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# Water Resources Data Texas Water Year 1983

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-83-2  
Prepared in cooperation with the State of Texas  
and with other agencies



# CALENDAR FOR WATER YEAR 1983

1982

## OCTOBER

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## SEPTEMBER

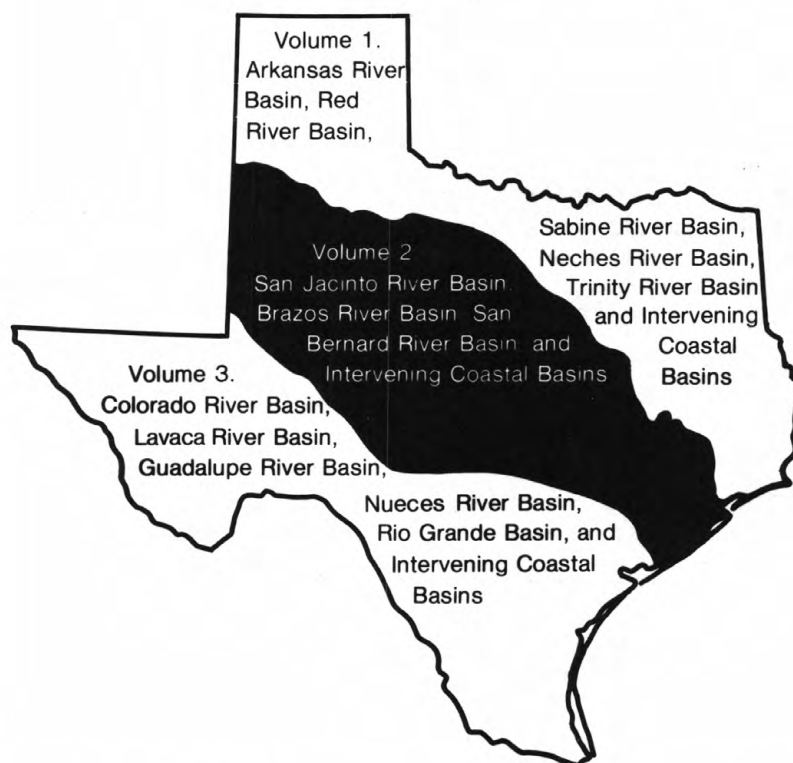
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U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TX-83-2  
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and with other agencies



UNITED STATES DEPARTMENT OF THE INTERIOR

William P. Clark, Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

For additional information write to  
District Chief, Water Resources Division  
U.S. Geological Survey  
300 East 8th Street  
Austin, Texas 78701



## 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. W. Boning, District Chief.







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# WATER RESOURCES DATA, TEXAS, WATER YEAR 1983

## VOLUME 2

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

#### INTRODUCTION

Surface-water data for Texas for the 1983 water year are presented in three volumes, appropriately identified 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. Records for a few pertinent stations in bordering states are also included. These data represent that part of the National Water Data System operated by the U.S. Geological Survey in cooperation with State and Federal agencies in Texas.

Records of discharge (or stage) of streams and contents (or stage) of lakes and reservoirs were first published in a series of Geological Survey Water-Supply Papers entitled, "Surface Water Supply of the United States." Through water year 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperature, and suspended sediment were published from 1941 to 1971 in an annual series of water-supply papers entitled, "Quality of Surface Waters of the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from Branch of Distribution, U.S. Geological Survey, 1200 South Eads Street, Arlington, Virginia 22202.

For water years 1961 through 1974, streamflow data were released by the Geological Survey in annual reports on a State-boundary basis. Water-quality records for water years 1964 through 1974 were similarly released either in separate reports or in conjunction with streamflow records. Beginning with the 1975 water year, water data for streamflow and water quality are published as an official Survey report on a State-boundary basis. These official Survey reports carry 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 report is identified as "U.S. Geological Survey Water-Data Report TX-83-2." Water-data reports are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161.



## COOPERATION

Federal agencies that assisted the Geological Survey in the collection of data in this report in the form of funds or services in 1982 are:

Corps of Engineers, U.S. Army.

International Boundary and Water Commission, United States  
and Mexico, U.S. Section.

National Park Service.

U.S. Bureau of Reclamation.

Organizations that assisted in the collection of data in this report through joint funding agreements through the Texas Department of Water Resources or through direct joint funding agreements with the Geological Survey are:

Texas Department of Water Resources, H. D. Davis, Executive Director; the cities of Abilene, Alice, Arlington, Austin, Brady, Cleburne, Clyde, Corpus Christi, El Paso, Gainesville, Garland, Graham, Houston, Lubbock, Nacogdoches, San Angelo, San Antonio, and Wichita Falls; Athens Municipal Water Authority; Bexar, Medina, and Atascosa Counties Water Control and Improvement District No. 1; Bistone Municipal Water Supply District; Brazos River Authority; Brown County Water Improvement District No. 1; Coastal Bend Council of Governments; Coastal Industrial Water Authority; Colorado River Municipal Water District; Dallas County; Dallas Public Works Department; Dallas/Fort Worth Airport; 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; Harris-Galveston Coastal Subsidence District; Lavaca-Navidad River Authority; Lower Colorado River Authority; Lower Neches Valley Authority; MacKenzie Municipal Water Authority; North Central Texas Municipal Water Authority; Northeast Texas Municipal Water District; Orange County; Pecos River Commission; Red Bluff Water Power Control District; Reeves County Water Improvement District No. 1; 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; Titus County Fresh Water Supply District No. 1; Trinity River Authority; Upper Guadalupe River Authority; Upper Neches River Municipal Water Authority; Upper Trinity Basin Water Quality Compact; West Central Texas Municipal Water District; Wichita County Water Improvement District No. 2; and Wood County.

## HYDROLOGIC CONDITIONS

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

Major weather developments in Texas during the 1983 water year include Hurricane Alicia, which affected the upper Texas Gulf coast during August 16-19, and a disastrous drought which occurred in West Texas during the spring and summer. Precipitation for the year was greater than normal in East Texas, near normal in the central part of the State, and less than normal in West Texas and in the Panhandle.

Conservation storage in a selected group of 70 reservoirs throughout the State, with a combined conservation capacity of 31,288,120 acre-feet, decreased from 84 percent at the end of September 1982 to 80 percent at the end of September 1983. Records from the 70 reservoirs show that contents increased in 22, decreased in 44 and remained the same in 4.

Dissolved-solids concentrations in most streams in the State are inversely related to water discharge. During years when rainfall and runoff are deficient, streamflow commonly is much more mineralized than years when rainfall and runoff are normal or excessive. However, for streams where discharge is controlled by reservoirs, the mineralization of the water may remain relatively constant, despite large fluctuations in rainfall and runoff.

The area for which water data are presented in volume 2 extends from the New Mexico border in Northwest Texas, southeastward across the central part of the State to the Upper 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 location of selected streamflow and water-quality stations in the area of Texas covered by volume 2 are shown in figure 1.

## Streamflow

At the beginning of the 1983 water year, streamflow was deficient in a broad area in the central part of the Brazos River basin, but near normal in the upper Brazos River basin and along the Gulf Coast. Rain showers in early November brought a return of normal streamflow to the entire area. Near normal streamflow continued through the remainder of the water year for the entire area with the exception of the central part of the Brazos River basin where minimal rainfall produced periods of deficient runoff in December, January, May, and September. Some flooding, associated with Hurricane Alicia, occurred along the Gulf Coast during August 12-15.



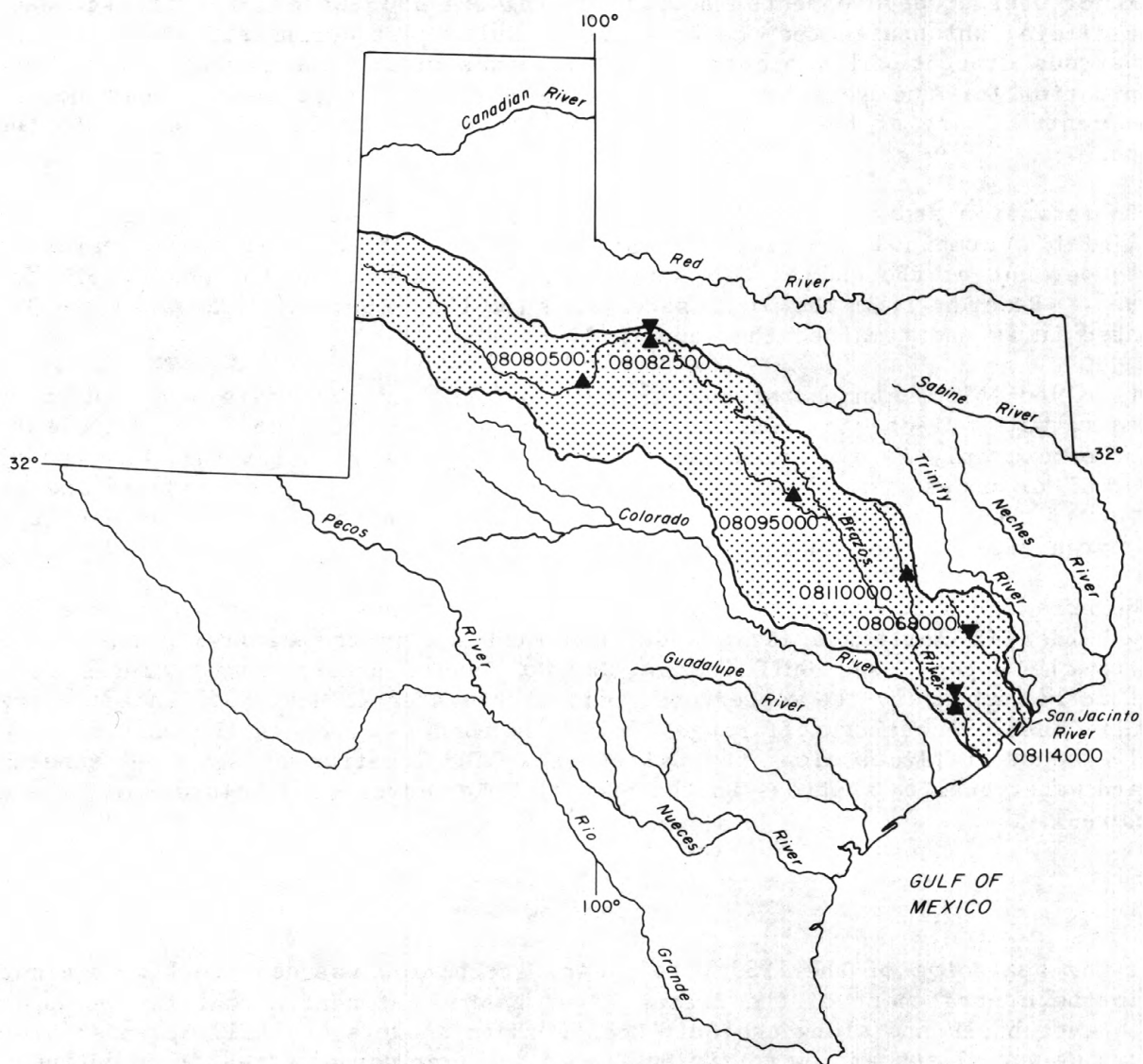


Figure 1.--Area of Texas covered by volume 2 and location of selected streamflow and water-quality stations in volume 2.

Runoff at the index station "North Bosque River near Clifton, Texas" was deficient (within the lowest 25 percent of record) for the year. The following table shows a comparison of runoff data for the 1983 water year with runoff for the period of record at five selected gaging stations (fig. 1) in volume 2.

Station name and number	Discharge during 1983 water year (cubic feet per second)			Discharge during period of record (cubic feet per second)		
	Max.	Min.	Avg.	Max.	Min.	Avg.
ä08080500 DMF Brazos River nr Aspermont, Tex.	18,200	0	58.3	91,400	0	160 (1925-34, 1940-82)
08082500 Brazos River at Seymour, Tex.	12,900	0	114	95,000	0	374 (1925-83)
*08095000 North Bosque River near Clifton, Tex.	2,230	0.10	14.7	92,800	0	167 (1968-83)
08110000 Navasota River near Bryan, Tex.	12,000	3.1	665	38,200	0	596 (1961-83)
08114000 Brazos River at Richmond, Tex.	58,600	661	5,462	123,000	35	7,285 (1941-83)

ä NASQAN site

\* Hydrologic index station.

At the other three index stations in the State, runoff during the 1983 water year ranged from excessive to normal at Neches River near Rockland, deficient at North Concho River near Carlsbad, and normal at Guadalupe River near Spring Branch. Monthly mean discharges for the four index stations in the State are plotted against the long-term monthly mean in figure 2.

Conservation storage from a selected group of 21 reservoirs in this area (volume 2) of the State, with a total combined conservation capacity of 3,931,490 acre-feet, decreased from 90 percent at the end of September 1982, to 85 percent capacity at the end of September 1983. Records from the 21 reservoirs show that contents increased in 8, and decreased in 13.

## Water Quality

Records of discharge-weighted-average concentrations of dissolved solids for the 1983 water year are compared in the following table with those for the 1979-83 water years for selected long-term daily or continuous stations in the San Jacinto and Brazos River basins:

Station identification	Mean discharge (cubic feet per second)		Discharge-weighted-average concentration of dissolved solids (milligrams per liter)	
	1983	1979-83	1983	1979-83
<u>San Jacinto River basin</u>				
08068000 West Fork San Jacinto River near Conroe, Tex.	792	<u>a</u> /710	89	<u>a</u> /85
<u>Brazos River basin</u>				
08082500 Brazos River at Seymour, Tex.	114	268	4,650	2,910
08114000 Brazos River at Richmond, Tex.	5,462	6,830	238	351

a/ Water years 1979, 1981-83.



## DEFINITION OF TERMS

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

During water year 1978, revisions were made in the terminology used to define 143 of the water-quality parameter codes that have been used by the Geological Survey in its publication of water-quality data in its WATSTORE data system. These revisions were made to achieve consistency in terminology. They do not represent a change in the way the codes have been used in the past or in the association of specific code numbers with identified analytical procedures.

Use of the new terminology began with data for the 1978 water year, and therefore, it first appears in that publication. Definitions on which the terminology is based are included in the "Definitions" sections of this report.

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, about 326,000 gallons, or 1,233 cubic meters.

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

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

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as the organisms which produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35°C  $\pm$  1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL (milliliters) of sample.

