	<10
19...	--	--	--	--	--	--	--	--
19...	270	4.0	618	<0.100	0.50	0.020	9	6
AUG								
28...	270	5.6	609	<0.100	0.40	0.010	11	2
28...	--	--	--	--	--	--	--	--
28...	--	--	--	<0.100	0.40	<0.010	10	<10
28...	--	--	--	<0.100	0.40	<0.010	30	100
28...	260	6.1	602	<0.100	0.60	0.020	10	460

324606099000201 - HUBBARD CR RES SITE P10

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
19...	0920	1.00	1200	8.20	8.0	9.9	87
19...	0922	10.0	1200	8.20	8.0	9.9	87
19...	0924	20.0	1200	8.20	8.0	9.9	87
19...	0926	31.0	1200	8.20	8.0	9.8	87
AUG							
28...	1428	1.00	1180	8.10	29.5	6.3	87
28...	1430	10.0	1180	8.10	28.0	6.5	87
28...	1432	20.0	1180	7.90	27.5	5.9	79
28...	1434	32.0	1180	7.90	27.5	5.7	76

08086400 HUBBARD CREEK RESERVOIR NEAR BRECKENRIDGE, TX--Continued

324514099010201 - HUBBARD CR RES SITE P11

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
19...	1305	1.00	1200	8.30	8.5	10.2	91
19...	1307	10.0	1200	8.30	8.0	10.2	90
19...	1309	20.0	1200	8.20	8.0	10.0	88
AUG							
28...	1856	1.00	1180	8.10	28.5	6.5	89
28...	1858	10.0	1180	8.10	27.5	6.3	84
28...	1900	20.0	1180	7.80	26.5	5.2	68

324301099001701 - HUBBARD CR RES SITE P12

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)
JAN									
19...	1333	1.00	1270	8.20	9.0	0.40	9.9	90	290
19...	1335	9.00	1270	8.10	9.0	--	9.1	82	290
AUG									
28...	1918	1.00	1220	8.10	29.5	0.30	6.3	87	270
28...	1920	9.00	1200	7.80	27.5	--	5.4	72	260

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)
JAN								
19...	170	79	22	130	3	7.8	120	60
19...	170	78	22	130	3	8.0	120	61
AUG								
28...	170	77	20	120	3	9.0	102	54
28...	170	73	20	120	3	9.2	98	53

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
19...	290	3.2	664	<0.100	0.80	0.030	4	8
19...	290	3.2	664	<0.100	1.0	0.050	5	11
AUG								
28...	270	6.0	617	<0.100	0.90	0.040	7	15
28...	270	5.9	610	<0.100	0.80	0.060	8	60

324949098594301 - HUBBARD CR RES SITE P13

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
19...	1020	1.00	1190	8.30	8.5	9.7	87
19...	1022	10.0	1190	8.20	8.5	9.7	87
19...	1024	20.0	1190	8.20	8.5	9.7	87
19...	1026	30.0	1200	8.20	8.5	9.7	87
19...	1028	40.0	1200	8.20	8.5	9.6	86
19...	1030	54.0	1200	8.20	8.5	9.6	86
AUG							
28...	1607	1.00	1170	8.10	30.0	6.3	88
28...	1609	10.0	1170	8.10	28.5	6.5	88
28...	1611	20.0	1170	8.00	28.0	6.0	81
28...	1613	30.0	1170	7.90	27.5	5.7	76
28...	1615	40.0	1170	7.50	26.5	3.4	45
28...	1617	54.0	1180	7.40	26.0	2.4	31

## BRAZOS RIVER BASIN

08086400 HUBBARD CREEK RESERVOIR NEAR BRECKENRIDGE, TX--Continued

324802099021601 - HUBBARD CR RES SITE P15

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
19...	1106	1.00	1200	8.30	8.0	10.1	89
19...	1108	10.0	1200	8.20	8.0	10.0	88
19...	1110	24.0	1200	8.20	8.0	9.8	86
AUG							
28...	1638	1.00	1190	8.20	30.0	6.5	91
28...	1640	10.0	1190	8.10	28.5	6.3	86
28...	1642	20.0	1180	8.00	27.5	5.8	78
28...	1644	26.0	1180	8.00	27.5	5.8	78

324653099032401 - HUBBARD CR RES SITE P16

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)
JAN									
19...	1122	1.00	1210	8.30	8.5	0.80	10.1	90	280
19...	1124	10.0	1220	8.20	8.0	--	9.8	86	--
19...	1126	17.0	1240	8.10	8.0	--	9.3	82	280
AUG									
28...	1700	1.00	1180	8.20	28.5	0.50	6.4	87	260
28...	1702	10.0	1180	8.10	27.5	--	6.1	81	--
28...	1704	17.0	1180	8.00	27.5	--	5.8	77	260

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)
JAN								
19...	170	75	22	120	3	7.9	112	56
19...	--	--	--	--	--	--	--	--
19...	160	75	22	120	3	8.1	116	59
AUG								
28...	170	70	20	120	3	8.7	92	54
28...	--	--	--	--	--	--	--	--
28...	170	69	21	120	3	8.7	90	55

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (MG/L AS MN)
JAN								
19...	280	3.9	632	<0.100	1.4	0.020	9	3
19...	--	--	--	<0.100	0.60	0.020	<10	10
19...	280	3.8	637	<0.100	0.80	0.050	12	18
AUG								
28...	270	5.7	604	<0.100	0.60	0.020	17	2
28...	--	--	--	<0.100	0.80	0.020	10	<10
28...	270	5.9	604	<0.100	0.50	0.040	<3	9

324608099042101 - HUBBARD CR RES SITE P17

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
19...	1146	1.00	1330	8.10	9.0	9.7	88
19...	1148	10.0	1380	8.00	8.5	9.0	80
19...	1150	15.0	1440	8.00	8.5	8.3	74
AUG							
28...	1730	1.00	1140	8.10	30.0	6.4	89
28...	1732	10.0	1180	7.40	27.5	3.3	44
28...	1734	16.0	1180	7.30	27.0	2.4	32



BRAZOS RIVER BASIN

229

08086400 HUBBARD CREEK RESERVOIR NEAR BRECKENRIDGE, TX--Continued

324541099053601 - HUBBARD CR RES SITE P18

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CAC03)
JAN									
19...	1210	1.00	1640	8.00	9.0	0.70	8.9	81	370
19...	1212	12.0	2000	7.90	9.0	--	7.7	70	480
AUG									
28...	1754	1.00	1100	8.10	31.0	0.50	6.7	95	260
28...	1756	14.0	1130	7.20	26.5	--	2.5	33	260

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CAC03	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS- SOLVED (MG/L AS S04)
JAN								
19...	240	100	30	170	4	8.2	130	97
19...	340	130	38	200	4	8.0	143	140
AUG								
28...	150	73	19	110	3	8.1	110	48
28...	140	73	18	110	3	7.9	114	42

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
19...	380	3.8	867	<0.100	0.70	0.030	14	13
19...	470	4.7	1080	0.300	0.80	0.050	9	78
AUG								
28...	230	8.1	562	<0.100	0.80	0.030	12	5
28...	240	8.5	571	<0.100	1.4	0.100	1900	1300

## BRAZOS RIVER MAIN STEM

08088000 BRAZOS RIVER NEAR SOUTH BEND, TX

LOCATION.--Lat 33°01'27", long 98°38'37", Young County, Hydrologic Unit 12060201, on left bank 225 ft downstream from bridge on State Highway 67, 1.8 mi downstream from Clear Fork Brazos River, 2.0 mi northeast of South Bend, and at mile 758.2.

DRAINAGE AREA.--22,673 mi<sup>2</sup>, of which 9,566 mi<sup>2</sup> probably is noncontributing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1938 to current year.

REVISED RECORDS.--WRD TX-74-1: 1973. WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,002.98 ft above National Geodetic Vertical Datum of 1929. Prior to Feb. 23, 1939, nonrecording gage at site 255 ft upstream; and Feb. 23, 1939, to Mar. 9, 1961, water-stage recorder at site 225 ft upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. There are many small diversions upstream from station for municipal supply and oil field operations. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08080950. Gage-height telemeter at station.

AVERAGE DISCHARGE.--51 years, 814 ft<sup>3</sup>/s (589,700 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 87,400 ft<sup>3</sup>/s May 4, 1941 (gage height, 27.35 ft); maximum gage height, 41.50 ft Aug. 6, 1978, from floodmark; no flow at times. Maximum stage since 1938, that of Aug. 6, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1876 reached a stage of 36.2 ft, from information by State Department of Highways and Public Transportation and U.S. Army Corps of Engineers. Flood of Sept. 24, 1900, reached a stage of 29.5 ft, and flood of June 16, 1930, reached a stage of 35.5 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 11,000 ft<sup>3</sup>/s and maximum(\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 18	1735	*14,200	*20.88	Sept. 15	0230	11,100	18.68

Minimum discharge, 18 ft<sup>3</sup>/s Sept. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	437	53	48	61	72	190	127	70	289	229	46	28
2	308	53	49	61	e56	175	99	50	281	215	1650	26
3	266	54	48	57	e52	167	91	105	288	200	1940	25
4	238	66	47	54	e49	140	97	1930	922	184	860	23
5	209	113	47	55	e49	e110	97	2580	2220	168	336	22
6	183	96	48	55	e50	e115	84	1650	3600	157	208	21
7	169	80	49	55	e51	e120	78	554	3630	148	236	20
8	165	70	50	51	60	136	61	306	2360	142	185	19
9	149	64	54	51	58	133	55	280	1690	132	485	20
10	132	56	60	51	58	127	50	225	2090	122	353	22
11	122	54	76	52	61	122	52	192	2160	113	226	27
12	113	62	80	48	64	115	50	166	2560	106	155	2620
13	105	93	85	49	65	108	57	153	4470	99	118	5920
14	99	77	84	51	66	104	75	149	6030	98	99	10600
15	92	68	80	50	87	91	73	141	3200	102	85	8610
16	87	122	83	49	112	91	75	979	2860	101	73	2550
17	84	127	80	50	478	93	65	9700	2070	103	72	2420
18	77	100	80	49	999	80	59	13500	1340	86	126	1790
19	74	84	78	49	990	82	63	5930	966	85	150	1230
20	71	72	73	47	886	69	78	1800	781	98	94	894
21	67	66	72	47	780	67	73	1330	634	73	62	707
22	67	62	72	48	605	73	75	1040	546	65	49	594
23	62	61	71	47	475	73	67	792	489	65	47	517
24	59	60	66	47	396	73	61	681	426	62	142	455
25	58	57	63	47	331	73	51	584	376	57	123	402
26	61	54	65	48	280	73	50	492	340	77	83	362
27	62	52	57	48	235	71	50	423	311	76	62	331
28	57	52	56	64	210	85	48	416	287	66	50	309
29	59	48	57	70	---	97	43	369	263	59	42	283
30	55	48	56	73	---	191	42	330	244	59	37	260
31	53	---	60	77	---	170	---	303	---	50	33	---
TOTAL	3840	2124	1994	1661	7675	3414	2046	47220	47723	3397	8227	41107
MEAN	124	70.8	64.3	53.6	274	110	68.2	1523	1591	110	265	1370
MAX	437	127	85	77	999	191	127	13500	6030	229	1940	10600
MIN	53	48	47	47	49	67	42	50	244	50	33	19
AC-FT	7620	4210	3960	3290	15220	6770	4060	93660	94660	6740	16320	81540
CAL YR 1988	TOTAL	66530.6	MEAN	182	MAX	4810	MIN	6.9	AC-FT	132000		
WTR YR 1989	TOTAL	170428	MEAN	467	MAX	13500	MIN	19	AC-FT	338000		

e Estimated.

## 08088000 BRAZOS RIVER NEAR SOUTH BEND, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1941 to March 1948, May 1965 to current year. Chemical and biochemical analyses: November 1977 to current year. Pesticide analyses: March 1968 to April 1982. Sediment analyses: May to September 1962, November 1977 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1942 to March 1948, November 1977 to September 1981.

WATER TEMPERATURE: November 1977 to September 1981.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 14,000 microsiemens Dec. 4, 1979; minimum daily, 350 microsiemens Aug. 6, 1978.

WATER TEMPERATURE: Maximum daily, 36.0°C July 18, 20-23, Aug. 17, 1981; minimum daily, 0.0°C Jan. 10, 11, 18, 21, Feb. 18, 1978.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCEI, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CaCO3)
NOV 17...	1030	131	7010	8.10	9.5	24	13.0	121	1.9	310	110	1100
DEC 22...	1110	72	4760	8.30	12.0	33	10.5	103	1.8	K29	290	730
MAR 10...	1130	127	8350	8.70	12.0	5.1	18.2	183	5.3	K20	K12	1300
MAY 11...	1200	197	5400	8.30	21.0	55	10.2	123	2.7	330	380	740
JUL 21...	0930	73	6260	8.00	24.0	14	7.2	92	2.8	180	130	920
AUG 17...	0950	72	3150	8.20	26.0	49	10.2	134	2.5	64	110	550
DATE	HARD-NESS NONCARB WH TOT FLD MG/L AS CaCO3	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CaCO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
NOV 17...	960	280	86	1200	17	9.3	102	1100	1900	0.60	3.2	4770
DEC 22...	580	180	67	610	10	8.9	144	640	1200	0.40	5.5	2920
MAR 10...	1200	290	150	1300	16	9.2	142	1300	1900	0.60	1.3	5460
MAY 11...	630	190	63	850	14	9.2	112	690	1300	0.50	7.3	3310
JUL 21...	780	240	79	960	14	9.5	143	880	1500	0.60	12	3880
AUG 17...	400	150	41	490	9	7.0	142	480	710	0.50	11	2020
DATE	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	PHOS-PHOROUS DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS P04)
NOV 17...	4650	--	0.030	<0.100	0.090	0.100	1.0	1.1	0.040	0.010	0.010	0.03
DEC 22...	2800	--	<0.010	<0.100	0.090	0.100	0.81	0.90	0.130	0.080	0.050	0.15
MAR 10...	5040	--	0.010	<0.100	0.080	0.060	0.62	0.70	0.150	0.070	0.030	0.09
MAY 11...	3180	0.060	0.040	0.100	0.060	0.140	0.44	0.50	0.080	0.080	0.050	0.15
JUL 21...	3770	--	<0.010	<0.100	0.070	0.040	0.43	0.50	0.040	<0.010	<0.010	--
AUG 17...	1980	--	<0.010	<0.100	0.040	0.030	0.76	0.80	0.080	<0.010	0.010	0.03
DATE	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
NOV 17...	18	6.4	95	<10	2	200	<10	<1	<1	<1	3	30
DEC 22...	20	3.9	97	--	--	--	--	--	--	--	--	--
MAR 10...	35	12	98	10	2	<100	<10	<1	2	1	2	50
MAY 11...	--	--	--	950	4	200	<10	2	3	<1	3	530
JUL 21...	47	9.3	84	--	--	--	--	--	--	--	--	--
AUG 17...	65	13	96	10	4	100	<10	<1	2	<1	5	20

## BRAZOS RIVER MAIN STEM

08088000 BRAZOS RIVER NEAR SOUTH BEND, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 17...	<5	90	10	<0.1	5	1	<1	<1.0	5800	29	<10
DEC 22...	--	--	--	--	--	--	--	--	--	--	--
MAR 10...	<5	120	40	0.2	3	<1	2	<1.0	6100	34	10
MAY 11...	<1	90	70	0.2	2	2	<1	<1.0	3900	27	10
JUL 21...	--	--	--	--	--	--	--	--	--	--	--
AUG 17...	<1	50	20	0.3	2	1	<1	<1.0	2400	11	<10

## BRAZOS RIVER BASIN

233

08088300 BRIAR CREEK NEAR GRAHAM, TX

LOCATION.--Lat 33°12'43", long 98°37'06", Young County, Hydrologic Unit 12060201, near right bank at downstream side of bridge on Farm Road 1769, 3.7 mi upstream from mouth, and 7.0 mi northwest of Graham.

DRAINAGE AREA.--24.2 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1958 to September 1989 (discontinued). Prior to October 1965, published as Oak Creek near Graham.

REVISED RECORDS.--WSP 2122: 1962. WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,090 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair. No known diversions upstream from station.

AVERAGE DISCHARGE.--31 years (water years 1959-89), 4.25 ft<sup>3</sup>/s (2.38 in/yr), 3,080 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,230 ft<sup>3</sup>/s Sept. 18, 1986 (gage height 13.52 ft); maximum gage height, 13.54 ft May 22, 1982; no flow for many days each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, 15.2 ft in September 1955. Flood in May 1957 reached a stage of 15.0 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft<sup>3</sup>/s and maximum (\*).

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Feb. 17	1810	217	4.35	June 4	2035	398	6.12
May 5	0025	*1,930	*11.65	June 7	1905	216	4.16
May 7	1950	1,630	11.34	June 13	1830	398	6.12
May 17	2245	548	7.59	Sept. 13	1830	995	9.73
May 28	0310	408	6.23				

Minimum discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	1.0	.00	.00	.00	.00	.00	.01	.00	.45	.01	.00	.00		
2	.28	.00	.00	.00	.00	.01	.01	.00	.24	.00	.00	.00		
3	.05	.00	.00	.00	.00	.01	.00	.00	.29	.00	.00	.00		
4	.01	.00	.00	.00	.00	.00	.00	216	219	.00	.00	.00		
5	.00	.00	.00	.00	.00	.00	.00	691	105	.00	.00	.00		
6	.00	.00	.00	.00	.00	.00	.00	25	9.5	.00	.00	.00		
7	.00	.00	.00	.00	.00	.01	.00	492	140	.00	111	.00		
8	.00	.00	.00	.00	.00	.02	.00	237	59	.00	22	.00		
9	.00	.00	.00	.00	.00	.05	.00	13	8.6	.00	2.2	.00		
10	.00	.00	.00	.00	.00	.05	.00	3.8	3.9	.00	.36	.00		
11	.00	.00	.00	.00	.00	.05	.00	2.3	29	.00	.07	5.0		
12	.00	32	.00	.00	.00	.03	.00	1.1	136	.00	.01	2.8		
13	.00	12	.00	.00	.00	.07	.00	.70	267	.00	.00	645		
14	.00	1.3	.00	.00	.00	.06	.00	.51	86	.00	.00	174		
15	.00	.36	.00	.00	.00	.03	.00	.41	13	.00	.00	12		
16	.00	.11	.00	.00	.04	.02	.00	31	4.1	.00	.00	2.9		
17	.00	.03	.00	.00	123	.01	.00	208	2.1	.00	.00	1.2		
18	.00	.01	.00	.00	55	.01	.00	152	1.0	.00	.00	.49		
19	.00	.00	.00	.00	5.8	.00	.00	12	.60	.00	.00	.25		
20	.00	.00	.00	.00	2.1	.00	.00	3.5	.40	.00	.00	.16		
21	.00	.00	.00	.00	1.0	.00	.00	1.5	.25	.00	.00	.12		
22	.00	.00	.00	.00	.46	.00	.00	.64	.16	.00	.00	.07		
23	.00	.00	.00	.00	.20	.00	.00	.37	.11	.00	.00	.04		
24	.00	.00	.00	.00	.10	.00	.00	.21	.08	.00	.00	.02		
25	.00	.00	.00	.00	.06	.00	.00	.12	.06	.00	.00	.01		
26	.00	.00	.00	.00	.04	.00	.00	.08	.06	.00	.00	.00		
27	.00	.00	.00	.00	.03	.00	.00	59	.05	.00	.00	.00		
28	.00	.00	.00	.00	.01	.02	.00	162	.03	.00	.00	.00		
29	.00	.00	.00	.00	---	.01	.00	9.2	.02	.00	.00	.00		
30	.00	.00	.00	.00	---	.01	.00	2.6	.01	.00	.00	.00		
31	.00	---	.00	.00	---	.01	---	1.0	---	.00	.00	---		
TOTAL	1.34	45.81	0.00	0.00	187.84	0.48	0.02	2326.04	1086.01	0.01	135.64	844.06		
MEAN	.043	1.53	.00	.00	6.71	.015	.001	75.0	36.2	.000	4.38	28.1		
MAX	1.0	32	.00	.00	123	.07	.01	691	267	.01	111	645		
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00		
AC-FT	2.7	91	.0	.0	373	1.0	.04	4610	2150	.02	269	1670		
CFSM	.00	.06	.00	.00	.28	.00	.00	3.10	1.50	.00	.18	1.16		
IN.	.00	.07	.00	.00	.29	.00	.00	3.58	1.67	.00	.21	1.30		
CAL YR 1988	TOTAL	1054.25	MEAN	2.88	MAX	305	MIN	.00	AC-FT	2090	CFSM	.12	IN.	1.62
WTR YR 1989	TOTAL	4627.25	MEAN	12.7	MAX	691	MIN	.00	AC-FT	9180	CFSM	.52	IN.	7.11



## 08088400 LAKE GRAHAM NEAR GRAHAM, TX

LOCATION.--Lat 33°08'04", long 98°36'48". Young County, Hydrologic Unit 12060201, near left end of earthen dam on Salt Creek, 2.2 mi northwest of Graham, 5 mi downstream from Briar Creek, and 9.5 mi upstream from mouth.

DRAINAGE AREA.--221 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1958 to September 1963 (unpublished record), October 1963 to current year. Prior to October 1965, monthend contents only.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1.30 ft above National Geodetic Vertical Datum of 1929. Prior to October 1963, nonrecording gage at same site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam 5,000 ft long. Lake Graham was connected with Lake Eddleman in 1959 by a cut channel at a gage height of 1,050.0 ft. Deliberate impoundment began Apr. 28, 1958, and dam was completed in July 1958. The uncontrolled emergency spillway is a 1,050-foot-wide cut at the right end of dam. The spillway is designed to discharge 136,500 ft<sup>3</sup>/s at a gage height of 1,087.5 ft. The dam is the property of the city of Graham and was built to impound water for municipal and industrial uses. In addition, water is used by the Texas Electric Service Co. for operation of their steam generating powerplant. The capacity table is based on an original survey of Lake Eddleman in 1928 and a Salt Creek survey of 1953. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Gage height (feet)	Capacity (acre-feet)
Top of dam.....	1,092.0	-
Crest of spillway.....	1,075.0	53,680
Bottom of interconnecting channel.....	1,050.0	8,670
Lowest gated outlet (invert).....	1,050.0	8,670

COOPERATION.--Capacity table was provided by Freese, Nichols, and Endress, Consulting Engineers. Record of diversions provided by the city of Graham.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 61,720 acre-ft May 16, 1989 (gage height, 1,077.98 ft); minimum, 23,390 acre-ft May 1, 1980 (gage height, 1,061.23 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 61,720 acre-ft May 16 at 2300 hours (gage height, 1,077.98 ft); minimum, 46,080 acre-ft Sept. 10 (gage height, 1,071.94 ft).

Capacity table (gage height, in feet, and total contents, in acre-feet)

1,070.0	41,480	1,074.0	51,140	1,078.0	61,780
1,072.0	46,220	1,076.0	56,290		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50740	49350	48730	48440	47930	50590	50270	48860	53760	52360	48460	46930
2	50670	49300	48730	48420	47850	50590	50250	48960	53580	52160	48590	46880
3	50620	49260	48680	48390	47850	50420	50200	48910	53630	52000	48540	46760
4	50590	49260	48660	48390	47810	50540	50070	54540	55530	51830	48440	46660
5	50500	49080	48660	48370	47710	50640	50020	58260	55640	51650	48370	46610
6	50450	49060	48660	48370	47660	50570	50020	56510	55190	51500	48290	46510
7	50370	49030	48680	48270	47640	50570	49970	58580	55900	51340	48610	46390
8	50350	49010	48640	48250	47610	50690	49850	56510	55640	51140	48640	46270
9	50300	48960	48640	48200	47590	50690	49830	55610	55090	50940	48560	46200
10	50250	48880	48760	48220	47610	50690	49630	55140	54960	50690	48490	46080
11	50150	48930	48780	48270	47610	50690	49600	54830	55140	50520	48440	46540
12	50120	49380	48780	48150	47610	50690	49550	54570	56830	50350	48370	46540
13	50070	49480	48780	48100	47560	50670	49600	54440	57560	50170	48290	52690
14	50020	49500	48780	48100	47590	50690	49600	54250	56210	50120	48290	55640
15	49970	49400	48710	48030	47730	50570	49580	54070	55400	50000	48250	55450
16	49950	49260	48660	48030	47980	50590	49550	61530	54980	49800	48170	55190
17	49900	49260	48640	48070	49550	50620	49580	58990	54720	49600	48100	54980
18	49800	49230	48680	48070	50620	50620	49550	56690	54490	49480	48070	54830
19	49780	49160	48680	48050	50690	50570	49500	55640	54280	49380	48030	54620
20	49700	49110	48640	48000	50740	50320	49450	55300	54120	49260	47950	54520
21	49630	49060	48640	47950	50740	50370	49430	54830	53970	49160	47880	54410
22	49650	49030	48590	47900	50690	50320	49330	54670	53810	49110	47760	54310
23	49550	49110	48610	47900	50670	50320	49230	54410	53650	49060	47710	54120
24	49500	49030	48540	47930	50690	50320	49180	54360	53480	48980	47610	54050
25	49550	48980	48510	47900	50720	50320	49180	54120	53350	48930	47540	53970
26	49480	48910	48590	47880	50670	50400	49160	53890	53170	48880	47460	53810
27	49580	48860	48460	47880	50620	50400	49110	54330	53040	48780	47340	53710
28	49400	48830	48440	48030	50590	50470	49110	54540	52890	48730	47290	53550
29	49400	48810	48440	47980	---	50450	48930	54310	52660	48660	47200	53400
30	49380	48730	48490	47980	---	50420	48880	54100	52510	48590	47100	53300
31	49330	---	48420	47980	---	50320	---	53890	---	48510	47000	---
MAX	50740	49500	48780	48440	50740	50690	50270	61530	57560	52360	48640	55640
MIN	49330	48730	48420	47880	47560	50320	48880	48860	52510	48510	47000	46080
(↑)	1073.27	1073.03	1072.90	1072.72	1073.78	1073.67	1073.09	1075.08	1074.54	1072.94	1072.32	1074.85
(Φ)	-1360	-600	-310	-440	+2610	-270	-1440	+5010	-1380	-4000	-1510	+6300
CAL YR 1988	MAX	52710	MIN	46560	(Φ)	-2400						
WTR YR 1989	MAX	61530	MIN	46080	(Φ)	+2610						

(↑) Gage height, in feet, at end of month.  
(Φ) Change in contents, in acre-feet.

BRAZOS RIVER BASIN

235

08088450 BIG CEDAR CREEK NEAR IVAN, TX

LOCATION.--Lat 32°49'39", long 98°43'25", Stephens County, Hydrologic Unit 12060201, on left bank at downstream side of bridge on Farm Road 717, 3.2 mi south of Ivan, 8.2 mi northwest of Caddo, and 11.6 mi northeast of Breckenridge.

DRAINAGE AREA.--97.0 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1964 to September 1989 (discontinued).

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,090 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--24 years (water years 1966-89), 11.8 ft<sup>3</sup>/s (1.65 in/yr), 8,550 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,700 ft<sup>3</sup>/s Oct. 13, 1981 (gage height, 32.50 ft), from rating curve extended above 30,100 ft<sup>3</sup>/s; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 1,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
June 7	0345	1,150	10.98	Aug. 2	1600	*5,710	*23.90
June 11	0235	1,400	12.08	Sept. 13	1400	1,560	12.72
June 13	1030	1,790	13.57				

Minimum discharge, no flow for several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.29	.07	.19	.13	.32	.03	.09	.05	.13	.00	.00
2	.09	.25	.05	.18	e.05	.32	.04	.08	.08	.12	1660	.00
3	.11	.24	.05	.18	e.01	e.20	.05	.07	.32	.11	.79	.00
4	.11	.19	.08	.19	.00	e.02	.05	249	228	.17	.11	.00
5	.11	.19	.11	.18	.00	e.01	.05	37	67	.22	3.9	.00
6	.02	.19	.11	.15	.00	e.01	.03	12	23	.40	22	.00
7	.03	.18	.11	.14	.00	e.01	.03	4.3	334	.51	32	.00
8	.03	.17	.18	.11	.00	e.01	.02	2.0	20	.44	4.4	.00
9	.03	.22	.25	.08	.00	.01	.02	.84	9.5	.41	1.3	12
10	.03	.28	.37	.08	.00	.01	.02	.36	31	.37	.48	28
11	.03	.32	.29	.09	.01	.02	.03	.15	473	.39	.18	66
12	.04	.36	.19	.08	.01	.02	.03	.08	112	.39	.06	17
13	.07	.29	.19	.08	.01	.03	.06	.06	564	.37	.01	790
14	.09	.25	.15	.12	.02	.04	.04	.03	59	.32	.03	77
15	.12	.24	.15	.12	.09	.02	.03	.03	21	.36	.03	13
16	.18	.19	.15	.11	.07	.03	.05	.03	13	.25	.02	5.5
17	.23	.23	.15	.11	17	.03	.07	49	10	.25	.01	2.4
18	.29	.25	.15	.11	17	.03	.08	32	6.9	.29	.00	1.3
19	.32	.27	.15	.08	8.0	.02	.05	9.4	4.7	.35	.00	.81
20	.32	.25	.14	.08	4.3	.02	.03	4.8	3.2	.44	.00	.50
21	.32	.25	.11	.08	2.5	.02	.03	2.5	2.1	.45	.00	.32
22	.32	.19	.11	.08	1.0	.02	.04	1.3	1.3	.39	.00	.17
23	.32	.15	.11	.08	.47	.01	.05	.47	.80	.55	.00	.07
24	.31	.14	.08	.08	2.3	.01	.05	.11	.39	.61	.00	.02
25	.30	.12	.08	.06	1.2	.02	.05	.03	.34	.57	.00	.01
26	.41	.13	.13	.06	.59	.02	.05	.02	.25	.70	.00	.00
27	.25	.09	.12	.05	.39	.03	.05	.02	.17	.60	.00	.00
28	.25	.08	.14	.20	.35	.05	.07	.03	.15	.44	.00	.00
29	.25	.08	.13	.12	---	.03	.05	.03	.16	.30	.00	.00
30	.25	.08	.13	.11	---	.03	.04	.05	.15	.15	.00	.00
31	.32	---	.17	.11	---	.03	---	.05	---	.03	.00	---
TOTAL	5.65	6.16	4.40	3.49	55.50	1.45	1.29	405.93	1985.56	11.08	1814.42	1014.10
MEAN	.18	.21	.14	.11	1.98	.047	.043	13.1	66.2	.36	58.5	33.8
MAX	.41	.36	.37	.20	17	.32	.08	249	564	.70	1660	790
MIN	.02	.08	.05	.05	.00	.01	.02	.02	.05	.03	.00	.00
AC-FT	11	12	8.7	6.9	110	2.9	2.6	805	3940	22	3600	2010
CFSM	.00	.00	.00	.00	.02	.00	.00	.13	.68	.00	.60	.35
IN.	.00	.00	.00	.00	.02	.00	.00	.16	.76	.00	.70	.39
CAL YR 1988	TOTAL	235.93	MEAN	.64	MAX	86	MIN	.00	AC-FT	468	CFSM	.01
WTR YR 1989	TOTAL	5309.03	MEAN	14.5	MAX	1660	MIN	.00	AC-FT	10530	CFSM	.15
											IN.	.09
												2.04

e Estimated.

## BRAZOS RIVER MAIN STEM

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX

LOCATION.--Lat 32°52'20", long 98°25'32", Palo Pinto County, Hydrologic Unit 12060201, at Morris Sheppard Dam on the Brazos River, 2.6 mi upstream from Loving Creek, 11.3 mi southwest of Grafard, and at mile 687.5.

DRAINAGE AREA.--23,596 mi<sup>2</sup>, approximately, of which 9,566 mi<sup>2</sup> probably is noncontributing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1941 to current year. Prior to October 1977, published as Possum Kingdom Reservoir.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 0.10 ft National Geodetic Vertical Datum of 1929 (levels by Brazos River Authority). Prior to Mar. 19, 1968, mercury U-tube in powerhouse at present site and datum.

REMARKS.--The lake is formed by reinforced concrete dam, Ambursen-type, massive buttress with flat-slab deck, a controlled spillway, two bulkhead sections, and an earthen-dike section. Total length of dam is 2,740 ft long. The dam was completed and storage began Mar. 21, 1941. The spillway has nine roof-weir gates (modified bear-trap type) that are 73.66 by 13 ft each and are designed to discharge about 100,000 ft<sup>3</sup>/s at a gage height of 1,000.0 ft. The outlet works consist of one controlled 54-inch-diameter conduit. Water is used for power development, irrigation, municipal, industrial, and recreational purposes. Two generators located in the powerhouse at dam can produce 22,500 kilowatts at a 1,000-foot gage height. Eleven major reservoirs, with a combined capacity of 607,800 acre-ft, largely regulate the inflow. The capacity curve is based on recomputation of a survey made in 1974. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08080950. Gage-height telemeter at station since Jan. 13, 1981. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Gage height (feet)	Capacity (acre-feet)
Top of dam.....	1,024.0	-
Design flood (top of gates).....	1,000.0	570,200
Crest of spillway.....	987.0	383,300
Invert of penstock.....	911.5	4,560
Lowest gated outlet (invert of 54-inch conduit).....	874.8	0

COOPERATION.--Capacity table 3-C provided by the Brazos River Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 743,700 acre-ft Oct. 5, 1941 (gage height, 1,001.0 ft); maximum gage height, 1,003.60 ft Oct. 13, 1981; minimum contents observed, 273,000 acre-ft Feb. 19 to Mar. 17, 1953 (gage height, 967.0 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 569,200 acre-ft June 18 at 1700 hours (gage height, 999.94 ft); minimum, 384,600 acre-ft Apr. 30 (gage height, 987.11 ft).

Capacity table (gage height, in feet, and total contents, in acre-feet)

986.0	371,700	992.0	446,100	998.0	536,000
988.0	395,100	994.0	474,100	1,000.0	570,200
990.0	419,800	996.0	504,000		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	423800	417800	407000	402000	398700	407100	393200	385700	489700	567100	549400	526000
2	423900	417400	407100	402200	398700	407500	393300	386800	488600	566700	557000	525100
3	423900	417500	406700	401800	397500	406100	393300	387100	489300	567100	559600	525000
4	423900	417300	406100	401600	395200	403300	393100	386400	490800	567200	559200	522700
5	424300	417000	406000	401900	393600	398900	392700	407600	491500	566700	557100	521600
6	424400	416500	405700	401500	391300	396600	392700	416400	495000	566700	557000	519800
7	423900	415300	406200	401300	389700	394700	392700	440600	495900	566900	554200	517900
8	424300	415600	404900	400700	389700	394600	392500	454400	498200	566500	551300	517600
9	423500	415900	404900	401100	389400	394300	392600	460000	504600	566200	550400	518100
10	423000	415100	405300	400200	389300	394200	391700	462600	511400	566000	550100	518500
11	422900	415600	403900	401000	389400	394300	391200	462900	520300	565500	549600	519600
12	422500	415000	403900	399900	389600	394500	391100	463300	535000	565700	548300	518400
13	422800	415300	403200	398700	389600	394600	391600	464200	566100	565300	547300	532900
14	422400	415400	403100	398200	390000	395000	392000	464300	565300	565700	547400	546900
15	422400	415100	403000	398500	390900	394500	392000	462900	565700	564100	545600	554500
16	422300	414300	402600	398600	392100	394500	392100	462700	564600	563900	545900	557800
17	421500	413600	402600	398100	394900	394700	392000	471300	567600	562900	545200	559900
18	421300	413600	402800	398200	395700	394700	392300	488200	567800	562500	545200	559200
19	421300	413400	403100	398200	397800	395100	391900	492100	565800	562400	544600	557500
20	421200	413000	402800	397900	400100	393800	391900	489400	567600	560600	543100	554500
21	420400	412200	403000	397900	401400	392500	390400	490900	567400	559100	541400	551100
22	420400	412200	403200	397900	402500	392400	390400	489700	567800	557000	540200	548100
23	420200	411900	403000	397900	403800	391800	390400	490200	567100	556600	538900	543400
24	419500	411900	403000	398000	404700	391800	390300	490000	567100	555200	537800	540000
25	419400	411900	403000	398600	405700	391700	389000	489900	567900	554400	535700	539700
26	419200	410700	403200	398000	406200	391800	386800	490800	566500	553100	534500	539900
27	418500	410100	403100	398100	406500	392100	386800	491500	566900	553300	533200	539500
28	417900	409300	402400	398700	406800	393400	385000	491100	567100	552100	532300	539000
29	417900	408600	402400	398100	---	393300	384700	490000	567400	551100	530300	538400
30	418200	407500	403300	398600	---	393300	385200	488600	567600	549900	528900	537500
31	417800	---	402000	398900	---	393200	---	489400	---	549800	527600	---
MAX	424400	417800	407100	402200	406800	407500	393300	492100	567900	567200	559600	559900
MIN	417800	407500	402000	397900	389300	391700	384700	385700	488600	549800	527600	517600
(↑)	989.84	989.02	988.57	988.31	988.97	987.84	987.16	995.04	999.85	998.82	997.48	998.09
(Φ)	-4300	-10300	-5500	-3100	+7900	-13600	-8000	+104200	+78200	-17800	-22200	-9900
CAL YR 1988	MAX	424400	MIN	367400	(Φ)	+25100						
WTR YR 1989	MAX	567900	MIN	384700	(Φ)	+115400						

(↑) Gage height, in feet, at end of month.  
(Φ) Change in contents, in acre-feet.

## BRAZOS RIVER MAIN STEM

23/

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: March 1962 to September 1977. Chemical and biochemical analyses: February 1978 to current year.

325208098254201 - POSSUM KINGDOM LK SITE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
20...	1106	1.00	3900	8.20	10.5	9.2	85
20...	1108	10.0	3900	8.20	10.5	9.2	85
20...	1110	20.0	3900	8.20	10.5	9.2	85
20...	1112	30.0	3900	8.10	10.5	9.2	85
20...	1114	40.0	3900	8.10	10.5	9.2	85
20...	1116	50.0	3900	8.10	10.5	9.2	85
20...	1118	60.0	3900	8.10	10.5	9.2	85
MAY							
02...	1120	1.00	3820	8.30	22.0	8.9	107
02...	1122	10.0	3830	8.20	21.5	8.9	106
02...	1124	20.0	3820	8.20	21.0	9.4	111
02...	1126	30.0	3820	8.10	16.0	9.2	98
02...	1128	40.0	3820	8.10	15.0	8.3	86
02...	1130	50.0	3830	7.90	12.5	6.9	68
02...	1132	61.0	3820	7.80	11.0	6.2	59
AUG							
29...	1235	1.00	2380	8.30	30.5	6.3	88
29...	1237	10.0	2370	8.30	29.5	6.4	88
29...	1239	20.0	2370	8.10	28.5	5.8	78
29...	1241	30.0	2400	7.80	28.0	4.6	62
29...	1243	40.0	2490	7.50	27.0	2.9	38
29...	1245	50.0	2960	7.50	25.5	2.5	32
29...	1247	60.0	3310	7.50	24.0	2.6	32

325218098254101 - POSSUM KINGDOM LK SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CAC03)
JAN									
20...	1127	1.00	3890	8.20	11.0	6.70	9.4	88	690
20...	1129	10.0	3890	8.20	11.0	--	9.4	88	--
20...	1131	20.0	3890	8.20	11.0	--	9.3	87	--
20...	1133	30.0	3890	8.10	11.0	--	9.1	86	--
20...	1135	40.0	3890	8.10	10.5	--	9.1	85	--
20...	1137	50.0	3890	8.10	10.5	--	9.1	85	--
20...	1139	60.0	3890	8.10	10.5	--	9.1	85	--
20...	1141	70.0	3890	8.10	10.5	--	9.1	85	--
20...	1143	80.0	3890	8.10	10.5	--	9.0	84	--
20...	1145	90.0	3890	8.10	10.5	--	9.0	84	640
MAY									
02...	1040	1.00	3830	8.30	21.5	1.80	8.9	106	650
02...	1042	10.0	3830	8.20	21.5	--	8.9	106	--
02...	1044	20.0	3830	8.20	21.0	--	8.9	105	--
02...	1046	30.0	3820	8.10	15.5	--	8.9	94	--
02...	1048	40.0	3820	8.10	14.5	--	8.3	85	--
02...	1050	50.0	3830	7.90	12.5	--	7.0	69	--
02...	1052	60.0	3830	7.80	11.0	--	6.4	61	--
02...	1054	70.0	3830	7.80	10.5	--	6.1	57	--
02...	1056	80.0	3830	7.80	10.5	--	6.1	57	--
02...	1058	90.0	3830	7.80	10.0	--	4.7	44	640
AUG									
29...	1145	1.00	2380	8.30	31.0	3.30	6.3	89	380
29...	1147	10.0	2380	8.30	30.0	--	6.3	87	--
29...	1149	20.0	2380	8.10	28.5	--	5.6	76	--
29...	1151	30.0	2390	7.90	28.0	--	4.8	64	--
29...	1153	40.0	2490	7.50	27.5	--	3.0	40	--
29...	1155	50.0	2890	7.50	26.0	--	2.5	32	--
29...	1157	60.0	3400	7.50	24.0	--	2.5	31	--
29...	1159	70.0	3680	7.50	21.5	--	2.4	29	--
29...	1201	80.0	3830	7.50	19.5	--	2.4	28	--
29...	1203	90.0	3930	7.50	18.0	--	2.4	27	--
29...	1205	97.0	3940	7.50	18.0	--	2.5	28	620

## BRAZOS RIVER MAIN STEM

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325218098254101 - POSSUM KINGDOM LK SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CAC03	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET MG/L AS CAC03	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN									
20...	580	180	59	560	10	8.2	110	570	900
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	530	160	58	540	10	8.3	110	570	860
MAY									
02...	560	160	60	560	10	9.3	90	560	870
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	530	160	59	570	10	9.1	116	570	870
AUG									
29...	280	100	32	340	8	7.3	99	310	520
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	470	160	54	560	10	9.0	151	540	880

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
20...	0.50	6.8	2350	<0.100	0.50	0.030	20	<10
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	<0.100	0.50	0.020	10	<10
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	6.6	2270	<0.100	0.40	0.020	10	<10
MAY								
02...	0.50	5.4	2280	<0.100	0.40	0.010	20	10
02...	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--
02...	--	--	--	<0.100	0.30	0.010	20	30
02...	--	--	--	<0.100	0.60	0.010	20	20
02...	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--
02...	--	6.8	2310	<0.100	0.40	0.020	40	330
AUG								
29...	0.40	5.2	1370	<0.100	0.50	<0.010	30	<10
29...	--	--	--	--	--	--	--	--
29...	--	--	--	<0.100	<0.20	0.010	10	20
29...	--	--	--	<0.100	0.30	<0.010	20	<10
29...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--
29...	--	7.9	2300	<0.100	1.7	0.220	130	630



## BRAZOS RIVER MAIN STEM

239

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325250098275301 - POSSUM KINGDOM LK SITE BR

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
20...	1042	1.00	3900	8.20	10.5	9.7	90
20...	1044	10.0	3900	8.20	10.5	9.7	90
20...	1046	20.0	3900	8.20	10.5	9.6	89
20...	1048	30.0	3900	8.20	10.5	9.6	89
20...	1050	40.0	3910	8.20	10.5	9.4	87
20...	1052	50.0	3910	8.20	10.5	8.7	81
MAY							
02...	1008	1.00	3830	8.20	21.5	8.9	106
02...	1010	10.0	3830	8.20	21.0	8.9	105
02...	1012	20.0	3830	8.20	21.0	8.9	105
02...	1014	30.0	3830	8.10	16.5	8.9	96
02...	1016	40.0	3830	7.90	14.0	6.6	67
02...	1018	51.0	3840	7.80	11.5	4.9	47
AUG							
29...	1110	1.00	2320	8.30	31.0	6.4	90
29...	1112	10.0	2330	8.30	30.0	6.3	87
29...	1114	20.0	2270	8.10	29.0	5.8	79
29...	1116	30.0	2100	7.50	27.5	3.0	40
29...	1118	40.0	2440	7.40	26.5	2.5	33
29...	1120	50.0	2950	7.40	25.0	2.6	33
29...	1122	62.0	3250	7.40	24.0	2.6	32

325256098275301 - POSSUM KINGDOM LK SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
20...	1012	1.00	3900	8.20	10.5	9.6	89
20...	1014	10.0	3900	8.20	10.5	9.6	89
20...	1016	20.0	3900	8.20	10.5	9.5	88
20...	1018	30.0	3900	8.20	10.5	9.5	88
20...	1020	40.0	3910	8.20	10.5	9.4	87
20...	1022	50.0	3910	8.20	10.5	9.1	85
20...	1024	60.0	3910	8.20	10.5	8.7	81
20...	1026	70.0	3910	8.20	10.5	8.9	83
20...	1028	82.0	3910	8.20	10.5	8.9	83
MAY							
02...	0942	1.00	3830	8.20	21.0	8.9	105
02...	0944	10.0	3830	8.20	21.0	8.9	105
02...	0946	20.0	3830	8.20	21.0	8.8	104
02...	0948	30.0	3830	8.10	16.0	8.8	94
02...	0950	40.0	3830	7.90	13.5	6.4	64
02...	0952	50.0	3830	7.80	11.5	5.5	53
02...	0954	60.0	3830	7.80	10.5	5.2	49
02...	0956	70.0	3830	7.80	10.0	4.9	46
02...	0958	82.0	3830	7.80	10.0	4.8	45
AUG							
29...	1040	1.00	2330	8.30	30.5	6.4	90
29...	1042	10.0	2340	8.30	30.0	6.5	90
29...	1044	20.0	2330	8.20	29.0	6.1	83
29...	1046	30.0	2230	7.60	27.0	3.7	49
29...	1048	40.0	2440	7.40	26.5	2.6	34
29...	1050	50.0	2960	7.40	25.0	2.6	33
29...	1052	60.0	3330	7.40	23.5	2.6	32
29...	1054	70.0	3550	7.40	21.5	2.5	30
29...	1056	80.0	3780	7.40	19.5	2.5	29
29...	1058	91.0	3900	7.40	18.0	2.5	28

## BRAZOS RIVER MAIN STEM

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325129098311801 - POSSUM KINGDOM LK SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
20...	0936	1.00	3900	8.30	10.0	9.7	89
20...	0938	10.0	3900	8.30	10.0	9.7	89
20...	0940	20.0	3900	8.30	10.0	9.7	89
20...	0942	30.0	3900	8.30	10.0	9.7	89
20...	0944	40.0	3910	8.30	10.0	9.5	87
20...	0946	50.0	3910	8.20	9.5	9.0	82
20...	0948	65.0	3910	8.20	9.5	8.6	78
MAY							
02...	0905	1.00	3840	8.20	21.5	8.7	103
02...	0907	10.0	3840	8.20	21.5	8.6	102
02...	0909	20.0	3840	8.20	21.0	8.6	101
02...	0911	30.0	3930	7.90	15.5	5.3	56
02...	0913	40.0	3980	7.90	14.5	4.1	42
02...	0915	50.0	3960	7.80	12.5	2.4	24
02...	0917	64.0	3860	7.80	11.0	2.3	22
AUG							
29...	1000	1.00	1990	8.30	28.5	6.6	89
29...	1002	10.0	1990	8.30	28.5	6.6	89
29...	1004	20.0	1980	8.20	28.0	6.3	84
29...	1006	30.0	2040	7.50	27.0	3.2	42
29...	1008	40.0	2220	7.40	25.5	2.6	33
29...	1010	50.0	2730	7.40	24.0	2.6	32
29...	1012	60.0	3050	7.40	22.5	2.7	33
29...	1014	73.0	3430	7.40	21.0	2.7	32

325327098314001 - POSSUM KINGDOM LK SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)
JAN									
20...	0906	1.00	3840	8.30	9.5	1.20	9.5	86	630
20...	0908	10.0	3840	8.30	9.5	--	9.4	85	--
20...	0910	20.0	3840	8.30	9.5	--	9.4	85	--
20...	0912	30.0	3850	8.30	9.5	--	9.2	83	--
20...	0914	40.0	3850	8.30	9.5	--	9.2	83	--
20...	0916	50.0	3880	8.20	9.5	--	8.3	75	--
20...	0918	60.0	3880	8.20	9.0	--	8.4	75	640
MAY									
02...	0828	1.00	3860	8.20	21.5	1.30	8.2	98	650
02...	0830	10.0	3860	8.20	21.5	--	8.2	98	--
02...	0832	20.0	3860	8.20	21.0	--	8.1	95	--
02...	0834	30.0	3920	8.00	16.5	--	6.2	67	--
02...	0836	40.0	4050	7.80	14.0	--	3.9	40	--
02...	0838	50.0	4040	7.80	12.5	--	3.0	30	--
02...	0840	59.0	3980	7.80	12.0	--	2.6	25	680
AUG									
29...	0910	1.00	1890	8.40	29.5	1.80	6.8	93	340
29...	0912	10.0	1910	8.40	29.0	--	6.7	91	--
29...	0914	20.0	1960	8.00	28.0	--	5.4	72	--
29...	0916	30.0	2060	7.50	27.0	--	3.3	43	--
29...	0918	40.0	2210	7.40	26.0	--	2.8	36	--
29...	0920	50.0	2650	7.30	24.0	--	2.9	36	--
29...	0922	60.0	3000	7.30	22.0	--	2.9	35	--
29...	0924	68.0	3280	7.20	21.0	--	3.0	35	530

BRAZOS RIVER MAIN STEM

241

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325327098314001 - POSSUM KINGDOM LK SITE DC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CAC03	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS- SOLVED (MG/L AS SO4)
JAN								
20...	530	160	56	570	10	8.1	103	570
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	540	160	59	570	10	8.5	102	570
MAY								
02...	560	160	61	580	10	9.4	90	560
02...	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--
02...	560	170	61	590	10	9.0	117	560
AUG								
29...	230	95	24	250	6	6.9	102	250
29...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--
29...	360	140	44	470	9	8.0	170	420

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
20...	890	5.2	2320	<0.100	1.8	0.030	20	<10
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	<0.100	0.60	0.030	30	<10
20...	--	--	--	--	--	--	--	--
20...	890	5.3	2320	<0.100	1.0	0.030	20	10
MAY								
02...	890	4.7	2320	<0.100	0.40	0.020	20	<10
02...	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--
02...	--	--	--	<0.100	0.60	0.020	20	40
02...	--	--	--	0.200	0.40	0.020	20	60
02...	--	--	--	--	--	--	--	--
02...	900	6.1	2370	0.400	0.50	0.040	40	370
AUG								
29...	390	7.1	1080	<0.100	0.60	<0.010	<3	<1
29...	--	--	--	--	--	--	--	--
29...	--	--	--	<0.100	0.60	0.010	20	20
29...	--	--	--	<0.100	0.30	0.020	40	20
29...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--
29...	720	9.2	1910	<0.100	2.9	0.400	100	460

## BRAZOS RIVER MAIN STEM

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325347098265701 - POSSUM KINGDOM LK SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
20...	1402	1.00	3680	8.30	9.0	10.3	92
20...	1404	10.0	3680	8.30	9.0	10.2	91
20...	1406	20.0	3680	8.30	9.0	10.1	91
20...	1408	30.0	3690	8.20	8.5	9.1	81
20...	1410	41.0	3710	8.10	8.5	8.4	74
MAY							
02...	1350	1.00	4030	8.20	22.0	7.7	93
02...	1352	10.0	4030	8.10	22.0	7.7	93
02...	1354	20.0	4000	7.90	18.5	4.8	54
02...	1356	30.0	4110	7.80	16.5	3.4	37
02...	1358	40.0	4290	7.70	15.5	1.1	12
AUG							
29...	1530	1.00	2000	8.40	31.5	6.5	93
29...	1532	10.0	2010	8.40	29.5	6.4	88
29...	1534	20.0	2020	8.20	29.0	5.7	78
29...	1536	30.0	2040	7.90	29.0	4.4	60
29...	1538	40.0	2260	7.50	27.5	2.5	33
29...	1540	50.0	2470	7.30	25.5	2.5	32

325557098264401 - POSSUM KINGDOM LK SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
20...	1428	1.00	3780	8.30	8.5	10.4	92
20...	1430	10.0	3780	8.30	8.5	10.4	92
20...	1432	20.0	3780	8.20	9.0	10.3	92
20...	1434	27.0	3840	8.10	8.5	9.5	84
MAY							
02...	1416	1.00	4220	8.10	22.0	7.4	89
02...	1418	10.0	4230	8.10	22.0	7.3	88
02...	1420	20.0	4200	7.70	18.5	1.8	20
02...	1422	26.0	4190	7.70	18.0	1.4	16
AUG							
29...	1600	1.00	2040	8.50	31.5	6.7	96
29...	1602	10.0	2070	8.40	30.0	6.0	83
29...	1604	20.0	2080	8.10	29.5	4.9	68
29...	1606	30.0	2150	7.70	29.0	3.1	42
29...	1608	37.0	2210	7.50	28.0	2.6	35

325715098250501 - POSSUM KINGDOM LK SITE GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CAC03)
JAN									
20...	1450	1.00	3850	8.30	9.0	0.50	10.9	98	620
20...	1452	10.0	3930	8.30	9.0	--	10.7	96	--
20...	1454	18.0	3930	8.30	9.0	--	10.7	96	620
MAY									
02...	1425	1.00	4460	7.90	22.0	0.30	5.5	66	770
02...	1427	10.0	4440	7.80	21.0	--	4.6	55	--
02...	1429	15.0	4300	7.70	20.0	--	2.5	29	720
AUG									
29...	1622	1.00	2060	8.50	32.5	0.90	6.9	100	380
29...	1624	10.0	2070	8.40	30.5	--	6.2	87	--
29...	1626	20.0	2060	7.90	30.0	--	4.1	57	--
29...	1628	26.0	2090	7.70	29.5	--	3.2	44	380

## BRAZOS RIVER MAIN STEM

243

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325715098250501 - POSSUM KINGDOM LK SITE GC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)
JAN								
20...	510	160	54	540	10	7.5	116	540
20...	--	--	--	--	--	--	--	--
20...	510	160	54	580	10	7.5	116	550
MAY								
02...	650	190	71	660	11	9.5	115	640
02...	--	--	--	--	--	--	--	--
02...	610	180	66	660	11	9.0	115	620
AUG								
29...	270	110	26	290	7	7.5	108	280
29...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--
29...	260	110	25	270	6	7.4	116	270
DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
20...	860	5.5	2240	<0.100	0.50	0.040	10	10
20...	--	--	--	<0.100	0.60	0.050	30	10
20...	900	5.5	2330	<0.100	0.60	0.050	20	10
MAY								
02...	1000	4.2	2640	<0.100	0.60	0.030	30	90
02...	--	--	--	<0.100	<0.20	0.420	40	130
02...	990	4.8	2600	<0.100	0.70	0.040	20	310
AUG								
29...	420	8.1	1210	<0.100	0.60	0.020	40	<10
29...	--	--	--	<0.100	0.60	0.020	280	<10
29...	--	--	--	<0.100	0.70	0.030	20	60
29...	430	8.9	1190	<0.100	0.70	0.050	40	190

325047098291201 - POSSUM KINGDOM LK SITE P03

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
20...	1220	1.00	3910	8.20	11.0	9.9	93
20...	1222	10.0	3910	8.20	11.0	9.9	93
20...	1224	20.0	3910	8.20	11.0	9.8	92
20...	1226	30.0	3910	8.10	11.0	9.7	91
20...	1228	40.0	3910	8.10	10.5	9.6	89
20...	1230	49.0	3910	8.10	10.5	9.3	86
MAY							
02...	1214	1.00	3810	8.20	23.5	8.5	105
02...	1216	10.0	3820	8.20	22.5	8.3	101
02...	1218	20.0	3830	8.10	18.5	7.8	88
02...	1220	30.0	3840	7.90	16.0	5.3	57
02...	1222	40.0	3850	7.80	14.0	3.2	33
02...	1224	49.0	3830	7.80	12.0	2.2	21
AUG							
29...	1322	1.00	2150	8.30	30.0	6.5	90
29...	1324	10.0	2150	8.30	29.0	6.5	89
29...	1326	20.0	2130	8.10	28.0	5.8	78
29...	1328	30.0	2120	7.40	27.0	3.0	39
29...	1330	40.0	2230	7.40	26.5	2.5	33
29...	1332	50.0	2910	7.30	24.5	2.6	33
29...	1334	58.0	3040	7.30	24.0	2.5	31



## BRAZOS RIVER MAIN STEM

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325125098323701 - POSSUM KINGDOM LK SITE P05

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
20...	1300	1.00	3910	8.30	10.0	10.2	94
20...	1302	10.0	3910	8.30	10.0	10.2	94
20...	1304	18.0	3910	8.30	10.0	10.2	94
MAY							
02...	1252	1.00	3830	8.20	23.5	8.1	100
02...	1254	10.0	3830	8.20	23.5	8.0	99
02...	1256	17.0	3830	8.10	23.5	7.3	90
AUG							
29...	1425	1.00	1920	8.30	29.5	6.6	91
29...	1427	10.0	1920	8.20	29.0	6.4	87
29...	1429	20.0	1920	7.70	28.5	4.4	59
29...	1431	27.0	1920	7.50	28.0	3.3	44

325301098342901 - POSSUM KINGDOM LK SITE P07

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
20...	1325	1.00	3870	8.30	10.0	10.0	92
20...	1327	10.0	3870	8.30	10.0	10.0	92
20...	1329	20.0	3870	8.30	10.0	10.0	92
20...	1331	30.0	3870	8.30	10.0	9.9	91
20...	1333	40.0	3890	8.20	9.5	8.7	79
20...	1335	51.0	3910	8.20	9.5	7.4	67
MAY							
02...	1315	1.00	3840	8.30	23.5	8.3	103
02...	1317	10.0	3840	8.30	23.5	8.2	102
02...	1319	20.0	3830	8.20	23.0	8.2	101
02...	1321	30.0	3840	7.80	21.5	4.6	55
02...	1323	40.0	3820	7.70	15.0	0.3	3
02...	1325	49.0	3820	7.70	13.0	0.2	2
AUG							
29...	1450	1.00	1660	8.40	30.5	6.6	92
29...	1452	10.0	1740	8.40	29.5	6.5	89
29...	1454	20.0	1650	7.70	28.0	4.0	54
29...	1456	30.0	1960	7.40	26.5	2.4	31
29...	1458	40.0	2110	7.40	26.0	2.4	31
29...	1500	50.0	2430	7.30	24.5	2.5	31
29...	1502	59.0	2920	7.30	23.5	2.5	31

325915098243001 - POSSUM KINGDOM LK SITE P09

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
AUG							
29...	1650	1.00	2060	8.50	32.5	7.2	104
29...	1652	10.0	2080	8.20	30.5	5.7	80
29...	1654	20.0	2090	7.80	30.0	3.5	49
29...	1656	27.0	2090	7.60	29.5	2.9	40

325725098280301 - POSSUM KINGDOM LK SITE P10

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CAC03)
AUG									
29...	1720	1.00	1660	8.20	31.5	0.30	6.3	90	280
29...	1722	8.00	1660	7.70	29.5	--	3.9	54	280

BRAZOS RIVER MAIN STEM

245

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325725098280301 - POSSUM KINGDOM LK SITE P10--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CAC03	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS- SOLVED (MG/L AS S04)
AUG								
29...	160	79	20	220	6	6.7	125	180
29...	150	79	19	220	6	6.6	124	180
DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
AUG								
29...	340	8.7	929	<0.100	0.80	0.050	4	3
29...	320	8.9	908	<0.100	0.80	0.060	5	96

## 08088600 BRAZOS RIVER AT MORRIS SHEPPARD DAM NEAR GRAFORD, TX

LOCATION.--Lat 32°52'00", long 98°26'00", Palo Pinto County, Hydrologic Unit 12060201, immediately below Morris Sheppard Dam (formerly Possum Kingdom Dam), 2.6 mi upstream from Loving Creek, 11.3 mi southwest of Grafard, and 20 mi upstream from gaging station near Palo Pinto.

DRAINAGE AREA.--27,190 mi<sup>2</sup>, of which 9,566 mi<sup>2</sup> probably is noncontributing.

PERIOD OF RECORD.--Chemical analyses: May 1941 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1942 to current year.

WATER TEMPERATURE: October 1949 to September 1955, October 1965 to current year.

REMARKS.--Discharges are computed on the basis of releases from Possum Kingdom Lake. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed 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 Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 6,110 microsiemens Feb. 20, 1961; minimum daily, 494 microsiemens May 4, 1957.

WATER TEMPERATURE: Maximum daily, 29.0°C Oct. 1, 2, 1988, Aug. 4, 1989; minimum daily, 6.5°C Jan. 20, 1978.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 4,090 microsiemens Apr. 2; minimum daily, 2,270 microsiemens Sept. 20-23.

WATER TEMPERATURE: Maximum daily, 29.0°C Oct. 1, 2, Aug. 4; minimum daily, 10.5°C Mar. 11, 12.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
		SODIUM DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)
OCT 11...	1230	197	3700	8.70	18.5	610	490	150	56
JAN 18...	1515	25	3820	8.00	14.5	670	560	170	60
APR 25...	1420	808	3820	8.30	20.0	630	520	160	56
JUN 14...	1005	2910	3770	8.10	16.5	590	500	150	53
AUG 01...	1140	25	3740	8.20	24.5	580	490	150	51
OCT 11...	520	9	7.9	118	520	810	0.40	8.1	2140
JAN 18...	550	10	8.5	111	580	910	0.40	4.7	2350
APR 25...	560	10	9.4	108	570	890	0.50	4.2	2310
JUN 14...	560	10	8.9	98	530	860	0.50	5.5	2230
AUG 01...	570	11	8.3	92	510	830	0.50	5.0	2180

## BRAZOS RIVER MAIN STEM

247

08088600 BRAZOS RIVER AT MORRIS SHEPPARD DAM NEAR GRAFORD, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1988 TO SEPTEMBER 1989

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. 1988	3081	3860	2300	19100	930	7730	500	4140	650
NOV. 1988	4285	3830	2280	26400	920	10700	490	5710	640
DEC. 1988	4424	3890	2320	27700	940	11200	500	6000	650
JAN. 1989	2561	3840	2290	15900	930	6400	500	3430	640
FEB. 1989	5278	3830	2290	32600	920	13200	490	7040	640
MAR. 1989	11267	3840	2290	69600	920	28100	490	15100	640
APR. 1989	4374	4080	2440	28800	990	11700	530	6250	680
MAY 1989	47713	3730	2220	286000	890	115100	480	61800	630
JUNE 1989	44827	3280	1950	236000	770	93200	420	50600	570
JULY 1989	8361	2690	1590	35800	610	13800	340	7630	480
AUG. 1989	24240	2450	1440	94400	550	36100	310	20100	440
SEPT 1989	39901	2290	1350	145000	510	55100	290	30700	420
TOTAL	200312	**	**	1017000	**	402000	**	218000	**
WTD.AVG.	549	3170	1880	**	740	**	400	**	550

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e3830	3830	3840	e3860	3840	e3820	4040	3870	3740	2640	2580	e2350
2	3830	3840	e3840	3830	e3830	3830	4090	3880	e3720	2750	2590	2330
3	3830	e3840	3850	3840	e3830	e3820	4070	3870	3700	2760	2390	2390
4	3850	3850	3840	3840	3830	e3830	4070	3850	e3670	2780	2590	e2380
5	3840	3850	3880	e3830	3830	e3830	4070	e3820	3630	2750	2590	e2370
6	3840	3840	3870	e3810	3840	e3840	4080	3780	e3600	e2750	2470	e2360
7	3830	3840	3890	3790	e3830	3840	e4080	3800	e3580	e2750	2460	2360
8	3850	3840	e3890	e3820	3830	3820	4080	2900	e3550	2760	2390	e2340
9	3850	3840	e3890	3840	3830	3840	4080	3790	e3520	2790	2380	e2320
10	3850	e3840	3890	3840	3840	e3840	e4080	3800	e3500	2750	e2450	e2300
11	3850	e3840	e3890	3840	e3830	3830	e4080	e3800	3470	2810	2520	2300
12	3840	3850	e3890	e3840	3830	4000	4080	e3800	3470	2810	2430	2320
13	3850	3850	e3900	e3840	3830	4040	4060	3790	e3300	2760	2380	2300
14	3850	3850	e3900	3850	e3830	4040	4080	3790	e3160	2770	2370	2330
15	3850	3850	3900	3840	3830	4060	4080	3760	3020	2700	2430	e2300
16	e3850	3840	e3900	3850	3830	e3900	4080	3780	2880	2790	e2420	2290
17	e3850	e3840	e3900	3840	3820	e3880	e4080	3790	e2900	2810	e2410	e2290
18	e3860	e3840	e3910	3850	3830	e3860	e4080	3730	e3250	2670	2400	e2280
19	3860	3840	e3910	3850	3830	3840	e4080	3730	e3600	2790	2420	e2280
20	3860	3820	e3910	3850	e3830	3840	e4080	3740	3970	2720	e2420	e2270
21	3880	3830	e3910	3860	e3830	3840	e4080	3740	e3670	e2670	e2430	2270
22	3870	3830	3920	3850	e3830	e3840	e4080	3730	e3320	2620	2420	e2270
23	3860	3830	e3920	3850	3830	e3840	e4080	3720	2940	2620	2430	e2270
24	3860	3840	e3920	3850	e3830	e3830	e4080	3720	e2900	2750	2430	e2290
25	3870	e3820	3920	3850	e3820	e3820	e4080	3660	2870	e2720	e2420	e2290
26	3860	3790	3900	e3850	e3820	3820	4080	3660	2800	e2690	2400	2300
27	e3860	3830	e3900	3850	3810	e3820	4080	3700	2770	2650	2420	2280
28	e3850	3830	e3910	3840	3820	3830	e4080	e3700	e2810	e2640	2440	2290
29	3850	3820	3930	3850	---	3830	e4070	e3720	e2850	e2630	2400	e2290
30	3870	3820	e3900	3940	---	3820	4070	e3720	2890	e2630	2380	2290
31	3870	---	e3900	3960	---	3810	---	e3730	---	e2630	e2400	---
MEAN	3850	3840	3890	3850	3830	3860	4080	3740	3300	2720	2440	2310

e Estimated

## BRAZOS RIVER MAIN STEM

08088600 BRAZOS RIVER AT MORRIS SHEPPARD DAM NEAR GRAFORD, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e29.0	22.0	18.0	e15.0	16.0	e13.0	16.0	18.5	23.0	25.5	28.0	e26.0
2	29.0	21.0	e17.0	14.0	e15.0	12.5	17.0	20.5	e24.0	25.5	28.5	27.0
3	24.0	e21.0	16.0	14.0	e15.0	e12.0	17.0	19.0	24.0	25.5	27.0	27.0
4	23.0	22.0	19.0	15.0	13.0	e12.0	17.0	22.0	e24.0	25.5	29.0	e27.0
5	23.0	21.5	18.0	e16.0	12.0	e11.0	16.0	e21.0	24.0	25.5	28.0	e27.0
6	24.0	21.5	18.0	e18.0	12.0	e11.0	18.0	19.0	e24.0	e25.0	27.0	e27.0
7	23.0	21.5	18.0	19.0	e11.0	11.0	e17.0	20.0	e24.0	e25.0	27.0	27.5
8	23.0	21.0	e18.0	e17.0	11.0	11.0	15.0	20.0	e24.0	25.0	27.0	e27.0
9	22.0	22.0	e18.0	14.5	14.0	14.0	15.0	20.0	e24.0	24.0	27.0	e27.0
10	23.0	e22.0	18.0	14.0	14.0	e12.0	e15.0	19.5	e24.0	25.0	e26.0	e27.0
11	22.0	e22.0	e18.0	14.0	e12.0	10.5	e15.0	e20.0	24.0	25.0	25.0	27.0
12	22.0	21.5	e18.0	e14.0	12.0	10.5	15.0	e20.0	25.0	25.0	26.0	26.0
13	23.5	21.0	e18.0	e14.0	12.0	11.5	15.0	20.0	e24.0	25.0	26.5	26.0
14	23.0	21.5	e18.0	14.0	e13.0	12.0	15.0	20.0	e24.0	25.0	26.0	26.0
15	23.0	21.5	18.0	13.5	13.0	13.0	15.0	20.0	22.0	24.0	26.5	e26.0
16	e23.0	21.0	e18.0	13.5	15.0	e13.0	15.0	20.0	25.0	24.5	e26.0	25.0
17	e23.0	e21.0	e18.0	14.0	15.0	e13.0	e15.0	20.0	e25.0	24.5	e25.0	e25.0
18	e23.0	e20.0	e18.0	14.0	12.0	e14.0	e15.0	21.0	e25.0	26.0	24.0	e25.0
19	23.0	19.5	e18.0	15.0	13.0	15.0	e15.0	21.0	e26.0	25.5	25.0	e25.0
20	22.0	19.5	e18.0	14.0	e13.0	15.0	e15.0	21.0	26.0	25.0	e25.0	e25.0
21	22.0	19.5	e18.0	14.0	e13.0	14.0	e15.0	21.0	e25.0	e25.0	e26.0	25.0
22	22.0	18.5	18.0	13.0	e12.0	e14.0	e15.0	21.0	e24.0	25.0	26.5	e25.0
23	22.0	18.5	e18.0	13.0	12.0	e14.0	e15.0	22.0	22.5	25.0	27.0	e25.0
24	24.0	21.0	e17.0	13.0	e12.0	e14.0	e15.0	23.0	e23.0	25.0	26.0	e25.0
25	24.0	e19.0	16.0	14.0	e12.0	e15.0	e15.0	23.0	25.0	e25.0	e26.0	e24.0
26	24.0	16.0	19.0	e14.0	e12.0	15.0	14.0	23.0	25.5	e25.0	27.0	23.0
27	e24.0	21.0	e18.0	15.0	12.0	e15.0	18.0	23.0	24.0	25.0	e27.0	24.0
28	e24.0	18.0	e17.0	16.0	12.0	15.0	e18.0	e23.0	e24.0	e25.0	27.0	24.0
29	24.0	19.0	15.0	16.0	---	16.0	e18.0	e23.0	e25.0	e25.0	27.0	e24.0
30	e23.0	19.0	e15.0	16.0	---	14.0	18.5	e23.0	25.0	e25.0	26.5	24.0
31	22.5	---	e15.0	17.0	---	16.0	---	e23.0	---	e25.0	e26.0	---
MEAN	23.5	20.5	17.5	15.0	13.0	13.0	16.0	21.0	24.5	25.0	26.5	25.5

e Estimated



## 08089000 BRAZOS RIVER NEAR PALO PINTO, TX

LOCATION.--Lat 32°51'45", long 98°18'08", Palo Pinto County, Hydrologic Unit 12060201, on right bank 100 ft upstream from bridge on Farm Road 4, 300 ft downstream from Dark Valley Creek, 6.5 mi north of Palo Pinto, and at mile 667.3.

DRAINAGE AREA.--23,811 mi<sup>2</sup>, of which 9,566 mi<sup>2</sup> probably is noncontributing.

PERIOD OF RECORD.--January 1924 to current year. Monthly discharge only for some periods, published in WSP 1312. Published as "near Mineral Wells" 1924-33.

REVISED RECORDS.--WSP 1512: 1924-25, 1929, 1932-34. WSP 1712: 1935-36, 1937-38(M), 1939, 1940(M). WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 834.23 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 15, 1933, nonrecording gage at site 19 mi downstream at datum 38.19 ft lower. Nov. 15, 1933 to Apr. 10, 1989 at datum 3.00 ft higher.

REMARKS.--Records fair except those for estimated daily discharges, which are fair. Since 1941, flow largely regulated by Possum Kingdom Lake (station 08088500) 20 mi upstream. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--16 years (water years 1925-40) prior to completion of Possum Kingdom Lake, 1,262 ft<sup>3</sup>/s (914,300 acre-ft/yr); 49 years (water years 1941-89) regulated, 912 ft<sup>3</sup>/s (660,700 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 95,600 ft<sup>3</sup>/s June 16, 1930, at site 19 mi downstream from Mineral Wells (gage height, 30 ft, present site and datum); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage occurred in 1876, from data by U.S. Army Corps of Engineers, and was several feet higher than the flood of June 16, 1930, which reached a stage of about 30 ft and was the highest since at least 1876.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,600 ft<sup>3</sup>/s May 20 at 0400 hours (gage height, 12.77 ft); minimum daily, 21 ft<sup>3</sup>/s Oct. 9 and Apr. 21, 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	71	455	222	59	70	48	81	115	84	101	504
2	61	68	159	84	55	66	44	57	73	175	762	610
3	47	64	66	58	50	690	84	392	537	103	2740	336
4	36	59	56	183	516	1000	68	3750	1460	80	1340	137
5	29	46	258	85	838	2250	49	797	1690	75	1210	436
6	26	33	175	76	927	1760	45	232	1380	142	1130	548
7	24	68	68	75	851	1330	119	1120	4820	89	1350	573
8	22	358	61	60	713	419	45	261	5740	76	1300	576
9	21	87	563	53	112	319	38	539	432	74	1030	161
10	366	69	106	127	69	272	32	167	308	70	720	113
11	189	63	658	177	66	186	e25	101	560	70	374	111
12	167	66	396	68	68	76	e80	85	1600	69	610	110
13	103	62	248	194	67	71	62	90	2270	66	564	983
14	78	59	144	625	62	69	52	136	3410	68	507	971
15	71	57	161	101	70	62	45	118	6740	83	125	1410
16	64	41	68	65	73	60	36	1360	4700	711	768	8840
17	256	36	60	64	294	62	29	4820	3690	116	134	3110
18	113	298	54	144	200	58	26	3580	2150	74	80	3560
19	78	94	54	72	106	56	25	10400	2510	68	68	2890
20	72	66	51	62	87	55	24	12400	1010	64	357	3090
21	129	58	51	54	73	741	21	4320	244	483	467	3140
22	85	290	56	52	71	290	463	2990	660	623	691	2420
23	74	246	54	53	68	265	90	1380	533	643	537	2800
24	63	182	47	51	85	196	47	1050	609	120	580	2760
25	195	68	44	53	73	65	34	853	427	409	533	1270
26	290	308	43	62	68	58	579	922	169	391	715	400
27	92	279	46	58	64	55	616	221	657	114	531	313
28	347	168	43	68	75	58	100	134	135	76	525	455
29	114	262	167	68	---	88	749	711	94	469	575	449
30	77	235	86	66	---	54	102	832	86	469	754	649
31	73	---	59	63	---	55	---	531	---	449	510	---
TOTAL	3433	3861	4557	3243	5860	10856	3777	54430	48809	6603	21688	43725
MEAN	111	129	147	105	209	350	126	1756	1627	213	700	1457
MAX	366	358	658	625	927	2250	749	12400	6740	711	2740	8840
MIN	21	33	43	51	50	54	21	57	73	64	68	110
AC-FT	6810	7660	9040	6430	11620	21530	7490	108000	96810	13100	43020	86730
CAL YR 1988	TOTAL	33762	MEAN	92.2	MAX	834	MIN	16	AC-FT	66970		
WTR YR 1989	TOTAL	210842	MEAN	578	MAX	12400	MIN	21	AC-FT	418200		

e Estimated.

## BRAZOS RIVER MAIN STEM

08090800 BRAZOS RIVER NEAR DENNIS, TX

LOCATION.--Lat 32°36'56", long 97°55'32", Parker County, Hydrologic Unit 12060201, on right bank at downstream side of highway embankment of bridge on Farm Road 1189, 0.2 mi south of Dennis, 1.0 mi upstream from Patrick Creek, and at mile 589.98.

DRAINAGE AREA.--25,237 mi<sup>2</sup>, of which 9,566 mi<sup>2</sup> probably is noncontributing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1968 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 697.67 ft above National Geodetic Vertical Datum of 1929 (State Department of Highways and Public Transportation bench mark).

REMARKS.--No estimated daily discharges. Records good. Flow is largely regulated by releases from Possum Kingdom Lake (station 08088500) and Lake Palo Pinto on Palo Pinto Creek. Flow is affected at times by discharge from the flood-detention pools of twelve floodwater-retarding structures with a combined detention capacity of 13,840 acre-ft. These structures control runoff from 53.0 mi<sup>2</sup> in the East Keechi and Pollard Creeks drainage basins. There are many diversions above station for irrigation, municipal supply, and oil field operations. Gage-height telemeter at station.

AVERAGE DISCHARGE.--21 years (water years 1969-89), 970 ft<sup>3</sup>/s (702,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 96,600 ft<sup>3</sup>/s Oct. 14, 1981 (gage height, 31.85 ft, from floodmarks); minimum, 0.87 ft<sup>3</sup>/s Aug. 2, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1930, 31.8 ft in May 1957, from floodmark, from information by State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 36,400 ft<sup>3</sup>/s May 17 at 2045 hours (gage height, 22.40 ft); minimum daily, 12.0 ft<sup>3</sup>/s Oct. 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	149	181	55	76	134	150	786	1270	442	712	750
2	42	110	228	103	64	134	155	348	1120	373	743	616
3	61	89	347	102	57	98	134	252	749	331	750	635
4	68	68	292	123	48	102	102	5160	1840	303	3110	698
5	56	56	189	137	41	307	73	15900	3420	347	2820	440
6	43	52	134	102	151	1750	60	7220	3850	294	2010	327
7	33	49	108	97	942	2270	65	2210	3640	262	2170	416
8	24	35	182	127	1070	1690	88	4320	9950	251	2270	592
9	23	34	208	99	983	1400	75	2950	8910	272	2380	640
10	22	37	160	78	651	636	69	1550	3160	264	1990	850
11	17	161	360	79	294	506	100	1250	2850	222	1300	434
12	12	124	305	72	191	412	88	733	5270	207	914	324
13	125	94	522	66	140	343	94	589	15200	201	785	601
14	146	78	442	140	103	232	328	528	22900	196	838	2970
15	115	55	288	130	133	172	349	453	8910	217	829	3120
16	119	47	250	417	290	140	202	945	7230	213	813	1410
17	92	40	187	269	2690	128	142	27300	6680	219	637	6860
18	69	36	186	176	3450	111	110	28500	5480	717	976	3410
19	50	46	145	127	2150	99	88	9930	3800	385	586	2990
20	66	62	114	102	840	93	68	10500	3190	269	332	2800
21	114	147	92	86	486	76	59	12800	2960	216	251	2630
22	91	144	79	105	320	72	49	5980	1450	188	296	2710
23	75	102	74	86	274	360	34	3910	1230	566	644	2560
24	60	78	71	70	231	465	96	3200	1280	937	756	2160
25	51	157	62	60	178	273	201	2150	1290	776	685	2550
26	68	220	61	154	158	320	149	1620	1100	413	668	2010
27	68	174	61	143	146	220	113	1900	938	499	711	806
28	107	120	56	107	153	800	324	1300	837	591	763	488
29	184	261	57	301	---	322	504	845	973	382	649	347
30	159	199	57	178	---	210	283	786	560	289	618	478
31	225	---	57	109	---	163	---	1340	---	517	811	---
TOTAL	2437	3024	5555	4000	16310	14038	4352	157255	132037	11359	33817	47622
MEAN	78.6	101	179	129	582	453	145	5073	4401	366	1091	1587
MAX	225	261	522	417	3450	2270	504	28500	22900	937	3110	6860
MIN	12	34	56	55	41	72	34	252	560	188	251	324
AC-FT	4830	6000	11020	7930	32350	27840	8630	311900	261900	22530	67080	94460
CAL YR 1988	TOTAL	43260.2	MEAN	118	MAX	3060	MIN	2.3	AC-FT	85810		
WTR YR 1989	TOTAL	431806	MEAN	1183	MAX	28500	MIN	12	AC-FT	856500		

08090800 BRAZOS RIVER NEAR DENNIS, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1970 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1970 to current year.

WATER TEMPERATURE: October 1970 to current year.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 5,410 microsiemens Apr. 18, 1984; minimum daily, 200 microsiemens Oct. 13, 1981.

WATER TEMPERATURE: Maximum daily, 38.5°C July 26, 1976; minimum daily, 0.0°C on many days during winter months 1977-79.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 3,870 microsiemens Apr. 29; minimum daily, 260 microsiemens May 9.

WATER TEMPERATURE: Maximum daily, 35.0°C July 12, 16; minimum daily, 2.0°C Feb. 4.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT 23...	1230	76	3550	21.0	580	140	57	520
DEC 21...	1300	91	3490	11.5	630	160	55	510
JAN 22...	1445	106	3540	10.5	630	160	56	500
FEB 28...	1605	164	1540	11.5	300	82	22	180
MAR 12...	1745	351	3570	20.0	570	140	53	520
MAY 05...	1815	17	446	21.0	120	36	6.3	39
AUG 17...	1330	443	2870	29.0	500	130	42	410
DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 23...	9	8.8	92	520	820	0.40	1.1	2120
DEC 21...	9	7.7	118	510	790	0.40	3.8	2110
JAN 22...	9	7.6	128	530	820	0.40	2.3	2150
FEB 28...	5	5.0	107	210	290	0.20	3.6	857
MAR 12...	9	8.2	115	520	800	0.40	4.0	2110
MAY 05...	2	3.9	85	41	57	0.20	5.8	240
AUG 17...	8	8.1	120	400	650	0.40	5.0	1720

## BRAZOS RIVER MAIN STEM

08090800 BRAZOS RIVER NEAR DENNIS, TX--Continued

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1988 TO SEPTEMBER 1989

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. 1988	2437	3380	1980	13000	790	5170	420	2770	580
NOV. 1988	3024	3470	2040	16600	810	6610	430	3530	600
DEC. 1988	5555	3560	2090	31300	830	12500	440	6640	610
JAN. 1989	4000	3150	1850	19900	730	7890	390	4240	540
FEB. 1989	16310	1660	977	43000	380	16700	210	9190	300
MAR. 1989	14038	3210	1880	71400	750	28300	400	15200	550
APR. 1989	4352	3000	1760	20700	690	8140	380	4410	530
MAY 1989	157255	1400	829	352000	320	135900	180	75200	250
JUNE 1989	132037	1740	1030	367000	400	140800	220	78600	320
JULY 1989	11359	3140	1850	56700	730	22300	390	12100	550
AUG. 1989	33817	2860	1690	154000	660	60100	360	32800	510
SEPT 1989	47622	2670	1570	202000	610	78700	340	43100	470
TOTAL	431806	**	**	1348000	**	523000	**	288000	**
WTD.AVG.	1183	1960	1160	**	450	**	250	**	350

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2690	3560	3690	3160	1310	1010	2260	3050	2920	2860	3450	3410
2	2560	3520	3680	3170	2310	1340	2890	2940	3340	2780	3310	3440
3	2860	3430	3740	3190	1440	1020	3040	3470	3150	2770	3210	3440
4	2730	3460	3760	3140	1090	1400	2850	702	1540	2840	2690	3430
5	3050	3510	3750	3460	992	1560	2760	470	2250	2820	2430	3390
6	3160	3480	3710	3570	2280	3140	2870	402	1590	2820	3120	3410
7	3160	3500	3640	3580	3620	3760	2980	410	1990	2760	2820	3380
8	3170	3510	3480	3580	3860	3730	3090	327	1300	2670	2390	3440
9	3180	3480	3550	3660	3850	3770	3160	260	2780	2620	2760	3420
10	3200	3460	3360	3620	3860	3620	3290	415	2640	2670	2630	3150
11	3200	3560	3370	3660	3830	3570	3140	467	1580	2730	2780	2390
12	3190	3560	3350	3470	3750	3550	3250	636	557	2760	2940	2730
13	3420	3550	3390	3440	3710	3580	2930	859	277	2820	2960	2070
14	3540	3550	3570	3090	3690	3480	2140	972	434	2830	3020	654
15	3440	3520	3600	3510	3150	3340	2430	962	2250	2830	2810	1730
16	3240	3520	3660	3720	1820	3330	2070	632	2410	2750	2720	1370
17	3240	3530	3810	3810	618	3260	2230	302	2630	2820	2720	2620
18	3270	3500	3640	3790	620	3190	2310	772	2900	3150	3060	2460
19	3350	3410	3610	3670	941	3130	2240	1100	3020	3220	2280	3030
20	3430	3060	3590	3710	892	3140	2500	3320	3090	3250	2600	3060
21	3580	3090	3570	3530	887	3110	2480	3500	3160	3250	2490	3090
22	3600	3250	3530	3610	958	3020	2590	3360	2930	3210	2440	3070
23	3570	3260	3510	3650	1040	3060	2690	3310	2760	3220	2880	3040
24	3580	3340	3540	3600	1130	3430	2870	3380	2560	3500	3290	3050
25	3570	3420	3500	3580	1220	3610	3510	3180	2800	3600	3290	2990
26	3530	3490	3420	3390	1340	3720	3550	2980	2760	3470	3350	2930
27	3540	3550	3430	1910	1440	3760	3520	3200	2880	3500	3350	2880
28	3540	3530	3430	1820	1540	853	3640	3170	2810	3520	3340	2810
29	3380	3590	3430	1450	---	2310	3870	2990	2990	3510	3320	2840
30	3530	3650	3360	1280	---	2130	3830	2930	2690	3360	3330	2850
31	3600	---	3270	2060	---	2410	---	3190	---	3400	3350	---
MEAN	3290	3460	3550	3220	2040	2880	2900	1860	2370	3040	2940	2850

08090800 BRAZOS RIVER NEAR DENNIS, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	19.0	12.0	13.5	16.0	14.0	17.0	25.0	30.0	33.0	31.0	29.5
2	---	20.0	11.0	15.0	11.0	13.5	25.0	25.5	29.0	33.0	29.0	33.5
3	---	21.0	13.0	9.0	4.0	18.0	25.0	28.5	29.0	33.0	31.5	34.0
4	23.5	22.0	11.5	12.5	2.0	6.0	24.5	20.5	25.0	33.0	30.5	29.5
5	25.5	19.0	12.0	16.0	3.0	3.0	23.5	21.0	26.5	33.0	28.0	33.0
6	25.0	18.0	11.0	16.0	4.0	5.0	25.5	20.0	26.0	34.0	30.0	32.5
7	25.0	20.0	15.5	14.0	2.5	8.5	25.5	23.0	24.0	30.5	26.0	32.5
8	22.0	21.0	10.0	9.0	4.0	11.0	23.5	22.5	23.5	31.0	27.0	32.0
9	25.0	23.0	10.0	9.0	6.5	13.0	18.0	23.5	24.0	32.0	26.5	30.0
10	24.0	21.0	8.0	11.0	9.5	16.5	19.0	23.0	25.0	---	26.5	29.0
11	24.0	18.0	11.0	15.5	10.0	18.0	18.5	24.0	27.0	33.0	---	26.0
12	23.0	17.0	11.0	9.5	12.0	19.0	15.5	22.0	25.5	35.0	27.0	26.5
13	21.0	19.0	11.5	6.0	14.0	22.0	13.0	22.0	23.5	31.0	30.0	22.0
14	22.5	21.5	12.5	---	11.0	23.0	16.0	24.0	24.5	---	27.5	21.0
15	24.0	23.0	9.0	10.0	8.5	18.5	20.5	28.0	23.5	34.0	27.0	25.0
16	---	17.5	8.0	8.0	8.0	20.0	---	---	24.0	35.0	29.0	25.0
17	26.5	14.0	---	11.0	6.0	---	20.0	20.0	25.0	33.5	28.0	25.0
18	26.0	15.0	10.0	13.0	7.0	17.0	25.0	21.5	26.0	34.0	30.5	24.0
19	24.0	12.0	12.5	12.0	7.0	18.0	28.0	22.5	27.0	34.0	32.0	25.5
20	26.0	13.0	13.0	11.0	10.0	22.0	29.0	24.0	---	33.0	33.0	25.5
21	22.5	11.0	13.0	---	12.5	12.5	30.0	24.0	26.0	31.0	34.0	26.0
22	23.0	11.5	15.5	10.0	12.5	18.0	29.5	26.0	30.0	32.0	34.0	25.0
23	23.0	11.0	12.5	11.5	9.0	16.0	28.0	27.5	30.5	31.0	34.0	20.5
24	22.5	---	13.0	16.0	---	20.0	28.0	26.5	30.0	31.0	33.5	21.0
25	27.0	---	12.0	17.0	15.0	17.0	28.0	28.0	30.5	30.0	33.0	21.0
26	19.5	15.0	16.0	12.0	19.0	23.0	30.0	30.0	30.5	28.5	29.5	27.0
27	24.5	12.0	---	10.0	13.0	20.5	26.5	29.5	29.0	30.0	32.0	23.0
28	19.0	12.0	9.5	11.0	11.5	21.0	29.0	27.0	30.0	32.0	34.0	24.0
29	19.0	12.0	7.5	10.0	---	23.0	28.0	27.0	30.5	30.0	31.0	---
30	18.0	12.0	5.5	12.5	---	22.5	28.0	28.0	30.0	33.0	34.0	25.0
31	17.0	---	12.0	14.5	---	23.0	---	28.5	---	33.0	33.0	---
MEAN	23.0	17.0	11.5	12.0	9.0	16.5	24.0	24.5	27.0	32.5	30.5	26.5



## BRAZOS RIVER MAIN STEM

08090900 LAKE GRANBURY NEAR GRANBURY, TX

LOCATION.--Lat 32°22'27", long 97°41'20", Hood County, Hydrologic Unit 12060201, at right end of spillway of DeCordova Bend Dam on Brazos River, 2.6 mi upstream from Fall Creek, 7.5 mi southeast of Granbury, and at mile 542.5.

DRAINAGE AREA.--25,679 mi<sup>2</sup>, of which 9,566 mi<sup>2</sup> probably is noncontributing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1968 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1.11 ft below National Geodetic Vertical Datum of 1929 (levels by Brazos River Authority), corrected.

REMARKS.--The lake is formed by an Ambursen-type concrete and earthfill dam 2,256 ft long, including a 932-foot concrete spillway. The dam was completed on Aug. 30, 1969, and deliberate impoundment began Sept. 15, 1969. The spillway consists of sixteen 36- by 35-foot tainter gates and two 7- by 8-foot sluice gates. The outflow from the sluice gates discharges into a bay where it is then controlled by two 4- by 4.5-foot sluice gates with invert at 625.8 ft. Flow is affected at times by discharge from the flood-detention pools of 12 floodwater-retarding structures with a combined detention capacity of 13,940 acre-ft. These structures control runoff from 53.9 mi<sup>2</sup> in the East Keefi, Kickapoo, and Ruckers Creeks drainage basins. The lake was built by the Brazos River Authority for the conservation of water for irrigation, municipal, and industrial uses. Water is diverted from the lake for municipal, domestic, irrigation, and industrial uses by several lakeside developers, or residents. Water is also diverted into Squaw Creek Reservoir. The city of Granbury returns sewage effluent into Lake Granbury. Stage telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam.....	706.5	-
Top of tainter gates (design flood).....	693.0	153,500
Crest of spillway.....	658.0	15,440
Lowest gated outlet (invert).....	640.0	2,200

COOPERATION.--The capacity curve, based on data prepared by the Ambursen Engineering Corporation, was provided by the U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 158,800 acre-ft Mar. 27, 1977 (elevation, 693.60 ft); minimum since first filling in October 1969, 97,600 acre-ft Aug. 9, 1978 (elevation, 685.28 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 153,700 acre-ft May 16 at 2000 hours (elevation, 693.02 ft); minimum, 123,000 acre-ft June 15 (elevation, 689.16 ft).

Capacity table (elevation, in feet, and contents, in acre-feet)

689.0	121,900	691.0	136,900	693.0	153,500
690.0	129,200	692.0	145,000	694.0	162,300

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	130400	130700	132500	139500	144400	150800	149300	151100	151000	149300	148900	150200
2	130400	130700	132800	139600	144600	150700	150000	148800	150600	149900	148300	150200
3	130100	130800	133100	139900	145400	150800	150600	148900	150500	149300	147500	150100
4	130100	131000	133900	139500	144700	150100	150600	152600	148600	148600	149600	150300
5	129800	131000	134200	139900	144400	148900	150300	148200	145900	148800	150500	150200
6	129700	130700	134500	139900	144300	151300	149700	144700	149600	149100	148800	150000
7	129700	130700	135300	140100	144300	151200	149600	140900	145700	149400	150600	149800
8	129600	130700	135300	140000	145700	149300	149900	147200	150100	149400	149100	149800
9	129500	130600	135300	139900	147500	149300	150100	149400	144000	148900	149800	150700
10	129300	130700	135400	139700	148900	148900	149700	146800	143500	149200	149700	150600
11	129300	130500	136200	139800	150000	148100	149600	148400	150400	149100	149100	148700
12	128900	130600	136800	140500	150500	148100	149600	148900	143800	149300	149300	148400
13	128700	130700	137400	140400	150800	148900	150600	147900	141600	149600	148900	148300
14	128800	130700	138100	140100	149000	149600	149900	148500	134500	149200	149500	149400
15	129000	130500	139200	140600	147800	149600	149000	149200	124400	149300	149800	150000
16	129200	130500	139500	140600	148700	149600	149300	153100	129600	149300	148900	144700
17	129100	130700	139500	141100	150500	149600	149800	144300	140800	148500	148800	145900
18	129300	130400	139500	141500	152000	150000	149800	138600	150000	148100	150200	146200
19	129100	130500	139700	141600	150800	149800	150000	136200	150800	148800	150600	146200
20	129200	130800	139900	141700	149600	150600	149900	141000	149800	148800	150300	146700
21	129200	130700	139700	141700	149800	150500	149800	140300	148900	148800	150100	147400
22	129200	130700	140200	141700	149400	150300	149800	141300	148800	148800	149300	147900
23	129000	130700	140000	141500	150000	149300	149600	146600	149300	148900	148800	148100
24	129300	130400	140000	141500	150000	148600	149600	149300	149600	148900	149300	147200
25	129200	130800	139500	141500	150300	149300	150000	148700	150200	149100	149800	148600
26	129300	131400	139500	142500	150700	149800	150000	149600	149300	150100	150000	149300
27	129200	131800	140000	142300	151100	150100	149100	150000	148500	149600	150000	148300
28	129600	132000	139700	143300	150800	145700	148300	150000	148400	148900	150000	149100
29	129300	131800	139600	143700	---	147900	149400	148600	148900	149600	149300	149300
30	129900	132300	139600	144200	---	149100	149800	149100	148800	149600	149100	149500
31	130300	---	139800	144400	---	149400	---	150300	---	149800	149300	---
MAX	130400	132300	140200	144400	152000	151300	150600	153100	151000	150100	150600	150700
MIN	128700	130400	132500	139500	144300	145700	148300	136200	124400	148100	147500	144700
(+)	690.14	690.41	691.36	691.93	692.69	692.53	692.57	692.63	692.45	692.57	692.51	692.54
(φ)	-100	+2000	+7500	+4600	+6400	-1400	+400	+500	-1500	+1000	-500	+200
CAL YR 1988	MAX	152100	MIN	128100	(φ)	-10900						
WTR YR 1989	MAX	153100	MIN	124400	(φ)	+19100						

(+) Elevation, in feet, at end of month.

(φ) Change in contents, in acre-feet.

## BRAZOS RIVER MAIN STEM

255

08090900 LAKE GRANBURY NEAR GRANBURY, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: September 1970 to current year.

322227097412101 - LAKE GRANBURY SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)
JAN									
26...	1116	1.00	2850	8.40	10.0	1.30	9.5	86	500
26...	1118	10.0	2850	8.40	10.5	--	9.5	87	--
26...	1120	20.0	2850	8.40	10.5	--	9.5	87	--
26...	1122	30.0	2850	8.40	10.5	--	9.4	86	--
26...	1124	40.0	2860	8.40	10.5	--	9.4	86	--
26...	1126	52.0	2860	8.40	10.5	--	9.2	84	500
JUN									
20...	1024	1.00	568	7.80	28.5	0.20	6.4	85	140
20...	1026	10.0	586	7.40	26.0	--	4.0	51	--
20...	1028	20.0	566	7.40	25.0	--	3.7	46	--
20...	1030	30.0	611	7.40	25.0	--	3.5	43	--
20...	1032	40.0	627	7.40	24.5	--	2.9	36	--
20...	1034	50.0	646	7.30	24.5	--	1.6	20	--
20...	1036	64.0	660	7.20	24.5	--	0.4	5	150
AUG									
31...	0921	1.00	1810	8.20	29.0	1.60	5.6	74	330
31...	0924	10.0	1800	8.20	29.0	--	5.4	72	--
31...	0926	20.0	1850	7.60	28.0	--	1.0	13	--
31...	0931	30.0	2150	7.40	27.0	--	0	0	--
31...	0933	40.0	2270	7.40	27.0	--	0	0	--
31...	0935	50.0	2290	7.40	26.5	--	0	0	--
31...	0938	65.0	2250	7.10	25.0	--	0	0	400

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT WH TOT FET MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN								
26...	120	49	410	8	7.9	107	410	650
26...	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--
26...	120	49	410	8	7.9	108	410	650
JUN								
20...	42	8.5	55	2	4.6	89	54	87
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	45	9.4	64	2	4.7	98	61	100
AUG								
31...	92	25	230	5	6.4	169	210	350
31...	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--
31...	110	31	320	7	8.5	121	250	470

## BRAZOS RIVER MAIN STEM

08090900 LAKE GRANBURY NEAR GRANBURY, TX--Continued

322227097412101 - LAKE GRANBURY SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
26...	0.40	5.1	1720	<0.100	1.0	0.020	20	<10
26...	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--
26...	--	--	--	<0.100	0.80	0.020	30	<10
26...	--	--	--	--	--	--	--	--
26...	--	5.0	1720	<0.100	1.0	0.020	<10	10
JUN								
20...	0.20	9.7	314	0.100	0.80	0.040	41	4
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	--	--	<0.100	0.20	<0.010	80	10
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	--	9.9	353	0.300	0.80	0.070	31	91
AUG								
31...	0.30	8.5	1020	<0.100	0.50	0.010	3	10
31...	--	--	--	--	--	--	--	--
31...	--	--	--	<0.100	0.50	0.020	20	70
31...	--	--	--	<0.100	0.50	0.010	40	240
31...	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--
31...	--	14	1280	<0.100	3.1	0.290	340	2300

322231097412001 - LAKE GRANBURY SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
26...	1138	1.00	2850	8.40	10.5	9.5	87
26...	1140	10.0	2850	8.40	10.5	9.5	87
26...	1142	20.0	2850	8.40	10.5	9.5	87
26...	1144	32.0	2850	8.40	10.5	9.5	87
JUN							
20...	1112	1.00	580	7.80	28.5	6.7	89
20...	1114	10.0	600	7.40	26.0	3.8	48
20...	1116	20.0	574	7.40	25.0	3.6	45
20...	1118	30.0	587	7.40	25.0	3.3	41
20...	1120	40.0	623	7.40	24.5	2.8	34
20...	1122	45.0	651	7.30	24.5	1.6	20
AUG							
31...	0943	1.00	1800	8.30	29.0	6.3	84
31...	0945	10.0	1800	8.30	29.0	6.1	82
31...	0947	20.0	1830	8.00	28.5	4.2	56
31...	0950	30.0	2100	7.40	27.5	0	0
31...	0952	40.0	2270	7.40	27.0	0	0
31...	0954	45.0	2280	7.50	27.0	0	0

322345097421901 - LAKE GRANBURY SITE BR

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
26...	1207	1.00	2850	8.50	11.0	10.4	96
26...	1209	10.0	2850	8.50	11.0	10.3	95
26...	1211	20.0	2850	8.50	11.0	10.2	94
JUN							
20...	1202	1.00	533	8.40	31.0	9.3	128
20...	1204	10.0	423	7.50	25.5	4.0	50
20...	1206	20.0	395	7.50	25.5	3.5	44
20...	1208	33.0	489	7.50	25.5	3.2	40
AUG							
31...	1017	1.00	1800	8.40	30.5	6.8	94
31...	1019	10.0	1800	8.40	30.0	6.6	90
31...	1021	20.0	2080	7.50	29.0	0	0
31...	1023	33.0	2130	7.60	28.0	0	0

08090900 LAKE GRANBURY NEAR GRANBURY, TX--Continued

322341097420601 - LAKE GRANBURY SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
26...	1156	1.00	2850	8.50	11.0	10.1	93
26...	1158	10.0	2850	8.40	11.0	10.0	92
26...	1200	20.0	2850	8.40	10.5	9.6	88
26...	1202	30.0	2850	8.40	10.5	9.1	83
26...	1204	40.0	2860	8.20	10.0	8.1	73
26...	1206	50.0	2860	8.20	10.0	7.8	70
26...	1208	63.0	2900	8.00	10.0	5.4	49
JUN							
20...	1142	1.00	516	8.20	30.0	8.3	113
20...	1144	10.0	408	7.40	25.5	8.3	104
20...	1146	20.0	388	7.40	25.0	3.4	42
20...	1148	30.0	438	7.40	25.0	2.9	36
20...	1150	40.0	465	7.40	24.5	2.4	30
20...	1152	50.0	408	7.40	24.5	2.1	26
20...	1154	60.0	445	7.40	24.5	1.5	18
AUG							
31...	1002	1.00	1800	8.40	30.0	6.7	91
31...	1004	10.0	1800	8.30	30.0	6.4	87
31...	1006	20.0	1980	7.50	28.5	0	0
31...	1008	30.0	2110	7.40	27.5	0	0
31...	1010	40.0	2270	7.50	27.0	0	0
31...	1012	50.0	2290	7.40	26.5	0	0
31...	1014	63.0	2260	7.30	25.5	0	0

322337097415401 - LAKE GRANBURY SITE BL

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
26...	1216	1.00	2850	8.40	10.5	9.6	88
26...	1218	10.0	2850	8.40	10.5	9.5	87
26...	1220	20.0	2850	8.40	10.5	9.4	86
26...	1222	31.0	2860	8.30	10.5	8.8	80
JUN							
20...	1133	1.00	511	8.20	30.0	8.3	113
20...	1135	10.0	402	7.50	30.0	4.1	56
20...	1137	20.0	385	7.40	25.0	3.3	41
20...	1139	30.0	458	7.40	25.0	2.8	35
20...	1141	40.0	605	7.40	25.5	2.5	31
AUG							
31...	1027	1.00	1800	8.40	30.5	6.8	94
31...	1029	10.0	1800	8.30	30.0	6.4	87
31...	1031	20.0	1910	7.50	29.0	0	0
31...	1033	30.0	2120	7.50	27.5	0	0
31...	1035	42.0	2240	7.60	27.5	0	0

322537097414501 - LAKE GRANBURY SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
26...	1234	5.00	2840	8.50	11.5	9.5	89
26...	1236	1.00	2820	8.50	11.5	10.0	93
26...	1238	14.0	2870	8.30	11.0	8.4	78
JUN							
20...	1215	1.00	446	8.50	31.5	9.9	138
20...	1217	13.0	491	7.30	26.5	1.2	15
AUG							
31...	1050	1.00	1840	8.40	32.0	6.4	90
31...	1053	14.0	1830	8.20	31.5	5.0	70

## BRAZOS RIVER MAIN STEM

08090900 LAKE GRANBURY NEAR GRANBURY, TX--Continued

322422097423901 - LAKE GRANBURY SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
26...	1252	1.00	2870	8.40	13.5	9.4	92
26...	1253	10.0	2870	8.40	13.5	9.4	92
26...	1255	20.0	2870	8.50	11.5	9.6	90
26...	1257	30.0	2870	8.40	11.0	8.9	82
26...	1259	40.0	2870	8.20	10.5	7.8	71
26...	1301	50.0	2940	8.20	10.0	7.6	69
26...	1303	56.0	2940	8.20	10.0	7.3	66
JUN							
20...	1237	1.00	450	7.90	31.0	6.4	88
20...	1239	10.0	390	7.50	25.0	5.1	63
20...	1241	20.0	433	7.50	25.0	3.7	46
20...	1243	30.0	961	7.60	25.0	4.5	56
20...	1245	40.0	2330	7.70	25.0	5.3	66
20...	1247	53.0	2400	7.70	25.0	5.5	69
AUG							
31...	1107	1.00	1900	8.10	33.0	5.2	75
31...	1109	10.0	1960	7.80	30.5	2.6	36
31...	1111	20.0	2160	7.50	29.5	0	0
31...	1115	30.0	2240	7.50	28.0	0	0
31...	1117	40.0	2280	7.50	27.5	0	0
31...	1119	55.0	2330	7.40	27.0	0	0

322437097423901 - LAKE GRANBURY SITE DL

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
26...	1306	1.00	2880	8.50	13.0	9.7	94
26...	1308	10.0	2880	8.50	13.0	9.6	93
26...	1310	20.0	2860	8.50	12.0	9.6	91
26...	1312	30.0	2860	8.40	11.5	9.5	89
JUN							
20...	1252	1.00	450	7.90	31.0	6.7	93
20...	1254	10.0	373	7.50	25.5	3.9	49
20...	1256	25.0	482	7.50	25.5	3.7	46
AUG							
31...	1124	1.00	1910	8.00	33.0	4.2	60
31...	1126	10.0	1970	7.80	31.0	2.3	32
31...	1128	20.0	2120	7.60	30.0	0	0

322458097443101 - LAKE GRANBURY SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
26...	1334	1.00	2890	8.50	11.5	9.6	90
26...	1336	10.0	2890	8.50	11.5	9.6	90
26...	1338	20.0	2900	8.50	11.5	9.4	88
26...	1340	30.0	2920	8.30	10.0	7.9	71
26...	1342	40.0	2960	8.30	10.0	7.7	70
26...	1344	50.0	2950	8.30	10.0	7.7	70
JUN							
20...	1303	1.00	446	7.60	28.5	5.1	67
20...	1305	10.0	389	7.60	25.5	4.5	56
20...	1307	20.0	688	7.60	25.0	4.4	55
20...	1309	30.0	2140	7.70	25.0	5.3	66
20...	1311	40.0	2460	7.70	25.0	5.5	69
20...	1313	50.0	2460	7.70	25.0	5.6	70
AUG							
31...	1135	1.00	1900	8.30	32.0	6.1	86
31...	1137	10.0	1900	8.20	31.5	5.9	83
31...	1139	20.0	2020	7.60	30.0	1.2	16
31...	1141	30.0	2290	7.50	28.5	0	0
31...	1143	40.0	2320	7.50	27.5	0	0
31...	1145	52.0	2350	7.40	28.0	0	0



## BRAZOS RIVER MAIN STEM

259

08090900 LAKE GRANBURY NEAR GRANBURY, TX--Continued

322619097463301 - LAKE GRANBURY SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JAN												
26...	1359	1.00	2870	8.80	12.0	1.10	11.1	105	530	130	49	400
26...	1401	10.0	2870	8.80	11.5	--	11.1	104	--	--	--	--
26...	1403	20.0	2950	8.50	10.0	--	9.2	83	--	--	--	--
26...	1405	30.0	2960	8.50	10.0	--	8.9	80	--	--	--	--
26...	1407	39.0	3000	8.30	9.5	--	7.8	70	530	130	51	420
JUN												
20...	1401	1.00	384	8.40	31.5	0.20	9.4	131	120	39	6.6	33
20...	1403	10.0	1870	7.80	27.0	--	6.2	80	--	--	--	--
20...	1405	20.0	2450	7.80	26.5	--	6.2	80	--	--	--	--
20...	1407	30.0	2520	7.70	25.5	--	5.3	67	--	--	--	--
20...	1409	38.0	2520	7.60	25.5	--	5.3	67	440	120	35	350
AUG												
31...	1201	1.00	1870	8.60	31.5	1.00	8.4	118	340	93	27	250
31...	1203	10.0	1870	8.20	31.0	--	6.4	89	--	--	--	--
31...	1206	20.0	2170	7.70	30.5	--	2.1	29	--	--	--	--
31...	1210	30.0	2360	7.50	30.5	--	0	0	--	--	--	--
31...	1215	38.0	2380	7.50	28.5	--	0	0	410	110	33	310

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN												
26...	8	7.6	108	420	650	4.5	1730	<0.100	0.90	0.020	10	<10
26...	--	--	--	--	--	--	--	<0.100	0.90	0.020	20	<10
26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	<0.100	0.70	0.020	20	<10
26...	8	7.5	115	440	680	4.6	1800	<0.100	0.70	0.040	10	20
JUN												
20...	1	4.5	98	30	42	11	225	<0.100	1.1	0.050	22	1
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	<0.100	0.50	0.010	10	<10
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	7	7.4	121	330	550	8.5	1470	<0.100	0.60	0.020	20	20
AUG												
31...	6	6.6	121	230	370	8.4	1060	<0.100	0.50	0.020	13	9
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	<0.100	0.70	0.010	20	70
31...	--	--	--	--	--	--	--	<0.100	0.50	0.020	20	350
31...	7	6.8	137	300	500	10	1350	<0.100	1.2	0.050	170	--

322703097451401 - LAKE GRANBURY SITE GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
26...	1429	1.00	2890	8.80	11.0	10.9	101
26...	1431	12.0	2900	8.70	11.0	10.0	92
JUN							
20...	1438	1.00	454	8.40	32.0	9.7	136
20...	1440	13.0	1530	7.70	26.0	5.1	65
AUG							
31...	1232	1.00	1860	8.50	32.0	8.1	114
31...	1234	12.0	1840	8.40	32.5	7.1	101

## BRAZOS RIVER MAIN STEM

08090900 LAKE GRANBURY NEAR GRANBURY, TX--Continued

322834097470801 - LAKE GRANBURY SITE HC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)
JAN							
26...	1450	1.00	3200	8.60	10.5	0.90	10.2
26...	1452	10.0	3200	8.60	10.5	--	10.2
26...	1454	20.0	3200	8.60	10.5	--	10.2
26...	1456	30.0	3100	8.40	10.0	--	8.3
JUN							
20...	1458	1.00	1970	8.70	31.0	0.40	12.2
20...	1500	10.0	2720	7.90	26.0	--	6.6
20...	1502	20.0	2780	7.80	26.0	--	6.0
20...	1504	30.0	2850	7.70	26.0	--	5.4
AUG							
31...	1252	1.00	1970	8.50	31.0	0.60	8.4
31...	1255	10.0	2110	8.20	30.5	--	6.0
31...	1258	20.0	2620	7.60	30.5	--	1.8
31...	1304	31.0	2630	7.60	31.0	--	1.4

DATE	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN						
26...	93	<0.100	0.70	0.020	30	<10
26...	93	--	--	--	--	--
26...	93	<0.100	0.90	0.020	20	<10
26...	75	<0.100	1.1	0.020	20	20
JUN						
20...	169	<0.100	0.70	0.020	20	<10
20...	84	--	--	--	--	--
20...	76	--	--	--	--	--
20...	69	<0.100	0.60	0.010	60	30
AUG						
31...	117	<0.100	0.60	0.020	20	10
31...	83	<0.100	0.60	0.010	10	20
31...	25	--	--	--	--	--
31...	19	<0.100	0.60	0.020	20	170

322819097483201 - LAKE GRANBURY SITE IC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
26...	1512	1.00	3900	8.60	10.5	9.9	91
26...	1514	15.0	3900	8.60	10.5	9.9	91
JUN							
20...	1525	1.00	2180	8.60	30.0	11.9	162
20...	1527	10.0	2550	7.80	26.5	5.4	69
20...	1529	16.0	2580	7.60	26.0	3.2	41
AUG							
31...	1319	1.00	2080	8.40	31.0	7.1	99
31...	1321	10.0	2090	8.10	30.5	5.0	69
31...	1323	15.0	2090	8.00	30.5	4.0	55

323318097480101 - LAKE GRANBURY SITE JC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
26...	1550	1.00	3920	8.60	10.5	9.9	91
26...	1552	10.0	3920	8.60	10.5	9.7	89
26...	1554	21.0	3920	8.60	10.5	9.9	91
JUN							
20...	1552	1.00	2900	8.30	31.5	9.2	129
20...	1554	10.0	2900	8.10	28.5	7.8	104
20...	1556	23.0	2900	8.10	29.0	8.0	108
AUG							
31...	1346	1.00	3180	8.20	32.5	7.7	110
31...	1348	10.0	3250	8.00	32.0	5.9	84
31...	1350	22.0	3030	7.60	31.5	1.9	27

## BRAZOS RIVER MAIN STEM

261

08090900 LAKE GRANBURY NEAR GRANBURY, TX--Continued

323435097492001 - LAKE GRANBURY SITE KC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATURATION	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JUN												
20...	1616	1.00	2910	8.30	28.5	0.50	9.1	121	530	140	43	420
20...	1618	10.0	2910	8.20	29.0	--	8.9	120	--	--	--	--
20...	1620	17.0	2910	8.20	29.5	--	8.9	121	500	130	43	420
AUG												
31...	1402	1.00	3420	8.30	32.0	0.50	7.0	99	550	140	49	490
31...	1404	10.0	3410	8.20	31.0	--	5.6	78	--	--	--	--
31...	1407	14.0	3410	8.10	32.0	--	5.4	77	550	140	49	480
DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JUN												
20...	8	7.8	130	400	650	7.3	1750	<0.100	0.60	<0.010	<10	10
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	8	7.6	126	400	650	7.3	1730	<0.100	0.70	<0.010	20	<10
AUG												
31...	9	8.5	125	470	780	6.0	2020	<0.100	0.60	0.020	30	10
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	9	8.6	116	470	770	6.0	1990	<0.100	0.50	0.020	20	20

## BRAZOS RIVER MAIN STEM

08091000 BRAZOS RIVER NEAR GLEN ROSE, TX

LOCATION.--Lat 32°16'18", long 97°39'48", Somervell County, Hydrologic Unit 12060201, at downstream side of bridge on U.S. Highway 67, 600 ft downstream from Georges Creek, 4.1 mi upstream from Paluxy River, 6 mi northeast of Glen Rose, and at mile 511.2.

DRAINAGE AREA.--25,818 mi<sup>2</sup>, of which 9,566 mi<sup>2</sup> probably is noncontributing.

PERIOD OF RECORD.--October 1923 to current year.

Water-quality records.--Chemical analyses: August to November 1946. Chemical and biochemical analyses: October 1980 to June 1987.

REVISED RECORDS.--WSP 1058: 1932. WSP 1512: 1946-47, 1949. WSP 1712: 1928(M). WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 567.82 ft above National Geodetic Vertical Datum of 1929. Prior to May 7, 1931, nonrecording gage at site 2.5 mi downstream at same datum. May 7, 1931, to Sept. 30, 1957, water-stage recorder at site 2.4 mi downstream at same datum, used as supplementary gage Oct. 1, 1957, to Apr. 1, 1959. Apr. 27, 1950, to Sept. 30, 1957, water-stage recorder, present gage, used as supplementary gage.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Since September 1969, flow largely regulated by Lake Granbury (station 08090900) 31 mi upstream. There are many diversions above station for irrigation, municipal supply, and for oil field operations.

AVERAGE DISCHARGE.--46 years (water years 1924-69) prior to regulation by Lake Granbury, 1,567 ft<sup>3</sup>/s (1,135,000 acre-ft/yr); 20 years (water years 1970-89) regulated, 1,012 ft<sup>3</sup>/s (733,200 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 97,600 ft<sup>3</sup>/s May 18, 1935 (gage height, 23.68 ft, site then in use, from floodmarks); maximum gage height, 35.19 ft, present site, Oct. 15, 1981; no flow at times prior to construction of Morris Sheppard Dam (1941) on the Brazos River forming Possum Kingdom Lake, and on July 14, 1984. Maximum stage since at least 1876, that of Oct. 15, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1908 reached a stage of 27 ft, and flood in May 1922 reached a stage of 29.5 ft, each at site 2.4 mi downstream, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 53,300 ft<sup>3</sup>/s May 18 at 0800 hours (gage height, 27.08 ft); minimum daily, 3.2 ft<sup>3</sup>/s Nov. 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68	11	21	23	64	99	196	35	58	438	338	e50
2	47	12	21	16	56	49	146	1200	426	92	1020	e50
3	41	13	21	12	54	30	135	1180	661	86	903	e50
4	36	13	21	12	46	26	124	2570	2590	561	483	e50
5	49	13	21	12	43	1190	97	18700	6240	378	1650	e50
6	53	14	21	13	41	393	422	14900	2240	68	2590	e49
7	27	22	21	27	41	286	282	6380	5040	68	2660	e51
8	15	25	21	32	29	2960	85	1710	7000	58	3700	e51
9	11	12	21	33	18	2060	70	338	9920	136	1940	e52
10	10	6.3	22	33	12	1010	67	4290	11600	237	1860	e64
11	16	3.8	23	33	16	886	56	891	1260	73	1860	e226
12	30	3.2	26	33	28	831	54	189	4500	39	1180	e1010
13	30	4.2	29	35	37	209	76	688	22500	36	927	e1900
14	22	9.7	28	32	1020	34	886	910	41000	38	502	e2360
15	12	11	28	28	1020	32	1490	192	28700	156	653	e1980
16	10	7.7	27	28	243	25	592	1340	6910	70	562	3690
17	8.0	6.9	27	31	285	21	105	40400	3440	56	e1710	4430
18	5.3	9.9	28	31	4880	21	81	50400	1200	310	e319	4900
19	6.9	22	27	32	3280	20	67	26400	3110	386	e86	2660
20	17	26	25	32	2350	18	62	5580	3700	58	e49	2600
21	21	14	25	32	1170	18	59	12400	3620	24	e46	2370
22	21	13	29	33	559	21	54	10800	3150	20	e47	2030
23	19	16	34	35	114	28	54	2060	460	18	e631	2270
24	15	16	35	35	65	569	50	1030	821	20	e527	2280
25	18	16	35	36	59	480	49	2240	946	454	e49	2130
26	18	16	32	39	53	88	46	1510	975	456	e47	1190
27	21	17	24	39	45	41	40	781	1710	80	e47	2270
28	11	18	21	65	181	15000	1100	738	897	511	e47	536
29	11	19	21	76	---	4220	473	723	411	436	e705	102
30	11	19	21	76	---	570	54	706	606	90	e888	222
31	11	---	21	71	---	268	---	265	---	64	e307	---
TOTAL	691.2	409.7	777	1065	15809	31503	7072	211546	175691	5517	28333	41673
MEAN	22.3	13.7	25.1	34.4	565	1016	236	6824	5856	178	914	1389
MAX	68	26	35	76	4880	15000	1490	50400	41000	561	3700	4900
MIN	5.3	3.2	21	12	12	18	40	35	58	18	46	49
AC-FT	1370	813	1540	2110	31360	62490	14030	419600	348500	10940	56200	82660

CAL YR 1988 TOTAL 34269.8 MEAN 93.6 MAX 3150 MIN 3.2 AC-FT 67970  
WTR YR 1989 TOTAL 520086.9 MEAN 1425 MAX 50400 MIN 3.2 AC-FT 1032000

e Estimated.

## 08091730 SQUAW CREEK RESERVOIR NEAR GLEN ROSE, TX

LOCATION.--Lat 32°18'00", long 97°47'12", Somervell County, Hydrologic Unit 12060202, on upstream side of intake structure near power house on Squaw Creek, 1.8 mi upstream from dam, 3.9 mi north of Glen Rose, and 6.1 mi upstream from mouth.

DRAINAGE AREA.--64.0 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The reservoir is formed by a rolled earthfill dam 4,360 ft long. Deliberate impoundment began in February 1977, and the dam was completed in June 1977. The flood-control outlet works consist of an ungated 100-foot-long concrete ogee spillway located at right end of dam. The low-flow outlet works consist of a concrete outlet tower with three 4- by 6-foot slide gates and a 6- by 6-foot slide gate, which feed into a 6-foot inside diameter concrete conduit that extends through the dam. During the year, water was diverted by pipeline from Lake Granbury into this reservoir. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam.....	796.0	228,100
Crest of spillway.....	783.0	178,100
Crest of spillway (normal operating level).....	775.0	151,100
Invert of slide gate (No. 1).....	764.0	117,300
Invert of slide gate (No. 2).....	715.0	24,670
Invert of slide gate (No. 3).....	666.5	380
Lowest gated outlet (invert).....	653.0	0

COOPERATION.--The capacity table, provided by Texas Utilities Services, Inc., was prepared by Freese and Nichols, Inc., Consulting Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 160,300 acre-ft May 16, 1989 (elevation, 777.81 ft); minimum since initial filling of reservoir on May 3, 1979, 142,700 acre-ft May 20, 1983 (elevation, 772.44 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 160,300 acre-ft May 16 at 1900 hours (elevation, 777.81 ft); minimum, 144,400 acre-ft Dec. 12-13 (elevation, 772.96 ft).

Capacity table (elevation, in feet, and total contents, in acre-feet)

772.00	141,300	776.00	154,200
774.00	147,700	778.00	160,900

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	148100	146200	144700	145500	147700	149500	154100	151800	152100	151900	149800	148000
2	147800	146100	144600	145600	148000	149500	153800	151700	152100	151600	149800	148000
3	147800	146100	144600	145600	147900	149500	153400	151900	152400	151700	149800	147900
4	147700	146000	144600	145700	147900	149500	153100	152600	152400	151700	149800	147700
5	147600	145900	144600	145700	147900	149500	152900	152400	152300	151600	149700	147700
6	147500	145700	144500	145900	147900	149400	152700	152600	153200	151500	149600	147600
7	147400	145700	144500	145900	147900	149400	152500	152600	153200	151500	149700	147500
8	147400	145700	144500	145800	147900	149400	152400	152500	153000	151300	149700	147400
9	147300	145700	144400	145900	148000	149400	152300	152400	152900	151300	149600	147400
10	147200	145700	144500	146000	148100	149400	152100	152200	154100	151400	149500	147300
11	147200	145500	144500	146100	148100	149300	152000	152100	154300	151400	149400	147500
12	147100	145500	144400	146200	148200	149300	152000	152200	154300	151300	149300	147900
13	147000	145500	144500	146300	148300	149400	152700	152300	160200	151200	149300	148300
14	146900	145400	144500	146300	148400	149300	152600	152200	158700	151200	149200	148200
15	146800	145200	144600	146300	148500	149300	152700	153900	157200	151200	149100	148200
16	146800	145300	144500	146300	148800	149200	152600	160000	156000	151100	149200	148100
17	146700	145300	144500	146400	149700	149200	152700	158000	155100	151100	149200	148100
18	146700	145300	144500	146400	149700	149200	152700	156700	154500	150900	149200	148000
19	146600	145200	144600	146600	149700	149200	152700	155700	154000	150800	149100	147900
20	146500	145200	144700	146500	149700	149200	152600	155100	153600	150700	149000	147800
21	146400	145100	144800	146600	149700	149200	152500	154500	153300	150600	149000	147700
22	146400	145100	145000	146700	149700	149200	152400	154000	153000	150500	148900	147600
23	146300	145000	145000	146700	149700	149200	152300	153600	152800	150500	148800	147400
24	146300	145000	145100	146800	149600	149200	152200	153300	152600	150400	148700	147300
25	146200	144900	145100	147000	149600	149100	152100	153100	152500	150300	148600	147200
26	146200	144900	145200	147000	149600	149100	152100	152900	152400	150200	148400	147100
27	146200	144900	145300	147200	149600	149300	152000	152600	152300	150100	148400	147100
28	146200	144800	145300	147500	149600	156900	151900	152400	152100	150100	148400	147000
29	146200	144700	145400	147600	---	156400	151900	152300	152000	150100	148300	146900
30	146200	144700	145500	147600	---	155400	151800	152200	151900	150000	148200	146900
31	146200	---	145500	147700	---	154700	---	152100	---	149900	148100	---
MAX	148100	146200	145500	147700	149700	156900	154100	160000	160200	151900	149800	148300
MIN	146200	144700	144400	145500	147700	149100	151800	151700	151900	149900	148100	146900
(+)	773.54	773.07	773.32	774.00	774.58	776.14	775.26	775.36	775.28	774.67	774.12	773.74
(Φ)	-1700	-1500	+800	+2200	+1900	+5100	-2900	+300	-200	-2000	-1800	-1200

CAL YR 1988 MAX 148500 MIN 144400 (Φ) -600  
WTR YR 1989 MAX 160200 MIN 144400 (Φ) -1000

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



## BRAZOS RIVER BASIN

08091750 SQUAW CREEK NEAR GLEN ROSE, TX

LOCATION.--Lat 32°16'12", long 97°43'56", Somervell County, Hydrologic Unit 12060202, on left bank at downstream side of highway embankment 25 ft left of left end of bridge on State Highway 144, 2.1 mi upstream from mouth, 2.5 mi downstream from Squaw Creek Dam, and 2.8 mi northeast of Glen Rose.

DRAINAGE AREA.--70.3 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1973 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 599.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. No known diversions between Squaw Creek Reservoir and this station. Flow regulated since Feb. 15, 1977, by Squaw Creek Reservoir. During the year, low flows were sustained by releases from pipeline used to divert water from Lake Granbury (station 08090900) to Squaw Creek Reservoir (station 08091730). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--13 years (water years 1977-89) 15.18 ft<sup>3</sup>/s (11,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,030 ft<sup>3</sup>/s Apr. 8, 1975 (gage height, 11.90 ft), from rating curve extended above 1,000 ft<sup>3</sup>/s on basis of velocity-area study; minimum, 0.02 ft<sup>3</sup>/s Aug. 28, 29, 1974.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1934, about 20.5 ft in May 1957, from information by State Department of Highways and Public Transportation (discharge not determined).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,940 ft<sup>3</sup>/s June 13 at 1830 hours (gage height, 11.85 ft), from rating curve extended above 1,000 ft<sup>3</sup>/s on basis of velocity-area study; minimum, 1.9 ft<sup>3</sup>/s Nov. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	4.6	3.4	7.2	7.9	7.0	450	23	24	38	9.2	9.5
2	8.9	5.5	3.4	7.3	8.3	7.0	351	18	18	31	13	8.6
3	8.9	3.2	3.4	7.3	9.3	7.0	287	30	29	27	12	8.9
4	7.8	2.7	3.1	7.4	8.9	11	234	46	60	23	12	8.9
5	7.9	2.7	3.1	7.6	8.9	14	188	47	71	19	12	8.4
6	8.4	2.7	3.2	7.9	8.6	7.9	156	35	52	16	11	9.6
7	9.5	2.7	3.3	7.3	8.4	7.5	130	53	149	14	15	11
8	9.6	2.7	3.4	7.4	8.4	7.2	111	46	183	15	12	11
9	10	2.7	3.4	7.4	8.4	7.0	89	38	158	16	12	11
10	10	2.7	4.4	7.4	8.1	6.8	68	64	136	13	12	12
11	5.2	2.8	4.2	7.4	7.9	6.5	48	65	445	12	12	14
12	4.6	2.9	4.0	7.9	7.9	6.7	49	52	425	10	12	13
13	6.6	2.9	3.6	7.4	7.9	7.0	97	82	2030	9.6	11	31
14	6.7	2.9	3.3	7.1	8.1	7.0	145	77	2350	10	11	15
15	6.5	2.9	6.2	6.5	9.5	7.0	139	69	1350	9.3	10	14
16	7.0	3.3	6.5	6.5	14	7.0	138	788	852	8.7	15	13
17	7.4	3.6	6.5	6.5	64	7.0	139	3010	572	8.4	11	13
18	7.4	3.4	6.5	6.7	11	7.0	148	1790	405	8.3	10	13
19	7.4	3.5	6.5	7.0	7.4	7.2	153	1080	282	7.9	10	13
20	7.4	4.0	6.5	7.0	7.0	9.1	149	753	231	7.6	9.9	13
21	7.7	4.0	6.5	7.5	7.0	8.8	128	532	182	7.3	9.5	13
22	7.8	3.8	7.4	7.9	7.0	8.4	106	404	142	5.6	9.5	12
23	7.0	3.7	7.4	7.2	7.0	9.0	86	323	113	5.4	9.5	12
24	6.2	3.7	7.4	7.0	6.8	9.5	70	251	89	6.0	9.5	12
25	11	3.5	7.2	7.9	6.5	9.5	56	199	109	9.6	9.5	12
26	11	2.1	7.0	8.4	6.7	9.5	47	160	122	8.9	8.9	12
27	11	1.9	7.1	8.6	7.0	9.5	39	135	96	8.9	8.9	12
28	9.4	3.0	7.4	25	7.0	1060	35	102	75	8.9	8.9	12
29	4.6	3.3	7.4	8.6	---	1110	30	69	58	8.9	8.9	12
30	4.6	3.3	7.4	8.1	---	856	26	44	45	8.9	8.9	12
31	5.0	---	8.0	7.9	---	602	---	31	---	8.4	8.9	---
TOTAL	241.5	96.7	168.1	248.3	284.9	3846.1	3892	10416	10853	390.6	333.0	371.9
MEAN	7.79	3.22	5.42	8.01	10.2	124	130	336	362	12.6	10.7	12.4
MAX	11	5.5	8.0	25	64	1110	450	3010	2350	38	15	31
MIN	4.6	1.9	3.1	6.5	6.5	6.5	26	18	18	5.4	8.9	8.4
AC-FT	479	192	333	493	565	7630	7720	20660	21530	775	661	738
CAL YR 1988	TOTAL	2206.0	MEAN	6.03	MAX	64	MIN	1.9	AC-FT	4380		
WTR YR 1989	TOTAL	31142.1	MEAN	85.3	MAX	3010	MIN	1.9	AC-FT	61770		

## 08092500 LAKE WHITNEY NEAR WHITNEY, TX

LOCATION.--Lat 31°51'55", Long 97°22'18", Bosque County, Hydrologic Unit 12060202, on State Highway 22, in intake structure of Whitney Dam on Brazos River, 2.4 mi upstream from Coon Creek, 3.5 mi upstream from Iron Creek, 7.4 mi southwest of Whitney, and at mile 442.4.

DRAINAGE AREA.--27,189 mi<sup>2</sup>, approximately, of which 9,566 mi<sup>2</sup> probably is noncontributing.

PERIOD OF RECORD.--December 1951 to current year. Prior to October 1970, published as Whitney Reservoir. Prior to October 1980, published as Whitney Lake.

Water-quality records.--Chemical analyses: March 1960 to September 1987. Chemical and biochemical analyses: September 1970 to August 1987.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--The lake is formed by a concrete-gravity and rolled earthfill dam 17,695 ft long, including spillway. The dam was completed in April 1951, and deliberate impoundment began Dec. 10, 1951. Concrete spillway is 680 ft long and includes 17 tainter gates 38.0 by 40.0 ft each. Outlet works are comprised of 16 gate-operated conduits that are 5.0- by 9.0 ft each. The space between elevations 522.0 and 571.0 ft is reserved for flood-control storage. At maximum design elevation of 573.0 ft the spillway is designed to discharge 684,000 ft<sup>3</sup>/s. The capacity table is based on a survey made in April and May 1959. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam.....	584.0	-
Design flood.....	573.0	2,100,000
Top of gates.....	571.0	1,999,500
Crest of spillway (sill of gates).....	533.0	627,100
Top of conservation pool (top of designated power storage).....	522.0	411,100
Lowest controlled outlet (invert).....	448.83	4,270

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,980,000 acre-ft May 29, 1957 (elevation, 570.25 ft); minimum daily since power pool elevation first reached in April 1954, 250,200 acre-ft Nov. 1, 1956 (elevation 509.52 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 999,600 acre-ft May 23 at 0600 hours (elevation, 546.36 ft); minimum, 386,300 acre-ft Dec. 18 (elevation, 520.45 ft).

Capacity table (elevation, in feet, and total contents, in acre-feet)

520.0	379,200	530.0	559,400	541.0	836,100
525.0	461,200	535.0	675,700	547.0	1,020,000

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	423300	419800	415000	388500	395500	447200	542400	562500	770300	644600	592600	598600
2	423300	419400	412400	388800	397500	447400	544900	562500	746200	642500	593100	596700
3	423200	419300	409900	388700	397500	448000	546900	567800	723800	639300	592400	595100
4	423000	419800	407800	388500	397400	450900	548300	583200	704800	636200	592000	594000
5	422700	419600	406200	388500	397200	451100	548800	612500	697900	633600	592200	592600
6	422400	419400	403700	388500	397200	446300	549000	639800	687400	628700	595800	591100
7	422400	418900	401600	388800	397000	446800	548600	650000	688400	630400	602900	588800
8	422400	418800	400700	388700	397000	450900	550500	649300	692700	629400	608500	587500
9	422200	418600	399100	388500	396900	455000	550700	645400	694000	627600	611300	587900
10	422000	418100	398000	388400	396700	457200	549900	646300	702300	627100	612900	588400
11	421600	417600	397000	388400	397000	459100	549400	647100	695800	625700	614600	588600
12	421400	418100	395500	388700	397400	460100	549000	644900	686700	624100	615500	591100
13	421100	417600	393600	388500	398000	461600	551600	645100	742500	623400	615300	594900
14	420700	417600	392500	388100	398000	462500	556100	645900	843800	621800	615000	596300
15	420400	418500	391200	388700	402300	463200	559700	644200	881200	620400	615000	597400
16	420300	417300	389600	388400	403600	462800	561200	646300	870700	619000	615300	603900
17	419900	416800	387900	388400	414000	462800	562500	811300	847000	616600	616200	612000
18	419800	417000	386900	388400	424000	463700	563000	907400	818200	615300	615900	620600
19	419600	417300	386800	388500	432800	463500	563400	966900	790500	614600	613900	625500
20	419900	417300	386800	388500	438900	465300	563200	976700	765700	614600	612500	629200
21	419600	417000	386800	388400	441400	465100	563000	988600	747300	610400	611100	632900
22	419100	416800	387300	388400	443800	464900	562300	999500	734600	608100	609700	635500
23	419400	416700	387400	388200	443800	464700	562100	985000	719500	606000	608800	639100
24	419100	416500	387300	388200	444500	464600	561900	958600	705100	603900	608100	642000
25	418900	416800	386900	390000	445000	466000	561400	937700	692000	601800	606700	643000
26	419400	417500	386600	389600	445800	466800	560800	916200	679500	602000	605300	642200
27	419300	417100	388200	389300	446500	467000	561000	892800	667400	600400	603600	642700
28	419600	416700	388100	393700	446800	509400	561000	867000	659100	598300	602700	642000
29	419400	416500	388100	394800	---	534500	562300	841200	653400	597400	601600	639300
30	419300	416300	388400	394800	---	540100	562500	817600	648100	595400	601300	637900
31	419900	---	388500	394700	---	542000	---	793500	---	593100	599900	---
MAX	423300	419800	415000	394800	446800	542000	563400	999500	881200	644600	616200	643000
MIN	418900	416300	386600	388100	395500	446300	542400	562500	648100	593100	592000	587500
(↑)	522.54	522.32	520.59	520.98	524.17	529.20	530.15	539.51	533.88	531.53	531.83	533.46
(Φ)	-2000	-3600	-27800	+6200	+52100	+95200	+20500	+231000	-145400	-55000	+6800	+38000

CAL YR 1988 MAX 485300 MIN 386600 (Φ) -98100  
WTR YR 1989 MAX 999500 MIN 386600 (Φ) +214600

(↑) Elevation, in feet, at end of month.  
(Φ) Change in contents, in acre-feet.

## 08092600 BRAZOS RIVER AT WHITNEY DAM NEAR WHITNEY, TX

LOCATION.--Lat 31°52'00", long 97°22'00", Hill County, Hydrologic Unit 12060202, immediately below Whitney Dam, 3.4 mi upstream from gaging station near Whitney, 4.0 mi upstream from Iron Creek, and 7.4 mi southwest of Whitney.

DRAINAGE AREA.--27,189 mi<sup>2</sup>, of which 9,566 mi<sup>2</sup> probably is noncontributing.

PERIOD OF RECORD.--Chemical analyses: August 1946 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1947 to current year.

WATER TEMPERATURE: October 1947 to current year.

INSTRUMENTATION.--From July 1953 to September 1966, water temperature was continuously recorded at this station.

REMARKS.--Records of discharge are given for gaging station 08093100. No appreciable inflow between dam and gaging station except during periods of heavy local rains. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed 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 Geological Survey District office upon request.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 3,620 microsiemens Aug. 24, 1978; minimum daily, 203 microsiemens May 23, 1952.

WATER TEMPERATURES: Maximum daily, 33.5°C July 3, 1973; minimum daily, 0.0°C Jan. 28, 29, 1948.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,140 microsiemens Feb. 8, 11; minimum daily, 1,030 microsiemens Aug. 7.

WATER TEMPERATURE: Maximum daily, 27.0°C Sept. 2; minimum daily, 7.0°C Feb. 6-9, Mar. 7.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 04...	0925	25	2000	--	24.0	320	80	30	280
NOV 29...	1410	25	2070	7.20	16.5	420	110	36	280
JAN 10...	1150	25	2140	--	--	390	97	35	280
FEB 27...	1600	25	2010	8.20	9.0	400	100	36	270
APR 11...	1440	4000	2000	8.20	16.5	370	96	32	240
JUN 07...	1015	7990	1370	--	25.0	260	71	20	160
20...	1612	800	1100	--	27.0	230	66	15	120

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)
OCT 04...	7	6.2	93	270	430	0.30	7.3	1160
NOV 29...	6	6.5	107	280	440	0.30	7.4	1220
JAN 10...	6	6.8	106	280	420	0.30	6.8	1190
FEB 27...	6	6.3	116	270	410	0.30	6.5	1170
APR 11...	5	6.0	116	260	420	0.30	5.5	1130
JUN 07...	4	5.4	125	160	250	0.30	5.0	747
20...	3	5.3	115	120	190	0.30	6.2	592

BRAZOS RIVER MAIN STEM

267

08092600 BRAZOS RIVER AT WHITNEY DAM NEAR WHITNEY, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1988 TO SEPTEMBER 1989

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. 1988	758	2070	1180	2420	440	910	250	502	370
NOV. 1988	791	2090	1190	2550	450	961	250	530	370
DEC. 1988	15800	2100	1200	51300	450	19300	250	10700	370
JAN. 1989	1057	2090	1190	3410	450	1280	250	708	370
FEB. 1989	1750	2110	1200	5690	450	2150	250	1180	370
MAR. 1989	6112	2030	1160	19100	430	7170	240	3960	360
APR. 1989	10986	2020	1150	34100	430	12800	240	7070	360
MAY 1989	191984	1820	1030	536000	380	198000	210	110100	340
JUNE 1989	342320	1230	686	634000	240	224100	140	126800	250
JULY 1989	39431	1100	612	65100	210	22700	120	12900	230
AUG. 1989	26689	1070	596	43000	210	15000	120	8520	230
SEPT 1989	20842	1080	602	33900	210	11800	120	6720	230
TOTAL	658520	**	**	1431000	**	516000	**	290000	**
WTD.AVG.	1804	1430	805	**	290	**	160	**	280

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2050	2090	2100	2110	2100	2050	2030	1990	1570	1090	1090	1060
2	2050	2100	2100	2110	2110	2040	2040	1990	1540	1100	1040	1060
3	2060	2080	2120	2110	2100	2050	2040	1950	1450	1100	1090	1050
4	2060	2090	2100	2110	2110	2040	2040	1980	1490	1090	1090	1060
5	2060	2080	2110	2120	2110	2040	2030	1990	1390	1090	1090	1060
6	2060	2090	2100	2120	2120	2040	2030	1980	1340	1100	1080	1060
7	2060	2080	2100	2110	2110	2040	2030	1980	1410	1100	1030	1060
8	2060	2080	2090	2120	2140	2060	2030	1980	1330	1090	1060	1060
9	2060	2090	2110	2110	2120	2040	2020	1980	1250	1100	1070	1060
10	2060	2100	2060	2110	2130	2040	2020	1960	1340	1100	1070	1060
11	2060	2100	2100	2110	2140	2040	2020	1990	1360	1110	1070	1060
12	2060	2020	2100	2120	2130	2040	2020	1980	1340	1110	1070	1060
13	2060	2090	2100	2110	2130	2050	2020	1980	1290	1100	1070	1040
14	2060	2090	2100	2110	2120	2040	2020	1980	1250	1100	1080	1070
15	2080	2090	2100	2130	2110	2060	2010	1980	1130	1100	1060	1080
16	2080	2090	2110	2110	2080	2050	2010	1980	1050	1100	1070	1080
17	2080	2090	2110	2120	2100	2050	2010	1950	1080	1100	1070	1080
18	2080	2090	2100	2120	2120	2050	2010	1940	1110	1100	1060	1080
19	2080	2090	2110	2120	2110	2050	2010	1940	1110	1100	1060	1070
20	2080	2100	2110	2120	2110	2050	2010	1920	1100	1100	1070	1080
21	2070	2100	2110	2120	2090	2020	2010	1900	1090	1100	1070	1080
22	2070	2100	2110	2120	2080	2040	2010	1880	1070	1100	1060	1120
23	2070	2100	2100	2110	2120	2040	2020	1880	1070	1100	1070	1090
24	2080	2100	2110	2120	2110	2050	2000	1870	1080	1100	1070	1090
25	2080	2090	---	2120	2100	2040	2000	1830	1100	1090	1070	1100
26	2070	2090	2110	2120	2100	2040	2000	1770	1110	1090	1070	1100
27	2070	2100	2110	2120	2090	2030	2000	1720	1100	1090	1070	1100
28	2070	2100	2110	2000	2100	1890	2000	1690	1100	1090	1070	1100
29	2090	2100	2110	2100	---	2020	2000	1680	1100	1090	1070	1100
30	2090	2090	2100	2110	---	2040	2000	1670	1100	1090	1070	1100
31	2060	---	2110	2110	---	2010	---	1630	---	1090	1070	---
MEAN	2070	2090	2100	2110	2110	2040	2020	1900	1230	1100	1070	1080

## BRAZOS RIVER MAIN STEM

08092600 BRAZOS RIVER AT WHITNEY DAM NEAR WHITNEY, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.5	20.0	15.0	11.5	11.5	10.5	14.5	17.0	24.0	25.5	25.0	26.0
2	23.0	20.0	14.5	12.0	11.0	10.0	14.0	16.5	25.5	25.5	26.0	27.0
3	23.0	20.0	16.5	12.0	8.0	10.0	15.0	17.0	25.0	25.0	25.5	26.5
4	23.0	20.0	19.5	12.0	8.0	9.0	14.5	17.5	24.5	26.0	25.0	26.0
5	22.5	20.0	14.0	13.0	8.0	8.0	16.0	17.5	25.0	25.5	26.0	26.0
6	23.5	20.0	14.5	12.0	7.0	8.0	17.0	19.0	25.0	25.5	26.0	26.0
7	23.0	19.5	14.5	13.0	7.0	7.0	16.0	19.0	25.0	25.5	25.5	26.0
8	23.0	19.0	14.0	12.0	7.0	8.0	15.0	20.0	25.5	25.5	26.0	26.0
9	23.0	19.5	12.5	11.5	7.0	8.0	16.0	20.0	25.5	25.0	26.0	26.5
10	22.0	18.5	13.5	11.5	7.5	8.0	16.0	20.0	25.5	25.0	25.5	26.5
11	22.0	19.0	13.5	12.0	8.0	9.0	16.0	18.0	24.5	25.0	25.5	26.0
12	21.5	20.5	13.0	11.0	10.0	9.5	15.5	17.5	24.0	25.0	26.0	26.0
13	21.5	19.5	12.5	10.5	9.0	9.5	15.5	18.5	25.0	25.0	26.0	25.5
14	21.5	19.0	13.0	11.0	9.0	9.5	15.0	18.5	25.0	25.0	26.0	25.5
15	21.5	19.5	12.5	10.5	9.0	9.0	15.5	19.0	25.0	25.5	26.0	25.0
16	21.5	17.5	11.5	10.5	8.5	10.0	16.0	19.0	24.5	25.5	26.0	25.5
17	21.5	12.0	12.0	10.0	9.0	11.0	16.0	20.5	25.0	25.5	26.0	25.0
18	21.5	18.5	11.5	11.0	8.5	11.5	16.5	20.5	24.0	25.0	26.0	25.0
19	21.0	19.5	12.0	11.5	8.5	12.0	16.5	20.5	25.0	25.5	26.5	24.5
20	21.5	18.0	13.0	11.0	9.5	14.0	16.0	20.5	25.5	25.0	26.5	24.5
21	21.5	16.5	12.0	10.5	9.0	10.5	16.5	21.5	25.0	20.0	26.0	24.5
22	21.0	16.5	13.0	10.5	9.0	12.0	16.5	21.5	24.5	25.0	26.0	24.0
23	21.5	16.0	12.0	10.5	8.0	11.0	16.5	22.5	25.0	25.5	26.0	24.0
24	21.0	16.0	12.0	11.0	8.0	11.0	16.5	22.5	24.5	25.0	26.0	24.0
25	21.0	17.5	13.0	12.0	9.0	10.5	17.0	22.5	25.0	25.0	26.0	23.0
26	21.0	18.5	13.5	11.0	9.0	12.5	19.0	23.5	25.0	25.0	26.5	23.0
27	21.0	18.0	13.0	10.5	9.0	13.0	17.5	23.5	25.0	25.0	26.5	22.5
28	21.0	15.5	11.5	11.5	9.0	13.0	17.5	24.0	25.0	25.0	26.0	22.5
29	21.0	15.5	11.5	11.5	---	13.5	17.0	24.0	25.5	26.0	26.0	22.0
30	20.5	15.5	12.0	10.5	---	14.0	17.0	24.0	25.5	25.5	26.0	23.0
31	20.0	---	13.0	11.0	---	14.5	---	24.5	---	25.0	26.0	---
MEAN	22.0	18.0	13.0	11.5	8.5	10.5	16.0	20.5	25.0	25.0	26.0	25.0



BRAZOS RIVER MAIN STEM

269

08093100 BRAZOS RIVER NEAR AQUILLA, TX

LOCATION.--Lat 31°48'44", long 97°17'51", Bosque County, Hydrologic Unit 12060202, on right bank at downstream side of highway embankment near right end of bridge on Farm Road 2114, 2.0 mi downstream from Tener Creek, 4.9 mi downstream from Iron Creek, 5.4 mi southwest of Aquilla, 9.0 mi downstream from Whitney Dam, and at mile 434.0.

DRAINAGE AREA.--27,244 mi<sup>2</sup>, of which 9,566 mi<sup>2</sup>, probably is noncontributing.

PERIOD OF RECORD.--October 1938 to current year. Prior to October 1974, published as Brazos River near Whitney.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 404.29 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1948, nonrecording gage at site 13.9 mi upstream at datum 27.77 ft higher. Oct. 1, 1948, to Feb. 12, 1975, at site 5.6 mi upstream at datum 13.10 ft higher.

REMARKS.--No estimated daily discharges. Records good. Most of flow is releases from Lake Whitney (station 08092500). The Brazos River at Whitney Dam (station 08092600) uses the discharge record at this station for publication of water-quality records. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--13 years (water years 1939-51) prior to regulation by Lake Whitney, 1,802 ft<sup>3</sup>/s (1,306,000 acre-ft/yr); 38 years (water-years 1952-89) regulated, unadjusted, 1,414 ft<sup>3</sup>/s (1,024,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 71,800 ft<sup>3</sup>/s May 18, 1949 (gage height, 31.03 ft), at site and datum then in use (Oct. 1, 1948, to Feb. 12, 1975); minimum daily, 0.4 ft<sup>3</sup>/s May 9, 1953. Maximum discharge since construction of Whitney Dam in 1951, 58,200 ft<sup>3</sup>/s May 28, 1957 (gage height, 27.34 ft), at site and datum in use Oct. 1, 1948, to Feb. 12, 1975).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1853, 45 ft May 9, 1922, at site and datum in use Oct. 1, 1948, to Feb. 12, 1975, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20,500 ft<sup>3</sup>/s June 16 at 2100 hours (gage height, 20.23 ft); minimum daily 16 ft<sup>3</sup>/s Oct. 5-6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	30	295	26	34	41	871	225	13300	2620	926	906
2	42	26	1360	27	31	43	349	523	13100	2250	853	903
3	21	26	1350	25	46	47	356	388	12900	2540	848	907
4	20	26	1340	26	38	46	351	278	12900	2210	838	904
5	16	24	1330	27	40	42	348	1060	11100	2130	843	904
6	16	21	1280	26	36	2440	350	4140	8340	2130	842	875
7	17	22	736	28	32	507	350	4210	8570	2070	871	907
8	17	22	759	27	30	46	343	4190	7970	1210	832	925
9	18	22	710	26	29	40	50	4240	7990	1190	821	600
10	20	21	756	24	30	39	325	2840	10400	593	822	435
11	20	20	745	21	37	40	503	1540	10500	831	816	396
12	20	23	719	21	35	39	445	2010	10600	881	822	389
13	20	21	712	21	37	39	359	1860	11100	894	813	390
14	20	20	714	23	32	40	180	1820	12500	863	805	378
15	21	22	708	22	30	40	344	1830	16300	855	942	359
16	22	21	708	22	117	39	350	2150	18900	870	832	157
17	25	20	704	22	372	43	349	5460	18900	802	843	41
18	24	21	543	22	184	42	310	4810	18700	922	848	192
19	25	115	43	23	85	42	507	4980	18500	850	845	354
20	25	48	26	22	76	43	354	5170	17800	930	855	445
21	25	30	23	22	68	44	355	6770	14100	1010	855	442
22	24	24	23	23	58	43	359	8890	11100	1020	871	461
23	26	19	22	23	49	42	368	10800	10000	1030	860	269
24	24	19	23	24	46	42	365	14500	8260	1020	863	137
25	25	20	22	27	47	42	359	14400	8190	1000	872	1230
26	27	30	23	29	47	44	365	14200	8120	1020	873	1580
27	26	23	27	25	44	44	398	14100	7980	1020	882	1520
28	27	18	25	239	40	270	371	13900	6330	1120	884	1540
29	28	18	23	85	---	441	358	13700	4070	1180	879	1560
30	26	19	24	43	---	655	294	13600	3800	1180	883	736
31	32	---	27	36	---	747	---	13400	---	1190	1050	---
TOTAL	758	791	15800	1057	1750	6112	10986	191984	342320	39431	26689	20842
MEAN	24.5	26.4	510	34.1	62.5	197	366	6193	11410	1272	861	695
MAX	59	115	1360	239	372	2440	871	14500	18900	2620	1050	1580
MIN	16	18	22	21	29	39	50	225	3800	593	805	41
AC-FT	1500	1570	31340	2100	3470	12120	21790	380800	679000	78210	52940	41340
CAL YR 1988	TOTAL	94827	MEAN	294	MAX	2390	MIN	16	AC-FT	188100		
WTR YR 1989	TOTAL	658520	MEAN	1804	MAX	18900	MIN	16	AC-FT	1306000		

## BRAZOS RIVER BASIN

08093160 AQUILLA CREEK NEAR PEORIA, TX  
(Reconnaissance Partial-record Station)

LOCATION.--Lat 31°58'40", long 97°14'44", Hill County, Hydrologic Unit 12060202, at bridge on State Highway 22 and 1.4 mi west of Peoria.

DRAINAGE AREA.--83.8 mi<sup>2</sup>.

PERIOD OF RECORD.--Periodic discharge measurements: October 1983 to September 1984.  
Chemical and biochemical analyses: October 1984 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)
FEB 27...	1330	0.35	753	8.00	11.0	25	6.8	9.4	87	1.9	300	110
APR 11...	1155	0.29	1020	7.90	13.0	--	1.2	10.1	96	1.7	430	150
JUN 06...	1930	4.3	1400	7.90	23.0	20	8.8	7.9	95	1.2	580	200
20...	1515	16	1430	8.20	23.0	25	6.2	7.4	88	1.0	580	200
JUL 17...	1015	1.6	1730	7.80	25.0	32	1.7	6.3	78	0.5	690	230
AUG 15...	1515	0.30	957	8.10	24.0	50	15	7.0	85	2.7	350	120
DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD (MG/L AS CAC03)	SULFATE DIS-SOLVED (MG/L AS S04)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	
FEB 27...	6.2	45	1	5.3	190	170	23	0.50	13	487	14	
APR 11...	14	62	1	7.2	267	210	54	0.40	6.9	665	4	
JUN 06...	20	110	2	5.4	299	370	100	0.70	13	999	20	
20...	19	92	2	5.3	333	320	110	0.60	16	953	8	
JUL 17...	27	130	2	4.7	376	410	140	0.50	16	1180	5	
AUG 15...	13	57	1	9.0	247	170	48	0.60	11	577	39	
DATE	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (MG/L AS AS)	
FEB 27...	4	10	4.32	0.080	4.40	0.040	1.1	1.1	0.070	6.9	3	
APR 11...	4	0	--	<0.010	<0.100	0.040	0.86	0.90	0.040	11	--	
JUN 06...	<1	--	--	<0.010	0.200	0.080	1.2	1.3	0.050	6.9	2	
20...	5	3	0.270	0.030	0.300	0.100	0.40	0.50	0.040	6.4	2	
JUL 17...	<1	--	--	<0.010	<0.100	0.070	0.43	0.50	0.070	6.0	--	
AUG 15...	16	23	1.44	0.060	1.50	0.030	0.97	1.0	0.130	8.9	2	
DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)	
FEB 27...	83	<1	<1	3	20	<5	28	<0.1	1	1.0	7	
APR 11...	--	--	--	--	--	--	--	--	--	--	--	
JUN 06...	140	<1	<2	5	15	1	94	<0.1	<1	<1.0	19	
20...	150	5	2	1	130	<1	160	<0.1	<1	<1.0	4	
JUL 17...	--	--	--	--	--	--	--	--	--	--	--	
AUG 15...	98	<1	1	5	14	<1	51	<0.1	<1	<1.0	15	

## BRAZOS RIVER BASIN

271

08093250 HACKBERRY CREEK AT HILLSBORO, TX

LOCATION.--Lat 32°00'20", long 97°08'58", Hill County, Hydrologic Unit 12060202, 63 ft downstream from centerline of highway and 13 ft to right of right end of bridge on State Highway 22, 0.1 mi upstream from Little Hackberry Creek, and 1.2 mi west of county courthouse in Hillsboro.

DRAINAGE AREA.--57.9 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 546.00 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known diversions above station. Crest-stage gage was removed Aug. 8, 1988.

AVERAGE DISCHARGE.--10 years (water years 1980-89), 23.2 ft<sup>3</sup>/s (16,810 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,050 ft<sup>3</sup>/s June 16, 1981 (gage height, 18.95 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1936, 18.3 ft in September 1936, from information by Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base discharge of 800 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Nov. 19	1900	938	13.11	May 4	1530	1,880	14.29
Jan. 28	1800	830	12.89	May 17	1300	*7,420	*17.15
Mar. 28	1700	1,430	13.84	June 14	0345	5,500	27.27
May 1	1100	1,730	14.16				

Minimum discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	e.00	.00	.21	2.3	6.0	20	449	4.8	4.5	.23	.10
2	.00	e.00	e.00	.28	1.7	6.3	17	67	4.2	4.1	.24	.11
3	.00	e.00	e.00	.23	e1.6	6.5	15	411	4.9	69	.20	.10
4	e.00	e.00	e.00	.13	e1.7	8.5	12	1030	24	14	.19	.10
5	e.00	e.00	e.00	.12	e1.8	9.0	9.0	791	26	6.4	.18	.10
6	e.00	e.00	.00	.11	e1.9	7.2	8.3	101	8.5	4.2	.16	.10
7	e.00	e.00	.00	.11	1.9	7.5	7.5	57	75	3.4	29	.10
8	e.00	e.00	.01	.09	2.0	6.6	7.0	41	73	2.8	2.1	.10
9	e.00	e.00	.0	.07	2.1	5.6	6.0	31	18	2.6	.73	.10
10	e.00	e.00	8.1	.08	2.2	5.4	5.1	25	11	2.1	.41	.11
11	e.00	e.00	15	.09	2.1	5.0	4.6	20	113	1.6	.27	.11
12	e.00	e.00	2.5	.16	2.6	4.4	4.8	18	205	1.3	.11	.10
13	e.00	e.00	.84	.25	3.4	4.1	17	22	607	1.1	.10	.50
14	e.00	e.00	.44	.27	3.2	3.9	353	31	2230	.92	.10	.27
15	e.00	e.00	.27	.24	2.9	3.5	43	21	206	.86	2.0	.58
16	e.00	e.00	.18	.22	121	3.1	19	148	73	.82	12	.25
17	e.00	e.00	.08	.26	193	3.4	14	2740	42	.73	1.3	.15
18	e.00	e.00	.04	.27	172	3.9	11	534	31	.56	.59	.10
19	e.00	e283	.06	.28	80	3.7	50	176	26	.46	.38	.10
20	e.00	e104	.15	.39	38	4.4	19	84	21	.40	.23	.10
21	e.00	e3.4	.11	.30	27	5.2	12	46	15	.41	.16	.10
22	e.00	e1.0	.10	.33	14	4.9	8.4	34	12	.38	.11	.11
23	e.00	e.43	.09	.36	11	3.6	6.5	26	9.4	.37	.10	.10
24	e.00	e.20	.20	.44	8.9	3.3	5.2	22	8.3	.34	.10	.11
25	e.00	e24	.18	.88	8.2	3.1	4.3	17	7.0	.33	.11	.11
26	e.00	e11	.11	1.5	8.2	3.4	3.8	13	7.4	.36	.10	.11
27	e.00	e.67	.26	1.5	7.3	3.9	3.4	10	7.1	.37	.10	.11
28	e.00	.18	.17	274	6.4	514	3.1	9.1	5.7	.28	.10	.11
29	e.00	.10	.16	99	---	359	3.0	7.6	4.8	.26	.10	.10
30	e.00	e.02	.24	e13	---	70	4.3	6.4	4.5	.23	.10	.10
31	e.00	---	.31	e4.4	---	27	---	5.2	---	.23	.10	---
TOTAL	0.00	428.00	29.60	399.57	728.4	1105.4	696.3	6993.3	3884.6	125.41	51.70	4.34
MEAN	.00	14.3	.95	12.9	26.0	35.7	23.2	226	129	4.05	1.67	.14
MAX	.00	283	15	274	193	514	353	2740	2230	69	29	.58
MIN	.00	.00	.00	.07	1.6	3.1	3.0	5.2	4.2	.23	.10	.10
AC-FT	.0	849	59	793	1440	2190	1380	13870	7710	249	103	8.6
CAL YR 1988	TOTAL	2731.99	MEAN	7.46	MAX	314	MIN	.00	AC-FT	5420		
WTR YR 1989	TOTAL	14446.62	MEAN	39.6	MAX	2740	MIN	.00	AC-FT	28650		

e Estimated.

## BRAZOS RIVER BASIN

08093250 HACKBERRY CREEK AT HILLSBORO, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1979 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)
NOV 29...	0900	0.11	621	7.00	7.0	25	34	11.7	97	1.6	210	80
JAN 10...	0840	0.07	884	7.80	5.0	13	14	12.6	99	1.7	270	99
MAR 01...	1530	6.0	757	8.20	13.0	16	28	11.8	113	1.2	260	100
APR 13...	1425	4.8	645	8.10	14.0	--	34	11.0	107	2.1	240	89
JUN 05...	1530	16	470	7.90	28.0	30	140	7.3	95	3.2	180	66
JUN 20...	1240	19	570	8.20	31.0	20	22	9.4	129	1.7	240	92
AUG 14...	1230	0.10	440	8.20	24.5	15	11	8.0	98	1.8	160	61
DATE		MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY TOT FET FIELD (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)
NOV 29...		3.2	43	1	3.9	94	170	32	0.60	7.1	396	51
JAN 10...		4.9	80	2	4.7	152	220	46	0.50	2.0	548	19
MAR 01...		3.7	52	1	3.4	180	170	28	0.60	7.0	473	55
APR 13...		3.6	46	1	2.7	163	140	24	0.50	2.0	406	73
JUN 05...		2.5	26	0.9	4.3	115	87	18	0.50	9.1	282	167
JUN 20...		3.1	28	0.8	3.3	196	97	14	0.60	11	367	54
AUG 14...		2.8	21	0.7	6.2	116	66	21	0.30	6.6	255	28
DATE		RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)
NOV 29...		7	44	1.26	0.040	1.30	0.030	0.67	0.70	0.080	7.4	--
JAN 10...		3	16	--	0.010	<0.100	0.040	0.76	0.80	0.030	7.7	2
MAR 01...		20	35	3.57	0.030	3.60	0.030	0.87	0.90	0.180	5.2	--
APR 13...		23	50	0.980	0.020	1.00	0.040	0.66	0.70	0.060	5.3	2
JUN 05...		43	124	1.14	0.060	1.20	0.140	0.76	0.90	0.100	10	--
JUN 20...		14	40	0.570	0.030	0.600	0.040	0.36	0.40	0.020	4.8	3
AUG 14...		7	21	--	<0.010	<0.100	0.040	0.36	0.40	0.050	4.9	3
DATE		BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM, DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY, DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV 29...		--	--	--	--	--	--	--	--	--	--	--
JAN 10...		60	<1	2	3	26	<5	42	0.6	<1	<1.0	7
MAR 01...		--	--	--	--	--	--	--	--	--	--	--
APR 13...		52	<1	<1	<1	9	<5	20	0.1	1	<1.0	5
JUN 05...		--	--	--	--	--	--	--	--	--	--	--
JUN 20...		56	2	1	1	7	1	8	<0.1	<1	<1.0	9
AUG 14...		48	<1	2	4	9	<1	27	<0.1	<1	<1.0	13

## BRAZOS RIVER BASIN

273

08093260 HACKBERRY CREEK BELOW HILLSBORO, TX  
(Low-flow partial-record station)

LOCATION.--Lat 31°59'43", long 97°08'38", Hill County, Hydrologic Unit 12060202, at abandoned steel truss bridge on county road, 0.7 mi downstream from Little Hackberry Creek, 0.8 mi downstream from State Highway 22, and 1.4 mi southwest of county courthouse in Hillsboro.

DRAINAGE AREA.--86.8 mi<sup>2</sup>.

PERIOD OF RECORD.--Periodic discharge measurements: October 1979 to current year. Chemical and biochemical analyses: October 1979 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS TOTAL (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)
OCT 03...	1320	1.7	769	7.10	23.5	15	10	4.6	55	3.0	210	76
JAN 12...	1015	1.4	850	7.20	14.5	4	1.5	6.0	60	1.0	210	74
MAR 01...	1010	7.8	785	7.90	10.0	14	20	10.8	97	0.6	290	110
JUL 17...	1430	2.0	764	7.60	31.0	25	11	6.8	93	0.3	190	71
AUG 21...	1100	1.7	827	7.80	27.0	15	140	5.5	70	13	170	62

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)
OCT 03...	5.7	76	2	11	148	140	65	0.40	11	474	53
JAN 12...	5.0	87	3	11	138	120	90	0.40	9.0	479	<1
MAR 01...	4.2	53	1	4.6	176	170	38	0.50	7.3	493	34
JUL 17...	3.5	71	2	11	164	110	69	0.40	10	444	16
AUG 21...	3.5	76	3	12	186	99	70	0.40	11	446	348

DATE	RESIDUE VOLATILE, SUS- PENDED (MG/L)	RESIDUE FIXED NON FILTER- ABLE (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS- SOLVED (UG/L AS AS)
OCT 03...	10	43	--	<0.010	1.70	0.210	1.3	1.5	5.80	11	--
JAN 12...	<1	--	0.570	0.020	0.590	0.060	0.84	0.90	5.50	9.4	1
MAR 01...	11	23	3.38	0.020	3.40	0.040	0.56	0.60	0.740	6.6	--
JUL 17...	3	13	0.050	0.050	0.100	4.90	1.2	6.1	0.060	17	3
AUG 21...	102	246	0.090	0.210	0.300	8.30	5.7	14	5.50	16	5

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 03...	--	--	--	--	--	--	--	--	--	--	--
JAN 12...	33	<1	1	3	12	<5	8	0.3	<1	<1.0	26
MAR 01...	--	--	--	--	--	--	--	--	--	--	--
JUL 17...	41	<1	1	3	14	<1	81	<0.1	<1	2.0	11
AUG 21...	49	<1	2	1	38	<1	140	0.1	<1	2.0	60



## BRAZOS RIVER BASIN

08093350 AQUILLA LAKE ABOVE AQUILLA, TX

LOCATION.--Lat 31°53'59", long 97°12'09", Hill County, Hydrologic Unit 12060202, 450 ft upstream from Farm Road 310 that runs along top of Aquilla Dam on Aquilla Creek, and 3.4 miles north-northeast of Aquilla.