Fecal coliform bacteria are bacteria that are present in the intestines 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 which produce blue colonies within 24 hours when incubated at 44.5°C  $\pm$  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 in intestines 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  $35^{\circ}\text{C} \pm 1.0^{\circ}\text{C}$  on M-enterococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the unconsolidated material 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  $500^{\circ}\text{C}$  for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in  $\text{g}/\text{m}^3$  (grams per cubic meter), and periphyton and benthic organisms in  $\text{g}/\text{m}^2$  (grams per square meter).

Dry mass refers to the mass of residue present after drying in an oven at  $60^{\circ}\text{C}$  for zooplankton and  $105^{\circ}\text{C}$  for 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.

Biomass pigment ratio is the ratio of organic mass in  $\text{mg}/\text{m}^2$  (milligrams per square meter) to the mass of chlorophyll a, in  $\text{mg}/\text{m}^2$ .

Bottom material: See Bed material.

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

Cfs-day is the volume of water represented by flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-ft, about 646,000 gallons or 2,447 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 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, and unless otherwise indicated is computed on the basis of a level pool. The computation does not include bank storage.

Control designates a feature downstream from a 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.

Cubic foot per second per square mile (CFSM) 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.

Cubic foot per second (FT<sup>3</sup>/S, ft<sup>3</sup>/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second. This rate is equivalent to approximately 7.48 gallons per second, 448.8 gallons per minute, or 0.02832 cubic meters per second.

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.



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

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

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

Drainage area of a stream at a 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 location. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

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.T.) 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 attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ( $\text{CaCO}_3$ ).

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

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic detergent compounds.

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

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

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

National Geodetic Vertical Datum of 1929 (NGVD) 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.

ND is used in some of the tables of pesticide data as an abbreviation for "Not Detected." Analyses in which this term is reported were made by the U.S. Environmental Protection Agency laboratory in Bay Saint Louis, Mississippi.

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

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 meters ( $\text{m}^2$ ), acres, or hectares. 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 milliliters ( $\text{mL}$ ) or liters ( $\text{L}$ ). 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.

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 suspended sediment or bed material determined either by 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 recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

<u>Clasification</u>	<u>Size (mm)</u>	<u>Method of analysis</u>
Clay.....	0.00024 - 0.004	Sedimentation
Silt.....	.004 - .062	Do.
Sand.....	.062 - 2.0	Sedimentation or sieve
Gravel.....	2.0 - 64.0	Sieve

The particle-size ditribution given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic material 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 growing upon solid surfaces. While primarily consisting of algae, the assemblage may include bacteria, fungi, protozoa, rotifers, and other small organisms.

Pesticides are chemical compounds used to control undesirable plants and animals. Major categories of pesticides include insecticides and herbicides, which control insects and plants respectively, and are the two categories reported.

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 quality of the water. They are the primary food producers in the aquatic environment, and are commonly known as algae.



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

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

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algal mats of floating "moss" in lakes. Their concentrations are expressed as number of 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.

Recoverable from bottom material refers to 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 only 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.

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.

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).

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream, or is the quantity of sediment, as measured by dry weight or volume, that passes a section during a given time. It is computed by multiplying discharge ( $\text{ft}^3/\text{s}$ ) times mg/L times 0.0027.

Suspended-sediment load is quantity of suspended sediment passing a section in a specified period.

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 weight or volume, that passes a section during a given time.

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

Sodium adsorption ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions with soil and is an index of sodium or alkali hazard to the soil. This ratio should be known especially for water used for irrigation.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks 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 micromhos per centimeter at  $25^\circ\text{C}$ . Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content in the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). 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 substrates refers to any naturally occurring emerged or submersed solid surface, such as rock or tree, upon which an organism lived.

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 multi-plate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection.

Suspended, recoverable refers to 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  $\mu\text{m}$  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 would be 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 refers to the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45  $\mu\text{m}$  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.

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 numbers 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 in milligrams per liter by 0.00136.



Tons per day is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour day.

Total refers to 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 water-suspended sediment mixture and that the analytical method determines all of the constituent in the sample.)

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

Total load (tons) is the total quantity of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the mean discharge ( $\text{ft}^3/\text{s}$ ), times the  $\text{mg/L}$  of the constituent, times the factor 0.0027, times the number of days.

Total, recoverable refers to 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 would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

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

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.

WDR is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual basic-data reports.

WRD is used as an abbreviation for "Water Resources Data" in the REVISED RECORDS paragraph to refer to State annual basic-data reports published before 1975.

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

#### DOWNSTREAM ORDER AND STATION NUMBER

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 main-stream station are listed before that station. A station on a tributary that enters between two main-stream 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 on which a station is situated with respect to the stream to which it is immediately tributary is indicated by an indentation in a list of stations in the front of the report. Each indentation represents one rank. This downstream order and system of indentation show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

As an added means of identification, each hydrologic station has been assigned a station number. These are in the same downstream order used in this report. 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 station numbering system is not used at miscellaneous sites where only random water-quality samples or discharge measurements are taken. The complete number for each station consists of eight digits, such as 08123800. The first two digits, 08 or 07, identify the river basin as previously published in the series of water-supply papers on the Surface Water Supply of the United States. The digits 07 indicate the Lower Mississippi River basin, and the digits 08 indicate the Western Gulf of Mexico Basins. The remaining six digits of the station number are sequential in downstream order.

All records for a drainage basin that extends across State boundaries can be arranged in downstream order by assembling the pages from the appropriate State reports by station number.

#### SPECIAL NETWORKS AND PROGRAMS

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

National stream-quality accounting network (NASQAN) is a data-collection network designed by the Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated into the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality.

Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of the commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity.

Radiochemical program is a network of regularly sampled gaging stations where additional samples are collected monthly or twice a year (at high and low flow) to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

#### EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

##### Collection and computation of data

The basic data collected at gaging stations consist of (1) records of stage; (2) measurements of discharge of streams and canals; and (3) stage, surface area, and contents of lakes and reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement basic data in determining the daily flow or volume of water in storage. Records of stage are obtained



from direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at 5-, 15-, 30-, or 60-minute intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in standard textbooks, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6. Surface areas of lakes or reservoirs are determined from instrument surveys using standard methods. The configuration of the reservoir bottom is often determined by sounding at many points.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables; monthly and yearly mean discharges are computed from the daily values. 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 computed by the shifting-control method, in which correction factors (based on individual discharge measurements and notes by the hydrologists or observers) are used in applying the gage heights to the rating tables.

At some stream-gaging stations, the stage-discharge relation is affected by 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.

For a lake- or reservoir-gaging station, a capacity table giving the contents for any stage is prepared from a stage-area relation curve defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly changes in contents are computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys, the computed contents may be increasingly in error due to the gradual accumulation of sediment. However, the change in contents is not affected to the same extent.

At 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. For such periods, the daily discharges are estimated on the basis of recorded range in stage, adjoining good record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Daily contents may be estimated on the basis of operator's log, adjoining good record, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulations of daily and monthly values. For gaging stations on streams or canals, a table showing the daily, monthly, and yearly discharge is given. For a gaging station on a reservoir, a table showing the daily contents is given. Tables of daily or maximum and minimum daily gage heights are included for some gaging stations. Records are published for the water year, which begins on October 1 and ends on September 30. A calendar for the current water year is shown on the inside of the front cover to facilitate finding the day of the week for any date.

The description of the gaging stations, except those partial-record stations published in tabular form in the back of the report, gives the location, drainage area, period of record, type and history of gages, average discharge, extremes of discharge or contents, general remarks, and notations of revisions of previously published records. The location of the gaging stations and the drainage areas are obtained from the most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies (U.S. Water Resources Council, 1968). Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records for some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

The type of gage currently in use, the datum of the present gage referred to National Geodetic Vertical Datum, and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." National Geodetic Vertical Datum is explained in "DEFINITIONS OF TERMS" on page 11.

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow at the gaging station is given under "REMARKS." For reservoir stations, information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the statistic to have little significance. Under "EXTREMES" are given first, the extremes for the period of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the maximum stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge, it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations additional peak discharges are listed under EXTREMES FOR THE CURRENT YEAR; if they are all independent peaks above a selected base. The time of occurrence of the peaks and corresponding gage heights are also listed. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in separate paragraphs following the table of peaks.

The daily table for stream-gaging stations gives the 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 mean discharges, respectively, for the month. Discharge for the month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN"), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are generally omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches. In the yearly summary below the monthly summary, the figures shown are the significant statistics for the calendar and water years.

Footnotes to the table of daily discharge are introduced by the word "NOTE." Footnotes are used to indicate periods for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the



maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-relation, or of any other unusual condition at the gage site are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables in the back of the report. 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 (or) discharge at crest-stage 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. Occasionally, a series of discharge measurements are made and samples collected within a short time period to investigate the seepage and (or) pollutant gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements and analyses are also given in special tables following the tables of partial-record stations.

#### Accuracy of field data and computed results

The accuracy of discharge data 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 observations of stage, measurements of discharge, and interpretation of records.

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good", within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 ft<sup>3</sup>/s; to tenths 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 above 1,000 ft<sup>3</sup>/s. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff because of the effects of diversion, municipal and industrial effluents consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, values for cubic feet per second per square mile and runoff in inches are not published unless satisfactory adjustments can be made. Adjustments for evaporation from a reservoir are not included in the published changes in reservoir contents, unless it is so stated.

#### Other data available

Information of a more detailed nature than that published for most of the gaging stations, such as observations of water temperatures, discharge measurements, gage-height records, and rating tables, is on file in the Texas District Office in Austin. Most gaging-station records are available in computer-usable form, and many statistical analyses have been made.

#### Records of discharge collected by agencies other than the Geological Survey

The International Boundary and Water Commission, United States and Mexico, operates all gaging stations on the Rio Grande and near the mouth of its principal tributaries at and below El Paso, Texas. Records collected at these stations are published in annual bulletins by the Commission and may be obtained from the International Boundary and Water Commission, United States Section, P. O. Box 20003, El Paso, Texas 79998.

#### EXPLANATION OF SURFACE-WATER QUALITY RECORDS

##### Collection and examination of data

Surface-water samples for analyses usually are collected at or near gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, pH, dissolved oxygen, water temperature, sediment discharge, etc.); extremes for the period of daily record; extremes for the current year; and general remarks.

##### Water analysis

Most methods for collecting and analyzing water samples are described in U.S. Geological Survey Techniques of Water Resources Investigations listed below.

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 loads.

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 the reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is probably 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 biocarbonate.

At stream-gaging stations where daily samples are obtained, tables are included to show monthly and annual weighted averages of specific conductance; weighted average concentrations of dissolved solids, chloride, sulfate, hardness; and loads of dissolved solids, chloride, and sulfate. The weighted averages have been computed by using the daily records of specific conductance and developing regression relationships between each water-quality parameter and specific conductance.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean value 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 district office.

At some stations where continuous or daily records of specific conductance are obtained, concentrations of selected chemical constituents have been computed from regression relationships between specific conductance and the chemical constituents. The weighted average, monthly and annual concentrations and/or loads of these constituents may be published in this report. For each station where this has been done, a statement so indicating has been included in the remarks section of the station description.

#### Water temperature

Water temperatures are measured at most of the water-quality stations. Water temperatures are also taken at time of discharge measurements at gaging stations. At sites at which daily samples are taken, the water temperature is taken about the same time each day. Large streams have a small diurnal temperature change; but small, shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams and reservoirs may be affected by waste-heat discharges.

At stations where digital recording thermographs are present, the records published consist of maximum, minimum, and mean temperatures for each day and the monthly averages.



### 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 section.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected twice daily or, in some instances, hourly. The published values of sediment discharges for days of rapidly changing flow or concentrations were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days in which the published value of sediment discharge 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 loads of suspended sediment were estimated on the basis of water-sediment discharge relations, sediment concentrations observed immediately before and after 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 estimating long-term sediment-discharge characteristics of the stream.

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

## PUBLICATIONS OF TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Thirty-seven manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing 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) is on 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, Branch of Distribution, 604 South Pickett Street, Alexandria, VA 22304 (authorized agent of the Superintendent of Documents, Government Printing Office).

NOTE: When ordering 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 measurements, and data presentation*, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 p.
- 3-A1. *General field and office procedures for indirect measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 p.
- 3-A2. *Measurement of peak discharge by the slope-area methods*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 p.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 p.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 p.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 p.
- 3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 p.
- 3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 p.
- 3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 p.
- 3-A9. *Measurement of time of travel and dispersion in streams by dye tracing*, by E. F. Hubbard, F. A. Kilpatrick, L. A. Martens, and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1982. 44 p.
- 3-A11. *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 p.
- 3-C1. *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 p.
- 3-C2. *Field methods for measurement of fluvial sediment*, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 p.
- 3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 p.
- 4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 p.

- 4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 p.
- 4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 p.
- 4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 p.
- 4-B3. *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 p.
- 5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M. W. Skougstad and others: USGS--TWRI Book 5, Chapter A1. 1979. 626 p.
- 5-A2. *Determination of minor elements in water by emission spectroscopy*, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 p.
- 5-A3. *Methods for analysis of organic substances in water*, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 p.
- 5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 p.
- 5-A5. *Methods for determination of radioactive substances in water and fluvial sediments*, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 p.
- 5-C1. *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 p.
- 8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 p.