DRAINAGE AREA.--255 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1983 to September 1985.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by an earthfill dam with a crest length of 11,890 ft and a top width of 38.0 ft. A reinforced concrete inlet structure, near center of dam, houses the flood-control gates and operating equipment. Closure of the dam began Mar. 20, 1982, and the dam was completed in January 1983. The dam was built and is owned by the U.S. Army Corps of Engineers. Deliberate impoundment began Apr. 29, 1983. The lake was built for water supply, flood control, and recreation purposes. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-ft)
Top of dam.....	582.5	-
Spillway crest (uncontrolled).....	564.5	213,700
Top of flood-control pool.....	556.0	146,000
Top of conservation pool.....	537.5	52,400
Invert, lowest gated outlet.....	503.0	932

COOPERATION.--Area and capacity tables by the U.S. Army Corps of Engineers. Records of elevations and contents provided by the U.S. Army Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum observed contents, 84,200 acre-ft, June 19, 1987 (elevation, 545.51 ft); minimum observed, 4,600 acre-ft Oct. 6-10, 1983 (elevation, 511.31 ft Oct. 6, 7, 9, 10 and 511.30 ft Oct. 8).

EXTREMES FOR CURRENT YEAR.--Maximum contents (observed), 77,120 acre-ft June 15 at 1500 hours (elevation, 543.97 ft); minimum (observed), 45,590 acre-ft Nov. 18 (elevation, 535.33 ft).

Capacity table (elevation, in feet, and total contents, in acre-feet)

535.0	44,620	539.0	57,450	542.0	68,760
537.0	50,740	540.0	61,040	544.0	77,200

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47360	46190	46460	46790	48840	56760	57950	55100	60530	56270	53020	52430
2	47330	46130	46430	46790	49030	56580	57280	55310	59700	56300	53020	52390
3	47270	46100	46400	46790	49030	56440	56960	56410	58980	56410	52890	52360
4	47210	46100	46400	46760	48970	56650	56760	60710	58480	56270	52790	52230
5	47150	46040	46370	46760	48940	56370	56550	63310	57950	56100	52720	52100
6	47090	45980	46340	46730	48880	56130	56370	63620	57210	55860	52690	52030
7	47030	45920	46400	46730	48810	55990	56170	64110	59260	56760	53580	52000
8	47000	45890	46460	46700	48780	55860	55990	63880	59800	55920	53550	51900
9	46940	45830	46460	46670	48780	55680	55790	63280	59660	55750	53520	51940
10	46880	45830	46760	46640	48780	55550	55480	62150	59590	55550	53450	52330
11	46820	45800	46880	46610	48750	55380	55240	61080	59840	55310	53380	52360
12	46760	45770	46850	46670	48840	55140	55100	60200	60600	55140	53320	52300
13	46700	45740	46820	46640	48910	55040	55480	59620	64230	55000	53290	52530
14	46640	45740	46850	46610	48910	55040	56820	58940	75920	54900	53220	52360
15	46580	45710	46820	46610	49090	54800	56860	58200	76320	54830	53290	52260
16	46550	45680	46790	46580	50100	54630	56680	57880	74530	54700	53420	52200
17	46520	45650	46730	46550	53290	54420	56550	69730	72650	54530	53420	52160
18	46520	45620	46700	46580	56340	54360	56440	75050	70720	54420	53350	52100
19	46490	46490	46700	46580	56620	54190	56550	75880	68840	54320	53290	52070
20	46430	46610	46730	46550	56860	54090	56370	75790	66870	54160	53190	51970
21	46400	46610	46700	46520	56890	53990	56130	74920	64880	54020	53150	51940
22	46370	46580	46760	46490	56960	53820	55860	74060	62900	53890	53090	51870
23	46340	46550	46760	46460	56890	53620	55580	72480	61520	53790	53020	51740
24	46280	46520	46730	46460	56890	53490	55340	70350	60530	53650	52950	51610
25	46220	46490	46670	46670	56890	53380	55100	68310	59520	53550	52890	51550
26	46220	46730	46640	46670	56960	53350	54830	66910	58580	53550	52820	51480
27	46160	46670	46820	46700	56960	53290	54590	65970	57560	53450	52760	51420
28	46220	46580	46790	48100	56890	56240	54490	64800	56930	53380	52690	51350
29	46220	46550	46760	48750	---	59080	54320	63690	56680	53250	52620	51290
30	46220	46520	46760	48810	---	59230	54090	62600	56480	53150	52530	51260
31	46220	---	46820	48810	---	59120	---	61560	---	53020	52430	---
MAX	47360	46730	46880	48810	56960	59230	57950	75880	76320	56760	53580	52530
MIN	46160	45620	46340	46460	48750	53290	54090	55100	56480	53020	52430	51260
(↑)	535.54	535.64	535.74	536.39	538.84	539.47	538.02	540.14	538.72	537.70	537.52	537.16
(Φ)	-960	+300	+300	+1990	+8080	+2230	-5030	+7470	-5080	-3460	-590	-1170
CAL YR 1988	MAX 64460	MIN 45620	(Φ)	-18310								
WTR YR 1989	MAX 76320	MIN 45620	(Φ)	+3900								

(↑) Elevation, in feet, at end of month.  
(Φ) Change in contents, in acre-feet.

## BRAZOS RIVER BASIN

275

08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

LOCATION.--Lat 31°53'58", long 97°12'26", Hill County, Hydrologic Unit 12060202, at Aquilla Dam on Aquilla Creek at Farm Road 310 and 3.3 mi north-northeast of Aquilla.

PERIOD OF RECORD.--Chemical and biochemical analyses: February 1984 to current year.

## 315354097125701 - AQUILLA LAKE SITE AR

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
25...	1034	1.00	471	8.30	11.0	10.0	92
25...	1036	10.0	471	8.30	11.0	9.9	91
25...	1038	20.0	471	8.20	11.0	9.7	89
MAY							
10...	1036	1.00	434	7.90	23.0	6.6	78
10...	1038	10.0	434	7.90	22.5	6.6	77
10...	1040	20.0	435	7.90	22.5	6.4	75
10...	1042	30.0	435	7.80	22.5	5.8	68
10...	1044	37.0	435	7.80	22.5	5.3	62
AUG							
09...	1019	1.00	336	8.10	28.0	6.7	87
09...	1022	10.0	336	7.90	27.5	6.1	78
09...	1024	20.0	337	7.70	27.5	4.7	60
09...	1026	33.0	339	7.60	27.5	4.1	53

## 315358097122601 - AQUILLA LAKE SITE AC

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CAC03)
JAN											
25...	0958	1.00	471	8.30	11.0	0.90	10.0	92	K1	K1	160
25...	0959	1.00	--	--	--	--	--	--	--	--	--
25...	1000	10.0	469	8.20	11.0	--	10.0	92	--	--	--
25...	1002	20.0	469	8.20	11.0	--	9.7	89	--	--	--
25...	1004	30.0	469	8.20	11.0	--	9.6	88	--	--	--
25...	1006	44.0	469	8.10	10.5	--	9.1	82	--	--	160
MAY											
10...	0957	1.00	434	7.90	22.5	0.70	6.6	77	K27	130	150
10...	0957	1.00	--	--	--	--	--	--	--	--	--
10...	0959	10.0	434	7.90	22.5	--	6.6	77	--	--	--
10...	1005	20.0	434	7.80	22.5	--	6.3	74	--	--	--
10...	1010	30.0	434	7.80	22.0	--	5.9	68	--	--	--
10...	1015	40.0	440	7.50	21.5	--	3.3	38	--	--	--
10...	1025	49.0	447	7.30	20.5	--	0.3	3	--	--	160
AUG											
09...	0947	1.00	336	8.10	27.5	1.00	6.8	87	<1	<1	130
09...	0949	10.0	337	7.90	27.5	--	5.7	73	--	--	--
09...	0951	20.0	339	7.70	27.5	--	4.3	55	--	--	--
09...	0954	30.0	339	7.70	27.5	--	4.1	53	--	--	--
09...	0956	40.0	344	7.50	27.0	--	1.6	20	--	--	--
09...	0958	46.0	396	7.20	25.0	--	0.3	4	--	--	150

## BRAZOS RIVER BASIN

08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

315358097122601 - AQUILLA LAKE SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
JAN										
25...	57	4.2	32	1	5.9	121	81	22	0.40	4.3
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	56	4.6	31	1	5.8	123	81	22	--	4.3
MAY										
10...	54	3.6	26	0.9	5.4	115	71	17	0.40	4.1
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	57	3.9	28	1	5.4	118	71	17	--	4.8
AUG										
09...	47	3.0	18	0.7	5.5	119	43	11	0.30	5.3
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	56	3.5	18	0.6	5.7	157	25	16	--	13

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
25...	279	--	--	0.100	--	--	0.70	0.020	4	1
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	0.100	--	--	0.70	0.030	<10	<10
25...	--	--	--	--	--	--	--	--	--	--
25...	278	--	--	0.100	--	--	0.70	0.020	20	8
MAY										
10...	250	0.420	0.080	0.500	0.110	0.39	0.50	0.020	10	3
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	0.510	0.090	0.600	0.120	0.48	0.60	0.020	20	20
10...	--	0.400	0.100	0.500	0.180	0.32	0.50	0.030	40	60
10...	258	0.410	0.090	0.500	0.270	0.63	0.90	0.030	10	290
AUG										
09...	204	--	--	<0.100	--	--	0.80	<0.010	9	27
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	<0.100	--	--	0.60	0.010	40	270
09...	--	--	--	--	--	--	--	--	--	--
09...	238	--	--	<0.100	--	--	3.5	0.050	1300	5100

315402097115401 - AQUILLA LAKE SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
25...	1022	1.00	470	8.30	11.0	10.0	92
25...	1024	10.0	470	8.30	11.0	10.0	92
25...	1026	20.0	470	8.20	10.5	9.5	86
25...	1028	25.0	470	8.20	10.5	9.5	86
MAY							
10...	1050	1.00	433	7.90	22.5	6.6	77
10...	1052	10.0	433	7.90	22.5	6.6	77
10...	1054	22.0	433	7.90	22.0	6.6	76
AUG							
09...	1033	1.00	336	8.10	28.0	6.8	88
09...	1035	10.0	336	7.90	27.5	6.1	78
09...	1037	20.0	337	8.00	27.5	6.2	79
09...	1040	25.0	337	7.90	27.5	6.0	77

## BRAZOS RIVER BASIN

277

08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

315601097111501 - AQUILLA LAKE SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)
JAN									
25...	1148	1.00	471	8.30	11.5	0.90	10.2	95	--
25...	1150	10.0	471	8.30	11.5	--	10.1	94	--
25...	1152	20.0	473	8.20	11.0	--	9.4	86	--
25...	1154	30.0	479	7.90	10.5	--	7.5	68	--
25...	1156	37.0	479	7.90	10.5	--	7.5	68	--
MAY									
10...	1221	1.00	427	7.90	22.5	0.70	6.3	74	0.520
10...	1223	10.0	428	7.90	22.0	--	6.2	72	--
10...	1225	20.0	430	7.90	22.0	--	6.1	71	--
10...	1227	30.0	433	7.80	22.0	--	5.8	67	--
10...	1231	42.0	433	7.80	22.0	--	5.8	67	0.510
AUG									
09...	1200	1.00	335	8.20	28.5	0.90	7.1	93	--
09...	1203	10.0	337	7.80	27.5	--	5.2	67	--
09...	1206	20.0	337	7.70	27.5	--	4.6	59	--
09...	1209	30.0	338	7.60	27.5	--	4.2	54	--
09...	1215	37.0	334	7.40	27.5	--	1.4	18	--

DATE	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
25...	--	0.100	--	--	<0.80	0.030	<10	<10
25...	--	--	--	--	--	--	--	--
25...	--	0.100	--	--	0.70	0.020	<10	10
25...	--	--	--	--	--	--	--	--
25...	--	0.100	--	--	0.70	0.020	<10	20
MAY								
10...	0.080	0.600	0.110	0.59	0.70	0.020	20	<10
10...	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--
10...	0.090	0.600	0.130	0.47	0.60	0.030	30	20
AUG								
09...	--	<0.100	--	--	0.80	<0.010	10	<10
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	--	<0.100	--	--	0.80	0.030	10	80
09...	--	0.700	--	--	1.2	0.050	20	190

315649097103701 - AQUILLA LAKE SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JAN										
25...	1208	1.00	472	8.30	12.5	0.80	10.0	95	K1	K10
25...	1209	1.00	--	--	--	--	--	--	--	--
25...	1210	10.0	475	8.10	12.0	--	9.3	87	--	--
MAY										
10...	1245	1.00	404	8.00	23.0	0.70	6.6	78	72	140
10...	1246	1.00	--	--	--	--	--	--	--	--
10...	1247	10.0	417	7.90	22.5	--	6.2	72	--	--
10...	1250	20.0	401	7.60	22.0	--	4.1	47	--	--
10...	1255	30.0	349	7.40	21.0	--	0.4	5	--	--
10...	1259	35.0	344	7.40	21.0	--	0	0	--	--
AUG										
09...	1228	1.00	339	7.80	28.5	0.70	5.4	70	K6	K3
09...	1233	13.0	340	7.70	27.5	--	3.7	47	--	--

## BRAZOS RIVER BASIN

08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

315649097103701 - AQUILLA LAKE SITE CC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)
JAN										
25...	170	59	4.4	31	1	5.8	123	82	22	4.1
25...	--	--	--	--	--	--	--	--	--	--
25...	170	59	4.4	32	1	5.9	123	82	21	4.0
MAY										
10...	140	52	3.1	25	0.9	4.9	111	64	14	5.9
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	130	48	2.0	18	0.7	3.7	105	47	11	9.3
AUG										
09...	130	47	3.0	17	0.6	5.6	112	43	11	5.6
09...	130	47	2.9	18	0.7	5.5	113	43	11	5.6

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
25...	282	--	--	0.100	--	--	0.70	0.020	7	3
25...	--	--	--	--	--	--	--	--	--	--
25...	282	--	--	0.100	--	--	0.80	0.020	14	3
MAY										
10...	235	0.650	0.050	0.700	0.080	0.52	0.60	0.030	15	5
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	0.620	0.080	0.700	0.170	0.53	0.70	0.030	20	20
10...	--	0.920	0.080	1.00	0.280	0.22	0.50	0.050	30	70
10...	202	--	<0.080	1.00	<0.280	--	0.80	0.050	35	76
AUG										
09...	199	--	--	<0.100	--	--	0.80	<0.010	7	3
09...	201	--	--	<0.100	--	--	0.60	0.030	15	8

315518097123401 - AQUILLA LAKE SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)
JAN									
25...	1050	1.00	471	8.30	11.0	0.90	10.1	93	--
25...	1052	10.0	473	8.30	11.0	--	10.0	92	--
25...	1054	20.0	473	8.20	11.0	--	9.5	87	--
25...	1056	30.0	475	8.10	10.5	--	8.5	77	--
25...	1058	35.0	475	8.00	10.5	--	8.2	74	--
MAY									
10...	1110	1.00	433	7.90	22.5	0.90	6.4	75	0.420
10...	1114	10.0	433	7.90	22.5	--	6.1	71	--
10...	1116	20.0	434	7.80	22.5	--	5.7	67	--
10...	1118	30.0	432	7.80	22.0	--	5.6	65	0.430
10...	1120	40.0	363	7.40	20.5	--	0.1	1	0.150
AUG									
09...	1052	1.00	337	7.90	28.0	0.90	5.9	76	--
09...	1054	10.0	337	7.80	27.5	--	5.5	70	--
09...	1056	20.0	337	7.80	27.5	--	5.2	67	--
09...	1058	30.0	338	7.70	27.5	--	4.7	60	--
09...	1101	36.0	339	7.60	27.5	--	4.4	56	--



## BRAZOS RIVER BASIN

2/9

08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

315518097123401 - AQUILLA LAKE SITE DC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
25...	--	0.100	--	--	0.60	0.020	<10	<10
25...	--	--	--	--	--	--	--	--
25...	--	0.100	--	--	0.70	0.020	<10	10
25...	--	--	--	--	--	--	--	--
25...	--	0.100	--	--	0.80	0.020	<10	50
MAY								
10...	0.080	0.500	0.100	0.60	0.70	0.020	20	20
10...	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--
10...	0.070	0.500	0.120	0.68	0.80	0.020	20	70
10...	0.050	0.200	0.510	0.49	1.0	0.050	70	480
AUG								
09...	--	<0.100	--	--	0.90	<0.010	10	10
09...	--	--	--	--	--	--	--	--
09...	--	<0.100	--	--	0.70	<0.010	10	20
09...	--	--	--	--	--	--	--	--
09...	--	<0.100	--	--	0.60	0.030	20	80

315748097144901 - AQUILLA LAKE SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JAN										
25...	1114	1.00	472	8.30	11.5	0.90	10.2	95	K1	K10
25...	1115	1.00	--	--	--	--	--	--	--	--
25...	1116	10.0	473	8.20	11.0	--	9.6	88	--	--
25...	1118	15.0	473	8.20	11.0	--	9.6	88	--	--
25...	1120	24.0	477	8.00	11.0	--	9.8	90	--	--
MAY										
10...	1140	1.00	418	8.00	23.0	1.00	6.8	80	K11	K4
10...	1141	1.00	--	--	--	--	--	--	--	--
10...	1142	10.0	420	7.90	22.5	--	5.9	69	--	--
10...	1146	20.0	427	7.70	22.5	--	4.9	57	--	--
10...	1150	30.0	293	7.40	21.0	--	0	0	--	--
10...	1155	36.0	298	7.40	20.5	--	0	0	--	--
AUG										
09...	1122	1.00	337	8.00	28.5	0.90	6.1	80	--	K1
09...	1125	10.0	338	7.80	27.5	--	5.1	65	--	--
09...	1127	20.0	339	7.70	27.5	--	4.4	56	--	--
09...	1132	33.0	342	7.30	27.5	--	1.1	14	--	--

DATE	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)
JAN										
25...	170	60	4.6	32	1	5.9	121	82	21	4.2
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	170	60	4.5	32	1	5.9	123	84	21	4.1
MAY										
10...	150	53	3.7	25	0.9	5.5	110	68	16	4.1
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	110	41	2.5	13	0.5	5.2	106	29	9.9	8.5
AUG										
09...	130	47	3.1	19	0.7	5.6	117	43	12	5.3
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	130	47	3.1	18	0.7	5.7	112	44	11	5.5

## BRAZOS RIVER BASIN

08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

315748097144901 - AQUILLA LAKE SITE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
25...	282	--	--	0.100	--	--	0.80	0.020	12	5
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	285	--	--	0.100	--	--	0.80	0.020	12	31
MAY										
10...	241	0.360	0.040	0.400	0.080	0.52	0.60	0.020	27	14
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	0.430	0.070	0.500	0.130	0.57	0.70	0.030	40	70
10...	--	0.320	0.080	0.400	0.210	0.89	1.1	0.060	70	140
10...	173	0.130	0.070	0.200	0.550	0.45	1.0	0.100	140	360
AUG										
09...	205	--	--	<0.100	--	--	0.60	0.020	5	5
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	<0.100	--	--	0.60	0.020	20	40
09...	202	--	--	<0.100	--	--	1.1	0.030	15	170

08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

Aquila Lake AC (315358097122601)

Phytoplankton Analyses September 1988 to October 1989

Date	1-25-89
Time	0959

TOTAL CELLS/mL	18,641
NUMBER OF SPECIES	51
DEPTH COLLECTED (ft.)	1.0

Organisms	Cells/mL
<b>BACILLARIOPHYTA (Diatoms)</b>	
Order Centrales	
<i>Cyclotella ocellata</i>	61
<i>Cyclotella stelligera</i>	15
<i>Melosira granulata</i> var. <i>angustissima</i>	46
<i>Melosira lireta</i>	61
<i>Stephanodiscus hantzschii</i>	152
<i>Stephanodiscus tenuis</i>	274
Order Pennales	
<i>Achnanthes deflexa</i>	19
<i>Achnanthes minutissima</i>	77
<i>Asterionella formosa</i>	10
<i>Cymbella minuta</i>	19
<i>Fragilaria vaucheriae</i>	19
<i>Gomphonema</i> sp. 1	10
<i>Gyrosigma</i> sp.	10
<i>Navicula aikensis</i>	10
<i>Navicula cocconeiformis</i>	10
<i>Navicula halophila</i> f. <i>tenuirostris</i> ?	10
<i>Navicula</i> sp. 1	19
<i>Navicula</i> sp. 2	10
<i>Nitzschia acicularis</i>	19
<i>Surirella ovata</i>	10
<i>Synedra radians</i>	10
<i>Synedra</i> sp.	10
<b>CHLOROPHYTA (Green algae)</b>	
<i>Ankistrodesmus convolutus</i>	135
<i>Ankistrodesmus falcatus</i>	338
<i>Ankistrodesmus falcatus</i> var. <i>mirabilis</i>	675
<i>Chlorococcum</i> sp.	202
<i>Chodatella subsalsa</i>	202
<i>Crucigenia tetrapedia</i>	68
<i>Franceia ovalis</i>	68
<i>Golenkinia radiata</i>	135
<i>Kirchneriella lunaris</i>	743
<i>Nephrocytium</i> sp.	135
<i>Scenedesmus abundans</i>	270
<i>Scenedesmus abundans</i> var. <i>brevicauda</i>	405
<i>Scenedesmus quadricauda</i>	810
<i>Selenastrum minutum</i>	270
<i>Sorastrum americanum</i>	202
<i>Staurastrum</i> sp.	68
<i>Stichococcus bacillus</i>	135
<i>Tetrastrum staurogeniaeforme</i>	540
<i>Tetrastrum</i> sp.	68
<i>Tetraedron</i> sp.	68
<b>CHRYSTOPHYTA (Golden-brown algae)</b>	
<i>Kephyrion</i> sp.	68
<b>CYANOPHYTA (Blue-green algae)</b>	
<i>Aphanocapsa delicatissima</i>	3,917
<i>Aphanocapsa elachista</i> var. <i>conferta</i>	2,363
<i>Chroococcus dispersus</i>	1,553
<i>Chroococcus multicoloratus</i>	1,080
<i>Chroococcus</i> sp.	338
<i>Dactylococcopsis fascicularis</i>	1,621
<i>Oscillatoria geminata</i>	540
<i>Synechococcus lineare</i> var. <i>spirale</i>	203
<i>Synechococcus</i> sp.	608

08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

Aquilla Lake CC (315649097103701)

Phytoplankton Analyses September 1988 to October 1989

Date	1-25-89
Time	1209

TOTAL CELLS/mL	90,420
NUMBER OF SPECIES	37
DEPTH COLLECTED (ft.)	1.0

<u>Organisms</u>	<u>Cells/mL</u>
<b>BACILLARIOPHYTA (Diatoms)</b>	
Order Centrales	
<i>Cyclotella meneghiniana</i>	90
<i>Cyclotella stelligera</i>	45
<i>Melosira granulata</i> var. <i>angustissima</i>	45
<i>Stephanodiscus hantzschii</i>	3,601
<i>Stephanodiscus dubius</i>	45
<i>Stephanodiscus tenuis</i>	675
Order Pennales	
<i>Achnanthes minutissima</i>	144
<i>Amphipleura pellucida</i>	36
<i>Cymbella minuta</i>	36
<i>Fragilaria vaucheriae</i>	108
<i>Navicula</i> sp.	36
<i>Nitzschia acicularis</i>	794
<i>Nitzschia dissipata</i>	36
<i>Nitzschia hungarica</i>	36
<i>Nitzschia palea</i>	469
<i>Nitzschia subacicularis</i>	36
<i>Synedra filiformis</i> var. <i>exilis</i>	144
<b>CHLOROPHYTA (Green algae)</b>	
<i>Ankistrodesmus convolutus</i>	750
<i>Ankistrodesmus falcatus</i> var. <i>acicularis</i>	2,251
<i>Ankistrodesmus falcatus</i> var. <i>mirabilis</i>	1,501
<i>Chlamydomonas</i> sp.	375
<i>Chlorococcum</i> sp.	1,501
<i>Chodatella subsalsa</i>	375
<i>Golenkinia radiata</i>	375
<i>Kirchneriella lunaris</i>	1,126
<i>Mesotaenium</i> sp.	375
<i>Scenedesmus abundans</i> var. <i>brevicauda</i>	750
<i>Scenedesmus quadricauda</i>	3,002
<i>Tetrastrum staurogeniaeforme</i>	1,501
<b>CYANOPHYTA (Blue-green algae)</b>	
<i>Aphanocapsa delicatissima</i>	11,256
<i>Chroococcus dispersus</i>	4,127
<i>Chroococcus multicoloratus</i>	8,630
<i>Dactylococcopsis fascicularis</i>	21,386
<i>Merismopedia tenuissima</i>	4,127
<i>Oscillatoria geminata</i>	16,509
<i>Synechococcus</i> sp.	3,002
<b>PYRROPHYTA (Dinoflagellates)</b>	
<i>Ceratium hirundinella</i>	375
<b>CRYPTOPHYTA (Cryptomonads)</b>	
<i>Chroomonas</i> sp.	750

08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

Aquilla Lake EC (315748097144901)

Phytoplankton Analyses September 1988 to October 1989

Date	1-25-89
Time	1115

TOTAL CELLS/mL	29,033
NUMBER OF SPECIES	51
DEPTH COLLECTED (ft.)	1.0

Organisms	Cells/mL
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## BACILLARIOPHYTA (Diatoms)

## Order Centrales

<i>Cyclotella meneghiniana</i>	38
<i>Melosira granulata</i> var. <i>angustissima</i>	58
<i>Stephanodiscus aestrea</i> var. <i>minutula</i>	10
<i>Stephanodiscus hantzschii</i>	488
<i>Stephanodiscus tenuis</i> ?	20

## Order Pennales

<i>Achnanthes minutissima</i>	18
<i>Cocconeis placentula</i>	18
<i>Cymbella minuta</i>	18
<i>Fragilaria vaucheriae</i>	74
<i>Navicula decussis</i>	37
<i>Neidium</i> sp.	18
<i>Nitzschia acicularis</i>	221
<i>Nitzschia palea</i>	37
<i>Nitzschia subacicularis</i>	18
<i>Nitzschia</i> sp.	18
<i>Surirella ovata</i>	37
<i>Synedra ulna</i>	18

## CHLOROPHYTA (Green algae)

<i>Ankistrodesmus convolutus</i>	307
<i>Ankistrodesmus falcatus</i> var. <i>mirabilis</i>	307
<i>Ankyra judayi</i>	61
<i>Chlorococcum</i> sp.	307
<i>Crucigenia crucifera</i>	246
<i>Gloeocystis</i> sp.	307
<i>Kirchneriella lunaris</i>	123
<i>Nephrocytium</i> sp.	368
<i>Scenedesmus abundans</i>	491
<i>Scenedesmus armatus</i> var. <i>brevicauda</i>	123
<i>Scenedesmus dimorphus</i>	246
<i>Scenedesmus quadricauda</i>	737
<i>Schroederia setigera</i>	61
<i>Selenastrum minutum</i>	61
<i>Stichococcus bacillaris</i>	246
<i>Tetrastrum staurogeniaeforme</i>	246

## CHRYSTOPHYTA (Golden-brown algae)

<i>Dinobryon</i> sp.	61
<i>Kephyrion</i> sp.	61

## CYANOPHYTA (Blue-green algae)

<i>Anabaena</i> sp.	368
<i>Aphanocapsa delicatissima</i>	6,998
<i>Aphanocapsa elachista</i> var. <i>conferta</i>	3,376
<i>Chroococcus dispersus</i>	246
<i>Chroococcus multicoloratus</i>	1,228
<i>Dactylococcopsis fascicularis</i>	4,788
<i>Gomphosphaeria lacustris</i>	921
<i>Merismopedia tenuissima</i>	491
<i>Microcystis</i> sp.	2,087
<i>Oscillatoria geminata</i>	982
<i>Oscillatoria</i> sp.	1,228
<i>Synechococcus</i> sp.	614

## PYRROPHYTA (Dinoflagellates)

<i>Ceratium hirundinella</i>	61
<i>Peridinium inconspicuum</i> ?	61

## CRYPTOPHYTA (Cryptomonads)

<i>Rhodomonas</i> sp.	61
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08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

Aquila Lake AC (315358097122601)

Phytoplankton Analyses September 1988 to October 1989

Date	5-10-89
Time	0957

TOTAL CELLS/mL	38,294
NUMBER OF SPECIES	32
DEPTH COLLECTED (ft.)	1.0

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
<i>Cyclotella ocellata</i>	67
<i>Melosira granulata</i> var. <i>angustissima</i>	89
<i>Stephanodiscus hantzschii</i>	67
<i>Stephanodiscus tenuis</i>	67
Order Pennales	
<i>Cymbella affinis</i>	72
<i>Cymbella</i> sp.	72
<i>Fragilaria crotonensis</i>	72
<i>Gomphonema olivaceum</i>	72
<i>Navicula mutica</i>	72
<i>Navicula</i> sp.	217
CHLOROPHYTA (Green algae)	
<i>Ankistrodesmus falcatus</i>	96
<i>Ankistrodesmus falcatus</i> var. <i>mirabilis</i>	193
<i>Chlamydomonas globosa</i>	193
<i>Chlorococcum</i> sp.	386
<i>Mesotaenium</i> sp.	96
<i>Nephrocytium</i> sp.	386
<i>Oocystis</i> sp.	96
<i>Scenedesmus dimorphus</i>	193
<i>Scenedesmus quadricauda</i>	386
<i>Schroederia setigera</i>	96
<i>Tetraedron minimum</i>	193
<i>Tetraedron regulare</i> var. <i>incus</i>	96
<i>Tetrastrum trigonum</i> var. <i>gracile</i>	96
CYANOPHYTA (Blue-green algae)	
<i>Aphanocapsa delicatissima</i>	22,091
<i>Aphanocapsa elachista</i> var. <i>conferta</i>	579
<i>Aphanothece saxicola</i>	2,701
<i>Chroococcus dispersus</i>	1,061
<i>Chroococcus multicoloratus</i>	3,762
<i>Microcystis</i> sp.	1,929
<i>Oscillatoria</i> sp.	2,026
<i>Synechococcus</i> sp.	579
CRYPTOPHYTA (Cryptomonads)	
<i>Chroomonas</i> sp.	193

08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

Aquilla Lake CC (315649097103701)

Phytoplankton Analyses September 1988 to October 1989

Date	5-10-89
Time	1246

TOTAL CELLS/mL	26,163
NUMBER OF SPECIES	45
DEPTH COLLECTED (ft.)	1.0

Organisms	Cells/mL
<b>BACILLARIOPHYTA (Diatoms)</b>	
Order Centrales	
<i>Cyclotella ocellata</i>	230
<i>Cyclotella</i> sp.	4
<i>Melosira granulata</i> var. <i>angustissima</i>	12
<i>Stephanodiscus hantzschii</i>	8
Order Pennales	
<i>Achnanthes minutissima</i>	16
<i>Fragilaria crotonensis</i>	527
<i>Fragilaria vaucheriae</i>	16
<i>Navicula viridula</i> var. <i>linearis</i>	33
<i>Nitzschia dissipata</i>	33
<i>Nitzschia palea</i>	16
<i>Nitzschia</i> sp.	33
<b>CHLOROPHYTA (Green algae)</b>	
<i>Ankistrodesmus convolutus</i>	84
<i>Ankistrodesmus falcatus</i>	84
<i>Ankistrodesmus falcatus</i> var. <i>mirabilis</i>	84
<i>Ankistrodesmus nannoselene</i>	169
<i>Chlamydomonas globosa</i>	253
<i>Chodatella subsalsa</i>	169
<i>Chlorococcum</i> sp.	1,013
<i>Cosmarium</i> sp.	84
<i>Crucigenia tetrapedium</i>	253
<i>Golenkinia radiata</i>	84
<i>Mesotaneum</i> sp.	169
<i>Oocystis</i> sp.	84
<i>Pediastrum simplex</i>	675
<i>Scenedesmus abundans</i> var. <i>brevicauda</i>	169
<i>Scenedesmus quadricauda</i>	591
<i>Selenastrum minutum</i>	169
<i>Tetraedron minimum</i>	253
<i>Tetrastrum staurogeniaeforme</i>	338
<b>CHRYSTOPHYTA (Golden-brown algae)</b>	
<i>Chrysochromulina parva</i>	169
<b>CYANOPHYTA (Blue-green algae)</b>	
<i>Aphanocapsa delicatissima</i>	9,792
<i>Aphanocapsa elachista</i> var. <i>conferta</i>	422
<i>Aphanothece saxicola</i>	506
<i>Chroococcus dispersus</i>	1,519
<i>Chroococcus multicoloratus</i>	2,954
<i>Merismopedia tenuissima</i>	1,351
<i>Oscillatoria</i> sp.	1,266
<i>Synechococcus</i> sp.	1,435
<i>Synechocystis</i> sp.	84
<b>EUGLENOPHYTA (Euglenoids)</b>	
<i>Euglena</i> sp.	84
<i>Phacus orbicularis</i>	84
<i>Trachelomonas volvocina</i>	338
<i>Trachelomonas</i> sp.	169
<b>CRYPTOPHYTA (Cryptomonads)</b>	
<i>Chroomonas</i> sp.	84
<i>Cryptomonas erosa</i>	253

08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued  
Aquilla Lake EC (315748097144901)

## Phytoplankton Analyses September 1988 to October 1989

Date 5-10-89  
Time 1141

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TOTAL CELLS/mL 47,842  
NUMBER OF SPECIES 35  
DEPTH COLLECTED (ft.) 1.0

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OrganismsCells/mL

## BACILLARIOPHYTA (Diatoms)

## Order Centrales

<i>Cyclotella meneghiniana</i>	19
<i>Cyclotella ocellata</i>	366
<i>Cyclotella stelligera</i>	38
<i>Stephanodiscus hantzschii</i>	58

## Order Pennales

<i>Achnanthes minutissima</i>	21
<i>Cymbella affinis</i>	11
<i>Navicula viridula</i> var. <i>linearis</i>	11
<i>Navicula</i> sp.1	21
<i>Navicula</i> sp.2	21
<i>Nitzschia palea</i>	11

## CHLOROPHYTA (Green algae)

<i>Ankistrodesmus convolutus</i>	96
<i>Ankistrodesmus falcatus</i> var. <i>mirabilis</i>	96
<i>Ankistrodesmus nanoselene</i>	96
<i>Chlamydomonas globosa</i>	96
<i>Chlorococcum</i> sp.	965
<i>Cosmarium</i> sp.	96
<i>Crucigenia tetrapedia</i>	1,833
<i>Gloeocystis</i> sp.	193
<i>Mesotaenium</i> sp.	96
<i>Nephrocystium</i> sp.	965
<i>Oocystis</i> sp. 1	482
<i>Oocystis</i> sp. 2	289
<i>Pediastrum simplex</i>	482
<i>Scenedesmus abundans</i>	193
<i>Scenedesmus bijuga</i> var. <i>alternans</i>	386
<i>Scenedesmus quadricauda</i>	965
<i>Tetraedron pentaedricum</i>	96

## CYANOPHYTA (Blue-green algae)

<i>Aphanocapsa delicatissima</i>	31,352
<i>Chroococcus dispersus</i>	868
<i>Chroococcus multicoloratus</i>	5,016
<i>Chroococcus</i> sp.	386
<i>Merismopedia punctatum</i>	1,254
<i>Synechococcus</i> sp.	675

## EUGLENOPHYTA (Euglenoids)

<i>Trachelomonas volvocina</i>	193
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## CRYPTOPHYTA (Cryptomonads)

<i>Cryptomonas erosa</i>	96
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08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

Aquilla Lake AC (315358097122601)

Phytoplankton Analyses September 1988 to October 1989

Date	8-9-89
Time	0948

TOTAL CELLS/mL	246,326
NUMBER OF SPECIES	44
DEPTH COLLECTED (ft.)	1.0

<u>Organisms</u>	<u>Cells/mL</u>
<b>BACILLARIOPHYTA (diatoms)</b>	
Order Centrales	
<i>Cyclotella meneghiniana</i>	163
<i>Cyclotella ocellata</i>	163
<i>Cyclotella stelligera</i>	490
<i>Melosira granulata</i> var. <i>angustissima</i>	327
<i>Stephanodiscus</i> sp.	163
Order Pennales	
<i>Achnanthes minutissima</i>	218
<i>Navicula</i> sp.	54
<i>Nitzschia acicularis</i>	109
<i>Nitzschia dissipata</i>	54
<i>Synedra acus</i>	54
<i>Synedra delicatissima</i>	54
<i>Synedra filiformis</i> var. <i>exilis</i>	436
<b>CHLOROPHYTA</b>	
<i>Ankistrodesmus falcatus</i> var. <i>mirabilis</i>	327
<i>Chlamydomonas</i> sp.	327
<i>Chlorococcum humicola</i>	327
<i>Chodatella quadriseta</i>	327
<i>Crucigenia tetrapedia</i>	1,307
<i>Gloeocystis</i> sp.	653
<i>Kirchneriella lunaris</i>	1,633
<i>Nephrocystium limneticum</i>	2,287
<i>Scenedesmus</i> sp.	653
<b>CHRYSOPHYTA (golden-brown algae)</b>	
<i>Kephyrion</i> sp.	327
<b>CYANOPHYTA (blue-green algae)</b>	
<i>Aphanocapsa delicatissima</i>	29,729
<i>Aphanocapsa elachista</i> var. <i>conferta</i>	5,227
<i>Aphanothece nidulans</i>	2,940
<i>Aphanothece saxicola</i>	14,048
<i>Chroococcus dispersus</i>	22,869
<i>Chroococcus limneticus</i>	3,920
<i>Chroococcus multicoloratus</i>	18,295
<i>Coelosphaerium</i> sp.	4,247
<i>Dactylococcopsis acicularis</i>	327
<i>Dactylococcopsis fascicularis</i>	44,104
<i>Lyngbya nana</i>	1,960
<i>Microcystis</i> sp.	7,187
<i>Oscillatoria geminata</i>	53,905
<i>Oscillatoria limnetica</i>	3,594
<i>Oscillatoria</i> sp.	653
<i>Raphidiopsis curvata</i>	15,681
<i>Spirulina laxa</i>	2,614
<i>Synechococcus</i> sp.	1,633
<i>Synechocystis</i> sp.	327
<b>CRYPTOPHYTA (cryptomonads)</b>	
<i>Chroomonas</i> sp.	653
<i>Cryptomonas erosa</i>	1,307
<i>Cryptomonas</i> sp.	653

08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

Aquila Lake CC (315649097103701)

## Phytoplankton Analyses September 1988 to October 1989

Date	8-9-89
Time	1229

TOTAL CELLS/mL	108,619
NUMBER OF SPECIES	40
DEPTH COLLECTED (ft.)	1.0

<u>Organisms</u>	<u>Cells/mL</u>
<b>BACILLARIOPHYTA (diatoms)</b>	
Order Centrales	
<i>Cyclotella stelligera</i>	85
<i>Melosira granulata</i> var. <i>angustissima</i>	1,191
<i>Stephanodiscus</i> sp.	85
Order Pennales	
<i>Achnanthes lanceolata</i>	25
<i>Achnanthes minutissima</i>	127
<i>Cymbella microcephala</i>	25
<i>Nitzschia acicularis</i>	329
<i>Nitzschia amphibia</i>	25
<i>Nitzschia palea</i>	177
<i>Synedra acus</i>	76
<i>Synedra delicatissima</i>	25
<i>Synedra filiformis</i> var. <i>exilis</i>	279
<b>CHLOROPHYTA</b>	
<i>Chlamydomonas</i> sp.	272
<i>Chlorococcum humicola</i>	817
<i>Cosmarium</i> sp.	272
<i>Golenkinia radiata</i>	272
<i>Kirchneriella lunaris</i>	2,995
<i>Mesotaenium</i> sp.	272
<i>Nephrocytium limneticum</i>	3,267
<i>Scenedesmus abundans</i>	544
<i>Selenastrum minutum</i>	272
<i>Tetraedron muticum</i>	272
<b>CYANOPHYTA (blue-green algae)</b>	
<i>Aphanocapsa delicatissima</i>	13,612
<i>Aphanothece saxicola</i>	12,523
<i>Chroococcus dispersus</i>	7,078
<i>Chroococcus limneticus</i>	1,089
<i>Chroococcus multicoloratus</i>	11,162
<i>Dactylococcopsis fascicularis</i>	3,267
<i>Dactylococcopsis mucicola</i>	272
<i>Lyngbya nana</i>	4,355
<i>Marsoniella elegans</i>	4,628
<i>Oscillatoria geminata</i>	28,586
<i>Oscillatoria limnetica</i>	2,722
<i>Raphidiopsis curvata</i>	2,995
<i>Synechococcus lineare</i>	544
<i>Synechococcus</i> sp.	2,450
<i>Synechocystis</i> sp.	544
<b>EUGLENOPHYTA (euglenoid algae)</b>	
<i>Euglena</i> sp	272
<b>CRYPTOPHYTA (cryptomonads)</b>	
<i>Chroomonas</i> sp.	544
<i>Cryptomonas</i> sp.	272



08093350 AQUILLA LAKE ABOVE AQUILLA, TX--Continued

Aquilla Lake EC (315748097144901)

Phytoplankton Analyses September 1988 to October 1989

Date	8-9-89
Time	1123

TOTAL CELLS/mL	120,597
NUMBER OF SPECIES	37
DEPTH COLLECTED (ft.)	1.0

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (diatoms)	
Order Centrales	
<i>Cyclotella stelligera</i>	272
<i>Melosira granulata</i> var. <i>angustissima</i>	544
Order Pennales	
<i>Nitzschia acicularis</i>	36
<i>Nitzschia palea</i>	18
<i>Synedra acus</i>	73
<i>Synedra filiformis</i> var. <i>exilis</i>	145
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i> var. <i>mirabilis</i>	544
<i>Chlamydomonas</i> sp.	272
<i>Chlorococcum humicola</i>	272
<i>Chodatella</i> sp.	272
<i>Kirchneriella lunaris</i>	1,633
<i>Mesotaenium</i> sp.	544
<i>Nephrocytium limneticum</i>	2,178
<i>Scenedesmus quadricauda</i>	1,633
<i>Selenastrum minutum</i>	272
<i>Tetraedron minimum</i>	272
<i>Tetraedron trigonum</i> var. <i>gracile</i>	272
CYANOPHYTA (blue-green algae)	
<i>Anabaena</i> sp.	544
<i>Aphanocapsa delicatissima</i>	11,434
<i>Aphanocapsa elachista</i> var. <i>conferta</i>	8,440
<i>Aphanothece nidulans</i>	1,361
<i>Aphanothece saxicola</i>	4,356
<i>Chroococcus dispersus</i>	8,167
<i>Chroococcus limneticus</i>	3,811
<i>Chroococcus multicoloratus</i>	7,895
<i>Coelosphaerium</i> sp.	2,722
<i>Dactylococcopsis fascicularis</i>	5,445
<i>Lyngbya nana</i>	3,811
<i>Merismopedia tenuissima</i>	2,178
<i>Oscillatoria geminata</i>	35,664
<i>Oscillatoria limnetica</i>	2,178
<i>Raphidiopsis curvata</i>	10,073
<i>Synechococcus</i> sp.	544
<i>Synechocystis</i> sp.	544
EUGLENOPHYTA (euglenoid algae)	
<i>Euglena</i> sp.	272
CRYPTOPHYTA (cryptomonads)	
<i>Chroomonas</i> sp.	1,089
<i>Cryptomonas erosa</i>	817

## 08093360 AQUILLA CREEK ABOVE AQUILLA, TX

LOCATION.--Lat 31°53'43", long 97°12'10", Hill County, Hydrologic Unit 12060202, on right bank of excavated outlet channel, 0.2 mi downstream from Aquilla Dam on Aquilla Creek and Farm Road 310 (on top of Aquilla Dam), and 3.3 mi north-northeast of Aquilla.

DRAINAGE AREA.--255 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1982 to current year (operated as low-water record only). Prior to Mar. 16, 1982, operated as a full range discharge station.

GAGE.--Water-stage recorder and concrete weir with sharp-crested, 90 degree v-notch weir section for low-flows. Datum of gage is 478.71 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Mar. 15, 1982, at site about 0.2 mi to left of current location at same datum.

REMARKS.--No estimated daily discharges. Records good. Daily discharges above 135 ft<sup>3</sup>/s are not published. Flow is regulated by Aquilla Lake 0.2 mi upstream (station 08093350). Deliberate impoundment of water began Apr. 29, 1983. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,100 ft<sup>3</sup>/s June 16, 1981 (gage height, 26.98 ft); no flow for many days in 1980-86.

EXTREMES FOR CURRENT YEAR.--Maximum discharge not determined; maximum gage height, 11.33 ft June 16; minimum daily, 0.01 ft<sup>3</sup>/s many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.17	.08	.08	.06	.24	70	---	63	---	82	24	.02
2	.14	.08	.09	.06	.28	70	---	27	---	82	24	.02
3	.08	.08	.18	.05	.26	70	---	22	---	82	10	.02
4	.07	.08	.33	.05	.24	72	82	26	---	82	.04	.02
5	.07	.08	.41	.06	.21	72	83	26	---	90	.06	.02
6	.07	.07	.56	.07	.20	72	85	26	---	89	.04	.02
7	.07	.07	.78	.09	.22	72	85	26	---	83	.04	.02
8	.07	.13	.18	.16	.24	72	85	---	109	82	.03	.02
9	.07	.16	.10	.22	.23	72	85	---	111	82	.03	.02
10	.07	.15	.28	.09	.22	72	85	---	114	82	.03	.32
11	.07	.18	.15	.03	.15	72	85	---	115	80	.03	.04
12	.06	.18	.14	.01	.07	72	87	---	111	71	.03	.02
13	.06	.16	.13	.01	.10	72	89	---	104	25	.03	.08
14	.07	.12	.17	.01	.17	72	89	---	104	25	.04	.03
15	.07	.12	.29	.01	.17	72	90	---	---	25	.03	.02
16	.07	.14	.38	.01	.22	72	91	---	---	26	.03	.02
17	.07	.14	.35	.01	.32	72	91	---	---	26	.03	.02
18	.07	.14	.46	.01	.12	72	102	.16	---	26	.02	.02
19	.07	.22	.63	.01	.11	72	127	.09	---	25	.02	.02
20	.07	.18	.66	.01	.22	72	126	---	---	26	.02	.02
21	.07	.17	.58	.01	.23	72	125	---	---	25	.03	.02
22	.07	.18	.23	.01	.32	72	125	---	---	25	.01	.01
23	.07	.18	.11	.01	.22	72	124	---	---	25	.01	.01
24	.07	.22	.15	.01	.25	54	123	12	---	25	.01	.01
25	.07	.19	.13	.02	.26	40	122	13	---	25	.01	.01
26	.09	.21	.12	.01	.28	40	122	---	---	25	.01	.01
27	.08	.14	.16	.02	.29	41	117	---	---	25	.01	.01
28	.08	.11	.13	.28	40	30	117	---	---	25	.01	.01
29	.08	.09	.09	.13	---	.81	115	---	---	25	.01	.01
30	.08	.08	.19	.19	---	---	116	---	82	25	.01	.01
31	.11	---	.10	.22	---	---	---	---	---	25	.02	---
TOTAL	2.43	4.13	8.23	1.94	45.84	---	---	---	---	1466	58.69	0.90
MEAN	.078	.14	.27	.063	1.64	---	---	---	---	47.3	1.89	.030
MAX	.17	.22	.78	.28	40	---	---	---	---	90	24	.32
MIN	.06	.07	.08	.01	.07	---	---	---	---	25	.01	.01
AC-FT	4.8	8.2	16	3.8	91	---	---	---	---	2910	116	1.8
CAL YR 1988	TOTAL	--	MEAN	--	MAX	--	MIN	--	AC-FT	--		
WTR YR 1989	TOTAL	--	MEAN	--	MAX	--	MIN	--	AC-FT	--		

## BRAZOS RIVER BASIN

291

## 08093500 AQUILLA CREEK NEAR AQUILLA, TX

LOCATION.--Lat 31°50'40", long 97°12'04", Hill County, Hydrologic Unit 12060202, at downstream side of highway embankment near left end of bridge on Farm Road 1304, 1.0 mi southeast of Aquilla, 1.2 mi downstream from Cobb Creek, 4.7 mi below Aquilla Dam, and 18.2 mi upstream from mouth.

DRAINAGE AREA.--308 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1938 to current year. Records of daily discharge for December 1924 to August 1925, published in WSP 608, are unreliable.

REVISED RECORDS.--WSP 1712: 1944(M), 1957-58. WDR TX-76-2: Drainage area. See PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 451.48 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Since May 1983, flow from 252 mi<sup>2</sup> above this station has been regulated by Aquilla Lake, 4.7 mi upstream (on Aquilla Creek), that began impounding water on Apr. 24, 1983.

AVERAGE DISCHARGE.--43 years (water years 1940-82), prior to regulation, 119 ft<sup>3</sup>/s (5.25 in/yr), 86,220 acre-ft/yr; 7 years (water years 1983-89), regulated, unadjusted, 68.3 ft<sup>3</sup>/s (49,480 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,300 ft<sup>3</sup>/s June 16, 1981 (gage height, 31.35 ft), from rating curve extended above 25,900 ft<sup>3</sup>/s on basis of slope-area measurement of 74,200 ft<sup>3</sup>/s, adjusted to gage site; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 31, 1887, reached a stage of 34 ft, from information by local resident. Flood of Sept. 27, 1936, was the highest since 1887 and reached a stage of 33 ft, from floodmark; discharge 84,500 ft<sup>3</sup>/s (by slope-area measurements at site 9 mi downstream) and 74,200 ft<sup>3</sup>/s (adjusted to gage site).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,770 ft<sup>3</sup>/s May 17 at 1415 hours (gage height, 22.30 ft); no flow Aug. 15 to Sept. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	e.17	e.20	e.59	e2.8	70	297	85	493	160	e29	e.00
2	32	e.17	e.20	e.59	e2.9	71	296	36	450	161	e28	e.00
3	e2.9	e.17	e.21	e.59	e5.0	72	216	109	354	184	e28	e.00
4	e.24	e.17	e.21	e.59	e3.6	78	90	337	356	167	e26	e.00
5	.16	e.17	e.22	e.59	e3.5	78	89	201	358	161	e3.2	e.00
6	e.16	e.17	e.22	e.59	e3.6	71	88	55	355	161	e1.7	e.00
7	e.16	e.17	e.23	e.59	e3.6	71	87	97	691	173	e76	e.00
8	e.16	e.17	e.23	e.59	e3.6	72	88	147	757	163	e21	e.01
9	e.16	e.17	e.26	e.59	e3.7	71	86	389	188	159	e.80	e.01
10	e.16	e.18	e1.8	e.60	e3.7	71	86	497	183	156	e.34	e.09
11	e.16	e.18	e23	.59	e3.8	73	86	493	211	155	e.22	e1.6
12	e.16	e.18	e.68	e.59	e3.8	72	86	446	322	154	e.13	e.05
13	e.16	e.18	e.55	e.60	e3.9	71	95	353	730	120	e.07	e.06
14	e.16	e.18	e.55	e.61	e3.9	72	195	352	1050	87	e.03	e.34
15	e.16	e.18	e.55	e.61	e4.3	72	106	349	492	85	e.00	e.09
16	e.16	e.18	e.56	e.62	e110	71	94	349	951	84	e.00	e.08
17	e.16	e.18	e.57	e.63	537	70	93	1600	938	84	e.00	e.09
18	e.16	e.18	e.57	e.63	228	70	99	245	926	83	e.00	e.09
19	e.16	e.23	e.57	e.64	39	70	152	103	918	83	e.00	e.09
20	e.16	e.18	e.57	e.65	30	71	129	276	909	83	e.00	e.09
21	e.16	e.18	e.57	e.66	26	71	127	532	899	82	e.00	e.09
22	e.16	e.18	e.57	e.66	18	71	126	524	891	81	e.00	e.09
23	e.16	e.18	e.57	e.67	15	70	125	731	722	81	e.00	e.09
24	e.17	e.18	e.58	e.69	14	55	125	998	477	81	e.00	e.09
25	e.17	e.19	e.58	e.72	13	40	124	969	472	80	e.00	e.10
26	e.17	e8.6	e.58	e1.4	14	40	125	805	467	80	e.00	e.10
27	e.17	e10	e.58	e1.0	13	40	126	508	461	80	e.00	e.10
28	e.17	e.31	e.58	e124	36	510	127	502	368	80	e.00	e.10
29	e.17	e.22	e.58	e9.0	---	355	128	499	204	e30	e.00	e.10
30	e.17	.20	e.59	e3.7	---	112	130	498	161	e29	e.00	e.11
31	e.20	---	e.59	e3.0	---	304	---	496	---	e29	e.00	---
TOTAL	42.57	23.80	38.32	157.58	1148.7	3105	3821	13581	16754	3396	214.49	3.66
MEAN	1.37	.79	1.24	5.08	41.0	100	127	438	558	110	6.92	.12
MAX	32	10	23	124	537	510	297	1600	1050	184	76	1.6
MIN	.16	.17	.20	.59	2.8	40	86	36	161	29	.00	.00
AC-FT	84	47	76	313	2280	6160	7580	26940	33230	6740	425	7.3
CAL YR 1988	TOTAL	15630.14	MEAN	42.7	MAX	712	MIN	.00	AC-FT	31000		
WTR YR 1989	TOTAL	42286.12	MEAN	116	MAX	1600	MIN	.00	AC-FT	83870		

e Estimated.

## BRAZOS RIVER BASIN

08093500 AQUILLA CREEK NEAR AQUILLA, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: March 1960 to June 1966, October 1967 to current year. Chemical and biochemical analyses: January 1968 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1965 to June 1966, November 1967 to September 1982.

WATER TEMPERATURE: May 1965 to June 1966, November 1967 to September 1982.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 3,080 microsiemens Dec. 31, 1975; minimum daily, 182 microsiemens Oct. 31, 1974.

WATER TEMPERATURE: Maximum daily, 31.0°C July 3, 1980; minimum daily, 0.0°C Jan. 8, 1976, Jan. 10, 1977.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)
OCT 05...	1020	0.15	354	7.50	19.5	52	62	--	--	3.5	130	48
NOV 30...	1300	0.19	618	7.30	9.0	55	15	4.2	36	4.4	250	89
JAN 11...	1246	0.59	972	7.80	10.0	15	4.4	10.5	94	1.3	370	130
FEB 28...	1320	8.3	618	8.10	10.0	14	10	11.4	102	1.1	260	100
APR 12...	1500	88	458	8.10	15.5	--	16	9.6	97	0.9	160	58
JUN 06...	1615	357	390	8.20	26.5	20	17	7.7	98	1.4	140	51
21...	1443	888	357	8.20	25.5	30	18	8.5	106	1.7	140	53

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD (MG/L AS CAC03)	SULFATE DIS-SOLVED (MG/L AS S04)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)
OCT 05...	3.3	19	0.7	4.2	100	55	12	0.30	10	212	112
NOV 30...	6.5	32	0.9	7.0	171	110	28	0.30	11	387	25
JAN 11...	11	63	1	4.4	235	190	49	0.40	6.3	595	8
FEB 28...	3.4	22	0.6	3.4	195	86	17	0.40	7.5	357	16
APR 12...	3.9	29	1	5.2	115	81	19	0.40	3.4	269	29
JUN 06...	3.1	22	0.8	5.4	112	56	17	0.40	2.7	225	24
21...	2.9	18	0.7	5.3	110	47	12	0.40	6.2	212	55

DATE	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)
OCT 05...	64	48	0.660	0.040	0.700	0.040	1.3	1.3	0.070	11	--
NOV 30...	2	23	0.270	0.030	0.300	0.030	1.1	1.1	0.060	11	4
JAN 11...	<1	--	0.580	0.020	0.600	0.060	--	<0.60	0.020	5.8	2
FEB 28...	14	2	7.37	0.030	7.40	0.030	0.77	0.80	0.030	4.0	--
APR 12...	11	18	0.580	0.020	0.600	0.080	0.62	0.70	0.040	7.2	2
JUN 06...	10	14	0.470	0.030	0.500	0.030	0.67	0.70	0.030	6.7	--
21...	22	33	0.340	0.060	0.400	0.050	--	<0.20	0.020	7.5	3

DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 05...	--	--	--	--	--	--	--	--	--	--	--
NOV 30...	75	2	<1	2	46	<5	310	<0.1	1	<1.0	6
JAN 11...	100	<1	1	2	14	<5	99	<0.1	2	<1.0	8
FEB 28...	--	--	--	--	--	--	--	--	--	--	--
APR 12...	60	<1	<1	<1	7	<5	9	<0.1	<1	<1.0	4
JUN 06...	--	--	--	--	--	--	--	--	--	--	--
21...	60	<1	1	7	740	2	61	<0.1	<1	<1.0	5

## BRAZOS RIVER BASIN

293

## 08094800 NORTH BOSQUE RIVER AT HICO, TX

LOCATION.--Lat 31°58'41", long 98°02'04"; Hamilton County, Hydrologic Unit 12060204, on left bank at downstream side of bridge on U.S. Highway 281 near south boundary of Hico, 2.6 mi downstream from Gilmore Creek, 5.0 mi upstream from Honey Creek, and 92.4 mi upstream from mouth.

DRAINAGE AREA.--359 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1962 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 982.46 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow is affected at times by discharge from flood-dentention pools of 40 floodwater-retarding structures with a combined detention capacity of 65,720 acre-ft. These structures control runoff from 202 mi<sup>2</sup> in North Bosque River and Green Creek drainage basins. The city of Stephenville discharges a small amount of sewage effluent into the river above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--11 years (water years 1963-73) prior to regulation, 50.5 ft<sup>3</sup>/s (36,590 acre-ft/yr); 16 years (water years 1974-89) regulated, 41.2 ft<sup>3</sup>/s (29,850 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,900 ft<sup>3</sup>/s Apr. 30, 1977 (gage height, 22.27 ft), from rating curve extended above 9,000 ft<sup>3</sup>/s; no flow at times in 1962-65, 1967-68, 1971, 1974, 1976, and 1978-86.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1880, 27.6 ft May 23, 1952, from floodmarks (discharge, 87,800 ft<sup>3</sup>/s, by contracted-opening measurement).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,300 ft<sup>3</sup>/s Mar. 28 at 0745 hours (gage height, 19.91 ft); minimum daily discharge, 0.32 ft<sup>3</sup>/s on Oct. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e26	31	e2.6	e3.9	e11	e8.7	658	20	56	62	13	8.8
2	e6.1	18	e2.6	e3.3	e11	e10	499	20	51	55	346	8.8
3	e2.9	11	e2.5	e3.1	e16	15	287	20	47	49	230	8.6
4	e1.6	8.1	e2.4	e3.2	e10	24	144	270	129	45	137	8.0
5	e1.0	e7.2	e2.4	e3.1	e9.0	e12	99	762	96	42	73	7.4
6	e.63	e6.8	e2.3	e3.0	e8.2	e9.6	82	275	60	39	49	7.1
7	e.50	8.8	e2.4	e2.8	e7.5	e9.1	e64	158	52	35	1040	7.0
8	e.47	e5.7	e2.9	e2.7	e7.2	e8.6	e55	130	114	35	364	6.8
9	e.52	e5.2	e4.8	e2.6	e9.0	e8.1	e46	124	77	35	196	7.1
10	e.68	e4.8	e4.9	e2.4	e13	e7.7	e38	119	106	34	101	7.3
11	e.65	e4.5	e5.7	e2.3	e27	e7.2	34	122	3820	33	70	7.2
12	e.42	e4.1	e4.7	e2.8	e39	6.7	34	134	1330	31	55	7.2
13	e.32	e3.8	e4.7	e5.0	17	e6.3	191	225	1460	28	44	183
14	e.35	e3.5	e4.1	e5.2	17	e6.1	842	241	4650	27	38	272
15	e.71	e3.2	e2.7	e4.7	26	e5.9	323	207	1610	27	34	103
16	e.75	e2.8	e2.2	e4.6	101	e5.7	195	224	1160	27	24	57
17	e.51	e2.5	e1.9	e4.5	430	e5.6	142	5820	798	26	25	35
18	e.85	e2.8	e1.6	e4.3	312	e5.7	114	2180	538	23	19	21
19	e.76	27	e1.3	e4.1	121	e6.2	91	1350	384	22	15	14
20	e.44	e8.7	1.0	e4.0	82	e7.2	69	1010	301	20	15	12
21	e.43	e6.4	e.95	e3.8	49	e7.1	52	773	236	19	14	9.3
22	.45	e5.2	e1.6	3.6	26	e6.9	41	598	206	19	9.7	8.9
23	e.48	e4.9	e3.1	e3.7	15	e6.4	36	424	189	20	9.7	9.1
24	e1.0	e4.5	e2.4	e4.1	e13	e6.2	33	325	164	18	9.3	8.9
25	e2.4	e4.2	e2.4	e7.5	e11	e6.4	31	247	142	16	9.3	8.8
26	144	e3.9	e2.3	e6.9	e10	e6.5	29	189	142	16	9.5	8.8
27	57	e3.6	e2.3	e7.4	e9.1	e7.7	27	128	115	16	9.5	8.6
28	19	e3.3	e2.4	e60	e8.2	e3430	25	103	97	27	9.3	8.3
29	e12	e3.0	e2.5	e41	---	e1150	22	85	83	16	8.8	8.3
30	e9.2	e2.7	e3.7	e22	---	e889	19	73	71	15	8.8	8.3
31	18	---	e4.3	e14	---	e757	---	64	---	13	8.8	---
TOTAL	310.12	211.2	87.65	245.6	1415.2	6448.6	4322	16420	18284	890	2994.7	875.6
MEAN	10.0	7.04	2.83	7.92	50.5	208	144	530	609	28.7	96.6	29.2
MAX	144	31	5.7	60	430	3430	842	5820	4650	62	1040	272
MIN	.32	2.5	.95	2.3	7.2	5.6	19	20	47	13	8.8	6.8
AC-FT	615	419	174	487	2810	12790	8570	32570	36270	1770	5940	1740

CAL YR 1988 TOTAL 6924.26 MEAN 18.9 MAX 3610 MIN .00 AC-FT 13730  
WTR YR 1989 TOTAL 52504.67 MEAN 144 MAX 5820 MIN .32 AC-FT 104100

e Estimated.



## 08095000 NORTH BOSQUE RIVER NEAR CLIFTON, TX

LOCATION.--Lat 31°47'09", long 97°34'04", Bosque County, Hydrologic Unit 12060204, near right bank at downstream side of bridge on Farm Road 219, 0.5 mi northeast of Clifton, 2.5 mi downstream from Meridian Creek, and 42.0 mi upstream from mouth.

DRAINAGE AREA.--968 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1923 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 788: 1924-26, 1928, 1930. WSP 1058: 1945(M). WSP 1512: 1924(M), 1927, 1928(M), 1929, 1930(M), 1931-33, 1934(M), 1935-37, 1939. WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 605.43 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1955, and from Apr. 23, 1957, to Mar. 26, 1958, nonrecording gage at site 1.1 mi upstream at datum 17.02 ft higher; Oct. 1, 1955, to Apr. 22, 1957, and Mar. 27, 1958, to Sept. 30, 1959, water-stage recorder destroyed by floods of Apr. 27, 1957, and Oct. 4, 1959; and Oct. 1, 1959, to Jan. 1, 1961, nonrecording gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharge, which are fair. The city of Clifton diverts water from the river upstream from this station for municipal use. The cities of Clifton and Meridian discharge sewage effluent into the river upstream and downstream, respectively, from the station. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08094800. Several observations of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--44 years (water years 1924-67) unregulated, 195 ft<sup>3</sup>/s (141,300 acre-ft/yr); 22 years (water years 1968-89) regulated, 167 ft<sup>3</sup>/s (121,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 92,800 ft<sup>3</sup>/s Oct. 4, 1959 (gage height, 34.88 ft), from rating curve extended above 34,000 ft<sup>3</sup>/s on basis of contracted-opening measurement of 92,800 ft<sup>3</sup>/s; no flow at times. Maximum stage since at least 1854, that of Oct. 4, 1959.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 9, 1922, reached a stage of about 32 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,300 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 28	2200	*37,900	*32.13	June 11	1430	12,800	16.48
May 17	2100	28,000	26.59	June 14	1300	27,400	a26.22

a From floodmark.

Minimum daily discharge, 2.5 ft<sup>3</sup>/s Nov. 18, 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	174	28	5.3	14	59	78	914	98	122	270	57	40
2	60	18	4.8	12	43	75	784	75	116	252	70	39
3	30	15	4.3	11	105	74	552	85	119	231	769	38
4	24	13	4.7	9.5	116	85	349	643	126	214	283	36
5	18	9.7	4.4	8.7	55	90	221	2130	263	201	172	36
6	15	7.4	4.7	8.6	44	84	161	909	172	191	120	35
7	13	6.7	5.3	8.3	39	91	131	488	617	189	712	35
8	12	7.2	6.3	7.3	33	88	116	342	338	212	915	34
9	11	6.4	6.1	7.3	30	84	100	260	208	154	366	33
10	11	6.1	9.4	7.1	28	78	84	205	162	120	230	34
11	10	5.4	16	7.3	27	73	75	154	5180	108	150	37
12	9.8	5.0	26	7.7	27	70	74	129	2740	102	117	35
13	9.6	4.9	27	7.9	27	65	84	147	e3990	109	103	38
14	9.2	4.2	32	7.6	26	62	1310	302	e16700	146	93	172
15	9.1	3.7	23	7.7	22	60	899	275	e4130	105	91	209
16	9.0	2.7	23	7.8	56	54	483	223	1880	96	88	121
17	9.0	2.6	19	8.1	744	52	328	15300	1430	92	157	89
18	9.0	2.5	16	11	1740	50	258	6620	1100	86	93	72
19	8.8	2.9	15	16	566	47	235	1890	914	80	78	60
20	8.4	2.5	13	15	340	47	189	1360	775	73	70	52
21	8.0	3.0	9.4	12	257	48	143	1100	671	68	64	47
22	8.0	4.1	8.1	11	189	49	132	905	595	66	60	42
23	7.8	10	7.4	9.8	149	48	111	743	522	64	56	37
24	7.6	8.5	7.2	9.3	123	47	90	586	475	65	54	34
25	7.2	8.4	7.2	9.5	110	44	79	434	434	75	53	31
26	8.5	13	7.7	10	104	48	73	312	396	66	50	29
27	9.5	8.4	8.1	12	94	48	66	230	384	66	47	29
28	16	6.8	7.8	209	84	14900	62	182	342	64	44	29
29	49	6.6	7.2	256	---	4600	67	158	311	61	43	28
30	29	6.2	7.6	131	---	1510	263	142	287	70	42	28
31	32	---	14	80	---	1110	---	130	---	62	41	---
TOTAL	642.5	228.9	357.0	939.5	5237	23859	8433	36557	45499	3758	5288	1579
MEAN	20.7	7.63	11.5	30.3	187	770	281	1179	1517	121	171	52.6
MAX	174	28	32	256	1740	14900	1310	15300	16700	270	915	209
MIN	7.2	2.5	4.3	7.1	22	44	62	75	116	61	41	28
AC-FT	1270	454	708	1860	10390	47320	16730	72510	90250	7450	10490	3130
CAL YR 1988	TOTAL	31382.5	MEAN	85.7	MAX	16400	MIN	1.9	AC-FT	62250		
WTR YR 1989	TOTAL	132377.9	MEAN	363	MAX	16700	MIN	2.5	AC-FT	262600		

e Estimated.

## BRAZOS RIVER BASIN

295

08095200 NORTH BOSQUE RIVER AT VALLEY MILLS, TX

LOCATION.--Lat 31°40'10", Long 97°28'09", Bosque County, Hydrologic Unit 12060204, on right bank at downstream side of bridge on Farm Road 56, about 0.8 mi downstream from Thompson Hollow, 0.8 mi north of intersection of State Highway 6 and Farm Road 56 in Valley Mills, and 28.0 mi upstream from mouth.

DRAINAGE AREA.--1,146 mi<sup>2</sup>.

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

Water-quality records.--Chemical and biochemical analyses: October 1980 to September 1982.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 524.55 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 29, 1959, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Flow is affected at times by discharge from the flood-detention pools of 42 floodwater-retarding structures with a combined detention capacity of 66,800 acre-ft. These structures control runoff from 207 mi<sup>2</sup>. There are several small diversions above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--8 years (water years 1960-67) unregulated, 263 ft<sup>3</sup>/s (190,500 acre-ft/yr); 21 years (water years 1968-89) regulated, 201 ft<sup>3</sup>/s (145,600 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 107,000 ft<sup>3</sup>/s Oct. 4, 1959 (gage height, 40.22 ft, from floodmarks), from rating curve extended above 28,200 ft<sup>3</sup>/s on basis of slope-area measurement of 107,000 ft<sup>3</sup>/s; no flow Oct. 5-12, 1965, many days in 1984, and Oct. 1-5, 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1868, 43 ft in May 1908. Floods in September 1936 and April 1945 reached a stage of about 38 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 29	0230	*31,800	*35.53	June 11	1700	12,000	22.58
May 18	0030	26,000	33.58	June 14	1000	23,900	32.35

Minimum daily discharge, 7.5 ft<sup>3</sup>/s Nov. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	329	26	11	17	50	61	1030	115	109	337	43	42
2	67	22	11	18	43	60	902	90	97	307	89	39
3	35	19	10	17	46	59	705	111	97	282	796	37
4	28	17	9.2	16	110	61	484	557	105	251	406	36
5	23	15	9.6	15	56	66	301	2300	299	226	236	36
6	20	14	9.5	15	45	64	225	1120	233	208	151	35
7	17	13	9.2	14	41	67	193	593	567	205	522	34
8	16	12	10	14	39	66	173	408	499	345	1240	34
9	15	13	10	13	37	65	153	274	277	345	526	33
10	14	12	14	13	35	62	135	210	188	188	347	33
11	14	11	22	13	35	60	122	164	4830	149	247	34
12	13	11	18	14	35	58	119	141	2790	133	187	33
13	12	11	22	15	35	57	122	141	4210	154	158	38
14	12	11	25	15	41	56	1210	329	17100	398	140	86
15	11	10	25	14	34	54	1090	286	4330	153	137	307
16	11	8.6	21	13	46	52	592	224	2270	126	133	168
17	11	7.5	22	13	481	51	381	12100	1720	108	206	114
18	11	7.6	20	14	2180	51	269	8490	1320	94	151	90
19	10	8.2	19	16	835	49	242	2430	1080	85	115	74
20	9.9	9.8	18	18	457	49	200	1700	915	76	99	63
21	9.5	9.9	16	16	284	50	158	1330	788	67	90	56
22	9.6	8.7	16	16	174	50	138	1050	698	63	86	51
23	9.2	9.0	14	15	124	50	123	885	613	58	80	48
24	8.8	14	14	15	93	50	103	705	552	58	75	45
25	8.5	14	13	16	76	49	90	577	507	71	71	44
26	8.9	13	13	16	71	49	82	452	456	62	66	42
27	9.5	14	13	17	68	50	77	353	445	60	58	40
28	9.5	13	15	210	64	8450	72	258	434	59	54	39
29	19	12	14	313	---	9490	100	192	392	53	50	40
30	27	11	14	109	---	1810	290	157	361	57	45	39
31	27	---	15	59	---	1260	---	129	---	54	44	---
TOTAL	825.4	377.3	472.5	1099	5635	22526	9881	37871	48282	4832	6648	1810
MEAN	26.6	12.6	15.2	35.5	201	727	329	1222	1609	156	214	60.3
MAX	329	26	25	313	2180	9490	1210	12100	17100	398	1240	307
MIN	8.5	7.5	9.2	13	34	49	72	90	97	53	43	33
AC-FT	1640	748	937	2180	11180	44680	19600	75120	95770	9580	13190	3590
CAL YR 1988	TOTAL	35815.9	MEAN	97.9	MAX	11700	MIN	4.3	AC-FT	71040		
WTR YR 1989	TOTAL	140259.2	MEAN	384	MAX	17100	MIN	7.5	AC-FT	278200		

## BRAZOS RIVER BASIN

08095550 WACO LAKE NEAR WACO, TX

LOCATION.--Lat 31°34'46", long 97°11'51", McLennan County, Hydrologic Unit 12060203, in intake structure at Waco Dam on Bosque River, at northwest edge of city limits of Waco, and 4.6 mi upstream from mouth.

DRAINAGE AREA.--1,652 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1965 to current year. Prior to October 1970, published as Waco Reservoir.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--The lake is formed by a rolled earthfill dam 24,618 ft long, including spillway. The lake was built for flood control and water conservation. From Oct. 1, 1964, to Feb. 26, 1965, the lake was operated as a detention basin only. On Feb. 26, 1965, old Lake Waco was breached and deliberate impoundment began. The spillway is controlled by fourteen 40.0- by 35.0-foot tainter gates. The outlet works consists of three gate-controlled outlets, 6.7 by 20.0 ft, opening into a 20.0-foot-diameter concrete conduit and two 54-inch concrete pipes. Low-flow releases are made through two 54-inch butterfly valves. Flow into two wet wells is controlled by four 5.0- by 6.0-foot slide gates that are used to release water downstream for the city of Waco municipal water supply. Capacity table No. 2-C is based on a sedimentation survey completed in December 1970. Flow is affected at times by discharge from the flood-detention pools of 44 floodwater-retarding structures with a combined detention capacity of 76,460 acre-ft. These structures control runoff from 248 mi<sup>2</sup> in the Bosque River and Hog Creek drainage basins. An unknown amount of water was diverted for municipal and industrial uses. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam.....	510.0	-
Design flood.....	505.0	824,400
Top of gates.....	500.0	722,500
Crest of spillway.....	465.0	229,900
Top of conservation pool.....	455.0	149,200
Lowest gated outlet (invert).....	400.0	560

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 292,100 acre-ft May 15, 1968 (elevation, 470.86 ft); minimum since initial filling, 86,360 acre-ft Oct. 8, 1984 (elevation, 445.10 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 243,800 acre-ft May 21 (elevation, 466.47 ft); minimum, 127,800 acre-ft Dec. 9 (elevation, 451.96 ft).

Capacity table (elevation, in feet, and total contents, in acre-feet)

451.0	121,400	457.0	163,900	464.0	220,900
454.0	142,000	460.0	187,100	467.0	248,900

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	133600	130500	128400	130500	137200	150200	174900	152000	173700	152300	149300	150600
2	133600	130400	128300	130500	137700	150000	169000	151600	167700	152500	149900	150400
3	133600	130300	128300	130600	137900	150100	163700	153600	163300	152700	151100	150300
4	133500	130200	128100	130500	138300	150900	160600	153500	158900	152500	151700	150100
5	133400	130000	128100	130500	138600	151300	160400	156000	155900	152300	151900	150000
6	133300	129900	128000	130400	138800	151600	158800	155400	153800	151900	151900	149700
7	133100	129800	127900	130400	139100	151700	156000	153300	153700	153300	153600	149500
8	133000	129600	128000	130400	139200	151900	154200	151300	153600	153300	156300	149300
9	132900	129500	127900	130300	139500	151300	152400	150300	152700	153700	155800	149100
10	132700	129400	128800	130300	139700	150200	150800	150400	151800	153500	153900	149000
11	132500	129300	128900	130200	140000	149800	150100	150700	159100	153100	152800	148800
12	132400	129200	128900	130200	140300	149400	150400	151000	164400	152200	152100	148700
13	132200	129100	128900	130500	140700	149600	151300	152500	172400	151900	151400	148700
14	132000	128900	128900	130400	140500	149800	153500	153200	206100	152200	151100	148500
15	131800	128900	128900	130400	140400	150100	156400	153600	213600	152000	151100	148800
16	131700	128700	128900	130400	141500	150300	157900	153600	211800	151900	151100	148900
17	131500	128500	128900	130300	146800	150600	157500	202200	207600	151500	151400	149000
18	131400	128500	128800	130300	155200	150800	156100	230700	202300	151100	151600	148900
19	131300	128800	128900	131000	158500	151000	155600	237500	196500	150900	151600	148800
20	131100	128700	128900	131000	160700	150700	154100	242400	190200	150800	151600	148800
21	131100	128600	128900	131000	162000	150100	153000	243800	183700	150500	151600	148700
22	130900	128500	129100	131000	161500	149500	152300	243400	176900	150300	151600	148500
23	130700	128400	129100	131000	158700	149600	151700	239900	171400	150200	151500	148200
24	130600	128300	129100	131100	153600	149600	151100	233600	167300	150000	151400	148000
25	130400	128400	129000	131700	152400	149800	150700	226400	163100	149800	151400	147800
26	130400	128900	129100	131700	152000	150100	150600	219100	158900	149800	151300	147600
27	130200	128800	129100	132100	151400	150300	150800	211700	155800	149600	151200	147400
28	130100	128700	129200	133400	150400	160700	151000	204200	154400	149500	151100	147300
29	130200	128600	129200	135100	---	188600	151000	196600	153000	149300	150900	147200
30	130200	128500	129200	136100	---	185800	152100	188800	152400	149000	150900	147100
31	130500	---	129300	136700	---	180700	---	181200	---	148800	150700	---
MAX	133600	130500	129300	136700	162000	188600	174900	243800	213600	153700	156300	150600
MIN	130100	128300	127900	130200	137200	149400	150100	150300	151800	148800	149300	147100
(+)	452.35	452.06	452.17	453.24	455.17	459.19	455.40	459.26	455.44	454.95	455.21	454.71
(Φ)	-2000	-2000	+800	+7400	+13700	+30300	-28610	+29100	-28800	-3600	+1900	-3600

CAL YR 1988 MAX 182700 MIN 127000 (Φ) -19000  
WTR YR 1989 MAX 243800 MIN 127900 (Φ) +13500

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

## 08096500 BRAZOS RIVER AT WACO, TX

LOCATION.--Lat 31°32'06", long 97°04'22", McLennan County, Hydrologic Unit 12060202, on left bank 2.2 mi downstream from bridge on LaSalle Avenue and at mile 400.7.

DRAINAGE AREA.--29,573 mi<sup>2</sup>, approximately, of which 9,566 mi<sup>2</sup> probably is noncontributing.

PERIOD OF RECORD.--September 1898 to current year (January 1912 to September 1914 monthly records only, published in WSP 1312).

REVISED RECORDS.--WSP 850 and 878: 1899-1900, 1907-9 (monthly and yearly summaries only). WSP 1512: 1901-5, 1910, 1915, 1925-26(M), 1927-29. WSP 1922: 1957. WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 349.34 ft above National Geodetic Vertical Datum of 1929. Sept. 14, 1898, to Mar. 28, 1918, May 6, 1922, to Feb. 12, 1925, nonrecording gage, and May 28, 1918, to May 5, 1922, Feb. 13, 1925, to Aug. 14, 1969, water-stage recorder. Prior to Aug. 14, 1969, at site 3.9 mi upstream at datum 7.46 ft higher.

REMARKS.--No estimated daily discharges. Records good. Flow is largely regulated by Lake Whitney and by Waco Lake (stations 08092500 and 08095550). The combined capacity for 18 reservoirs above station is 4,135,000 acre-ft, of which 2,194,000 acre-ft is flood-control storage in Lake Whitney and in Waco Lake. The city of Waco diverts water above station for municipal use, and the Brazos River Authority returns treated sewage effluent to the river above station. There are many other small diversions above station for municipal supply, irrigation, and for oil field operations that will not appreciably affect flow. Flow may be slightly affected at times by discharge from the flood-detention pools of eleven floodwater-retarding structures with a combined detention capacity of 6,420 acre-ft. These structures control runoff from 20.4 mi<sup>2</sup> in the Aquilla and Hackberry Creeks drainage basins. Several observations of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--42 years (water years 1899-1940) unregulated, 2,560 ft<sup>3</sup>/s (1,855,000 acre-ft/yr); 49 years (water years 1941-89) regulated, 2,177 ft<sup>3</sup>/s (1,577,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 246,000 ft<sup>3</sup>/s Sept. 27, 1936 (gage height, 40.90 ft), at former site and datum, levee on left bank was overtopped and broken by flood; no flow Aug. 20, 21, 1918, and probably for several days in August 1923.