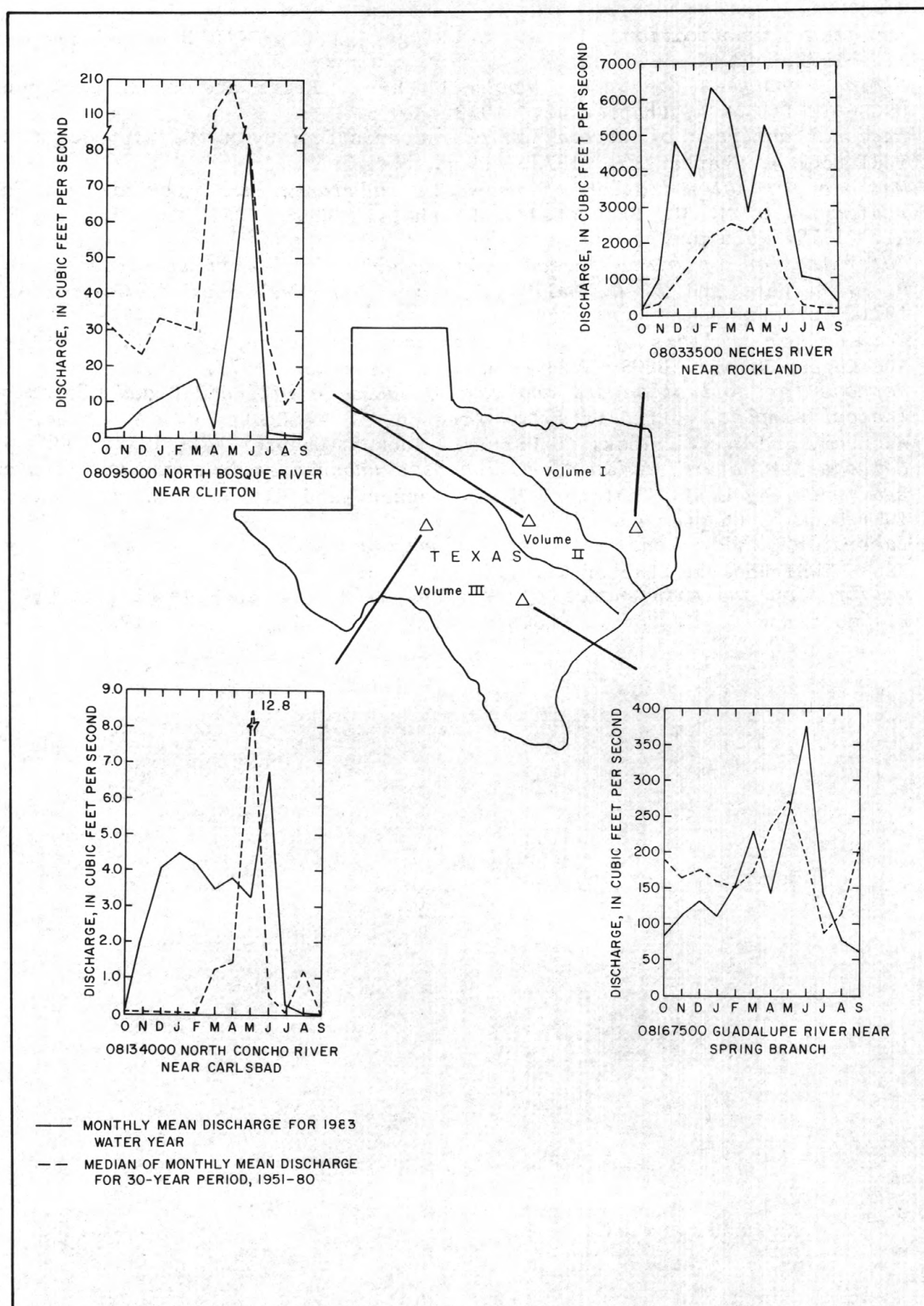


FIGURE 2.--COMPARISON OF MONTHLY MEAN DISCHARGE AT FOUR LONG-TERM REPRESENTATIVE GAGING STATIONS DURING THE 1983 WATER YEAR WITH MEDIAN OF THE MONTHLY MEAN DISCHARGE FOR THE PERIOD 1951-80.

## SAN JACINTO RIVER BASIN

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, 1,294 acre-ft was diverted to Lewis Creek Reservoir for that purpose. A spillway with five 40- by 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
Normal operating level.....	200.4	417,900
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, 360,400 acre-ft Nov. 22, 1980 (elevation, 197.46 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 512,000 acre-ft May 22 at 0800 to 1300 hours (elevation, 204.66 ft); minimum, 386,600 acre-ft Oct. 28 (elevation, 198.34 ft).

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

198.0	370,500	201.0	451,600	204.0	496,500
199.0	389,700	202.0	430,300	205.0	520,000
200.0	409,600	203.0	473,700		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	396500	389300	416900	433300	435800	432200	436000	427600	431100	429200	427200	431500
2	395700	392100	417900	433900	437100	431500	434100	428200	429800	428800	427200	430900
3	395100	392900	421400	434500	436700	431300	432000	428000	430100	428400	426800	430500
4	394300	392300	422600	433700	435000	432800	431800	427600	430100	428600	425900	429600
5	393100	391900	423200	432400	437300	433000	431500	426800	430100	428800	425900	429200
6	392500	391500	423700	431100	440300	432800	430700	426500	432400	428400	425500	428600
7	392500	391500	423700	430700	441800	432400	430300	427000	431800	427800	425500	428400
8	391900	391700	423900	430500	441200	431800	429800	426800	431500	427200	425300	428800
9	393100	391500	423500	430100	443900	432000	429200	426500	430900	426800	425700	428600
10	392100	391500	424700	430500	444100	432000	429200	426800	430100	425900	426500	429200
11	392700	391500	425900	430900	443100	431500	428600	428400	429400	425700	427000	429200
12	395300	392100	425700	430500	440700	430900	429000	428600	429400	425500	427200	429400
13	394100	391300	424500	430700	437700	430900	430300	428400	429200	426100	427200	429000
14	393300	391700	426500	431800	435200	430900	429800	428800	429400	425700	427200	428600
15	392700	390900	427200	431100	434100	431300	429400	433000	430300	428800	427000	427800
16	392500	391700	427200	430700	433000	432400	429000	432000	430900	432000	426500	427600
17	391700	395300	427400	430700	431800	431500	428400	430700	430700	431500	424100	427600
18	391300	395500	428200	430700	430900	431300	428800	431100	430700	431500	427400	428800
19	391100	397300	428200	431500	429800	430900	428200	432600	430500	430900	429000	433000
20	391300	397700	427800	430300	435000	432400	428400	472600	430100	430700	430700	437100
21	390900	398300	428200	430700	438200	431500	428200	508500	430100	430700	431800	434100
22	390300	398300	428200	431300	438800	431100	428600	508300	430500	430300	432400	433000
23	389500	399100	428200	431100	437900	445200	428600	494200	430100	429600	432400	431800
24	389100	399300	428800	431500	436000	449700	428400	478000	430900	429400	432000	430900
25	388700	398700	433300	430900	434100	448800	427400	460900	431300	429000	432000	430500
26	387800	402700	434100	430900	434100	451400	427400	449300	430500	428600	432000	430100
27	387000	408800	434300	430100	434100	449900	427200	443100	429800	428600	431800	429800
28	387800	412500	434700	429800	433700	446300	427200	439200	429600	428200	431800	429600
29	390300	414600	433500	430300	---	442600	427600	436700	429600	428200	431500	429400
30	389700	416200	431500	430100	---	441200	427400	434100	429600	428000	431300	429200
31	389300	---	432400	433900	---	437500	---	433500	---	427800	431100	---
MAX	396500	416200	434700	434500	444100	451400	436000	508500	432400	432000	432400	437100
MIN	387000	389300	416900	429800	429800	430900	427200	426500	429200	425500	424100	427600
(+)	198.98	200.32	201.10	201.17	201.16	201.34	200.86	201.15	200.97	200.88	201.04	200.95
(+)	-8000	+26900	+16200	+1500	-200	+3800	-10100	+6100	-3900	-1800	+3300	-1900
CAL YR 1982	MAX	461500	MIN	387000	±	+2600						
WTR YR 1983	MAX	508500	MIN	387000	±	+31900						

† Elevation, in feet, at end of month.  
± Change in contents, in acre-feet.

## SAN JACINTO RIVER BASIN

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 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
JAN									
17...	1040	1.00	204	7.9	12.0	1.07	10.0	93	69
17...	1042	10.0	204	7.9	12.0	--	9.9	92	--
17...	1044	20.0	204	7.8	11.5	--	9.8	90	--
17...	1046	30.0	204	7.8	11.5	--	9.6	88	--
17...	1048	40.0	204	7.7	11.5	--	9.5	87	--
17...	1050	56.0	204	7.6	11.5	--	9.8	90	69
JUN									
01...	1012	1.00	197	8.5	25.0	1.18	7.4	90	69
01...	1014	10.0	200	8.4	25.0	--	7.9	96	--
01...	1015	20.0	200	7.9	25.0	--	7.4	90	--
01...	1016	30.0	201	7.1	22.0	--	1.9	22	--
01...	1018	40.0	187	7.1	21.0	--	.7	8	--
01...	1020	50.0	226	7.2	19.0	--	.2	2	77
AUG									
09...	1042	1.00	185	8.7	31.0	.50	6.4	86	65
09...	1044	10.0	185	8.2	29.5	--	5.2	68	--
09...	1046	20.0	195	7.0	27.5	--	.0	0	--
09...	1048	30.0	190	6.6	24.0	--	.0	0	--
09...	1050	40.0	190	6.5	22.0	--	.0	0	--
09...	1052	54.0	282	6.3	19.0	--	.0	0	79

DATE	HARD- NESS, NONCAR- BONATE (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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN									
17...	8	24	2.2	13	.7	2.9	61	7.0	22
17...	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
17...	13	24	2.3	13	.7	2.9	57	8.0	23
JUN									
01...	9	24	2.1	12	.7	3.0	60	8.3	21
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	2	27	2.3	13	.7	3.0	75	8.3	22
AUG									
09...	3	23	1.9	11	.6	3.0	62	7.2	19
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	0	28	2.3	11	.6	3.1	120	3.6	19



## SAN JACINTO RIVER BASIN

31

## LAKE CONROE NEAR CONROE, TX--Continued

302127095335501 LAKE CONROE SITE AC--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN									
17...	.20	3.3	111	.20	1.10	1.3	.030	5	2
17...	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
17...	--	--	--	.20	1.00	1.2	.030	20	<10
17...	--	3.6	111	.20	1.30	1.5	.030	10	13
JUN									
01...	--	4.7	111	<.10	.80	--	.030	<3	3
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	<.10	1.00	--	.030	20	<10
01...	--	--	--	<.10	1.40	--	.040	40	50
01...	--	--	--	--	--	--	--	--	--
01...	--	4.7	128	<.10	1.80	--	.070	270	2600
AUG									
09...	.10	2.5	105	<.10	1.20	--	.040	14	49
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	<.10	1.00	--	.050	70	620
09...	--	--	--	<.10	1.20	--	.050	880	1600
09...	--	--	--	--	--	--	--	--	--
09...	--	12	159	<.10	8.10	--	.830	4300	3700

302132095333701 LAKE CONROE SITE AL

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN								
17...	1104	1.00	204	8.0	12.0	.95	10.0	93
17...	1106	10.0	204	7.9	11.5	--	9.8	90
17...	1108	20.0	204	7.9	11.5	--	9.7	89
17...	1110	30.0	204	7.9	11.5	--	9.7	89
17...	1112	40.0	204	7.8	11.5	--	9.6	88
17...	1114	50.0	204	7.8	11.5	--	9.6	88
JUN								
01...	1048	1.00	199	8.5	25.0	1.15	7.3	89
01...	1050	10.0	200	8.3	25.0	--	7.7	94
01...	1052	20.0	199	7.8	24.5	--	7.0	84
01...	1054	30.0	199	7.3	22.0	--	2.5	29
01...	1056	40.0	185	7.4	20.5	--	.6	7
01...	1058	50.0	228	7.5	19.0	--	.1	1
01...	1100	66.0	265	7.7	17.5	--	.1	1
AUG								
09...	1126	1.00	185	8.8	31.0	.56	6.2	84
09...	1128	10.0	185	8.5	29.5	--	5.2	68
09...	1130	20.0	195	7.1	28.0	--	.0	0
09...	1132	30.0	190	6.7	24.0	--	.0	0
09...	1134	40.0	190	6.5	22.0	--	.0	0
09...	1136	50.0	222	6.3	20.0	--	.0	0
09...	1138	64.0	298	6.3	18.5	--	.0	0

## SAN JACINTO RIVER BASIN

LAKE CONROE NEAR CONROE, TX--Continued

302245095365301 LAKE CONROE SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN								
17...	1020	1.00	204	7.7	12.0	1.15	10.2	95
17...	1022	10.0	204	7.4	11.5	--	9.8	90
17...	1024	20.0	210	7.2	11.5	--	9.6	88
17...	1026	30.0	210	6.9	11.5	--	9.6	88
JUN								
01...	0944	1.00	197	8.3	25.5	1.03	7.3	90
01...	0946	10.0	197	7.9	25.5	--	6.8	83
01...	0948	20.0	198	7.3	24.5	--	5.7	69
01...	0950	30.0	175	6.9	21.5	--	.2	2
AUG								
09...	1010	1.00	185	8.7	31.0	.46	6.7	90
09...	1012	10.0	195	7.2	30.0	--	2.5	33
09...	1014	20.0	195	6.8	27.5	--	.0	0
09...	1016	30.0	220	6.6	24.5	--	.0	0

302320095334001 LAKE CONROE SITE CL

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN								
17...	1022	1.00	204	8.0	12.0	.96	10.3	96
17...	1024	10.0	204	7.9	12.0	--	10.2	95
17...	1026	25.0	204	7.8	11.5	--	10.4	95
JUN								
01...	1112	1.00	200	8.4	25.0	1.08	7.0	85
01...	1114	10.0	195	8.0	25.0	--	7.0	85
01...	1116	20.0	196	7.6	24.0	--	6.0	72
01...	1118	30.0	191	7.5	22.0	--	2.3	26
01...	1120	44.0	173	7.8	21.0	--	7.3	82
AUG								
09...	1152	1.00	185	9.1	31.0	.52	7.5	101
09...	1154	10.0	185	8.8	30.0	--	6.6	87
09...	1156	20.0	190	7.2	27.5	--	.0	0
09...	1158	30.0	190	6.8	23.5	--	.0	0
09...	1200	42.0	195	6.7	21.5	--	.0	0

SAN JACINTO RIVER BASIN  
LAKE CONROE NEAR CONROE, TX--Continued

302323095341201 LAKE CONROE SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN								
17...	1134	1.00	204	8.0	12.0	.98	9.8	91
17...	1136	10.0	204	8.0	12.0	--	9.7	90
17...	1138	20.0	204	7.9	11.5	--	9.5	87
17...	1140	30.0	204	7.9	11.5	--	9.4	86
17...	1142	40.0	204	7.8	11.5	--	9.0	83
17...	1144	51.0	204	7.8	11.5	--	8.7	80
JUN								
01...	1135	1.00	191	8.3	25.5	1.09	6.9	85
01...	1137	10.0	192	8.0	25.0	--	7.0	85
01...	1139	20.0	194	7.4	24.0	--	6.1	73
01...	1141	30.0	187	7.3	21.5	--	1.8	20
01...	1143	40.0	177	7.4	21.0	--	.8	9
01...	1145	50.0	188	7.7	20.5	--	.3	3
AUG								
09...	1218	1.00	185	9.0	31.5	.63	7.2	98
09...	1220	10.0	185	8.8	30.0	--	6.2	82
09...	1222	20.0	185	7.2	28.0	--	.0	0
09...	1224	30.0	190	6.8	24.0	--	.0	0
09...	1226	40.0	190	6.7	21.5	--	.0	0
09...	1228	52.0	198	6.7	21.5	--	.0	0

302448095374101 LAKE CONROE SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN								
17...	1155	1.00	204	8.0	11.5	1.00	9.9	91
17...	1157	10.0	204	7.9	11.5	--	9.6	88
17...	1159	20.0	208	7.8	11.5	--	9.5	87
17...	1201	26.0	208	7.9	11.5	--	9.5	87
JUN								
01...	1200	1.00	194	8.7	26.0	1.09	7.3	90
01...	1202	10.0	194	8.3	25.5	--	7.9	97
01...	1204	20.0	195	7.3	23.5	--	1.7	20
01...	1206	25.0	161	7.5	21.5	--	.3	3
AUG								
09...	1246	1.00	185	9.0	31.5	.47	7.6	103
09...	1248	10.0	185	8.1	30.0	--	5.9	78
09...	1250	23.0	198	7.3	28.0	--	.0	0



SAN JACINTO RIVER BASIN  
LAKE CONROE NEAR CONROE, TX--Continued

302607095360901 LAKE CONROE SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
JAN									
17...	1216	1.00	202	7.9	11.5	.91	9.5	87	66
17...	1218	10.0	202	7.8	11.5	--	9.4	86	--
17...	1220	20.0	202	7.7	11.5	--	9.4	86	--
17...	1222	30.0	202	7.7	11.5	--	9.3	85	--
17...	1224	36.0	202	7.7	11.5	--	9.3	85	66
JUN									
01...	1232	1.00	166	7.7	25.5	.72	6.8	83	57
01...	1234	10.0	169	7.0	24.0	--	5.0	60	--
01...	1236	20.0	147	6.8	22.0	--	.7	8	--
01...	1238	30.0	120	7.0	21.0	--	.1	1	--
01...	1240	37.0	108	7.3	21.0	--	.1	1	40
AUG									
09...	1600	1.00	183	8.9	30.0	.45	6.9	92	65
09...	1602	10.0	183	8.5	29.5	--	5.2	68	--
09...	1604	20.0	190	7.2	27.5	--	.0	0	--
09...	1606	34.0	202	7.2	23.5	--	.0	0	68

DATE	HARD- NESS, NONCAR- BONATE (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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN									
17...	6	23	2.1	13	.7	2.9	60	7.0	22
17...	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
17...	7	23	2.1	13	.7	3.0	59	8.0	22
JUN									
01...	6	20	1.8	9.8	.6	2.9	51	10	18
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	3	14	1.3	5.9	.4	2.6	37	15	10
AUG									
09...	4	23	1.9	11	.6	3.8	61	7.3	18
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	0	24	1.9	10	.6	2.9	75	5.9	17

DATE	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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
17...	3.5	109	.20	.90	1.1	.050	7	2
17...	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--
17...	4.1	111	.20	1.10	1.3	.040	16	12
JUN								
01...	2.7	96	<.10	1.10	--	.040	32	9
01...	--	--	<.10	1.20	--	.040	50	10
01...	--	--	<.10	1.20	--	.040	70	120
01...	--	--	--	--	--	--	--	--
01...	5.1	77	<.10	1.20	--	.070	250	430
AUG								
09...	2.6	104	<.10	1.10	--	.060	5	9
09...	--	--	--	--	--	--	--	--
09...	--	--	<.10	1.10	--	.070	220	940
09...	5.6	116	<.10	2.10	--	.190	1900	1800

## SAN JACINTO RIVER BASIN

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## LAKE CONROE NEAR CONROE, TX--Continued

302714095372201 LAKE CONROE SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN								
17...	1238	1.00	202	7.8	11.5	.94	9.2	84
17...	1240	10.0	202	7.7	11.5	--	8.7	80
17...	1242	23.0	202	7.7	11.0	--	8.3	75
JUN								
01...	1246	1.00	184	8.5	26.5	.81	6.5	81
01...	1248	10.0	187	7.9	25.5	--	6.4	79
01...	1250	23.0	184	7.0	20.5	--	.3	3
AUG								
09...	1544	1.00	183	9.0	30.5	.47	7.9	106
09...	1546	10.0	183	8.1	29.5	--	5.8	76
09...	1548	23.0	212	7.1	27.0	--	.0	0

303129095360501 LAKE CONROE SITE GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN								
17...	1310	1.00	186	7.0	11.0	.40	7.8	71
17...	1312	10.0	142	7.0	10.0	--	6.6	58
17...	1314	20.0	142	7.0	10.0	--	6.4	57
17...	1316	33.0	142	7.0	10.0	--	8.0	71
JUN								
01...	1324	1.00	96	6.8	27.0	.40	6.2	78
01...	1326	10.0	98	6.4	23.5	--	.0	0
01...	1328	20.0	88	6.3	22.0	--	.0	0
01...	1330	34.0	84	6.3	21.5	--	.0	0
AUG								
09...	1334	1.00	183	8.8	31.0	.45	8.5	115
09...	1336	10.0	190	7.1	29.5	--	2.4	32
09...	1338	20.0	190	7.1	29.5	--	2.1	28
09...	1340	33.0	208	7.1	29.0	--	.0	0

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JAN									
17...	61	12	21	2.1	12	.7	3.6	49	12
17...	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
17...	47	11	16	1.6	9.2	.6	3.3	36	12
JUN									
01...	35	4	12	1.3	5.4	.4	2.8	31	13
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	32	0	11	1.2	3.3	.3	3.3	34	12
AUG									
09...	63	4	22	2.0	11	.6	4.0	59	6.7
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	68	1	24	2.0	11	.6	3.8	67	7.7

SAN JACINTO RIVER BASIN  
LAKE CONROE NEAR CONROE, TX--Continued

303129095360501 LAKE CONROE SITE GC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

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- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
17...	21	11	112	<.10	.50	.110	83	4
17...	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--
17...	15	13	92	<.10	1.50	.190	120	18
JUN								
01...	9.0	6.0	68	<.10	1.60	.150	120	50
01...	--	--	--	<.10	1.70	.420	650	960
01...	--	--	--	--	--	--	--	--
01...	5.2	7.0	66	<.10	2.20	.800	1500	920
AUG								
09...	18	3.8	103	<.10	1.30	.080	6	9
09...	--	--	--	--	--	--	--	--
09...	--	--	--	<.10	2.10	.110	40	30
09...	19	5.0	115	<.10	2.20	.180	820	1400



## SAN JACINTO RIVER BASIN

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## 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 current year.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 138.48 ft 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.--10 years, 13.4 ft<sup>3</sup>/s (9,710 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, 292 ft<sup>3</sup>/s Oct. 1-8; maximum gage height, 13.05 ft May 22 at 1100 to 1600 hours (result of backwater from taintor gate releases); no controlled releases for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	292	33	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	292	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	292	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	292	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	292	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	292	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	292	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	292	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	290	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	289	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	289	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	277	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	289	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	290	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	197	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	150	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	150	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	150	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	88	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	152	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	152	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	152	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	152	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	151	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	152	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	5737.00	33.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	185	1.10	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	292	33	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	11380	65	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
CAL YR 1982	TOTAL	8232.00	MEAN	22.6	MAX	292	MIN	.00	AC-FT	16330		
WTR YR 1983	TOTAL	5770.00	MEAN	15.8	MAX	292	MIN	.00	AC-FT	11440		

## SAN JACINTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records poor. Discharge is outflow from Lake Conroe. Floodflows may include local runoff. Discharge estimated during periods of backwater.

AVERAGE DISCHARGE.--11 years (water years 1973-83), 247 ft<sup>3</sup>/s (179,000 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, 8,780 ft<sup>3</sup>/s May 22 at 1500 hours (gage height, 35.50 ft); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	291	95	.60	920	631	630	1160	1.3	627	.60	.00	1.3
2	294	.92	.60	912	831	489	645	.60	299	.32	.00	1.3
3	296	.00	.32	863	811	163	595	1.3	6.3	.32	.00	.92
4	296	.00	.92	850	804	150	449	1.3	1.6	.32	.00	.60
5	295	.00	.92	843	853	632	435	1.3	1.6	.32	.00	.32
6	295	.00	.60	839	831	625	222	.92	2.0	.32	.00	.32
7	297	.00	.92	571	911	624	44	.92	2.5	.32	.00	.00
8	296	.00	.92	389	1040	300	2.0	1.3	2.0	.00	.00	.00
9	296	.00	.60	214	1110	19	1.6	1.3	2.0	.32	.32	.00
10	294	.00	.60	46	1090	2.5	1.6	1.3	1.6	.00	.00	.00
11	290	.00	1.3	2.5	1300	2.0	1.3	1.6	1.3	.00	.60	.32
12	286	.00	.32	2.0	1550	2.0	1.3	1.3	1.3	.00	.32	.32
13	290	.00	.60	2.0	1520	2.0	1.6	1.3	1.3	.32	.32	.32
14	289	.00	1.3	2.0	1320	2.0	3.3	1.3	1.3	.00	.32	.32
15	225	.00	.92	2.5	844	2.5	2.5	225	1.3	.32	.00	.00
16	145	.00	.92	2.0	567	2.9	2.0	542	1.6	700	.00	.00
17	144	.92	.92	19	561	3.8	1.6	310	1.6	300	836	.00
18	143	.60	1.3	185	548	2.5	1.6	115	1.6	100	2210	.32
19	82	.92	.92	559	49	2.5	1.6	7.9	1.6	175	763	56
20	11	.92	.92	709	17	4.3	1.3	2310	1.6	50	25	577
21	.00	.60	.92	21	918	3.3	1.3	6090	1.3	.92	1.3	809
22	.00	.60	1.3	2.0	1300	2.9	1.3	8760	1.3	.92	1.6	423
23	.00	.60	1.3	2.0	1290	636	2.0	8710	1.6	.60	2.0	238
24	.00	.00	1.3	2.0	1290	1750	1.6	8430	1.6	.60	1.6	223
25	48	.00	5.2	78	1020	2050	1.3	8040	71	.32	1.6	220
26	149	.67	268	185	27	1700	1.3	6470	236	.32	1.6	116
27	151	1.3	726	192	11	1850	1.3	3560	27	.00	1.6	6.8
28	152	.32	925	88	167	2100	1.3	2100	.60	.00	1.3	1.3
29	168	1.3	904	6.7	---	1870	1.3	1490	.60	.00	1.3	1.3
30	154	.92	878	1.6	---	1560	1.3	1060	.60	.32	1.3	1.3
31	154	---	858	145	---	1520	---	642	---	.00	1.3	---
TOTAL	5831.00	105.59	4585.44	8655.3	23211	18703.2	3587.3	58878.94	1301.70	1332.48	3852.38	2679.06
MEAN	188	3.52	148	279	829	603	120	1899	43.4	43.0	124	89.3
MAX	297	95	925	920	1550	2100	1160	8760	627	700	2210	809
MIN	.00	.00	.32	1.6	11	2.0	1.3	.60	.60	.00	.00	.00
AC-FT	11570	209	9100	17170	46040	37100	7120	116800	2580	2640	7640	5310
CAL YR 1982	TOTAL	73664.41	MEAN	202	MAX	2600	MIN	.00	AC-FT	146100		
WTR YR 1983	TOTAL	132723.39	MEAN	364	MAX	8760	MIN	.00	AC-FT	263300		

## SAN JACINTO RIVER BASIN

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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 current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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 (MG/L AS CACO3)	
MAR 07...	1130	625	205	7.7	14.5	5	4.7	10.4	103	1.0	69	
MAY 17...	1112	294	208	7.7	21.0	5	3.1	8.2	92	1.1	72	
DATE	TIME	HARD- NESS, NONCAR- BONATE (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 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)
MAR 07...	9	24	2.2	13	.7	2.9	60	7.8	22	.20	3.6	
MAY 17...	0	25	2.2	12	.6	3.0	62	8.4	22	.10	1.8	
DATE	TIME	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDE (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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	
MAR 07...	112	14	13	<.020	.20	.120	.88	1.00	.060	6.9		
MAY 17...	112	<1	<1	.010	<.10	.370	.33	.70	.020	6.6		
DATE	TIME	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)					
MAR 07...	1130	1	87	<1	<10	2	8					
MAY 17...	1112	1	84	<1	<10	<1	9					
DATE	TIME	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)					
MAR 07...	4	3	.1	<1	<1	10						
MAY 17...	8	2	.2	<1	<1	13						



## SAN JACINTO RIVER BASIN

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	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)	DI- ELDRIN TOTAL (UG/L)
MAR 07...	1130	<.10	<.10	<.01	<.10	<.01	<.01	<.01	.01	<.01
MAY 17...	1112	<.10	<.10	<.01	<.10	<.01	<.01	<.01	.01	<.01
DATE	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)	METHYL TRI- THION, TOTAL (UG/L)
MAR 07...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
MAY 17...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
DATE	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	PER- THANE 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)	SILVEX, TOTAL (UG/L)	
MAR 07...	<.01	<.01	<.10	<1	<.01	.02	<.01	<.01	<.01	
MAY 17...	<.01	<.01	<.10	<1	<.01	.03	<.01	<.01	<.01	

## SAN JACINTO RIVER BASIN

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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 and water-quality data: October 1968 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 20...	1030	6.6	170	19.5	41	17	13	2.1	16
DEC 22...	1130	55	320	13.5	98	31	34	3.1	22
JAN 13...	1525	54	337	11.5	100	38	36	3.4	23
MAR 03...	1230	53	310	17.5	100	29	35	3.1	22
APR 12...	1045	33	375	18.5	120	36	42	3.6	27
MAY 25...	1200	1500	105	25.0	43	6	15	1.3	4.5
JUN 28...	0655	94	269	26.5	79	28	27	2.7	20
AUG 16...	1350	35	305	28.0	94	18	33	2.8	22
SEP 27...	1345	34	197	22.0	63	17	22	2.0	14

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY 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 20...	1.1	2.1	24	10	35	<.10	15	108
DEC 22...	1.0	3.2	67	16	49	.10	19	187
JAN 13...	1.0	2.6	66	16	51	.10	17	189
MAR 03...	1.0	2.2	71	13	46	.10	16	180
APR 12...	1.1	2.2	84	10	57	.10	17	209
MAY 25...	.3	3.1	37	11	7.1	<.10	9.1	73
JUN 28...	1.0	2.3	51	12	45	.10	16	156
AUG 16...	1.0	3.2	76	6.5	46	.20	14	173
SEP 27...	.8	3.8	46	17	26	<.10	19	131