Maximum stage since at least 1847, that of Sept. 27, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage for 1847-98, 34.63 ft May 28, 1885, from floodmark at site 3.9 mi upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 25,200 ft<sup>3</sup>/s June 17 at 0400 hours (gage height, 20.43 ft); maximum gage height, 24.62 ft May 17 at 1530 hours (backwater from Tehuacana Creek); minimum daily, 5.4 ft<sup>3</sup>/s Dec. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	736	22	71	16	151	1330	6140	501	17900	3590	1400	1040
2	267	31	316	30	108	546	5960	1050	17100	3220	1310	912
3	248	33	1370	26	177	84	5260	2810	15800	3150	961	928
4	156	46	1470	36	156	329	3680	2740	15600	2980	940	898
5	26	72	1480	41	100	171	1440	5590	15200	2680	939	903
6	27	74	1490	34	38	786	2040	5950	10100	2710	899	890
7	51	1030	1300	32	97	2800	2910	6750	9500	2870	2460	907
8	117	717	719	16	96	421	2210	6540	11700	2100	1810	951
9	137	110	631	26	58	672	1810	5940	8630	1810	1800	905
10	100	87	1210	34	78	1080	1640	5350	10500	1740	2220	474
11	648	75	1400	39	99	572	1290	2330	11000	1100	1890	532
12	1130	77	1190	37	99	572	781	2970	11500	1430	1440	422
13	135	70	926	17	100	376	732	3110	14200	1350	1420	465
14	97	72	896	15	91	180	1070	4180	19800	1350	1190	492
15	88	76	864	16	94	192	722	3300	21000	1220	989	357
16	85	70	850	18	478	197	680	3380	23800	1170	1130	373
17	52	63	852	19	2330	177	1290	14400	24500	1150	931	167
18	9.0	66	851	16	4290	177	2100	12500	24100	1160	935	111
19	6.5	161	540	20	1190	161	2650	6800	23800	1070	933	258
20	6.3	109	50	19	614	445	2320	6040	23400	1010	932	352
21	11	134	18	16	521	802	1850	7490	21500	1120	890	484
22	23	64	8.9	27	1120	635	1340	11100	16200	1160	933	420
23	24	33	8.0	17	2290	338	1340	12700	15100	1180	899	456
24	17	30	6.7	12	2760	154	1220	19600	11100	1150	892	1800
25	15	33	5.4	49	2350	167	1050	20600	10700	1170	890	831
26	17	76	7.2	69	1050	135	826	20100	10600	1120	896	839
27	16	122	7.2	199	716	152	623	19300	10200	1120	902	1620
28	18	159	8.4	314	1100	1460	694	19000	8850	1150	904	716
29	20	195	16	1060	---	4930	645	18600	5620	1280	917	151
30	20	92	18	373	---	5770	677	18400	4990	1290	856	1410
31	31	---	25	145	---	6200	---	18200	---	1280	925	---
TOTAL	4333.8	3999	18604.8	2788	22351	32011	56990	287321	443990	51880	36433	21064
MEAN	140	133	600	89.9	798	1033	1900	9268	14800	1674	1175	702
MAX	1130	1030	1490	1060	4290	6200	6140	20600	24500	3590	2460	1800
MIN	6.3	22	5.4	12	38	84	623	501	4990	1010	856	111
AC-FT	8600	7930	36900	5530	44330	63490	113000	569900	880700	102900	72260	41780
CAL YR 1988	TOTAL	173308.35	MEAN	474	MAX	3510	MIN	.12	AC-FT	343800		
WTR YR 1989	TOTAL	981765.6	MEAN	2690	MAX	24500	MIN	5.4	AC-FT	1947000		



## BRAZOS RIVER MAIN STEM

08098290 BRAZOS RIVER NEAR Highbank, TX  
(National stream-quality accounting network)

LOCATION.--Lat 31°08'02", long 96°49'29", Falls County, Hydrologic Unit 12070101, near right bank 45 ft downstream from bridge on Farm Road 413, 1.4 mi downstream from Highbank Slough and Spring Branch, 2.6 mi south of Highbank, and at mile 346.6.

DRAINAGE AREA.--30,436 mi<sup>2</sup>, of which 9,566 mi<sup>2</sup> probably is noncontributing.

## WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 279.29 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Many diversions above station for municipal supply, irrigation and industrial uses. Flow is affected by 20 upstream reservoirs with a total combined capacity of 4,181,000 acre-ft. Water is diverted from the river about 52 miles upstream from this station by Texas Power and Light Co. to Tradinghouse Reservoir. Flow is affected at times by discharge from the flood-detention pools of 76 floodwater-retarding structures with a total combined detention capacity of 83,290 acre-ft. These structures control runoff from 238 mi<sup>2</sup> in the Aquilla, Tehuacana, Castleman Creeks, and Cow Bayou basins. A U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--24 years, 2,488 ft<sup>3</sup>/s (1,803,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 78,700 ft<sup>3</sup>/s Feb. 4, 1986 (gage height, 23.90 ft); minimum daily, 32 ft<sup>3</sup>/s Oct. 4-5, 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stages since at least 1909, 42 ft in December 1913 and 40 ft in September 1936, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 44,500 ft<sup>3</sup>/s May 18 at 1900 hours (gage height, 23.09 ft); minimum daily, 44 ft<sup>3</sup>/s Oct. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	969	49	243	92	849	1220	5840	563	19200	5260	1640	1080
2	1170	45	154	92	544	1070	5410	443	19000	3810	2090	1220
3	518	45	117	100	461	966	4910	808	18000	3990	2100	1110
4	339	54	918	92	553	346	3920	3080	16900	4510	1420	1070
5	316	61	1380	99	752	409	2630	4590	17000	4110	1420	1060
6	196	56	1390	104	429	460	1310	7040	15600	e3300	1360	1070
7	112	51	1400	113	308	966	1730	7650	11700	e3350	7740	1050
8	91	201	1410	117	243	2090	2120	7210	11900	e3600	7670	1080
9	85	1000	959	102	232	715	1610	6110	14000	e2500	5060	1110
10	87	296	829	88	224	594	1280	5370	11600	e2300	3980	1100
11	127	155	1200	81	196	1060	1220	4330	16100	e2100	2880	682
12	132	113	1660	76	187	674	908	1960	15600	1580	2210	672
13	862	99	1520	97	190	621	623	2420	15600	1760	1750	602
14	511	99	1170	109	198	572	618	3320	21900	1730	1690	622
15	213	97	1070	110	205	357	797	4650	25800	1710	1530	593
16	141	92	942	92	211	317	635	3870	26400	1570	1280	457
17	126	86	911	79	1030	309	528	15100	26400	1520	1400	510
18	119	92	911	73	5180	307	874	40300	26100	1500	1220	449
19	110	98	903	77	5520	317	1510	32400	25800	1460	1180	319
20	86	99	830	81	2860	315	1990	14900	25500	1420	1140	262
21	65	170	395	76	1500	357	1680	11800	25200	1320	1120	428
22	56	163	206	83	1140	825	1300	12100	22600	1410	1130	552
23	58	164	156	98	1380	802	978	14000	17700	1420	1130	571
24	49	132	124	98	2200	591	952	15700	15600	1470	1120	555
25	47	90	109	130	2490	361	892	20600	12700	1460	1100	1730
26	46	79	100	152	2100	321	785	21900	12500	1480	1100	1310
27	44	76	99	468	1300	293	656	21200	12400	1450	1090	714
28	45	289	99	466	702	374	512	20300	11400	1480	1090	1730
29	46	241	87	933	---	1670	521	19800	9310	1470	1090	1220
30	48	236	90	2060	---	6170	519	19700	6120	1590	1090	360
31	58	---	95	1250	---	6310	---	19400	---	1610	1070	---
TOTAL	6872	4528	21477	7688	33184	31759	49258	362614	525630	69240	62890	25288
MEAN	222	151	693	248	1185	1024	1642	11700	17520	2234	2029	843
MAX	1170	1000	1660	2060	5520	6310	5840	40300	26400	5260	7740	1730
MIN	44	45	87	73	187	293	512	443	6120	1320	1070	262
AC-FT	13630	8980	42600	15250	65820	62990	97700	719200	1043000	137300	124700	50160

CAL YR 1988 TOTAL 213429 MEAN 583 MAX 4110 MIN 44 AC-FT 423300  
WTR YR 1989 TOTAL 1200428 MEAN 3289 MAX 40300 MIN 44 AC-FT 2381000

e Estimated.



08098290 BRAZOS RIVER NEAR Highbank, TX--Continued  
(National stream-quality accounting network)

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: November 1967 to current year. Pesticide analyses: November 1976 to June 1981. Sediment analyses: October 1974 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1967 to current year.  
WATER TEMPERATURES: November 1967 to February 1984.

INSTRUMENTATION.--Beginning September 1980, specific conductance is recorded continuously at this station.  
From October 1980 to February 1984 water temperature was recorded continuously at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Where maximum or minimum specific conductance values are not shown, mean value is estimated. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 3,000 microsiemens Aug. 24, 1978; minimum daily, 140 microsiemens Mar. 8, 1984.  
WATER TEMPERATURES (1967-84): Maximum daily, 35.5°C July 15, 16, 1978; minimum daily, 0.0°C Dec. 29-31, 1983.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,990 microsiemens Dec. 8; minimum daily, 370 microsiemens Aug. 9.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CaCO3)
OCT 18...	1435	120	1140	7.90	27.0	4.0	11.8	150	0.3	K6	K1	240
DEC 20...	1340	947	1970	7.70	14.5	--	--	--	--	--	--	390
FEB 28...	1440	662	422	7.70	13.0	27	10.1	97	--	K19	34	170
MAY 18...	1254	42100	373	7.50	23.0	--	--	--	--	--	--	120
JUN 07...	0950	11800	1210	7.40	26.5	79	7.2	91	1.4	560	K200	250
AUG 08...	1540	6680	432	7.00	27.0	25	6.0	76	2.6	11000	13000	160
DATE	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CaCO3	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CaCO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
OCT 18...	120	65	19	130	4	4.3	119	140	190	0.30	2.8	650
DEC 20...	260	100	33	270	6	6.6	124	260	410	0.30	7.1	--
FEB 28...	15	56	6.0	26	0.9	3.8	150	38	24	0.30	8.5	247
MAY 18...	31	39	4.6	27	1	4.2	86	31	36	0.20	5.0	--
JUN 07...	130	71	17	140	4	5.6	121	140	210	0.30	6.1	693
AUG 08...	59	48	9.3	24	0.9	4.8	140	23	31	0.30	8.3	245
DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	PHOS-PHOROUS DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)
OCT 18...	624	--	<0.010	<0.100	0.020	<0.010	0.38	0.40	0.100	0.090	0.090	0.28
DEC 20...	1160	--	--	--	--	--	--	--	--	--	--	--
FEB 28...	259	1.14	0.060	1.20	0.120	0.100	--	<0.20	0.150	0.130	0.110	0.34
MAY 18...	199	--	--	--	--	--	--	--	--	--	--	--
JUN 07...	665	--	<0.010	0.220	0.010	0.010	0.39	0.40	0.040	0.020	0.010	0.03
AUG 08...	213	0.770	0.030	0.800	0.020	0.100	0.58	0.60	0.180	0.190	0.170	0.52

## BRAZOS RIVER MAIN STEM

08098290 BRAZOS RIVER NEAR HIGHBANK, TX--Continued  
(National stream-quality accounting network)

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 18...	11	3.6	52	<10	3	88	<0.5	<1	<1	<3	<1	9
DEC 20...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 28...	64	114	58	20	2	55	<0.5	<1	1	<3	1	16
MAY 18...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 07...	272	8670	58	130	1	90	<0.5	2	<1	<3	5	110
AUG 08...	1250	22500	75	<10	5	57	<0.5	<1	<1	<3	6	7

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 18...	<5	16	12	<0.1	<10	2	<1	<1.0	870	<6	4
DEC 20...	--	--	--	--	--	--	--	--	--	--	--
FEB 28...	<5	8	6	<0.1	<10	1	<1	1.0	390	<6	3
MAY 18...	--	--	--	--	--	--	--	--	--	--	--
JUN 07...	<1	16	8	<0.1	<10	2	<1	<1.0	860	<6	17
AUG 08...	<1	7	2	<0.1	<10	2	<1	<1.0	360	<6	3

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1988 TO SEPTEMBER 1989

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. 1988	6872	1180	673	12500	210	3860	130	2460	270
NOV. 1988	4528	1100	627	7670	190	2300	120	1500	260
DEC. 1988	21477	1720	984	57100	360	20800	200	11500	330
JAN. 1989	7688	1040	593	12300	180	3770	120	2420	240
FEB. 1989	33184	632	357	31900	91	8140	69	6160	170
MAR. 1989	31759	658	371	31800	96	8260	72	6150	170
APR. 1989	49258	621	350	46600	89	11800	68	8980	170
MAY 1989	362614	1110	633	620000	200	197400	120	122400	250
JUNE 1989	525630	1020	581	825000	170	242800	110	161400	250
JULY 1989	69240	1000	567	106000	160	30700	110	20700	240
AUG. 1989	62890	807	457	77600	130	21400	89	15100	200
SEPT 1989	25288	1120	635	43400	190	13100	120	8510	260
TOTAL	1200428	**	**	1871000	**	564000	**	367000	**
WTD.AVG.	3289	1020	577	**	170	**	110	**	240

## BRAZOS RIVER MAIN STEM

301

08098290 BRAZOS RIVER NEAR HIGHBANK, TX--Continued  
(National stream-quality accounting network)

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	1540	1280	1470	1190	1140	1160	1110	1010	1050	1760	1690	1710
2	1340	995	1190	1200	1160	1180	1020	1000	1010	1730	1680	1720
3	986	947	971	1210	1150	1180	1010	950	979	1720	1680	1700
4	963	918	935	1190	1140	1160	1190	890	976	1710	1650	1690
5	1030	953	983	1160	1130	1150	1660	950	1170	1690	1650	1680
6	1110	1040	1080	1170	1120	1140	1970	1730	1910	1690	1640	1670
7	1160	1110	1130	1200	1120	1160	1980	1920	1970	1680	1640	1660
8	1210	1160	1180	1190	1120	1160	1990	1890	1960	1650	1610	1630
9	1220	1190	1200	1150	980	1050	1980	1930	1950	1630	1550	1610
10	1240	1210	1220	1000	970	986	1960	1870	1910	1590	1550	1570
11	1240	1220	1230	1020	980	1000	1920	1870	1890	1550	1510	1530
12	1250	1230	1240	1040	1000	1030	1890	1450	1770	1530	1470	1500
13	1350	1230	1290	1060	1030	1050	1610	1440	1530	1490	1440	1470
14	1240	1100	1150	1090	1050	1070	1630	1570	1620	1440	1390	1420
15	1110	1090	1090	1090	1040	1070	1590	1500	1530	1430	1390	1410
16	1100	1080	1090	1090	1060	1070	1780	1590	1670	1410	1370	1400
17	1120	956	1080	1100	1050	1070	1870	1790	1830	1420	1380	1410
18	1120	1090	1100	1110	1090	1100	1930	1850	1890	1440	1380	1420
19	1120	1020	1100	1130	1080	1100	1950	1920	1930	1460	1420	1450
20	1110	1030	1080	1130	1100	1110	1950	1860	1920	1430	1370	1400
21	1130	1090	1110	1150	1130	1140	1920	1870	1900	1430	1380	1410
22	1150	1060	1110	1160	1130	1150	1890	1830	1870	1450	1400	1420
23	1140	1040	1090	1160	1130	1150	1860	1790	1840	1430	1380	1420
24	1130	1040	1100	1160	1150	1150	1840	1770	1810	1430	1320	1390
25	1230	1100	1140	1190	1160	1170	1830	1800	1820	1360	1290	1330
26	1220	1190	1210	1200	1170	1190	1840	1770	1810	1320	1240	1280
27	1240	1100	1180	1190	1150	1180	1810	1730	1780	1290	1160	1270
28	1250	1150	1210	1220	1150	1190	1790	1760	1770	1210	976	1120
29	1240	1080	1170	1230	1160	1190	1790	1740	1780	1140	566	923
30	1260	1190	1240	1170	1090	1150	1780	1730	1760	764	566	677
31	1260	1120	1170	---	---	---	1760	1680	1730	696	676	688
MONTH	1540	918	1150	1230	970	1120	1990	890	1690	1760	566	1420
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	722	685	700	544	513	532	---	---	520	---	---	1130
2	701	683	694	532	511	522	---	---	510	---	---	1170
3	717	662	687	560	529	537	---	---	510	---	---	1190
4	726	677	700	555	528	542	---	---	520	---	---	1130
5	694	649	667	565	545	556	---	---	560	---	---	1030
6	784	702	731	591	562	577	---	---	560	---	---	920
7	864	774	816	637	580	600	---	---	520	---	---	600
8	957	863	903	595	527	563	---	---	530	---	---	570
9	988	947	975	630	584	605	---	---	560	---	---	600
10	1000	984	990	800	611	666	---	---	600	---	---	660
11	1020	993	1010	1280	828	1080	---	---	660	---	---	730
12	1040	1010	1030	1320	1250	1280	---	---	700	---	---	800
13	1050	1040	1040	1310	1100	1190	---	---	740	---	---	850
14	1070	1040	1050	1100	971	1040	---	---	770	---	---	820
15	1060	1030	1050	980	929	942	---	---	780	---	---	770
16	1070	1040	1050	928	860	895	---	---	790	---	---	780
17	1050	875	985	887	856	878	---	---	790	---	---	660
18	864	610	718	882	814	853	---	---	810	---	---	450
19	630	554	588	831	773	806	---	---	820	682	394	490
20	544	532	536	808	769	790	---	---	780	1170	717	993
21	542	521	537	786	737	763	---	---	760	1380	1170	1290
22	560	538	544	746	715	731	---	---	720	1550	1360	1460
23	558	546	551	740	713	725	---	---	700	1510	1420	1480
24	575	524	539	746	726	734	---	---	730	1560	1440	1510
25	605	501	539	760	722	745	---	---	760	1630	1570	1600
26	520	500	508	763	717	739	---	---	790	1590	1560	1570
27	519	498	512	742	713	725	---	---	840	1570	1530	1560
28	526	507	521	738	577	694	---	---	870	1550	1530	1550
29	---	---	---	696	556	623	---	---	970	1540	1490	1530
30	---	---	---	---	---	570	---	---	1050	1500	1430	1470
31	---	---	---	---	---	550	---	---	---	1440	1330	1400
MONTH	1070	498	756	1320	511	744	---	---	707	1630	394	1060

## BRAZOS RIVER MAIN STEM

08098290 BRAZOS RIVER NEAR HIGHBANK, TX--Continued  
(National stream-quality accounting network)

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	1400	733	1310	986	933	955	---	---	1040	1160	1130	1150
2	---	---	1300	1070	975	1030	---	---	1000	1200	1140	1170
3	---	---	1300	1030	984	1020	---	---	1020	1220	1190	1200
4	1340	1200	1280	995	888	957	---	---	1080	1240	1220	1230
5	1360	1220	1320	972	899	939	---	---	1100	1230	1150	1190
6	1330	1270	1300	992	931	972	---	---	1070	1160	1120	1130
7	1280	1200	1240	---	---	940	---	---	740	1130	1110	1120
8	1290	1260	1270	---	---	940	---	---	510	1160	1120	1130
9	1250	809	1040	---	---	960	480	370	399	1160	1120	1140
10	1070	864	1000	1010	934	979	750	480	595	1140	1090	1110
11	1120	1030	1070	1000	890	929	880	730	800	1130	1100	1110
12	1170	1130	1150	988	927	959	720	600	664	1130	1070	1110
13	1200	1170	1180	1000	928	967	730	660	708	1190	1130	1150
14	1160	857	983	986	924	953	790	610	703	1160	1010	1110
15	933	572	768	987	897	952	890	780	826	1160	1080	1120
16	908	766	844	992	913	962	890	800	845	---	---	1120
17	908	884	901	999	909	971	920	780	856	---	---	1100
18	949	873	907	1020	992	1010	910	800	858	1440	---	1090
19	958	937	944	1020	987	1000	920	870	897	1110	1060	1090
20	969	924	948	1040	1000	1030	1030	820	889	1090	1020	1060
21	946	912	927	1070	1020	1050	1070	1000	1040	1050	1020	1030
22	944	856	900	1110	1050	1080	1080	1020	1060	1090	1040	1060
23	856	823	839	1150	1060	1100	1070	1000	1050	1060	1030	1040
24	886	715	845	1160	1130	1150	1100	1000	1060	1050	1030	1040
25	896	874	879	1160	1040	1090	1120	1100	1110	1060	1030	1040
26	906	873	887	1090	1010	1050	1140	1110	1120	1130	1060	1100
27	916	893	902	1200	1080	1140	1140	1120	1130	1130	1110	1120
28	978	904	925	1200	1140	1170	1160	1130	1150	1120	1080	1100
29	1010	956	993	---	---	1120	1160	1130	1140	1120	1090	1100
30	1010	944	971	---	---	1100	1140	1130	1140	1140	1110	1120
31	---	---	---	---	---	1080	1160	1130	1140	---	---	---
MONTH	1400	572	1040	1200	888	1020	1160	370	927	1440	1010	1110

## 08099400 PROCTOR LAKE NEAR PROCTOR, TX

LOCATION.--Lat 31°58'07", long 98°29'09", Comanche County, Hydrologic Unit 12070201, in intake structure at Proctor Lake on Leon River, 2.0 mi upstream from U.S. Highways 67 and 377, 3.5 mi west of Proctor, and 228.1 mi upstream from mouth.

DRAINAGE AREA.--1,259 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1963 to current year. Prior to October 1970, published as Proctor Reservoir.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to May 28, 1963, non-recording gage at same site and datum.

REMARKS.--The lake is formed by a reinforced concrete gated structure and rolled earthfill dam, total length 13,460 ft. The lake was operated as a detention basin from Jan. 30 to July 5, 1963. The gates were closed July 6, 1963, but the lake was operated to elevation 1,156.0 ft until construction was completed. Deliberate impoundment began Sept. 30, 1963. The spillway is a gated concrete gravity structure located on the left bank, with an ogee weir section and stilling basin. The spillway is controlled by eleven 40.0- by 35.0-foot tainter gates. The spillway was designed to discharge 431,800 ft<sup>3</sup>/s at an elevation of 1,201.0 ft. The lake is operated for flood control and water conservation. Inflow is partly regulated by one major reservoir (see station 08099000). Inflow is also affected at times by discharge from the flood-detention pools of 23 floodwater-retarding structures with a combined detention capacity of 43,690 acre-ft. These structures control runoff from 172 mi<sup>2</sup> in the Leon River and Rush Creek drainage basins. The capacity table is based on a survey made in 1946. Borrow is not included in capacity totals. Gage-height telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam.....	1,206.0	-
Design flood.....	1,201.0	433,000
Top of gates.....	1,197.0	374,200
Crest of spillway (top of conservation pool).....	1,162.0	59,400
Lowest gated outlet (invert).....	1,128.0	68

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 174,800 acre-ft June 12, 1986 (elevation, 1,179.33 ft); minimum since first filling of lake, 18,900 acre-ft Oct. 4, 1984 (elevation, 1,149.37 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 138,000 acre-ft June 18 at 0200 hours (elevation, 1,174.91 ft); minimum, 45,970 acre-ft Jan. 11 (elevation, 1,158.84 ft).

Capacity table (elevation, in feet, and total contents, in acre-feet)

1,158.0	42,790	1,164.0	69,060	1,170.0	103,590
1,160.0	50,620	1,166.0	79,660	1,172.0	116,940
1,162.0	59,390	1,168.0	91,170	1,175.0	138,710

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50040	48060	46750	46320	46440	50000	50090	49920	90340	111600	79660	71210
2	49960	47980	46750	46400	46980	49960	50130	50000	89680	109500	81210	70650
3	49920	47940	46710	46360	46750	49960	50130	50040	89090	108100	86110	70080
4	49840	47900	46670	46320	46520	50130	50040	50620	89560	106300	86510	69370
5	49390	47820	46670	46280	46400	50090	49960	51120	89680	104600	86110	68710
6	49430	47740	46590	46240	46360	50090	49880	51500	89560	102800	85590	68100
7	49550	47660	46830	46240	46320	50090	49840	51580	89440	101600	85590	67350
8	49510	47620	46830	46200	46280	50040	49800	51670	89150	99700	85010	66710
9	49470	47620	46790	46160	46240	50040	49720	51630	88680	98080	84380	66310
10	49430	47540	46790	46160	46200	50000	49680	51540	89560	96460	83750	65670
11	49310	47460	46830	46160	46160	50000	49550	51460	90400	94870	83180	65330
12	49230	47460	46750	46320	46200	49960	49470	51370	91050	93400	82560	64740
13	49100	47380	46670	46320	46200	49960	50000	51960	94500	92380	82000	65570
14	46590	47340	46670	46320	46200	49960	50460	52300	123500	91770	81380	66810
15	48860	47300	46670	46200	46630	49880	50540	52340	134000	91050	81440	67250
16	48740	47220	46630	46160	46950	49840	50540	52770	137600	90400	81320	67000
17	48660	47060	46550	46160	48540	49800	50540	68910	137900	89620	80770	66610
18	48660	47100	46520	46160	49590	49800	50620	89270	136900	88850	80210	66110
19	48540	47420	46480	46200	49840	49720	50620	94560	135200	88150	79600	65620
20	48420	47340	46520	46160	50130	49880	50540	96030	133300	87390	79000	65080
21	48340	47260	46480	46130	50090	49840	50460	96460	131400	86690	78340	64600
22	48260	47180	46520	46090	50040	49760	50420	96830	129200	85990	77740	64020
23	48220	47140	46550	46090	50000	49680	50290	96530	127200	85530	77140	63440
24	48140	47100	46480	46050	49960	49590	50250	95720	125200	84720	76490	62820
25	48020	47060	46360	46160	50000	49590	50210	94870	123200	84040	75790	62290
26	47940	47020	46320	46130	50000	49590	50130	94560	121300	83470	75150	61730
27	47900	46980	46440	46160	50000	49760	50130	93890	119300	82900	74510	61160
28	47900	46950	46400	46520	50000	50130	50090	93220	117400	82340	73930	60830
29	47820	46870	46320	46520	---	50250	50090	92320	115400	81770	73240	60690
30	47900	46830	46360	46480	---	50210	50090	91770	113500	80990	72560	60600
31	48100	---	46360	46440	---	50170	---	90990	---	80210	71890	---
MAX	50040	48060	46830	46520	50130	50250	50620	96830	137900	111600	86510	71210
MIN	46590	46830	46320	46050	46160	49590	49470	49920	88680	80210	71890	60600
(↑)	1159.38	1159.06	1158.94	1158.96	1159.85	1159.89	1159.87	1167.97	1171.50	1166.10	1164.55	1162.26
(Φ)	-1900	-1270	-470	+80	+3560	+170	-80	+40900	+22510	-33290	-8320	-11290
CAL YR 1988	MAX 105500	MIN 46320	(Φ) -8530									
WTR YR 1989	MAX 137900	MIN 46050	(Φ) +10560									

(↑) Elevation, in feet, at end of month.  
(Φ) Change in contents, in acre-feet.



## BRAZOS RIVER BASIN

08099500 LEON RIVER NEAR HASSE, TX

LOCATION.--Lat 31°57'28", long 98°27'32", Comanche County, Hydrologic Unit 12070201, on left bank 110 ft left and 70 ft upstream from left upstream end of bridge on U.S. Highways 67 and 377, 500 ft upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 0.3 mi upstream from Walnut Creek, 2.0 mi downstream from Proctor Lake, 2.1 mi northeast of Hasse, and 225.2 mi upstream from mouth.

DRAINAGE AREA.--1,261 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1939 to current year.

Water-quality records.--Chemical and biochemical analyses: October 1980 to September 1982.

REVISED RECORDS.--WSP 1342: 1952. WSP 1392: 1952. WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,115.01 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good except those for December to March, which are fair. Since October 1963, flow has been regulated by Proctor Lake (station 08099400) 2.0 mi upstream. There are numerous diversions above station for municipal, steam powerplant operation and other uses. Gage-height telemeter at station.

AVERAGE DISCHARGE.--24 years (water years 1940-63), prior to completion of Proctor Lake, 151 ft<sup>3</sup>/s (109,400 acre-ft/yr); 26 years (water years 1964-89); regulated, 95.6 ft<sup>3</sup>/s (69,260 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,500 ft<sup>3</sup>/s May 24, 1952 (gage height, 21.49 ft); maximum gage height, 21.72 ft Oct. 4, 1959; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1858, occurred in May 1908, from information by local resident. At a site about 2.5 mi upstream, flood of May 1908 was 9.1 ft higher than that of May 24, 1952, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,270 ft<sup>3</sup>/s June 11 at 0400 hours (gage height, 12.08 ft); minimum daily, 0.71 ft<sup>3</sup>/s Oct. 28, 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.3	1.1	.92	2.4	1.9	7.4	5.4	2.0	279	939	267	249
2	7.7	.72	.92	1.1	1.8	7.4	5.6	2.1	273	925	281	241
3	6.8	.88	1.1	1.1	1.6	7.6	5.4	1.9	273	912	278	237
4	7.6	1.0	.99	1.0	1.2	8.2	5.1	1.9	282	899	284	240
5	7.5	1.2	1.1	1.0	1.5	7.8	4.9	2.5	260	883	288	241
6	7.3	1.1	1.2	1.2	1.4	7.6	4.8	1.5	260	868	283	241
7	7.4	1.4	1.9	1.2	1.6	7.4	4.3	1.3	263	854	283	240
8	6.9	1.5	2.4	1.2	1.5	7.5	4.4	1.2	269	842	280	240
9	7.1	1.1	1.8	1.1	2.1	7.3	4.3	1.0	266	831	276	236
10	11	1.2	2.0	1.2	2.9	7.5	4.5	.92	298	812	277	233
11	19	1.0	1.7	1.3	3.1	7.4	4.5	.87	514	795	274	235
12	17	1.4	1.5	1.5	3.3	7.0	4.5	.95	24	779	272	235
13	15	1.2	1.6	1.8	3.7	6.6	5.4	2.6	33	627	267	237
14	17	1.2	1.8	1.3	3.5	6.6	5.6	2.4	90	345	269	236
15	17	1.3	1.6	1.5	4.9	6.3	4.5	1.8	194	332	268	233
16	17	1.5	1.7	1.4	4.3	6.3	4.3	2.6	555	324	270	233
17	17	1.3	1.8	1.5	17	6.2	4.0	38	1130	321	270	237
18	15	1.4	1.7	1.7	8.5	6.1	3.7	10	1150	316	265	238
19	15	2.2	1.6	1.9	7.6	5.9	3.7	27	1140	305	259	238
20	16	1.1	1.9	1.9	7.9	6.3	3.4	33	1120	301	259	238
21	16	.75	2.2	2.1	7.7	6.5	3.4	33	1110	297	260	238
22	16	.98	2.0	1.8	7.5	6.9	3.1	33	1090	294	258	238
23	16	1.0	2.0	2.0	7.3	7.1	2.8	220	1070	292	260	234
24	16	1.0	2.1	2.3	7.0	7.2	2.7	467	1050	287	257	235
25	13	.91	2.0	2.5	7.3	7.3	2.5	424	1030	283	252	236
26	7.8	.99	2.0	2.3	7.6	7.5	2.3	307	1010	281	249	235
27	1.8	1.0	2.3	2.2	7.2	7.3	2.2	299	999	280	246	233
28	.71	.85	2.0	5.5	7.3	9.6	2.0	296	982	278	253	155
29	.71	1.0	2.0	2.0	---	7.6	2.1	302	965	275	251	51
30	.83	1.1	2.1	1.9	---	6.7	2.1	293	954	273	250	27
31	2.0	---	2.2	1.7	---	5.9	---	290	---	272	251	---
TOTAL	332.45	34.38	54.13	54.6	140.2	220.0	117.5	3099.54	18933	16322	8257	6640
MEAN	10.7	1.15	1.75	1.76	5.01	7.10	3.92	100	631	527	266	221
MAX	19	2.2	2.4	5.5	17	9.6	5.6	467	1150	939	288	249
MIN	.71	.72	.92	1.0	1.2	5.9	2.0	.87	24	272	246	27
AC-FT	659	68	107	108	278	436	233	6150	37550	32370	16380	13170
CAL YR 1988	TOTAL	27350.09	MEAN	74.7	MAX	1220	MIN	.71	AC-FT	54250		
WTR YR 1989	TOTAL	54204.80	MEAN	149	MAX	1150	MIN	.71	AC-FT	107500		

## BRAZOS RIVER BASIN

305

08100000 LEON RIVER NEAR HAMILTON, TX

LOCATION.--Lat 31°47'19", long 98°07'16"; Hamilton County, Hydrologic Unit 12070201, at downstream side of bridge on U.S. Highway 281, 2.2 mi upstream from Mesquite Creek, 3.6 mi downstream from Bear Creek, 5.9 mi north of Hamilton, and 172.9 mi upstream from mouth.

DRAINAGE AREA.--1,891 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1925 to September 1931, September 1960 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 955.38 ft above National Geodetic Vertical Datum of 1929. Jan. 7, 1925, to Sept. 30, 1931, nonrecording gage 1.4 mi downstream at datum 1.87 ft higher. Sept. 1 to Nov. 22, 1960, nonrecording gage at same site and at 5.00-foot higher datum. Nov. 22, 1960, to Sept. 30, 1972, recording gage at same site and at 5.00-foot higher datum.

REMARKS.--No estimated daily discharges. Records good. Since 1960, at least 67 percent of the drainage area above this station has been regulated by Proctor Lake (station 08099400) 54 miles upstream and by several other smaller reservoirs. There are numerous diversions above station for irrigation, municipal supply, and for industrial uses. Flow is affected at times by discharge from the flood-detention pools of 14 floodwater-retarding structures with a combined detention capacity of 11,610 acre-ft. These structures control runoff from 43.9 mi<sup>2</sup> in the northeast tributaries drainage basin. Several observations of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--6 years (water years 1926-31) unregulated, 130 ft<sup>3</sup>/s (94,180 acre-ft/yr); 29 years (water years 1961-89) regulated, 146 ft<sup>3</sup>/s (105,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,600 ft<sup>3</sup>/s Sept. 9, 1962 (gage height, 31.93 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1858, 38.4 ft in May 1908 and December 1913; flood in September 1911 reached a stage of 37.0 ft, all at present site and datum, from information by local residents. The flood in October 1959 reached a stage of 34.1 ft, present datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,200 ft<sup>3</sup>/s Mar. 28 at 1200 hours (gage height, 31.15 ft); minimum daily, 1.1 ft<sup>3</sup>/s Oct. 7-11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	4.8	8.8	7.1	12	4.0	138	38	272	984	249	218
2	6.5	3.0	8.2	5.4	8.8	4.0	98	33	269	960	250	215
3	2.3	2.6	8.0	4.8	7.9	3.9	79	213	271	929	403	205
4	1.7	2.5	8.2	5.1	6.8	3.8	63	118	306	906	306	203
5	1.4	3.2	8.8	5.2	7.3	3.8	51	205	333	887	274	204
6	1.2	3.1	9.1	5.3	6.3	3.5	47	180	292	865	262	206
7	1.1	3.2	9.0	5.2	5.7	3.3	44	89	279	843	261	205
8	1.1	3.0	9.1	4.6	5.6	3.6	42	59	272	828	276	203
9	1.1	2.9	10	7.8	5.6	3.6	38	40	277	820	281	203
10	1.1	2.8	14	2.5	5.6	3.5	34	32	385	801	269	209
11	1.1	2.7	17	3.2	5.6	3.3	33	27	6870	781	269	221
12	1.2	2.7	20	3.7	5.6	3.3	33	26	5360	760	259	220
13	1.5	3.1	18	3.8	5.7	3.3	39	24	2220	736	247	238
14	4.3	5.3	20	3.3	5.6	3.3	219	26	1630	686	245	273
15	4.7	5.1	22	3.5	7.3	3.1	183	38	1300	395	252	257
16	2.4	3.5	19	3.8	9.2	2.8	113	29	802	329	251	248
17	1.9	4.1	17	5.5	22	2.3	79	1650	715	319	264	244
18	2.2	5.0	16	5.3	79	2.3	63	771	985	307	265	244
19	2.2	9.6	16	4.6	135	2.5	56	365	1180	295	259	242
20	7.6	9.3	15	3.8	43	2.5	51	153	1250	287	252	241
21	9.4	7.6	14	3.5	16	2.5	47	121	1230	279	249	239
22	10	6.9	14	3.7	9.1	3.3	42	107	1200	272	243	236
23	11	6.7	15	3.6	6.2	2.9	38	95	1170	266	234	233
24	13	7.5	12	4.1	5.1	3.1	37	103	1160	269	232	236
25	12	8.0	4.4	4.4	4.5	3.5	36	342	1140	266	231	231
26	11	8.0	6.0	4.1	4.2	3.8	35	361	1120	265	219	224
27	13	7.1	6.7	4.9	4.0	3.7	34	302	1100	261	217	223
28	10	7.1	3.5	11	4.0	6080	34	287	1060	260	215	222
29	7.4	8.1	3.9	10	---	1570	30	283	1030	256	216	212
30	4.4	8.8	5.0	8.1	---	418	40	281	1010	250	221	112
31	5.9	---	6.3	18	---	251	---	277	---	253	219	---
TOTAL	169.7	157.3	364.0	168.9	442.7	8407.5	1876	6675	36488	16615	7890	6667
MEAN	5.47	5.24	11.7	5.45	15.8	271	62.5	215	1216	536	255	222
MAX	16	9.6	22	18	135	6080	219	1650	6870	984	403	273
MIN	1.1	2.5	3.5	2.5	4.0	2.3	30	24	269	250	215	112
AC-FT	337	312	722	335	878	16680	3720	13240	72370	32960	15650	13220
CAL YR 1988	TOTAL	44909.52	MEAN	123	MAX	8620	MIN	.95	AC-FT	89080		
WTR YR 1989	TOTAL	85921.1	MEAN	235	MAX	6870	MIN	1.1	AC-FT	170400		

## BRAZOS RIVER BASIN

08100500 LEON RIVER AT GATESVILLE, TX

LOCATION.--Lat 31°25'58", long 97°45'42", Coryell County, Hydrologic Unit 12070201, on right bank at upstream side of county road bridge, 800 ft downstream from U.S. Highway 84 bridge in Gatesville, 0.3 mi downstream from Dodds Creek, 5.2 mi upstream from Cottonwood Creek, and 99.0 mi upstream from mouth.

DRAINAGE AREA.--2,342 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1950 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 723.85 ft above National Geodetic Vertical Datum of 1929. Oct. 1, 1950, to Feb. 8, 1951, nonrecording gage; Feb. 9, 1951, to Jan. 21, 1969, water-stage recorder; all at site 800 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Some upstream regulation by Proctor Lake (08099400) and other smaller reservoirs. Flow at times is slightly affected by discharge from 18 floodwater-retarding structures with a combined detention capacity of 12,600 acre-ft. These structures control runoff from 47.0 mi<sup>2</sup> in the northeast tributaries and Pecan Creek drainage basins. There are numerous diversions above station for irrigation, municipal supply, and oil-field operation. The city of Hamilton, located about 70 mi upstream from this station, diverts flow from the river for municipal use and returned sewage effluent to the stream. The city of Gatesville obtains all of their municipal water supply from ground-water wells, but discharges sewage effluent back to the Leon River downstream from this station. Several observations of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--39 years, 234 ft<sup>3</sup>/s (169,500 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,200 ft<sup>3</sup>/s Oct. 4, 1959 (gage height, 34.14 ft), from rating curve extended above 41,000 ft<sup>3</sup>/s; no flow at times in 1951-52, 1954-55, 1971, 1978-79, and 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1854, about 35 ft in May 1908, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,670 ft<sup>3</sup>/s May 17 at 1200 hours (gage height, 25.54 ft); minimum daily, 5.1 ft<sup>3</sup>/s Nov. 10, 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	231	16	7.1	8.0	33	47	501	114	337	1030	259	211
2	132	15	6.9	7.9	26	45	337	76	330	1000	330	211
3	55	14	7.1	7.6	37	45	246	490	324	983	352	208
4	36	13	7.1	6.5	29	49	198	438	323	952	405	205
5	20	11	7.0	6.4	51	54	163	606	334	930	413	198
6	14	9.2	6.3	6.9	34	47	138	518	405	910	328	197
7	11	8.7	5.8	7.5	26	46	122	320	377	888	288	197
8	10	7.3	6.0	7.1	21	45	114	215	340	867	297	199
9	9.4	6.8	7.7	6.4	19	43	105	144	327	879	384	199
10	8.3	5.1	14	6.4	19	42	96	112	324	847	296	201
11	7.6	6.1	13	6.8	18	40	87	87	438	817	291	202
12	7.5	6.1	11	6.8	17	39	82	75	2740	793	279	220
13	7.1	6.8	14	7.5	17	38	84	150	4150	772	275	243
14	7.3	6.0	14	9.9	17	38	110	111	5790	753	269	234
15	7.1	6.3	12	8.3	17	37	146	77	4930	725	260	246
16	7.1	6.5	9.8	7.4	51	36	261	73	2260	557	259	277
17	7.1	5.2	8.7	6.7	377	36	199	3570	1150	392	261	251
18	7.1	5.1	8.9	6.4	515	35	151	2720	842	371	257	242
19	6.5	7.7	9.1	8.6	442	34	120	1920	998	350	257	238
20	8.7	9.0	9.0	8.6	233	34	101	714	1170	333	267	237
21	9.3	8.5	10	7.1	209	35	89	394	1260	320	258	235
22	8.8	8.5	11	7.1	126	35	82	267	1250	309	251	232
23	7.8	9.4	11	7.3	86	33	75	223	1220	302	246	227
24	7.6	13	8.8	7.5	69	32	68	192	1190	294	241	223
25	6.9	12	8.0	8.8	60	32	62	165	1170	287	231	224
26	6.4	15	7.9	8.7	56	32	59	242	1150	290	223	226
27	10	11	23	9.1	53	32	56	441	1130	286	223	222
28	11	9.0	21	163	50	923	54	413	1110	289	216	217
29	13	7.3	13	57	---	2640	56	358	1080	277	208	218
30	13	7.1	9.9	65	---	4730	65	348	1050	274	206	217
31	22	---	9.0	50	---	1470	---	341	---	266	209	---
TOTAL	715.6	271.7	317.1	538.3	2708	10824	4027	15914	39499	18343	8539	6657
MEAN	23.1	9.06	10.2	17.4	96.7	349	134	513	1317	592	275	222
MAX	231	16	23	163	515	4730	501	3570	5790	1030	413	277
MIN	6.4	5.1	5.8	6.4	17	32	54	73	323	266	206	197
AC-FT	1420	539	629	1070	5370	21470	7990	31570	78350	36380	16940	13200
CAL YR 1988	TOTAL	49474.2	MEAN	135	MAX	5940	MIN	5.1	AC-FT	98130		
WTR YR 1989	TOTAL	108353.7	MEAN	297	MAX	5790	MIN	5.1	AC-FT	214900		

## BRAZOS RIVER BASIN

307

## 08101000 COWHOUSE CREEK AT PIDCOKE, TX

LOCATION.--Lat 31°17'05", long 97°53'05", Coryell County, Hydrologic Unit 12070202, on left bank 125 ft downstream from bridge on Farm Road 116, 0.1 mi downstream from Bee House Creek, 0.6 mi northeast of Pidcoke, 4.9 mi upstream from Table Rock Creek, and 34.6 mi upstream from mouth.

DRAINAGE AREA.--455 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1950 to current year.

REVISED RECORDS.--WSP 1712: 1955. WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 736.71 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known diversion above station. Several observations of water temperatures were made during the year. Satellite telemeter at station.

AVERAGE DISCHARGE.--39 years, 80.8 ft<sup>3</sup>/s (2.41 in/yr), 58,540 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 66,200 ft<sup>3</sup>/s Oct. 4, 1959 (gage height, 40.1 ft, from floodmark); from rating curve extended above 30,000 ft<sup>3</sup>/s on basis of slope-area measurement of 55,800 ft<sup>3</sup>/s; no flow at times. Maximum stage since at least 1882, that of Oct. 4, 1959, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 28	0900	5,760	14.27	May 17	0930	*21,100	*28.44
Mar. 28	1630	6,780	15.46	June 11	1500	9,110	17.95
May 13	1900	5,000	13.32				

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	.27	.00	.00	2.5	13	64	6.0	28	26	e2.4	e.23
2	2.7	.03	.00	.00	1.9	13	44	5.6	26	24	e6.3	e.25
3	.18	.00	.00	.00	5.3	13	37	378	25	21	e80	e.22
4	.01	.00	.00	.00	2.8	17	31	67	23	18	27	e.23
5	.00	.00	.00	.00	1.8	18	27	249	42	16	11	e.25
6	.00	.00	.00	.00	1.4	16	26	88	27	15	e8.3	e.28
7	.00	.00	.00	.00	1.4	14	24	38	24	13	e8.5	e.25
8	.00	.00	.00	.00	1.5	14	23	29	26	13	e7.9	e.22
9	.00	.00	.00	.00	1.4	14	19	23	21	12	e7.3	e.22
10	.00	.00	.17	.00	1.2	13	18	18	20	20	e6.7	e.19
11	.00	.00	.13	.00	1.2	12	16	16	3190	18	e6.1	e.18
12	.00	.00	.03	.00	1.3	9.9	16	15	332	13	e5.2	e.21
13	.00	.00	.00	.00	1.2	8.7	18	726	135	11	e4.3	e.22
14	.00	.00	.00	.01	1.2	8.5	31	229	589	9.5	e3.8	e.31
15	.00	.00	.00	.02	1.0	7.9	28	51	547	9.5	e3.5	.38
16	.00	.00	.00	.00	2.2	7.4	24	35	200	9.5	e3.1	.40
17	.00	.00	.00	.00	90	7.4	24	4970	127	e9.3	e2.6	.36
18	.00	.00	.00	.00	191	7.3	22	629	94	e9.1	e2.4	.26
19	.00	.00	.00	.23	50	6.8	19	235	76	e8.6	e2.1	.21
20	.00	.00	.00	.41	35	6.6	17	146	63	e7.6	e1.8	.18
21	.00	.00	.00	.18	29	8.9	16	102	53	e6.1	e1.5	.16
22	.00	.00	.00	.16	24	7.4	14	80	46	e5.2	e1.2	.15
23	.00	.00	.00	.15	20	7.7	12	62	41	e4.5	e1.0	.13
24	.00	.00	.00	.14	18	7.4	11	54	38	e3.6	e.79	.07
25	.00	.00	.00	.21	18	7.4	9.5	47	37	3.3	e.63	.01
26	.00	.12	.00	.42	17	7.4	8.8	42	37	3.2	e.56	.00
27	.00	.02	.00	.25	16	7.5	8.1	39	47	e3.1	e.51	.00
28	.00	.00	.01	34	14	2680	8.1	37	35	e2.7	e.45	.00
29	.00	.00	.00	14	---	458	23	35	31	e2.5	e.33	.00
30	.00	.00	.00	6.1	---	189	8.2	32	28	e2.5	e.26	.00
31	1.7	---	.00	3.2	---	100	---	29	---	e2.5	e.24	---
TOTAL	8.99	0.44	0.34	59.48	551.3	3708.2	646.7	8512.6	6008	322.3	207.77	5.57
MEAN	.29	.015	.011	1.92	19.7	120	21.6	275	200	10.4	6.70	.19
MAX	4.4	.27	.17	34	191	2680	64	4970	3190	26	80	.40
MIN	.00	.00	.00	.00	1.0	6.6	8.1	5.6	20	2.5	.24	.00
AC-FT	18	.9	.7	118	1090	7360	1280	16880	11920	639	412	11
CFSM	.00	.00	.00	.00	.04	.26	.05	.60	.44	.02	.01	.00
IN.	.00	.00	.00	.00	.05	.30	.05	.70	.49	.03	.02	.00

CAL YR 1988	TOTAL	3064.50	MEAN	8.37	MAX	569	MIN	.00	AC-FT	6080	CFSM	.02	IN.	.25
WTR YR 1989	TOTAL	20031.69	MEAN	54.9	MAX	4970	MIN	.00	AC-FT	39730	CFSM	.12	IN.	1.64

e Estimated.



## BRAZOS RIVER BASIN

08102000 BELTON LAKE NEAR BELTON, TX

LOCATION.--Lat 31°06'22", long 97°28'28", Bell County, Hydrologic Unit 12070201, in intake structure at Belton Dam on Leon River, 1.6 mi upstream from bridge on State Highway 317, 3.5 mi north of Belton, 8.9 mi upstream from Nolan Creek, and 16.7 mi upstream from mouth.

DRAINAGE AREA.--3,531 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1954 to current year. Prior to October 1970, published as Belton Reservoir.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Feb. 20, 1955, nonrecording gage at present site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam 5,524 ft long, including a 1,300-foot uncontrolled broad-crested spillway in a saddle near left end of dam and a 418-foot-long dike. Deliberate impoundment began Mar. 8, 1954, and the dam was completed in December 1954. The lake was built for flood control and conservation storage. The controlled outlet works consist of a 22.0-foot-diameter conduit that is controlled by three 7.0- by 22.0-foot broome-type gates. The service outlet consists of a 36- by 36-inch gated outlet that discharges into the flood-control conduit. Beginning January 1976, the capacity table is based on a sedimentation survey made in 1966. There are many small diversions upstream for irrigation, municipal supply, and oil field operations. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08100500. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam.....	662.0	-
Design flood.....	656.9	-
Crest of spillway.....	631.0	1,086,000
Top of conservation pool.....	594.0	442,000
Service outlet (invert).....	540.0	51,240
Lowest gated outlet (invert).....	483.0	0

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 870,300 acre-ft June 6, 1957 (elevation, 620.45 ft); minimum since initial filling, 113,400 acre-ft Dec. 16, 1956 (elevation, 553.06 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 511,800 acre-ft May 23 at 0300 hours (elevation, 599.36 ft); minimum, 369,600 acre-ft Jan. 18 (elevation, 587.82 ft).

Capacity table (elevation, in feet, and total contents, in acre-feet)

587.0	360,700	591.0	405,800	597.0	480,400
589.0	382,800	594.0	442,000	600.0	520,500

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	384500	378100	373300	371200	380500	399900	436700	445700	469100	452000	449900	445800
2	384400	378000	373100	371100	381200	400100	438400	445200	466000	450900	451200	445700
3	384300	377600	372800	371100	381300	400700	439300	447000	462800	450100	451200	445600
4	384000	377500	372600	371000	381200	401000	440000	448700	460000	449000	451100	445600
5	383900	377200	372400	370700	381000	401300	440200	451100	457700	448400	450700	445300
6	383600	376800	372200	370600	380800	400600	440600	452500	454800	449000	450400	445300
7	383300	376600	372700	370700	380600	400600	440700	453400	454000	450200	452600	444800
8	383000	376300	373100	370500	380600	400600	441200	453400	453000	450500	451900	444600
9	382800	376100	373000	370400	380500	400700	441600	453100	453000	451000	451100	444600
10	382600	375900	373200	370400	380300	400700	441500	452500	452500	451500	450200	444600
11	382200	375800	373400	370300	380400	400700	441200	451800	460700	451900	449600	444300
12	382100	375600	373300	370300	380500	400400	441600	451000	461900	452100	449400	444200
13	381800	375400	373100	370500	380800	400600	442400	453500	466300	452400	448900	444800
14	380500	375100	373000	370300	381000	401000	442600	455600	480400	452900	448700	444600
15	381000	374900	373000	370200	381300	401100	442900	455000	490900	453100	448400	444500
16	380600	374600	372800	370100	384400	400900	443100	454500	497000	453300	448100	444300
17	380300	374300	372500	370000	389100	400900	443600	483400	495400	452900	447700	444300
18	380100	374100	372300	369900	392600	401300	444200	497000	491300	452400	447400	444300
19	379900	374400	372000	370900	394200	401100	444600	504500	486700	451900	447100	444300
20	379600	374200	371800	371100	394900	402000	444700	509000	482100	451000	447100	444300
21	379500	373800	371800	371000	395600	402300	445000	510600	477700	450500	447000	444300
22	379300	373700	371800	370900	396300	402200	445000	511500	473800	450400	447000	444200
23	378800	373500	371700	370700	397000	402200	445200	509800	470800	450000	446800	443800
24	378400	373300	371600	370700	397700	402100	445100	506300	468400	450100	446800	443500
25	378200	373100	371500	373500	398700	402200	445100	501200	465800	449900	446700	443400
26	378000	374400	371400	373500	399000	402500	445200	494900	463500	449700	446600	443100
27	377700	374300	371600	373800	399500	402700	445300	488500	460800	449600	446700	442900
28	377500	374100	371500	377200	399500	411900	445600	483400	458100	449400	446500	442900
29	377300	373800	371300	379500	---	420300	445300	478300	455300	449200	446300	442900
30	377100	373600	371300	380100	---	426200	445700	474900	453000	448900	446200	442900
31	378200	---	371300	380100	---	433300	---	471900	---	448900	446000	---
MAX	384500	378100	373400	380100	399500	433300	445700	511500	497000	453300	452600	445800
MIN	377100	373100	371300	369900	380300	399900	436700	445200	452500	448400	446000	442900
(+)	588.59	588.18	587.97	588.76	590.46	593.30	594.30	596.35	594.88	594.55	594.32	594.07
(Φ)	-5000	-4600	-2300	+8800	+19400	+33800	+12400	+26200	-18900	-4100	-2900	-3100

CAL YR 1988 MAX 467700 MIN 371300 (Φ) -71100  
WTR YR 1989 MAX 511500 MIN 369900 (Φ) +58400

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



BRAZOS RIVER BASIN

309

08102500 LEON RIVER NEAR BELTON, TX

LOCATION.--Lat 31°04'12", long 97°26'28", Bell County, Hydrologic Unit 12070201, on left bank 1,400 ft upstream from bridge on Farm Road 817, 2,000 ft upstream from concrete dam, 1.0 mi upstream from bridge on Interstate Highway 35 and U.S. Highway 81, 1.6 mi northeast of Belton, 3.2 mi downstream from Belton Dam, 5.2 mi upstream from Nolan Creek, and 13.1 mi upstream from mouth.

DRAINAGE AREA.--3,542 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1923 to current year.

Water-quality records.--Chemical and biochemical analyses: March 1961 to August 1964. Water temperature: March 1957 to October 1972. Water temperature recorded continuously from March 1957 to September 1964.

REVISED RECORDS.--WSP 1442: 1925(M), 1935(M), 1936, 1938(M), 1941-42(M), 1944-45(M). WSP 1712: 1937(M). WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder above concrete dam. Datum of gage is 476.68 ft above National Geodetic Vertical Datum of 1929. Prior to May 21, 1931, nonrecording gage.

REMARKS.--No estimated daily discharges. Records good. The city of Temple diverts water from the pool at gage and returns sewage effluent to Little Elm Creek downstream from station. The Brazos River Authority returns sewage effluent to the Leon River downstream from station for their Temple-Belton plant. Flow regulated by Belton Lake (station 08102000) since Mar. 8, 1954. Several observations of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--30 years (water years 1924-53) unregulated, 659 ft<sup>3</sup>/s (477,400 acre-ft/yr); 36 years (water years 1954-89) regulated, 487 ft<sup>3</sup>/s (352,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 56,500 ft<sup>3</sup>/s Apr. 22, 1945 (gage height, 24.41 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in December 1913 reached a stage of 25 ft, and flood in September 1921 reached a stage of 21 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,720 ft<sup>3</sup>/s May 25, 26 at 1400 and 0400 hours, respectively (gage height, 6.92 ft); no flow Feb. 22 to Mar. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	41	15	16	5.5	.00	8.0	.95	1650	1440	99	83
2	71	38	13	15	7.0	.00	10	.92	1640	1430	104	79
3	77	39	13	16	6.2	6.9	8.9	5.6	1650	1440	236	76
4	78	40	14	15	5.2	91	10	25	1650	1440	383	65
5	50	42	12	15	4.1	88	4.6	34	1650	1100	382	60
6	23	24	14	13	4.2	89	4.6	33	1650	459	384	58
7	18	21	14	12	3.1	74	1.8	45	1090	457	398	67
8	18	19	23	11	3.0	75	1.9	133	478	460	475	66
9	21	13	24	17	7.6	55	4.6	383	481	460	562	63
10	23	11	35	15	.80	55	7.1	387	481	461	560	67
11	51	8.6	34	10	2.6	51	7.2	383	491	459	412	70
12	48	7.9	26	8.6	5.6	58	5.3	387	785	459	278	73
13	38	8.6	11	10	4.4	43	8.2	390	1430	460	283	76
14	7.6	5.6	10	8.0	2.4	11	12	388	714	460	287	82
15	3.7	7.6	11	9.1	.52	6.4	9.7	507	106	460	285	78
16	2.6	10	7.0	9.0	23	7.1	9.1	743	1860	453	285	82
17	2.4	10	9.0	8.4	3.7	10	5.9	524	3680	454	286	83
18	1.3	12	11	9.2	1.9	8.3	8.0	62	3680	455	217	77
19	1.4	11	11	8.6	.51	6.4	3.9	59	3680	453	104	77
20	1.3	9.5	11	7.3	.54	7.7	6.2	64	3680	450	106	80
21	1.4	8.3	9.6	5.2	.03	9.5	4.7	62	3670	321	107	80
22	9.2	8.4	12	3.8	.00	11	3.7	67	3660	186	89	83
23	34	8.7	12	6.2	.00	6.9	2.9	1010	3040	189	77	85
24	37	7.6	12	5.0	.00	6.7	2.4	1840	2580	193	82	91
25	39	8.7	13	8.2	.00	6.7	1.5	2890	2590	190	83	89
26	44	11	18	7.9	.00	8.9	1.1	3700	2590	197	81	94
27	60	7.7	16	5.4	.00	8.1	1.2	3690	2580	191	85	81
28	72	13	14	7.4	.00	7.6	1.2	3200	2580	190	80	78
29	64	12	14	10	---	20	1.8	2750	2580	184	82	66
30	36	13	17	7.8	---	7.7	1.5	2160	2210	181	81	47
31	38	---	16	7.3	---	5.3	---	1650	---	146	82	---
TOTAL	1036.9	477.2	471.6	307.4	91.90	841.20	159.0	27573.47	60606	15878	7055	2256
MEAN	33.4	15.9	15.2	9.92	3.28	27.1	5.30	889	2020	512	228	75.2
MAX	78	42	35	17	23	91	12	3700	3680	1440	562	94
MIN	1.3	5.6	7.0	3.8	.00	.00	1.1	.92	106	146	77	47
AC-FT	2060	947	935	610	182	1670	315	54690	120200	31490	13990	4470
CAL YR 1988	TOTAL	59232.85	MEAN	162	MAX	1180	MIN	.00	AC-FT	117500		
WTR YR 1989	TOTAL	116753.67	MEAN	320	MAX	3700	MIN	.00	AC-FT	231600		

## 08103800 LAMPASAS RIVER NEAR KEMPNER, TX

LOCATION.--Lat: 31°04'54", long: 98°00'59", Lampasas County, Hydrologic Unit 12070203, on left bank 800 ft upstream from centerline of U.S. Highway 190, 0.6 mi upstream from Mesquite Creek, 0.8 mi west of Kempner, 0.9 mi downstream from Sulphur Creek, and 72.3 mi upstream from mouth.

DRAINAGE AREA.--818 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1962 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 828.38 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 4, 1967, at site 800 ft downstream at present datum.

REMARKS.--Records good. At times, flow is affected by discharge from the flood-detention pools of 13 floodwater-retarding structures with a combined detention capacity of 38,570 acre-ft. These structures control runoff from 131 mi<sup>2</sup> in the Sulphur and Bennett Creeks drainage basins. There are many small diversions above station for irrigation and municipal supply. The city of Lampasas diverts water upstream from this station and returns sewage effluent to Sulphur Creek, upstream from this station. Several observations of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--27 years, 123 ft<sup>3</sup>/s (89,110 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 71,000 ft<sup>3</sup>/s May 16, 1965 (gage height, 32.98 ft); minimum daily, 1.4 ft<sup>3</sup>/s July 17, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1871, occurred in September 1873 (stage about 45 ft). Flood of May 13, 1957, reached a stage of 37 ft, and flood of Oct. 4, 1959, reached a stage of 34 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 14	0130	4,740	8.33	May 17	0930	*9,680	*11.25

Minimum daily discharge, 8.2 ft<sup>3</sup>/s Sept. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	20	11	18	20	11	30	23	27	29	13	13
2	16	14	11	18	21	11	26	21	27	28	16	16
3	15	15	12	16	22	11	26	23	27	26	15	13
4	15	15	12	17	16	12	24	23	26	31	11	13
5	14	14	13	18	15	12	20	30	26	25	10	14
6	12	13	13	15	15	9.9	19	28	26	23	9.9	16
7	13	14	14	15	15	9.9	18	17	27	23	20	16
8	14	14	20	13	16	9.9	18	22	30	23	24	15
9	14	13	23	13	15	9.9	18	23	18	33	15	14
10	15	14	26	13	15	10	18	27	22	23	14	13
11	15	15	24	13	15	10	16	26	1470	23	13	15
12	13	15	14	14	15	10	15	23	264	23	13	16
13	13	15	13	17	11	10	17	346	151	21	13	18
14	13	14	14	17	11	9.9	27	1040	369	21	13	25
15	13	16	15	15	11	9.9	24	163	161	23	14	12
16	13	17	13	15	16	9.9	23	97	98	23	15	12
17	14	12	14	13	29	10	24	2020	70	23	15	12
18	14	13	17	13	35	11	24	389	56	23	16	11
19	15	23	18	18	20	11	23	144	49	23	18	12
20	14	19	18	28	20	11	20	92	43	25	19	12
21	14	11	19	14	17	e11	20	70	41	18	20	12
22	15	9.9	20	13	13	11	19	56	35	16	18	14
23	15	9.9	20	13	12	10	13	47	32	18	18	15
24	18	14	20	13	11	11	15	42	33	17	18	8.2
25	17	9.0	19	13	11	11	15	37	33	16	26	14
26	17	21	19	15	11	11	15	37	33	15	20	13
27	18	13	20	15	12	11	16	34	33	15	16	12
28	18	11	18	51	11	109	18	31	32	14	15	13
29	18	11	16	34	---	175	19	30	30	14	13	13
30	18	11	15	26	---	58	28	30	29	12	13	11
31	25	---	18	23	---	37	---	29	---	13	13	---
TOTAL	479	425.8	519	549	451	664.3	608	5020	3318	660	486.9	413.2
MEAN	15.5	14.2	16.7	17.7	16.1	21.4	20.3	162	111	21.3	15.7	13.8
MAX	25	23	26	51	35	175	30	2020	1470	33	26	25
MIN	12	9.0	11	13	11	9.9	13	17	18	12	9.9	8.2
AC-FT	950	845	1030	1090	895	1320	1210	9960	6580	1310	966	820

CAL YR 1988 TOTAL 11793.8 MEAN 32.2 MAX 841 MIN 9.0 AC-FT 23390  
WTR YR 1989 TOTAL 13594.2 MEAN 37.2 MAX 2020 MIN 8.2 AC-FT 26960

e Estimated.

## BRAZOS RIVER BASIN

311

08103800 LAMPASAS RIVER NEAR KEMPNER, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: March to June 1964. Chemical and biochemical analyses: October 1980 to September 1982, October 1987 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-A-TURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CaCO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CaCO3
OCT 19...	0910	14	2660	7.80	19.5	2	1.5	7.3	82	0.3	480	250
DEC 06...	0955	14	2740	8.00	11.0	5	3.2	11.2	105	1.5	530	250
MAR 01...	0900	18	2540	7.90	11.5	5	0.40	10.4	98	--	510	260
APR 17...	1120	21	1870	7.80	20.0	20	4.0	8.9	101	1.2	350	130
JUN 08...	0920	15	1930	7.80	24.0	15	8.0	6.1	75	1.1	400	150
AUG 09...	0930	12	1680	7.70	24.0	32	1.4	7.8	95	1.3	350	140
DATE		CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT 19...		110	50	350	7	11	233	31	710	0.20	3.7	1410
DEC 06...		130	50	350	7	11	279	31	720	0.30	2.6	1460
MAR 01...		120	52	340	7	11	257	36	700	0.30	3.8	1420
APR 17...		77	39	220	5	9.3	226	31	440	0.20	3.0	955
JUN 08...		90	43	240	5	9.7	257	28	450	0.30	9.5	1020
AUG 09...		79	38	190	5	9.2	215	26	380	0.30	9.5	861
DATE		RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)
OCT 19...		4	1	--	<0.010	<0.100	0.020	0.18	0.20	0.190	2.4	2
DEC 06...		8	<1	--	<0.010	0.300	0.050	0.35	0.40	0.260	2.6	--
MAR 01...		9	9	0.190	0.010	0.200	0.100	0.30	0.40	0.190	2.1	2
APR 17...		17	10	--	<0.010	<0.100	0.040	0.26	0.30	0.110	3.2	--
JUN 08...		63	1	0.080	0.020	0.100	0.060	0.74	0.80	0.200	3.6	2
AUG 09...		4	2	--	<0.010	<0.100	0.020	1.1	1.1	0.150	2.8	3
DATE		BARIUM, DIS-SOLVED (UG/L AS Ba)	CADMIUM DIS-SOLVED (UG/L AS Cd)	CHRO-MIUM, DIS-SOLVED (UG/L AS Cr)	COPPER, DIS-SOLVED (UG/L AS Cu)	IRON, DIS-SOLVED (UG/L AS Fe)	LEAD, DIS-SOLVED (UG/L AS Pb)	MANGA-NESE, DIS-SOLVED (UG/L AS Mn)	MERCURY DIS-SOLVED (UG/L AS Hg)	SELE-NIUM, DIS-SOLVED (UG/L AS Se)	SILVER, DIS-SOLVED (UG/L AS Ag)	ZINC, DIS-SOLVED (UG/L AS Zn)
OCT 19...		<100	1	<1	<1	<10	<5	30	0.3	<1	<1.0	<10
DEC 06...		--	--	--	--	--	--	--	--	--	--	--
MAR 01...		100	<1	1	1	10	<5	10	<0.1	<1	<1.0	<10
APR 17...		--	--	--	--	--	--	--	--	--	--	--
JUN 08...		100	<1	<1	1	10	<1	<10	0.2	<1	<1.0	<10
AUG 09...		74	<1	<1	1	20	<1	6	0.2	<1	<1.0	28

## BRAZOS RIVER BASIN

08103900 SOUTH FORK ROCKY CREEK NEAR BRIGGS, TX  
(Hydrologic bench-mark station)

LOCATION.--Lat 30°54'41", Long 98°02'12", Burnet County, Hydrologic Unit 12070203, at upstream side of bridge on Ranch Road 963, 6 mi above confluence with North Fork Rocky Creek, 7 mi west of Briggs, and 12.9 mi above mouth.

DRAINAGE AREA.--33.3 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WRD TX-74-1: 1972-73(P). WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder, concrete control, and crest-stage gages. Datum of gage is 955.8 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Recording rain gage at station.

AVERAGE DISCHARGE.--26 years, 10.2 ft<sup>3</sup>/s (4.16 in/yr), 7,390 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,200 ft<sup>3</sup>/s June 19, 1976 (gage height, 22.70 ft), from rating curve extended above 1,000 ft<sup>3</sup>/s on basis of slope-area measurements of 3,580 and 8,510 ft<sup>3</sup>/s and conveyance-slope study; no flow for many days most years.  
Maximum stage since at least 1904, 22.70 ft June 19, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 17	0545	*2,050	*7.27	No other peak greater than base discharge.			
Minimum daily discharge, no flow for many days.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.35	.52	3.1	.79	3.9	2.6	.00	.00
2	.00	.00	.00	.00	.25	.68	3.0	.78	3.5	2.3	.00	.00
3	.00	.00	.00	.00	.39	.76	3.0	.72	3.3	1.9	.00	.00
4	.00	.00	.00	.00	.22	1.0	2.6	.86	3.1	1.8	.00	.00
5	.00	.00	.00	.00	.10	1.1	2.1	1.7	3.8	1.9	.00	.00
6	.00	.00	.00	.00	.00	.74	2.0	1.1	3.8	1.6	.00	.00
7	.00	.00	.00	.00	.00	.73	2.1	.86	3.2	1.4	.00	.00
8	.00	.00	.00	.00	.00	.71	2.0	.85	2.6	1.3	.00	.00
9	.00	.00	.00	.00	.00	.73	1.7	.71	2.2	1.2	.00	.00
10	.00	.00	.00	.00	.00	.71	1.6	.92	2.2	1.1	.00	.00
11	.00	.00	.00	.00	.00	.61	1.5	.72	18	.99	.00	.00
12	.00	.00	.00	.00	.00	.61	1.6	.75	6.1	.88	.00	.00
13	.00	.00	.00	.00	.00	.60	2.2	1.8	5.1	.79	.00	.00
14	.00	.00	.00	.00	.00	.60	5.5	6.4	47	.78	.00	.00
15	.00	.00	.00	.00	.00	.57	4.1	102	15	.74	.00	.00
16	.00	.00	.00	.00	.61	.52	2.9	9.9	8.4	.55	.00	.00
17	.00	.00	.00	.00	1.2	.52	2.4	376	6.4	.45	.00	.00
18	.00	.00	.00	.00	1.6	.51	2.2	42	5.3	.29	.00	.00
19	.00	.00	.00	.00	1.3	.46	1.9	26	4.7	.20	.00	.00
20	.00	.00	.00	.00	1.1	.68	1.8	20	4.1	.09	.00	.00
21	.00	.00	.00	.00	.81	.56	1.8	17	3.6	.00	.00	.00
22	.00	.00	.00	.00	.64	.60	1.5	14	3.1	.00	.00	.00
23	.00	.00	.00	.00	.53	.56	1.4	12	2.8	.00	.00	.00
24	.00	.00	.00	.00	.52	.54	1.3	11	2.9	.00	.00	.00
25	.00	.00	.00	.00	.58	.58	1.2	9.1	3.1	.00	.00	.00
26	.00	.00	.00	.00	.60	.64	1.2	7.8	8.1	.00	.00	.00
27	.00	.00	.00	.00	.48	.58	1.1	6.7	7.2	.04	.00	.00
28	.00	.00	.00	2.7	.41	23	1.0	6.4	4.2	.40	.00	.00
29	.00	.00	.00	1.5	---	12	.92	5.6	3.2	.01	.00	.00
30	.00	.00	.00	.90	---	5.8	.86	4.9	2.8	.00	.00	.00
31	.00	---	.00	.51	---	3.7	---	4.4	---	.00	.00	---
TOTAL	0.00	0.00	0.00	5.61	11.69	61.92	61.58	693.76	192.7	23.31	0.00	0.00
MEAN	.00	.00	.00	.18	.42	2.00	2.05	22.4	6.42	.75	.00	.00
MAX	.00	.00	.00	2.7	1.6	23	5.5	376	47	2.6	.00	.00
MIN	.00	.00	.00	.00	.00	.46	.86	.71	2.2	.00	.00	.00
AC-FT	.0	.0	.0	11	23	123	122	1380	382	46	.0	.0
CFSM	.00	.00	.00	.01	.01	.06	.06	.67	.19	.02	.00	.00
IN.	.00	.00	.00	.01	.01	.07	.07	.78	.22	.03	.00	.00
CAL YR 1988	TOTAL	186.99	MEAN	.51	MAX	39	MIN	.00	AC-FT	371	CFSM	.02
WTR YR 1989	TOTAL	1050.57	MEAN	2.88	MAX	376	MIN	.00	AC-FT	2080	CFSM	.09
											IN.	.21
											IN.	1.17

08103900 SOUTH FORK ROCKY CREEK NEAR BRIGGS, TX--Continued  
(Hydrologic bench-mark station)

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1961 to January 1964. Chemical and biochemical analyses: January 1968 to current year. Pesticide analyses: July 1971 to July 1982. Sediment analyses: May to June 1963, February 1968 to current year. Radiochemical analyses: January 1968 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

		DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CAC03)	
FEB 22...		1055	0.65	565	7.70	9.0	0.10	10.8	95	49	100	260
APR 11...		1010	1.5	560	7.20	12.0	0.20	10.2	97	30	130	270
JUN 08...		1145	2.8	504	7.80	26.5	0.30	7.6	98	92	49	240
DATE		HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CAC03	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS-SOLVED (MG/L AS S04)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SI02)
FEB 22...		65	59	26	23	0.6	1.8	192	30	56	0.40	7.6
APR 11...		52	63	27	16	0.4	1.7	219	32	31	0.40	8.4
JUN 08...		13	55	25	17	0.5	1.9	230	22	21	0.50	10
DATE		SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	PHOS-PHOROUS DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS ORTHO, DIS-SOLVED (MG/L AS P)	SEDI-MENT, SUS-PENDED (MG/L)
FEB 22...		326	321	<0.010	<0.100	<0.010	<0.010	<0.20	<0.010	<0.010	<0.010	6
APR 11...		317	313	<0.010	<0.100	<0.010	0.010	0.20	<0.010	<0.010	<0.010	12
JUN 08...		272	292	<0.010	<0.100	<0.010	<0.010	<0.20	<0.010	<0.010	<0.010	5
DATE		SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	
FEB 22...		0.01	76	<10	<1	44	<0.5	1	1	<3	<1	
APR 11...		0.05	40	20	1	49	<0.5	<1	<1	<3	1	
JUN 08...		0.04	81	20	1	48	<0.5	<1	1	<3	1	
DATE		IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	
FEB 22...		7	<5	13	1	<0.1	<10	<1	<1	<1.0	1700	
APR 11...		4	<5	12	2	<0.1	<10	1	<1	<1.0	2000	
JUN 08...		11	<1	14	4	<0.1	<10	<1	<1	<1.0	1900	
DATE		VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	URANIUM NATURAL DIS-SOLVED (UG/L AS U)	
FEB 22...		<6	<3	<0.4	<0.4	3.6	<0.4	2.7	<0.4	0.07	0.75	
APR 11...		<6	13	--	--	--	--	--	--	--	--	
JUN 08...		<6	11	4.8	<0.4	6.1	<0.4	4.8	<0.4	<0.02	0.89	



## BRAZOS RIVER BASIN

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX

LOCATION.--Lat 31°01'20", long 97°31'57", Bell County, Hydrologic Unit 12070203, in intake structure at Stillhouse Hollow Dam on Lampasas River, 5 mi southwest of Belton, and 16.0 mi upstream from mouth.

DRAINAGE AREA.--1,313 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1966 to current year. Prior to October 1970, published as Stillhouse Hollow Reservoir.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by a rolled earthfill dam 15,624 ft long, including a 1,650-foot spillway and 5,894-foot dike. The lake was operated as a temporary detention basin from Sept. 2, 1966, to Feb. 19, 1968. Deliberate impoundment began Feb. 19, 1968. The lake was built for flood control and water conservation. The spillway is an uncontrolled broad-crested weir 1,650 ft long located near right end of dam. The flood-control outlet consists of a 12.0-foot-diameter conduit controlled by two 5.67- by 12.0-foot slide gates at an invert elevation of 515.0 ft. The capacity curve is based on maps prepared by Brazos River Authority in 1937 and supplemented by contour maps prepared by the U.S. Army Corps of Engineers in 1958. There are many small diversions upstream for irrigation, municipal supply and for oil field operations. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08103800. Gage-height telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam.....	698.0	-
Design flood.....	693.2	1,013,300
Crest of spillway.....	666.0	630,400
Top of conservation pool.....	622.0	235,700
Lowest gated outlet (invert).....	515.0	775

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 347,100 acre-ft May 2, 3, 1977 (elevation, 637.26 ft); minimum since conservation storage was reached on Apr. 12, 1969, 178,300 acre-ft Oct. 5, 1984 (elevation, 612.18 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 221,900 acre-ft July 5 at 0800 hours (elevation, 619.81 ft); minimum, 168,600 acre-ft Dec. 7 (elevation, 610.30 ft).

Capacity table (elevation, in feet, and total contents, in acre-feet)

610.0	167,100	614.0	188,000	618.0	210,900
612.0	177,300	616.0	199,200	620.0	223,100

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	172200	170300	168900	169100	172400	176100	181800	184300	210000	221600	219800	216800
2	172100	170300	168800	169100	172600	176200	182000	184300	210000	221600	220000	216700
3	172000	170300	168800	169200	172500	176300	182300	184400	210100	221800	219800	216600
4	172000	170200	168700	169100	172400	176600	182300	184500	210200	221800	219700	216500
5	171900	170100	168700	169200	172400	176500	182400	185000	210300	221800	219600	216400
6	171800	170000	168700	169200	172300	176500	182600	185000	210300	221800	219500	216100
7	171800	169900	168900	169100	172300	176500	182700	185100	210300	221800	219800	216000
8	171700	169900	169000	169100	172200	176500	182700	185100	210200	221800	219600	215800
9	171500	169800	169000	169100	172200	176600	182700	185100	210200	221700	219500	215700
10	171400	169700	169300	169000	172200	176700	182700	185100	210300	221700	219400	215500
11	171300	169600	169300	169000	172200	176800	182700	185100	212000	221600	219200	215400
12	171200	169500	169300	169000	172400	176800	182700	185200	213300	221600	219200	215300
13	171100	169500	169300	169300	172400	176900	183000	186200	214500	221500	219000	215300
14	171000	169500	169300	169300	172500	177000	183100	188700	217800	221500	219000	215000
15	170900	169500	169200	169200	172700	177000	183200	190500	218900	221400	218900	214800
16	170800	169400	169200	169200	173900	177000	183400	191500	219400	221300	218800	214700
17	170800	169300	169100	169200	174400	177100	183500	201700	219700	221100	218700	214600
18	170700	169200	169100	169200	174800	177200	183600	204900	220000	221000	218600	214500
19	170600	169300	169100	169500	175000	177200	183800	206100	220300	220800	218500	214400
20	170600	169300	169100	169600	175400	177400	183900	207100	220500	220600	218300	214200
21	170600	169100	169100	169600	175500	177500	184000	207700	220600	220500	218100	214100
22	170500	169100	169200	169600	175500	177500	184100	208200	220700	220300	218000	214000
23	170400	169100	169200	169600	175500	177500	184200	208600	220800	220400	217900	213600
24	170300	169000	169100	169700	175600	177500	184100	209000	221000	220300	217800	213400
25	170200	169000	169100	170800	175800	177600	184200	209200	221100	220200	217800	213300
26	170200	169200	169100	170800	175900	177700	184200	209400	221200	220100	217600	213000
27	170200	169200	169100	171000	175900	177900	184300	209600	221200	220000	217500	212800
28	170100	169100	169100	171500	176000	178700	184300	209700	221500	219900	217400	212700
29	170100	169100	169100	172100	---	180700	184300	209800	221500	219800	217300	212600
30	170000	169000	169200	172200	---	181300	184400	209900	221500	219700	217200	212600
31	170400	---	169200	172400	---	181500	---	209900	---	219600	217000	---
MAX	172200	170300	169300	172400	176000	181500	184400	209900	221500	221800	220000	216800
MIN	170000	169000	168700	169000	172200	176100	181800	184300	210000	219600	217000	212600
(†)	610.65	610.38	610.41	611.04	611.75	612.80	613.33	617.84	619.75	619.44	619.01	618.28
(Φ)	-1700	-1400	+200	+3200	+3600	+5500	+2900	+25500	+11600	-1900	-2600	-4400

CAL YR 1988 MAX 240400 MIN 168700 (Φ) -69900  
WTR YR 1989 MAX 221800 MIN 168700 (Φ) +40400

(†) Gage height, in feet, at end of month.  
(Φ) Change in contents, in acre-feet.

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.-- Chemical and biochemical analyses: October 1969 to September 1982, January 1988 to current year.

310129097315901 - STILLHOUSE HOLLOW LAKE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CAC03)
JAN											
17...	1030	1.00	622	8.30	12.0	2.10	8.9	83	<1	K6	200
17...	1032	10.0	622	8.30	12.0	--	8.9	83	--	--	--
17...	1034	20.0	622	8.30	12.0	--	8.9	83	--	--	--
17...	1036	30.0	622	8.30	12.0	--	8.9	83	--	--	--
17...	1038	40.0	622	8.30	12.0	--	8.9	83	--	--	--
17...	1040	50.0	622	8.30	12.0	--	8.9	83	--	--	--
17...	1042	60.0	622	8.30	12.0	--	8.9	83	--	--	--
17...	1044	70.0	622	8.30	12.0	--	8.9	83	--	--	--
17...	1046	80.0	622	8.30	12.0	--	8.8	83	--	--	--
17...	1048	90.0	622	8.30	11.0	--	8.7	80	--	--	--
17...	1050	100	622	8.30	11.0	--	8.6	79	--	--	--
17...	1052	110	624	8.20	11.0	--	8.0	73	--	--	200
APR											
13...	0935	1.00	641	8.40	15.5	2.50	8.6	87	K2	<1	210
13...	0937	10.0	641	8.40	15.5	--	8.6	87	--	--	--
13...	0939	20.0	641	8.40	15.5	--	8.6	87	--	--	--
13...	0941	30.0	641	8.40	15.5	--	8.6	87	--	--	--
13...	0943	40.0	641	8.20	14.0	--	8.0	78	--	--	--
13...	0945	45.0	640	8.10	12.5	--	7.7	73	--	--	--
13...	0947	50.0	636	8.10	11.5	--	8.0	74	--	--	--
13...	0949	60.0	633	8.10	11.0	--	8.0	73	--	--	--
13...	0951	70.0	633	8.10	10.5	--	7.8	71	--	--	--
13...	0953	80.0	633	8.00	10.0	--	7.4	66	--	--	--
13...	0955	90.0	633	8.00	10.0	--	7.3	65	--	--	--
13...	0957	100	633	8.00	10.0	--	7.2	64	--	--	--
13...	0959	107	633	8.00	10.0	--	7.3	65	--	--	200
AUG											
23...	1000	1.00	606	8.40	28.5	2.70	6.0	79	<1	<1	180
23...	1002	10.0	606	8.40	28.5	--	6.0	79	--	--	--
23...	1004	20.0	606	8.40	27.5	--	5.8	75	--	--	--
23...	1006	30.0	606	8.30	27.0	--	5.1	66	--	--	--
23...	1008	40.0	636	7.70	23.5	--	0.6	7	--	--	--
23...	1010	50.0	662	7.70	16.0	--	1.2	12	--	--	--
23...	1012	60.0	660	7.70	15.0	--	1.2	12	--	--	--
23...	1014	70.0	658	7.70	14.0	--	1.2	12	--	--	--
23...	1016	80.0	658	7.60	13.5	--	1.2	12	--	--	--
23...	1018	85.0	654	7.60	13.5	--	0.5	5	--	--	--
23...	1020	90.0	654	7.60	13.5	--	0.4	4	--	--	--
23...	1022	100	654	7.60	13.0	--	0.4	4	--	--	--
23...	1024	110	654	7.60	13.0	--	0.4	4	--	--	--
23...	1026	113	654	7.60	13.0	--	0.4	4	--	--	210

## BRAZOS RIVER BASIN

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

310129097315901 - STILLHOUSE HOLLOW LAKE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
JAN										
17...	37	40	24	47	1	3.9	162	25	89	0.20
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	37	40	24	46	1	3.8	162	25	89	--
APR										
13...	50	43	25	52	2	3.6	161	26	95	0.30
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	46	42	24	47	1	3.6	158	26	91	--
AUG										
23...	42	36	22	50	2	3.9	139	25	92	0.20
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	43	45	24	49	2	3.7	168	23	100	--

## BRAZOS RIVER BASIN

317

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

310129097315901 - STILLHOUSE HOLLOW LAKE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
17...	8.7	335	0.020	<0.100	0.050	0.35	0.40	<0.010	<3	<1
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	0.020	<0.100	0.040	0.36	0.40	<0.010	<10	<10
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	8.6	334	0.010	<0.100	0.100	0.30	0.40	0.020	<3	28
APR										
13...	7.8	349	<0.010	<0.100	0.010	0.19	0.20	<0.010	<3	<1
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	<0.010	0.100	0.030	0.67	0.70	<0.010	20	<10
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	8.1	336	<0.010	0.100	0.050	0.45	0.50	<0.010	3	3
AUG										
23...	6.9	319	<0.010	<0.100	<0.010	--	0.20	<0.010	3	<1
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	<0.010	<0.100	<0.010	--	0.30	0.010	<10	<10
23...	--	--	<0.010	<0.100	<0.010	--	0.20	<0.010	<10	<10
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	9.4	355	<0.010	<0.100	0.210	0.89	1.1	0.040	40	270

## BRAZOS RIVER BASIN

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

310033097333001 - STILLHOUSE HOLLOW LAKE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN								
17...	1120	1.00	621	8.40	12.0	2.50	9.1	85
17...	1122	10.0	621	8.40	12.0	--	9.1	85
17...	1124	20.0	621	8.40	12.0	--	9.1	85
17...	1126	30.0	621	8.40	12.0	--	9.1	85
17...	1128	40.0	621	8.40	12.0	--	9.1	85
17...	1130	50.0	621	8.40	12.0	--	9.1	85
17...	1132	60.0	621	8.40	11.5	--	9.0	83
17...	1134	70.0	621	8.40	11.5	--	9.0	83
17...	1136	80.0	624	8.30	11.5	--	8.9	83
17...	1138	90.0	624	8.30	11.5	--	8.9	83
17...	1140	105	624	8.30	11.5	--	8.7	81
APR								
13...	1030	1.00	643	8.40	16.0	--	8.6	88
13...	1032	10.0	643	8.40	16.0	--	8.6	88
13...	1034	20.0	643	8.40	16.0	--	8.7	89
13...	1036	30.0	643	8.40	16.0	--	8.7	89
13...	1038	40.0	643	8.40	15.5	--	8.5	86
13...	1040	45.0	641	8.10	13.0	--	7.8	75
13...	1042	50.0	641	8.10	11.5	--	7.5	70
13...	1044	60.0	637	8.00	10.5	--	7.5	68
13...	1046	70.0	635	8.00	10.5	--	7.5	68
13...	1048	80.0	634	8.00	10.5	--	7.3	66
13...	1050	90.0	634	8.00	10.5	--	7.2	65
13...	1052	102	635	7.90	10.5	--	6.7	61
AUG								
23...	1130	1.00	605	8.40	28.5	--	2.1	28
23...	1132	10.0	605	8.40	28.5	--	2.1	28
23...	1134	20.0	605	8.40	28.0	--	1.9	25
23...	1136	30.0	605	8.30	27.5	--	1.6	21
23...	1138	40.0	650	7.60	22.0	--	0.1	1
23...	1140	50.0	664	7.60	17.0	--	0.1	1
23...	1142	60.0	664	7.60	15.5	--	0.1	1
23...	1144	70.0	660	7.60	14.0	--	0.1	1
23...	1146	80.0	655	7.60	13.5	--	0	0
23...	1148	90.0	655	7.60	13.5	--	0	0
23...	1150	100	655	7.60	13.5	--	0	0
23...	1152	108	655	7.60	13.0	--	0	0

310128097353601 - STILLHOUSE HOLLOW LAKE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JAN										
17...	1154	1.00	628	8.40	12.0	1.80	9.2	86	<1	<1
17...	1156	10.0	631	8.40	12.0	--	9.2	86	--	--
17...	1158	20.0	632	8.40	11.5	--	9.1	84	--	--
17...	1200	30.0	636	8.40	11.5	--	9.0	83	--	--
17...	1202	40.0	636	8.40	12.0	--	9.0	84	--	--
17...	1204	50.0	636	8.40	11.5	--	8.8	82	--	--
17...	1206	60.0	636	8.40	11.5	--	8.8	82	--	--
17...	1208	70.0	638	8.30	11.5	--	8.6	80	--	--
17...	1210	76.0	638	8.30	11.5	--	8.5	79	--	--
APR										
13...	1300	1.00	667	8.40	16.5	1.80	8.6	89	K1	K1
13...	1302	10.0	667	8.40	16.5	--	8.6	89	--	--
13...	1304	20.0	667	8.40	16.5	--	8.6	89	--	--
13...	1306	45.0	663	7.90	13.5	--	6.1	59	--	--
13...	1308	30.0	667	8.40	16.0	--	8.3	85	--	--
13...	1310	40.0	660	8.40	16.0	--	8.3	85	--	--
13...	1312	50.0	655	7.90	11.5	--	5.8	54	--	--
13...	1314	60.0	647	7.90	11.0	--	6.1	56	--	--
13...	1316	70.0	644	7.90	11.0	--	6.0	55	--	--
13...	1318	80.0	644	7.80	11.0	--	5.8	53	--	--
AUG										
23...	1220	1.00	603	8.40	30.0	1.90	5.7	77	<1	<1
23...	1222	10.0	603	8.40	29.5	--	5.7	77	--	--
23...	1224	20.0	603	8.30	28.5	--	5.5	73	--	--
23...	1226	30.0	607	8.10	27.5	--	4.2	55	--	--
23...	1228	35.0	613	7.70	26.0	--	1.2	15	--	--
23...	1230	40.0	633	7.50	22.5	--	0	0	--	--
23...	1232	50.0	666	7.50	17.0	--	0	0	--	--
23...	1234	60.0	666	7.50	15.0	--	0	0	--	--
23...	1236	70.0	660	7.50	14.5	--	0	0	--	--
23...	1238	80.0	660	7.50	14.0	--	0	0	--	--
23...	1240	85.0	660	7.50	14.0	--	0	0	--	--



08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

310128097353601 - STILLHOUSE HOLLOW LAKE CC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	HARD- NESS TOTAL (MG/L AS CAC03)	HARD- NESS NONCARB WAT TOT FLD MG/L AS CAC03	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN										
17...	200	37	40	24	48	2	3.9	162	26	93
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	200	37	40	24	47	1	3.8	162	26	92
APR										
13...	210	44	43	24	52	2	3.7	162	26	100
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	210	42	43	24	48	1	3.6	164	26	95
AUG										
23...	180	43	37	22	50	2	3.9	140	25	91
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	210	40	46	24	50	2	3.6	174	23	93
DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
17...	8.6	341	0.010	<0.100	0.040	0.26	0.30	<0.010	6	<1
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	<0.010	<0.100	0.050	0.25	0.30	<0.010	<10	<10
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	8.4	338	0.010	<0.100	0.070	0.43	0.50	0.020	<3	8
APR										
13...	7.2	353	<0.010	<0.100	0.010	0.59	0.60	<0.010	<3	<1
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	<0.010	<0.100	0.020	0.38	0.40	<0.010	<10	<10
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	8.3	346	<0.010	0.100	0.090	0.31	0.40	0.010	3	11
AUG										
23...	7.0	320	<0.010	<0.100	<0.010	--	0.50	<0.010	3	2
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	<0.010	<0.100	<0.010	--	0.30	0.010	10	10
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	<0.010	<0.100	0.110	0.79	0.90	0.020	40	240
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	10	355	<0.010	<0.100	<0.010	--	0.40	0.020	280	290

## BRAZOS RIVER BASIN

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

310130097371701 - STILLHOUSE HOLLOW LAKE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
17...	1245	1.00	642	8.40	12.0	9.3	87
17...	1246	10.0	642	8.40	11.5	9.2	86
17...	1247	20.0	656	8.40	11.5	9.0	84
17...	1248	30.0	679	8.40	11.0	9.0	83
17...	1249	40.0	714	8.40	11.0	9.0	83
17...	1250	50.0	929	8.20	10.5	8.1	74
17...	1251	57.0	972	8.10	10.5	7.8	71
APR							
13...	1140	1.00	688	8.30	16.5	8.4	87
13...	1142	10.0	688	8.30	16.5	8.4	87
13...	1144	20.0	688	8.40	16.5	8.4	87
13...	1146	30.0	688	8.40	16.5	8.3	86
13...	1148	40.0	694	8.20	16.5	7.6	79
13...	1150	45.0	695	7.80	14.0	4.4	43
13...	1152	50.0	673	7.80	12.5	4.6	44
13...	1154	63.0	662	7.80	11.5	4.6	43
AUG							
23...	1310	1.00	604	8.40	30.0	5.7	77
23...	1312	10.0	604	8.40	29.0	5.7	76
23...	1314	20.0	604	8.30	28.0	5.3	70
23...	1316	30.0	604	7.90	27.0	2.9	37
23...	1318	40.0	635	7.40	21.5	0.2	2
23...	1320	50.0	663	7.50	16.5	0.2	2
23...	1322	60.0	663	7.50	15.5	0.2	2
23...	1324	69.0	663	7.50	15.0	0.1	1

310037097383201 - STILLHOUSE HOLLOW LAKE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JAN										
17...	1300	1.00	697	8.40	11.5	0.80	9.8	91	<1	K14
17...	1302	10.0	697	8.40	11.0	--	9.7	89	--	--
17...	1304	20.0	760	8.40	10.5	--	9.5	86	--	--
17...	1306	30.0	1530	8.00	10.5	--	8.2	75	--	--
APR										
13...	1210	1.00	720	8.20	16.5	0.50	7.8	81	K3	K4
13...	1212	10.0	720	8.20	16.5	--	7.9	82	--	--
13...	1214	20.0	720	8.20	16.5	--	7.8	81	--	--
13...	1216	31.0	720	8.20	16.5	--	7.8	81	--	--
AUG										
23...	1350	1.00	607	8.30	30.0	1.20	6.3	86	K4	K1
23...	1352	10.0	616	8.30	28.5	--	5.7	75	--	--
23...	1354	20.0	635	7.90	28.0	--	3.7	49	--	--
23...	1356	30.0	640	7.50	27.5	--	1.4	18	--	--
23...	1358	35.0	640	7.40	27.0	--	0.2	3	--	--

DATE	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT WH TOT FET MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN										
17...	210	42	42	25	58	2	4.2	166	26	110
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	320	130	68	37	180	4	6.6	190	28	360
APR										
13...	220	53	51	23	62	2	3.9	169	27	120
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	220	49	50	22	59	2	3.8	167	28	120
AUG										
23...	190	41	40	21	48	2	4.0	146	22	93
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	200	41	45	21	49	2	4.1	158	21	90

## BRAZOS RIVER BASIN

321

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

310037097383201 - STILLHOUSE HOLLOW LAKE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
17...	8.0	373	<0.010	<0.100	0.040	0.36	0.40	0.010	<3	1
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	0.020	<0.100	0.050	0.45	0.50	0.010	10	<10
17...	5.2	799	0.010	<0.100	0.170	0.53	0.70	0.020	3	6
APR										
13...	6.7	395	<0.010	<0.100	0.050	0.35	0.40	0.020	4	1
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	<0.010	<0.100	0.060	0.34	0.40	0.020	<10	<10
13...	6.5	389	<0.010	<0.100	0.060	0.34	0.40	0.030	7	6
AUG										
23...	7.8	323	<0.010	0.100	0.030	0.47	0.50	<0.010	4	<1
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	<0.010	<0.100	0.110	0.59	0.70	0.060	10	20
23...	9.5	335	<0.010	<0.100	0.220	0.78	1.0	0.090	34	230

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

Stillhouse Hollow Lake AC (310129097315901)

Phytoplankton Analyses September 1988 to October 1989

Date	1-17-89
Time	1031

TOTAL CELLS/mL	5,108
NUMBER OF SPECIES	16
DEPTH COLLECTED (ft.)	3.5

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (Diatoms)	
Order Pennales	
<i>Navicula</i> sp.	34
CHLOROPHYTA (Green algae)	
<i>Ankistrodesmus</i> sp.	34
<i>Chlorococcum</i> sp.	34
<i>Cosmarium</i> sp.	68
<i>Crucigenia tetrapedia</i>	68
<i>Oocystis pusilla</i>	135
<i>Selenastrum minutum</i>	34
<i>Tetraedron minimum</i>	34
CHRYSTOPHYTA (Golden-brown algae)	
<i>Dinobryon</i> sp.	34
CYANOPHYTA (Blue-green algae)	
<i>Aphanocapsa delicatissima</i>	3,073
<i>Chroococcus multicoloratus</i>	918
<i>Chroococcus varius</i>	338
<i>Chroococcus</i> sp.	135
<i>Dactylococcopsis fascicularis</i>	34
<i>Gloeotheca linearis</i>	101
<i>Synechococcus aeruginosa</i>	34

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued  
Stillhouse Hollow Lake EC (310037097383201)

## Phytoplankton Analyses September 1988 to October 1989

Date	1-17-89
Time	1301

TOTAL CELLS/mL	7,904
NUMBER OF SPECIES	25
DEPTH COLLECTED (ft.)	1.3

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
<i>Cyclotella ocellata</i>	96
<i>Stephanodiscus</i> sp.	39
Order Pennales	
<i>Achnanthes minutissima</i>	5
<i>Fragilaria crotonensis</i>	114
<i>Navicula rhyncocephala</i>	5
<i>Navicula</i> sp.	5
<i>Nitzschia filiformis</i>	5
CHLOROPHYTA (Green algae)	
<i>Ankistrodesmus convolutus</i>	203
<i>Chlamydomonas</i> sp.	68
<i>Chodatella subsalsa</i>	68
<i>Mesotaenium</i> sp. ?	68
<i>Selenastrum minutum</i>	203
<i>Tetrastrum</i> sp.	68
Unknown coccoid	68
CHRYSTOPHYTA (Golden-brown algae)	
<i>Kephyrion</i> sp.	135
CYANOPHYTA (Blue-green algae)	
<i>Aphanocapsa elachista</i> var. <i>conferta</i>	3,174
<i>Aphanothece</i> sp.	405
<i>Chroococcus dispersus</i>	135
<i>Chroococcus multicoloratus</i>	1,283
<i>Dactylococcopsis fascicularis</i>	270
<i>Dactylococcopsis</i> sp.	338
<i>Gloeotheca linearis</i>	743
<i>Oscillatoria</i> sp.	270
EUGLENOPHYTA (Euglenoids)	
<i>Trachelomonas volvocina</i>	68
PYRRROPHYTA (Dinoflagellates)	
<i>Ceratium hirundinella</i>	68



08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

Stillhouse Hollow Lake AC (310129097315901)

## Phytoplankton Analyses September 1988 to October 1989

Date	4-13-89
Time	0936

TOTAL CELLS/mL	10,602
NUMBER OF SPECIES	21
DEPTH COLLECTED (ft.)	4.2

<u>Organisms</u>	<u>Cells/mL</u>
CHLOROPHYTA (green algae)	
<i>Chlamydomonas</i> sp.	68
<i>Chlorococcum</i> sp.	540
<i>Scenedesmus bijuga</i> var. <i>alternans</i>	270
<i>Scenedesmus quadrata</i>	270
<i>Selenastrum minutum</i>	135
<i>Tetraedron minimum</i>	135
CHRYSTOPHYTA (golden-brown algae)	
<i>Dinobryon divergens</i>	405
CYANOPHYTA (blue-green algae)	
<i>Aphanocapsa delicatissima</i>	2,701
<i>Aphanothece nidulans</i>	1,148
<i>Chroococcus dispersus</i>	338
<i>Chroococcus limneticus</i>	135
<i>Chroococcus multicoloratus</i>	2,026
<i>Chroococcus varius</i>	270
<i>Oscillatoria</i> sp.	1,351
<i>Synechococcus aeruginosa</i>	270
PYRRROPHYTA (dinoflagellates)	
<i>Ceratium hirundinella</i>	68
CRYPTOPHYTA (cryptomonads)	
<i>Cryptomonas</i> sp.	68
BACILLARIOPHYTA (diatoms)	
Order Centrales	
<i>Cyclotella ocellata</i>	50
<i>Stephanodiscus</i> sp.	152
Order Pennales	
<i>Nitzschia palea</i>	135
<i>Synedra</i> sp.	67

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

Stillhouse Hollow Lake EC (310037097383201)

Phytoplankton Analyses September 1988 to October 1989

Date	4-13-89
Time	1211

TOTAL CELLS/mL	21,880
NUMBER OF SPECIES	27
DEPTH COLLECTED (ft.)	0.9

<u>Organisms</u>	<u>Cells/mL</u>
CHLOROPHYTA (green algae)	
<i>Ankistrodesmus convolutus</i>	203
<i>Ankistrodesmus nannoselene</i>	68
<i>Chlamydomonas</i> sp.	68
<i>Chlorococcum</i> sp.	675
<i>Chodatella subsalsa</i>	270
<i>Crucigenia tetrapedia</i>	135
<i>Kirchneriella obesa</i>	270
<i>Oocystis pusilla</i>	270
<i>Scenedesmus brasiliensis</i> ?	270
<i>Scenedesmus quadrata</i>	338
<i>Selenastrum minutum</i>	945
<i>Tetraedron minimum</i>	203
<i>Tetraedron regulare</i> var. <i>torsum</i>	68
CHRYSTOPHYTA (golden-brown algae)	
<i>Dinobryon divergens</i>	135
CYANOPHYTA (blue-green algae)	
<i>Aphanocapsa delicatissima</i>	7,901
<i>Aphanothece nidulans</i>	3,106
<i>Chroococcus dispersus</i>	1,283
<i>Chroococcus limneticus</i>	405
<i>Chroococcus multicoloratus</i>	3,241
<i>Gloeotheca linearis</i>	135
<i>Synechococcus aeruginosa</i>	675
CRYPTOPHYTA (cryptomonads)	
<i>Cryptomonas</i> sp.	68
BACILLARIOPHYTA (diatoms)	
Order Centrales	
<i>Stephanodiscus</i> sp.	608
Order Pennales	
<i>Fragilaria crotonensis</i>	240
<i>Navicula</i> sp.	180
<i>Nitzschia acuta</i> ?	60
<i>Nitzschia filiformis</i>	60

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued

Stillhouse Hollow Lake AC (310129097315901)

Phytoplankton Analyses September 1988 to October 1989

Date	8-23-89
Time	1001

TOTAL CELLS/mL	38,881
NUMBER OF SPECIES	15
DEPTH COLLECTED (ft.)	4.4

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (diatoms)	
Order Centrales	
<i>Cyclotella ocellata</i>	327
Order Pennales	
<i>Synedra</i> sp.	327
CHLOROPHYTA (green algae)	
<i>Cosmarium</i> sp.	163
<i>Tetraedron minimum</i>	163
CHRYSTOPHYTA (Golden-brown algae)	
<i>Dinobryon divergens</i>	163
CYANOPHYTA (blue-green algae)	
<i>Aphanocapsa delicatissima</i>	2,941
<i>Aphanothece saxicola</i>	14,213
<i>Chroococcus</i> sp.	327
<i>Dactylococcopsis acicularis</i>	327
<i>Dactylococcopsis fascicularis</i>	5,554
<i>Lyngbya nana</i>	2,777
<i>Oscillatoria limnetica</i>	7,842
<i>Pseudanabaena catenata</i>	2,287
<i>Raphidiopsis curvata</i>	1,307
<i>Spirulina</i> sp.	163

08104050 STILLHOUSE HOLLOW LAKE NEAR BELTON, TX--Continued  
Stillhouse Hollow Lake EC (310037097383201)

## Phytoplankton Analyses September 1988 to October 1989

Date	8-23-89
Time	1351

TOTAL CELLS/mL	54,608
NUMBER OF SPECIES	26
DEPTH COLLECTED (ft.)	2.0

<u>Organisms</u>	<u>Cells/mL</u>
<b>BACILLARIOPHYTA (diatoms)</b>	
Order Centrales	
<i>Cyclotella ocellata</i>	700
Order Pennales	
<i>Nitzschia palea</i>	654
<i>Synedra</i> sp.	980
<b>CHLOROPHYTA (green algae)</b>	
<i>Ankistrodesmus falcatus</i>	3,267
<i>Ankistrodesmus nannoselene</i>	233
<i>Chlamydomonas</i> sp.	233
<i>Chlorococcum</i> sp.	233
<i>Cosmarium</i> sp.	233
<i>Crucigenia tetrapedia</i>	934
<i>Pediastrum simplex</i>	1,867
<i>Selenastrum minutum</i>	233
<i>Tetraedron minimum</i>	467
<b>CYANOPHYTA (blue-green algae)</b>	
<i>Aphanocapsa delicatissima</i>	6,068
<i>Aphanothece saxicola</i>	12,369
<i>Chroococcus dispersus</i>	1,400
<i>Chroococcus limneticus</i>	467
<i>Chroococcus</i> sp.	1,167
<i>Dactylococcopsis fascicularis</i>	5,834
<i>Dactylococcopsis smithii</i>	1,400
<i>Lyngbya nana</i>	3,034
<i>Lyngbya</i> sp.	2,100
<i>Oscillatoria limnetica</i>	5,368
<i>Raphidiopsis curvata</i>	4,201
<i>Synechococcus</i> sp.	700
<b>CRYPTOPHYTA (cryptomonads)</b>	
<i>Chroomonas</i> sp.	233
<b>EUGLENOPHYTA</b>	
<i>Phacotus</i> sp.	233

## BRAZOS RIVER BASIN

08104100 LAMPASAS RIVER NEAR BELTON, TX

LOCATION.--Lat 31°00'06", long 97°29'32", Bell County, Hydrologic Unit 12070203, on left bank 22 ft upstream from upstream bridge of two bridges on Interstate Highway 35 and U.S. Highway 81, 3.5 mi downstream from Stillhouse Hollow Dam, 4.1 mi southwest of Belton, and 12.7 mi upstream from mouth.

DRAINAGE AREA.--1,321 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1963 to September 1989 (discontinued).

Water-quality records.--Chemical and biochemical analyses: October 1980 to September 1982.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 476.58 ft above National Geodetic Vertical Datum of 1929 (from Texas Department of Highways and Public Transportation levels, from a Santa Fe Railroad bench mark).

REMARKS.--Estimated daily discharges Feb. 5-6. Records good. Many small diversions above station for irrigation and for municipal supply. Since Sept. 2, 1966, flow largely regulated by Stillhouse Hollow Lake (station 08104050). Gage-height telemeter at station.

AVERAGE DISCHARGE.--3 years (water years 1964-66) unregulated, 368 ft<sup>3</sup>/s (266,600 acre-ft/yr); 23 years (water years 1967-89) regulated, 219 ft<sup>3</sup>/s (158,700 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 77,900 ft<sup>3</sup>/s May 17, 1965 (gage height, 43.58 ft); no flow Aug. 9, 10, 12-15, and Sept. 5, 6, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1877, 45 ft September 1921, from information by local residents. Flood of May 1957 reached a stage of 44.4 ft (discharge, 83,500 ft<sup>3</sup>/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 479 ft<sup>3</sup>/s May 17 at 0600 hours (gage height, 7.80 ft); minimum daily, 1.1 ft<sup>3</sup>/s Jan. 7, 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	2.7	3.9	1.4	9.1	5.4	5.4	2.7	4.4	8.2	6.5	5.1
2	2.9	2.6	3.7	1.3	12	5.4	5.5	2.7	5.5	8.3	7.9	5.3
3	2.6	2.6	3.4	1.3	11	5.1	5.7	4.2	6.4	8.6	6.0	5.2
4	2.6	2.6	3.3	1.2	9.2	6.1	5.9	4.0	7.6	8.3	5.7	5.1
5	2.6	2.5	3.3	1.2	e8.7	4.9	6.1	4.2	8.4	8.3	5.6	5.2
6	2.6	1.9	3.3	1.2	e8.3	4.4	6.1	3.0	7.2	8.3	5.7	5.4
7	2.6	1.9	6.8	1.1	7.5	4.4	5.8	2.7	7.5	8.3	7.7	5.3
8	2.6	1.9	18	1.1	7.3	4.4	5.7	2.6	7.0	7.9	6.7	5.4
9	2.6	2.0	8.6	2.3	7.0	4.4	5.4	2.6	7.0	7.9	6.1	5.2
10	2.4	2.1	4.6	1.5	8.2	4.6	5.4	2.7	7.3	7.8	6.1	5.1
11	2.3	1.9	4.4	1.3	10	4.7	5.1	2.8	9.7	7.0	5.8	5.0
12	2.3	2.1	2.6	1.5	11	4.9	5.1	5.1	6.8	6.8	5.7	4.8
13	2.4	1.9	2.2	2.3	11	5.2	5.1	3.7	7.4	6.8	5.7	5.4
14	2.5	1.9	2.1	1.9	11	5.4	5.1	3.8	12	6.8	5.7	5.1
15	2.6	1.9	1.8	1.6	11	5.4	5.0	3.6	7.0	6.7	5.9	5.1
16	2.4	2.1	1.9	1.6	23	5.4	5.1	3.6	6.8	6.4	6.1	4.9
17	2.6	2.0	2.1	1.8	6.9	5.4	4.8	77	6.8	6.3	6.1	4.6
18	2.6	2.0	2.2	2.8	6.7	5.4	4.7	9.4	6.8	6.1	6.1	4.8
19	2.6	2.3	2.2	5.0	6.3	5.4	4.3	8.7	6.8	6.1	5.8	4.5
20	2.6	3.2	2.2	5.5	6.0	5.6	4.1	8.4	6.8	5.9	5.7	4.1
21	2.6	3.0	2.1	4.3	5.5	6.2	4.1	8.0	6.8	6.1	5.4	4.3
22	2.6	2.8	2.3	5.1	5.4	6.1	4.0	6.9	6.6	6.1	5.4	4.2
23	2.7	2.7	2.2	5.7	5.4	6.1	3.6	6.8	6.8	7.4	5.6	4.2
24	2.6	2.5	2.2	6.4	5.4	6.1	3.4	6.5	7.2	6.6	5.3	4.4
25	2.6	2.4	1.9	7.9	5.4	5.8	3.1	6.4	7.9	6.4	5.1	4.3
26	2.6	3.2	1.9	8.5	5.4	5.4	3.1	6.6	7.5	5.7	5.1	4.4
27	2.6	2.6	1.9	9.1	5.4	5.1	3.1	6.4	8.1	5.7	5.1	4.2
28	2.6	3.0	1.6	10	5.4	6.7	3.1	6.5	7.7	5.7	5.1	4.3
29	2.6	3.6	1.3	8.4	---	14	2.9	6.6	7.9	5.7	5.1	4.3
30	2.6	3.9	1.3	6.8	---	5.8	2.8	6.4	7.9	5.7	5.1	4.5
31	4.2	---	1.5	4.3	---	5.4	---	4.4	---	5.7	5.1	---
TOTAL	81.9	73.8	102.8	115.4	234.5	174.6	138.6	229.0	219.6	213.6	180.0	143.7
MEAN	2.64	2.46	3.32	3.72	8.37	5.63	4.62	7.39	7.32	6.89	5.81	4.79
MAX	4.2	3.9	18	10	23	14	6.1	77	12	8.6	7.9	5.4
MIN	2.3	1.9	1.3	1.1	5.4	4.4	2.8	2.6	4.4	5.7	5.1	4.1
AC-FT	162	146	204	229	465	346	275	454	436	424	357	285

CAL YR 1988 TOTAL 41603.2 MEAN 114 MAX 1230 MIN 1.3 AC-FT 82520  
WTR YR 1989 TOTAL 1907.5 MEAN 5.23 MAX 77 MIN 1.1 AC-FT 3780

e Estimated.



## BRAZOS RIVER BASIN

329

08104100 LAMPASAS RIVER NEAR BELTON, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: April 1943 to June 1944, April 1963 to August 1964. Chemical and biochemical analyses: January 1981 to August 1982, January to September 1988.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CAC03)
JAN 17...	1430	1.2	567	8.00	11.0	1	1.2	11.8	108	0.5	260
APR 13...	1420	6.1	537	7.80	16.0	10	0.40	9.2	94	0.7	260
AUG 23...	1500	5.6	593	8.00	30.5	3	1.2	8.9	122	1.0	220
DATE	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CAC03	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS-SOLVED (MG/L AS S04)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SI02)
JAN 17...	32	65	23	23	0.6	2.1	225	20	40	0.20	7.7
APR 13...	32	75	18	16	0.4	1.5	230	15	26	0.30	5.7
AUG 23...	39	54	21	36	1	2.7	183	21	64	0.30	9.6
DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)
JAN 17...	316	<1	<1	<0.010	0.800	0.030	0.37	0.40	<0.010	2.0	<1
APR 13...	310	5	<1	<0.010	1.60	0.030	--	<0.20	<0.010	1.7	<1
AUG 23...	318	1	1	<0.010	0.300	0.030	0.27	0.30	<0.010	2.0	<1
DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN 17...	49	<1	<1	<1	5	<5	16	<0.1	<1	<1.0	3
APR 13...	47	<1	<1	<1	6	<5	14	<0.1	<1	1.0	4
AUG 23...	53	<1	<1	5	3	<1	12	<0.1	<1	<1.0	7

## BRAZOS RIVER BASIN

08104500 LITTLE RIVER NEAR LITTLE RIVER, TX

LOCATION.--Lat 30°57'59", long 97°20'45", Bell County, Hydrologic Unit 12070204, on right bank 25 ft downstream from State Highway 95, 2.4 mi southeast of Little River, 5 mi downstream from confluence of Leon and Lampasas Rivers, and 95.8 mi upstream from mouth.

DRAINAGE AREA.--5,228 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1923 to May 1929, August 1962 to current year.

Water-quality records.--Chemical analyses: October 1964 to September 1982.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 400.11 ft above National Geodetic Vertical Datum of 1929. From Oct. 5, 1923, to May 27, 1929, nonrecording gage at railroad bridge 0.5 mi upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Many small diversions upstream for irrigation and municipal supply affect very low flows. Flow regulated by Belton Lake (station 08102000) on Leon River beginning Mar. 8, 1954, and by Stillhouse Hollow Lake (station 08104050) on the Lampasas River beginning Sept. 2, 1966. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08102600. Several observations of water temperature were made during the year. Brazos River Authority satellite telemeter at station.

AVERAGE DISCHARGE.--5 years (water years 1924-28) unregulated, 709 ft<sup>3</sup>/s (513,700 acre-ft/yr); 27 years (water years 1963-89) regulated, 843 ft<sup>3</sup>/s (610,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 79,600 ft<sup>3</sup>/s May 17, 1965 (gage height, 42.85 ft); minimum daily, 8.2 ft<sup>3</sup>/s Aug. 6, 19, 1963.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, 46.8 ft in September 1921, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,010 ft<sup>3</sup>/s May 17 at 1430 hours (gage height, 20.88 ft); minimum daily, 43 ft<sup>3</sup>/s Oct. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	148	137	49	57	91	91	163	120	1820	1540	186	127
2	108	79	49	54	76	94	151	106	1810	1500	458	121
3	76	74	50	54	124	92	146	182	1810	1520	282	118
4	68	69	49	53	83	150	142	164	1800	1500	469	103
5	64	66	50	53	68	209	130	453	1860	1570	458	98
6	62	66	50	52	68	165	126	213	1820	668	449	102
7	57	61	51	52	67	150	127	152	1530	566	552	105
8	55	59	120	50	65	142	122	151	578	569	583	105
9	56	57	84	50	64	137	115	496	543	557	645	97
10	55	54	90	58	64	123	115	561	549	548	631	101
11	59	53	195	55	59	127	116	574	866	547	559	107
12	69	52	75	50	62	124	116	537	673	539	363	106
13	67	51	65	60	68	130	119	559	1590	539	358	107
14	60	51	59	133	62	108	174	1090	3390	534	353	150
15	50	52	57	62	61	98	152	828	508	536	361	115
16	48	68	54	53	1020	90	132	1170	1020	523	356	113
17	47	59	51	51	527	88	124	5140	3470	518	349	111
18	47	55	51	50	726	86	119	1010	3460	517	326	110
19	45	56	52	52	259	84	121	414	3440	513	172	110
20	44	84	53	239	192	86	123	329	3390	512	161	109
21	43	59	53	82	157	109	118	269	3370	492	159	107
22	44	55	52	59	125	125	116	235	3350	296	153	111
23	53	54	52	52	111	92	111	663	3100	287	126	110
24	68	55	52	52	105	87	108	2050	2490	304	124	115
25	68	52	51	88	102	86	108	2490	2470	291	150	116
26	70	199	52	172	100	84	108	3570	2480	289	134	112
27	78	106	54	77	97	82	106	3570	2490	294	129	118
28	83	54	54	224	93	236	108	3350	2450	288	128	115
29	87	50	54	289	---	862	103	2740	2450	281	127	112
30	80	49	54	325	---	305	128	2470	2370	275	125	90
31	197	---	57	119	---	196	---	1840	---	268	126	---
TOTAL	2156	2036	1939	2877	4696	4638	3747	37496	62947	19181	9552	3321
MEAN	69.5	67.9	62.5	92.8	168	150	125	1210	2098	619	308	111
MAX	197	199	195	325	1020	862	174	5140	3470	1570	645	150
MIN	43	49	49	50	59	82	103	106	508	268	124	90
AC-FT	4280	4040	3850	5710	9310	9200	7430	74370	124900	38050	18950	6590
CAL YR 1988	TOTAL	128694	MEAN	352	MAX	1570	MIN	43	AC-FT	255300		
WTR YR 1989	TOTAL	154586	MEAN	424	MAX	5140	MIN	43	AC-FT	306600		

## BRAZOS RIVER BASIN

331

08104645 NORTH FORK SAN GABRIEL RIVER NEAR LIBERTY HILL, TX

LOCATION.--Lat 30°42'11", long 97°52'37", Williamson County, Hydrologic Unit 12070205, at upstream side of U.S. Highway 183 bridge, 0.4 mi upstream from Hamilton Branch, 3.8 mi northeast of Liberty Hill.

DRAINAGE AREA.--202 mi<sup>2</sup>.

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1980 to August 1989 (discontinued).

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIO-CHEMICAL, 5 DAY (MG/L)	HARDNESS TOTAL (MG/L AS CaCO3)	HARDNESS NONCARBONATE (MG/L AS CaCO3)
MAR 02...	1335	400	7.90	13.0	8	0.70	11.0	108	--	220	41
APR 19...	1425	435	7.90	25.5	15	1.6	8.5	106	0.7	210	25
JUN 09...	1315	412	7.60	25.5	5	0.40	8.4	106	0.6	190	25
AUG 10...	1300	331	7.50	27.0	25	0.60	8.2	105	1.0	140	12
DATE	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	ALKALINITY WAT TOT FET FIELD (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)
MAR 02...	64	14	7.8	0.2	1.8	177	33	10	0.30	5.6	243
APR 19...	59	15	9.1	0.3	1.5	184	24	11	0.30	5.5	236
JUN 09...	53	15	10	0.3	1.4	169	21	13	0.30	9.4	225
AUG 10...	34	14	11	0.4	1.6	131	20	13	0.30	15	188
DATE	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	RESIDUE VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHOROUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC, DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS Ba)
MAR 02...	<1	<1	<0.010	<0.100	0.030	0.27	0.30	<0.010	2.5	1	41
APR 19...	5	5	<0.010	<0.100	<0.010	--	0.20	<0.010	1.7	--	--
JUN 09...	<1	<1	<0.010	<0.100	<0.010	--	<0.20	<0.010	1.9	<1	48
AUG 10...	3	3	<0.010	<0.100	0.020	0.38	0.40	<0.010	2.4	2	35
DATE	CADMIUM DIS-SOLVED (UG/L AS Cd)	CHROMIUM, DIS-SOLVED (UG/L AS Cr)	COPPER, DIS-SOLVED (UG/L AS Cu)	IRON, DIS-SOLVED (UG/L AS Fe)	LEAD, DIS-SOLVED (UG/L AS Pb)	MANGANESE, DIS-SOLVED (UG/L AS Mn)	MERCURY, DIS-SOLVED (UG/L AS Hg)	SELENIUM, DIS-SOLVED (UG/L AS Se)	SILVER, DIS-SOLVED (UG/L AS Ag)	ZINC, DIS-SOLVED (UG/L AS Zn)	
MAR 02...	<1	<1	1	8	<5	1	<0.1	1	<1.0	5	
APR 19...	--	--	--	--	--	--	--	--	--	--	
JUN 09...	<1	<1	<1	12	<1	2	<0.1	<1	2.0	6	
AUG 10...	<1	<1	<1	31	<1	23	0.4	<1	<1.0	6	

## BRAZOS RIVER BASIN

## 08104650 LAKE GEORGETOWN NEAR GEORGETOWN, TX

LOCATION.--Lat 30°40'03", long 97°43'38", Williamson County, Hydrologic Unit 12070205, at North San Gabriel Dam, on North Fork San Gabriel River, 2.5 mi upstream from Middle Fork San Gabriel River, 3.7 mi northwest of Georgetown, and 4.4 mi upstream from confluence with South Fork San Gabriel River.

DRAINAGE AREA.--247 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to May 13, 1980, nonrecording gage at present site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam, 6,700 ft long, including the spillway. The lake was built for water conservation and flood control. Deliberate impoundment began on Mar. 3, 1980. The spillway is an ungated broad-crested weir 1,000 ft long, located near right end of dam. The spillway for normal flood releases is a gated, 11-foot-diameter conduit, controlled by two 5- by 11 foot slide gates, located near the center of dam. The invert for the floodgate is 720.0 ft. A low-flow outlet, consisting of four 3- by 4-foot gates is located near the center of dam. These gates are inverts of 735.0, 749.0, 763.0, and 777.0 ft. Figures given herein represent total content. Data regarding dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam.....	861.0	246,700
Design flood.....	856.2	221,200
Crest of spillway.....	834.0	130,800
Top of conservation pool.....	791.0	37,080
Lowest gated outlet (invert of 11-foot conduit).....	720.0	0

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 89,730 acre-ft June 22, 1981 (elevation, 819.44 ft); minimum, 466 acre-ft Mar. 4, 1980 (elevation, 724.46 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 45,160 acre-ft May 23 at 0900 hours (elevation, 796.74 ft); minimum, 30,920 acre-ft Jan. 25 (elevation, 785.93 ft).

## Capacity table (elevation, in feet, and total contents, in acre-feet)

785.0	29,890	789.0	34,540	794.0	41,150
787.0	32,150	791.0	37,080	797.0	45,550

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34250	33020	31970	31230	31260	31330	33620	34220	38380	37520	36440	35210
2	34210	32980	31940	31220	31250	31340	33690	34200	38170	37520	36460	35170
3	34170	32940	31900	31200	31230	31360	33760	34200	37950	37580	36420	35140
4	34130	32900	31870	31180	31200	31390	33800	34200	37740	37580	36380	35100
5	34030	32860	31860	31160	31160	31420	33830	34300	37530	37580	36340	35050
6	34030	32840	31820	31140	31130	31420	33860	34320	37450	37560	36280	34980
7	33980	32800	31800	31120	31100	31430	33880	34320	37460	37540	36240	34910
8	33940	32780	31790	31090	31070	31430	33890	34320	37450	37500	36190	34860
9	33890	32740	31770	31070	31060	31440	33910	34320	37450	37460	36140	34800
10	33860	32700	31780	31040	31040	31460	33890	34360	37520	37420	36070	34760
11	33810	32670	31750	31010	31020	31470	33910	34370	37640	37370	36030	34720
12	33750	32640	31730	30990	31040	31480	33920	34390	37730	37340	36000	34680
13	33700	32600	31700	31020	31050	31490	33940	34550	37890	37300	35930	34680
14	33650	32570	31660	31000	31050	31500	33980	34960	38570	37270	35890	34620
15	33600	32580	31630	30980	31040	31500	34030	36320	38740	37230	35870	34550
16	33570	32560	31590	30970	31100	31500	34050	36590	38810	37190	35830	34500
17	33520	32510	31570	30940	31160	31510	34080	34050	38860	37150	35790	34470
18	33470	32470	31540	30930	31210	31510	34100	44000	38900	37100	35750	34420
19	33440	32450	31510	31000	31250	31520	34170	44370	38890	37030	35720	34380
20	33400	32400	31490	30990	31270	31560	34190	44700	38660	36960	35640	34330
21	33350	32360	31470	30980	31300	31580	34210	44900	38420	36910	35590	34280
22	33320	32320	31460	30960	31300	31580	34220	45080	38190	36860	35540	34220
23	33270	32280	31430	30930	31300	31580	34200	44610	38020	36810	35480	34140
24	33210	32240	31410	30930	31290	31590	34210	43680	37940	36760	35540	34080
25	33170	32200	31390	31040	31300	31600	34210	42780	37820	36720	35510	34030
26	33120	32170	31360	31040	31300	31630	34210	41840	37740	36680	35460	33960
27	33090	32140	31340	31120	31310	31660	34220	40920	37650	36640	35440	33890
28	33050	32090	31320	31160	31310	31950	34220	39980	37560	36600	35390	33860
29	33030	32040	31300	31250	---	33290	34220	39380	37500	36560	35360	33810
30	32990	32010	31270	31270	---	33460	34220	38880	37520	36510	35310	33760
31	33040	---	31250	31260	---	33540	---	38580	---	36470	35260	---
MAX	34250	33020	31970	31270	31310	33540	34220	45080	38900	37580	36460	35210
MIN	32990	32010	31250	30930	31020	31330	33620	34200	37450	36470	35260	33760
(↑)	787.76	786.88	786.22	786.23	786.27	788.18	788.74	792.13	791.33	790.53	789.58	788.36
(Φ)	-1240	-1030	-760	+10	+50	+2230	+680	+4360	-1060	-1050	-1210	-1500

CAL YR 1988 MAX 37910 MIN 31250 (Φ) -5440  
WTR YR 1989 MAX 45080 MIN 30930 (Φ) -490

(↑) Elevation, in feet, at end of month.  
(Φ) Change in contents, in acre-feet.

## BRAZOS RIVER BASIN

333

08104650 LAKE GEORGETOWN NEAR GEORGETOWN, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1981 to August 1989 (discontinued).

304016097433101 - LAKE GEORGETOWN SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CAC03)	
JAN												
03...	0920	1.00	373	8.20	14.0	2.10	8.9	88	<1	K2	180	
03...	0922	10.0	373	8.20	14.0	--	8.8	87	--	--	--	
03...	0924	20.0	376	8.10	13.5	--	8.1	79	--	--	--	
03...	0926	30.0	376	8.10	13.0	--	7.8	75	--	--	--	
03...	0928	40.0	376	8.00	13.0	--	7.3	70	--	--	--	
03...	0930	50.0	376	8.00	13.0	--	7.0	68	--	--	--	
03...	0932	60.0	376	7.90	13.0	--	6.6	64	--	--	--	
03...	0934	65.0	376	7.90	13.0	--	6.6	64	--	--	180	
APR												
18...	0945	1.00	366	8.30	18.0	2.50	8.2	89	<1	K2	180	
18...	0947	10.0	366	8.30	17.5	--	8.1	87	--	--	--	
18...	0949	20.0	366	8.30	17.0	--	8.0	85	--	--	--	
18...	0951	30.0	366	8.20	16.0	--	7.3	76	--	--	--	
18...	0953	40.0	375	7.80	12.0	--	5.1	48	--	--	--	
18...	0955	50.0	375	7.70	11.0	--	4.2	39	--	--	--	
18...	0957	64.0	377	7.70	11.0	--	3.5	32	--	--	180	
AUG												
10...	0855	1.00	330	8.20	27.5	3.30	4.7	61	K1	<1	150	
10...	0857	10.0	330	8.20	27.5	--	4.7	61	--	--	--	
10...	0859	20.0	330	8.20	27.0	--	4.6	59	--	--	--	
10...	0901	30.0	330	7.80	26.5	--	2.8	36	--	--	--	
10...	0903	35.0	330	7.40	24.5	--	0.1	1	--	--	--	
10...	0905	40.0	334	7.40	22.0	--	0	0	--	--	--	
10...	0907	50.0	355	7.40	18.5	--	0	0	--	--	--	
10...	0909	60.0	380	7.40	15.5	--	0	0	--	--	--	
10...	0911	65.0	391	7.30	14.5	--	0	0	--	--	190	
DATE		HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CAC03	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)
JAN												
03...	17	47	15	9.3	0.3	2.6	162	16	12	0.20	8.9	
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	15	47	15	10	0.3	2.5	164	18	17	--	9.0	
APR												
18...	14	47	14	8.8	0.3	2.4	161	15	11	0.20	7.2	
18...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
18...	13	49	14	8.7	0.3	2.4	167	15	11	--	9.2	
AUG												
10...	11	42	12	7.5	0.3	2.4	144	12	10	0.40	8.8	
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	5	53	14	8.7	0.3	2.3	185	10	11	--	14	



## BRAZOS RIVER BASIN

08104650 LAKE GEORGETOWN NEAR GEORGETOWN, TX--Continued

304016097433101 - LAKE GEORGETOWN SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
03...	208	--	<0.010	<0.100	0.100	0.90	1.0	<0.010	14	2
03...	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--
03...	--	--	<0.010	<0.100	0.120	0.48	0.60	<0.010	<10	<10
03...	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--
03...	217	--	<0.010	<0.100	0.170	0.83	1.0	0.030	5	49
APR										
18...	202	--	<0.010	0.200	0.010	0.49	0.50	0.010	<3	<1
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	0.190	0.010	0.200	0.010	0.19	0.20	<0.010	<10	<10
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	209	--	<0.010	0.300	0.010	0.59	0.60	<0.010	<3	19
AUG										
10...	181	--	<0.010	<0.100	0.020	0.28	0.30	<0.010	4	4
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	<0.010	<0.100	0.020	0.38	0.40	<0.010	20	<10
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	<0.010	<0.100	0.120	0.48	0.60	<0.010	160	210
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	225	--	<0.010	<0.100	0.690	0.41	1.1	0.030	920	430

304006097452501 - LAKE GEORGETOWN SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CAC03)
JAN											
03...	1050	1.00	374	8.30	14.0	1.50	9.8	97	<1	<1	180
03...	1052	10.0	374	8.30	14.0	--	9.6	95	--	--	--
03...	1054	20.0	374	8.20	13.5	--	9.2	90	--	--	--
03...	1056	30.0	374	8.20	13.0	--	9.0	87	--	--	--
03...	1058	40.0	374	8.20	13.0	--	8.8	85	--	--	--
03...	1100	53.0	378	8.00	12.5	--	7.6	73	--	--	180
APR											
18...	1040	1.00	367	8.30	18.5	1.50	8.5	93	K1	K2	180
18...	1042	10.0	367	8.30	18.0	--	8.4	91	--	--	--
18...	1044	20.0	367	8.30	17.0	--	8.0	85	--	--	--
18...	1046	30.0	388	7.90	15.0	--	5.4	55	--	--	--
18...	1048	40.0	376	7.60	11.5	--	2.5	23	--	--	--
18...	1050	50.0	378	7.60	11.0	--	2.2	20	--	--	--
18...	1052	55.0	378	7.60	11.0	--	2.2	20	--	--	180
AUG											
10...	0940	1.00	329	8.20	28.0	1.80	5.6	73	K1	K1	160
10...	0942	10.0	329	8.20	28.0	--	5.6	73	--	--	--
10...	0944	20.0	329	8.20	27.5	--	5.5	71	--	--	--
10...	0946	25.0	329	8.20	27.5	--	5.4	70	--	--	--
10...	0948	30.0	335	7.40	26.0	--	0	0	--	--	--
10...	0950	40.0	343	7.30	22.0	--	0	0	--	--	--
10...	0952	54.0	366	7.30	18.5	--	0	0	--	--	180

08104650 LAKE GEORGETOWN NEAR GEORGETOWN, TX--Continued

304006097452501 - LAKE GEORGETOWN SITE BC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CAC03	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)
JAN										
03...	16	48	15	9.3	0.3	2.5	166	18	12	8.7
03...	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--
03...	15	48	15	9.4	0.3	2.5	167	16	12	8.8
APR										
18...	16	48	14	8.9	0.3	2.4	162	15	11	7.3
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	13	49	14	8.5	0.3	2.4	167	16	11	9.4
AUG										
10...	11	43	12	7.6	0.3	2.5	146	12	10	9.0
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	7	50	13	7.7	0.3	2.5	172	8.0	11	12

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
03...	213	--	<0.010	<0.100	0.080	0.62	0.70	0.020	11	<1
03...	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--
03...	--	--	<0.010	<0.100	0.090	0.61	0.70	0.010	<10	<10
03...	--	--	--	--	--	--	--	--	--	--
03...	212	--	<0.010	<0.100	0.160	0.34	0.50	0.030	20	8
APR										
18...	204	--	<0.010	0.200	<0.010	--	0.40	0.010	<3	<1
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	0.190	0.010	0.200	0.060	0.24	0.30	0.010	10	<10
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	210	--	<0.010	0.300	0.060	0.34	0.40	0.020	3	40
AUG										
10...	184	--	<0.010	<0.100	0.030	0.37	0.40	<0.010	3	1
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	<0.010	<0.100	0.020	0.88	0.90	<0.010	20	20
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	<0.010	<0.100	0.130	0.77	0.90	0.010	40	270
10...	--	--	--	--	--	--	--	--	--	--
10...	208	--	<0.010	<0.100	0.660	0.04	0.70	0.010	640	330

304055097471301 - LAKE GEORGETOWN SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CAC03)
JAN											
03...	1130	1.00	373	8.30	14.0	1.10	9.8	97	K2	34	180
03...	1132	10.0	373	8.30	13.5	--	9.8	96	--	--	--
03...	1134	20.0	379	8.10	13.0	--	9.2	89	--	--	--
03...	1136	25.0	384	8.00	13.0	--	8.0	77	--	--	180
APR											
18...	1115	1.00	375	8.20	21.0	0.60	7.7	88	K11	K10	180
18...	1117	10.0	375	8.20	19.0	--	7.6	84	--	--	--
18...	1119	20.0	378	8.00	16.5	--	6.5	68	--	--	--
18...	1121	27.0	397	7.80	16.0	--	5.3	55	--	--	190
AUG											
10...	1015	1.00	339	7.90	28.0	0.80	4.4	58	K4	K3	160
10...	1017	10.0	339	8.00	28.0	--	4.7	61	--	--	--
10...	1019	20.0	339	8.00	27.5	--	4.7	61	--	--	--
10...	1021	27.0	339	8.00	27.5	--	4.7	61	--	--	170

## BRAZOS RIVER BASIN

08104650 LAKE GEORGETOWN NEAR GEORGETOWN, TX--Continued

304055097471301 - LAKE GEORGETOWN SITE CC--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)
JAN										
03...	11	46	15	9.1	0.3	2.5	166	15	12	8.4
03...	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--
03...	13	49	15	9.2	0.3	2.5	171	16	12	8.6
APR										
18...	15	49	14	8.4	0.3	2.3	165	16	11	7.1
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	14	54	13	7.8	0.3	2.1	175	18	11	7.5
AUG										
10...	11	44	12	7.7	0.3	2.6	149	12	10	9.3
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	17	45	13	7.7	0.3	2.5	149	12	11	9.3
DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
03...	208	--	<0.010	<0.100	0.080	0.62	0.70	0.020	4	<1
03...	--	--	<0.010	<0.100	0.080	0.42	0.50	0.010	10	<10
03...	--	--	--	--	--	--	--	--	--	--
03...	215	--	<0.010	<0.100	0.120	0.58	0.70	0.010	6	3
APR										
18...	207	0.090	0.010	0.100	0.010	0.29	0.30	0.020	<3	<1
18...	--	--	--	--	--	--	--	--	--	--
18...	--	0.090	0.010	0.100	0.050	0.45	0.50	0.010	<10	<10
18...	218	0.090	0.010	0.100	0.110	0.49	0.60	0.010	5	8
AUG										
10...	187	--	<0.010	<0.100	0.030	0.27	0.30	0.020	55	1
10...	--	--	<0.010	<0.100	0.040	0.46	0.50	<0.010	10	<10
10...	--	--	--	--	--	--	--	--	--	--
10...	190	--	<0.010	<0.100	0.040	0.76	0.80	0.020	7	13

08104650 LAKE GEORGETOWN NEAR GEORGETOWN, TX--Continued

Lake Georgetown AC (304016097433101)

Phytoplankton Analyses September 1988 to October 1989

Date	1-3-89
Time	0921

TOTAL CELLS/mL	1,672
NUMBER OF SPECIES	16
DEPTH COLLECTED (ft.)	3.5

<u>Organisms</u>	<u>Cells/mL</u>
CHLOROPHYTA (Green algae)	
<i>Arthrodesmus</i> sp.	22
<i>Chlamydomonas</i> sp.	22
<i>Crucigenia tetrapedia</i>	88
<i>Golenkinia radiata</i>	66
<i>Kirchneriella obesa</i>	88
<i>Scenedesmus quadricauda</i>	88
<i>Tetrastrum</i> sp.	88
CHRYSTOPHYTA (Golden-brown algae)	
<i>Dinobryon divergens</i>	22
<i>Kephyrion</i> sp.	22
CYANOPHYTA (Blue-green algae)	
<i>Chroococcus dispersus</i>	110
PYRRHOPHYTA (Dinoflagellates)	
<i>Glenodinium quadridens</i>	66
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
<i>Cyclotella ocellata</i>	660
<i>Melosira granulata</i>	132
Order Pennales	
<i>Navicula</i> sp.	22
<i>Synedra</i> sp.	88

## BRAZOS RIVER BASIN

08104650 LAKE GEORGETOWN NEAR GEORGETOWN, TX--Continued

Lake Georgetown CC (304055097471301)

## Phytoplankton Analyses September 1988 to October 1989

Date	1-3-89
Time	1131

TOTAL CELLS/mL	1,449
NUMBER OF SPECIES	20
DEPTH COLLECTED (ft.)	1.85

<u>Organisms</u>	<u>Cells/mL</u>
CHLOROPHYTA (Green algae)	
<i>Ankistrodesmus convolutus</i>	14
<i>Ankistrodesmus falcatus</i>	28
<i>Chlamydomonas</i> sp.	14
<i>Crucigenia tetrapedia</i>	56
<i>Gloeocystis</i> sp.	14
<i>Golenkinia radiata</i>	42
<i>Kirchneriella obesa</i>	56
<i>Oocystis</i> sp.	28
<i>Scenedesmus quadricauda</i>	111
<i>Tetraedron minimum</i>	28
CHRYSTOPHYTA (Golden-brown algae)	
<i>Dinobryon divergens</i>	14
<i>Kephyrion</i> sp.	56
CYANOPHYTA (Blue-green algae)	
<i>Chroococcus dispersus</i>	28
<i>Schizothrix calcicola</i>	14
EUGLENOPHYTA (Euglenoids)	
<i>Phacus</i> sp.	14
PYRRHOPHYTA (Dinoflagellates)	
<i>Glenodinium quadridens</i>	111
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
<i>Cyclotella ocellata</i>	765
Order Pennales	
<i>Nitzschia closterium</i>	14
<i>Nitzschia</i> sp.	14
<i>Synedra delicatissima</i>	28



08104650 LAKE GEORGETOWN NEAR GEORGETOWN, TX--Continued

Lake Georgetown AC (304016097433101)

## Phytoplankton Analyses September 1988 to October 1989

Date	4-18-89
Time	0946

TOTAL CELLS/mL	20,327
NUMBER OF SPECIES	25
DEPTH COLLECTED (ft.)	4.2

<u>Organisms</u>	<u>Cells/mL</u>
CHLOROPHYTA (green algae)	
<i>Ankistrodesmus falcatus</i>	135
<i>Chlamydomonas</i> sp.	68
<i>Chlorococcum</i> sp.	473
<i>Chodatella subsalsa</i>	68
<i>Closteriopsis longissima</i>	68
<i>Cosmarium</i> sp.	135
<i>Crucigenia tetrapedia</i>	68
<i>Elakatothrix viridis</i>	202
<i>Franceia ovalis</i>	68
<i>Mesotaenium</i> sp.	202
<i>Oocystis</i> sp.	608
<i>Scenedesmus bijuga</i>	135
<i>Scenedesmus quadricauda</i>	270
<i>Selenastrum minutum</i>	68
<i>Sphaerocystis Schroeteri</i>	405
<i>Tetraedron minimum</i>	68
CYANOPHYTA (blue-green algae)	
<i>Aphanocapsa delicatissima</i>	10,737
<i>Aphanothece nidulans</i>	2,836
<i>Chroococcus limneticus</i>	405
<i>Chroococcus multicoloratus</i> ?	1,216
<i>Synechococcus</i> sp.	1,418
CHRYSTOPHYTA	
<i>Dinobryon divergens</i>	68
BACILLARIOPHYTA (diatoms)	
Order Centrales	
<i>Stephanodiscus hantzschii</i> var. <i>pusillus</i>	202
Order Pennales	
<i>Diploneis</i> sp.	202
<i>Nitzschia</i> sp.	202

## BRAZOS RIVER BASIN

08104650 LAKE GEORGETOWN NEAR GEORGETOWN, TX--Continued

Lake Georgetown CC (304055097471301)

Phytoplankton Analyses September 1988 to October 1989

Date	4-18-89
Time	1116

TOTAL CELLS/mL	17,694
NUMBER OF SPECIES	20
DEPTH COLLECTED (ft.)	1.0

<u>Organisms</u>	<u>Cells/mL</u>
CHLOROPHYTA (green algae)	
<i>Ankistrodesmus convolutus</i>	135
<i>Ankistrodesmus falcatus</i>	135
<i>Chlorococcum</i> sp.	473
<i>Crucigenia tetrapedia</i>	203
<i>Dictyosphaerium pulchellum</i>	338
<i>Mesotaenium</i> sp.	135
<i>Scenedesmus bijuga</i>	270
<i>Scenedesmus quadricauda</i>	540
<i>Selenastrum minutum</i>	68
CYANOPHYTA (blue-green algae)	
<i>Aphanocapsa delicatissima</i>	8,238
<i>Aphanocapsa elachista</i>	1,351
<i>Aphanothece nidulans</i>	2,634
<i>Chroococcus limneticus</i>	675
<i>Chroococcus multicoloratus</i>	608
<i>Synechococcus</i> sp.	540
EUGLENOPHYTA (euglenoid algae)	
<i>Euglena</i> sp.	68
PYRROPHYTA (dinoflagellates)	
<i>Glenodinium quadridens</i>	68
BACILLARIOPHYTA (diatoms)	
Order Centrales	
<i>Cyclotella ocellata</i>	675
Order Pennales	
<i>Nitzschia palea</i>	360
<i>Nitzschia</i> sp.	180

08104650 LAKE GEORGETOWN NEAR GEORGETOWN, TX--Continued

Lake Georgetown AC (304016097433101)

Phytoplankton Analyses September 1988 to October 1989

Date	8-10-89
Time	0856

TOTAL CELLS/mL	57,820
NUMBER OF SPECIES	22
DEPTH COLLECTED (ft.)	--

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (diatoms)	
Order Centrales	
<i>Cyclotella stelligera</i>	762
<i>Stephanodiscus</i> sp.	381
Order Pennales	
<i>Achnanthes minutissima</i>	65
<i>Anomoeoneis vitrea</i>	65
<i>Nitzschia acicularis</i>	65
<i>Nitzschia palea</i>	65
<i>Synedra acus</i>	65
<i>Synedra delicatissima</i>	326
CHLOROPHYTA (green algae)	
<i>Ankistrodesmus nanoselene</i>	163
<i>Carteria</i> sp.	163
<i>Chlorococcum</i> sp.	817
<i>Cosmarium</i> sp.	327
<i>Oocystis</i> sp.	163
<i>Tetraedron muticum</i>	163
CYANOPHYTA (blue-green algae)	
<i>Aphanizomenon flos-aquae</i>	1,143
<i>Aphanothece nidulans</i>	6,207
<i>Chroococcus limneticus</i>	3,920
<i>Chroococcus varius</i>	653
<i>Dactylococcopsis fascicularis</i>	13,884
<i>Lyngbya nana</i>	13,068
<i>Oscillatoria limnetica</i>	13,558
<i>Synechococcus</i> sp.	1,797

08104650 LAKE GEORGETOWN NEAR GEORGETOWN, TX--Continued  
 Lake Georgetown CC (304055097471301)

Phytoplankton Analyses September 1988 to October 1989

Date	8-10-89
Time	1016

TOTAL CELLS/mL	95,058
NUMBER OF SPECIES	31
DEPTH COLLECTED (ft.)	--

<u>Organisms</u>	<u>Cells/mL</u>
<b>BACILLARIOPHYTA (diatoms)</b>	
Order Centrales	
<i>Cyclotella stelligera</i>	272
<i>Melosira granulata</i>	635
<i>Melosira</i> sp.	181
<i>Stephanodiscus hantzschii</i> var. <i>pusilus</i>	71
<i>Stephanodiscus</i> sp.	71
Order Pennales	
<i>Achnanthes minutissima</i>	70
<i>Anomoeoneis vitrea</i>	70
<i>Nitzschia acicularis</i>	70
<i>Nitzschia</i> sp.	279
<i>Synedra delicatissima</i>	417
<b>CHLOROPHYTA (green algae)</b>	
<i>Chlorococcum</i> sp.	181
<i>Chodatella quadriseta</i>	181
<i>Cosmarium</i> sp.	181
<i>Crucigenia tetrapedia</i>	1,452
<i>Nephrocytium</i> sp.	181
<i>Pediastrum tetras</i>	181
<i>Scenedesmus dimorphus</i>	726
<i>Scenedesmus quadricauda</i>	726
<i>Tetraedron minimum</i>	181
<b>CHRYSTOPHYTA (Golden-brown algae)</b>	
<i>Dinobryon divergens</i>	181
<b>CYANOPHYTA (blue-green algae)</b>	
<i>Aphanizomenon flos-aquae</i>	544
<i>Aphanocapsa delicatissima</i>	7,260
<i>Aphanocapsa elachista</i> var. <i>conferta</i>	8,167
<i>Aphanothece nidulans</i>	18,513
<i>Chroococcus limneticus</i>	726
<i>Chroococcus varius</i>	3,630
<i>Dactylococcopsis acicularis</i>	363
<i>Dactylococcopsis fascicularis</i>	23,413
<i>Lyngbya nana</i>	10,527
<i>Oscillatoria limnetica</i>	13,975
<i>Synechococcus</i> sp.	1,633

## BRAZOS RIVER BASIN

343

08104700 NORTH FORK SAN GABRIEL RIVER NEAR GEORGETOWN, TX

LOCATION.--Lat 30°39'42", Long 97°42'40", Williamson County, Hydrologic Unit 12070205, on left bank 5,000 ft downstream from North Fork dam, 1.5 mi upstream from Middle Fork San Gabriel River, 2.7 mi upstream from Interstate Highway 35, 2.7 mi northwest of Georgetown, and 3.4 mi upstream from mouth.

DRAINAGE AREA.--248 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1968 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 689.06 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Beginning Mar. 3, 1980, flow largely regulated by Lake Georgetown (station 08104650) located about 1.0 mi upstream from gage. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--11 years (water years 1969-79) unregulated, 88.1 ft<sup>3</sup>/s (63,830 acre-ft/yr); 10 years (water years 1980-89) regulated, 67.8 ft<sup>3</sup>/s (49,120 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,000 ft<sup>3</sup>/s Sept. 17, 1974 (gage height, 26.20 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1875, 39.5 ft in September 1921. Flood in April 1957 reached a stage of 34.5 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 667 ft<sup>3</sup>/s May 23 at 1100 hours (gage height, 7.27 ft); minimum daily, 0.44 ft<sup>3</sup>/s Jan. 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	6.1	6.6	6.3	5.1	5.1	3.9	6.5	135	4.8	4.3	3.0
2	5.5	6.0	6.6	6.0	5.0	5.3	4.0	6.4	135	4.8	4.8	3.1
3	5.3	6.0	6.3	6.0	4.6	5.3	3.9	6.3	135	5.1	4.6	3.1
4	5.3	3.2	6.3	6.0	4.4	5.2	4.0	6.3	135	4.8	4.6	3.1
5	5.3	.54	6.4	6.0	4.4	5.0	4.1	6.6	135	4.8	4.6	3.1
6	5.3	.56	6.6	6.0	4.4	4.9	4.1	6.3	53	4.8	4.6	3.2
7	5.3	.69	6.8	6.0	4.5	5.1	9.3	6.4	6.3	4.8	4.6	3.4
8	5.3	3.2	6.7	6.0	4.6	5.1	11	7.2	6.3	4.7	4.6	3.6
9	5.3	6.0	6.6	6.0	4.6	5.2	5.8	5.3	6.3	4.6	4.6	3.6
10	5.3	6.6	6.6	6.0	4.6	5.4	5.8	4.8	6.3	4.6	4.7	3.6
11	5.4	6.6	6.3	4.6	4.6	5.5	6.0	3.5	6.6	4.6	4.8	3.6
12	5.6	6.7	6.3	3.9	4.6	5.6	6.0	3.6	6.4	4.7	4.8	3.6
13	5.8	7.0	6.5	4.3	4.6	5.5	6.3	5.0	6.5	4.8	4.8	3.8
14	5.8	7.0	6.4	4.1	4.6	5.5	6.3	4.5	8.0	4.8	4.8	3.6
15	5.9	7.1	6.4	4.0	4.6	5.5	6.0	5.1	6.5	4.8	4.8	3.5
16	6.0	6.6	6.4	4.0	5.1	5.5	6.0	4.5	6.3	4.4	4.8	3.4
17	6.0	6.6	6.3	3.9	4.8	5.6	6.3	6.3	6.3	4.1	4.8	3.4
18	6.2	6.6	6.3	2.3	4.8	5.7	6.3	5.5	6.3	3.3	4.6	3.4
19	6.3	6.5	6.3	.44	4.8	5.5	6.6	5.3	51	3.7	4.8	3.5
20	6.3	6.3	6.4	.78	4.8	5.8	6.3	5.3	137	4.2	4.8	3.6
21	6.3	6.3	6.6	4.0	4.8	5.4	6.6	5.1	137	4.4	4.8	3.6
22	6.3	6.3	6.5	4.6	4.8	5.6	6.4	6.3	137	4.4	4.8	3.6
23	6.3	6.3	6.3	4.5	4.8	5.7	6.6	413	102	4.4	5.1	3.6
24	6.3	6.3	6.3	3.8	4.8	5.5	6.6	631	69	4.4	4.9	3.6
25	6.3	6.3	6.3	4.0	4.8	5.5	6.6	619	69	4.4	3.7	3.6
26	6.3	6.3	6.3	3.8	4.8	5.5	6.6	612	69	4.4	3.6	3.6
27	6.3	6.3	6.3	6.8	5.0	5.3	6.6	611	69	4.2	3.6	3.6
28	6.3	6.4	6.3	4.8	5.1	6.0	6.6	603	69	4.2	2.8	3.6
29	6.3	6.6	6.3	5.1	---	6.6	6.4	398	35	4.1	2.4	3.6
30	6.3	6.6	6.3	5.2	---	4.4	6.4	265	4.8	4.2	2.7	3.6
31	6.6	---	6.3	5.1	---	3.9	---	187	---	4.2	2.9	---
TOTAL	182.3	169.59	198.9	144.32	132.4	166.7	183.4	4461.1	1754.9	138.5	135.1	104.2
MEAN	5.88	5.65	6.42	4.66	4.73	5.38	6.11	144	58.5	4.47	4.36	3.47
MAX	6.6	7.1	6.8	6.8	5.1	6.6	11	631	137	5.1	5.1	3.8
MIN	5.3	.54	6.3	.44	4.4	3.9	3.9	3.5	4.8	3.3	2.4	3.0
AC-FT	362	336	395	286	263	331	364	8850	3480	275	268	207
CAL YR 1988	TOTAL	2387.99	MEAN	6.52	MAX	27	MIN	.54	AC-FT	4740		
WTR YR 1989	TOTAL	7771.41	MEAN	21.3	MAX	631	MIN	.44	AC-FT	15410		



## BRAZOS RIVER BASIN

08104700 NORTH FORK SAN GABRIEL RIVER NEAR GEORGETOWN, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1981 to August 1989 (discontinued).

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CAC03)	HARD-NESS NONCARB WH WAT TOT FLD (MG/L AS CAC03)
JAN 03...	1240	5.8	372	7.90	16.0	3	2.5	11.2	115	0.4	180	18
APR 18...	1320	6.3	370	8.20	19.5	10	2.8	9.5	106	1.2	180	22
AUG 10...	1130	4.6	349	7.80	25.0	17	1.2	8.2	102	0.8	170	15
DATE		CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD (MG/L AS CAC03)	SULFATE DIS-SOLVED (MG/L AS S04)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
JAN 03...	49	15	9.2	0.3	2.5	166	16	12	0.20	8.9	212	
APR 18...	49	15	9.0	0.3	2.3	162	15	11	0.20	7.5	206	
AUG 10...	46	13	8.3	0.3	2.4	154	14	11	0.40	9.5	197	
DATE		RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)
JAN 03...	9	2	0.090	0.010	0.100	0.130	0.47	0.60	<0.010	3.2	1	
APR 18...	10	9	--	<0.010	0.300	0.030	0.27	0.30	0.010	3.5	1	
AUG 10...	9	3	--	<0.010	0.200	0.080	0.62	0.70	0.010	3.8	2	
DATE		BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM, DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY, DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN 03...	42	<1	<1	4	<3	<5	2	<0.1	<1	<1.0	12	
APR 18...	38	<1	<1	<1	<3	<5	5	<0.1	<1	<1.0	<3	
AUG 10...	36	<1	<1	1	5	6	11	<0.1	<1	<1.0	15	

## BRAZOS RIVER BASIN

345

08104900 SOUTH FORK SAN GABRIEL RIVER AT GEORGETOWN, TX

LOCATION.--Lat 30°37'32", Long 97°41'27", Williamson County, Hydrologic Unit 12070205, on right bank at downstream side of downstream bridge of two bridges on Interstate Highway 35, 1.1 mi southwest of the courthouse at Georgetown, and 2.4 mi upstream from mouth.

DRAINAGE AREA.--133 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1948, 1962-67, and December 1967 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 687.72 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Several observations of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--21 years (water years 1969-89), 48.9 ft<sup>3</sup>/s (4.99 in/yr), 35,430 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,400 ft<sup>3</sup>/s Sept. 3, 1981 (gage height, 24.60 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1887, about 41 ft Apr. 24, 1957, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 17	1700	*10,500	*13.19	No other peak greater than base discharge.			
Minimum daily discharge, 0.03 ft <sup>3</sup> /s Sept. 27-30.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.23	.10	.17	.19	3.3	6.0	17	13	21	11	17	.28
2	.16	.10	.15	.19	1.9	11	15	8.6	22	11	26	.23
3	.16	.10	.11	.22	2.4	7.9	12	7.1	20	13	22	.18
4	.15	.10	.11	.24	4.0	13	9.3	7.2	20	11	20	.13
5	.15	.10	.11	.34	3.8	11	8.5	17	18	10	16	.10
6	.15	.10	.16	.43	3.4	16	7.0	22	18	9.4	12	.08
7	.15	.11	.87	.48	2.9	11	6.3	17	16	9.0	7.7	.06
8	.12	.11	.81	.36	2.8	6.8	5.9	11	16	8.9	5.7	.06
9	.11	.10	.12	.35	3.0	5.8	7.7	7.8	10	9.3	4.6	.05
10	.11	.10	.45	.31	1.8	5.3	6.7	14	12	8.8	4.1	3.9
11	.10	.10	.18	.35	1.2	4.9	5.9	11	17	6.8	3.8	.77
12	.10	.11	.15	.43	1.3	6.8	6.0	14	22	6.4	4.0	.26
13	.10	.11	.15	.98	3.0	6.1	6.7	15	16	5.9	3.4	3.9
14	.10	.13	.17	.28	2.0	5.5	10	270	55	5.8	1.7	1.6
15	.10	.56	.19	.45	1.5	5.0	9.6	356	38	7.2	1.8	.97
16	.10	.26	.19	.51	2.4	4.5	12	88	24	7.2	3.0	.64
17	.10	.10	.19	.35	4.3	4.9	8.5	1690	19	5.5	3.2	.51
18	.08	.14	.19	.35	3.6	4.4	7.1	236	17	4.2	2.9	.28
19	.08	.15	.16	2.0	5.3	4.6	17	63	14	3.0	2.5	.23
20	.08	.24	.15	.90	7.3	6.3	18	46	13	2.1	1.4	.19
21	.08	.29	.15	.24	4.3	5.6	16	125	12	1.2	.71	.16
22	.09	.28	.19	.15	3.8	5.6	10	53	12	.85	.27	.14
23	.09	.21	.19	.12	3.3	5.8	10	41	11	.65	.21	.09
24	.08	.18	.19	.13	3.1	6.1	7.4	36	11	.65	4.2	.06
25	.08	.15	.19	.17	3.5	5.5	6.2	33	12	35	7.6	.06
26	.08	.15	.19	.39	4.8	6.9	6.3	30	12	34	4.5	.05
27	.08	.15	.19	8.4	5.3	7.3	6.1	29	13	24	2.0	.03
28	.08	.15	.19	6.8	5.0	11	6.1	29	12	21	.67	.03
29	.08	.15	.19	12	---	259	18	27	12	15	.34	.03
30	.09	.15	.19	12	---	40	21	28	12	12	.37	.03
31	.81	---	.19	6.6	---	22	---	26	---	19	.37	---
TOTAL	4.07	4.78	6.83	56.71	94.3	521.6	303.3	3370.7	527	318.85	184.04	15.10
MEAN	.13	.16	.22	1.83	3.37	16.8	10.1	109	17.6	10.3	5.94	.50
MAX	.81	.56	.87	12	7.3	259	21	1690	55	35	26	3.9
MIN	.08	.10	.11	.12	1.2	4.4	5.9	7.1	10	.65	.21	.03
AC-FT	8.1	9.5	14	112	187	1030	602	6690	1050	632	365	30
CFSM	.00	.00	.00	.01	.03	.13	.08	.82	.13	.08	.04	.00
IN.	.00	.00	.00	.02	.03	.15	.08	.94	.15	.09	.05	.00
CAL YR 1988	TOTAL	1708.10	MEAN	4.67	MAX	111	MIN	.08	AC-FT	3390	CFSM	.04
WTR YR 1989	TOTAL	5407.28	MEAN	14.8	MAX	1690	MIN	.03	AC-FT	10730	CFSM	.11
											IN.	.48
											IN.	1.51

## BRAZOS RIVER BASIN

08105100 BERRY CREEK NEAR GEORGETOWN, TX

LOCATION.--Lat 30°41'28", long 97°39'21", Williamson County, Hydrologic Unit 12070205, on right bank at upstream side of upstream service road on Interstate Highway 35, 2.9-mi north of the county courthouse at Georgetown, and 3.6 mi upstream from mouth.

DRAINAGE AREA.--83.1 mi<sup>2</sup>.

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

Water-quality records.--Sediment records: October 1976 to September 1981.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 659.97 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. No regulation or diversions. Several observations of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--22 years, 25.4 ft<sup>3</sup>/s (4.15 in/yr), 18,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,500 ft<sup>3</sup>/s Oct. 31, 1974 (gage height, 19.33 ft); maximum gage height, 20.11 ft from floodmark, Feb. 3, 1986; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1921 occurred September 1921, 25 ft, from information by State Department of Highways and Public Transportation and local residents (discharge not determined).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 17	1800	*1,950	*8.14	No other peak greater than base discharge.			

Minimum daily discharge, no flow on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.09	.90	2.8	1.6	6.8	4.8	2.1	.00
2	.00	.00	.00	.00	.10	1.2	3.4	1.5	6.2	4.7	3.0	.00
3	.00	.00	.00	.00	.14	1.1	3.7	1.5	5.6	4.5	2.2	.00
4	.00	.00	.00	.00	.14	2.9	3.5	1.5	5.6	4.3	2.1	.00
5	.00	.00	.00	.00	.14	1.0	2.8	1.6	6.0	4.3	2.1	.00
6	.00	.00	.00	.00	.14	1.1	2.5	1.4	5.9	4.3	1.9	.00
7	.00	.00	.00	.00	.14	1.3	2.5	1.4	5.9	4.3	1.8	.00
8	.00	.00	.00	.00	.14	1.1	2.5	1.3	6.6	4.2	1.6	.00
9	.00	.00	.00	.00	.14	e1.0	2.5	1.1	6.9	4.0	1.2	.00
10	.00	.00	.00	.00	.14	e.90	2.3	1.2	6.8	3.8	1.1	.00
11	.00	.00	.00	.00	.17	e.80	2.4	1.2	7.6	3.7	.83	.00
12	.00	.00	.00	.00	.16	e2.0	2.4	1.2	6.2	3.6	.63	.00
13	.00	.00	.00	.00	.20	1.5	2.4	1.6	6.7	3.3	.55	.00
14	.00	.00	.00	.00	.19	1.2	2.7	7.9	275	3.3	.42	.00
15	.00	.00	.00	.00	.17	1.1	2.7	91	47	3.2	.46	.00
16	.00	.00	.00	.00	.22	1.2	2.7	27	17	3.1	.46	.00
17	.00	.00	.00	.00	.27	1.1	2.6	372	11	2.9	.29	.00
18	.00	.00	.00	.00	.31	1.1	2.3	91	9.2	2.8	.22	.00
19	.00	.00	.00	.02	.30	1.1	3.4	24	9.0	2.8	.12	.00
20	.00	.00	.00	.06	.30	1.2	2.7	15	8.4	2.8	.06	.00
21	.00	.00	.00	.06	.33	1.8	2.7	13	8.3	2.8	.03	.00
22	.00	.00	.00	.06	.34	1.8	2.6	13	8.2	2.7	.00	.00
23	.00	.00	.00	.07	.37	1.6	2.5	13	8.0	2.7	.00	.00
24	.00	.00	.00	.06	.56	1.3	2.2	12	7.6	2.7	.00	.00
25	.00	.00	.00	.05	.82	1.3	1.9	12	7.0	2.5	.00	.00
26	.00	.00	.00	.06	.90	1.2	2.0	11	6.6	2.4	.00	.00
27	.00	.00	.00	.05	1.0	1.2	1.8	11	6.3	2.5	.00	.00
28	.00	.00	.00	.06	.89	2.7	1.9	9.7	5.8	2.6	.00	.00
29	.00	.00	.00	.15	---	4.5	1.9	8.8	5.2	2.4	.00	.00
30	.00	.00	.00	.19	---	12	1.8	8.1	4.9	2.2	.00	.00
31	.00	---	.00	.14	---	3.4	---	7.3	---	2.1	.00	---
TOTAL	0.00	0.00	0.00	1.03	8.81	57.60	76.1	764.9	527.3	102.3	23.17	0.00
MEAN	.00	.00	.00	.033	.31	1.86	2.54	24.7	17.6	3.30	.75	.00
MAX	.00	.00	.00	.19	1.0	12	3.7	372	275	4.8	3.0	.00
MIN	.00	.00	.00	.00	.09	.80	1.8	1.1	4.9	2.1	.00	.00
AC-FT	.0	.0	.0	2.0	17	114	151	1520	1050	203	46	.0
CFSM	.00	.00	.00	.00	.00	.02	.03	.30	.21	.04	.01	.00
IN.	.00	.00	.00	.00	.00	.03	.03	.34	.24	.05	.01	.00

CAL YR 1988 TOTAL 1149.71 MEAN 3.14 MAX 103 MIN .00 AC-FT 2280 CFSM .04 IN. .51  
WTR YR 1989 TOTAL 1561.21 MEAN 4.28 MAX 372 MIN .00 AC-FT 3100 CFSM .05 IN. .70

e Estimated.

## BRAZOS RIVER BASIN

347

08105300 SAN GABRIEL RIVER NEAR WEIR, TX

LOCATION.--Lat 30°38'45", Long 97°35'06", Williamson County, Hydrologic Unit 12070205, on left bank at downstream side of State Highway 29 bridge, 0.5 mi upstream from Manske Branch, 4.7 mi east of Georgetown, and 54.8 mi upstream from mouth.

DRAINAGE AREA.--563 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is 582.04 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Since March 1980, flow is partially regulated by Lake Georgetown (station 08104650) 12 mi upstream. The city of Georgetown releases sewage effluent into the river 6.5 mi upstream from this station.