## SAN JACINTO RIVER BASIN

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 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.--Water-discharge records good. Regulated since Jan. 9, 1973, by Lake Conroe (station 08067600), capacity 532,000 acre-ft, 14.5 mi upstream. No other large diversions above 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); 11 years (water years 1973-83) regulated, 589 ft<sup>3</sup>/s (426,700 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, 32,500 ft<sup>3</sup>/s May 22 at 1600 hours (gage height, 24.15 ft); minimum daily, 25 ft<sup>3</sup>/s May 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	335	220	1230	1660	1030	704	1250	36	673	98	41	73
2	342	160	602	1670	1380	634	824	35	552	71	38	115
3	343	170	503	1290	2070	382	642	38	206	60	37	70
4	342	140	900	1400	2380	213	553	34	150	53	37	59
5	337	106	821	1520	1680	777	470	31	129	49	35	53
6	337	79	487	1190	1560	1150	385	28	125	45	34	49
7	339	74	434	732	1240	1080	245	27	161	43	35	48
8	342	72	278	580	1620	847	128	26	117	40	35	45
9	343	60	151	415	1990	331	107	25	125	38	67	44
10	342	53	111	209	2590	194	95	42	151	37	131	46
11	337	49	122	146	1820	141	86	94	117	36	125	52
12	404	47	188	126	1930	116	80	63	95	34	195	46
13	406	44	187	116	1770	107	78	48	83	45	110	43
14	363	42	171	105	1530	103	90	45	78	60	92	40
15	328	41	538	97	1140	98	87	253	77	54	102	38
16	203	43	374	95	755	95	67	1020	88	803	72	37
17	184	369	237	87	708	103	60	754	128	1490	139	37
18	176	519	212	195	676	115	56	366	131	280	2170	46
19	159	524	168	492	504	90	53	159	112	333	3750	209
20	58	647	122	1070	142	125	51	4660	89	298	872	586
21	39	345	101	627	1420	158	49	12100	77	128	555	1160
22	33	205	92	412	2410	116	48	29400	72	90	666	718
23	30	146	93	382	2640	140	47	24300	75	81	725	445
24	29	171	96	269	2730	3950	55	16800	69	71	490	376
25	27	133	116	177	1580	5820	44	13800	81	83	250	363
26	134	129	659	321	506	7220	40	11500	333	68	168	292
27	178	1500	1250	342	425	4450	39	6740	310	57	119	125
28	180	1430	1350	284	265	3210	38	2720	144	51	96	84
29	314	1280	1120	124	---	2620	38	1650	161	47	85	69
30	320	1260	1040	101	---	1990	37	1180	111	49	76	60
31	250	---	1050	248	---	1630	---	761	---	45	69	---
TOTAL	7554	10058	14803	16482	40491	38709	5842	128735	4820	4737	11416	5428
MEAN	244	335	478	532	1446	1249	195	4153	161	153	368	181
MAX	406	1500	1350	1670	2730	7220	1250	29400	673	1490	3750	1160
MIN	27	41	92	87	142	90	37	25	69	34	34	37
AC-FT	14980	19950	29360	32690	80310	76780	11590	255300	9560	9400	22640	10770
CAL YR 1982	TOTAL	168318	MEAN	461	MAX	9600	MIN	19	AC-FT	333900		
WTR YR 1983	TOTAL	289075	MEAN	792	MAX	29400	MIN	25	AC-FT	573400		

## SAN JACINTO RIVER BASIN

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08068000 WEST FORK SAN JACINTO RIVER NEAR CONROE, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1961 to current year. Pesticide analyses: October 1975 to September 1982. Sediment records: October 1966 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1961 to current year.  
WATER TEMPERATURES: October 1961 to current year.

INSTRUMENTATION.--Beginning October 1980 specific conductance and 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 daily, 763 micromhos Apr. 20, 1971; minimum daily, 52 micromhos May 12, 1972.  
WATER TEMPERATURES: Maximum daily, 36.0°C Aug. 6, 1964, July 9, 1967; minimum daily, 0.0°C Dec. 22, 1963, Jan. 31, 1968.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 644 micromhos May 15; minimum daily, 86 micromhos Mar. 23.  
WATER TEMPERATURES: Maximum daily, 35.5°C July 4; minimum daily, 6.5°C Jan. 23, Mar. 12.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)
DEC											
01...	1245	1240	116	6.9	15.5	150	30	8.2	83	2.6	550
JAN											
12...	1250	126	260	7.2	12.0	75	68	9.6	88	1.0	--
MAR											
07...	1510	1040	230	7.8	17.5	35	42	9.2	97	1.7	750
MAY											
17...	1440	746	220	7.6	20.5	30	38	7.7	86	2.6	820
JUN											
28...	1310	142	176	6.7	27.0	30	40	6.8	85	2.0	--
AUG											
03...	1235	36	304	7.2	28.0	20	7.3	7.4	94	1.9	84
18...	1755	2900	178	7.7	26.5	20	22	5.6	80	4.8	980
19...	1220	4100	125	7.0	24.0	80	39	5.7	68	3.6	2300
20...	1105	809	123	7.4	25.5	100	49	5.5	67	3.7	920
31...	1055	68	248	6.6	28.0	45	21	6.5	95	3.1	140
DATE											
DEC											
01...	2300	39	5	13	1.5	7.2	.5	3.5	34	10	11
JAN											
12...	--	77	16	26	2.9	21	1.1	2.5	61	12	36
MAR											
07...	880	75	16	26	2.4	15	.8	2.8	59	10	30
MAY											
17...	2400	72	14	25	2.2	14	.8	2.8	58	11	25
JUN											
28...	--	48	10	16	2.0	14	.9	2.4	38	10	22
AUG											
03...	1300	81	12	27	3.2	29	1.5	2.7	69	11	43
18...	6300	63	6	22	1.9	11	.6	3.8	57	8.2	19
19...	9400	43	5	15	1.4	8.2	.6	3.3	38	9.5	15
20...	3400	39	3	13	1.6	8.8	.6	3.6	36	12	13
31...	580	66	2	22	2.6	20	1.1	3.8	64	12	29



08068000 WEST FORK SAN JACINTO RIVER NEAR CONROE, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	FLUORIDE, 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 CONSTITUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLATILE, 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, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
DEC 01...	<.10	12	97	79	46	24	--	.090	<.10	<.10	.090
JAN 12...	.10	17	--	154	35	5	.10	.100	.20	--	.270
MAR 07...	.20	7.3	152	130	59	26	.18	.020	.20	.13	.120
MAY 17...	.10	5.7	129	121	70	7	.17	.030	.20	.16	.100
JUN 28...	<.10	11	--	100	61	17	.25	.050	.30	--	.120
AUG 03...	.20	21	176	179	24	<1	.46	.040	.50	.46	.100
18...	.20	3.7	--	104	56	<1	--	.020	<.10	--	.120
19...	.20	5.4	--	81	40	12	--	.040	<.10	--	.180
20...	.20	11	--	85	74	<1	--	.070	<.10	--	.130
31...	.10	21	--	149	34	11	.18	.120	.30	--	.470

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- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS-SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHODIS- 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)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 01...	<.060	2.2	2.30	.320	.220	.110	17	117	392	93
JAN 12...	--	1.0	1.30	.200	--	--	--	--	--	--
MAR 07...	.090	1.2	1.30	.110	.060	.040	8.9	64	180	81
MAY 17...	.110	1.8	1.90	.130	.050	.040	12	94	189	95
JUN 28...	--	.98	1.10	.170	--	--	9.7	--	--	--
AUG 03...	.100	1.3	1.40	.160	.080	.060	4.6	19	1.8	99
18...	--	1.3	1.40	.070	--	--	8.6	--	--	--
19...	--	1.1	1.30	.070	--	--	12	--	--	--
20...	--	1.1	1.20	.120	--	--	18	--	--	--
31...	--	.33	.80	.230	--	--	7.8	--	--	--

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIIUM, 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)
DEC 01...	1245	1	61	<1	<1	<1	<3	4	180	<1
MAR 07...	1510	1	90	<1	<1	<1	<3	1	96	<1
MAY 17...	1440	1	87	<1	<1	<1	<3	1	110	7
AUG 03...	1235	2	100	<1	1	<1	<3	2	46	<1
18...	1755	1	61	--	<1	10	--	<1	56	1
19...	1220	1	48	--	<1	<10	--	1	200	2
20...	1105	1	62	--	<1	10	--	2	350	2

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)
DEC 01...	7	22	<.1	<10	<1	<1	1	45	<6.0	18
MAR 07...	<4	8	<.1	<10	4	<1	<1	88	<6.0	5
MAY 17...	<4	13	<.1	<10	1	<1	<1	86	<6.0	8
AUG 03...	8	120	<.1	<10	<1	<1	<1	150	<6.0	19
18...	--	2	<.1	--	--	<1	<1	--	--	7
19...	--	12	<.1	--	--	<1	<1	--	--	7
20...	--	15	<.1	--	--	<1	<1	--	--	10

## SAN JACINTO RIVER BASIN

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08068000 WEST FORK SAN JACINTO RIVER NEAR CONROE, TX--Continued

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1982 TO SEPTEMBER 1983

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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.	1982	7554	237	129	2630	29	601	7.0	143	70
NOV.	1982	10058	159	87	2370	17	458	5.1	139	50
DEC.	1982	14803	199	109	4360	23	911	6.2	246	61
JAN.	1983	16482	225	123	5470	27	1210	6.8	301	68
FEB.	1983	40491	148	81	8910	15	1670	4.8	527	47
MAR.	1983	38709	170	93	9760	18	1920	5.4	566	53
APR.	1983	5842	239	130	2060	30	477	7.0	111	71
MAY	1983	128735	137	76	26400	14	4790	4.5	1570	44
JUNE	1983	4820	213	117	1520	25	324	6.5	85	65
JULY	1983	4737	198	108	1390	23	290	6.1	78	61
AUG.	1983	11416	165	91	2800	18	545	5.3	163	52
SEPT	1983	5428	202	111	1620	23	340	6.3	92	62
TOTAL		289075	**	**	69200	**	13500	**	4030	**
WTD. AVG.		792	161	89	**	17	**	5.2	**	51

## SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	262	258	260	---	---	223	---	---	117	229	160	191
2	264	260	262	---	---	233	---	---	140	187	157	172
3	264	258	261	---	---	231	---	---	150	232	188	207
4	262	260	261	---	---	238	---	---	169	254	217	240
5	266	262	265	257	232	241	---	---	171	217	195	201
6	271	267	269	277	251	267	---	---	199	203	195	199
7	272	266	269	290	275	284	---	---	202	205	198	201
8	271	268	269	296	277	283	---	---	216	210	203	206
9	269	263	267	307	272	283	---	---	235	219	210	213
10	264	247	255	298	273	280	---	---	246	251	224	235
11	251	242	246	303	268	281	---	---	242	267	244	254
12	241	220	230	287	266	275	---	---	228	268	260	265
13	230	224	227	291	269	279	---	---	228	---	---	277
14	233	228	230	276	271	274	---	---	231	---	---	286
15	244	231	237	304	261	278	---	---	196	297	286	289
16	257	243	249	290	222	276	---	---	207	301	281	287
17	248	239	243	225	120	161	---	---	220	302	291	295
18	246	239	244	177	117	139	---	---	224	306	230	266
19	249	240	244	212	127	183	---	---	232	230	208	218
20	273	248	264	134	124	130	---	---	262	220	207	212
21	288	272	279	171	133	151	316	288	295	336	212	286
22	290	279	284	200	172	185	317	297	310	346	289	307
23	295	283	289	216	201	210	311	269	292	373	346	363
24	292	284	288	218	186	207	277	260	269	344	302	319
25	294	286	290	227	199	214	280	238	257	303	278	296
26	317	212	249	230	198	222	274	202	230	297	246	258
27	221	210	213	184	88	110	206	191	199	247	240	243
28	218	208	213	142	112	133	215	189	201	263	245	250
29	212	148	177	156	141	146	226	218	221	304	268	287
30	191	174	182	158	126	143	222	214	219	322	304	314
31	---	---	---	---	---	---	242	222	236	332	235	300
MONTH	317	148	251	307	88	219	317	189	221	373	157	256

## SAN JACINTO RIVER BASIN

08068000 WEST FORK SAN JACINTO RIVER NEAR CONROE, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	263	236	249	265	212	220	202	196	200	443	382	419
2	285	220	258	221	215	217	206	199	204	467	423	441
3	216	174	192	228	223	227	209	206	208	487	394	439
4	174	156	165	253	227	243	213	209	212	433	344	387
5	155	129	147	240	207	213	215	213	214	336	312	325
6	131	111	121	281	225	244	230	215	223	341	303	318
7	129	111	117	236	---	227	254	230	238	323	297	307
8	135	119	127	277	248	253	269	256	265	332	299	310
9	118	97	111	280	269	275	278	271	276	324	291	299
10	104	94	97	271	262	267	285	277	282	483	310	352
11	119	104	112	270	263	267	289	282	287	482	156	310
12	121	119	120	268	250	262	296	288	293	537	351	477
13	122	120	122	275	269	272	297	285	293	539	373	477
14	123	121	122	279	270	276	295	274	285	622	405	539
15	126	122	123	286	275	282	318	283	306	644	186	381
16	129	126	128	290	284	288	304	298	300	247	216	233
17	127	126	126	293	277	288	312	300	305	226	204	217
18	128	126	127	318	282	296	379	290	338	223	205	213
19	148	127	134	319	282	298	461	373	425	260	224	240
20	164	150	160	295	251	272	447	376	400	255	118	155
21	164	96	119	280	249	265	401	379	385	131	100	119
22	117	99	110	301	279	290	398	359	374	99	90	94
23	193	137	184	286	86	194	371	361	365	134	101	117
24	192	185	188	160	99	138	408	367	383	159	136	150
25	197	186	192	159	138	145	412	402	406	171	159	166
26	205	195	198	140	129	134	451	409	434	177	172	175
27	226	206	216	158	132	143	498	396	457	176	174	175
28	238	228	233	179	160	171	411	347	387	177	170	174
29	---	---	---	183	179	182	397	366	384	174	170	171
30	---	---	---	187	181	183	428	360	384	183	170	173
31	---	---	---	196	188	192	---	---	---	176	171	173
MONTH	285	94	154	319	86	233	498	196	317	644	90	275

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	181	173	176			236	---	---	282	---	---	232
2	202	179	186			248	---	---	285	---	---	216
3	219	200	212			254	---	---	287	---	---	234
4	235	217	223			259	303	291	298	---	---	241
5	---	---	226			262	298	276	288	---	---	245
6	---	---	227			265	293	282	289	---	---	248
7	---	---	218			267	292	180	276	---	---	249
8	---	---	229			270	289	271	279	---	---	251
9	---	---	227			272	287	224	267	281	227	264
10	---	---	221			273	376	165	227	263	244	258
11	---	---	229			274	---	---	241	254	246	250
12	---	---	237			276	---	---	213	257	235	250
13	---	---	242			265	---	---	245	268	242	259
14	---	---	244			254	---	---	238	278	260	268
15	---	---	245			258	---	---	234	277	263	270
16	---	---	239			171	---	---	261	302	251	273
17	---	---	227			156	---	---	239	368	258	277
18	---	---	226			201	---	---	147	382	281	322
19	---	---	231			196	---	---	135	285	151	189
20	---	---	239			199	---	---	123	184	156	172
21	---	---	245			227	---	---	182	186	153	173
22	---	---	247			239	---	---	176	183	155	174
23	---	---	246			243	---	---	174	210	180	194
24	---	---	249			248	---	---	184	249	213	236
25	---	---	243			242	---	---	204	249	209	236
26	---	---	196			249	---	---	218	206	195	199
27	---	---	198			256	---	---	229	214	202	210
28	---	---	223			260	---	---	237	221	215	218
29	---	---	236			263	---	---	241	242	219	228
30	---	---	232			262	---	---	245	276	244	260
31	---	---	---			265	---	---	249	---	---	---
MONTH	235	173	227			245	376	165	232	382	151	237

## SAN JACINTO RIVER BASIN

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08068000 WEST FORK SAN JACINTO RIVER NEAR CONROE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

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

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



## SAN JACINTO RIVER BASIN

08068000 WEST FORK SAN JACINTO RIVER NEAR CONROE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	25.0	22.5	23.5	29.5	27.0	28.0	33.0	24.5	28.5	29.5	27.5	28.5
2	24.5	23.0	24.0	33.5	25.0	29.0	33.0	24.0	27.5	28.5	26.0	27.5
3	26.5	23.5	25.0	34.5	25.5	29.5	29.5	23.0	26.5	29.5	26.0	27.5
4	26.5	25.0	25.5	35.5	25.5	30.0	29.0	27.0	27.5	29.5	26.5	27.5
5	26.5	25.0	25.5	33.0	25.5	28.5	30.5	26.0	28.0	29.5	26.0	27.5
6	25.5	24.0	25.0	31.5	24.0	28.0	31.0	27.0	28.5	28.5	26.5	27.5
7	25.5	23.0	24.0	31.5	23.0	27.0	31.5	27.0	28.5	29.0	26.0	27.0
8	26.5	23.5	25.0	30.0	21.5	26.5	30.0	27.0	28.0	27.0	25.5	26.5
9	26.5	24.0	25.0	31.5	22.0	27.0	28.0	26.5	27.0	26.5	24.5	25.5
10	26.0	24.0	25.0	32.5	23.0	27.5	26.5	25.0	25.5	27.5	24.5	25.5
11	26.0	24.0	25.0	32.0	23.0	27.5	25.5	25.0	25.0	27.5	25.0	26.0
12	27.0	24.0	25.5	28.0	23.0	25.5	25.5	24.5	25.0	28.5	25.0	26.5
13	26.5	24.5	25.5	24.5	22.5	24.0	27.5	24.5	26.0	28.5	25.5	27.0
14	27.5	24.5	26.0	26.5	23.0	24.5	29.0	26.0	27.5	28.5	25.0	26.5
15	26.5	25.5	26.0	26.0	22.5	24.0	29.5	27.0	28.5	27.5	24.5	25.5
16	27.0	24.5	25.5	24.5	23.5	24.0	30.0	27.5	28.5	29.0	24.5	26.5
17	25.0	23.5	24.5	26.5	24.0	25.5	29.5	27.0	28.0	27.5	25.5	26.0
18	26.0	23.0	24.5	27.0	25.5	26.0	27.5	25.5	26.5	26.0	24.5	25.5
19	27.5	25.0	26.0	27.0	25.5	26.5	26.0	25.0	25.5	25.0	24.0	24.5
20	28.0	25.0	26.5	28.0	26.0	27.0	27.5	25.5	26.5	26.0	24.0	25.0
21	28.5	25.5	27.0	28.5	26.5	27.5	28.0	26.0	27.0	24.5	22.5	24.0
22	27.5	26.0	26.5	30.5	24.0	27.5	29.0	27.0	28.0	23.0	21.0	22.0
23	28.0	24.5	26.0	32.5	24.5	28.5	29.5	28.0	28.5	22.5	20.5	21.5
24	27.0	25.5	26.5	35.0	24.0	29.0	30.0	27.5	28.5	22.5	20.5	21.5
25	27.0	25.5	26.0	33.5	24.5	29.0	30.0	27.5	28.5	23.0	21.0	22.0
26	25.5	24.5	25.0	34.0	24.5	29.5	29.5	27.0	28.0	24.0	22.0	23.0
27	28.0	25.0	26.0	32.0	23.5	28.5	29.5	27.5	28.5	24.5	22.5	23.5
28	29.0	26.0	27.5	33.0	24.0	28.5	29.0	27.0	28.0	24.5	22.0	23.0
29	30.0	27.5	28.5	31.0	24.5	27.0	30.0	26.5	28.0	24.0	21.5	22.5
30	29.5	28.0	29.0	32.5	24.0	28.0	31.0	27.0	29.0	24.0	20.5	22.5
31	---	---	---	32.5	24.5	28.5	31.0	27.5	29.5	---	---	---
MONTH	30.0	22.5	25.5	35.5	21.5	27.5	33.0	23.0	27.5	29.5	20.5	25.0

## 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 downstream 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".

Water-quality records: Chemical analyses: September 1961 to April 1964. Sediment records: December 1965 to September 1975.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 62.17 ft 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.--Water-discharge records fair except those for November and September, which are poor. No diversion above station.

AVERAGE DISCHARGE.--44 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 (discharge, 48,300 ft<sup>3</sup>/s), from floodmarks identified by local residents.

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

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 26	0900	4,230	15.52
May 22	2400	*8,750	22.16
Aug. 19	2300	4,680	16.20

Minimum daily discharge, 12 ft<sup>3</sup>/s Oct. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	14	106	1200	566	299	124	259	42	63	42	45	92		
2	13	93	650	935	518	111	214	41	54	36	40	92		
3	13	175	473	1250	466	103	154	40	49	33	50	119		
4	13	78	457	1030	223	109	116	39	45	31	45	103		
5	13	79	780	429	296	186	101	39	58	30	100	91		
6	12	73	712	203	460	278	93	39	67	29	120	87		
7	22	59	236	179	515	479	88	37	60	28	100	84		
8	24	46	145	154	393	297	85	36	53	28	80	82		
9	21	43	111	141	920	148	81	33	49	27	300	120		
10	23	41	96	123	2000	112	75	116	44	26	500	150		
11	19	39	99	107	1700	92	68	87	41	27	1000	200		
12	139	39	124	97	1160	79	65	67	38	27	1100	150		
13	173	39	158	86	484	73	64	65	35	113	900	100		
14	158	38	158	76	238	70	63	57	35	99	500	85		
15	104	38	440	72	187	67	71	72	115	101	300	75		
16	58	100	722	69	231	65	64	163	392	1200	228	72		
17	42	500	679	68	390	65	58	224	893	1940	130	70		
18	34	1000	282	66	422	64	55	224	351	1530	2000	100		
19	29	1000	154	138	212	60	55	126	158	774	4030	600		
20	26	1200	114	392	158	106	54	1770	96	285	4040	1200		
21	25	1000	98	646	1160	124	51	5290	68	147	3970	900		
22	23	600	82	736	1940	130	55	7700	51	120	2780	500		
23	22	300	124	426	1980	848	56	7800	61	319	1010	300		
24	24	300	106	229	1780	3040	51	4820	106	354	337	200		
25	23	200	132	165	586	3660	46	2190	231	124	210	130		
26	23	300	354	131	257	3970	44	654	355	70	201	103		
27	23	1500	638	112	188	2180	42	238	362	53	143	92		
28	23	1700	698	98	149	1200	42	153	170	43	120	81		
29	136	1500	552	89	---	847	42	114	84	60	110	127		
30	98	1400	313	82	---	359	42	90	56	70	101	137		
31	175	---	235	125	---	258	---	75	---	50	92	---		
TOTAL	1545	13586	11122	9020	19312	19304	2354	32441	4240	7816	24682	6242		
MEAN	49.8	453	359	291	690	623	78.5	1046	141	252	796	208		
MAX	175	1700	1200	1250	2000	3970	259	7800	893	1940	4040	1200		
MIN	12	38	82	66	149	60	42	33	35	26	40	70		
CFSM	.12	1.08	.86	.70	1.65	1.49	.19	2.50	.34	.60	1.90	.50		
IN.	.14	1.21	.99	.80	1.71	1.71	.21	2.88	.38	.69	2.19	.55		
AC-FT	3060	26950	22060	17890	38310	38290	4670	64350	8410	15500	48960	12380		
CAL YR 1983	TOTAL	76474	MEAN	210	MAX	7350	MIN	12	CFSM	.50	IN	6.79	AC-FT	151700
WTR YR 1983	TOTAL	151664	MEAN	416	MAX	7800	MIN	12	CFSM	.99	IN	13.47	AC-FT	300800

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

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)
AUG												
18...	1850	4100	57	6.9	24.5	150	210	6.0	82	5.1	620	12000
19...	1330	3700	63	6.7	24.5	100	96	5.0	60	3.9	1000	6400
20...	1110	4030	59	6.7	23.5	100	41	4.3	50	3.0	1000	2200
31...	0955	92	267	6.8	27.0	80	25	6.9	87	1.7	150	750

	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 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)
AUG												
18...	15	0	4.3	1.0	6.1	.7	2.4	15	12	5.7	.20	3.8
19...	16	1	4.9	1.0	5.8	.6	2.0	15	--	7.9	.10	4.7
20...	17	3	5.0	1.1	4.7	.5	2.4	14	--	7.1	.10	5.2
31...	58	5	17	3.7	32	1.9	2.6	53	15	40	.20	18

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
AUG											
18...	45	440	57	.02	.180	.20	.180	1.2	1.40	.180	8.9
19...	--	85	34	.00	.140	.10	.160	1.2	1.40	.120	19
20...	--	78	44	--	.060	<.10	.160	.94	1.10	.090	19
31...	161	36	4	.73	.070	.80	.200	.50	.70	.620	9.7

DATE	TIME	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)
AUG							
18...	1850	1	35	2	10	2	260
19...	1330	1	39	<1	10	2	310
20...	1110	1	46	<1	10	1	370
31...	0955	1	110	<1	<10	2	670

DATE	TIME	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)
AUG							
18...		2	37	<.1	<1	<1	13
19...		3	19	<.1	<1	<1	10
20...		4	13	<.1	<1	<1	12
31...		2	130	<.1	<1	<1	10

SAN JACINTO RIVER BASIN

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08068520 SPRING CREEK AT SPRING, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
AUG 31...	0955	<.10	<.10	<.10	<.10	<.10	<2.0	<.1
DATE		PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
AUG 31...		<.1	<.10	<2.0	<2.0	<.10	<.10	<.1



## SAN JACINTO RIVER BASIN

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 gage (station 08068700), 5.6 mi southeast of Hockley, and 6.3 mi upstream from gage (station 08068740).

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

PERIOD OF RECORD.--June 1975 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 National Geodetic Vertical Datum of 1929, 1973 adjustment.

REMARKS.--Records fair except those for period of no gage-height record, which are poor. No record July 29 to Sept. 30, 1983; gage removed for construction of new bridge. Diversions and return flow for irrigation occur upstream from station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--7 years (water years 1975-82), 66.1 ft<sup>3</sup>/s (47,890 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 Sept. 30, 1983; 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, 2,090 ft<sup>3</sup>/s May 23 at 1600 hours (gage height, 60.53 ft), but may have been exceeded during period of no record July 29 to Sept. 30; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	9.8	530	38	25	17	204	.21	6.0	.00		
2	.49	6.6	350	36	50	12	88	.18	4.0	.00		
3	.64	24	260	33	40	10	37	.13	3.0	.00		
4	.00	25	400	31	30	15	19	.12	2.0	.00		
5	.01	16	350	28	45	17	14	.00	1.0	.00		
6	.00	10	150	25	60	12	9.7	.00	.50	.00		
7	.63	6.4	80	20	40	8.0	5.6	.00	.00	.00		
8	3.4	4.4	50	16	22	6.5	3.5	.00	.00	.00		
9	.51	3.1	35	13	170	5.0	2.3	.00	.00	.00		
10	.00	2.3	30	10	590	4.0	1.5	5.4	.00	.00		
11	.00	1.8	30	7.8	350	3.7	1.1	2.2	.00	.00		
12	124	1.5	45	6.1	150	3.3	.85	.00	.00	.00		
13	151	1.1	40	4.7	70	3.0	.85	.00	.00	.03		
14	90	.76	35	4.1	45	2.8	.84	.00	.00	5.6		
15	41	.63	250	3.4	70	2.6	.49	.00	.00	25		
16	22	5.2	200	3.0	310	2.5	.30	.04	.20	412		
17	16	363	109	3.0	290	4.0	.29	.76	19	513		
18	9.9	522	69	4.0	120	3.5	.24	.17	40	318		
19	6.4	480	49	30	50	3.0	.24	.26	35	139		
20	4.7	650	34	150	30	12	.24	343	17	80		
21	3.3	450	25	200	490	7.0	.24	1140	6.5	60		
22	2.5	250	19	140	680	4.0	.24	1700	1.0	177		
23	2.0	130	16	70	660	200	.24	2030	.00	208		
24	1.8	110	14	40	340	711	.21	1860	.00	114		
25	5.2	70	21	25	170	769	.10	1390	.00	72		
26	3.6	45	26	16	85	590	.10	813	.00	42		
27	2.1	450	32	12	50	350	.09	270	.30	24		
28	1.3	600	33	10	25	170	.33	100	1.7	16		
29	9.2	450	26	8.0	---	71	.20	40	.39	18		
30	16	370	22	7.0	---	175	.29	20	.00	---		
31	18	---	30	8.0	---	370	---	10	---	---		
TOTAL	535.68	5058.59	3360	1002.1	5057	3563.9	392.08	9725.47	137.59	---		
MEAN	17.3	169	108	32.3	181	115	13.1	314	4.59	---		
MAX	151	650	530	200	680	769	204	2030	.40	---		
MIN	.00	.63	14	3.0	22	2.5	.09	.00	.00	---		
AC-FT	1060	10030	6660	1990	10030	7070	778	19290	273	---		

CAL YR 1982 TOTAL 20130.80 MEAN 55.2 MAX 1950 MIN .00 AC-FT 39930  
WTR YR 1983 TOTAL - MEAN - MAX - MIN - AC-FT -

NOTE.--No gage-height record Jan. 16 to Mar. 23.