AVERAGE DISCHARGE.--2 years (water years 1978-79) prior to regulation by Lake Georgetown, 165 ft<sup>3</sup>/s (119,500 acre-ft/yr); 10 years (water years 1980-89) regulated, 188 ft<sup>3</sup>/s (136,200 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 44,500 ft<sup>3</sup>/s Feb. 3, 1986 (gage height, 23.23 ft); minimum daily, 0.45 ft<sup>3</sup>/s Aug. 22, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1852, about 37 ft Sept. 10, 1921, from information by local residents. The second highest flood since 1852, about 32 ft, occurred Apr. 24, 1957, from information by State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,800 ft<sup>3</sup>/s May 17 at 1130 hours (gage height, 13.28 ft); minimum daily, 9.7 ft<sup>3</sup>/s Oct. 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	15	20	15	20	20	39	31	169	49	24	11
2	12	15	18	15	20	27	34	25	168	46	55	11
3	11	14	18	16	20	24	33	23	165	52	27	10
4	9.7	14	19	15	16	39	26	27	162	47	23	11
5	10	13	19	16	16	29	16	48	164	42	22	11
6	10	13	18	16	17	26	23	36	132	41	21	10
7	11	13	21	16	17	24	25	39	47	38	19	10
8	15	12	31	14	16	21	33	34	40	37	19	10
9	17	13	15	15	14	21	24	28	36	36	19	10
10	16	14	17	16	14	22	26	36	37	36	19	11
11	18	16	17	15	16	19	24	32	75	34	18	13
12	18	16	15	14	16	20	21	34	49	33	17	11
13	16	15	14	16	16	20	22	101	45	30	16	12
14	12	16	14	17	16	21	35	282	643	30	16	14
15	12	16	14	14	14	19	30	491	198	29	16	11
16	12	19	14	14	17	17	29	212	102	28	15	11
17	12	16	14	15	21	18	30	3450	77	28	15	12
18	12	19	14	14	23	18	23	794	65	26	14	12
19	13	17	14	18	19	18	51	203	63	28	14	11
20	12	16	14	23	22	24	42	138	156	26	13	11
21	11	17	15	15	17	22	37	187	162	24	12	11
22	12	17	15	14	18	22	32	143	161	25	12	11
23	11	18	15	14	17	19	28	330	150	26	11	11
24	11	17	15	14	19	19	28	709	109	25	11	11
25	12	18	15	17	19	20	23	697	108	28	13	11
26	12	17	15	17	19	21	22	690	112	42	12	11
27	22	17	16	23	19	23	23	670	110	35	12	11
28	17	17	16	30	17	56	26	660	108	30	12	11
29	13	17	16	39	---	249	25	518	99	26	11	11
30	13	18	15	45	---	118	43	307	53	23	11	11
31	17	---	16	24	---	57	---	253	---	22	11	---
TOTAL	413.7	475	509	566	495	1073	873	11228	3765	1022	530	333
MEAN	13.3	15.8	16.4	18.3	17.7	34.6	29.1	362	125	33.0	17.1	11.1
MAX	22	19	31	45	23	249	51	3450	643	52	55	14
MIN	9.7	12	14	14	14	17	16	23	36	22	11	10
AC-FT	821	942	1010	1120	982	2130	1730	22270	7470	2030	1050	661
CAL YR 1988	TOTAL	13267.5	MEAN	36.2	MAX	1160	MIN	9.7	AC-FT	26320		
WTR YR 1989	TOTAL	21282.7	MEAN	58.3	MAX	3450	MIN	9.7	AC-FT	42210		

## BRAZOS RIVER BASIN

08105300 SAN GABRIEL RIVER NEAR WEIR, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1976 to August 1989 (discontinued).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: December 1976 to September 1982.

INSTRUMENTATION.--Water temperature was recorded continuously from December 1976 to September 1982.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum daily, 35.5°C July 27, 1982; minimum daily, 2.5°C Jan. 22, 1978, Jan. 2, 1979.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS TOTAL (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)
OCT 20...	1130	12	506	8.10	24.0	3	5.2	8.4	102	1.2	210	57
DEC 07...	0900	21	560	8.00	13.5	4	--	9.5	93	1.7	230	65
MAR 02...	1120	26	542	8.00	12.5	5	6.4	9.8	94	0.8	240	71
APR 19...	1220	68	483	7.80	23.0	15	5.5	8.0	95	1.7	200	60
JUN 09...	1055	34	468	7.40	24.5	8	4.7	5.2	64	1.2	220	64
AUG 10...	1040	19	452	7.90	25.0	25	3.1	7.7	94	7.4	190	51
DATE		MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT TOT FET FIELD MG/L AS CAC03	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)
OCT 20...		17	29	0.9	2.6	167	25	38	0.20	5.3	274	14
DEC 07...		17	28	0.8	2.8	216	22	37	0.20	4.4	306	--
MAR 02...		16	24	0.7	2.2	213	30	32	0.20	2.0	305	16
APR 19...		13	17	0.5	2.2	182	24	24	0.20	3.7	253	14
JUN 09...		14	15	0.4	2.3	213	21	18	0.20	6.0	268	4
AUG 10...		14	22	0.7	2.4	175	20	27	0.20	11	253	18
DATE		RESIDUE VOLATILE, SUS- PENDED (MG/L)	RESIDUE FIXED NON FILTER- ABLE (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS- SOLVED (UG/L AS AS)
OCT 20...		3	11	0.970	0.030	1.00	0.050	0.35	0.40	0.430	4.3	2
DEC 07...		--	--	--	<0.010	0.300	0.010	0.39	0.40	0.020	4.2	--
MAR 02...		10	6	1.27	0.030	1.30	0.040	0.46	0.50	0.440	3.8	1
APR 19...		12	2	1.06	0.040	1.10	0.100	0.60	0.70	0.290	3.9	--
JUN 09...		<1	--	0.670	0.030	0.700	0.040	0.36	0.40	0.090	3.3	1
AUG 10...		<1	--	0.470	0.030	0.500	0.020	1.1	1.1	0.220	5.1	3
DATE		BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM, DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY, DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 20...		36	<1	<1	<1	10	<5	2	<0.1	<1	<1.0	9
DEC 07...		--	--	--	--	--	--	--	--	--	--	--
MAR 02...		44	<1	<1	1	8	<5	7	<0.1	<1	1.0	7
APR 19...		--	--	--	--	--	--	--	--	--	--	--
JUN 09...		51	<1	<1	1	8	<1	6	<0.1	<1	<1.0	<3
AUG 10...		37	<1	<1	<1	9	<1	2	<0.1	<1	<1.0	7



## BRAZOS RIVER BASIN

349

08105600 GRANGER LAKE NEAR GRANGER, TX

LOCATION.--30°41'34" N, long 97°19'34" W; Williamson County, Hydrologic Unit 12070205, at Granger Dam on San Gabriel River, 1.5 mi south of Friendship, 2.2 mi upstream from Willis Creek, 7.1 mi east of Granger, and at mile 31.9.

DRAINAGE AREA.--730 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1980 to current year.

GAGE--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Mar. 27, 1980, nonrecording gage at present site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam, 16,320 ft long, including the spillway. The lake was built for water conservation and flood control. Deliberate impoundment began on Jan. 21, 1980. The spillway is an ungated 950-foot long ogee weir, located near right end of dam. The spillway for normal flood releases is a gated 18-foot-diameter conduit, controlled by two 8- by 18-foot slide gates, located near the center of dam. The invert for the floodgate is 457.0 ft. A low-flow outlet consists of three 3- by 4-foot gated openings, with invert elevations of 486.0, 494.0, and 502.0 ft. Figures given herein represent total contents. Data regarding dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam.....	555.0	674,500
Designed flood.....	550.3	580,000
Crest of spillway.....	528.0	244,200
Top of conservation pool.....	504.0	65,510
Lowest gated outlet (invert of 18-foot conduit).....	457.0	0

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 186,200 acre-ft June 19, 1981 (elevation, 522.25 ft); minimum, 615 acre-ft Jan. 21, 1980 (elevation, 462.60 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 100,500 acre-ft May 22 at 0900 hours (elevation, 510.83 ft); minimum, 58,850 acre-ft Dec. 5 (elevation, 502.40 ft).

Capacity table (elevation, in feet, and total contents, in acre-feet)

502.0	57,280	506.0	74,610	510.0	95,670
504.0	65,510	508.0	84,650	511.0	101,600

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61100	59880	58920	59800	61670	62590	65290	66170	84540	67280	66260	64550
2	61060	59840	58880	59840	61670	62800	65380	66170	82100	67320	66610	64460
3	60980	59880	58880	59840	61630	62880	65510	66260	79810	67320	66610	64370
4	60900	59760	58880	59840	61590	62920	65380	66390	77420	67320	66570	64290
5	60850	59680	58880	59880	61550	62840	65380	66610	74950	67320	66520	64200
6	60770	59640	58880	59960	61550	62840	65330	66610	73050	67320	66430	64070
7	60730	59600	59200	59920	61550	62840	65380	66660	71060	67190	66340	63990
8	60690	59560	59280	59880	61550	62880	65330	66700	68840	67320	66300	63900
9	60610	59520	59280	59840	61550	62880	65160	66700	67590	67230	66170	63770
10	60530	59440	59600	59840	61550	62960	65110	67230	68390	67190	66170	63690
11	60450	59440	59640	59920	61590	63010	65110	67230	69020	67140	66080	63640
12	60410	59400	59680	59920	61760	63010	65110	67280	68480	67140	65990	63560
13	60330	59360	59680	60080	61880	63050	65160	70920	68260	67050	65950	63600
14	60250	59400	59680	60080	61920	63090	65290	72350	71200	67050	65860	63430
15	60250	59440	59640	60080	61960	63090	65330	73470	71200	67010	65820	63350
16	60210	59320	59600	60040	61960	63090	65380	73430	70780	66920	65770	63300
17	60160	59280	59600	60040	62210	63220	65460	97240	70380	66880	65730	63220
18	60080	59320	59600	60080	62210	63220	65460	99120	69740	66790	65640	63130
19	60040	59400	59600	60530	62340	63260	65900	99590	69290	66660	65600	63050
20	60000	59280	59640	60570	62380	63430	65990	99830	68840	66520	65460	62960
21	59960	59200	59680	60570	62380	63730	65990	100200	68620	66480	65420	62880
22	59920	59160	59720	60570	62380	63690	66080	100400	68260	66340	65290	62800
23	59840	59120	59760	60610	62380	63730	66080	99950	68030	66390	65240	62540
24	59760	59120	59720	60690	62380	63730	66080	99530	67940	66340	65200	62380
25	59760	59200	59680	60730	62460	63820	66120	98530	67860	66260	65160	62290
26	59760	59160	59760	60900	62540	63900	66120	96780	67860	66260	65070	62170
27	59760	59120	59760	60900	62500	63940	66120	95090	67720	66340	64980	62040
28	59680	59040	59720	61060	62540	64500	66170	93320	67590	66340	64940	62040
29	59680	59000	59720	61380	---	64850	66120	91410	67410	66340	64810	61960
30	59680	58960	59760	61510	---	65110	66170	89200	67280	66260	64760	61920
31	59880	---	59840	61630	---	65200	---	86930	---	66210	64680	---
MAX	61100	59880	59840	61630	62540	65200	66170	100400	84540	67320	66610	64550
MIN	59680	58960	58880	59800	61550	62590	65110	66170	67280	66210	64680	61920
(↑)	502.66	502.43	502.65	503.09	503.31	503.93	504.15	508.43	504.40	504.16	503.81	503.16
(Φ)	-1300	-920	+880	+1790	+910	+2660	+970	+20760	-19650	-1070	-1530	-2760
CAL YR 1988	MAX 75330	MIN 56720	(Φ) -8600									
WTR YR 1989	MAX 100400	MIN 56720	(Φ) +740									

(↑) Elevation, in feet, at end of month.

(Φ) Change in contents, in acre-feet.

BRAZOS RIVER BASIN  
08105600 GRANGER LAKE NEAR GRANGER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1981 to August 1989 (discontinued).

304132097200801 - GRANGER LAKE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CAC03)
JAN											
05...	0905	1.00	389	8.40	13.5	0.80	9.7	95	<1	K72	150
05...	0907	10.0	389	8.40	13.5	--	9.7	95	--	--	--
05...	0909	20.0	389	8.40	13.5	--	9.5	93	--	--	--
05...	0911	30.0	389	8.40	13.0	--	9.3	90	--	--	--
05...	0913	41.0	389	8.40	13.0	--	9.0	87	--	--	150
APR											
20...	0930	1.00	414	8.30	19.0	0.70	9.3	101	K4	K9	160
20...	0932	10.0	417	8.20	18.5	--	8.5	92	--	--	--
20...	0934	20.0	418	8.10	17.5	--	7.8	82	--	--	--
20...	0936	30.0	420	8.00	16.5	--	7.2	74	--	--	--
20...	0938	40.0	422	8.00	16.5	--	6.3	65	--	--	170
AUG											
11...	0850	1.00	340	7.90	26.5	0.50	5.1	64	<1	K1	130
11...	0852	10.0	340	7.90	26.5	--	5.0	63	--	--	--
11...	0854	20.0	340	7.90	26.5	--	5.0	63	--	--	--
11...	0856	30.0	340	7.90	26.0	--	4.8	60	--	--	--
11...	0858	40.0	342	7.70	26.0	--	4.2	52	--	--	130

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CAC03	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
JAN											
05...	23	42	10	21	0.8	3.1	123	27	28	0.30	7.2
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	26	42	11	21	0.8	3.1	124	29	28	--	7.3
APR											
20...	29	47	11	22	0.8	2.8	134	30	30	0.30	5.3
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	21	48	11	22	0.8	2.8	144	30	30	--	5.7
AUG											
11...	18	40	8.3	17	0.7	3.3	116	22	19	0.20	7.1
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	18	40	8.2	16	0.6	3.2	116	22	19	--	7.2

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
05...	212	--	<0.010	0.100	0.020	0.38	0.40	0.020	<3	<1
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	<0.010	0.100	0.020	0.48	0.50	0.030	10	<10
05...	--	--	--	--	--	--	--	--	--	--
05...	216	--	<0.010	0.100	0.030	0.67	0.70	0.040	15	1
APR										
20...	229	0.190	0.010	0.200	0.030	0.47	0.50	0.080	<3	<1
20...	--	--	--	--	--	--	--	--	--	--
20...	--	0.180	0.020	0.200	0.070	0.33	0.40	0.080	<10	<10
20...	--	--	--	--	--	--	--	--	--	--
20...	236	0.180	0.020	0.200	0.140	0.56	0.70	0.030	6	14
AUG										
11...	186	--	<0.010	<0.100	0.050	1.2	1.3	0.020	9	<1
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	<0.010	<0.100	0.050	0.55	0.60	0.030	30	<10
11...	--	--	--	--	--	--	--	--	--	--
11...	185	--	0.020	<0.100	0.120	0.38	0.50	0.050	6	17

## BRAZOS RIVER BASIN

351

08105600 GRANGER LAKE NEAR GRANGER, TX--Continued

304209097195101 - GRANGER LAKE SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
05...	0940	1.00	388	8.40	13.5	9.6	94
05...	0942	10.0	388	8.40	13.5	9.5	93
05...	0944	20.0	388	8.40	13.5	9.4	92
APR							
20...	0950	1.00	414	8.30	19.0	9.2	100
20...	0952	10.0	417	8.20	18.5	8.6	93
20...	0954	20.0	419	8.10	17.0	7.7	80
20...	0956	30.0	421	8.00	16.5	6.7	69
AUG							
11...	0915	1.00	340	7.90	26.5	5.2	66
11...	0917	10.0	340	7.90	26.5	5.0	63
11...	0919	20.0	340	7.90	26.0	4.9	61
11...	0921	34.0	342	7.80	26.0	4.2	52

304206097215001 - GRANGER LAKE SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)
JAN									
05...	1000	1.00	390	8.40	14.0	0.80	9.4	93	--
05...	1002	10.0	390	8.40	13.5	--	9.4	92	--
05...	1004	20.0	390	8.40	13.5	--	9.1	89	--
05...	1006	25.0	394	8.20	13.0	--	7.7	74	--
APR									
20...	1005	1.00	410	8.30	20.5	0.50	9.1	102	0.190
20...	1007	10.0	415	8.20	19.5	--	8.7	96	0.190
20...	1009	15.0	420	8.10	18.5	--	7.6	82	--
20...	1011	20.0	422	8.00	18.0	--	7.1	76	--
20...	1012	26.0	426	7.80	17.5	--	5.1	54	0.180
AUG									
11...	0935	1.00	336	8.20	27.0	0.50	6.3	80	--
11...	0937	10.0	336	8.20	26.5	--	6.0	76	--
11...	0939	20.0	339	7.70	26.5	--	3.6	45	--
11...	0941	25.0	339	7.60	26.5	--	3.0	38	--

DATE	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
05...	<0.010	<0.100	0.020	0.48	0.50	0.030	<10	<10
05...	<0.010	0.100	0.020	0.48	0.50	0.020	20	<10
05...	--	--	--	--	--	--	--	--
05...	<0.010	0.100	0.070	0.63	0.70	0.030	<10	<10
APR								
20...	0.010	0.200	0.020	0.28	0.30	0.020	<10	<10
20...	0.010	0.200	0.040	0.36	0.40	0.020	<10	<10
20...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
20...	0.020	0.200	0.210	0.79	1.0	0.040	<10	30
AUG								
11...	<0.010	<0.100	0.020	0.38	0.40	0.040	10	<10
11...	<0.010	<0.100	0.030	0.57	0.60	0.040	20	<10
11...	--	--	--	--	--	--	--	--
11...	0.030	<0.100	0.120	0.88	1.0	0.090	20	<10

## BRAZOS RIVER BASIN

08105600 GRANGER LAKE NEAR GRANGER, TX--Continued

304108097215101 - GRANGER LAKE SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CAC03)
JAN											
05...	1030	1.00	390	8.40	13.5	0.80	9.6	94	<1	K44	150
05...	1032	10.0	392	8.40	13.5	--	9.5	93	--	--	--
05...	1034	20.0	392	8.40	13.0	--	9.4	91	--	--	--
05...	1036	30.0	392	8.40	13.0	--	9.1	88	--	--	--
05...	1038	37.0	393	8.30	13.0	--	8.7	84	--	--	140
APR											
20...	0850	1.00	414	8.30	19.5	0.70	9.3	102	K9	K6	160
20...	0852	10.0	415	8.30	19.0	--	9.1	99	--	--	--
20...	0854	15.0	416	8.30	19.0	--	9.2	100	--	--	--
20...	0856	20.0	424	7.90	17.0	--	6.5	68	--	--	--
20...	0858	30.0	424	7.80	16.5	--	5.9	61	--	--	--
20...	0900	40.0	426	7.80	16.5	--	5.8	60	--	--	170
AUG											
11...	1000	1.00	338	8.20	27.5	0.50	6.4	82	<1	<1	130
11...	1002	10.0	338	8.20	27.0	--	6.0	76	--	--	--
11...	1004	20.0	341	8.00	27.0	--	5.5	70	--	--	--
11...	1006	30.0	354	7.50	26.5	--	2.5	32	--	--	--
11...	1008	39.0	357	7.50	26.5	--	1.8	23	--	--	140

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CAC03	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET MG/L AS CAC03	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)
JAN										
05...	27	43	11	21	0.8	3.1	126	28	29	7.2
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	17	41	10	21	0.8	3.0	127	28	28	7.0
APR										
20...	28	47	11	22	0.8	2.8	135	30	30	5.2
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	24	48	11	21	0.7	2.8	141	30	29	5.7
AUG										
11...	18	40	8.4	17	0.7	3.2	117	22	19	7.0
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	16	42	8.7	17	0.6	3.1	125	22	20	7.6

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
05...	218	0.090	0.010	0.100	0.010	0.49	0.50	0.020	14	<1
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	<0.010	0.100	0.020	0.58	0.60	0.020	<10	<10
05...	--	--	--	--	--	--	--	--	--	--
05...	214	--	<0.010	0.100	0.030	0.67	0.70	0.040	6	3
APR										
20...	229	0.190	0.010	0.200	0.030	0.37	0.40	0.080	6	<1
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	--	0.180	0.020	0.200	0.100	0.10	0.20	0.030	<10	<10
20...	--	--	--	--	--	--	--	--	--	--
20...	232	0.180	0.020	0.200	0.160	0.54	0.70	0.030	4	4
AUG										
11...	187	--	<0.010	<0.100	0.020	0.58	0.60	0.030	5	<1
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	<0.010	<0.100	0.050	0.65	0.70	0.040	20	<10
11...	--	--	--	--	--	--	--	--	--	--
11...	195	--	<0.010	<0.100	0.160	0.64	0.80	0.060	14	17

## BRAZOS RIVER BASIN

353

08105600 GRANGER LAKE NEAR GRANGER, TX--Continued

303947097231401 - GRANGER LAKE SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)
JAN											
05...	1050	1.00	405	8.40	14.0	0.70	9.4	93	K2	K17	160
05...	1052	10.0	460	8.00	12.5	--	7.7	74	--	--	--
05...	1054	19.0	528	7.80	12.0	--	6.0	57	--	--	210
APR											
20...	1030	1.00	433	8.30	21.0	0.50	9.6	109	K4	K6	170
20...	1032	10.0	433	7.80	18.0	--	6.2	66	--	--	--
20...	1034	15.0	437	7.70	16.5	--	5.3	55	--	--	--
20...	1036	21.0	440	7.60	15.5	--	3.3	33	--	--	170
AUG											
11...	1030	1.00	347	8.10	28.0	0.50	7.4	96	K1	K3	140
11...	1032	10.0	357	7.60	27.0	--	4.0	51	--	--	--
11...	1034	19.0	351	7.50	26.5	--	3.5	44	--	--	140
DATE		HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)
JAN											
05...	27	45	11	23	0.8	2.9	131	29	30	6.7	
05...	--	--	--	--	--	--	--	--	--	--	
05...	25	61	14	25	0.8	2.7	185	27	35	6.0	
APR											
20...	25	51	11	20	0.7	2.6	148	30	29	4.9	
20...	--	--	--	--	--	--	--	--	--	--	
20...	--	--	--	--	--	--	--	--	--	--	
20...	21	51	11	20	0.7	2.7	152	30	29	5.8	
AUG											
11...	17	40	9.0	18	0.7	3.1	120	22	21	7.5	
11...	--	--	--	--	--	--	--	--	--	--	
11...	19	41	9.0	17	0.7	3.2	121	22	20	7.6	
DATE		SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN											
05...	226	--	<0.010	0.200	0.010	0.49	0.50	0.030	<3	<1	
05...	--	0.890	0.010	0.900	0.060	0.54	0.60	0.030	<10	<10	
05...	282	1.77	0.030	1.80	0.130	0.57	0.70	0.060	<3	19	
APR											
20...	237	0.280	0.020	0.300	0.010	0.39	0.40	0.090	20	3	
20...	--	0.280	0.020	0.300	0.100	0.50	0.60	0.020	20	<10	
20...	--	--	--	--	--	--	--	--	--	--	
20...	241	0.280	0.020	0.300	0.220	0.38	0.60	0.100	15	44	
AUG											
11...	193	--	<0.010	<0.100	0.020	0.68	0.70	0.030	11	<1	
11...	--	--	<0.010	<0.100	0.080	0.52	0.60	0.050	20	<10	
11...	192	--	<0.010	<0.100	0.090	0.71	0.80	0.070	5	13	



## BRAZOS RIVER BASIN

08105600 GRANGER LAKE NEAR GRANGER, TX--Continued

Granger Lake AC (304132097200801)

Phytoplankton Analyses September 1988 to October 1989

Date	1-5-89
Time	0906

TOTAL CELLS/mL	4,226
NUMBER OF SPECIES	20
DEPTH COLLECTED (ft.)	1.4

<u>Organisms</u>	<u>Cells/mL</u>
CHLOROPHYTA (Green algae)	
<i>Ankistrodesmus falcatus</i>	138
<i>Carteria</i> sp.	28
<i>Euastrum</i> sp.	14
<i>Kirchneriella lunaris</i>	321
<i>Kirchneriella obesa</i>	46
<i>Oocystis</i> sp.	46
<i>Pandorina morum</i>	334
<i>Phacotus lenticularis</i>	14
<i>Scenedesmus bijuga</i>	184
<i>Scenedesmus quadricauda</i>	445
<i>Tetrastrum</i> sp.	111
unidentified green coccoids	92
CYANOPHYTA (Blue-green algae)	
<i>Merismopedia tenuissima</i>	1,112
<i>Schizothrix calcicola</i>	92
EUGLENOPHYTA (Euglenoids)	
<i>Euglena</i> sp.	14
<i>Trachelomonas</i> sp.	28
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
<i>Cyclotella ocellata</i>	138
<i>Melosira granulata</i>	780
Order Pennales	
<i>Nitzschia</i> sp.	14
<i>Synedra delicatissima</i>	275

08105600 GRANGER LAKE NEAR GRANGER, TX--Continued  
Granger Lake DC (303947097231401)

## Phytoplankton Analyses September 1988 to October 1989

Date	1-5-89
Time	1051

TOTAL CELLS/mL	5,139
NUMBER OF SPECIES	23
DEPTH COLLECTED (ft.)	1.2

<u>Organisms</u>	<u>Cells/mL</u>
CHLOROPHYTA (Green algae)	
<i>Ankistrodesmus falcatus</i>	367
<i>Carteria</i> sp.	92
<i>Chlamydomonas</i> sp.	413
<i>Crucigenia tetrapedia</i>	184
<i>Golenkinia radiata</i>	46
<i>Kirchneriella lunaris</i>	184
<i>Kirchneriella obesa</i>	46
<i>Oocystis</i> sp.	97
<i>Pandorina morum</i>	445
<i>Phacotus lenticularis</i>	92
<i>Scenedesmus bijuga</i>	28
<i>Scenedesmus dimorphus</i>	56
<i>Scenedesmus quadricauda</i>	139
<i>Tetrastrum</i> sp.	184
unidentified green coccoids	138
CYANOPHYTA (Blue-green algae)	
<i>Merismopedia tenuissima</i>	1,112
<i>Schizothrix calcicola</i>	92
EUGLENOPHYTA (Euglenoids)	
<i>Euglena</i> sp.	46
<i>Trachelomonas</i> sp.	92
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
<i>Cyclotella ocellata</i>	551
<i>Melosira granulata</i>	551
Order Pennales	
<i>Nitzschia</i> sp.	46
<i>Synedra delicatissima</i>	138

08105600 GRANGER LAKE NEAR GRANGER, TX--Continued

Granger Lake AC (304132097200801)

Phytoplankton Analyses September 1988 to October 1989

Date	4-20-89
Time	0931

TOTAL CELLS/mL	42,880
NUMBER OF SPECIES	34
DEPTH COLLECTED (ft.)	1.1

<u>Organisms</u>	<u>Cells/mL</u>
CHLOROPHYTA (Green algae)	
<i>Ankistrodesmus convolutus</i>	169
<i>Ankistrodesmus falcatus</i>	169
<i>Ankistrodesmus nannoselene</i>	169
<i>Chlamydomonas</i> sp.	338
<i>Chlorococcum</i> sp.	1,182
<i>Chodatella quadriseta</i>	1,351
<i>Elakatothrix viridis</i>	675
<i>Gloeocystis</i> sp.	506
<i>Kirchneriella lunaris</i>	14,518
<i>Kirchneriella obesa</i>	675
<i>Oocystis</i> sp.	2,532
<i>Phacotus lenticularis</i>	1,013
<i>Scenedesmus abundans</i> var. <i>brevicauda</i>	338
<i>Scenedesmus armatus</i>	169
<i>Scenedesmus quadricauda</i>	844
<i>Selenastrum minutum</i> ?	1,013
<i>Tetraedron muticum</i>	338
<i>Tetrastrum staurogeniaeforme</i>	844
CYANOPHYTA (Blue-green algae)	
<i>Aphanocapsa delicatissima</i>	3,545
<i>Arthrospira</i> sp.	2,026
<i>Calothrix</i> sp.	1,519
<i>Chroococcus dispersus</i>	1,688
<i>Chroococcus multicoloratus</i>	1,182
<i>Merismopedia tenuissima</i>	2,701
<i>Synechococcus elongatus</i>	844
CRYPTOPHYTA (Cryptomonads)	
<i>Cryptomonas</i> sp.	169
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
<i>Cyclotella ocellata</i>	338
<i>Melosira italica</i>	338
<i>Stephanodiscus hantzschii</i> var. <i>pusillus</i>	1,350
Order Pennales	
<i>Cymbella minuta</i>	84
<i>Gomphonema</i> sp.	127
<i>Navicula cryptocephala</i>	42
<i>Navicula rhynchocephala</i>	42
<i>Nitzschia</i> sp.	42

08105600 GRANGER LAKE NEAR GRANGER, TX--Continued

Granger Lake DC (303947097231401)

Phytoplankton Analyses September 1988 to October 1989

Date	4-20-89
Time	1031

TOTAL CELLS/mL	32,296
NUMBER OF SPECIES	27
DEPTH COLLECTED (ft.)	0.8

<u>Organisms</u>	<u>Cells/mL</u>
CHLOROPHYTA (Green algae)	
<i>Ankistrodesmus convolutus</i>	900
<i>Ankistrodesmus falcatus</i>	112
<i>Ankistrodesmus nannoselene</i>	225
<i>Chlorella</i> sp.	225
<i>Chlorococcum</i> sp.	2,138
<i>Chodatella quadriseta</i>	563
<i>Crucigenia tetrapedia</i>	112
<i>Gloeocystis</i> sp.	225
<i>Kirchneriella lunaris</i>	4,952
<i>Mesotaenium</i> sp.	112
<i>Oocystis</i> sp.	1,013
<i>Phacotus lenticularis</i>	450
<i>Pandorina morum</i>	675
<i>Scenedesmus quadricauda</i>	450
<i>Tetraedron muticum</i>	112
<i>Tetrastrum staurogeniaeforme</i>	2,701
CYANOPHYTA (Blue-green algae)	
<i>Aphanocapsa delicatissima</i>	1,351
<i>Aphanothece saxicola</i>	1,576
<i>Calothrix</i> sp.	1,800
<i>Chroococcus dispersus</i>	1,125
<i>Chroococcus multicoloratus</i>	2,363
<i>Merismopedia tenuissima</i>	7,766
<i>Synechococcus</i> sp.	563
EUGLENOPHYTA (Euglenoids)	
<i>Euglena</i> sp.	112
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
<i>Melosira granulata</i>	193
<i>Melosira italica</i>	386
<i>Stephanodiscus hantzschii</i> var. <i>pusillus</i>	96

08105600 GRANGER LAKE NEAR GRANGER, TX--Continued

Granger Lake AC (304132097200801)

## Phytoplankton Analyses September 1988 to October 1989

Date	8-11-89
Time	0851

TOTAL CELLS/mL	83,916
NUMBER OF SPECIES	31
DEPTH COLLECTED (ft.)	0.9

OrganismsCells/mL

## BACILLARIOPHYTA (diatoms)

## Order Centrales

<i>Melosira italica</i>	365
<i>Stephanodiscus hantzschii</i> var. <i>pusilus</i>	21
<i>Stephanodiscus</i> sp.	21

## Order Pennales

<i>Synedra</i> sp.	817
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## CHLOROPHYTA (green algae)

<i>Ankistrodesmus falcatus</i>	204
<i>Ankistrodesmus falcatus</i> var. <i>mirabilis</i>	204
<i>Ankistrodesmus nannoselene</i>	817
<i>Chlorococcum</i> sp.	612
<i>Kirchneriella lunaris</i>	612
<i>Scenedesmus quadricauda</i>	408
<i>Treubaria setigera</i>	204

## CYANOPHYTA (blue-green algae)

<i>Anabaena</i> sp.	3,063
<i>Aphanocapsa delicatissima</i>	3,675
<i>Aphanothece nidulans</i>	2,042
<i>Chroococcus dispersus</i>	612
<i>Chroococcus limneticus</i>	817
<i>Chroococcus multicoloratus</i>	408
<i>Chroococcus varius</i>	5,717
<i>Dactylococcopsis fascicularis</i>	612
<i>Lyngbya nana</i>	25,523
<i>Lyngbya subtilis</i>	6,942
<i>Merismopedia tenuissima</i>	7,351
<i>Mirismopedia</i> sp.	817
<i>Oscillatoria limnetica</i>	10,822
<i>Pseudanabaena catenata</i>	6,330
<i>Raphidiopsis curvata</i>	1,021
<i>Spirulina laxa</i>	817
<i>Spirulina</i> sp.	408
<i>Synechococcus elongatus</i>	2,246
<i>Synechococcus</i> sp.	204

## CRYPTOPHYTA (cryptomonads)

<i>Cryptomonas</i> sp.	204
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08105600 GRANGER LAKE NEAR GRANGER, TX--Continued  
Granger Lake DC (303947097231401)

Phytoplankton Analyses September 1988 to October 1989

Date 8-11-89  
Time 1031

TOTAL CELLS/mL 172,163  
NUMBER OF SPECIES 35  
DEPTH COLLECTED (ft.) 0.8

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA (diatoms)	
Order Centrales	
<i>Cyclotella stelligera</i>	98
<i>Melosira italica</i>	1,029
<i>Stephanodiscus hantzschii</i> var. <i>pusilus</i>	637
<i>Stephanodiscus</i> sp.	196
Order Pennales	
<i>Navicula</i> sp.	47
<i>Nitzschia acicularis</i>	47
<i>Nitzschia palea</i>	93
<i>Nitzschia subacicularis</i>	140
CHLOROPHYTA (green algae)	
<i>Ankistrodesmus nannoselene</i>	326
<i>Chlorococcum</i> sp.	326
<i>Chlorogonium</i> sp.	326
<i>Golenkinia radiata</i>	326
<i>Nephrocytium</i> sp.	653
<i>Oocystis</i> sp.	1,307
<i>Scenedesmus dimorphus</i>	653
<i>Scenedesmus quadricauda</i>	1,307
<i>Schroederia setigera</i>	326
CYANOPHYTA (blue-green algae)	
<i>Anabaena</i> sp.	1,307
<i>Aphanocapsa delicatissima</i>	30,383
<i>Aphanothece nidulans</i>	13,721
<i>Chroococcus limneticus</i>	653
<i>Chroococcus varius</i>	2,614
<i>Dactylococcopsis acicularis</i>	326
<i>Dactylococcopsis fascicularis</i>	980
<i>Lyngbya nana</i>	6,207
<i>Merismopedia tenuissima</i>	57,825
<i>Microcystis</i> sp.	3,920
<i>Oscillatoria limnetica</i>	7,187
<i>Pseudanabaena catenata</i>	24,175
<i>Raphidiopsis curvata</i>	2,614
<i>Spirulina</i> sp.	2,287
<i>Synechococcus elongatus</i>	5,554
<i>Synechococcus leopoldensis</i>	2,614
<i>Synechococcus</i> sp.	1,633
CRYPTOPHYTA (cryptomonads)	
<i>Chroomonas</i> sp.	326

## 08105700 SAN GABRIEL RIVER AT LANEPORT, TX

LOCATION.--Lat 30°41'39", long 97°16'43", Williamson County, Hydrologic Unit 12070205, on right bank at upstream side of county bridge, 0.2 mi north of Laneport, 3.4 mi downstream from Willis Creek, 7.5 mi northwest of Thrall, and 26.2 mi upstream from mouth.

DRAINAGE AREA.--738 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WRD TX-74-1: 1965(M), 1966(P), 1967(M), 1968, 1969(P), 1973(P). WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 412.60 ft above National Geodetic Vertical Datum of 1929. Prior to June 10, 1983, at site 125 ft downstream and at 0.06 ft higher datum. Prior to Apr. 6, 1982, at right downstream side of bridge at present location, at same datum.

REMARKS.--No estimated daily discharges. Records good. Flow partly regulated by Granger Lake (station 08105600) since Jan. 21, 1980. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--14 years (water years 1966-79) unregulated, 289 ft<sup>3</sup>/s (209,400 acre-ft/yr); 10 years (water years 1980-89) regulated, 219 ft<sup>3</sup>/s (158,700 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,200 ft<sup>3</sup>/s Oct. 31, 1974 (gage height, 30.80 ft); no flow Aug. 21 to Oct. 6 and Oct. 13-15, 1985.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1910, occurred during September 1921, 39.6 ft; in April 1957, 34.6 ft; and in October 1959, 33.8 ft; from floodmarks at present site and datum. Discharge not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,360 ft<sup>3</sup>/s May 28 at 2230 hours (gage height, 10.21 ft); minimum daily, 0.21 ft<sup>3</sup>/s Oct. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.0	5.4	6.3	6.7	5.4	4.5	5.0	6.1	1290	22	7.0	4.3
2	7.9	5.3	7.4	6.7	5.2	5.9	5.1	5.0	1280	20	9.9	5.3
3	7.1	4.6	7.8	6.9	5.9	5.8	4.7	5.5	1270	20	6.7	4.8
4	6.6	4.7	7.5	6.1	5.5	5.8	5.3	5.5	1250	20	5.7	4.1
5	7.3	5.1	7.6	6.7	5.5	5.5	5.3	7.7	1240	17	6.0	4.0
6	6.1	5.4	6.7	6.2	5.5	5.5	5.1	6.4	1090	16	5.8	4.6
7	6.7	4.8	6.2	6.8	5.4	5.6	6.0	6.4	955	16	4.6	4.9
8	7.6	4.6	10	6.7	5.2	5.0	6.4	5.6	951	16	4.8	4.7
9	8.1	5.1	6.7	6.7	5.1	4.3	6.0	5.7	690	16	4.6	5.3
10	6.5	6.2	8.4	6.0	4.4	4.0	5.4	31	267	16	4.7	5.2
11	7.5	5.2	7.5	5.8	5.1	5.7	5.5	9.6	279	14	5.0	4.7
12	6.8	6.3	6.7	7.1	5.6	6.2	5.4	10	263	7.3	6.1	3.8
13	7.8	6.4	6.7	8.2	4.8	6.4	5.7	33	262	6.1	5.9	3.2
14	8.8	6.8	6.6	7.3	4.4	5.5	7.0	32	275	6.4	4.7	5.2
15	9.2	5.7	6.1	6.7	4.4	5.2	6.7	150	263	7.0	5.3	4.6
16	9.4	5.7	5.7	6.4	4.3	5.8	6.6	319	262	6.3	4.8	5.4
17	8.9	5.6	6.6	4.9	5.0	6.0	5.5	390	263	5.7	4.3	5.0
18	10	6.0	6.8	4.4	5.8	6.4	6.2	166	263	5.4	3.2	3.8
19	8.8	5.8	6.8	6.0	5.5	6.1	13	11	262	4.1	5.1	3.6
20	8.3	5.4	6.6	6.4	5.4	7.0	5.9	9.1	262	4.8	5.1	3.7
21	7.3	5.5	6.3	5.0	5.2	8.5	5.1	8.5	261	3.9	4.0	4.1
22	8.2	4.9	6.6	5.2	5.0	6.2	6.4	7.6	260	5.8	1.5	3.3
23	8.5	5.7	6.8	5.4	4.8	5.7	6.1	371	217	6.4	2.8	3.9
24	6.1	6.5	6.7	4.7	4.8	6.0	5.4	729	141	5.4	2.8	4.3
25	6.8	7.0	6.7	5.4	4.9	6.4	5.8	939	141	5.4	3.6	3.7
26	6.3	7.3	6.7	6.1	5.2	6.1	5.4	1290	141	6.9	4.6	3.4
27	5.4	6.6	6.7	5.8	5.5	6.3	5.1	1330	140	5.3	5.0	3.4
28	.91	6.2	6.3	6.0	5.3	9.2	5.2	1350	141	7.3	4.0	4.1
29	.21	6.4	5.7	6.1	---	6.7	5.8	1330	140	6.7	3.9	4.2
30	3.4	6.3	5.7	5.8	---	5.6	6.1	1310	117	6.8	3.9	5.2
31	6.8	---	6.5	5.4	---	4.9	---	1310	---	5.9	4.0	---
TOTAL	217.32	172.5	211.4	189.6	144.1	183.8	178.2	11189.7	14636	311.9	149.4	129.8
MEAN	7.01	5.75	6.82	6.12	5.15	5.93	5.94	361	488	10.1	4.82	4.33
MAX	10	7.3	10	8.2	5.9	9.2	13	1350	1290	22	9.9	5.4
MIN	.21	4.6	5.7	4.4	4.3	4.0	4.7	5.0	117	3.9	1.5	3.2
AC-FT	431	342	419	376	286	365	353	22190	29030	619	296	257
CAL YR 1988	TOTAL	17339.25	MEAN	47.4	MAX	338	MIN	.16	AC-FT	34390		
WTR YR 1989	TOTAL	27713.72	MEAN	75.9	MAX	1350	MIN	.21	AC-FT	54970		

08105700 SAN GABRIEL RIVER AT LANEPOR, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: July 1972 to August 1989 (discontinued).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: December 1976 to March 1982.

INSTRUMENTATION.-- Water temperature was recorded continuously from December 1976 to March 1982.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum daily, 37.5°C July 9, 1978; minimum daily, 1.5°C Jan. 28, 1978.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION)	OXYGEN DEMAND, BIO-CHEMICAL, 5 DAY (MG/L)	HARDNESS TOTAL (MG/L AS CaCO3)	HARDNESS NONCARB WH WAT TOT FLD (MG/L AS CaCO3)
OCT 20...	0900	8.2	400	7.20	21.0	2	6.1	7.1	81	0.6	160	27
DEC 07...	1105	7.3	424	7.20	13.0	2	7.5	8.7	84	1.7	160	24
MAR 02...	0905	6.1	438	7.30	12.5	4	15	9.2	88	--	170	24
APR 19...	0950	22	433	7.10	19.5	20	31	7.6	84	1.7	170	31
JUN 09...	0840	945	356	7.50	26.0	15	22	7.9	99	1.2	140	12
AUG 10...	0830	5.8	414	7.00	24.0	25	13	6.7	80	1.2	170	15

DATE	CALCIUM, DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	ALKALINITY WAT TOT FET FIELD (MG/L AS CaCO3)	SULFATE, DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)
OCT 20...	44	11	22	0.8	2.9	128	29	27	0.30	9.1	222
DEC 07...	47	11	22	0.8	2.9	139	29	29	0.30	7.7	232
MAR 02...	51	11	22	0.8	1.9	149	33	30	0.30	5.7	244
APR 19...	48	11	24	0.8	2.9	134	31	29	0.20	5.4	232
JUN 09...	44	8.1	16	0.6	3.2	131	22	20	0.30	8.3	201
AUG 10...	51	9.3	19	0.7	3.0	151	27	24	0.30	8.8	233

DATE	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	RESIDUE VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE (MG/L AS N)	NITROGEN, NITRITE (MG/L AS N)	NITROGEN, NO2+NO3 (MG/L AS N)	NITROGEN, AMMONIA (MG/L AS N)	NITROGEN, ORGANIC (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC (MG/L AS N)	PHOSPHOROUS (MG/L AS P)	CARBON, ORGANIC (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)
OCT 20...	12	<1	--	<0.010	0.300	0.020	0.28	0.30	0.020	3.7	3
DEC 07...	13	10	2.09	0.010	2.10	0.040	1.5	1.5	0.590	4.6	--
MAR 02...	25	8	--	<0.010	0.500	0.050	0.35	0.40	0.020	3.1	2
APR 19...	47	16	0.480	0.020	0.500	0.060	0.54	0.60	0.030	3.7	--
JUN 09...	23	<1	0.280	0.020	0.300	0.040	0.46	0.50	0.020	4.8	6
AUG 10...	21	<1	--	<0.010	0.900	0.040	0.36	0.40	0.030	3.4	3

DATE	BARIUM, DIS-SOLVED (UG/L AS Ba)	CADMIUM, DIS-SOLVED (UG/L AS Cd)	CHROMIUM, DIS-SOLVED (UG/L AS Cr)	COPPER, DIS-SOLVED (UG/L AS Cu)	IRON, DIS-SOLVED (UG/L AS Fe)	LEAD, DIS-SOLVED (UG/L AS Pb)	MANGANESE, DIS-SOLVED (UG/L AS Mn)	MERCURY, DIS-SOLVED (UG/L AS Hg)	SELENIUM, DIS-SOLVED (UG/L AS Se)	SILVER, DIS-SOLVED (UG/L AS Ag)	ZINC, DIS-SOLVED (UG/L AS Zn)
OCT 20...	54	<1	<1	1	11	<5	4	<0.1	<1	<1.0	7
DEC 07...	--	--	--	--	--	--	--	--	--	--	--
MAR 02...	55	<1	<1	1	12	<5	4	<0.1	<1	<1.0	8
APR 19...	--	--	--	--	--	--	--	--	--	--	--
JUN 09...	48	<1	1	1	7	1	2	<0.1	<1	<1.0	<3
AUG 10...	53	<1	<1	1	38	<1	4	<0.1	<1	<1.0	5

## BRAZOS RIVER BASIN

08106310 SAN GABRIEL RIVER NEAR ROCKDALE, TX

LOCATION.--Lat 30°43'39", long 97°02'19", Milam County, Hydrologic Unit 12070204, on left bank at downstream side of Farm Road 487, 1.2 mi downstream from Brushy Creek, 4.3 mi upstream from mouth, and 5.3 mi north of Rockdale.

DRAINAGE AREA.--1,359 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1974 to current year. Prior to October 1980, gage-height record only (not published).

GAGE.--Water-stage recorder. Datum of gage is 311.59 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow largely regulated by Granger Lake (station 08105600). Flow is affected at times by discharge from the flood-detention pools of 46 floodwater-retarding structures with a combined detention capacity of 46,140 acre-ft. These structures control runoff from 144 mi<sup>2</sup> in the Brushy Creek drainage basin. Backwater from Little River occurs at times. Several observations of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--9 years, 450 ft<sup>3</sup>/s (326,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 32.91 ft July 27, 1979 (discharge not determined, but may have been in backwater from Little River). Maximum discharge, 15,600 ft<sup>3</sup>/s June 14, 1981 (gage height, 32.11 ft); minimum daily, 0.08 ft<sup>3</sup>/s July 13, 1984.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,430 ft<sup>3</sup>/s May 18 at 1300 hours (gage height, 27.90 ft); maximum gage height 28.30 ft May 19 at 0300 hours (backwater from Little River); minimum daily, 1.9 ft<sup>3</sup>/s Sept. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	7.5	8.1	e12	58	20	59	17	1480	96	12	5.4
2	31	15	9.1	e12	48	22	46	19	1460	48	15	4.9
3	19	14	9.5	e12	37	29	38	20	1450	52	18	4.3
4	13	12	9.5	e12	33	30	33	17	1430	41	26	4.0
5	10	9.0	9.9	e12	29	26	29	19	1420	38	23	3.8
6	9.0	6.9	10	e12	25	23	28	46	1340	33	14	3.7
7	8.7	6.2	11	e11	23	25	26	76	1040	29	11	3.3
8	7.8	6.0	12	e10	22	25	24	52	1020	28	9.7	2.9
9	6.8	6.0	15	e10	22	24	22	38	982	26	8.8	2.7
10	7.0	5.7	22	e11	21	22	21	236	343	25	8.1	2.6
11	7.2	5.8	23	e13	20	20	20	308	2240	24	7.9	3.1
12	6.7	5.9	30	e14	20	19	19	76	1930	23	7.2	3.8
13	6.3	6.2	24	15	20	19	19	66	534	17	7.0	5.0
14	6.3	6.2	22	17	22	18	21	2230	997	15	6.9	4.2
15	6.0	6.2	18	19	22	18	30	1520	2500	13	7.2	4.8
16	6.3	6.9	15	17	20	17	35	809	681	13	7.0	5.0
17	6.4	7.5	14	16	20	16	29	1710	430	18	9.1	5.1
18	6.5	9.2	14	15	21	16	26	7670	374	17	9.4	5.0
19	6.9	12	13	15	28	16	25	5410	347	13	6.1	4.5
20	6.1	10	14	16	40	18	192	1020	330	11	5.2	4.4
21	6.4	11	14	27	30	23	120	544	319	9.7	4.6	4.1
22	6.3	11	15	36	28	84	60	332	309	9.3	4.3	4.1
23	6.0	9.6	15	22	26	103	53	268	301	8.8	5.1	3.3
24	5.7	9.5	15	17	24	52	36	884	189	8.9	5.7	2.5
25	5.8	9.6	15	17	22	37	30	891	172	11	5.3	2.4
26	5.7	9.5	15	20	22	30	26	1570	174	11	5.8	2.2
27	5.6	9.7	15	51	21	28	24	1630	171	13	33	2.1
28	6.6	9.7	13	32	19	81	22	1620	171	15	14	2.0
29	6.0	9.7	e13	30	---	397	21	1600	168	17	8.5	1.9
30	6.3	8.7	e12	26	---	136	19	1560	166	31	6.5	2.6
31	7.3	---	e12	78	---	79	---	1530	---	16	6.0	---
TOTAL	254.7	262.2	457.1	627	743	1473	1153	33788	24468	730.7	317.4	109.7
MEAN	8.22	8.74	14.7	20.2	26.5	47.5	38.4	1090	816	23.6	10.2	3.66
MAX	31	15	30	78	58	397	192	7670	2500	96	33	5.4
MIN	5.6	5.7	8.1	10	19	16	19	17	166	8.8	4.3	1.9
AC-FT	505	520	907	1240	1470	2920	2290	67020	48530	1450	630	218

CAL YR 1988 TOTAL 26520.9 MEAN 72.5 MAX 1560 MIN 4.4 AC-FT 52600  
WTR YR 1989 TOTAL 64383.8 MEAN 176 MAX 7670 MIN 1.9 AC-FT 127700

e Estimated.

## BRAZOS RIVER BASIN

363

08106350 LITTLE RIVER NEAR ROCKDALE, TX

LOCATION.--Lat 30°45'38", long 97°00'49", Milam County, Hydrologic Unit 12070204, on right bank downstream from Alcoa pumping station, 200 ft downstream from mouth of San Gabriel River, and 6.8 mi north of Rockdale.

DRAINAGE AREA.--6,959 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1981 to current year.

GAGE.--Water-stage recorder. Datum of gage is 299.12 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges Feb. 6-8. Records good. Daily discharges are not published above 1,000 ft<sup>3</sup>/s. There are numerous diversions for irrigation and municipal supply above station. For statement regarding regulations by the Soil Conservation Service floodwater-retarding structures, see station No. 08106310. The Aluminum Co. of America diverts water from Little River to their plant reservoir. Several observations of water temperature were made during the year. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 35.67 ft June 15, 1981 (maximum discharge not determined); minimum daily, 13 ft<sup>3</sup>/s May 9, 1984.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 32.53 ft May 18 at 1800 hours (maximum discharge not determined); minimum daily discharge, 27 ft<sup>3</sup>/s Oct. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	89	104	35	75	234	116	278	99	---	---	234	107
2	239	156	33	78	167	127	215	115	---	---	220	123
3	125	66	33	79	139	136	189	105	---	---	477	123
4	72	56	34	75	146	152	174	107	---	---	289	119
5	60	54	34	74	151	165	161	167	---	---	454	115
6	59	47	33	75	e120	263	149	372	---	---	448	106
7	53	58	38	74	e115	219	140	304	---	672	442	104
8	50	72	67	52	e108	207	135	182	---	603	544	105
9	43	66	78	41	102	191	130	152	---	592	595	107
10	41	64	113	39	99	188	123	---	---	578	651	106
11	39	61	88	40	97	169	119	---	---	568	645	107
12	38	59	194	52	95	166	119	613	---	562	580	108
13	45	58	100	51	77	165	119	562	---	546	371	107
14	51	57	77	52	71	168	123	---	---	542	356	108
15	64	48	67	102	78	159	145	---	---	537	351	116
16	68	36	61	97	63	140	179	---	---	534	359	101
17	59	48	49	84	---	134	145	---	---	526	353	90
18	57	64	45	60	---	130	131	---	---	505	349	86
19	55	48	55	54	---	130	126	---	---	483	309	85
20	54	40	74	83	342	133	278	---	---	496	183	83
21	53	47	75	212	245	138	244	---	---	506	142	79
22	50	60	76	152	203	217	165	809	---	465	133	78
23	49	41	75	89	165	281	145	672	---	273	130	74
24	33	35	74	59	142	182	125	---	---	255	119	74
25	27	36	72	55	130	149	117	---	---	263	116	88
26	42	37	71	58	126	142	112	---	---	254	113	102
27	41	87	72	187	124	138	110	---	---	254	137	101
28	43	149	71	114	118	143	107	---	---	258	115	102
29	51	61	71	180	---	781	105	---	---	249	111	98
30	66	40	73	357	---	---	102	---	---	263	106	97
31	69	---	76	478	---	445	---	---	---	243	105	---
TOTAL	1885	1855	2114	3278	---	---	4510	---	---	---	9537	2999
MEAN	60.8	61.8	68.2	106	---	---	150	---	---	---	308	100
MAX	239	156	194	478	---	---	278	---	---	---	651	123
MIN	27	35	33	39	---	---	102	---	---	---	105	74
AC-FT	3740	3680	4190	6500	---	---	8950	---	---	---	18920	5950
CAL YR 1988	TOTAL	---	MEAN	---	MAX	---	MIN	---	AC-FT	---		
WTR YR 1989	TOTAL	---	MEAN	---	MAX	---	MIN	---	AC-FT	---		

e Estimated.



## BRAZOS RIVER BASIN

08106500 LITTLE RIVER AT CAMERON, TX

LOCATION.--Lat 30°49'53", long 96°57'01", Milam County, Hydrologic Unit 12070204, on right bank at site of old McCowan bridge, 2,020 ft upstream from bridge on U.S. Highway 77, 1.1 mi upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 2 mi southeast of Cameron, and 33.6 mi upstream from mouth.

DRAINAGE AREA.--7,065 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1916 to current year.

REVISED RECORDS.--WSP 718: 1918-20, 1922. WSP 1512: 1918-20(M), 1921, 1922(M), 1924(M), 1926, 1929-30, 1934, 1935(M), 1936, 1940(M), 1941, 1944-45(M). WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 281.89 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Nov. 2, 1916, to Sept. 30, 1922, nonrecording gage at site 1.8 mi upstream at different datum. Oct. 1, 1922, to Apr. 8, 1926, nonrecording gage at McCowan bridge 30 ft downstream at same datum. Apr. 9, 1926, to Oct. 9, 1933, nonrecording gage at bridge on U.S. Highway 77, 2,020 ft downstream at 1.58 ft lower datum.

REMARKS.--No estimated daily discharges. Records good. Many small upstream diversions for irrigation and municipal supply affect low flows. Since Mar. 8, 1954, at least 50 percent of the drainage area has been regulated by Belton Lake (station 08102000) on the Leon River, and since Sept. 21, 1966, an additional 19 percent of the drainage area has been regulated by Stillhouse Hollow Lake (station 08104050) on the Lampasas River. The Aluminum Co. of America diverts water 10.9 mi upstream from the gage for use at their Rockdale plant. The city of Cameron diverts water 2.1 mi upstream from the gage for municipal use. Treated effluent is returned to the river upstream from gage. Flow is slightly affected at times by discharge from the flood-detention pools of 65 floodwater-retarding structures with a combined detention capacity of 68,500 acre-ft. These structures control runoff from 209 mi in the Nolan, Donahoe, and Brushy Creeks drainage basins. Satellite telemeter at station.

AVERAGE DISCHARGE.--36 years (water years 1918-53) unregulated, 1,807 ft<sup>3</sup>/s (1,309,000 acre-ft/yr); 36 years (water years 1954-89) regulated, 1,541 ft<sup>3</sup>/s (1,116,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 647,000 ft<sup>3</sup>/s Sept. 10, 1921 (gage height, 53.2 ft, present datum, from floodmark), from rating curve extended above 110,000 ft<sup>3</sup>/s on basis of slope-area measurement of 647,000 ft<sup>3</sup>/s; no flow July 12-27, 1956.  
Maximum stage since 1852, that of Sept. 10, 1921.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1852 reached about the same stage as that of Sept. 10, 1921. Flood in December 1913 reached a stage of 49.0 ft. Stages based on information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,000 ft<sup>3</sup>/s May 19 at 0100 hours (gage height, 28.88 ft); minimum daily, 11 ft<sup>3</sup>/s Oct. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	74	33	71	253	113	279	90	3070	2330	216	105
2	230	186	29	74	176	124	205	104	2980	1630	203	119
3	136	90	28	76	152	124	176	103	2960	1620	411	122
4	95	60	27	73	141	147	158	91	2940	1580	311	119
5	61	61	30	71	169	138	146	156	2950	1570	420	119
6	61	49	30	72	130	248	136	278	2970	1460	447	107
7	53	49	31	71	117	214	128	351	2630	770	442	105
8	47	77	66	60	112	204	122	187	2310	632	491	109
9	38	77	68	34	111	187	118	149	1570	614	604	110
10	33	73	130	33	109	182	112	378	1090	595	632	111
11	31	70	107	32	107	166	107	970	2300	581	631	114
12	30	64	169	45	110	156	108	626	3450	571	603	114
13	30	63	137	54	100	154	109	549	1360	553	380	119
14	47	64	92	52	82	155	113	2280	2280	548	345	116
15	51	64	80	81	92	151	124	3040	6450	544	337	121
16	76	36	69	110	79	132	170	1560	2030	539	344	116
17	62	29	54	96	683	126	137	2590	1600	529	342	97
18	57	70	47	80	775	118	126	12100	3580	514	340	94
19	54	54	44	54	853	120	119	11900	3720	483	309	93
20	53	38	72	89	386	120	237	2780	3690	487	199	89
21	51	35	74	174	253	125	243	1250	3650	502	142	87
22	48	62	75	181	202	167	162	882	3620	486	134	83
23	46	42	75	118	165	270	142	715	3590	283	132	78
24	41	31	72	75	142	189	120	1390	3250	237	124	77
25	11	28	72	68	131	144	111	2640	2600	246	120	83
26	30	29	71	72	125	135	105	3630	2540	238	113	104
27	39	30	70	166	121	133	102	4770	2540	236	136	103
28	38	176	68	140	115	140	98	4820	2530	241	118	104
29	46	88	68	148	---	613	96	4640	2480	233	112	103
30	66	46	70	329	---	1060	94	4070	2470	242	108	101
31	82	---	71	427	---	491	---	3730	---	223	107	---
TOTAL	1802	1915	2129	3226	5991	6546	4203	72819	85200	21317	9353	3122
MEAN	58.1	63.8	68.7	104	214	211	140	2349	2840	688	302	104
MAX	230	186	169	427	853	1060	279	12100	6450	2330	632	122
MIN	11	28	27	32	79	113	94	90	1090	223	107	77
AC-FT	3570	3800	4220	6400	11880	12980	8340	144400	169000	42280	18550	6190
CAL YR 1988	TOTAL	152293	MEAN	416	MAX	3460	MIN	11	AC-FT	302100		
WTR YR 1989	TOTAL	217623	MEAN	596	MAX	12100	MIN	11	AC-FT	431700		

08106500 LITTLE RIVER AT CAMERON, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1959 to September 1974. Chemical and biochemical analyses: January 1968 to current year. Sediment analyses: February 1978 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1959 to current year.

WATER TEMPERATURES: October 1959 to current year.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,280 microsiemens Sept. 25, 26, 1963; minimum daily, 154 microsiemens Sept. 13, 1974.

WATER TEMPERATURES: Maximum daily, 33.0°C Aug. 6, 1964, Aug. 1, 1969; minimum daily, 0.0°C Dec. 25, 26, 29, 30, 1983.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 848 microsiemens Mar. 24; minimum daily, 319 microsiemens June 12.

WATER TEMPERATURE: Maximum daily, 30.5°C Sept. 5; minimum daily, 2.0°C Feb. 7.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML)
OCT 18...	1045	49	677	8.00	22.0	13	8.4	97	1.0	100	41
DEC 05...	1140	30	760	7.60	12.0	15	10.9	101	2.2	84	34
FEB 28...	1045	118	620	7.70	13.5	36	9.7	94	0.3	140	310
MAR 31...	1130	484	419	7.30	19.5	--	--	--	--	--	--
APR 18...	1000	150	740	7.70	20.0	35	8.6	95	1.8	92	100
MAY 19...	1322	12200	253	7.70	25.5	--	--	--	--	--	--
JUN 06...	1226	2920	420	7.30	23.5	87	7.5	89	1.1	220	1200
AUG 08...	1035	411	444	7.40	26.5	--	7.4	93	0.9	84	92

DATE	HARD-NESS TOTAL (MG/L AS CAC03)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CAC03	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET MG/L AS CAC03	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT 18...	240	31	67	17	52	2	4.8	207	49	55	0.40
DEC 05...	240	7	68	16	66	2	6.0	229	58	70	0.50
FEB 28...	250	47	80	12	37	1	3.8	203	50	41	0.40
MAR 31...	150	31	50	7.0	25	0.9	3.9	123	32	29	0.30
APR 18...	240	21	75	14	54	2	4.5	224	58	64	0.40
MAY 19...	100	0	37	2.7	8.6	0.4	4.6	110	5.0	8.7	0.30
JUN 06...	160	28	47	10	23	0.8	3.8	131	27	33	0.30
AUG 08...	--	--	--	--	--	--	--	139	8.0	22	0.10

DATE	SILICA, DIS-SOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)
OCT 18...	8.6	400	388	1.77	1.77	0.030	0.030	1.80	1.80	0.090
DEC 05...	7.0	457	442	1.98	2.06	0.020	0.040	2.00	2.10	0.160
FEB 28...	8.9	370	369	2.85	2.74	0.050	0.060	2.90	2.80	0.120
MAR 31...	7.8	--	229	--	--	--	--	--	--	--
APR 18...	5.1	433	421	2.17	2.07	0.030	0.030	2.20	2.10	0.070
MAY 19...	12	--	145	--	--	--	--	--	--	--
JUN 06...	7.8	242	233	0.380	--	0.020	<0.010	0.400	0.410	0.040
AUG 08...	9.0	106	--	0.670	0.660	0.030	0.020	0.700	0.680	0.070

## BRAZOS RIVER BASIN

08106500 LITTLE RIVER AT CAMERON, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 18...	0.060	0.41	0.50	0.720	0.710	0.510	1.6	16	2.1	95
DEC 05...	0.130	1.0	1.2	1.40	1.30	1.30	4.0	12	0.97	89
FEB 28...	0.090	0.98	1.1	0.580	0.580	0.490	1.5	51	16	96
MAR 31...	--	--	--	--	--	--	--	--	--	--
APR 18...	0.070	1.2	1.3	0.710	0.690	0.670	2.1	57	23	99
MAY 19...	--	--	--	--	--	--	--	--	--	--
JUN 06...	0.030	0.56	0.60	0.040	0.050	0.050	0.15	313	2470	78
AUG 08...	0.030	0.53	0.60	0.250	0.170	0.180	0.55	87	97	91
DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)
OCT 18...	20	6	70	<0.5	<1	<1	<3	2	7	<5
DEC 05...	--	--	--	--	--	--	--	--	--	--
FEB 28...	<10	3	65	<0.5	<1	<1	<3	2	6	<5
MAR 31...	--	--	--	--	--	--	--	--	--	--
APR 18...	--	--	--	--	--	--	--	--	--	--
MAY 19...	--	--	--	--	--	--	--	--	--	--
JUN 06...	20	3	58	<0.5	<1	<1	<3	4	11	<1
AUG 08...	50	<1	61	<0.5	2	<1	<3	7	--	1
DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 18...	14	3	<0.1	<10	<1	1	<1.0	690	7	<3
DEC 05...	--	--	--	--	--	--	--	--	--	--
FEB 28...	13	8	<0.1	<10	<1	<1	1.0	620	<6	5
MAR 31...	--	--	--	--	--	--	--	--	--	--
APR 18...	--	--	--	--	--	--	--	--	--	--
MAY 19...	--	--	--	--	--	--	--	--	--	--
JUN 06...	7	1	<0.1	<10	<1	<1	<1.0	390	<6	4
AUG 08...	8	--	<0.1	<10	4	<1	<1.0	150	<6	24

## BRAZOS RIVER BASIN

367

08106500 LITTLE RIVER AT CAMERON, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1988 TO SEPTEMBER 1989

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. 1988	1802	727	409	1990	55	269	59	285	260
NOV. 1988	1915	737	415	2150	56	290	60	310	260
DEC. 1988	2129	698	392	2250	53	303	55	317	250
JAN. 1989	3226	708	399	3470	54	469	57	499	250
FEB. 1989	5991	524	291	4710	38	619	36	584	200
MAR. 1989	6546	651	365	6450	49	862	50	879	240
APR. 1989	4203	627	351	3980	47	530	47	534	230
MAY 1989	72819	415	228	44800	29	5770	25	4910	160
JUNE 1989	85200	424	233	53600	30	6910	26	5900	170
JULY 1989	21317	447	246	14200	32	1830	28	1590	170
AUG. 1989	9353	454	250	6320	32	818	28	718	180
SEPT 1989	3122	584	325	2740	43	362	41	349	220
TOTAL	217623	**	**	147000	**	19000	**	16900	**
WTD.AVG.	596	452	250	**	32	**	29	**	170

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	791	785	725	801	553	653	409	677	430	429	532	597
2	722	772	747	808	569	663	411	691	430	434	506	605
3	738	695	762	802	538	677	437	706	429	431	521	600
4	770	712	770	805	498	683	491	709	430	436	468	576
5	745	746	751	815	507	730	528	720	427	443	486	553
6	791	746	751	816	505	725	572	703	428	426	351	561
7	750	751	759	818	534	697	611	678	438	443	441	579
8	726	732	790	823	565	710	638	834	435	450	440	569
9	769	726	700	822	611	702	655	571	413	463	421	585
10	736	724	578	824	652	634	670	560	444	473	387	580
11	659	706	557	819	698	643	682	452	448	470	411	585
12	622	610	639	828	720	604	691	454	319	470	413	580
13	608	599	689	813	713	611	704	478	428	451	425	582
14	613	633	729	821	721	628	708	474	435	451	432	583
15	655	664	779	791	699	637	711	355	329	451	446	616
16	629	685	777	809	674	635	718	341	339	448	458	596
17	669	707	800	763	703	655	732	438	373	446	459	580
18	704	712	780	781	392	672	739	370	456	454	465	593
19	718	727	740	803	335	678	743	372	456	446	466	593
20	727	745	718	808	484	691	751	363	456	442	457	591
21	729	737	670	804	425	682	581	408	452	443	475	580
22	740	736	687	777	474	676	734	426	450	438	484	583
23	742	787	665	803	529	776	710	449	447	449	489	584
24	752	812	628	755	554	848	714	459	447	463	488	586
25	763	783	657	720	585	747	648	446	449	464	512	586
26	766	785	656	723	618	759	637	425	447	484	542	561
27	776	813	682	769	625	690	670	441	445	484	535	572
28	789	846	713	652	640	667	655	438	442	492	574	584
29	779	752	744	547	---	740	661	439	440	500	e600	591
30	756	738	766	570	---	508	663	436	435	491	625	590
31	744	---	771	454	---	508	---	436	---	562	606	---
MEAN	725	732	715	766	576	675	642	508	427	459	481	584

## BRAZOS RIVER BASIN

08106500 LITTLE RIVER AT CAMERON, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.0	19.0	11.5	11.0	15.0	13.5	21.0	24.5	28.0	24.0	29.0	29.0
2	22.0	18.0	11.5	13.0	16.0	13.0	22.0	24.0	23.0	25.0	27.0	29.5
3	22.0	19.0	11.0	15.0	10.5	15.0	21.5	25.0	23.0	25.0	28.0	30.0
4	21.0	20.0	11.5	13.0	8.0	14.0	22.5	24.0	24.0	26.0	28.0	30.0
5	20.0	20.0	11.5	15.0	3.0	9.0	21.0	23.0	23.0	25.0	28.5	30.5
6	21.0	18.0	11.5	17.5	3.0	6.0	20.0	24.0	22.5	25.5	28.0	29.5
7	20.5	19.0	13.0	17.5	2.0	6.0	21.0	24.0	23.0	26.0	28.0	30.0
8	21.0	20.0	13.0	15.0	4.0	8.0	22.0	24.0	21.5	26.5	25.0	29.0
9	21.0	21.0	11.5	13.5	4.5	10.0	20.5	25.0	24.0	27.0	25.0	29.0
10	20.0	20.0	11.5	14.5	6.0	11.5	18.0	24.0	24.0	27.5	25.0	28.5
11	20.0	20.0	10.5	14.0	9.0	14.0	16.0	22.0	22.5	27.0	25.0	28.0
12	19.0	21.0	10.0	12.0	10.0	15.0	16.5	21.5	25.0	27.0	25.0	27.0
13	19.0	19.0	9.5	10.5	13.5	17.0	15.5	21.5	25.0	27.0	25.0	28.0
14	19.0	20.5	10.5	10.0	13.0	19.0	15.0	20.0	23.5	27.0	25.5	23.5
15	19.5	21.0	10.5	11.0	13.5	19.0	15.5	21.0	21.0	27.0	26.0	23.0
16	20.0	18.0	9.5	10.0	13.0	18.0	17.0	22.5	22.0	27.5	25.0	22.5
17	22.5	16.5	9.0	10.0	12.5	19.5	20.0	23.0	23.5	27.5	26.0	22.5
18	24.0	18.0	9.0	10.5	9.5	20.0	21.5	23.5	21.0	28.0	27.0	23.0
19	21.5	19.0	10.0	12.0	9.5	19.0	22.0	25.0	21.0	28.0	27.5	23.0
20	23.0	15.0	12.0	13.0	11.0	20.0	21.5	26.0	21.0	28.0	28.0	23.0
21	22.0	14.0	12.0	11.0	11.0	17.0	21.0	26.0	22.5	25.5	30.0	24.5
22	22.0	14.0	16.0	11.0	11.0	14.0	21.5	26.0	22.5	26.5	28.0	23.5
23	22.5	12.5	14.0	11.0	10.0	14.0	23.0	27.0	22.0	26.0	28.5	23.5
24	21.0	13.0	14.5	13.0	10.0	15.0	24.0	27.0	22.0	27.0	29.0	19.5
25	22.5	14.0	16.0	14.0	11.0	18.0	25.0	25.0	22.0	26.0	30.0	19.5
26	23.0	16.0	16.0	14.0	13.0	18.5	25.0	24.0	22.0	26.0	29.0	21.0
27	23.0	15.0	17.0	13.5	15.0	19.5	25.0	21.0	22.0	27.0	29.0	19.5
28	23.5	14.0	12.0	15.0	14.0	20.0	25.0	20.5	23.0	27.0	29.0	18.5
29	21.5	13.5	11.5	13.0	---	20.0	25.0	21.0	23.0	27.5	29.0	20.0
30	21.5	12.0	12.0	14.0	---	20.0	25.0	21.5	23.5	28.0	29.0	20.5
31	20.0	---	12.0	13.0	---	20.5	---	22.0	---	29.0	29.0	---
MEAN	21.5	17.5	12.0	13.0	10.0	15.5	21.0	23.5	23.0	26.5	27.5	25.0



## 08109000 BRAZOS RIVER NEAR BRYAN, TX

LOCATION.--Lat 30°36'50", long 96°29'11", Brazos-Burleson County line, Hydrologic Unit 12070101, on left bank 2.4 mi downstream from Little Brazos River, 5 mi downstream from Texas and New Orleans Railroad Co. bridge, 9 mi southwest of Bryan, and at mile 281.1.

DRAINAGE AREA.--39,515 mi<sup>2</sup>, approximately, of which 9,566 mi<sup>2</sup> probably is noncontributing.

PERIOD OF RECORD.--August 1899 to December 1902, February 1918 to January 1926, June 1926 to current year. Monthly figures only for some periods, published in WSP 1312. Prior to September 1925, published as "near College Station".

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 192.33 ft above National Geodetic Vertical Datum of 1929. Aug. 1, 1899, to Dec. 31, 1902, and Feb. 23, 1918, to Sept. 17, 1925, nonrecording gage at site 7.5 mi downstream at different datum. Sept. 11, 1925, to Oct. 24, 1932, nonrecording gage at site 3,000 ft upstream at present datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Flow is partly regulated by four upstream reservoirs with a combined capacity of 4,447,600 acre-ft, of which 3,200,800 acre-ft is for flood control. Many small diversions above station for irrigation, municipal, industrial, and oil field operation. Flow is affected at times by discharge from the flood-detention pools of 145 floodwater-retarding structures with a combined detention capacity of 152,800 acre-ft. These structures control runoff from 450 mi<sup>2</sup>. Since 1941, at least 10 percent of drainage area is regulated by upstream reservoirs. Several observations of water temperature were made during the year. Satellite telemeter at station.

AVERAGE DISCHARGE.--24 years (water years 1900-1902, 1919-25, 1927-40) unregulated, 5,652 ft<sup>3</sup>/s (4,095,000 acre-ft/yr); 49 years (water years 1941-89) regulated, 4,805 ft<sup>3</sup>/s (3,481,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 54 ft Sept. 12, 1921, present site and datum (discharge not determined); minimum daily, 89 ft<sup>3</sup>/s Aug. 24, 1934.  
Maximum stage since at least 1854, that of Sept. 12, 1921.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 5, 1913, reached a stage of 51 ft, present site and datum, from information by Texas and New Orleans Railroad Co. at their bridge 5 mi upstream and from comparison of maximum stages reached by floods in 1913 and 1921 at gage near College Station. Flood in 1854 reached about the same stage as flood of Dec. 5, 1913.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 50,300 ft<sup>3</sup>/s May 19, gage height, 26.0 ft, from floodmark; minimum daily, 95 ft<sup>3</sup>/s Oct. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	146	132	361	228	1950	1160	7530	1040	e23800	9390	1800	1270
2	162	148	280	226	1420	1480	6740	967	e22800	8050	2150	1260
3	1050	151	293	224	1130	1290	6320	937	e22200	6460	2220	1330
4	962	206	248	218	825	1510	5980	947	e21000	8740	2480	1330
5	651	181	200	207	726	946	5110	3040	e20900	7420	1980	1260
6	481	136	801	203	883	692	3720	4850	e20900	6270	1760	1240
7	399	115	1170	197	854	811	2240	7470	e18100	5180	1750	1230
8	333	125	1240	194	634	920	1790	8320	14500	4310	13600	1200
9	253	132	1780	192	e542	2330	2580	7630	14500	4940	15100	1190
10	208	241	1410	199	e500	1430	2140	6790	15200	3790	9180	1210
11	175	662	1060	201	e467	1000	1910	6860	14300	3170	6710	1240
12	156	423	1270	190	e462	1230	1730	6250	19600	2940	4900	1130
13	148	310	1580	231	e420	1170	1650	3640	19400	2390	3720	913
14	165	259	1680	292	e400	994	1280	3980	18900	2440	2790	920
15	667	227	1330	254	e381	957	1140	7520	28500	2400	2510	823
16	497	214	1090	223	339	823	1190	8680	32200	2350	2320	848
17	324	217	1010	206	346	667	1220	6550	28400	2180	2030	845
18	252	205	961	247	659	597	1140	e27000	28500	2050	2020	706
19	223	187	938	389	5050	560	1080	e46600	29900	2040	1870	686
20	205	182	938	533	6300	548	1750	e44700	30000	1940	1760	596
21	186	190	927	280	3880	566	2370	e22500	29800	1920	1640	e549
22	172	187	794	213	2370	581	2460	e16000	29300	1820	1490	494
23	154	173	560	250	1740	704	2040	e15500	26200	1870	1440	618
24	139	224	422	315	1670	1100	1590	e15400	22400	1810	1400	717
25	126	234	347	263	2370	1060	1450	e19300	18900	1730	1390	738
26	117	222	308	668	2800	866	1390	e25300	15700	1710	1360	1030
27	116	186	282	716	2520	685	1270	e27200	15500	1700	1330	1980
28	100	159	274	621	1870	620	1180	e27400	15100	1680	1330	1010
29	95	136	252	1310	---	682	1030	e26400	13800	1690	1330	1460
30	102	246	242	1200	---	1790	1050	e25400	11700	1660	1300	1760
31	115	---	237	1960	---	7010	---	e24500	---	1720	1290	---
TOTAL	8879	6410	24285	12650	43508	36779	74070	448671	642000	107760	97950	31583
MEAN	286	214	783	408	1554	1186	2469	14470	21400	3476	3160	1053
MAX	1050	662	1780	1960	6300	7010	7530	46600	32200	9390	15100	1980
MIN	95	115	200	190	339	548	1030	937	11700	1660	1290	494
AC-FT	17610	12710	48170	25090	86300	72950	146900	889900	1273000	213700	194300	62640

CAL YR 1988 TOTAL 419840 MEAN 1147 MAX 7570 MIN 95 AC-FT 832800  
WTR YR 1989 TOTAL 1534545 MEAN 4204 MAX 46600 MIN 95 AC-FT 3044000

e Estimated.



## BRAZOS RIVER BASIN

371

08109800 EAST YEGUA CREEK NEAR DIME BOX, TX

LOCATION.--Lat 30°24'26", long 96°49'02", Burleson County, Hydrologic Unit 12070102, on left bank 49 ft upstream from centerline of State Highway 21, 0.8 mi downstream from Buffalo Creek, 3.5 mi north of Dime Box, and 12.2 mi upstream from mouth.

DRAINAGE AREA.--244 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1962 to current year.

Water-quality records.--Chemical and biochemical analyses: November 1980 to August 1987. Sediment analyses: June 1966 to September 1975.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 284.00 ft State Department of Highways and Public Transportation datum. Nov. 6 to Dec. 10, 1970, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records good. Diversions above station for irrigation. Several observations of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--27 years, 57.7 ft<sup>3</sup>/s (41,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,000 ft<sup>3</sup>/s May 24, 1975 (gage height, 13.91 ft); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1886, 17 ft in 1899 and 1957, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 17	2100	*377	*7.90				

Minimum daily discharge, 0.03 ft<sup>3</sup>/s July 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	17	15	19	19	20	20	15	2.3	4.4	2.0	.68
2	15	19	16	19	16	27	13	12	2.2	3.3	4.1	.58
3	13	17	15	19	35	32	11	6.7	2.0	3.8	8.3	1.5
4	13	17	15	19	36	21	9.0	6.2	2.0	4.2	8.5	1.7
5	13	16	14	18	27	15	7.4	6.8	1.7	7.0	6.3	1.1
6	13	14	14	18	24	19	6.1	7.6	1.6	6.4	4.4	.98
7	13	13	15	18	23	20	5.0	9.3	2.1	4.3	3.4	.87
8	13	13	16	18	23	20	4.2	7.1	4.5	2.9	3.4	.94
9	13	13	18	18	22	20	3.8	5.5	3.6	1.9	3.0	2.0
10	13	13	20	17	21	20	3.7	6.6	3.4	1.3	2.8	3.1
11	13	13	23	18	22	17	3.6	6.6	107	1.1	2.8	3.5
12	13	13	21	20	23	12	3.4	8.6	95	.70	2.6	2.6
13	13	13	18	33	25	9.9	3.6	10	43	.56	2.0	1.7
14	13	13	16	40	24	9.0	15	74	72	.53	1.6	1.7
15	13	13	16	33	24	8.3	14	177	93	.41	1.7	1.1
16	13	14	14	24	23	7.7	9.2	103	41	.31	1.9	1.3
17	13	13	15	21	23	7.7	7.2	127	19	.20	2.1	2.0
18	13	14	16	20	26	7.5	5.7	185	13	.14	2.3	2.0
19	13	15	13	25	28	7.4	4.5	104	11	.09	2.2	1.5
20	13	11	9.6	90	28	7.8	3.8	33	9.7	.08	1.8	1.0
21	13	4.7	7.6	89	27	13	3.4	16	8.4	.05	1.6	.89
22	13	2.5	7.0	41	25	44	3.1	11	7.4	.03	1.0	.89
23	13	6.9	6.0	29	22	64	2.9	8.1	6.8	.06	.89	.81
24	13	14	5.2	26	21	25	2.6	6.2	6.3	.79	.97	.89
25	13	15	4.5	29	21	17	2.4	4.8	6.2	10	.79	.89
26	14	16	6.0	161	21	17	2.3	3.9	6.9	7.2	.91	.94
27	14	15	6.7	320	21	18	2.1	3.4	7.4	8.5	.95	.95
28	13	14	5.6	210	20	21	2.0	3.2	6.9	5.0	1.2	.94
29	13	13	4.6	86	---	159	1.9	2.9	6.6	3.1	1.5	1.4
30	14	14	4.9	52	---	243	5.5	2.6	5.7	2.3	1.3	1.9
31	17	---	16	28	---	55	---	2.4	---	1.8	.86	---
TOTAL	416	399.1	393.7	1578	670	984.3	181.4	975.5	597.7	82.45	79.17	42.35
MEAN	13.3	12.7	12.7	50.9	23.9	31.8	6.05	31.5	19.9	2.66	2.55	1.41
MAX	17	19	23	320	36	243	20	185	107	10	8.5	3.5
MIN	13	2.5	4.5	17	16	7.4	1.9	2.4	1.6	.03	.79	.58
AC-FT	825	792	781	3130	1330	1950	360	1930	1190	164	157	84

CAL YR 1988	TOTAL	6492.8	MEAN	17.7	MAX	139	MIN	2.5	AC-FT	12880
WTR YR 1989	TOTAL	6399.67	MEAN	17.5	MAX	320	MIN	.03	AC-FT	12690

## BRAZOS RIVER BASIN

08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX

LOCATION.--Lat 30°19'20", long 96°31'32", Burleson County, Hydrologic Unit 12070102, in intake structure of Somerville Dam on Yegua Creek, at the southwest edge of the city limits of Somerville, and 20.0 mi upstream from mouth.

DRAINAGE AREA.--1,007 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1966 to current year. Prior to October 1970, published as Somerville Reservoir.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by a rolled earthfill dam 20,210 ft long, with a 4,715-foot-long dike and a 1,250-foot long uncontrolled spillway. Deliberate impoundment began Jan. 3, 1967, and the dam was completed Oct. 27, 1967. The spillway is an uncontrolled ogee weir 1,250 ft wide located near right end of dam. The low-flow outlet consists of one 10.0-foot-diameter conduit that is controlled by two 5.0- by 10.0-foot tractor-type gates. Capacity table is based on Geological Survey topographic maps dated 1959. The lake was designed for flood control and water conservation. Gage-height telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam.....	280.0	-
Design flood.....	274.5	1,028,800
Crest of spillway.....	258.0	507,500
Top of conservation pool.....	238.0	160,100
Lowest gated outlet (invert of 10-foot conduit).....	206.0	200

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 311,000 acre-ft June 9, 1979 (elevation, 248.55 ft); minimum, 88,800 acre-ft Oct. 5, 1984 (elevation, 230.70 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 172,400 acre-ft June 19 at 0600 hours (elevation, 239.05 ft); minimum, 117,400 acre-ft Jan. 8 (elevation, 233.92 ft).

Capacity table (elevation, in feet, and total contents, in acre-feet)

233.0	108,800	237.0	148,900	239.0	171,800
235.0	127,900	238.0	160,100	240.0	184,000

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	130200	127700	125100	117800	133300	134300	149200	149600	163900	166400	161800	156100
2	130100	127600	125100	117700	133500	134500	149400	149600	163800	165700	162000	155900
3	130000	127500	125000	117700	133500	134600	149600	150700	163700	166600	161800	155700
4	130000	127300	124900	117700	133400	134700	149300	150700	163500	166400	161800	155500
5	129900	127200	124900	117800	133300	134500	149200	151700	163200	165900	161600	155200
6	129800	127100	124900	117900	133300	134400	149100	151700	162900	165500	161500	155000
7	129600	127000	124900	117900	133300	134300	149100	151500	163000	164700	161300	154800
8	129400	126900	125000	117800	133200	134300	148900	151700	163000	164700	161100	154700
9	129200	126900	125200	117700	133300	134200	148500	151500	162800	164200	160900	154300
10	129000	126800	125800	117600	133300	134200	148100	151800	162600	163900	160700	154100
11	128900	126700	125800	117700	133400	134200	147900	151700	164500	163600	160500	153900
12	128800	126700	125700	117900	133600	134300	147900	151500	165000	163200	160300	153700
13	128500	126700	125700	118800	133900	134300	148500	153100	165100	163000	160100	155200
14	128400	126600	125700	118800	134000	134300	150100	155600	170100	162500	159900	154600
15	128200	126600	125600	118800	134200	134300	150300	157500	171500	162300	159800	154200
16	128000	126500	125600	118800	134000	134200	150600	159500	172000	162200	159500	154100
17	127800	126400	125500	118800	134400	134200	150600	161100	172200	162000	159400	153900
18	127900	126500	125300	119000	134300	134300	150700	162200	172300	161600	159200	153500
19	127800	126700	125300	121200	134400	134300	150700	163800	172000	161400	159200	153400
20	127700	126500	125400	122100	134500	134300	150700	165500	171200	161000	158700	153300
21	127600	126100	125400	122700	134500	138200	150600	165800	170300	160600	158500	153000
22	127500	126000	125100	122900	134400	139800	150600	165800	169400	160300	158300	152800
23	127400	125900	123800	123100	134300	140700	150200	165800	168700	160100	157900	152200
24	127300	125900	122100	123100	134200	141000	150200	165700	168500	160000	157900	151800
25	127200	125900	120400	123400	134200	141100	150100	165400	168400	159700	157600	151500
26	127100	125900	118300	123800	134500	142500	150100	165300	168200	159400	157400	151200
27	127000	125900	118100	124300	134500	144200	150000	165200	168100	159500	157300	151000
28	127000	125800	118000	126000	134500	146000	150000	165100	167400	159300	157000	150900
29	127100	125700	117700	130100	---	146900	149900	164600	167100	159100	156800	150800
30	127300	125600	118000	132500	---	148200	150000	164700	166800	159000	156700	150700
31	127700	---	117900	132900	---	148900	---	164200	---	158700	156400	---
MAX	130200	127700	125800	132900	134500	148900	150700	165800	172300	166600	162000	156100
MIN	127000	125600	117700	117600	133200	134200	147900	149600	162600	158700	156400	150700
(+)	234.98	234.77	233.98	235.49	235.65	237.00	237.10	238.35	238.58	237.88	237.67	237.16
(Φ)	-2500	-2100	-7700	+15000	+1600	+14400	+1100	+14200	+2600	-8100	-2300	-5700

CAL YR 1988 MAX 165100 MIN 117700 (Φ) -41600  
WTR YR 1989 MAX 172300 MIN 117600 (Φ) +20500

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

## BRAZOS RIVER BASIN

373

08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1969 to current year.

301908096313101 - SOMERVILLE LAKE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, (PER-CENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS TOTAL (MG/L AS CaCO3)
JAN											
20...	0900	1.00	476	7.70	12.0	0.76	8.7	80	K4	K6	140
20...	0902	10.0	476	7.70	12.0	--	8.6	79	--	--	--
20...	0904	24.0	476	7.70	12.0	--	8.6	79	--	--	130
MAY											
02...	0850	1.00	465	7.80	23.5	1.10	7.4	87	K2	K2	140
02...	0852	10.0	465	7.80	23.5	--	7.3	86	--	--	--
02...	0854	20.0	465	7.50	23.0	--	6.0	70	--	--	--
02...	0856	27.0	472	7.00	20.5	--	0.1	1	--	--	130
AUG											
16...	0900	1.00	450	7.60	27.5	0.80	4.2	54	<2	K24	130
16...	0902	10.0	450	7.40	27.5	--	2.8	36	--	--	--
16...	0904	20.0	450	7.30	27.5	--	2.6	33	--	--	--
16...	0906	28.0	450	7.30	27.5	--	2.4	31	--	--	120

DATE	HARDNESS NONCARB WH TOT FLD (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	ALKALINITY WAT TOT FET FIELD (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)	FLUORIDE, DIS-SOLVED (MG/L AS F)
JAN										
20...	61	39	9.6	35	1	7.5	76	65	57	0.40
20...	--	--	--	--	--	--	--	--	--	--
20...	60	38	9.7	37	1	7.7	75	66	57	--
MAY										
02...	67	39	9.4	35	1	7.5	69	66	57	0.30
02...	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--
02...	59	38	9.2	35	1	7.4	74	66	56	--
AUG										
16...	54	36	8.6	35	1	7.5	71	59	56	0.40
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	55	36	8.5	34	1	7.6	70	59	55	--

DATE	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHOROUS TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS Fe)	MANGANESE, DIS-SOLVED (UG/L AS Mn)
JAN										
20...	8.0	267	<0.010	<0.100	0.170	1.1	1.3	0.040	8	4
20...	--	--	<0.010	<0.100	0.160	0.84	1.0	0.040	20	<10
20...	7.9	268	<0.010	<0.100	0.170	1.0	1.2	0.040	7	10
MAY										
02...	6.1	262	0.020	<0.100	0.020	0.88	0.90	0.040	9	9
02...	--	--	--	--	--	--	--	--	--	--
02...	--	--	0.020	<0.100	0.040	1.1	1.1	0.050	10	130
02...	7.3	264	0.040	<0.100	0.240	1.1	1.3	0.070	23	1200
AUG										
16...	13	258	<0.010	<0.100	0.020	0.88	0.90	0.060	7	25
16...	--	--	<0.010	<0.100	0.060	0.84	0.90	0.060	<10	20
16...	--	--	--	--	--	--	--	--	--	--
16...	12	254	0.010	<0.100	0.070	0.73	0.80	0.060	10	10



## BRAZOS RIVER BASIN

08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX--Continued

301940096315801 - SOMERVILLE LAKE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
20...	0930	1.00	476	7.80	12.0	9.0	83
20...	0932	10.0	476	7.80	12.0	9.0	83
20...	0934	22.0	476	7.80	12.0	9.0	83
MAY							
02...	0920	1.00	468	7.90	23.5	7.6	89
02...	0922	10.0	468	7.70	23.0	7.0	81
02...	0924	20.0	468	7.60	23.0	6.6	77
02...	0926	24.0	471	7.10	22.0	2.4	27
AUG							
16...	0920	1.00	450	8.20	28.0	5.9	76
16...	0922	10.0	450	7.40	27.5	3.0	38
16...	0924	20.0	450	7.20	27.5	1.8	23
16...	0926	25.0	450	7.20	27.5	1.3	17

302026096341501 - SOMERVILLE LAKE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
20...	0945	1.00	466	8.00	12.5	9.6	89
20...	0947	9.00	466	8.00	12.5	9.6	89
MAY							
02...	0940	1.00	470	8.20	24.5	8.0	96
02...	0942	11.0	470	7.10	23.0	2.3	27
AUG							
16...	0930	1.00	450	8.70	29.0	6.5	85
16...	0932	13.0	450	8.10	29.0	4.2	55

301805096332501 - SOMERVILLE LAKE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
20...	0955	1.00	462	8.10	12.5	9.9	92
20...	0957	10.0	462	8.10	12.5	9.9	92
MAY							
02...	0950	1.00	470	8.00	24.0	7.9	94
02...	0952	10.0	470	8.00	24.0	7.5	89
02...	0954	15.0	470	7.50	24.0	6.0	71
AUG							
16...	0942	1.00	450	8.30	28.0	5.6	72
16...	0944	10.0	450	7.80	28.0	4.2	54
16...	0946	15.0	450	7.50	28.0	2.6	34

301847096334601 - SOMERVILLE LAKE DR

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
20...	1010	1.00	473	7.90	12.0	9.5	88
20...	1012	10.0	473	7.90	12.0	9.5	88
20...	1014	18.0	473	7.90	12.0	9.5	88
MAY							
02...	1000	1.00	469	8.00	24.0	7.8	92
02...	1002	10.0	469	7.90	24.0	7.7	91
02...	1004	19.0	469	7.60	24.0	6.6	78
AUG							
16...	0952	1.00	450	8.50	28.5	6.5	85
16...	0954	10.0	450	7.90	28.0	4.2	54
16...	0956	21.0	450	7.30	28.0	1.0	13

## BRAZOS RIVER BASIN

375

08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX--Continued

301904096335601 - SOMERVILLE LAKE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JAN										
20...	1020	1.00	473	7.90	12.0	0.46	9.5	88	K13	K18
20...	1022	10.0	473	7.90	12.0	--	9.5	88	--	--
20...	1024	22.0	473	7.90	12.0	--	9.5	88	--	--
MAY										
02...	1010	1.00	469	8.00	24.5	1.10	7.8	93	K2	K2
02...	1012	10.0	469	8.00	24.0	--	7.8	92	--	--
02...	1014	20.0	469	7.00	22.5	--	2.2	25	--	--
02...	1016	24.0	472	7.00	22.0	--	0.4	5	--	--
AUG										
16...	1000	1.00	449	8.50	29.0	0.70	6.3	83	<2	<2
16...	1002	10.0	449	8.20	28.5	--	5.1	66	--	--
16...	1004	20.0	453	7.20	28.0	--	0.4	5	--	--
16...	1006	25.0	455	7.20	27.5	--	0	0	--	--

DATE	TIME	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN											
20...	140	64	39	9.7	35	1	7.6	74	66	57	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	130	60	38	9.7	36	1	7.6	75	66	57	--
MAY											
02...	140	68	39	9.6	38	1	7.7	69	67	56	--
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
02...	140	65	39	9.5	36	1	7.4	72	65	56	--
AUG											
16...	130	58	37	8.7	35	1	7.6	70	59	54	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	130	54	37	8.7	34	1	7.5	74	58	55	--

DATE	TIME	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN											
20...	7.8	266	<0.010	<0.100	0.110	0.09	0.20	0.030	13	3	
20...	--	--	<0.010	<0.100	0.110	0.99	1.1	0.030	10	<10	
20...	7.7	267	<0.010	<0.100	0.120	1.1	1.2	0.030	10	3	
MAY											
02...	6.2	265	<0.010	<0.100	<0.010	--	0.90	0.050	5	2	
02...	--	--	<0.010	<0.100	0.020	0.58	0.60	0.040	20	<10	
02...	--	--	0.020	<0.100	0.200	0.50	0.70	0.050	20	40	
02...	7.4	264	0.040	<0.100	0.160	1.0	1.2	0.050	9	640	
AUG											
16...	12	255	<0.010	<0.100	0.010	0.99	1.0	0.070	12	1	
16...	--	--	<0.010	<0.100	0.010	0.79	0.80	0.050	<10	10	
16...	--	--	0.020	<0.100	0.190	0.81	1.0	0.080	20	500	
16...	13	258	0.040	<0.100	0.310	0.79	1.1	0.100	160	690	

301817096364101 - SOMERVILLE LAKE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
20...	1050	1.00	468	8.00	12.0	9.9	91
20...	1052	10.0	468	8.00	12.0	9.9	91
20...	1054	15.0	468	8.00	12.0	9.9	91
MAY							
02...	1045	1.00	469	8.00	24.5	7.8	93
02...	1047	10.0	469	7.90	24.5	7.5	90
02...	1049	17.0	472	7.20	24.0	4.2	50
AUG							
16...	1025	1.00	450	8.60	29.0	6.2	81
16...	1027	10.0	450	8.20	28.5	4.8	63
16...	1029	18.0	450	7.30	28.5	1.5	20

## BRAZOS RIVER BASIN

08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX--Continued

301754096380801 - SOMERVILLE LAKE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

		SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI, KF AGAR (COLS. PER 100 ML)	
DATE	TIME										
JAN											
20...	1110	1.00	462	8.10	13.0	0.24	10.2	96	68	79	
20...	1112	8.00	462	8.10	13.0	--	10.1	95	--	--	
MAY											
02...	1110	1.00	475	8.10	25.5	0.30	8.1	99	K2	K2	
02...	1112	10.0	475	8.00	24.5	--	7.5	90	--	--	
AUG											
16...	1045	1.00	448	8.70	30.0	0.40	6.4	86	K4	K7	
16...	1047	10.0	454	7.50	29.0	--	2.0	26	--	--	
		HARDNESS TOTAL (MG/L AS CAC03)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CAC03	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNESIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CAC03	SULFATE DIS-SOLVED (MG/L AS S04)	CHLORIDE, DIS-SOLVED (MG/L AS CL)
DATE											
JAN											
20...	130	64	38	9.6	36	1	7.2	71	64	56	
20...	130	64	38	9.6	36	1	7.0	71	64	57	
MAY											
02...	140	72	39	9.7	37	1	7.7	66	74	59	
02...	140	72	39	9.5	38	1	7.7	65	69	55	
AUG											
16...	130	56	36	8.7	35	1	7.7	70	59	56	
16...	130	59	37	8.8	35	1	7.7	70	59	56	
		SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHOROUS TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGANESE, DIS-SOLVED (UG/L AS MN)
DATE											
JAN											
20...	6.8	260	<0.010	<0.100	0.030	1.3	1.3	0.040	120	35	
20...	6.6	261	0.010	<0.100	0.030	1.4	1.4	0.040	14	14	
MAY											
02...	7.7	274	0.020	<0.100	0.020	0.38	0.40	0.090	10	6	
02...	6.8	264	<0.010	<0.100	0.020	1.1	1.1	0.090	9	27	
AUG											
16...	12	256	<0.010	<0.100	0.010	1.1	1.1	0.090	13	4	
16...	12	258	<0.010	<0.100	0.010	1.3	1.3	0.130	70	110	

08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX--Continued

Somerville Lake AC (301908096313101)

Phytoplankton Analyses October 1988 to September 1989

Date	1-20-89
Time	0901

TOTAL CELLS/mL	77,856
NUMBER OF SPECIES	43
DEPTH COLLECTED (ft.)	1.2

<u>Organisms</u>	<u>Cells/mL</u>
<b>BACILLARIOPHYTA (Diatoms)</b>	
Order Centrales	
<i>Cyclotella ocellata</i>	98
<i>Cyclotella stelligera</i>	391
<i>Melosira granulata</i> var. <i>angustissima</i>	586
<i>Melosira</i> sp.	195
<i>Stephanodiscus dubius</i>	98
<i>Stephanodiscus hantzschii</i>	684
<i>Stephanodiscus tenuis</i>	1,759
Order Pennales	
<i>Achnanthes minutissima</i>	618
<i>Diploneis</i> sp.	62
<i>Navicula cincta</i>	62
<i>Navicula</i> sp.	62
<i>Nitzschia acicularis</i>	124
<i>Nitzschia palea</i>	433
<b>CHLOROPHYTA (Green algae)</b>	
<i>Ankistrodesmus convolutus</i>	544
<i>Ankistrodesmus fractus</i>	544
<i>Chlamydomonas</i> sp.	544
<i>Chodatella subsalsa</i>	1,089
<i>Cosmarium</i> sp.	544
<i>Crucigenia quadrata</i>	2,178
<i>Gloeocystis</i> sp.	272
<i>Scenedesmus abundans</i> var. <i>brevicauda</i>	1,089
<i>Scenedesmus quadricauda</i>	2,178
<i>Schroederia judayi</i>	544
<i>Selenastrum minutum</i>	1,361
<i>Staurostrum</i> sp.	272
<i>Tetrastrum staurogeniaeforme</i>	2,178
<i>Xanthidium</i> sp.	272
Unknown coccoid	2,178
<b>CYANOPHYTA (Blue-green algae)</b>	
<i>Anabaena</i> sp.	2,450
<i>Anabaenopsis elenkinii</i>	3,539
<i>Aphanocapsa delicatissima</i>	14,429
<i>Aphanothece nidulans</i>	6,806
<i>Chroococcus dispersus</i>	3,811
<i>Chroococcus limneticus</i>	4,628
<i>Chroococcus multicoloratus</i>	2,995
<i>Dactylococcopsis fascicularis</i>	2,450
<i>Gomphosphaeria lacustris</i>	3,811
<i>Holopedium irregulare</i>	4,900
<i>Lyngbya</i> sp.	817
<i>Merismopedia tenuissima</i>	2,178
<i>Oscillatoria</i> sp.	2,722
<i>Pseudoanabaena</i> sp.	817
<i>Synechococcus</i> sp.	544

08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX--Continued

Somerville Lake FC (301754096380801)

## Phytoplankton Analyses October 1988 to September 1989

Date	1-20-89
Time	1111

TOTAL CELLS/mL	53,014
NUMBER OF SPECIES	43
DEPTH COLLECTED (ft.)	0.4

<u>Organisms</u>	<u>Cells/mL</u>
CHLOROPHYTA (Green algae)	
<i>Ankistrodesmus convolutus</i>	1,688
<i>Ankistrodesmus falcatus</i>	506
<i>Ankistrodesmus falcatus</i> var. <i>tumulus</i>	168
<i>Chodatella quadriseta</i>	1,520
<i>Dictyosphaerium pulchellum</i>	338
<i>Kirchneriella lunaris</i> var. <i>irregularis</i>	1,351
<i>Oocystis pusilla</i>	168
<i>Scenedesmus armatus</i>	338
<i>Scenedesmus dimorphus</i>	1,351
<i>Scenedesmus quadricauda</i>	1,351
<i>Selenastrum minutum</i>	168
<i>Staurastrum</i> sp.	168
<i>Tetraedron minimum</i>	338
<i>Tetraedron trigonum</i>	168
<i>Tetrastrum staurogeniaeforme</i>	1,351
Unidentified green coccoid	675
CYANOPHYTA (Blue-green algae)	
<i>Aphanocapsa elachista</i> var. <i>conferta</i>	7,091
<i>Chroococcus dispersus</i>	2,701
<i>Chroococcus limneticus</i>	1,013
<i>Chroococcus multicoloratus</i>	3,546
<i>Chroococcus turgidus</i>	1,520
<i>Dactylococcopsis fascicularis</i>	11,650
<i>Merismopedia tenuissima</i>	5,403
<i>Oscillatoria</i> sp.	675
<i>Pseudoanabaena</i> sp.	844
<i>Spirulina</i> sp.	168
EUGLENOPHYTA (Euglenoids)	
<i>Euglena</i> sp.	168
<i>Trachelomonas hispida</i>	338
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
<i>Melosira granulata</i> var. <i>angustissima</i>	1,447
<i>Melosira</i> sp.	965
<i>Stephanodiscus</i> sp.	965
Order Pennales	
<i>Achnanthes lanceolata</i>	137
<i>Achnanthes minutissima</i>	137
<i>Cymbella</i> sp.	137
<i>Navicula costulata</i>	683
<i>Navicula decussis</i>	137
<i>Navicula rhychocephala</i>	137
<i>Navicula</i> sp.	137
<i>Neidium</i> sp.	137
<i>Nitzschia frustulum</i>	137
<i>Nitzschia microcephala</i>	137
<i>Surirella ovata</i>	137
<i>Tabellaria flocculosa</i>	820



08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX--Continued  
Somerville Lake AC (301908096313101)

## Phytoplankton Analyses October 1988 to September 1989

Date 5-2-89  
Time 0851

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TOTAL CELLS/mL 130,772  
NUMBER OF SPECIES 42  
DEPTH COLLECTED (ft.) 1.8

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<u>Organisms</u>	<u>Cells/mL</u>
<b>CHLOROPHYTA (Green algae)</b>	
<i>Ankistrodesmus convolutus</i>	2,251
<i>Ankistrodesmus falcatus</i>	225
<i>Ankistrodesmus nannoselene</i>	225
<i>Chlamydomonas</i> sp.	450
<i>Chlorococcum</i> sp.	1,800
<i>Chodatella subsalsa</i>	450
<i>Chodatella</i> sp.	450
<i>Cosmarium</i> sp.	450
<i>Dictyosphaerium pulchellum</i>	1,800
<i>Franceia ovalis</i>	225
<i>Gloeocystis</i> sp.	900
<i>Golenkinia radiata</i>	225
<i>Kirchneriella lunaris</i>	675
<i>Pediastrum</i> sp.	900
<i>Scenedesmus armatus</i>	450
<i>Scenedesmus quadricauda</i>	2,701
<i>Selenastrum minutum</i>	450
<i>Tetraedron pentaedricum</i> ?	450
<i>Tetrastrum staurogeniaeforme</i>	900
<b>CYANOPHYTA (Blue-green algae)</b>	
<i>Anabaena circinalis</i>	2,926
<i>Aphanocapsa delicatissima</i>	19,133
<i>Aphanocapsa elachista</i>	13,731
<i>Aphanothece saxicola</i>	7,428
<i>Chroococcus multicoloratus</i>	5,402
<i>Chroococcus pallidus</i>	450
<i>Chroococcus varius</i>	17,782
<i>Dactylococcopsis fascicularis</i>	1,575
<i>Merismopedia tenuissima</i>	5,402
<i>Merismopedia</i> sp.	9,004
<i>Oscillatoria subtilissima</i>	10,804
<i>Spirulina laxa</i>	675
<i>Spirulina</i> sp.	1,351
<i>Synechococcus lineare</i>	11,704
<i>Synechococcus</i> sp.	4,277
<b>EUGLENOPHYTA (Euglenoids)</b>	
<i>Trachelomonas hispida</i>	225
<i>Trachelomonas volvocina</i>	225
<b>CRYPTOPHYTA (Cryptomonads)</b>	
<i>Cryptomonas</i> sp.	450
<b>BACILLARIOPHYTA (Diatoms)</b>	
Order Centrales	
<i>Cyclotella</i> sp.	158
<i>Melosira granulata</i> var. <i>angustissima</i>	394
<i>Stephanodiscus hantzschii</i>	709
<i>Stephanodiscus tenuis</i>	315
Order Pennales	
<i>Achnanthes lanceolata</i> var. <i>dubia</i>	675

08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX--Continued

Somerville Lake FC (301754096380801)

Phytoplankton Analyses October 1988 to September 1989

Date	5-2-89
Time	1111

TOTAL CELLS/mL	21,273
NUMBER OF SPECIES	29
DEPTH COLLECTED (ft.)	0.45

<u>Organisms</u>	<u>Cells/mL</u>
CHLOROPHYTA (Green algae)	
<i>Ankistrodesmus convolutus</i>	68
<i>Chlamydomonas</i> sp.	68
<i>Coelastrum microporum</i>	270
<i>Gloeocystis</i> sp.	270
<i>Oocystis</i> sp.	135
<i>Scenedesmus bijuga</i> var. <i>alternans</i>	270
<i>Scenedesmus dimorphus</i>	270
<i>Selenastrum minutum</i>	202
<i>Staurastrum</i> sp.	68
<i>Tetrastrum staurogeniaeforme</i>	270
CYANOPHYTA (Blue-green algae)	
<i>Anabaena circinalis</i>	540
<i>Aphanocapsa elachista</i>	4,727
<i>Chroococcus dispersus</i>	338
<i>Chroococcus multicoloratus</i>	405
<i>Chroococcus varius</i>	3,039
<i>Merismopedia tenuissima</i>	7,293
<i>Synechococcus linearis</i>	2,161
EUGLENOPHYTA (Euglenoids)	
<i>Euglena</i> sp.	68
<i>Trachelomonas hispida</i>	135
CRYPTOPHYTA (Cryptomonads)	
<i>Cryptomonas</i> sp.	135
BACILLARIOPHYTA (Diatoms)	
Order Centrales	
<i>Melosira granulata</i> var. <i>angustissima</i>	177
<i>Melosira lirata</i>	69
<i>Stephanodiscus hantzschii</i>	69
<i>Stephanodiscus niagarae</i>	10
<i>Stephanodiscus tenuis</i>	148
Order Pennales	
<i>Achnanthes lanceolata</i> var. <i>dubia</i>	11
<i>Gomphonema</i> sp.	11
<i>Navicula</i> sp.	23
<i>Surirella ovata</i>	23

08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX--Continued

## Somerville Lake AC (301908096313101)

Phytoplankton Analyses September 1988 to October 1989

Date	8-16-89
Time	0901

TOTAL CELLS/mL	226,532
NUMBER OF SPECIES	38
DEPTH COLLECTED (ft.)	1.8

<u>Organisms</u>	<u>Cells/mL</u>
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## BACILLARIOPHYTA (diatoms)

## Order Centrales

<i>Cyclotella meneghiniana</i>	865
<i>Cyclotella stelligera</i>	288
<i>Melosira granulata</i> var. <i>angustissima</i>	2,178
<i>Melosira</i> sp.	1,089
<i>Stephanodiscus hantzschii</i> var. <i>pusilus</i>	288
<i>Stephanodiscus tenuis</i>	3,459

## Order Pennales

<i>Achnanthes</i> sp.	545
<i>Anomoeoneis</i> sp.	545
<i>Nitzschia acicularis</i>	182
<i>Nitzschia</i> sp.	363

## CHLOROPHYTA (green algae)

<i>Ankistrodesmus convolutus</i>	544
<i>Ankistrodesmus nannoselene</i>	1,089
<i>Chlamydomonas</i> sp.	544
<i>Chlorococcum</i> sp.	1,634
<i>Cosmarium</i> sp.	544
<i>Glaucocystis</i> sp.	1,634
<i>Gleocystis vesiculosa</i>	4,356
<i>Kirchneriella lunaris</i>	3,812
<i>Nephrocytium</i> sp.	2,178
<i>Oocystis pusilla</i>	3,812
<i>Scenedesmus quadricauda</i>	3,267
<i>Schroederia setigera</i>	544
<i>Tetraedron muticum</i>	1,089

## CYANOPHYTA (blue-green algae)

<i>Aphanocapsa delicatissima</i>	20,148
<i>Aphanocapsa elachista</i>	6,535
<i>Chroococcus dispersus</i>	11,436
<i>Chroococcus limneticus</i>	2,178
<i>Chroococcus varius</i>	3,267
<i>Dactylococcopsis fascicularis</i>	2,178
<i>Lyngbya</i> sp. 1	1,634
<i>Marsoniella elengans</i>	11,980
<i>Merismopedia tenuissima</i>	4,356
<i>Microcystis</i> sp.	15,248
<i>Oscillatoria limnetica</i>	25,050
<i>Pseudanabaena catenata</i>	81,684
<i>Synechococcus lineare</i>	2,178
<i>Synechococcus</i> sp.	3,267

## CRYPTOPHYTA (cryptomonads)

<i>Chroomonas</i> sp.	544
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## BRAZOS RIVER BASIN

08109900 SOMERVILLE LAKE NEAR SOMERVILLE, TX--Continued

Somerville Lake FC (301754096380801)

## Phytoplankton Analyses September 1988 to October 1989

Date	8-16-89
Time	1046

TOTAL CELLS/mL	347,159
NUMBER OF SPECIES	35
DEPTH COLLECTED (ft.)	0.6

<u>Organisms</u>	<u>Cells/mL</u>
<b>BACILLARIOPHYTA (diatoms)</b>	
Order Centrales	
<i>Cyclotella meneghiniana</i>	545
<i>Cyclotella stelligera</i>	408
<i>Melosira granulata</i> var. <i>angustissima</i>	817
<i>Stephanodiscus hantzschii</i> var. <i>pusillus</i>	272
<i>Stephanodiscus tenuis</i>	3,676
Order Pennales	
<i>Anomoeoneis</i> sp.	490
<i>Cymbella minuta</i>	163
<i>Nitzschia</i> sp.	163
<b>CHLOROPHYTA (green algae)</b>	
<i>Ankistrodesmus nannoselene</i>	2,450
<i>Chlamydomonas</i> sp.	1,634
<i>Chlorococcum</i> sp.	817
<i>Cosmarium</i> sp.	817
<i>Kirchneriella lunaris</i>	1,634
<i>Scenedesmus acuminatus</i>	1,634
<i>Scenedesmus quadricauda</i>	3,267
<i>Schroederia setigera</i>	1,634
<i>Tetraedron muticum</i>	817
<i>Tetraedron</i> sp.	817
<b>CYANOPHYTA (blue-green algae)</b>	
<i>Anabaena</i> sp.	2,451
<i>Aphanocapsa delicatissima</i>	13,069
<i>Chroococcus dispersus</i>	17,971
<i>Chroococcus varius</i>	6,535
<i>Chroococcus</i> sp.	3,267
<i>Dactylococcopsis acicularis</i>	2,451
<i>Dactylococcopsis fascicularis</i>	14,703
<i>Lyngbya</i> sp. 1	3,267
<i>Lyngbya</i> sp. 2	13,886
<i>Marsoniella elengans</i>	9,802
<i>Merismopedia tenuissima</i>	26,139
<i>Oscillatoria limnetica</i>	16,337
<i>Pseudanabaena catenata</i>	172,354
<i>Raphidiopsis curvata</i>	14,703
<i>Spirulina subsalsa</i>	1,634
<i>Synechococcus lineare</i>	5,718
<i>Synechococcus</i> sp.	817

## BRAZOS RIVER BASIN

383

08110000 YEGUA CREEK NEAR SOMERVILLE, TX

LOCATION.--Lat 30°19'18", long 96°30'26", Burleson County, Hydrologic Unit 12070102, on left bank 40 ft downstream from bridge on State Highway 36, 860 ft downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 1.0 mi downstream from Somerville Lake, 2.0 mi south of Somerville, 5.0 mi upstream from Davidson Creek, and 18.4 mi upstream from mouth.

DRAINAGE AREA.--1,009 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1924 to current year.

REVISED RECORDS.--WSP 1512: 1926(M), 1929, 1935. WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 199.21 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 30, 1934, nonrecording gage at railway bridge 860 ft upstream at datum 34.30 ft higher. Jan. 30, 1934, to Nov. 30, 1970, water-stage recorder at highway bridge 100 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records good above 1.0 ft<sup>3</sup>/s and fair below. Flow regulated by Somerville Lake (station 08109900) since Feb. 3, 1965. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--41 years (water years 1925-65) unregulated, 290 ft<sup>3</sup>/s (210,100 acre-ft/yr); 24 years (water years 1966-89) regulated, 279 ft<sup>3</sup>/s (202,100 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 56,800 ft<sup>3</sup>/s July 1, 1940 (gage height, 19.27 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1875, 22 ft Dec. 5, 1913, present site and datum, from information by Gulf, Colorado, and Santa Fe Railway Co.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 796 ft<sup>3</sup>/s Dec. 25, 26 at 1500 and 1100 hours, respectively (gage height, 6.35 ft); no flow June 2-6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	.98	.13	1.0	.33	.34	.08	.06	.02	214	1.3	1.2
2	1.5	.89	.12	1.1	.20	.43	.05	.05	.02	208	1.5	1.2
3	1.4	.85	.13	1.2	.17	.46	.05	.09	.00	216	1.2	1.2
4	1.4	.84	.15	1.3	.15	.50	.05	.14	.00	198	1.0	1.2
5	1.4	.71	.16	1.6	.13	.46	.03	.56	.00	189	.92	1.3
6	1.4	.74	.16	1.8	.11	.43	.03	.54	.00	186	.88	1.3
7	1.4	.93	.16	2.0	.11	.43	.03	.28	.00	183	.84	1.3
8	1.4	.63	.16	2.1	.12	.43	.04	.21	.02	183	.95	1.3
9	1.4	.47	.26	2.3	.14	.45	.05	.18	.02	182	.94	1.3
10	1.4	.32	.33	2.4	.15	.46	.05	.17	.02	147	.95	1.3
11	1.4	.24	.47	2.4	.16	.45	.05	.18	.55	82	.98	1.2
12	1.3	.19	.47	2.6	.17	.44	.06	.16	.77	79	1.0	1.3
13	1.3	.15	.43	3.2	.19	.47	.14	.27	.57	76	1.0	1.5
14	1.2	.13	.41	4.0	.20	.49	4.7	.97	2.1	45	1.0	1.4
15	1.1	.15	.39	3.4	.21	.45	1.6	.49	1.2	2.4	1.1	1.3
16	1.0	.23	.35	3.0	.21	.44	.29	.25	.38	1.0	1.1	1.3
17	.96	.25	.30	2.7	.21	.44	.11	.19	.18	.91	1.2	1.3
18	.89	.34	.28	2.6	.27	.47	.06	.19	.13	.91	1.2	1.3
19	.90	.44	.27	7.7	.27	.45	.04	.17	.92	.98	1.2	1.4
20	.94	.41	.26	16	.31	.52	.04	.15	379	.99	1.3	1.4
21	.94	.32	.23	1.8	.33	7.4	.05	.14	358	.95	1.3	1.3
22	.92	.29	117	.79	.33	5.5	.05	.11	361	.92	1.3	1.3
23	.96	.28	473	.55	.31	.64	.04	.10	332	.90	1.3	1.3
24	.95	.27	761	.48	.25	.22	.04	.08	258	.86	1.3	1.3
25	.93	.23	788	.44	.27	.13	.03	.07	242	.80	1.3	1.3
26	.96	.23	790	.52	.30	.98	.03	.06	191	.75	1.2	1.3
27	.97	.22	521	.71	.32	2.3	.04	.06	41	.75	1.2	1.4
28	1.0	.16	24	.76	.32	3.1	.04	.05	198	.79	1.3	1.4
29	1.1	.15	1.0	20	---	9.4	.05	.04	217	.83	1.3	1.4
30	1.1	.14	.68	13	---	.98	.06	.03	219	.88	1.3	1.4
31	1.1	---	.91	1.4	---	.21	---	.03	---	.91	1.3	---
TOTAL	36.02	12.18	3482.21	104.85	6.24	39.87	7.98	6.07	2893.98	2204.53	35.66	39.4
MEAN	1.16	.41	112	3.38	.22	1.29	.27	.20	96.5	71.1	1.15	1.31
MAX	1.5	.98	790	20	.33	9.4	4.7	.97	379	216	1.5	1.5
MIN	.89	.13	.12	.44	.11	.13	.03	.03	.00	.75	.84	1.2
AC-FT	71	24	6910	208	12	79	16	12	5740	4370	71	78
CAL YR 1988	TOTAL	14479.54	MEAN	39.6	MAX	790	MIN	.00	AC-FT	28720		
WTR YR 1989	TOTAL	8868.99	MEAN	24.3	MAX	790	MIN	.00	AC-FT	17590		



## BRAZOS RIVER BASIN

08110000 YEGUA CREEK NEAR SOMERVILLE, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: March 1942 to March 1959, September 1961 to September 1967, October 1968 to September 1980. Chemical and biochemical analyses: October 1980 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: September 1961 to September 1967.

WATER TEMPERATURE: September 1961 to June 1967.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,380 microsiemens Apr. 14, 1962; minimum daily, 53 microsiemens Sept. 13, 1961.

WATER TEMPERATURE: Maximum daily, 33.0°C June 11, July 31, 1965; minimum daily, 1.5°C Jan. 14, 1964.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIO-CHEMICAL, 5 DAY (MG/L)	HARDNESS TOTAL (MG/L AS CaCO3)	HARDNESS NONCARB WH WAT TOT FLD (MG/L AS CaCO3)
JAN 20...	1315	12	529	7.10	14.5	67	--	9.0	88	5.6	120	83
MAY 02...	1230	0.05	1770	7.70	25.5	50	26	8.4	103	8.0	490	420
AUG 16...	1200	1.6	693	7.60	28.5	30	15	6.5	85	5.3	190	120
DATE		CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)
JAN 20...		37	7.3	49	2	6.3	40	91	78	0.10	13	306
MAY 02...		150	28	170	3	11	71	320	340	0.30	13	1080
AUG 16...		58	12	53	2	8.6	75	120	99	0.30	14	411
DATE		RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	RESIDUE VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHOROUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)
JAN 20...		--	--	0.280	0.020	0.300	0.160	1.0	1.2	0.130	9.9	1
MAY 02...		65	13	--	0.020	<0.100	0.060	0.44	0.50	0.070	12	1
AUG 16...		48	16	--	<0.010	<0.100	0.020	1.3	1.3	0.120	14	1
DATE		BARIUM, DIS-SOLVED (UG/L AS Ba)	CADMIUM DIS-SOLVED (UG/L AS Cd)	CHROMIUM, DIS-SOLVED (UG/L AS Cr)	COPPER, DIS-SOLVED (UG/L AS Cu)	IRON, DIS-SOLVED (UG/L AS Fe)	LEAD, DIS-SOLVED (UG/L AS Pb)	MANGANESE, DIS-SOLVED (UG/L AS Mn)	MERCURY DIS-SOLVED (UG/L AS Hg)	SELENIUM, DIS-SOLVED (UG/L AS Se)	SILVER, DIS-SOLVED (UG/L AS Ag)	ZINC, DIS-SOLVED (UG/L AS Zn)
JAN 20...		60	<1	2	1	110	<5	180	<0.1	<1	<1.0	4
MAY 02...		190	1	<1	2	10	<5	1500	0.2	<1	<1.0	6
AUG 16...		130	<1	1	3	10	4	680	0.2	<1	1.0	5

## BRAZOS RIVER BASIN

385

08110100 DAVIDSON CREEK NEAR LYONS, TX

LOCATION.--Lat 30°25'10"; long 96°32'24", Burleson County, Hydrologic Unit 12070102, on left bank 83 ft downstream from Farm Road 60, 1.2 mi downstream from Berry Creek, 2.8 mi northeast of Lyons, and 10.7 mi upstream from mouth.

DRAINAGE AREA.--195 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1962 to current year.

Water-quality records.--Sediment records: June 1966 to September 1975.

GAGE.--Water-stage recorder. Datum of gage is 220.26 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. The city of Caldwell discharges sewage effluent into creek above station. Several observations of water temperature were made during the year. Satellite telemeter at station.

AVERAGE DISCHARGE.--27 years, 64.0 ft<sup>3</sup>/s (4.46 in/yr), 46,370 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,200 ft<sup>3</sup>/s June 24, 1968 (gage height, 18.67 ft); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1902, that of June 24, 1968. Flood in 1947 reached a stage of 17 ft, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jan. 30	0930	*1,210	*13.97				

Minimum daily discharge, no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.00	.00	.00	.21	25	2.2	12	.27	.99	3.1	.59	.00		
2	.00	.00	.00	.12	12	5.9	6.9	.64	.90	2.5	11	.00		
3	.00	2.5	.00	.07	45	45	5.2	.82	.71	59	6.5	.00		
4	.00	1.0	.00	.05	84	16	4.0	29	.67	26	4.7	.00		
5	.00	.39	.00	.14	17	9.6	2.7	13	1.1	12	1.9	.00		
6	.00	.28	.00	.19	9.4	6.7	2.0	7.7	1.0	6.0	.87	.00		
7	.00	.22	.00	.19	6.5	5.5	1.9	5.7	3.1	4.4	.54	.00		
8	.00	.15	.00	.18	5.3	4.7	1.9	3.4	2.4	3.4	.52	.00		
9	.00	.07	.00	.23	4.9	3.4	1.6	1.5	2.8	3.4	.33	.00		
10	.00	.02	.00	.20	4.2	2.7	1.5	2.9	3.0	2.0	.29	.00		
11	.00	.02	.00	.22	3.8	2.6	1.4	30	28	1.4	.26	.00		
12	.00	.02	.03	.27	3.3	2.3	1.5	10	350	1.3	.25	.00		
13	.00	.02	.00	.50	3.1	2.3	2.5	4.0	107	.97	.23	.00		
14	.00	.01	.00	3.5	3.0	2.3	60	7.6	384	.65	.23	.00		
15	.00	.01	.04	.63	3.0	2.1	17	82	212	.76	.24	.00		
16	.00	.03	.13	.50	2.6	2.0	6.9	118	33	.60	.23	.00		
17	.00	.02	.09	.42	2.7	2.0	3.4	36	13	.46	.26	.00		
18	.00	.00	.03	.35	2.8	1.8	1.5	299	8.4	.54	.26	.00		
19	.00	.01	.03	5.0	2.8	2.0	.93	256	6.1	.49	.23	.00		
20	.00	.00	.05	250	4.1	1.9	.70	48	4.7	.41	.25	.00		
21	.00	.00	.04	68	3.0	19	.60	19	3.4	.33	.27	.00		
22	.00	.00	.04	20	2.8	40	.54	11	2.5	.25	.23	.00		
23	.00	.00	.02	8.1	3.1	11	.43	8.3	1.7	.27	.19	.00		
24	.00	.00	.02	4.9	2.9	6.7	.41	6.4	2.8	.38	.11	.00		
25	.00	.00	.00	2.7	2.7	6.6	.45	5.0	4.7	.28	.06	.00		
26	.00	.00	.00	42	2.6	43	.52	4.0	5.1	.22	.04	.00		
27	.00	.00	.00	620	2.5	294	.41	3.1	4.7	.31	.02	.00		
28	.00	.00	.00	200	2.3	39	.37	2.4	4.2	.44	.00	.00		
29	.00	.00	.03	1000	---	22	.31	2.0	3.7	.43	.00	.00		
30	.00	.00	.10	982	---	20	.28	1.5	3.3	.30	.00	.00		
31	.00	---	.28	105	---	28	---	1.4	---	.22	.00	---		
TOTAL	0.00	4.77	0.93	3315.67	266.4	652.3	139.85	1019.63	1198.97	132.81	30.60	0.00		
MEAN	.00	.16	.030	107	9.51	21.0	4.66	32.9	40.0	4.28	.99	.00		
MAX	.00	2.5	.28	1000	84	294	60	299	384	59	11	.00		
MIN	.00	.00	.00	.05	2.3	1.8	.28	.27	.67	.22	.00	.00		
AC-FT	.0	9.5	1.8	6580	528	1290	277	2020	2380	263	61	.0		
CFSM	.00	.00	.00	.55	.05	.11	.02	.17	.20	.02	.01	.00		
IN.	.00	.00	.00	.63	.05	.12	.03	.19	.23	.03	.01	.00		
CAL YR 1988	TOTAL	3318.20	MEAN	9.07	MAX	756	MIN	.00	AC-FT	6580	CFSM	.05	IN.	.63
WTR YR 1989	TOTAL	6761.93	MEAN	18.5	MAX	1000	MIN	.00	AC-FT	13410	CFSM	.10	IN.	1.29

## BRAZOS RIVER MAIN STEM

08110200 BRAZOS RIVER AT WASHINGTON, TX

LOCATION.--Lat 30°21'40", long 96°09'18", Washington County, Hydrologic Unit 12070101, near right bank beneath floor of bridge on State Highway 105, 2.4 mi upstream from Navasota River, 2.5 mi north of Washington, and at mile 228.8.

DRAINAGE AREA.--41,192 mi<sup>2</sup>, approximately, of which 9,566 mi<sup>2</sup> probably is noncontributing.

PERIOD OF RECORD.--November 1965 to September 1983. Stage only site October 1983 to current year. Gage heights collected in this vicinity since 1915 are contained in reports of the National Weather Service.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 140.13 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated gage heights, which are poor. Backwater at times from the Navasota River. There are many diversions above station for irrigation, municipal, industrial, and oil field operations. At times, flow is affected by five upstream reservoirs with a combined capacity of 4,955,000 acre-ft. Flow is also affected by discharge from the flood-detention pools of 147 floodwater-retarding structures with a combined detention capacity of 153,200 acre-ft. These structures control runoff from 451 mi<sup>2</sup> above station. Gage-height telemeter at station.

AVERAGE DISCHARGE.--17 years (1965-83), 5,153 ft<sup>3</sup>/s (3,733,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 82,500 ft<sup>3</sup>/s Jan. 24, 1968 (gage height, 33.60 ft); maximum gage height, 36.74 ft Apr. 28, 1966 (backwater from Navasota River); minimum discharge, 170 ft<sup>3</sup>/s Oct. 22, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1856, 62.0 ft Dec. 6, 1913, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 28.61 ft May 20 at 1500 hours; minimum, 1.50 ft Nov. 30, from graph based on partially recorded graphic record.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.58	1.59	1.71	1.78	e4.59	4.19	12.71	3.55	19.03	12.19	4.70	3.86
2	1.58	1.59	2.05	1.74	e4.03	4.00	11.24	3.37	18.42	11.30	5.61	3.79
3	1.65	1.60	1.93	1.71	e3.48	4.21	9.70	3.39	18.25	10.01	5.61	3.78
4	3.42	1.60	1.95	1.69	e3.14	e4.42	9.14	3.33	17.73	10.76	5.95	3.97
5	2.92	1.64	1.86	1.68	e2.80	e3.90	8.43	4.72	17.47	10.46	5.80	3.80
6	2.61	1.63	1.74	1.66	e2.78	e3.27	7.28	6.71	17.54	9.73	5.03	3.73
7	2.36	1.59	3.27	1.66	e3.16	e3.00	5.84	9.60	16.66	8.86	4.79	3.70
8	2.23	1.59	3.61	1.62	e2.75	e3.29	4.70	10.30	14.83	8.06	11.81	3.66
9	2.09	1.59	3.92	1.64	e2.48	4.62	5.46	10.44	14.76	8.24	14.50	3.63
10	1.92	1.59	4.47	1.65	e2.40	4.62	5.26	10.03	15.37	7.81	11.37	3.67
11	1.75	1.89	3.78	1.66	e2.30	3.74	4.97	9.74	14.77	6.62	9.46	3.72
12	1.67	2.44	3.56	1.72	e2.25	3.43	4.74	9.94	17.12	6.25	8.14	3.75
13	1.60	2.15	3.99	2.08	e2.25	3.94	4.69	8.28	17.45	5.74	6.99	3.35
14	1.60	1.96	4.34	2.18	e2.15	3.52	4.67	7.47	17.65	5.55	6.13	3.21
15	1.60	1.85	4.12	2.07	e2.06	3.36	4.17	9.14	21.11	5.47	5.57	3.11
16	2.61	1.83	3.66	1.90	e1.80	3.30	3.91	11.86	23.11	5.37	5.33	3.01
17	2.26	1.72	3.44	1.78	e1.90	2.98	3.98	10.25	21.93	5.21	5.04	3.08
18	2.01	1.76	3.34	e1.62	e1.90	2.78	3.85	19.75	21.76	5.04	4.87	2.91
19	1.85	1.76	3.27	e1.73	e4.40	2.67	3.65	27.09	22.37	4.95	4.84	2.79
20	1.76	1.67	3.26	e2.76	e7.80	2.59	4.04	28.16	22.45	4.82	4.66	2.74
21	1.71	1.64	3.24	e1.99	e6.50	5.02	4.86	20.65	22.44	4.74	4.54	2.55
22	1.65	1.66	3.19	e1.66	e5.10	3.96	5.38	18.00	22.54	4.64	4.36	2.36
23	1.61	1.65	3.36	e1.59	4.77	3.28	5.02	19.14	21.74	4.57	4.20	2.32
24	1.60	1.61	3.67	e1.93	4.40	3.50	4.51	19.64	20.18	4.63	4.14	2.55
25	1.60	1.71	3.76	e1.83	4.82	3.73	4.16	20.32	18.75	4.47	4.08	2.68
26	1.60	1.77	3.71	e1.69	5.65	5.01	4.06	22.15	16.86	4.43	4.05	2.69
27	1.60	1.72	3.66	e3.36	5.67	4.62	3.94	22.53	16.17	4.44	4.02	4.34
28	1.60	1.65	2.31	e2.22	5.10	11.05	3.78	22.25	15.66	4.38	3.99	3.79
29	1.59	e1.52	1.94	e3.38	---	8.89	3.62	21.51	14.81	4.33	3.99	3.03
30	1.59	e1.50	1.85	e3.93	---	8.64	3.46	20.56	13.79	4.32	3.95	4.17
31	1.59	---	1.84	e3.11	---	11.60	---	19.62	---	4.29	3.91	---
MAX	3.42	2.44	4.47	3.93	7.80	11.60	12.71	28.16	23.11	12.19	14.50	4.34
MIN	1.58	1.50	1.71	1.59	1.80	2.59	3.46	3.33	13.79	4.29	3.91	2.32

CAL YR 1988 MAX 9.71 MIN 1.50  
WTR YR 1989 MAX 28.16 MIN 1.50

e Estimated.

## BRAZOS RIVER BASIN

387

08110325 NAVASOTA RIVER ABOVE GROESBECK, TX

LOCATION.--Lat 31°34'27", long 96°31'14", Limestone County, Hydrologic Unit 12070103, in city of Groesbeck at water supply pumping plant, 1.2 mi downstream from Springfield Lake, 3.7 mi north of Groesbeck, and 161.4 mi upstream from mouth.

DRAINAGE AREA.--239 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1975 to May 1978 (periodic gage-height and low-flow measurements only), June 1978 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 396.65 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow is partly regulated by Lake Mexia 7.4 mi upstream (capacity, 9,400 acre-ft) and by Springfield Lake 1.2 mi upstream (approximate capacity, 3,100 acre-ft). There are several diversions above station for irrigation, municipal supply, and for oil field operation (total amount is unknown). The city of Groesbeck diverts water from the pool at gage for municipal use, and returns washwater and sewage effluent into the river downstream from gage. Gage-height telemeter at station.

AVERAGE DISCHARGE.--11 years, 97.7 ft<sup>3</sup>/s (70,780 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,200 ft<sup>3</sup>/s May 11, 1979 (gage height, 15.06 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1910, 26 ft in 1910 and 1944, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 19,200 ft<sup>3</sup>/s Nov. 17 at 1600 hours (gage height, 13.40 ft); no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.02	.14	.38	6.9	74	230	1.6	3.1	.58	.04
2	.00	.00	.03	.12	.29	6.1	49	110	1.6	2.2	1.2	.02
3	.00	.00	.04	.15	.22	5.0	35	572	2.5	15	.90	.0
4	.00	.00	.05	.12	.10	15	25	858	2.1	22	.68	.00
5	.00	.00	.06	.15	.10	36	16	1590	3.0	21	.70	.00
6	.00	.00	.05	.18	.06	20	9.5	852	1.8	17	.84	.10
7	.00	.00	.07	.22	.04	13	5.5	275	39	13	1.0	.69
8	.00	.00	.56	.23	.06	8.5	4.3	123	1100	12	1.0	1.2
9	.00	.00	.36	.21	.65	6.5	2.4	69	1180	8.2	.99	1.4
10	.00	.00	.70	.24	1.0	5.1	1.8	64	340	5.3	.70	5.6
11	.09	.00	.53	.22	1.0	3.8	.81	40	317	3.8	.74	7.5
12	.02	.00	.19	.19	1.0	2.7	.25	25	343	3.3	.68	5.8
13	.00	.00	.14	.07	.80	2.0	.63	20	255	2.2	.64	8.3
14	.00	.00	.14	.04	.30	1.5	5.0	211	2730	1.8	.53	9.0
15	.00	.00	.12	.06	.24	1.8	5.2	413	2990	1.4	.66	3.8
16	.00	.00	.09	.01	1.1	.76	3.3	166	820	1.2	.59	2.0
17	.00	.00	.08	.03	1.3	.50	2.2	10500	189	.94	.28	1.0
18	.00	.00	.11	.05	4.7	.66	2.1	12400	83	.81	.39	.71
19	.00	.03	.13	.09	427	.63	2.2	3280	57	.88	.36	.44
20	.00	.08	.14	.21	255	2.0	1.6	511	40	1.0	.28	.29
21	.00	.03	.12	.29	118	3.9	.89	143	26	.81	.21	.16
22	.00	.01	.08	.21	69	1.7	.62	71	17	.76	.34	.54
23	.00	.00	.07	.28	44	.89	.63	52	11	.88	.19	1.2
24	.00	.00	.01	.87	28	.49	.30	33	8.2	.82	.13	.70
25	.00	.00	.00	1.4	21	.32	.12	20	7.3	.87	.19	.46
26	.00	.40	.03	.90	16	.31	.15	13	5.7	.81	.25	.45
27	.00	.17	.10	.42	14	.28	.10	9.6	5.9	1.0	.08	.41
28	.00	.10	.11	1.0	8.7	65	.09	6.5	4.9	.87	.16	.36
29	.00	.07	.10	1.1	---	564	.85	4.2	3.6	.82	.08	.39
30	.00	.05	.12	.99	---	524	318	2.4	3.3	.62	.10	.41
31	.00	---	.14	.71	---	180	---	1.8	---	.73	.06	---
TOTAL	0.11	0.94	4.49	10.90	1014.04	1479.34	567.54	32665.5	10588.5	145.12	15.53	52.97
MEAN	.004	.031	.14	.35	36.2	47.7	18.9	1054	353	4.68	.50	1.77
MAX	.09	.40	.70	1.4	427	564	318	12400	2990	22	1.2	9.0
MIN	.00	.00	.00	.01	.04	.28	.09	1.8	1.6	.62	.06	.00
AC-FT	.2	1.9	8.9	22	2010	2930	1130	64790	21000	288	31	105
CAL YR 1988	TOTAL	8516.12	MEAN	23.3	MAX	1990	MIN	.00	AC-FT	16890		
WTR YR 1989	TOTAL	46544.98	MEAN	128	MAX	12400	MIN	.00	AC-FT	92320		

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: November 1967 to June 1989 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1967 to September 1989.

WATER TEMPERATURE: November 1967 to September 1989.

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 regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request. Prior to October 1978 this station was published as 08110400 Navasota River near Groesbeck.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 6,590 microsiemens Oct. 8, 9, 1969; minimum daily, 71 microsiemens June 4, 1973.

WATER TEMPERATURE: Maximum daily, 38.0°C on several days during July 1974, and May 1978; minimum daily, 1.5°C Jan. 10, 1973.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 544 microsiemens Jan. 25; minimum daily, 109 microsiemens May 18.

WATER TEMPERATURE: Maximum daily, 30.0°C July 7; minimum daily, 7.0°C Mar. 8.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
		SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
NOV 27...	0800	0.31	513	7.80	18.0	220	12	82	4.0
JAN 06...	1756	0.10	516	7.20	14.0	240	25	89	4.0
FEB 27...	1215	18	343	6.80	13.0	120	21	43	3.6
MAY 31...	0800	2.4	247	7.70	27.5	110	0	41	2.4
JUN 30...	0800	17	278	7.50	27.5	130	0	46	2.8
NOV 27...	16	0.5	2.4	210	13	25	0.20	15	284
JAN 06...	16	0.5	2.1	214	16	24	0.20	15	295
FEB 27...	19	0.8	4.8	101	15	29	0.20	7.1	182
MAY 31...	5.3	0.2	3.5	129	8.0	6.3	0.20	11	155
JUN 30...	8.5	0.3	4.4	128	9.0	8.1	0.10	14	170

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1988 TO SEPTEMBER 1989

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/L)
OCT. 1988	0.11	530	304	0.09	24	0.01	12	0.00	250
NOV. 1988	0.94	516	296	0.8	23	0.06	12	0.03	240
DEC. 1988	4.49	522	299	3.6	23	0.3	12	0.1	250
JAN. 1989	10.90	532	305	9.0	24	0.7	12	0.3	250
FEB. 1989	1014.04	383	219	598	20	56	14	38	160
MAR. 1989	1479.34	317	180	719	18	73	14	56	130
APR. 1989	567.54	301	171	262	18	27	14	21	120
MAY 1989	32665.5	167	94	8320	11	981	9.8	863	61
JUNE 1989	10588.5	170	96	2740	11	328	10	292	61
JULY 1989	145.12	289	164	64	17	6.8	14	5.4	110
AUG. 1989	15.53	390	222	9.3	21	0.9	14	0.6	170
SEPT 1989	52.97	412	235	34	21	3.1	14	2.0	180
TOTAL	46544.98	**	**	12800	**	1480	**	1280	**
WTD.AVG.	128	180	102	**	12	**	10	**	66



## BRAZOS RIVER BASIN

389

08110325 NAVASOTA RIVER ABOVE GROESBECK, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	e530	534	531	351	276	282	251	279	341	407
2	---	---	e530	531	526	352	279	283	259	293	381	e410
3	---	---	e525	534	523	351	283	268	261	305	387	---
4	---	---	e525	e532	525	357	287	243	263	300	395	---
5	---	---	e525	530	518	359	296	205	270	262	397	---
6	---	---	e520	529	536	356	302	213	281	259	393	e412
7	---	---	e515	526	535	346	302	214	282	265	357	e413
8	---	---	510	514	e533	342	308	218	193	282	384	e414
9	---	---	510	516	531	351	312	225	183	287	390	e415
10	---	---	516	526	533	354	312	232	183	290	395	e416
11	e530	---	515	523	536	358	315	234	189	295	394	418
12	e530	---	517	531	538	364	316	238	187	302	398	420
13	---	---	517	527	535	363	321	246	177	303	406	421
14	---	---	525	e529	534	367	320	251	164	309	396	422
15	---	---	528	e531	524	376	327	255	155	323	380	425
16	---	---	530	e533	536	379	341	246	157	322	420	395
17	---	---	530	e535	536	379	341	215	164	331	417	367
18	---	---	533	e537	447	384	350	109	171	341	411	365
19	---	e530	534	539	453	384	354	130	187	347	405	363
20	---	e530	537	532	327	387	355	125	199	345	410	366
21	---	e530	538	534	326	390	357	135	205	345	404	366
22	---	e530	538	535	330	390	355	157	216	353	395	367
23	---	---	538	536	336	391	360	157	225	359	395	368
24	---	---	e538	542	329	391	360	171	234	357	394	369
25	---	---	e538	544	331	397	363	176	247	359	396	368
26	---	511	538	539	333	402	365	192	247	364	398	372
27	---	512	537	527	338	403	369	203	251	367	392	376
28	---	515	537	528	343	399	373	215	266	372	391	383
29	---	518	535	529	---	342	377	223	273	382	392	387
30	---	e525	537	526	---	284	310	232	278	376	389	386
31	---	---	534	526	---	271	---	247	---	e259	405	---
MEAN	530	522	528	531	462	365	330	211	221	320	394	392

e Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	13.0	13.0	13.0	19.0	24.5	28.0	27.0	28.0	29.5
2	---	---	---	13.0	15.0	13.0	19.5	24.5	28.0	28.0	28.5	---
3	---	---	---	13.5	13.0	13.0	20.5	23.5	28.0	27.5	27.0	---
4	---	---	---	---	11.0	13.5	22.5	22.0	28.0	28.5	28.0	---
5	---	---	---	13.5	11.0	12.0	22.0	22.5	27.5	29.0	28.0	---
6	---	---	---	13.0	9.0	12.0	21.0	23.5	27.5	29.5	27.5	---
7	---	---	---	14.0	8.0	9.5	21.0	24.0	27.5	30.0	28.5	---
8	---	---	15.0	14.0	8.5	7.0	21.0	24.0	26.5	29.0	28.0	---
9	---	---	14.0	14.0	8.5	7.5	21.0	25.0	26.5	29.0	27.0	---
10	---	---	13.5	13.0	8.0	8.5	20.0	25.0	27.0	29.0	27.0	---
11	---	---	13.5	13.0	9.0	10.5	19.0	24.0	27.0	29.0	27.0	28.0
12	---	---	---	14.0	9.0	12.5	18.5	24.0	27.0	29.0	26.5	29.0
13	---	---	12.5	13.5	9.5	13.5	18.5	23.5	27.0	29.0	27.5	28.0
14	---	---	12.5	---	10.5	13.5	18.0	23.5	26.5	29.0	27.0	26.5
15	---	---	12.5	---	11.5	16.0	18.0	23.5	24.5	28.5	27.0	25.5
16	---	---	12.0	---	12.0	16.0	18.0	24.5	24.0	28.5	27.0	25.0
17	---	---	11.5	---	12.0	16.0	19.0	24.0	24.0	29.0	27.0	25.0
18	---	---	11.5	---	10.5	17.0	20.0	23.5	24.0	28.5	27.0	24.5
19	---	---	11.0	13.0	9.5	17.5	21.0	23.5	26.0	28.5	28.0	24.5
20	---	---	12.0	13.0	10.0	17.0	21.5	26.0	27.0	29.0	28.0	24.5
21	---	---	12.5	12.5	11.0	17.0	22.0	27.0	28.0	29.0	28.0	24.5
22	---	---	12.0	12.5	10.0	15.5	22.0	27.0	28.5	28.0	28.5	24.5
23	---	---	13.0	12.5	10.0	15.0	22.0	27.0	28.5	28.0	28.5	24.5
24	---	---	---	12.0	9.5	14.5	22.0	27.5	28.0	28.0	29.0	23.5
25	---	---	---	12.0	10.0	15.0	23.0	27.5	28.0	27.5	29.0	23.0
26	---	17.0	13.0	13.0	11.0	15.0	23.0	28.0	27.5	27.5	29.5	23.0
27	---	18.0	14.5	13.0	12.5	16.0	23.5	28.5	27.5	27.5	29.0	22.5
28	---	16.5	14.0	12.5	13.0	17.0	24.5	28.0	27.0	27.5	29.0	22.5
29	---	15.5	13.0	13.0	---	19.5	24.5	28.0	27.5	27.5	29.0	22.5
30	---	15.5	13.0	13.0	---	19.0	24.5	27.5	27.5	27.5	29.0	23.0
31	---	---	13.5	13.0	---	20.0	---	27.5	---	28.0	29.5	---
MEAN	---	16.5	13.0	13.0	10.5	14.5	21.0	25.0	27.0	28.5	28.0	25.0

## BRAZOS RIVER BASIN

08110430 BIG CREEK NEAR NEAR FREESTONE, TX

LOCATION.--Lat 31°30'24", long 96°19'28", Limestone County, Hydrologic Unit 12070103, 12 ft to left and 25 ft downstream from left end of bridge on State Highway 164, 5.1 mi southwest of Freestone, and 8.2 mi upstream from mouth.

DRAINAGE AREA.--57.1 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1975 to June 1978 (periodic gage-height and low-flow measurements only), July 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 362.94 ft above National Geodetic Vertical Datum of 1929. Apr. 25, 1985, to Aug. 17, 1987, at site 62 ft downstream at the same datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Several observations of water temperature were made during the year. Satellite telemeter at station.

AVERAGE DISCHARGE.--11 years, 37.4 ft<sup>3</sup>/s (8.89 in/yr), 27,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,950 ft<sup>3</sup>/s May 17, 1989 gage height, 15.37 ft (from rating curve extended above 2,200 ft<sup>3</sup>/s); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1950, 19 ft in April 1957, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 5	1300	1,040	12.47	June 8	0630	935	12.33
May 17	2200	*5,950	*15.37	June 15	0400	1,470	12.96

Minimum daily discharge, no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.09	.00	.00	.47	3.7	1.9	11	74	4.3	6.0	.24	.00
2	.05	.00	.00	.42	2.3	2.0	5.5	62	4.1	5.3	.28	.00
3	.01	.00	.00	.49	8.1	2.1	4.0	115	4.1	169	1.3	.00
4	.00	.00	.00	.46	11	2.1	2.9	329	4.1	70	1.4	.00
5	.00	.00	.00	.39	3.8	2.2	2.2	892	5.0	18	.74	.00
6	.00	.00	.00	.39	2.2	2.0	1.7	623	6.0	10	.35	.00
7	.00	.00	.06	.44	1.6	1.7	1.3	195	136	15	.33	.00
8	.00	.00	.76	e.44	1.4	1.5	.98	92	771	178	1.2	.00
9	.00	.00	.04	e.40	1.2	1.4	.94	51	445	47	2.3	.00
10	.00	.00	2.9	e.37	1.1	1.3	.76	27	144	19	1.3	31
11	.00	.00	10	.34	1.0	1.1	.72	16	214	12	.69	64
12	.00	.00	4.4	.39	.92	.99	.67	10	271	9.1	.36	31
13	.00	.00	1.3	.52	.98	.93	.65	17	135	6.6	.20	6.5
14	.00	.00	.63	.71	1.2	.86	4.0	185	552	5.2	.12	4.3
15	.00	.00	.39	.89	1.2	.85	15	36	1210	4.6	.08	2.1
16	.00	.00	.26	.98	1.1	.91	7.9	18	573	4.1	.05	.69
17	.00	.00	.21	.87	1.8	.88	4.6	1690	128	3.1	.03	.25
18	.00	.00	.18	.73	42	1.0	3.0	2430	35	2.4	.02	.11
19	.00	.00	.17	.64	78	1.1	2.1	884	23	1.9	.02	.05
20	.00	.00	.18	.58	20	1.2	1.6	315	17	1.5	.01	.02
21	.00	.00	.19	.53	9.5	1.2	1.4	70	12	1.2	.00	.00
22	.00	.00	.21	.52	5.9	2.0	1.2	34	9.7	.80	.00	.00
23	.00	.00	.20	.52	4.2	2.7	.97	22	15	.54	.00	.00
24	.00	.00	.17	.55	3.1	2.1	.88	18	14	.39	.00	.00
25	.00	.00	.19	.84	2.6	1.7	.70	14	9.3	.34	.00	.00
26	.00	.01	.20	1.6	2.3	1.5	.56	11	8.1	.33	.00	.00
27	.00	.01	.26	5.3	2.0	1.6	.45	8.3	10	.45	.00	.00
28	.00	.00	.22	4.1	1.8	4.7	.41	6.7	10	.39	.00	.00
29	.00	.00	.17	3.5	---	86	.39	5.3	7.6	.41	.00	.00
30	.00	.00	.17	13	---	185	50	4.4	6.4	.39	.00	.00
31	.00	---	.82	12	---	53	---	4.4	---	.31	.00	---
TOTAL	0.15	0.02	24.28	53.38	216.00	369.52	128.48	8259.1	4783.7	593.35	11.02	140.02
MEAN	.005	.001	.78	1.72	7.71	11.9	4.28	266	159	19.1	.36	4.67
MAX	.09	.01	10	13	78	185	50	2430	1210	178	2.3	64
MIN	.00	.00	.00	.34	.92	.85	.39	4.4	4.1	.31	.00	.00
AC-FT	.3	.04	48	106	428	733	255	16380	9490	1180	22	278
CFSM	.00	.00	.01	.03	.14	.21	.08	4.67	2.79	.34	.01	.08
IN.	.00	.00	.02	.03	.14	.24	.08	5.38	3.12	.39	.01	.09

CAL YR 1988	TOTAL	5638.86	MEAN	15.4	MAX	675	MIN	.00	AC-FT	11180	CFSM	.27	IN.	3.67
WTR YR 1989	TOTAL	14579.02	MEAN	39.9	MAX	2430	MIN	.00	AC-FT	28920	CFSM	.70	IN.	9.50

e Estimated.

## 08110470 LAKE LIMESTONE NEAR MARQUEZ, TX

LOCATION.--Lat 31°19'30", Long 96°19'08", Leon County, Hydrologic Unit 12070103, in left end bypass pier of Sterling C. Robertson Dam on the Navasota River, 7.5 mi northwest of Marquez, and 124 mi upstream from mouth.

DRAINAGE AREA.--675 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by a rolled earthfill dam 11,395 ft long, including the spillway. The lake was built for water conservation. Deliberate impoundment began on Oct. 16, 1978. The spillway is an uncontrolled broad-crested weir 3,000 ft long located near left end of dam. The spillway for normal flood releases is a gated concrete gravity structure with an ogee weir section and stilling basin located near center of dam. It is controlled by five 40- by 28-foot tainter gates. There are two 4- by 8-foot slide gates located in each of the two center piers of the spillway that discharge into the stilling basin. These gates can also be opened during extreme floods. A low-flow outlet, consisting of a 10-inch-diameter cast iron pipe, is located in the left end of pier. In addition, there are two 36-inch (outside diameter) steel cylinder pipes located in the right end pier for water supply releases. The lowest invert for low flow and water supply releases is at elevation 325.50 ft. The city of Mexia releases various amounts of sewage effluent into stream above lake. Gage-height telemeter at station. Figures given herein represent total contents. Data regarding dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam.....	380.0	-
Design flood.....	370.0	334,735
Crest of spillway.....	369.6	327,760
Top of gates.....	365.0	253,905
Top of conservation pool.....	363.0	225,445
Concrete gated spillway.....	337.0	21,125
Lowest gated outlet (invert).....	322.0	265

COOPERATION.--Records of daily lake elevations are obtained in cooperation with the Brazos River Authority. Area and capacity tables were furnished by the Brazos River Authority and are based on Geological Survey topographic maps.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 242,300 acre-ft May 17, 1989 (elevation, 364.19 ft); minimum, 10,740 acre-ft Nov. 30, 1978 (elevation, 332.63 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 242,300 acre-ft May 17 at 2200 hours (elevation, 364.19 ft); minimum, 173,800 acre-ft Dec. 7 at 0200 hours (elevation, 358.91 ft).

## Capacity table (elevation, in feet, and total contents, in acre-feet)

358.0	163,100	361.0	199,400	364.0	239,600
359.0	174,800	362.0	212,200	365.0	254,000
360.0	187,000	363.0	225,600		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	183500	178200	174700	178600	180400	186200	190800	192100	224700	225200	220100	213100
2	183400	177700	174600	178400	182600	186000	191000	193400	224600	226800	221500	212800
3	183200	177700	174500	178700	181900	186100	191000	197300	223900	226300	221200	212400
4	182800	177800	174500	178200	181300	187900	191900	203400	224300	225700	220700	212200
5	182300	177500	174200	178400	181600	187500	191000	215200	225200	225400	220800	211800
6	182100	176900	174000	178200	180700	186200	190900	221900	224900	225200	220500	211200
7	181700	177000	176300	179000	180500	185900	190100	224300	229600	226100	221900	210700
8	181300	176900	177500	178700	180500	185800	191000	224500	231300	227400	221300	210200
9	181600	176500	176600	178300	180200	185800	190400	226300	231900	227400	220800	210900
10	181100	176900	178600	178200	180000	185600	190000	225400	232900	227200	220400	211200
11	181000	176400	179200	178300	180100	185500	189400	225200	232600	227000	220200	211500
12	180500	176700	178700	179400	179900	185100	189300	225000	230800	226500	220100	211200
13	179900	176400	178600	179200	180500	185000	189800	228500	229200	226300	219700	211600
14	179500	176000	178700	178800	180700	185300	190300	229200	230300	225700	219400	210600
15	179500	177600	179000	179400	181100	185500	190100	228100	228700	225300	219200	210200
16	179400	176500	178400	178800	181000	185100	189500	227100	231000	225200	218900	209900
17	179300	175800	178200	178700	182300	185000	189800	238300	228300	224700	218600	209800
18	179400	176100	177800	178800	183200	185300	189400	233200	227100	224300	218300	209400
19	179200	176700	178100	178900	184200	184800	189900	226000	226800	224300	217900	209200
20	179000	176300	178300	178800	186100	186500	189800	226400	226100	223900	217800	208900
21	179000	176000	178100	178400	185900	185900	189500	225800	225700	223500	217400	208700
22	178400	175700	178400	178100	186600	185400	189200	226300	225600	223200	217000	208400
23	178800	175500	178200	178100	185900	185100	188900	226000	225600	223000	216500	208000
24	178100	175200	178200	178300	185600	184900	188900	225300	225400	223000	216100	207500
25	178100	175100	177700	178400	185900	185000	188800	225200	225400	223200	215800	207000
26	178400	176100	177300	179200	185900	185300	188600	225400	226300	223100	215600	206600
27	178100	175900	179500	178800	186200	185400	188400	225400	226000	223000	215200	206200
28	178300	175100	178300	179500	186200	186500	188400	225400	225600	222600	214800	205700
29	177900	175400	178100	179900	---	188600	190400	225000	225700	222000	214400	205400
30	177900	174900	178200	179900	---	190800	190800	224600	225400	221700	214000	205100
31	178400	---	178600	180100	---	191300	---	224600	---	221500	213300	---
MAX	183500	178200	179500	180100	186600	191300	191900	238300	232900	227400	221900	213100
MIN	177900	174900	174000	178100	179900	184800	188400	192100	223900	221500	213300	205100
(+)	359.30	359.01	359.31	359.44	359.94	360.35	360.31	362.93	362.99	362.70	362.09	361.45
(Φ)	-5100	-3500	+3700	+1500	+6100	+5100	-500	+33800	+800	-3900	-8200	-8200

CAL YR 1988 MAX 230100 MIN 174000 (Φ) -42700  
WTR YR 1989 MAX 238300 MIN 174000 (Φ) +21600

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

## BRAZOS RIVER BASIN

08110470 LAKE LIMESTONE NEAR MARQUEZ, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1980 to current year.

## 311937096194601 - LAKE LIMESTONE SITE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
19...	1005	1.00	322	7.90	11.0	9.5	86
19...	1007	10.0	322	7.90	11.0	9.5	86
19...	1009	20.0	322	7.90	11.0	9.7	88
19...	1011	30.0	322	7.90	11.0	9.7	88
19...	1013	36.0	322	7.90	11.0	9.7	88
MAY							
01...	1123	1.00	346	8.00	23.5	8.3	98
01...	1125	10.0	346	8.00	23.0	8.2	96
01...	1127	20.0	346	7.90	23.0	8.0	94
01...	1129	30.0	346	7.10	19.0	3.2	35
01...	1131	37.0	346	7.10	18.0	1.6	17
AUG							
15...	1110	1.00	199	7.30	27.5	3.8	49
15...	1112	10.0	199	7.10	27.0	2.3	29
15...	1114	20.0	199	7.10	27.0	2.8	36
15...	1116	30.0	199	7.00	27.0	1.9	24
15...	1118	38.0	202	7.00	27.0	0.4	5

## 311941096191401 - LAKE LIMESTONE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CAC03)
JAN									
19...	0935	1.00	322	7.80	11.0	1.10	9.5	87	99
19...	0937	10.0	322	7.80	11.0	--	9.4	86	--
19...	0939	20.0	322	7.80	11.0	--	9.4	86	--
19...	0941	30.0	322	7.80	11.0	--	9.2	84	--
19...	0943	40.0	322	7.80	11.0	--	9.1	83	--
19...	0945	45.0	322	7.70	11.0	--	9.1	83	99
MAY									
01...	1145	1.00	349	8.10	23.5	0.90	8.6	102	100
01...	1147	10.0	349	8.10	23.0	--	8.5	100	--
01...	1149	20.0	349	8.00	23.0	--	8.2	96	--
01...	1155	30.0	349	7.40	21.0	--	6.5	73	--
01...	1156	35.0	349	7.10	18.0	--	2.5	27	--
01...	1157	44.0	349	7.20	18.0	--	1.7	18	110
AUG									
15...	1130	1.00	198	7.30	27.5	1.20	3.9	50	64
15...	1132	10.0	198	7.10	27.5	--	2.2	28	--
15...	1134	20.0	198	7.10	27.0	--	2.2	28	--
15...	1136	30.0	200	7.00	27.0	--	0.9	11	--
15...	1138	35.0	200	6.90	27.0	--	0.5	6	--
15...	1140	40.0	207	6.90	27.0	--	0	0	--
15...	1142	44.0	217	6.90	27.0	--	0	0	69

## BRAZOS RIVER BASIN

393

08110470 LAKE LIMESTONE NEAR MARQUEZ, TX--Continued

311941096191401 - LAKE LIMESTONE SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN									
19...	20	30	5.9	24	1	5.2	79	25	35
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	18	30	5.9	24	1	5.2	81	26	35
MAY									
01...	26	32	6.0	24	1	5.4	79	27	37
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	26	32	6.3	25	1	5.4	80	27	37
AUG									
15...	7	20	3.5	12	0.7	4.4	57	13	15
15...	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--
15...	3	21	3.9	12	0.7	4.7	66	12	16

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
19...	0.20	4.6	177	<0.100	0.60	0.020	4	<1
19...	--	--	--	--	--	--	--	--
19...	--	--	--	<0.100	0.50	0.020	20	<10
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	--	4.8	180	<0.100	0.80	0.020	10	49
MAY								
01...	0.20	1.8	181	<0.100	0.50	0.020	28	2
01...	--	--	--	--	--	--	--	--
01...	--	--	--	0.100	0.50	0.030	20	20
01...	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--
01...	--	3.4	184	0.300	<0.20	0.040	14	400
AUG								
15...	0.20	5.5	108	<0.100	1.0	0.030	23	7
15...	--	--	--	--	--	--	--	--
15...	--	--	--	<0.100	0.60	0.050	20	20
15...	--	--	--	<0.100	0.60	0.030	20	150
15...	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--
15...	--	7.6	120	<0.100	1.3	0.100	860	1900

312458096205101 - LAKE LIMESTONE SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)
JAN									
19...	1045	1.00	326	8.10	11.5	1.00	10.4	96	100
19...	1047	10.0	326	7.90	10.5	--	9.9	89	--
19...	1049	20.0	326	7.90	10.5	--	9.9	89	--
19...	1051	27.0	326	7.90	10.5	--	9.8	88	99
MAY									
01...	1220	1.00	352	8.00	24.0	0.90	7.7	92	110
01...	1222	10.0	352	7.80	23.5	--	7.2	85	--
01...	1224	20.0	352	7.20	20.0	--	4.0	44	--
01...	1226	27.0	352	7.20	20.0	--	4.0	44	110
AUG									
15...	1210	1.00	200	7.80	28.5	0.90	5.4	70	64
15...	1212	10.0	200	7.40	28.0	--	3.9	50	--
15...	1214	20.0	200	7.20	27.5	--	2.9	37	--
15...	1216	25.0	205	7.00	27.5	--	0.8	10	--
15...	1218	28.0	205	6.90	27.5	--	0	0	67



## BRAZOS RIVER BASIN

08110470 LAKE LIMESTONE NEAR MARQUEZ, TX--Continued

312458096205101 - LAKE LIMESTONE SITE BC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)
JAN								
19...	18	30	6.0	25	1	5.2	82	23
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	22	30	5.8	24	1	5.0	77	23
MAY								
01...	27	32	6.3	28	1	5.3	79	27
01...	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--
01...	26	32	6.1	25	1	5.0	79	27
AUG								
15...	7	20	3.5	12	0.7	4.5	57	13
15...	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--
15...	7	21	3.6	12	0.7	4.6	60	12

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
19...	36	4.2	179	<0.100	0.90	0.040	6	<1
19...	--	--	--	<0.100	0.70	0.020	<10	<10
19...	--	--	--	--	--	--	--	--
19...	36	3.7	174	<0.100	0.80	0.020	10	5
MAY								
01...	55	1.7	203	<0.100	0.70	0.030	11	1
01...	--	--	--	<0.100	0.60	0.030	20	<10
01...	--	--	--	--	--	--	--	--
01...	38	2.6	183	0.200	<0.20	0.030	14	17
AUG								
15...	16	5.6	109	<0.100	0.50	0.060	9	3
15...	--	--	--	--	--	--	--	--
15...	--	--	--	<0.100	0.60	0.060	20	30
15...	--	--	--	--	--	--	--	--
15...	16	6.3	112	<0.100	1.1	0.100	81	550

312625096205901 - LAKE LIMESTONE SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
19...	1115	1.00	324	8.20	11.0	10.7	97
19...	1117	10.0	324	8.10	10.5	10.3	93
19...	1119	16.0	324	7.80	10.5	9.5	85
MAY							
01...	1249	1.00	352	7.80	24.5	7.2	87
01...	1251	10.0	352	7.70	24.0	6.5	78
01...	1253	15.0	352	7.60	24.0	6.1	73
AUG							
15...	1236	1.00	200	8.50	29.5	6.8	90
15...	1238	10.0	200	8.20	28.5	5.9	77
15...	1240	18.0	213	7.00	28.0	0	0

## BRAZOS RIVER BASIN

395

08110470 LAKE LIMESTONE NEAR MARQUEZ, TX--Continued

312622096224201 - LAKE LIMESTONE SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
19...	1135	1.00	374	8.00	10.0	10.1	90
19...	1137	10.0	380	7.80	9.5	9.8	86
19...	1139	18.0	380	7.80	9.5	9.5	84
MAY							
01...	1310	1.00	360	7.70	24.5	7.1	86
01...	1312	10.0	360	7.60	24.0	6.7	80
01...	1314	20.0	360	7.50	24.0	5.8	69
AUG							
15...	1255	1.00	202	8.70	29.5	7.4	98
15...	1257	10.0	209	7.80	28.0	5.0	65
15...	1259	22.0	211	7.20	27.5	2.3	30

312726096240001 - LAKE LIMESTONE SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)
JAN									
19...	1150	1.00	375	8.30	11.0	0.55	11.1	101	110
19...	1152	5.00	384	8.10	10.5	--	10.3	93	--
19...	1154	12.0	389	7.60	10.0	--	8.7	77	110
MAY									
01...	1315	1.00	365	7.60	25.0	0.40	6.6	80	110
01...	1317	13.0	365	7.30	24.5	--	4.2	51	110
AUG									
15...	1312	1.00	213	8.30	29.5	0.50	6.6	88	72
15...	1314	14.0	228	7.20	28.0	--	2.1	27	75

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT WH TOT FET MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)
JAN								
19...	20	34	6.3	31	1	4.8	91	30
19...	--	--	--	--	--	--	--	--
19...	23	35	6.4	31	1	4.7	91	30
MAY								
01...	24	35	5.6	26	1	5.1	87	25
01...	23	35	5.7	26	1	5.2	88	25
AUG								
15...	8	23	3.5	12	0.6	4.8	64	12
15...	6	24	3.7	13	0.7	4.8	69	12

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
19...	45	0.25	206	<0.100	0.80	0.040	21	4
19...	--	--	--	--	--	--	--	--
19...	50	0.55	212	<0.100	1.1	0.040	12	26
MAY								
01...	39	2.7	191	<0.100	1.1	0.090	19	9
01...	38	3.0	191	<0.100	1.2	0.110	21	120
AUG								
15...	16	6.5	116	<0.100	1.2	0.090	14	5
15...	18	7.2	124	<0.100	1.3	0.150	42	270

## BRAZOS RIVER BASIN

08110500 NAVASOTA RIVER NEAR EASTERLY, TX

LOCATION.--Lat 31°10'12", long 96°17'51", Leon-Robertson County line, Hydrologic Unit 12070103, at left downstream end of bridge on U.S. Highway 79, 1.0 mi upstream from Missouri Pacific Railroad Co. bridge, 7 mi northeast of Easterly, and 105.7 mi upstream from mouth.