## SAN JACINTO RIVER BASIN

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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 gage (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 National Geodetic Vertical Datum of 1929, 1973 adjustment.

REMARKS.--Water-discharge records fair except those for period of no gage-height record, which are poor. Diversions and return flow for irrigation occur upstream from station.

AVERAGE DISCHARGE.--8 years, 94.8 ft<sup>3</sup>/s (68,680 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, 1,910 ft<sup>3</sup>/s May 22 at about 1200 hours (gage height, 45.02 ft); minimum daily, 0.07 ft<sup>3</sup>/s Oct. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.21	12	570	80	30	20	310	.70	12	.80	16	9.7
2	.07	8.0	360	100	70	15	123	.60	7.0	.60	12	8.4
3	1.3	25	300	70	50	12	45	.50	5.2	.50	33	17
4	1.4	40	550	50	40	18	25	.40	4.5	.45	31	18
5	.21	30	480	35	60	20	18	.30	3.6	1.2	25	14
6	.10	22	300	28	80	15	14	.25	3.2	2.6	19	16
7	1.0	8.6	150	23	67	10	10	.22	2.8	2.5	14	26
8	4.0	5.5	100	18	21	8.0	7.0	.20	2.6	2.3	64	19
9	2.0	4.0	60	15	206	6.0	5.0	.20	2.5	1.3	197	21
10	.50	2.5	45	12	708	5.0	4.0	10	2.4	1.2	205	9.8
11	.20	2.0	40	10	416	4.5	3.0	7.2	2.3	1.3	347	6.3
12	150	1.6	50	8.0	178	4.0	2.5	.58	2.2	1.2	356	3.9
13	180	1.4	45	7.0	85	3.6	2.0	.40	2.2	3.0	296	2.6
14	120	1.2	40	6.0	43	3.4	2.5	.30	2.1	6.5	257	1.7
15	50	1.0	230	5.0	82	3.2	2.0	1.0	2.0	47	121	.84
16	26	6.0	264	4.5	365	3.2	1.5	1.3	35	515	51	.71
17	18	420	120	4.0	350	5.0	1.0	2.6	85	627	31	.62
18	12	620	68	4.5	136	4.0	.80	1.5	58	441	210	2.2
19	8.0	520	50	40	63	3.5	.70	1.2	47	190	880	266
20	6.0	690	40	200	35	15	.60	486	28	93	911	445
21	4.0	527	30	250	586	8.0	.50	1440	17	61	803	458
22	3.0	293	22	180	811	5.0	.45	1880	7.8	173	732	390
23	2.5	156	19	100	790	250	.42	1830	3.3	282	577	215
24	2.2	135	17	50	400	835	.40	1800	3.1	146	196	84
25	6.0	85	25	30	200	876	.38	1630	3.0	79	81	41
26	5.0	53	50	20	100	765	.37	1180	3.1	51	47	24
27	3.0	540	60	15	60	463	.50	431	2.1	26	35	23
28	2.0	650	50	11	30	193	1.0	168	6.0	23	27	58
29	12	570	40	9.0	---	142	.80	104	4.3	40	23	168
30	20	419	30	7.0	---	210	.80	68	1.2	30	15	99
31	22	---	35	10	---	456	---	38	---	22	12	---
TOTAL	662.69	5848.8	4240	1402.0	6062	4381.4	583.22	11084.45	360.5	2871.45	6624	2448.77
MEAN	21.4	195	137	45.2	217	141	19.4	358	12.0	92.6	214	81.6
MAX	180	690	570	250	811	876	310	1880	85	627	911	458
MIN	.07	1.0	17	4.0	21	3.2	.37	.20	1.2	.45	12	.62
AC-FT	1310	11600	8410	2780	12020	8690	1160	21990	715	5700	13140	4860
CAL YR 1982	TOTAL	26611.61	MEAN	72.9	MAX	2350	MIN	.00	AC-FT	52780		
WTR YR 1983	TOTAL	46569.28	MEAN	128	MAX	1880	MIN	.07	AC-FT	92370		

Note.--No gage-height record Oct. 6 to Nov. 5, Dec. 19 to Feb. 6, Feb. 24 to Mar. 24, Apr. 3 to May 11.

## SAN JACINTO RIVER BASIN

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

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1976 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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 (MG/L AS CACO3)	
NOV 29...	1335	572	87	7.3	13.0	70	34	9.1	87	2.9	21	
MAR 22...	0945	5.0	630	6.8	11.0	130	130	9.8	88	3.8	77	
MAY 12...	1320	.54	680	6.9	26.0	35	18	5.7	70	3.2	91	
SEP 15...	1040	.81	205	7.0	25.0	55	14	6.7	81	1.7	59	
DATE		HARD- NESS, NONCAR- BONATE (MG/L 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 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 29...	0	5.5	1.7	7.1	.7	4.6	21	10	12	<.10	8.5	
MAR 22...	57	25	3.6	82	4.2	3.7	20	39	140	.20	5.2	
MAY 12...	55	29	4.5	90	4.3	5.8	36	47	160	.20	11	
SEP 15...	0	18	3.4	16	.9	6.4	64	14	20	.20	21	
DATE		SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLATILE, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
NOV 29...	62	34	23	--	.040	<.10	.100	1.6	1.70	.210	10	
MAR 22...	311	74	31	.23	.070	.30	.240	1.6	1.80	.180	15	
MAY 12...	369	46	<1	.32	.080	.40	.520	2.1	2.60	.240	8.4	
SEP 15...	138	13	<1	--	.020	<.10	.050	1.3	1.30	.160	11	
				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)			
	DATE		TIME									
	NOV 29...		1335	1	38	<1	<10	2	290			
	MAR 22...		0945	1	95	<1	<10	2	290			
	MAY 12...		1320	2	160	<1	<10	3	92			
	SEP 15...		1040	2	120	<1	<10	1	550			

## SAN JACINTO RIVER BASIN

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

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

		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)			
DATE	TIME	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)	DI- ELDRIN TOTAL (UG/L)
NOV 29...										
MAR 22...										
MAY 12...										
SEP 15...										
NOV 29...	1335	<.10	<.10	<.01	<.10	<.01	<.01	<.01	<.01	<.01
MAR 22...	0945	<.10	<.10	<.01	<.10	<.01	<.01	<.01	.01	<.01
SEP 15...	1040	<.10	<.10	<.01	<.10	<.01	<.01	<.01	.02	<.01
DATE	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)	METHYL TRI- THION, TOTAL (UG/L)
NOV 29...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
MAR 22...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
SEP 15...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
DATE	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	PER- THANE 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)	SILVEX, TOTAL (UG/L)	
NOV 29...	<.01	<.01	<.10	<1	<.01	.02	<.01	<.01	<.01	<.01
MAR 22...	<.01	<.01	<.10	<1	<.01	<.01	<.01	<.01	<.01	<.01
SEP 15...	<.01	<.01	<.10	<1	<.01	<.01	<.01	<.01	<.01	<.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>.

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

REMARKS.--Records fair except those for November and December, which are poor. No regulation or diversions known. Several observations of water temperature were made each year. Gage-height telemeter located at station.

EXTREMES FOR PERIOD MAY TO SEPTEMBER 1982.--Maximum discharge, 2,400 ft<sup>3</sup>/s May 14, time unknown (gage height, about 79.5 ft), no other peak above base of 450 ft<sup>3</sup>/s during period; no flow June 23 to July 20.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base 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)
Nov. 17	1700	524	74.94	Mar. 24	a0300	616	a75.50
Nov. 20	unknown	456	74.47	May 22	a0400	*1,570	78.44
Feb. 10	a0200	580	a75.30	Aug. 19	1100	1,010	77.15
Feb. 21	a2000	809	76.45				

a About.

Minimum daily discharge (estimated), 0.20 ft<sup>3</sup>/s Nov. 14, 15, July 11, 12.

DISCHARGE, IN CUBIC FEET PER SECOND, MAY TO SEPTEMBER 1982  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								.10	.40	.00	.80	.03
2								.08	.30	.00	.30	.03
3								.07	.22	.00	.20	1.0
4								.06	.15	.00	.12	5.0
5								.05	.12	.00	.10	1.5
6								5.0	.09	.00	.08	.60
7								10	.15	.00	20	.30
8								3.0	.10	.00	10	.20
9								1.0	.06	.00	5.0	.15
10								.50	.05	.00	2.0	.10
11								.30	.04	.00	1.0	.08
12								100	.03	.00	.78	.06
13								600	.03	.00	.57	1.0
14								2130	.02	.00	.39	3.0
15								600	.02	.00	.27	4.0
16								150	.04	.00	.20	10
17								60	.05	.00	.15	5.8
18								200	.04	.00	.12	3.2
19								100	.03	.00	.10	2.0
20								79	.02	.00	.09	1.1
21								50	.01	10	.08	3.7
22								30	.01	20	2.5	3.9
23								20	.00	10	.55	2.3
24								14	.00	5.0	.30	2.9
25								9.0	.00	2.0	.15	4.8
26								6.0	.00	1.0	.10	2.7
27								3.2	.00	.50	.07	1.5
28								2.1	.00	.30	.06	.92
29								1.3	.00	.20	.05	.55
30								.92	.00	.15	.04	.40
31								.58	---	1.0	.04	---
TOTAL								4176.26	1.98	50.15	46.21	62.82
MEAN								135	.066	1.62	1.49	2.09
MAX								2130	.40	20	20	10
MIN								.05	.00	.00	.04	.03
AC-FT								8280	3.9	99	92	125

WTR YR 1982 TOTAL - MEAN - MAX - MIN - AC-FT -

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DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

†† Rainfall, in inches.

## SAN JACINTO RIVER BASIN

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 September 1983.

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

REMARKS.--Records fair except those for period of no gage-height record, which are poor. Low flow consists of sewage effluent from urbanized areas and drainage from irrigated farming areas in the basin. Gage-height telemeter located at station.

EXTREMES FOR PERIOD MAY 1982.--Maximum discharge, 3,550 ft<sup>3</sup>/s May 14, 1982 (gage height, 43.48 ft).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,170 ft<sup>3</sup>/s, May 22 at 0900 hours (gage height, 42.90 ft); minimum daily, 1.2 ft<sup>3</sup>/s Nov. 15.

## DISCHARGE, IN CUBIC FEET PER SECONDS, MAY 1982

May 14..... 3,550                      May 16..... 1,790  
May 15..... 2,790                      May 17..... 1,710

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	20	1070	215	65	25	400	6.0	17	3.2	15	19
2	5.0	11	705	369	180	20	200	10	9.7	2.9	18	19
3	5.0	35	516	319	65	17	80	12	7.0	2.8	22	19
4	3.0	58	789	158	45	30	35	7.0	6.0	2.6	45	21
5	2.0	44	670	77	90	35	18	6.0	5.0	2.6	69	22
6	10	30	378	51	200	20	12	5.5	4.5	2.8	68	20
7	50	18	199	37	120	22	10	5.0	4.2	3.0	14	26
8	40	6.5	120	28	50	15	8.5	5.5	4.0	3.2	91	27
9	20	3.9	77	23	468	10	7.5	5.0	3.7	3.1	220	27
10	10	3.1	57	18	1460	8.0	6.5	100	3.6	2.6	230	24
11	7.0	2.3	58	14	964	7.0	5.7	34	3.6	2.5	337	20
12	250	1.7	80	10	424	6.0	5.2	24	3.5	2.5	435	19
13	300	1.5	77	7.8	203	5.5	4.7	18	3.4	3.7	389	18
14	200	1.4	72	7.0	99	5.2	4.3	15	3.4	5.4	302	18
15	80	1.2	415	6.5	120	5.0	4.0	17	46	97	172	18
16	45	49	506	6.0	409	5.0	3.7	20	71	737	60	18
17	30	876	288	5.6	475	7.0	3.5	16	249	868	31	19
18	20	1080	155	6.2	269	5.0	3.5	15	62	664	778	22
19	15	886	100	81	114	5.5	3.4	14	30	454	1600	516
20	11	1180	69	469	74	20	3.4	590	19	169	1360	910
21	8.8	898	52	535	813	10	3.5	2350	14	60	975	971
22	7.1	576	40	383	1300	7.0	3.4	3120	9.7	180	749	624
23	5.0	319	28	209	1000	1000	4.8	2580	7.1	352	635	400
24	3.5	217	20	97	650	1200	5.5	1750	6.3	295	395	174
25	3.0	152	38	56	350	1100	5.0	1480	27	118	129	74
26	5.0	199	114	33	150	800	4.9	1230	20	65	64	42
27	3.5	903	133	22	70	500	4.9	781	8.3	42	41	29
28	2.5	1200	130	16	40	200	4.9	297	4.9	22	35	59
29	101	896	74	10	---	120	5.8	133	4.7	32	28	180
30	74	844	38	7.4	---	80	7.7	76	3.8	37	24	152
31	36	---	47	9.7	---	150	---	38	---	24	20	---
TOTAL	1354.4	10512.6	7115	3286.2	10267	5440.2	869.3	14760.0	661.4	4258.9	9351	4507
MEAN	43.7	350	230	106	367	175	29.0	476	22.0	137	302	150
MAX	300	1200	1070	535	1460	1200	400	3120	249	868	1600	971
MIN	2.0	1.2	20	5.6	40	5.0	3.4	5.0	3.4	2.5	14	18
AC-FT	2690	20850	14110	6520	20360	10790	1720	29280	1310	8450	18550	8940
(††)	4.97	10.56	3.78	1.48	4.78	4.04	.38	9.20	6.20	5.70	7.80	5.70

CAL YR 1982 TOTAL - MEAN - MAX - MIN - AC-FT - †† -  
WTR YR 1983 TOTAL 72383.0 MEAN 198 MAX 3120 MIN 1.2 AC-FT 143600 †† 64.59

†† Rainfall, in inches.