DRAINAGE AREA.--968 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1924 to current year.

Water-quality records.--Chemical analyses: December 1941 to September 1947, February 1966 to August 1985.

Sediment records: 1962. Specific conductance (daily records): August 1947 to September 1947.

REVISED RECORDS.--WSP 898: 1924, 1926-27, 1928(M), 1929-30, 1931(M). WSP 1512: 1932(M), 1936. WDR TX-76-2: Drainage area. WDR TX-78-2: 1974(M), 1977.

GAGE.--Water-stage recorder. Datum of gage is 271.46 ft above National Geodetic Vertical Datum of 1929. Prior to June 11, 1932, nonrecording gage at railroad bridge 1.0 mi downstream at 19.86-foot higher datum. June 11, 1932, to Sept. 30, 1978, water-stage recorder 46 ft upstream at 5.00-foot higher datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow is largely regulated by Lake Mexia (capacity, 9,400 acre-ft), and by Lake Limestone (station 08110470). There are numerous diversions above station for irrigation, municipal supply, and for oil field operation. Several observations of water temperature were made during the year. Satellite telemeter at station.

AVERAGE DISCHARGE.--36 years (water years 1925-60) unregulated, 406 ft<sup>3</sup>/s (5.70 in/yr), 294,100 acre-ft/yr; 28 years (water years 1961-89) regulated, 424 ft<sup>3</sup>/s (5.95 in/yr), 307,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 60,300 ft<sup>3</sup>/s May 2, 1944 (gage height, 27.13 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1845, 29 ft in June 1899, from information by local residents (discharge, 90,000 ft<sup>3</sup>/s), from rating curve extended above 60,000 ft<sup>3</sup>/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 45,600 ft<sup>3</sup>/s May 18 at 2100 hours (gage height, 25.71 ft); minimum daily, 1.2 ft<sup>3</sup>/s Oct. 10, 12-16, 18-21, and 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	3.2	3.0	3.2	e9.5	32	14	35	49	15	29	44	48		
2	4.4	2.2	3.2	e7.2	33	16	22	34	17	25	44	48		
3	3.1	1.9	3.0	e5.3	48	17	18	37	15	218	18	48		
4	2.2	1.8	3.1	e4.7	36	17	16	100	14	668	12	48		
5	1.8	1.9	e3.4	4.5	18	15	13	385	18	356	13	48		
6	1.6	1.7	e4.2	4.6	13	14	12	404	18	130	12	48		
7	1.4	1.6	e5.2	5.0	11	13	11	303	20	85	15	48		
8	1.4	1.5	e7.8	4.8	10	13	11	305	398	52	27	48		
9	1.3	1.6	e17	4.5	9.7	13	11	211	1530	63	112	48		
10	1.2	1.6	e14	4.5	9.1	13	10	318	2020	30	110	48		
11	1.3	1.7	e20	4.9	8.7	14	10	267	2310	83	39	48		
12	1.2	2.3	e24	6.2	10	14	10	80	3360	104	22	49		
13	1.2	2.9	e19	10	12	14	11	61	4310	102	17	49		
14	1.2	2.2	e17	15	11	14	14	1240	4030	94	14	48		
15	1.2	3.2	e14	15	10	13	14	2040	5020	86	13	36		
16	1.2	3.0	e11	11	9.6	13	13	2260	7660	84	12	10		
17	1.3	2.6	e8.3	8.0	12	13	12	1680	4420	40	11	7.0		
18	1.2	2.5	e7.0	6.7	33	13	11	26300	3000	17	10	6.5		
19	1.2	3.3	e6.0	6.4	76	12	11	30900	1500	13	9.6	6.4		
20	1.2	3.5	e5.2	7.8	101	13	10	11000	323	12	9.3	6.4		
21	1.2	3.2	e4.6	6.9	54	15	10	4390	170	11	8.9	6.3		
22	1.3	2.9	e4.6	5.8	31	21	10	1810	118	11	45	6.3		
23	1.3	2.8	e4.3	5.3	23	20	10	214	87	11	79	5.8		
24	1.2	2.7	e4.2	5.1	19	16	9.5	190	78	11	61	6.0		
25	1.3	2.9	e4.2	5.8	17	14	9.6	118	77	13	49	6.3		
26	1.4	3.4	e4.1	8.6	16	15	9.6	67	76	12	48	5.5		
27	1.7	5.5	e4.1	11	16	23	9.6	29	47	11	48	5.5		
28	1.6	4.0	e6.7	14	15	21	9.7	22	32	11	49	39		
29	1.7	3.2	e13	27	---	30	10	19	34	44	48	77		
30	1.8	3.3	e9.9	47	---	51	71	18	31	78	48	62		
31	3.3	---	e8.0	37	---	82	---	16	---	58	48	---		
TOTAL	51.6	79.9	263.3	319.1	694.1	586	434.0	84867	40748	2562	1095.8	966.0		
MEAN	1.66	2.66	8.49	10.3	24.8	18.9	14.5	2738	1358	82.6	35.3	32.2		
MAX	4.4	5.5	24	47	101	82	71	30900	7660	668	112	77		
MIN	1.2	1.5	3.0	4.5	8.7	12	9.5	16	14	11	8.9	5.5		
AC-FT	102	158	522	633	1380	1160	861	168300	80820	5080	2170	1920		
CFSM	.00	.00	.01	.01	.03	.02	.01	2.83	1.40	.09	.04	.03		
IN.	.00	.00	.01	.01	.03	.02	.02	3.26	1.57	.10	.04	.04		
CAL YR 1988	TOTAL	26073.7	MEAN	71.2	MAX	1110	MIN	1.1	AC-FT	51720	CFSM	.07	IN.	1.00
WTR YR 1989	TOTAL	132666.8	MEAN	363	MAX	30900	MIN	1.2	AC-FT	2763100	CFSM	.38	IN.	5.10

e Estimated.

## BRAZOS RIVER BASIN

397

08111000 NAVASOTA RIVER NEAR BRYAN, TX

LOCATION.--Lat 30°52'10", long 96°11'32", Brazos-Madison County line, Hydrologic Unit 12070103, on right bank at upstream side of bridge on U.S. Highway 190, 2.5 mi upstream from Shepard Creek, 17 mi northeast of Bryan, and 68.4 mi upstream from mouth.

DRAINAGE AREA.--1,454 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1951 to current year.

Water-quality records.--Chemical and biochemical analyses: October 1958 to September 1981. Sediment records: October 1973 to September 1981.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 224.64 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow is largely regulated by Lake Limestone (station 08110470) 57.6 mi upstream. There are numerous diversions above the station for irrigation, municipal, and for oil field operations. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--9 years (water years 1952-60) unregulated, 437 ft<sup>3</sup>/s (316,600 acre-ft/yr); 28 years (water years 1961-89) regulated, 575 ft<sup>3</sup>/s (416,600 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,200 ft<sup>3</sup>/s Apr. 29, 1966 (gage height, 16.57 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since about 1840, 19.5 ft in June 1899, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 33,500 ft<sup>3</sup>/s May 20 at 1100 hours (gage height, 16.24 ft); minimum daily, 0.17 ft<sup>3</sup>/s Sept. 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.38	2.0	4.7	16	139	24	79	42	17	32	37	12
2	2.6	3.0	4.6	22	83	25	66	119	16	34	70	12
3	3.8	4.2	4.2	19	63	26	42	80	86	72	57	12
4	6.1	3.5	4.1	15	71	29	32	60	33	239	43	12
5	5.3	2.8	4.3	13	71	29	26	142	94	408	31	12
6	3.4	1.7	4.7	11	59	27	23	324	116	500	20	12
7	2.2	1.4	5.5	10	41	25	20	470	35	287	14	12
8	1.5	1.3	7.9	9.9	32	23	18	446	69	114	12	12
9	1.1	1.2	21	10	28	21	17	312	100	68	13	12
10	.93	1.2	53	9.8	27	20	16	323	434	56	25	12
11	.72	1.2	44	9.5	25	20	16	414	1080	50	64	12
12	.64	1.0	76	10	26	20	15	559	1710	34	44	12
13	.61	1.2	80	15	28	20	15	421	1660	47	19	12
14	.58	1.4	51	54	30	20	15	433	2780	62	11	12
15	.63	2.0	31	99	32	20	18	463	3610	60	8.0	12
16	.63	2.6	24	76	31	20	24	797	4200	53	5.8	13
17	.55	2.4	20	47	29	19	25	1120	4750	48	4.8	11
18	.50	2.3	14	33	28	18	22	1690	6640	44	4.0	6.5
19	.53	2.9	10	28	39	18	19	4910	5870	30	3.3	2.1
20	.56	4.5	9.3	24	65	18	18	30500	4690	19	2.6	.77
21	.59	7.4	9.4	22	81	19	17	18600	3350	14	2.2	.49
22	.55	7.1	10	22	76	28	16	9020	1870	11	1.8	.34
23	.56	4.1	9.8	20	51	61	15	5710	633	10	1.7	.29
24	.68	3.0	9.5	18	37	65	14	4030	203	10	6.5	.26
25	.70	2.8	8.9	17	31	48	13	2110	107	11	24	.19
26	.77	3.0	8.3	18	27	36	13	752	69	11	20	.17
27	.78	3.5	8.2	45	25	31	12	223	60	12	14	.19
28	.73	3.7	8.7	53	24	40	12	89	53	14	13	.29
29	.97	4.8	22	123	---	249	12	42	40	13	12	.32
30	1.3	5.2	36	519	---	111	14	26	32	12	12	2.5
31	1.9	---	22	234	---	70	---	20	---	18	12	---
TOTAL	42.79	88.4	626.1	1622.2	1299	1200	664	84247	44407	2393	607.7	218.41
MEAN	1.38	2.95	20.2	52.3	46.4	38.7	22.1	2718	1480	77.2	19.6	7.28
MAX	6.1	7.4	80	519	139	249	79	30500	6640	500	70	13
MIN	.38	1.0	4.1	9.5	24	18	12	20	16	10	1.7	.17
AC-FT	85	175	1240	3220	2580	2380	1320	167100	88080	4750	1210	433
CAL YR 1988	TOTAL	30564.01	MEAN	83.5	MAX	1100	MIN	.07	AC-FT	60620		
WTR YR 1989	TOTAL	137415.60	MEAN	376	MAX	30500	MIN	.17	AC-FT	272600		

## BRAZOS RIVER MAIN STEM

08111500 BRAZOS RIVER NEAR HEMPSTEAD, TX

LOCATION.--Lat-30°07'44", long 96°11'15", Washington-Waller County line, Hydrologic Unit 12070101, at downstream side of bridge on U.S. Highway 290, 6,000 ft upstream from Texas and New Orleans Railroad Co. bridge, 6.5 mi northwest of Hempstead, 10.5 mi upstream from Caney Creek, and at mile 193.8.

DRAINAGE AREA.--43,880 mi<sup>2</sup>, approximately, of which 9,566 mi<sup>2</sup> probably is noncontributing.

PERIOD OF RECORD.--October 1938 to current year. Gage-height records collected in this vicinity at intermittent periods since 1903 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1512: 1941. WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 107.90 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 1, 1940, nonrecording gage at railroad bridge 6,000 ft downstream at datum 4.20 ft higher. Nov. 1, 1940, to Sept. 30, 1963, nonrecording gage at site 1,500 ft downstream at datum 10.00 ft higher. Oct. 1, 1964, to July 31, 1974, water-stage recorder 1,500 ft downstream at datum 10.00 ft higher. Aug. 1, 1974 to Dec. 31, 1988, water-stage recorder at present site at datum 10.00 ft higher.

REMARKS.--Records good. There are many diversions above station for irrigation, municipal, and industrial uses, and oil field operations. At times, flow is affected by reservoirs on the Brazos River above Waco (station 08096500) and by reservoirs on the Lampasas and Little Rivers above Cameron. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08110200. Several observations of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--51 years, 6,463 ft<sup>3</sup>/s (4,682,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 143,000 ft<sup>3</sup>/s May 2, 1957 (gage height, 54.21 ft), at site 1,500 ft downstream at present datum; minimum daily, 137 ft<sup>3</sup>/s Nov. 6, 1952.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1899, 66.1 ft Dec. 8, 1913, at site 1,500 ft downstream at present datum, from information by Texas and New Orleans Railroad Co., obtained at bridge 6,000 ft downstream. Flood of July 4, 1899, reached a stage of 63.6 ft, at site 1,500 ft downstream at present datum, from information by Texas and New Orleans Railroad Co.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 44,300 ft<sup>3</sup>/s May 21 at 0400 hours (gage height, 36.20 ft); minimum daily, 245 ft<sup>3</sup>/s Nov. 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	343	300	278	423	e6900	2550	11800	1320	24000	14000	1910	1550
2	338	302	268	413	6200	2050	13500	1300	22700	11500	2400	1520
3	324	301	386	417	5190	1760	11400	1290	21700	9880	3330	1510
4	325	311	433	396	4090	2000	8810	1370	21100	8270	3340	1500
5	821	290	423	371	3140	1910	7250	1510	20100	8620	3550	1560
6	980	281	415	363	2480	1780	6160	2150	19600	8540	3510	1540
7	785	302	378	355	2100	1370	4970	3730	19600	7460	2910	1500
8	649	307	658	343	1930	1130	3670	5950	17600	6550	2490	1480
9	569	274	1090	327	1650	1160	2600	7340	15000	5710	9500	1450
10	531	257	1330	324	1300	1630	2620	8700	15000	5640	14700	1440
11	464	248	1730	324	1090	2200	2770	8860	15800	5290	10600	1450
12	399	245	1510	409	1000	1680	2460	7480	15700	4180	7840	1460
13	354	e310	1310	617	944	1380	2290	7470	19200	3700	6120	1490
14	321	e335	1450	571	894	1530	2360	6640	20600	3300	4770	1400
15	313	e350	1690	707	836	1420	2610	5510	22100	3020	3810	1250
16	298	e370	1700	743	796	1250	2060	6550	28300	2930	3150	1240
17	510	382	1460	622	756	1190	1760	9340	31300	2850	2860	1150
18	622	364	1240	565	720	1080	1690	9320	29100	2730	2610	1130
19	517	357	1130	1280	717	946	1620	26300	29000	2570	2380	1100
20	435	378	1070	e5330	2040	874	1530	40400	30200	2450	2310	999
21	390	349	1040	e3970	5650	844	1630	41600	30500	2350	2150	963
22	362	343	1030	e2020	5040	2140	2150	26600	30700	2260	2040	885
23	337	330	1010	e1430	3420	2580	2550	22400	30900	2180	1910	796
24	324	323	995	1080	2480	1970	2440	24800	28900	2090	1800	728
25	309	312	1140	784	2090	1710	2090	25600	25900	2100	1740	767
26	299	310	1310	651	2260	1720	1810	27300	22700	2040	1690	857
27	297	338	1320	889	2800	3290	1690	29900	19500	1990	1670	884
28	297	342	1280	2020	2890	4370	1600	30700	18000	1990	1630	1310
29	281	326	887	e5800	---	14600	1510	29900	16700	1940	1610	1720
30	277	302	560	e10100	---	11200	1450	28200	15200	1890	1610	1220
31	287	---	480	e8100	---	8930	---	26000	---	1880	1590	---
TOTAL	13358	9539	31001	51744	71403	84244	112850	475530	676700	141900	113530	37849
MEAN	431	318	1000	1669	2550	2718	3762	15340	22560	4577	3662	1262
MAX	980	382	1730	10100	6900	14600	13500	41600	31300	14000	14700	1720
MIN	277	245	268	324	717	844	1450	1290	15000	1880	1590	728
AC-FT	26500	18920	61490	102600	141600	167100	223800	943200	1342000	281500	225200	75070
CAL YR 1988	TOTAL	566582	MEAN	1548	MAX	12000	MIN	245	AC-FT	1124000		
WTR YR 1989	TOTAL	1819648	MEAN	4985	MAX	41600	MIN	245	AC-FT	3609000		

e Estimated.



## BRAZOS RIVER BASIN

399

## 08111700 MILL CREEK NEAR BELLVILLE, TX

LOCATION.--Lat 29°52'51", long 96°12'18", Austin County, Hydrologic Unit 12070104, on left bank at upstream side of abandoned bridge pier, about 5 ft downstream from State Highway 36, 5.0 mi southeast of Bellville, 6.0 mi upstream from Brazos River, and 9.0 mi upstream from mouth.

DRAINAGE AREA.--376 mi<sup>2</sup>.

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

Water-quality records.--Chemical analyses: October 1968 to September 1985. Sediment records: October 1966 to September 1985.

REVISED RECORDS.--WSP 2122: 1965(P). WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 122.82 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. During the year, the city of Bellville discharged about 415 acre-ft of sewage effluent into a tributary of Mill Creek above gage. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--26 years, 229 ft<sup>3</sup>/s (8.27 in/yr), 165,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 44,400 ft<sup>3</sup>/s June 13, 1973 (gage height, 17.95 ft); minimum daily, 0.08 ft<sup>3</sup>/s July 22, 23, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1899, 22.8 ft in 1940, from information by local residents and the State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jan. 29	2300	*4,180	*13.19				

Minimum daily discharge, 2.8 ft<sup>3</sup>/s on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	4.2	8.9	e5.8	12	132	33	110	28	15	18	122	e3.2		
2	3.2	7.3	e5.8	11	88	39	80	23	13	19	1860	e3.0		
3	4.0	5.9	e5.7	11	84	40	67	44	12	34	2610	e3.0		
4	3.5	5.8	e5.7	11	70	41	59	201	12	65	940	e3.0		
5	3.0	5.3	e5.6	10	62	38	52	183	12	49	116	e2.8		
6	2.8	5.0	e5.6	10	55	36	50	187	11	28	e55	e3.8		
7	2.8	4.8	e5.5	10	50	39	46	86	12	22	e36	e3.8		
8	2.8	e4.7	7.5	e9.7	51	39	43	61	13	18	e28	e5.0		
9	3.0	e4.6	11	e9.5	47	35	40	49	12	27	e24	e3.8		
10	3.2	e4.5	11	10	46	34	35	440	11	30	e22	e3.2		
11	3.2	e4.4	14	10	46	34	31	211	13	21	e19	12		
12	e3.1	e4.4	15	32	52	e33	31	71	27	e15	e18	131		
13	e3.1	e4.3	15	78	53	e33	42	54	19	e11	e16	38		
14	e3.0	e4.3	12	40	51	e33	46	130	99	e10	e14	60		
15	e3.0	4.8	11	30	48	e32	46	133	269	e8.9	e11	30		
16	e3.0	5.3	10	24	45	e32	41	94	156	e7.7	e9.5	e29		
17	e2.9	5.8	10	20	41	e32	36	66	e50	e6.9	e7.7	e19		
18	e2.9	5.4	9.7	27	40	e31	33	193	e29	6.1	e6.4	e14		
19	e2.9	5.9	9.5	115	38	e31	31	97	e23	5.6	e5.4	e12		
20	e2.8	5.6	9.5	934	40	35	29	63	e18	e5.6	e7.1	e11		
21	e2.8	5.4	9.5	961	44	36	27	46	e16	e5.6	e6.6	e10		
22	e2.8	5.6	9.5	183	41	42	25	37	e13	e5.4	e6.4	e9.5		
23	e2.8	5.8	9.3	71	37	61	24	31	e13	e5.2	e5.9	e9.2		
24	e2.8	5.9	9.2	53	35	51	23	27	13	e5.0	e5.4	e8.9		
25	e2.8	6.0	9.2	44	35	40	21	24	12	6.2	e5.2	e8.6		
26	3.2	6.4	9.2	45	35	36	21	23	15	14	e4.8	e8.3		
27	3.7	6.3	9.2	224	33	218	20	22	19	13	e4.6	e8.0		
28	3.5	6.1	11	112	33	612	20	20	18	8.3	e4.3	e7.7		
29	3.5	e5.9	12	2330	---	1780	19	19	18	7.0	e4.0	e7.4		
30	3.5	e5.9	12	1940	---	2170	30	18	17	5.9	e3.5	6.9		
31	6.3	---	12	321	---	379	---	16	---	5.2	e3.2	---		
TOTAL	100.1	166.3	297.0	7698.2	1432	6125	1178	2697	980	488.6	5981.0	475.1		
MEAN	3.23	5.54	9.58	248	51.1	198	39.3	87.0	32.7	15.8	193	15.8		
MAX	6.3	8.9	15	2330	132	2170	110	440	269	65	2610	131		
MIN	2.8	4.3	5.5	9.5	33	31	19	16	11	5.0	3.2	2.8		
AC-FT	199	330	589	15270	2840	12150	2340	5350	1940	969	11860	942		
CFSM	.01	.01	.03	.66	.14	.53	.10	.23	.09	.04	.51	.04		
IN.	.01	.02	.03	.76	.14	.61	.12	.27	.10	.05	.59	.05		
CAL YR 1988	TOTAL	35440.3	MEAN	96.8	MAX	7190	MIN	1.5	AC-FT	70300	CFSM	.26	IN.	3.51
WTR YR 1989	TOTAL	27618.3	MEAN	75.7	MAX	2610	MIN	2.8	AC-FT	54780	CFSM	.20	IN.	2.73

e Estimated.

## BRAZOS RIVER MAIN STEM

08114000 BRAZOS RIVER AT RICHMOND, TX

LOCATION.--Lat 29°34'56", long 95°45'27", Fort Bend County, Hydrologic Unit 12070104, on right bank at downstream side of upstream bridge on U.S. Highway 90 in Richmond, 850 ft downstream from Texas and New Orleans Railroad Co. bridge, and at mile 92.0.

DRAINAGE AREA.--45,007 mi<sup>2</sup>, approximately, of which 9,566 mi<sup>2</sup> probably is noncontributing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1903 to June 1906, October 1922 to current year. Published as "at Rosenberg" October 1922 to September 1931 and equivalent except for diversion by Richmond Irrigation Co.'s canal. June to November 1901 and June to September 1902 in U.S. Department of Agriculture, Office of Experiment Stations, Bulletin Nos. 119 and 133. Gage-height records collected in this vicinity since 1914 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1392: 1933. WSP 1632: 1958. WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 27.94 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1922, various types of nonrecording gages at railroad bridge 925 ft upstream at different datums. Oct. 1, 1922, to Sept. 30, 1931, nonrecording chain gage at Rosenberg 7.6 mi upstream at datum about 17 ft higher; Oct. 1, 1931, to Sept. 30, 1975, water-stage recorder at present site at datum 13.00 ft higher; Oct. 1, 1975 to Dec. 31, 1988, water stage recorder at present site and at datum 10.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. Considerable water is diverted above station for irrigation and municipal supply. For statement regarding regulation by upstream reservoirs and by Soil Conservation Service Flood-water-retarding structures, see station 08110200. Gage-height telemeter at station.

AVERAGE DISCHARGE.--20 years (water years 1904-05, 1923-40) unregulated, 7,209 ft<sup>3</sup>/s (5,223,000 acre-ft/yr); 49 years (water years 1941-89) regulated, 7,158 ft<sup>3</sup>/s (5,186,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 123,000 ft<sup>3</sup>/s June 6, 1929 (gage height, 53.6 ft, from floodmarks), present site and datum; minimum daily, 35 ft<sup>3</sup>/s Aug. 23, 1934.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1852, 61.2 ft Dec. 10, 1913, present datum, from floodmarks on right bank 1,000 ft upstream from gage. From information by Texas and New Orleans Railroad Co., stages of other floods at railroad bridge, present datum, are as follows: May 1884, 56.7 ft; June 13, 1885, 57.7 ft; July 1899, 58.6 ft; May 2, 1915, 56.3 ft; and May 9, 1922, 53.9 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 43,800 ft<sup>3</sup>/s May 22 at 0500 hours (gage height, 34.07 ft); minimum daily, 229 ft<sup>3</sup>/s Nov. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	462	411	418	931	10900	3020	10500	1820	27200	16600	4370	1540
2	496	388	423	760	8340	3080	10600	1610	25100	15500	7800	1570
3	458	381	402	670	7330	2750	13400	1450	23600	13500	6390	1650
4	350	310	391	584	6680	2350	12700	1360	22500	11600	6330	1630
5	300	324	355	578	5550	2050	10300	1500	21700	9960	5700	1510
6	277	375	339	532	4440	2060	8340	1710	20800	9040	4650	1460
7	282	375	418	466	3570	2010	7230	2040	20100	9500	4430	1490
8	714	305	434	493	3000	1930	6270	2490	20000	8660	4160	1580
9	910	259	491	441	2630	1580	5170	4360	18500	7760	3680	1570
10	809	229	544	430	2400	1260	3890	6550	15900	6830	5170	1550
11	703	255	969	441	2130	1290	3100	8990	15200	6150	14300	1530
12	639	277	1310	424	1830	1660	3120	10400	16100	6150	12900	1560
13	557	295	1680	432	1580	2130	3390	8650	15900	5500	9760	1570
14	532	365	1630	480	1430	1810	3060	8360	19100	4690	7720	1590
15	470	350	1540	676	1330	1500	2890	8320	21300	4200	6150	1610
16	440	458	1530	752	1250	1500	2960	7040	22800	3700	5040	1510
17	414	491	1720	717	1170	1400	2960	6330	28300	3460	4060	1360
18	388	475	1820	919	1120	1410	2500	10500	32000	3330	3480	1290
19	386	502	1630	1120	1060	1340	2190	12400	30800	3210	3250	1210
20	391	457	1440	1600	1010	1120	2020	26500	30300	3100	2970	1090
21	510	439	1260	3560	972	988	1970	40300	31200	2970	2670	1010
22	522	365	1170	6890	2590	962	1800	42100	31600	2880	2590	919
23	513	273	1190	4440	5600	945	1840	30400	31700	2750	2430	909
24	449	339	1190	2610	4910	1860	2280	23700	32100	2660	2210	902
25	389	462	1190	1890	3630	2500	2710	25200	30600	2600	2110	842
26	391	417	1160	1610	2920	2150	2620	26500	27800	2520	1990	743
27	360	434	1150	1250	2520	1900	2240	28100	24600	2600	1950	682
28	365	402	1340	1130	2630	1860	1900	30800	21000	2540	1840	700
29	385	305	1500	1560	---	4380	1740	31800	18900	2500	1700	778
30	380	268	1490	6910	---	13000	1790	31100	17800	2470	1660	1070
31	396	---	1300	13600	---	15200	---	29400	---	2430	1640	---
TOTAL	14638	10986	33424	58896	94522	82995	137480	471780	714500	181360	145100	38425
MEAN	472	366	1078	1900	3376	2677	4583	15220	23820	5850	4681	1281
MAX	910	502	1820	13600	10900	15200	13400	42100	32100	16600	14300	1650
MIN	277	229	339	424	972	945	1740	1360	15200	2430	1640	682
AC-FT	29030	21790	66300	116800	187500	164600	272700	935800	1417000	359700	287800	76220
CAL YR 1988	TOTAL	637905	MEAN	1743	MAX	13800	MIN	229	AC-FT	1265000		
WTR YR 1989	TOTAL	1984106	MEAN	5436	MAX	42100	MIN	229	AC-FT	3935000		

08114000 BRAZOS RIVER AT RICHMOND, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1941 to current year. Chemical and biochemical analyses: January 1968 to current year. Pesticide analyses: October 1967 to May 1982. Sediment analyses: April 1957 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1941 to current year.

WATER TEMPERATURE: November 1950 to current year.

SUSPENDED-SEDIMENT DISCHARGE: January 1966 to September 1986.

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 regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,600 microsiemens Sept. 4, 1978; minimum daily, 172 microsiemens Oct. 31, 1984.

WATER TEMPERATURE: Maximum daily, 33.0°C Aug. 5, 1951; minimum daily, 1.0°C Jan. 8, 1970.

SEDIMENT CONCENTRATION: Maximum daily mean, 13,500 mg/L Apr. 4, 1979; minimum daily mean, 8 mg/L Nov. 29, 1967, Sept. 20, and Oct. 6, 7, 1980.

SEDIMENT LOAD: Maximum daily, 1,860,000 tons Apr. 4, 1979; minimum daily, 9.8 tons Oct. 11, 1983.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,590 microsiemens Dec. 30; minimum daily, 249 microsiemens Feb. 1.

WATER TEMPERATURE: Maximum daily, 31.0°C Sept. 5, 6; minimum daily, 6.0°C Feb. 7-9.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML)
		HARD-NESS TOTAL (MG/L AS CaCO3)	HARD-NESS NONCARB WH WAT TOT FLD (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)
NOV 16...	1100	502	1000	8.50	18.0	27	9.0	95	2.8	150	190
JAN 09...	1145	445	880	8.40	15.0	18	10.0	98	3.1	44	56
FEB 27...	1050	2490	476	8.00	15.0	260	10.2	102	1.2	120	84
APR 24...	1210	2300	642	8.10	25.0	66	8.0	97	0.7	150	92
JUN 05...	1350	21700	1200	8.00	26.5	670	7.8	98	1.0	140	120
JUL 26...	1145	2470	813	8.40	27.5	96	7.0	88	2.2	330	210
DATE		SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)
NOV 16...	270	34	72	21	110	3	4.6	234	82	140	0.40
JAN 09...	240	64	68	17	85	2	6.2	176	83	120	0.30
FEB 27...	160	50	53	7.3	36	1	4.3	113	48	35	0.30
APR 24...	190	19	61	9.8	56	2	4.3	174	59	65	0.30
JUN 05...	260	140	73	18	130	4	5.4	120	140	200	0.30
JUL 26...	210	60	62	13	81	3	4.7	149	84	120	0.30
NOV 16...	8.7	585	580	0.880	--	0.020	<0.010	0.900	<0.100	0.030	
JAN 09...	11	522	498	0.370	0.360	0.030	0.010	0.400	0.370	0.040	
FEB 27...	10	292	285	5.02	4.92	0.180	0.180	5.20	5.10	0.130	
APR 24...	9.8	377	376	1.16	1.28	0.040	0.020	1.20	1.30	0.040	
JUN 05...	7.1	664	649	0.380	--	0.020	<0.010	0.400	0.400	0.030	
JUL 26...	8.3	698	460	--	--	0.010	<0.010	<0.100	<0.100	0.010	

## BRAZOS RIVER MAIN STEM

08114000 BRAZOS RIVER AT RICHMOND, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 16...	0.010	0.37	0.40	0.430	0.110	0.090	0.28	43	58	71
JAN 09...	0.040	0.36	0.40	0.190	0.160	0.140	0.43	22	26	95
FEB 27...	0.110	1.2	1.3	0.340	0.200	0.150	0.46	212	1430	100
APR 24...	0.020	0.36	0.40	0.270	0.190	0.160	0.49	128	795	98
JUN 05...	0.020	--	<0.60	0.050	0.050	0.040	0.12	1070	62700	85
JUL 26...	<0.010	0.39	0.40	0.150	0.060	0.050	0.15	155	1030	99

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)
NOV 16...	<10	6	150	<0.5	3	<1	<3	3	8	<5
JAN 09...	--	--	--	--	--	--	--	--	--	--
FEB 27...	20	3	93	<0.5	<1	<1	<3	3	22	<5
APR 24...	--	--	--	--	--	--	--	--	--	--
JUN 05...	70	2	130	<0.5	2	1	<3	5	50	<1
JUL 26...	20	2	110	<0.5	<1	<1	<3	5	15	<1

DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 16...	25	5	<0.1	<10	2	<1	<1.0	800	<6	10
JAN 09...	--	--	--	--	--	--	--	--	--	--
FEB 27...	6	<1	<0.1	<10	2	<1	<1.0	480	<6	9
APR 24...	--	--	--	--	--	--	--	--	--	--
JUN 05...	17	2	<0.1	<10	<1	<1	<1.0	850	<6	6
JUL 26...	15	<1	0.3	<10	3	<1	<1.0	640	<6	7

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1988 TO SEPTEMBER 1989

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. 1988	14638	1030	586	23200	170	6640	110	4220	260
NOV. 1988	10986	990	563	16700	160	4670	100	3030	250
DEC. 1988	33424	1250	709	63900	230	20500	130	11900	280
JAN. 1989	58896	530	303	48200	70	11200	53	8470	150
FEB. 1989	94522	421	241	61500	51	12900	42	10700	130
MAR. 1989	82995	499	286	64100	63	14100	50	11200	150
APR. 1989	137480	469	269	99800	59	21700	47	17400	140
MAY 1989	471780	715	408	519000	100	132100	73	92600	190
JUNE 1989	714500	879	501	966000	140	260700	90	173900	230
JULY 1989	181360	746	426	209000	100	51400	76	37000	210
AUG. 1989	145100	541	309	121000	69	27200	54	21200	160
SEPT 1989	38425	976	556	57700	150	16000	100	10400	250
TOTAL	1984106	**	**	2250000	**	579000	**	402000	**
WTD.AVG.	5436	737	420	**	110	**	75	**	200

## BRAZOS RIVER MAIN STEM

403

08114000 BRAZOS RIVER AT RICHMOND, TX--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1050	930	972	1150	249	432	277	717	1060	733	841	890
2	974	944	1010	1020	274	454	265	685	1100	760	481	909
3	921	947	1030	962	268	471	302	770	1150	756	504	930
4	939	948	1000	935	264	470	446	761	1160	711	498	955
5	948	985	984	915	351	462	394	712	1180	740	522	972
6	934	1050	972	904	478	505	362	680	1170	727	601	980
7	919	1080	960	907	381	467	366	608	1140	709	683	994
8	900	1090	937	903	398	474	384	659	1150	757	653	999
9	880	1080	882	896	394	485	544	718	1140	655	637	984
10	873	1080	869	892	420	505	595	842	1130	672	676	995
11	926	1070	877	894	396	517	540	612	1070	669	728	1010
12	963	1060	903	932	388	531	551	447	1010	663	346	998
13	1100	1060	975	1030	420	550	506	432	1080	698	355	1000
14	1080	1030	1000	1080	458	533	555	917	775	775	382	965
15	1060	1020	1030	1100	490	583	557	1070	884	805	316	934
16	1040	1020	993	1140	525	601	536	997	800	747	327	967
17	1120	1020	1440	1120	545	602	610	945	842	795	379	1010
18	1270	1000	1540	1010	558	603	694	862	710	792	452	987
19	1340	981	1380	803	580	584	565	945	559	823	550	1000
20	1320	976	1500	586	594	577	546	733	710	842	606	1000
21	1220	977	1370	614	586	623	608	466	755	793	601	1000
22	1140	978	1400	481	579	646	602	351	769	830	583	992
23	1120	975	1520	291	690	661	679	358	784	815	640	988
24	1120	973	1490	341	768	751	659	438	774	805	632	986
25	1070	963	1290	446	571	1080	632	582	758	799	684	985
26	1050	929	1240	375	524	917	693	660	724	816	700	997
27	1020	901	1320	384	485	651	871	781	678	814	757	993
28	1020	902	1360	486	447	401	1110	957	663	809	763	996
29	1020	918	1400	489	---	403	1090	1040	679	835	771	982
30	1010	938	1590	407	---	513	810	1040	700	821	763	984
31	989	---	1500	359	---	274	---	1070	---	831	820	---
MEAN	1040	994	1180	769	467	559	578	737	903	768	589	979

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25.0	20.0	13.0	14.0	16.0	15.0	20.0	25.0	27.0	26.0	30.0	30.0
2	25.0	20.0	13.0	16.0	17.0	15.0	21.0	25.0	27.0	26.0	27.0	30.0
3	23.0	20.0	13.0	16.0	15.0	16.0	21.0	26.0	27.0	26.0	27.0	---
4	23.0	23.0	13.0	16.0	10.0	18.0	22.0	25.0	27.0	28.0	27.0	---
5	23.0	21.0	14.0	17.0	9.0	10.0	21.0	25.0	27.0	29.0	28.0	31.0
6	23.0	19.0	14.0	19.0	7.0	9.0	20.0	25.0	27.0	29.0	29.0	31.0
7	23.0	19.0	14.0	21.0	6.0	9.0	20.0	25.0	27.0	29.0	30.0	30.0
8	---	22.0	17.0	19.0	6.0	10.0	22.0	25.0	---	29.0	29.0	30.0
9	---	22.0	12.0	14.0	6.0	---	22.0	26.0	27.0	29.0	28.0	30.0
10	23.0	24.0	14.0	13.0	7.0	---	19.0	26.0	27.0	29.0	28.0	30.0
11	23.0	24.0	12.0	14.0	10.0	14.0	17.0	25.0	27.0	30.0	28.0	30.0
12	21.0	24.0	11.0	15.0	12.0	17.0	18.0	24.0	27.0	30.0	28.0	30.0
13	21.0	23.0	11.0	14.0	17.0	13.0	17.0	24.0	27.0	30.0	28.0	30.0
14	21.0	23.0	11.0	12.0	18.0	20.0	17.0	24.0	26.0	30.0	28.0	28.0
15	21.0	23.0	14.0	10.0	20.0	21.0	17.0	24.0	25.0	30.0	28.0	25.0
16	21.0	21.0	13.0	11.0	19.0	20.0	17.0	26.0	25.0	30.0	28.0	25.0
17	23.0	17.0	13.0	12.0	17.0	20.0	20.0	26.0	26.0	30.0	28.0	25.0
18	23.0	18.0	11.0	13.0	15.0	22.0	22.0	25.0	26.0	30.0	30.0	25.0
19	23.0	21.0	11.0	14.0	14.0	22.0	22.0	25.0	26.0	30.0	30.0	26.0
20	24.0	18.0	15.0	14.0	16.0	22.0	22.0	26.0	27.0	30.0	30.0	26.0
21	24.0	18.0	16.0	12.0	14.0	19.0	21.0	26.0	27.0	30.0	30.0	26.0
22	24.0	15.0	17.0	11.0	13.0	14.0	23.0	22.0	27.0	30.0	30.0	26.0
23	24.0	14.0	17.0	11.0	12.0	13.0	25.0	26.0	28.0	30.0	30.0	24.0
24	24.0	14.0	18.0	12.0	11.0	13.0	25.0	26.0	27.0	30.0	30.0	22.0
25	28.0	18.0	18.0	15.0	12.0	18.0	25.0	26.0	28.0	28.0	30.0	21.0
26	24.0	20.0	18.0	15.0	13.0	20.0	25.0	26.0	27.0	28.0	30.0	21.0
27	24.0	24.0	18.0	16.0	15.0	21.0	25.0	28.0	26.0	28.0	30.0	22.0
28	24.0	15.0	16.0	17.0	15.0	21.0	25.0	28.0	26.0	28.0	30.0	22.0
29	24.0	14.0	15.0	18.0	---	21.0	26.0	28.0	26.0	30.0	30.0	23.0
30	---	14.0	14.0	15.0	---	21.0	25.0	28.0	26.0	30.0	30.0	24.0
31	24.0	---	14.0	15.0	---	20.0	---	28.0	---	30.0	30.0	---
MEAN	23.5	19.5	14.0	14.5	13.0	17.0	21.5	25.5	26.5	29.0	29.0	26.5



## BRAZOS RIVER BASIN

08115000 BIG CREEK NEAR NEEDVILLE, TX

LOCATION.--Lat 29°28'35", long 95°48'45", Fort Bend County, Hydrologic Unit 12070104, near center of stream at downstream side of bridge on State Highway 36, 1.5 mi downstream from Coon Creek, 5.5 mi north of Needville, and 10.5 mi upstream from Fairchild Creek, and 33.0 mi upstream from mouth.

DRAINAGE AREA.--42.8 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1947 to June 1950, March 1952 to current year.

REVISED RECORDS.--WSP 1148: 1947. WSP 1712: 1957-58, 1959(M). WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 59.39 ft above National Geodetic Vertical Datum of 1929. Prior to June 30, 1950, and May 29, 1959, to Mar. 29, 1960, nonrecording gage at 10.00 ft higher datum. March 1952 to May 28, 1959, and Mar. 30, 1960, to Sept. 30, 1967, water-stage recorder at 10.00 ft higher datum.

REMARKS.--No estimated daily discharges. Records fair. Channel was rectified in 1956. No diversion above station. Low flow supplemented by drainage from irrigated fields. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--39 years (water years 1948-49, 1953-89), 35.6 ft<sup>3</sup>/s (25,790 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,400 ft<sup>3</sup>/s June 26, 1960 (gage height, 23.81 ft); maximum gage height, 24.03 ft Oct. 31, 1959; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1913, 24.4 ft in August 1945 before channel rectification, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 1,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 18	1600	1,640	20.29	Aug. 2	0130	*3,530	*23.15

Minimum daily discharge, 0.55 ft<sup>3</sup>/s Nov. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	5.7	.82	1.1	8.5	1.0	2.0	1.4	1.5	36	921	1.2
2	1.4	6.9	.80	.97	4.4	1.0	1.5	3.4	1.7	35	2500	1.2
3	1.3	3.5	.65	1.1	14	1.0	1.4	3.6	1.9	15	586	1.2
4	1.1	2.0	.77	.97	5.6	1.0	1.3	3.8	1.9	8.7	268	1.2
5	.99	1.7	.77	.95	2.2	1.0	1.2	2.7	2.0	5.2	138	1.3
6	1.1	1.1	.68	1.0	1.7	1.0	1.2	3.0	1.7	3.3	54	1.2
7	1.0	.96	.68	1.1	1.4	1.1	1.3	2.7	1.6	2.9	22	1.2
8	1.0	.97	1.8	1.1	1.2	1.0	1.3	2.4	1.7	5.7	11	1.2
9	1.1	.85	3.9	1.1	1.1	1.0	1.3	2.2	1.9	7.7	5.6	1.3
10	1.7	1.1	2.1	.94	.93	1.0	1.3	1.9	1.8	8.8	3.5	1.3
11	1.6	.87	1.6	.87	.92	1.0	1.2	1.7	1.8	9.0	3.1	1.3
12	1.3	.99	1.3	1.0	.97	1.0	1.3	2.0	1.6	8.0	2.8	1.3
13	1.4	1.3	1.1	1.1	.98	1.1	445	3.9	1.6	5.6	2.3	1.2
14	1.4	1.3	1.2	1.6	.93	1.0	110	286	5.0	4.5	1.9	1.1
15	1.9	1.0	1.3	1.4	.89	1.0	31	88	16	4.5	1.8	1.1
16	1.9	1.3	1.1	1.1	.82	1.0	12	31	19	4.2	2.6	1.1
17	1.7	1.0	1.0	.98	.80	1.0	5.4	74	11	3.5	1.6	1.1
18	2.0	.76	1.1	27	.76	1.0	2.8	1350	7.7	2.9	2.8	1.1
19	2.2	.97	1.1	166	.78	1.0	1.9	573	5.6	3.0	1.5	1.2
20	2.1	1.1	.98	403	.84	1.1	1.6	195	4.2	2.9	1.4	1.1
21	2.3	1.2	.83	84	.97	1.0	1.3	80	2.9	2.5	1.3	1.1
22	5.3	1.0	1.6	24	.86	1.1	1.3	32	2.6	2.7	1.2	1.0
23	9.1	.77	1.1	9.8	.79	1.7	1.3	16	3.4	3.0	1.2	.97
24	14	.94	1.1	5.0	.78	1.1	1.3	9.9	4.3	4.6	1.3	1.1
25	7.4	.93	1.1	3.4	.77	1.0	1.3	4.9	12	5.0	1.3	1.0
26	3.8	.85	.94	2.4	.75	1.1	1.3	3.0	43	4.7	1.3	1.0
27	2.7	.87	1.1	1.5	.94	10	1.3	2.2	40	4.3	1.2	1.0
28	1.7	.79	1.1	1.1	1.0	2.5	1.3	2.1	23	7.2	1.3	1.2
29	1.4	.55	1.1	8.6	---	251	1.3	2.1	13	9.8	1.2	1.1
30	1.3	1.2	1.1	40	---	26	2.5	2.0	15	11	1.2	1.0
31	6.2	---	1.0	20	---	5.7	---	1.6	---	8.1	1.3	---
TOTAL	85.09	44.47	36.82	814.18	56.58	322.5	640.2	2787.5	250.4	239.3	4544.7	34.37
MEAN	2.74	1.48	1.19	26.3	2.02	10.4	21.3	89.9	8.35	7.72	147	1.15
MAX	14	6.9	3.9	403	14	251	445	1350	43	36	2500	1.3
MIN	.99	.55	.65	.87	.75	1.0	1.2	1.4	1.5	2.5	1.2	.97
AC-FT	169	88	73	1610	112	640	1270	5530	497	475	9010	68
CAL YR 1988	TOTAL	2752.01	MEAN	7.52	MAX	578	MIN	.55	AC-FT	5460		
WTR YR 1989	TOTAL	9856.11	MEAN	27.0	MAX	2500	MIN	.55	AC-FT	19550		

BRAZOS RIVER MAIN STEM

405

08116650 BRAZOS RIVER NEAR ROSHARON, TX  
(National stream-quality accounting network)

LOCATION.--Lat 29°20'58", long 95°34'56", Fort Bend-Brazoria County line, Hydrologic Unit 12070104, on right bank at downstream side of bridge on Farm Road 1462, 2.0 mi downstream from Big Creek, 2.1 mi upstream from Cow Creek, and 7.3 mi west of Rosharon and at mile 56.7.

DRAINAGE AREA.--45,339 mi<sup>2</sup>, approximately, of which 9,566 mi<sup>2</sup> probably is noncontributing.

PERIOD OF RECORD.--April 1967 to September 1980, Apr. 25, 1984, to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Water is diverted above station for irrigation, industrial, and municipal supply and materially affects low flow. For regulation by upstream reservoirs and Soil Conservation Service floodwater-retarding structures, see Brazos River at Washington (station 08110200). Gage-height telemeter at station.

AVERAGE DISCHARGE.--18 years (water years 1968-80, 1985-89), 7,563 ft<sup>3</sup>/s (5,479,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 79,900 ft<sup>3</sup>/s May 14, 1968 (elevation, 50.74 ft); minimum daily, 40 ft<sup>3</sup>/s Apr. 7-10, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation since at least 1884, 56.4 ft about Dec. 11, 1913, from information by the State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (estimated), 44,000 ft<sup>3</sup>/s May 22 at time unknown (elevation, unknown); minimum daily, 157 ft<sup>3</sup>/s Nov. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	420	268	315	1200	11600	2530	12100	1370	27800	18100	e5500	1570
2	400	266	397	949	9090	2850	9280	1290	25700	18000	e18500	1540
3	349	253	431	734	7130	2790	10900	1130	23900	15600	18600	1590
4	260	221	435	455	6170	2260	12300	1130	22600	12700	13900	1580
5	203	163	430	370	5470	1960	10700	1050	21500	10600	10500	1540
6	264	157	412	331	4520	1790	8510	1320	20800	9020	6740	1440
7	273	189	379	479	3660	1760	6970	1470	19900	8870	4700	1420
8	286	198	422	446	2980	1720	6070	1660	19700	8810	4320	1400
9	582	243	447	426	2460	1610	5130	2300	19100	7930	3860	1400
10	654	222	519	244	2160	1340	4110	3910	16600	7100	3240	1400
11	577	228	534	197	1970	1100	3190	5930	14500	6230	7940	1370
12	505	291	816	233	1780	1070	2630	8850	14800	5860	11900	1490
13	424	351	1180	199	1670	1440	3730	9100	15000	5620	9770	1460
14	365	341	1480	249	1590	1700	4640	8030	16300	4970	7550	1810
15	384	188	1500	276	1470	1440	3250	8350	19900	4330	6130	1640
16	503	169	1340	403	1370	1240	2770	7700	21400	3850	4960	1490
17	467	217	1250	499	1290	1220	2800	6240	24700	3410	4220	1380
18	279	273	1310	620	1220	1210	2560	7790	29900	3130	3540	1250
19	254	320	1360	1570	1160	1420	2130	14900	31000	2880	3150	1100
20	223	331	1210	2890	1110	1380	1810	e20000	29600	2850	2950	1030
21	206	354	1050	3260	1060	1210	1660	e36000	29900	2700	2690	974
22	442	418	938	4460	1040	1120	1570	e43000	30600	2530	2500	902
23	557	263	884	5390	3200	1130	1370	e35000	31000	2480	2390	808
24	545	284	861	3450	4760	1070	1380	e26000	31900	2370	2200	822
25	478	363	870	2260	4020	1950	1770	23900	32500	2310	2100	908
26	278	449	864	1760	3100	2250	2030	25200	33600	2470	1990	824
27	344	447	845	1460	2580	1950	1910	26100	33000	2480	1900	631
28	228	440	903	1250	2340	1670	1650	28200	26100	2550	1830	548
29	225	427	1050	1290	---	2090	1400	30400	21200	2500	1710	596
30	228	359	1100	2490	---	6000	1320	30900	19100	2410	1620	773
31	225	---	1310	8940	---	13500	---	29900	---	2350	1620	---
TOTAL	11428	8693	26842	48780	91970	67770	131640	448120	723600	187010	174520	36686
MEAN	369	290	866	1574	3285	2186	4388	14460	24120	6033	5630	1223
MAX	654	449	1500	8940	11600	13500	12300	43000	33600	18100	18600	1810
MIN	203	157	315	197	1040	1070	1320	1050	14500	2310	1620	548
AC-FT	22670	17240	53240	96760	182400	134400	261100	888800	1435000	370900	346200	72770
CAL YR 1988	TOTAL	549055	MEAN	1500	MAX	14000	MIN	150	AC-FT	1089000		
WTR YR 1989	TOTAL	1957059	MEAN	5362	MAX	43000	MIN	157	AC-FT	3882000		

e Estimated.

## SAN BERNARD RIVER MAIN STEM

08117500 SAN BERNARD RIVER NEAR BOLING, TX

LOCATION.--Lat 29°18'48", long 95°53'38", Wharton-Fort Bend County line, Hydrologic Unit 12090401, on left bank at downstream side of bridge on Farm Road 442, 2.5 mi downstream from Snake Creek, and 4.5 mi northeast of Boling.

DRAINAGE AREA.--727 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1954 to current year.

Water-quality records.--Chemical and biochemical analyses: February 1978 to September 1986.

REVISED RECORDS.--WSP 1712: 1958. WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 30.81 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Part of low flow is drainage from areas irrigated with diversions from the Colorado River. There are diversions above station for irrigation and for other uses. Several measurements were made during the year.

AVERAGE DISCHARGE.--35 years, 494 ft<sup>3</sup>/s (357,900 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,200 ft<sup>3</sup>/s June 28, 1960 (gage height, 42.41 ft); minimum daily, 1.7 ft<sup>3</sup>/s Dec. 7, 1988.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, 43.5 ft in 1913 (probably December). Flood in September 1938 reached a stage of 43.3 ft, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Aug. 5	1800	*3,530	*19.51	No other peak greater than base discharge.			

Minimum daily discharge, 1.7 ft<sup>3</sup>/s Dec. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	272	76	3.0	13	1510	20	65	36	46	293	510	119
2	586	99	2.6	11	1770	19	89	54	43	310	1200	108
3	707	120	2.2	10	1740	19	81	75	42	252	1990	92
4	536	120	2.0	9.4	1320	18	62	86	40	179	2550	89
5	364	121	1.9	8.1	1120	17	45	108	42	133	3430	98
6	273	118	1.8	8.5	787	16	31	145	39	106	3310	114
7	219	103	1.7	8.5	535	15	23	159	45	93	2430	120
8	181	78	3.4	7.7	390	15	18	177	53	79	1450	119
9	157	59	109	7.5	274	15	16	190	66	87	957	118
10	149	47	604	6.5	192	15	13	184	88	86	714	134
11	146	40	466	5.9	139	14	12	158	94	98	526	152
12	163	31	236	5.7	108	13	18	145	94	102	358	157
13	173	23	141	6.1	94	11	66	186	95	104	242	198
14	176	18	103	7.1	89	11	193	445	97	114	174	204
15	201	18	74	7.8	80	10	173	668	111	117	142	184
16	205	17	52	9.8	71	10	139	673	274	131	116	149
17	202	12	37	9.6	67	9.6	97	607	414	133	110	122
18	201	21	29	13	60	9.4	68	1500	405	121	102	114
19	184	17	22	138	49	9.2	45	2760	281	118	104	99
20	153	12	17	1530	46	10	30	1590	204	128	106	88
21	129	8.3	14	2410	43	10	21	1010	159	120	111	79
22	158	6.1	15	2350	38	11	15	685	120	112	115	77
23	282	4.5	15	2160	34	10	11	551	87	124	109	67
24	291	4.0	13	1930	30	9.8	8.6	450	77	129	106	59
25	209	3.9	10	1340	27	10	6.8	331	139	141	111	63
26	151	3.2	8.7	907	26	11	5.4	229	309	237	121	69
27	133	3.4	9.0	643	24	11	4.2	159	488	674	130	67
28	115	4.5	8.9	478	22	11	6.3	102	442	919	138	70
29	95	4.4	9.7	502	---	23	15	72	427	850	140	75
30	98	4.0	14	806	---	74	26	55	354	788	132	81
31	83	---	17	1280	---	40	---	48	---	666	123	---
TOTAL	6992	1196.3	2042.9	16629.2	10685	497.0	1403.3	13638	5175	7544	21857	3285
MEAN	226	39.9	65.9	536	382	16.0	46.8	440	172	243	705	109
MAX	707	121	604	2410	1770	74	193	2760	488	919	3430	204
MIN	83	3.2	1.7	5.7	22	9.2	4.2	36	39	79	102	59
AC-FT	13870	2370	4050	32980	21190	986	2780	27050	10260	14960	43350	6520
CAL YR 1988	TOTAL	47574.2	MEAN	130	MAX	1440	MIN	1.7	AC-FT	94360		
WTR YR 1989	TOTAL	90944.7	MEAN	249	MAX	3430	MIN	1.7	AC-FT	180400		

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, the Geological Survey collects limited streamflow data at sites other than continuous stream-gaging stations. 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 1989						
Station no.	Station name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
Brazos River basin						
08080900	White River below falls near Crosbyton, Tex.	Lat 33°39'57", long 101°09'35", Crosby County, at bridge on U.S. Highway 82 and 4.5 mi east of Crosbyton (discontinued).	(a)	1951-89	10-19-88 1-25-89 5-8-89 8-24-89	0.15 .83 .13 .07
08111600	Piney Creek near Bellville, Tex.	Lat 29°57'06", long 96°10'20", Austin County, at bridge on county road and about 5.1 mi east of Bellville (discontinued).	30.7	1948, 1955, 1958, 1964-89	10-6-88 11-21-88 1-11-89 7-28-89	.29 1.1 2.3 1.3
08111650	West Fork Mill Creek near Industry, Tex.	Lat 29°58'55", long 96°30'00", Austin County, at bridge on Farm Road 109 and about 0.6 mi north of Industry (discontinued).	75.3	1964-89	10-6-88 11-21-88 1-11-89 7-27-89 9-13-89	0 0 0 0 0

† Operated as a continuous-record station.

a Not applicable.

## 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), 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 inspections 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 1989							
Station no.	Station name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (ft <sup>3</sup> /s)
San Jacinto River basin							
08068325	Willow Creek near Tomball, Tex.	Lat 30°06'19", long 95°32'47", Harris County, at bridge on Kuykendahl Road, 0.6 mi upstream from Cannon Gully, and 4.0 mi east of Tomball.	41.0	1984-89	5-18-89	31.54	-
08068700	Cypress Creek at Sharp Road near Hockley, Tex.	Lat 29°55'15", long 95°50'24", Harris County, at bridge on Sharp Road and 7.4 mi south of Hockley.	80.7	1976-78, 1979-89	5-18-89	62.40	-
08072350	Buffalo Bayou near Fulshear, Tex.	Lat 29°43'22", long 95°46'01", Harris County, at proposed location of Peek Road bridge, about 200 ft downstream from Little Prong Bayou, 4,300 ft upstream from Mason Road, 8.3 mi east-northeast of Fulshear.	81.7	1986-89	8- 1-89	11.23	-
08072700	South Mayde Creek near Addicks, Tex.	Lat 29°48'03", long 95°41'33", Harris County, at bridge on Groeschke Road, 3.2 mi west of Addicks, and 4.6 mi upstream from Langham Creek.	32.3	1974-89	5-18-89	*106.27	-
08072760	Langham Creek at West Little York Road near Addicks Tex.	Lat 29°52'01", long 95°38'47", Harris County, at bridge on West Little York Road, 500 ft upstream from former site on State Highway 6, 2.1 mi downstream from Dinners Creek, and 5.7 mi north of Addicks.	b24.6	1977-89	5-17-89	21.17	844
08072800	Langham Creek near Addicks, Tex.	Lat 29°50'08", long 95°37'32", Harris County, at bridge on Clay Road, 3.6 mi north of Addicks, and 4.4 mi upstream from mouth.	48.9	1974-89	5-17-89	*100.42	-
08074020	Whiteoak Bayou at Alabonson Road at Houston, Tex.	Lat 29°52'14", long 95°28'49", Harris County, at bridge on Alabonson Road, in northwest Houston, 1.0 mi upstream from Vogel Creek, and 2.5 mi upstream from Cole Creek.	34.5	1984-89	5-18-89	*48.77	7,390
08074150	Cole Creek at Deihl Road, Houston, Tex.	Lat 29°51'04", long 95°29'16", Harris County, at bridge on Deihl Road in northwest Houston, 1.8 mi upstream from mouth.	7.50	1964-89†	5-18-89	*79.00	1,900
08074250	Brickhouse Gully at Costa Rica Street, Houston, Tex.	Lat 29°49'40", long 95°28'09", Harris County, at bridge on Costa Rica Street in northwest Houston and 1.0 mi upstream from Whiteoak Bayou.	11.4	1965-89†	6-26-89	*68.9/	5,630
08074540	Little Whiteoak Bayou at Trimble Street at Houston, Tex.	Lat 29°47'33", long 95°22'06", Harris County, at bridge on Trimble Street, Houston.	18.0	1979-89	6-26-89	(c)	-
08074760	Brays Bayou at Alief Road, Alief, Tex.	Lat 29°42'39", long 95°35'13", Harris County, at bridge on High Star Street in Alief.	14.1	1977-89	8- 1-89	16.81	-
08074780	Keegans Bayou at Keegan Road near Houston, Tex.	Lat 29°39'55", long 95°35'42", Harris County, at bridge on Keegan Road and about 16 mi southwest of Houston.	8.63	1965-71, 1975-89	8- 1-89	*79.89	-
08074800	Keegans Bayou at Roark Road near Houston, Tex.	Lat 29°39'23", long 95°33'43", Harris County, at bridge on Roark Road in southwest Houston.	12.7	1965-89	8- 1-89	*75.05	(d)
08074810	Brays Bayou at Gessner Drive, Houston, Tex.	Lat 29°40'21", long 95°31'41", Harris County, at bridge on Gessner Drive in southwest Houston and 0.10 mi below mouth of Keegans Bayou.	53.2	1977-89	8- 1-89	*61.42	11,700
08075470	Sims Bayou at Martin Luther King Boulevard, Houston, Tex.	Lat 29°38'42", long 95°20'13", Harris County, at bridge on Martin Luther King Boulevard in south Houston (discontinued).	48.4	1978-89	8- 1-89	*38.15	-
08075780	Greens Bayou at Cutten Road near Houston, Tex.	Lat 29°56'56", long 95°31'10", Harris County, at bridge on Cutten Road and about 16.5 mi northwest of Houston.	8.65	1965-89	5-18-89	*116.54	1,920
08076900	Carpenters Bayou near Channelview, Tex.	Lat 29°46'20", long 95°09'24", Harris County, at bridge on temporary Beltway 8, at western boundary of Channelview 4.9 mi upstream from mouth.	25.8	1986-89	6-26-89	*18.49	-

\* Elevation, in feet.

† Operated as a continuous-record station.

c Gage height not determined.

d Discharge not determined.



Annual maximum stage and (or) discharge during water year 1989--Continued							
Station no.	Station name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (ft <sup>3</sup> /s)
Clear Creek basin							
08077505	Beamer Street Ditch at Houston, Tex.	Lat 29°35'30", long 95°13'19", Harris County, at bridge on Hughes Road in southeast Houston.	5.19	1984-89	6-26-89 8- 1-89	*31.27 *31.27	- -
08077520	Turkey Creek near Friendswood, Tex.	Lat 29°35'02", long 95°11'13", Harris County, at bridge on Dixie Farm Road in southern Harris County, 2.4 mi upstream from Clear Creek, and 3.9 mi north-northeast of Friendswood.	6.78	1985-89	6-26-89	*27.22	-
08077600	Clear Creek near Friendswood, Tex.	Lat 29°31'02", long 95°10'42", Galveston County, at bridge on Farm Road 528 and 1.5 mi south-east of Friendswood.	-	1966-89	8- 1-89	*20.85	-
08077630	Horsepen Bayou at Bay Area Blvd., Houston, Tex.	Lat 29°35'00", long 95°06'12", Harris County, at upstream bridge on Bay Area Blvd., in south-east Houston, and 2.0 mi upstream from Armand Bayou.	17.8	1985-89	8- 1-89	*12.35	-
Brazos River basin							
08079300	Blackwater Draw tributary near Floyd, N. Mex.	Lat 34°14'52", long 103°44'51", Roosevelt County, 0.5 mi below section road and 10 mi west of Floyd.	10	1963-89	8-12-89	.80	20
08080600	Running Water Draw near Clovis, N. Mex.	Lat 34°31'55", long 103°12'05", Curry County, 0.25 mi upstream from State Highway 18 and 8 mi west of Clovis.	109	1953-56 1967-64† 1979 1981-89	6-30-89	1.6†	e4
08091500	Paluxy River at Glen Rose, Tex.	Lat 32°13'53", long 97°46'37", Somervell County, on left bank at downstream side of remaining pier of dismantled highway bridge, 500 ft upstream from bridge on U.S. Highway 67, 1.0 mi upstream from Cross Branch, 1.2 mi southwest of Glen Rose, and 5.1 mi upstream from mouth.	410	1923-25† 1947-85† 1986-89	3-28-89	21.08	31,500
08092000	Nolan River at Blum, Tex.	Lat 32°09'02", long 97°24'09", Hill County, on right bank 60 ft upstream from bridge on Farm Road 933, 0.6 mi northwest of Blum, 2.8 mi downstream from Mustang Creek, 3.0 mi downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 3.2 mi upstream from Rock Creek, and 8.5 mi upstream from mouth.	282	1924-25† 1947-85† 1986-89	5-17-89	33.44	/9,600
08095300	Middle Bosque River near McGregor, Tex.	Lat 31°30'33", long 97°21'56", McLennan County, on downstream side of bridge on county road, 1,100 ft downstream from Pecan Creek, 5.2 mi northeast of McGregor, and 7.4 mi upstream from mouth.	182	1959-89	5-17-89	21.92	27,800
08095400	Hog Creek near Crawford, Tex.	Lat 31°33'20", long 97°21'22", McLennan County, on downstream side of bridge on Farm Road 185, 5.6 mi east of Crawford, and 9.8 mi upstream from South Bosque River.	78.2	1959-89	5-17-89	9.55	1,920
08099100	Leon River near De Leon, Tex.	Lat 32°10'25", long 98°31'58", Comanche County, on left bank at downstream end of bridge on State Highway 16, 1.5 mi upstream from Flat Creek, 4.4 mi northeast of De Leon, 6 mi downstream from Hog Creek, and 250.1 mi upstream from mouth.	479	1960-85† 1986-89	5-17-89	15.63	/,070
08099300	Sabana River near De Leon, Tex.	Lat 32°06'50", long 98°36'19", Comanche County, on left bank at downstream end of bridge on Farm Road 587, 0.6 mi downstream from Spring Branch, 4.0 mi west of De Leon, 4.2 mi upstream from Turkey Creek, and 12.2 mi upstream from mouth.	264	1960-85† 1986-89	5-17-89 6-14-89	20.75 b22.75	5,290 15,400

\* Elevation, in feet.

† Operated as a continuous-record station.

b Revised.



# INDEX

	Page		Page
Access to WATSTORE data.....	18	Cubic foot per second per square mile (CFSM),	
Accuracy of the records.....	13	definition of.....	21
Acre-foot, definition of.....	19	Cypress Creek, Grant Road near Cypress.....	63
Addicks Reservoir near Addicks.....	134	at House and Hahl Road near Cypress.....	59-61
Adenosine triphosphate (ATP), definition of.....	19	at Katy-Hockley Road near Hockley.....	58
Algae, definition of.....	19	at Sharp Road near Hockley.....	408
growth potential (AGP), definition of.....	19	at Stuebner-Airline Road near Westfield.....	64
Aquilla Creek, above Aquilla.....	290	near Westfield.....	65-68
near Aquilla.....	291-292	Data, collection and computation.....	9
near Peoria.....	270	presentation.....	11,17
Aquilla Lake above Aquilla.....	274-289	Davidson Creek near Lyons.....	385
Arrangement of records.....	15	Deadman Creek near Nugent.....	207
Artificial substrate, definition of.....	27	Definition of terms.....	19-30
Ash mass, definition of.....	20	Diatoms, definition of.....	25
Bacteria, definition of.....	19	Discharge, at partial-record stations.....	407-409
Barker Reservoir near Addicks.....	132	definition of.....	21
Beamer Street Ditch at Houston.....	409	Dissolved, definition of.....	21
Bear Creek near Barker.....	133	Dissolved-solids concentration, definition of.....	21
Bed load, definition of.....	26	Diversity index, definition of.....	21
discharge, definition of.....	26	Double Mountain Fork Brazos River, at Justiceburg.....	187-189
Bed material, definition of.....	20	near Aspermont.....	190-193
Belton Lake near Belton.....	308	Downstream order numbering.....	8
Berry Bayou at Forest Oaks Street, Houston.....	166-167	Drainage area, definition of.....	11,22
Berry Creek near Georgetown.....	346	Drainage basin, definition of.....	22
Big Cedar Creek near Ivan.....	235	Dry mass, definition of.....	20
Big Creek, near Freestone.....	390	Duck Creek near Girard.....	194
near Needville.....	404	East Fork San Jacinto River, near New Caney.....	72-78
Big Sandy Creek above Breckenridge.....	219-223	near Cleveland.....	70-71
Biochemical oxygen demand (BOD), definition of.....	20	East Yegua Creek near Dime Box.....	371
Biomass, definition of.....	20	Estimated daily discharge, identification of.....	13
Blackwater Draw tributary near Floyd, N. Mex.....	409	Explanation of the records.....	8
Blue-green algae, definition of.....	25	Fecal coliform bacteria, definition of.....	19
Bottom material, definition of.....	20	Fecal streptococcal bacteria, definition of.....	20
Brays Bayou, at Alief Road, Alief.....	408	Gage height, definition of.....	22
at Gessner Drive, Houston.....	408	Gaging station, definition of.....	22
at Houston.....	161-162	Gaging-station records.....	33-406
Brazos River, at Morris Sheppard Dam near Graford.....	246-248	Garners Bayou near Humble.....	174
at Richmond.....	400-403	Granger Lake near Granger.....	349-359
at Seymour.....	197-200	Green algae, definition of.....	25
at Waco.....	297	Greens Bayou, at Cutten Road near Houston.....	408
at Washington.....	386	at Ley Road at Houston.....	176
at Whitney Dam near Whitney.....	266-268	at U.S. Highway 75 near Houston.....	171
near Aquilla.....	269	near Houston.....	172-173
near Bryan.....	369	Hackberry Creek, at Hillsboro.....	271-272
near Dennis.....	250-253	below Hillsboro.....	273
near Glen Rose.....	262	Halls Bayou at Houston.....	175
near Hempstead.....	398	Hardness, definition of.....	22
near Highbank.....	298-302	Hog Creek near Crawford.....	409
near Palo Pinto.....	249	Horsepen Bayou at Bay Area Blvd., Houston.....	409
near Rosharon.....	405	Hubbard Creek, below Albany.....	214-218
near South Bend.....	230-232	Hubbard Creek Reservoir near Breckenridge.....	224-229
Brazos River basin, crest-stage partial-record		Hunting Bayou at Interstate Highway 610 at Houston.....	169-170
stations in.....	409	Hydrologic bench-mark network.....	22
gaging-station records in.....	184-405	Hydrologic conditions.....	3
low-flow partial-record stations in.....	407	Hydrologic unit.....	22
Briar Creek near Graham.....	233	Identifying estimated daily discharge.....	13
Brickhouse Gully at Costa Rica Sreet, Houston.....	408	Illustrations.....	4,6
Buffalo Bayou, at Houston.....	139-144	Index.....	411
at Main Street, Houston.....	147-153	Instantaneous discharge, definition of.....	21
at Piney Point.....	138	Introduction.....	1
at Turning Basin, Houston.....	154-160	Keegans Bayou, at Keegan Road near Houston.....	408
at West Belt Drive, Houston.....	136-137	at Roark Road near Houston.....	408
near Addicks.....	135	Laboratory measurements.....	16
near Fulshear.....	408	Lake Conroe, at outflow weir near Conroe.....	40
near Katy.....	131	near Conroe.....	33-39
California Creek near Stamford.....	208	Lake Creek near Conroe.....	44
Caney Creek near Splendora.....	79-81	Lake Georgetown near Georgetown.....	332-342
Carpenters Bayou near Channelview.....	408	Lake Graham near Graham.....	234
Cells/volume, definition of.....	20	Lake Granbury near Granbury.....	254-261
Chemical oxygen demand (COD), definition of.....	20	Lake Houston near Sheldon.....	85-128
Chlorophyll, definition of.....	20	Lake Limestone near Marquez.....	391-395
Chocolate Bayou near Alvin.....	183	Lake Whitney near Whitney.....	265
Classification of records.....	14	Lake Surveys (Water Quality):	
Clear Creek, near Friendswood.....	409	Aquilla Lake near Aquilla.....	275-289
near Pearland.....	177	Conroe, Lake, near Conroe.....	34-39
Clear Creek basin, crest-stage partial-record		Georgetown, Lake, near Georgetown.....	333-342
stations in.....	409	Granbury, Lake, near Granbury.....	255-261
Clear Fork Brazos River, at Fort Griffin.....	209	Granger Lake near Granger.....	350-359
at Hawley.....	204	Houston, Lake, near Sheldon.....	86-128
at Nugent.....	206	Hubbard Creek Reservoir near Breckenridge.....	225-229
near Roby.....	203	Limestone, Lake, near Marquez.....	392-395
Coastal Basin, gaging-station records in.....	178-179	Possum Kingdom Lake near Graford.....	237-245
Cole Creek at Deihl Road, Houston.....	408	Somerville Lake near Somerville.....	373-382
Color Unit, definition of.....	21	Stillhouse Hollow Lake near Belton.....	315-327
Computation, data collection and.....	9	Lakes and reservoirs:	
Contents, definition of.....	21	Addicks Reservoir near Addicks.....	134
Continuous-record station, definition of.....	14	Aquilla lake above Aquilla.....	274-289
Control, definition of.....	21	Barker Reservoir near Addicks.....	132
structure.....	21	Belton Lake near Belton.....	308
Cooperation.....	2		
Cowhouse Creek at Pidcoke.....	307		
Crest-stage partial-record measurements.....	408-409		
Crest-stage partial-record station, definition of.....	9		
Cubic-foot-per-second day, definition of.....	20		
Cubic foot per second (FT <sup>3</sup> /s, ft <sup>3</sup> /s), definition of...	21		

	Page		Page
Lakes and reservoirs:		Records, accuracy of.....	13
Conroe, Lake, near Conroe.....	33-39	arrangement of.....	15
Lake Georgetown near Georgetown.....	332-342	classification of.....	13
Graham, Lake, near Graham.....	234	explanation of.....	8
Granbury, Lake, near Granbury.....	254-261	of stage and water discharge.....	9
Granger Lake near Granger.....	349-359	of surface-water quality.....	14
Houston, Lake, near Sheldon.....	85-128	others available.....	14
Hubbard Creek Reservoir near Breckenridge.....	224-229	Recoverable from bottom material, definition of.....	26
Limestone, Lake, near Marquez.....	391-395	Remark codes.....	18
Millers Creek Reservoir near Bomartin.....	202	Reservoirs. See Lakes and reservoirs.	
Possum Kingdom Lake near Graford.....	236-245	Return period, definition of.....	26
Proctor Lake near Proctor.....	303	Running Water Draw near Clovis, N. Mex.....	409
Somerville Lake near Somerville.....	372-382	Runoff in inches, definition of.....	26
Squaw Creek Reservoir near Glen Rose.....	263		
Stillhouse Hollow Lake near Belton.....	314-327	Sabana River near De Leon.....	409
Waco Lake near Waco.....	296	Salt Fork Brazos River, near Aspermont.....	195-196
Whitney, Lake, near Whitney.....	265	San Bernard River near Boling.....	406
LaMarque Levee pump station near LaMarque.....	180-182	San Gabriel River, at Lanepoint.....	360-361
Lampasas River, near Belton.....	328-329	near Rockdale.....	362
near Kempner.....	310-311	near Weir.....	347-348
Langham Creek, at West Little York Road near Addicks.....	408	San Jacinto River near Sheldon.....	129-130
near Addicks.....	408	San Jacinto River basin, crest-stage partial-record stations in.....	408
Leon River, at Gatesville.....	306	gaging-station records in.....	33-176
near Belton.....	309	Sediment, collection and examination.....	16
near De Leon.....	409	definition of.....	26
near Hamilton.....	305	Sims Bayou, at Hiram Clarke Street, Houston.....	163
near Hasse.....	304	at Houston.....	164-165
Little Cypress Creek near Cypress.....	62	at Martin Luther King Boulevard, Houston.....	408
Little River, at Cameron.....	364-368	Sodium adsorption ratio (SAR), definition of.....	27
near Little River.....	330	Solute, definition of.....	27
near Rockdale.....	363	Somerville Lake near Somerville.....	372-382
Little Whiteoak Bayou at Trimble Street at Houston.....	408	South Fork Rocky Creek near Briggs.....	312-313
Low-flow partial-record measurements.....	407	South Fork San Gabriel River at Georgetown.....	345
Low-flow partial-record stations, definition of.....	9	South May Creek near Addicks.....	408
Luce Bayou above Lake Houston near Huffman.....	82-84	Special networks and programs.....	7
		Specific conductance, definition of.....	27
Mean concentration, definition of.....	26	Spring Creek at Spring.....	55-57
Mean discharge, definition of.....	21	Squaw Creek near Glen Rose.....	264
Metamorphic stage, definition of.....	22	Squaw Creek Reservoir near Glen Rose.....	263
Methylene blue active substance (MBAS), definition of.....	22	Stage-discharge relation, definition of.....	27
Micrograms per gram, definition of.....	22	Station identification numbers.....	8
Micrograms per liter, definition of.....	22	Stillhouse Hollow Lake near Belton.....	314-327
Middle Bosque River near McGregor.....	409	Streamflow, definition of.....	27
Middle Yegua Creek near Dime Box.....	370	yearly summary.....	3
Mill Creek near Bellville.....	399	Substrate, definition of.....	27
Millers Creek near Munday.....	201	Surface area, definition of.....	27
Millers Creek Reservoir near Bomartin.....	202	Surficial bed material, definition of.....	28
Milligrams of carbon per area or volume per unit time.....	25	Suspended (as used in tables of chemical analyses), definition of.....	28
Milligrams of oxygen per area or volume per unit time.....	25	Suspended, recoverable, definition of.....	28
Milligrams per liter, definition of.....	23	Suspended, total, definition of.....	28
Miscellaneous sampling site.....	14	Suspended sediment, definition of.....	26
Moses Lake-Galveston Bay near Texas City.....	178-179	Suspended-sediment concentration, definition of.....	26
Mulberry Creek near Hawley.....	205	Suspended-sediment discharge, definition of.....	26
		Suspended-sediment load, definition of.....	26
National Geodetic Vertical Datum (NGVD), definition of.....	23	Taxonomy, definition of.....	28
National stream-quality accounting network (NASQAN), definition of.....	23	Temperature, collection and examination.....	16
National Trends Network (NTN), definition of.....	23	Terms, definition of.....	19-30
Natural substrates, definition of.....	27	Thermograph, definition of.....	29
Navasota River, above Groesbeck.....	387-389	Time-weighted average, definition of.....	29
near Bryan.....	397	Tons per acre-foot, definition of.....	29
near Easterly.....	396	Tons per day, definition of.....	29
Networks and programs, special.....	7	Total coliform bacteria, definition of.....	19
Nolan River at Blum.....	409	Total (in tables of chemical analyses), definition of.....	29
North Bosque River, at Hico.....	293	Total discharge, definition of.....	29
at Valley Mills.....	295	Total organism count, definition of.....	23
near Clifton.....	294	Total, recoverable, definition of.....	29
North Fork Double Mountain Fork Brazos River near Post.....	184-186	Total sediment discharge, definition of.....	27
North Fork Hubbard Creek near Albany.....	210-213	Total sediment load, definition of.....	27
North Fork San Gabriel River, near Georgetown.....	343-344	Tritium network.....	29
near Liberty Hill.....	331	Turkey Creek near Friendwood.....	409
On-site measurements and sample collection.....	15		
Organic mass, definition of.....	20	Vince Bayou at Pasadena.....	168
Organism, definition of.....	23		
Organism count/area, definition of.....	23	Waco Lake near Waco.....	296
Organism count/volume, definition of.....	23	Water discharge, records of.....	9
Other records available.....	14	Water quality, yearly summary.....	5
		Water temperature, explanation of.....	16
Paluxy River at Glen Rose.....	409	Water year, definition of.....	30
Parameter code, definition of.....	23	WATSTORE data, access to.....	18
Partial-record station, definition of.....	14, 24	WDR, definition of.....	30
Partial-record stations, crest-stage.....	408-409	Weighted average, definition of.....	30
low-flow.....	407	West Fork Mill Creek near Industry.....	407
Particle size, definition of.....	24	West Fork San Jacinto River, above Lake Houston near Porter.....	52-54
Particle-size classification, definition of.....	24	below Lake Conroe near Conroe.....	41-43
Percent composition, definition of.....	24	near Conroe.....	45-51
Periphyton, definition of.....	24	near Humble.....	69
Pesticides, definition of.....	24	Wet mass, definition of.....	20
Phytoplankton, definition of.....	24	Whatstore data, access to.....	18
Picocurie, definition of.....	24	Whiteoak Bayou, at Alabonson Road at Houston.....	408
Piney Creek near Bellville.....	407	at Houston.....	145-146
Plankton, definition of.....	24	White River below falls near Crosbyton.....	407
Polychlorinated biphenyls (PCBs), definition of.....	25	Willow Creek near Tomball.....	408
Possum Kingdom Lake near Graford.....	236-245	WSP, definition of.....	30
Primary productivity, definition of.....	25		
Proctor Lake near Proctor.....	303	Yegua Creek near Somerville.....	383-384
Programs, special networks and.....	7		
Publication of techniques of water-resources investigations.....	31-33		
Radiochemical program.....	25	Zooplankton, definition of.....	25



## FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI).

Multiply inch-pound units	By	To obtain SI units
<i>Length</i>		
inches (in)	$2.54 \times 10^1$	millimeters (mm)
	$2.54 \times 10^{-2}$	meters (m)
feet (ft)	$3.048 \times 10^{-1}$	meters (m)
miles (mi)	$1.609 \times 10^0$	kilometers (km)
<i>Area</i>		
acres	$4.047 \times 10^3$	square meters (m <sup>2</sup> )
	$4.047 \times 10^{-1}$	square hectometers (hm <sup>2</sup> )
	$4.047 \times 10^{-3}$	square kilometers (km <sup>2</sup> )
square miles (mi <sup>2</sup> )	$2.590 \times 10^0$	square kilometers (km <sup>2</sup> )
<i>Volume</i>		
gallons (gal)	$3.785 \times 10^0$	liters (L)
	$3.785 \times 10^0$	cubic decimeters (dm <sup>3</sup> )
	$3.785 \times 10^{-3}$	cubic meters (m <sup>3</sup> )
million gallons	$3.785 \times 10^3$	cubic meters (m <sup>3</sup> )
	$3.785 \times 10^{-3}$	cubic hectometers (hm <sup>3</sup> )
cubic feet (ft <sup>3</sup> )	$2.832 \times 10^1$	cubic decimeters (dm <sup>3</sup> )
	$2.832 \times 10^{-2}$	cubic meters (m <sup>3</sup> )
cfs-days	$2.447 \times 10^3$	cubic meters (m <sup>3</sup> )
	$2.447 \times 10^{-3}$	cubic hectometers (hm <sup>3</sup> )
acre-feet (acre-ft)	$1.233 \times 10^3$	cubic meters (m <sup>3</sup> )
	$1.233 \times 10^{-3}$	cubic hectometers (hm <sup>3</sup> )
	$1.233 \times 10^{-6}$	cubic kilometers (km <sup>3</sup> )
<i>Flow</i>		
cubic feet per second (ft <sup>3</sup> /s)	$2.832 \times 10^1$	liters per second (L/s)
	$2.832 \times 10^1$	cubic decimeters per second (dm <sup>3</sup> /s)
	$2.832 \times 10^{-2}$	cubic meters per second (m <sup>3</sup> /s)
gallons per minute (gal/min)	$6.309 \times 10^{-2}$	liters per second (L/s)
	$6.309 \times 10^{-2}$	cubic decimeters per second (dm <sup>3</sup> /s)
	$6.309 \times 10^{-5}$	cubic meters per second (m <sup>3</sup> /s)
million gallons per day	$4.381 \times 10^1$	cubic decimeters per second (dm <sup>3</sup> /s)
	$4.381 \times 10^{-2}$	cubic meters per second (m <sup>3</sup> /s)
<i>Mass</i>		
tons (short)	$9.072 \times 10^{-1}$	megagrams (Mg) or metric tons



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