NOTE.--No gage-height record Feb. 22 to Apr. 19.

## SAN JACINTO RIVER BASIN

59

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 current year.

GAGE.--Water-stage and rainfall recorders. Datum of gage is 70.00 ft National Geodetic Vertical Datum, 1973 adjustment.

REMARKS.--Prior to June 1983, only stages above 16.5 ft are published. Low flow is sustained by sewage effluent from urbanized areas and drainage from irrigated farm land. Gage-height telemeter located at station.

EXTREMES FOR PERIOD JUNE TO SEPTEMBER 1982.--Maximum and minimum gage heights not determine.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 35.05 ft May 21 at 2000 hours; minimum recorded, 15.84 ft Sept. 17.

## DISCHARGE, IN CUBIC FEET PER SECOND, MAY TO SEPTEMBER 1982

May	15.....	4,100
May	16.....	2,280
Aug.	13.....	16
Sept.	17.....	23

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

Jan.	25.....	76
Mar.	24.....	1,680
Mar.	28.....	452
May	23.....	3,220
May	31.....	77

GAGE HEIGHT (FEET ABOVE DATUM), JUNE TO SEPTEMBER 1982  
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									---		---	16.72
2									---		---	16.78
3									---		---	17.74
4									---		---	17.74
5									---		---	16.83
6									---		---	16.74
7									---		---	16.75
8									---		---	16.74
9									17.04		---	16.73
10									17.03		---	16.73
11									17.06		---	16.71
12									17.05		---	16.91
13									17.10		17.01	16.74
14									17.10		16.99	16.74
15									17.01		16.90	16.69
16									17.51		16.87	16.86
17									---		16.82	17.09
18									---		17.49	17.01
19									---		17.16	16.91
20									---		16.79	16.90
21									---		16.75	16.80
22									---		16.82	16.90
23									---		16.77	16.90
24									---		16.77	16.90
25									---		16.74	16.85
26									---		16.71	16.80
27									---		16.70	16.82
28									---		16.70	16.76
29									---		16.71	16.73
30									---		16.85	16.78
31									---		16.92	---
MAX									---		---	17.74
MIN									---		---	16.69



## SAN JACINTO RIVER BASIN

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

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.70	17.85	27.31	19.64	17.30	17.09	20.62	---	17.24	16.44	16.78	16.45
2	16.76	17.31	25.01	20.36	18.49	16.90	19.95	---	16.90	16.45	16.70	17.22
3	16.79	18.11	22.50	20.36	17.95	16.73	17.94	---	16.76	16.35	16.83	16.58
4	16.81	17.55	23.42	19.31	16.84	16.97	17.12	---	16.69	16.35	17.80	16.37
5	16.76	17.44	23.34	17.84	21.00	16.89	16.81	---	16.67	16.41	18.48	16.35
6	16.86	17.30	22.26	17.20	19.15	16.74	16.62	---	16.76	16.34	19.05	20.86
7	17.04	17.14	19.71	16.92	18.57	16.74	---	---	16.61	16.36	17.19	16.96
8	17.71	16.98	18.36	16.74	17.69	16.59	---	---	16.58	16.36	18.59	16.84
9	17.61	16.72	17.73	---	30.50	---	---	---	16.59	16.35	18.83	16.79
10	17.35	16.63	17.32	---	28.80	---	---	19.92	16.57	16.34	21.92	16.60
11	17.39	---	17.75	---	27.44	---	---	17.28	16.56	16.33	25.01	16.36
12	25.60	---	17.40	---	23.38	---	---	---	16.57	16.34	23.79	16.20
13	21.51	---	17.38	---	20.04	---	---	---	16.49	17.53	20.90	16.20
14	21.13	---	18.60	---	18.40	---	---	---	16.48	---	20.25	16.00
15	19.35	---	21.31	---	18.41	---	---	16.85	25.27	24.70	19.38	15.97
16	18.19	21.94	21.75	---	21.21	---	---	---	24.86	27.50	18.15	15.92
17	17.60	28.09	21.25	---	21.43	---	---	---	23.23	26.52	17.40	16.30
18	17.34	25.16	19.04	---	21.15	---	---	---	19.06	24.90	32.67	17.64
19	17.10	27.34	17.93	19.14	18.77	---	---	---	17.67	24.03	32.40	25.88
20	16.99	27.21	17.46	21.50	24.05	16.93	---	32.32	17.23	20.66	28.40	25.35
21	16.89	25.50	17.14	21.64	24.73	---	---	35.05	16.90	18.34	25.98	25.30
22	16.87	23.59	16.95	21.39	26.66	---	---	34.92	16.66	19.66	24.02	24.04
23	16.79	21.52	17.46	19.89	26.06	27.69	---	33.17	24.85	20.16	22.58	21.30
24	16.74	19.55	16.76	18.39	24.19	26.65	---	30.97	24.75	20.17	21.80	19.55
25	16.71	18.74	17.65	17.39	23.12	26.62	---	27.82	23.82	18.90	19.30	17.67
26	16.76	20.66	18.35	17.05	19.19	24.84	---	26.77	20.31	17.70	17.61	17.00
27	16.75	25.91	18.75	16.77	18.04	24.00	---	25.24	17.84	17.39	17.20	16.61
28	16.75	25.96	18.62	16.59	17.44	22.13	---	21.59	16.77	17.06	17.20	17.05
29	21.43	25.64	17.94	---	---	19.25	---	18.94	16.60	17.24	16.94	18.19
30	18.13	28.70	17.75	---	---	18.21	---	18.09	16.56	17.23	16.64	18.20
31	17.89	---	19.56	19.95	---	20.59	---	17.65	---	16.94	16.47	---
MAX	25.60	---	27.31	---	30.50	---	---	---	25.27	---	32.67	25.88
MIN	16.70	---	16.76	---	16.84	---	---	---	16.48	---	16.47	15.92
(††)	6.34	9.84	3.30	1.99	5.04	4.12	0	9.08	8.85	7.10	8.00	4.90

CAL YR 1982 †† -  
WTR YR 1983 †† 68.56

†† Rainfall, in inches.

## SAN JACINTO RIVER BASIN

61

08069000 CYPRESS CREEK NEAR WESTFIELD, TX

LOCATION.--Lat 30°02'08", long 95°25'43", Harris County, Hydrologic Unit 12040102, near left bank at downstream side of 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 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.--Water-discharge records fair. No large diversion above station. Low flow is maintained by sewage effluent. channel below gage was rectified in 1950-51, 1975 and 1981.

AVERAGE DISCHARGE.--39 years, 163 ft<sup>3</sup>/s (118,100 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, present datum, in May 1929 (discharge, 26,000 ft<sup>3</sup>/s), 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 above base of 2,400 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)
Nov. 17	0700	2,860	17.56	May 21	1900	*5,990	23.98
Nov. 30	1700	3,350	18.84	July 16	0900	2,610	16.96
Feb. 9	1900	3,940	20.37	Aug. 19	0100	5,130	24.81
Mar. 23	1800	3,040	17.90				

Minimum daily discharge, 13 ft<sup>3</sup>/s July 4, 7, 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	53	1560	436	104	53	403	19	86	20	62	52
2	21	69	900	409	167	48	262	26	56	17	52	62
3	25	169	671	402	120	44	118	31	46	14	68	69
4	27	69	671	256	61	65	73	19	49	13	68	48
5	25	61	733	134	401	72	54	18	41	15	138	103
6	50	50	518	90	320	46	45	19	40	15	155	143
7	71	42	271	73	205	48	38	17	38	13	155	95
8	51	33	163	62	119	37	32	18	34	14	85	69
9	58	24	114	55	1270	32	27	20	35	14	215	84
10	41	22	93	49	2260	25	29	191	32	14	325	98
11	47	19	130	41	1440	22	26	90	47	14	703	51
12	1200	25	101	35	645	21	23	40	54	13	746	51
13	501	20	101	31	319	20	22	25	57	188	469	36
14	384	20	110	28	173	19	21	19	63	113	356	28
15	189	18	474	25	209	18	23	49	551	290	273	30
16	99	169	549	23	328	19	21	45	691	2010	157	31
17	63	1970	400	23	518	27	20	25	825	1310	97	42
18	48	1030	213	28	405	19	21	24	342	849	2560	67
19	37	1420	135	269	210	21	21	24	204	691	3570	1020
20	33	1470	100	411	120	69	19	2740	158	352	1660	1350
21	31	1010	80	550	800	30	20	4750	124	228	1050	1080
22	28	681	69	474	1450	23	30	5060	105	159	760	702
23	25	420	185	285	1160	1310	26	3660	110	319	611	441
24	23	238	68	154	838	1540	20	2470	499	335	464	248
25	23	176	200	94	601	1350	21	1660	854	205	215	125
26	21	274	332	70	233	1100	20	1350	405	125	115	77
27	23	1350	334	54	114	824	26	932	230	103	84	50
28	23	1350	231	45	73	495	20	443	63	80	105	47
29	439	1020	143	37	---	218	17	228	29	75	72	139
30	130	1750	88	32	---	141	20	157	25	97	56	188
31	91	---	202	155	---	263	---	117	---	76	46	---
TOTAL	3849	15022	9939	4830	14663	8019	1518	24286	5893	7781	15492	6626
MEAN	124	501	321	156	524	259	50.6	783	196	251	500	221
MAX	1200	1970	1560	550	2260	1540	403	5060	854	2010	3570	1350
MIN	21	18	68	23	61	18	17	17	25	13	46	28
AC-FT	7630	29800	19710	9580	29080	15910	3010	48170	11690	15430	30730	13140
CAL YR 1982	TOTAL	62398	MEAN	171	MAX	3830	MIN	14	AC-FT	123800		
WTR YR 1983	TOTAL	117918	MEAN	323	MAX	5060	MIN	13	AC-FT	233900		

## SAN JACINTO RIVER BASIN

08069000 CYPRESS CREEK NEAR WESTFIELD, TX--Continued

## WATER-QUALITY RECORDS

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

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

		STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)	
DATE	TIME												
AUG													
18...	1940	4850	51	6.8	24.0	100	230	5.7	77	4.5	900	13000	
19...	1445	3050	48	6.3	25.0	100	120	4.7	57	4.3	6700	14000	
20...	1202	1650	81	6.8	24.0	100	78	4.3	51	4.3	18000	13000	
31...	0855	46	382	6.9	30.0	70	39	6.7	89	3.1	330	2000	
		HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L 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)
DATE	TIME												
AUG													
18...	17	0	5.4	1.0	3.4	.4	2.6	18	--	3.0	.10	5.1	
19...	16	0	4.9	1.0	3.0	.3	2.6	17	--	3.9	.10	5.1	
20...	20	0	5.7	1.3	7.2	.7	3.3	20	--	10	.10	6.3	
31...	74	0	23	4.1	50	2.6	6.9	110	18	41	.30	18	
		SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	
AUG													
18...	--	207	43	.04	.060	.10	.270	1.3	1.60	.280	16		
19...	--	257	35	--	.050	<.10	.130	2.0	2.10	.190	18		
20...	--	220	44	.00	.110	.10	.230	1.2	1.40	.240	23		
31...	228	50	20	1.8	.180	2.0	.360	.94	1.30	1.70	11		
				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)				
DATE	TIME												
AUG													
18...	1940		2	34	<1	<10	2	310					
19...	1445		1	37	<1	<10	2	300					
20...	1202		1	48	<1	<10	1	360					
31...	0855		4	97	<1	10	5	170					
		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)						
AUG													
18...		<1	13	<.1	<1	<1	15						
19...		<1	10	<.1	<1	<1	8						
20...		<1	14	<.1	<1	<1	10						
31...		2	36	<.1	<1	<1	13						
DATE	TIME	AME- TRYNE TOTAL (UG/L)	ATRA- TONE TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPR- AZINE TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)		
AUG													
31...	0855	<.10	<.10	<.10	<.10	<.10	.1	<.1	<.10	.20	<.10	<.1	

## SAN JACINTO RIVER BASIN

63

08069200 CYPRESS CREEK NEAR HUMBLE, TX  
(Low-flow partial-record station)

LOCATION.--Lat 30°01'49", long 95°19'47", Harris County, Hydrologic Unit 12040102, 500 ft (150 m) north of end of dirt extension of Tettar Road, about 2 mi (3 km) upstream from mouth, and 4.7 mi (7.6 km) northwest of Humble.

DRAINAGE AREA.--319 mi<sup>2</sup> (826 km<sup>2</sup>).

PERIOD OF RECORD.--Occasional discharge measurements: October 1970 to September 1983 (discontinued). Chemical, biochemical, and pesticide analyses: October 1970 to September 1983 (discontinued).

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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 (MG/L AS CACO3)
NOV 29...	1140	1300	96	7.3	12.5	60	100	9.8	92	3.2	22
MAR 22...	1140	27	485	7.5	12.5	45	85	8.0	75	5.6	91
MAY 12...	1045	45	410	7.2	23.5	80	270	5.6	66	5.6	72

DATE	HARD- NESS, NONCAR- BONATE (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 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)
NOV 29...	0	6.4	1.5	8.4	.8	3.8	23	10	11	<.10	8.0
MAR 22...	0	29	4.4	61	2.9	6.6	120	23	54	.30	15
MAY 12...	0	23	3.5	52	2.8	6.2	87	19	54	.30	11

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLATILE, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
NOV 29...	63	83	16	.13	.070	.20	.150	1.9	2.00	.350	11
MAR 22...	265	66	26	3.5	.250	3.7	.680	1.4	2.10	3.40	12
MAY 12...	221	520	<1	1.8	.230	2.0	.450	1.8	2.20	1.80	14

DATE	TIME	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)
NOV 29...	1140	1	45	<1	<10	3	340
MAR 22...	1140	3	93	<1	<10	5	77
MAY 12...	1045	6	96	<1	<10	5	97

DATE	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...	<1	4	<.1	<1	1	16
MAR 22...	3	39	<.1	<1	<1	15
MAY 12...	5	19	<.1	<1	<1	11



## SAN JACINTO RIVER BASIN

08069200 CYPRESS CREEK NEAR HUMBLE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	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)	DI- ELDRIN TOTAL (UG/L)
NOV 29...	1140	<.10	<.10	<.01	<.10	<.01	<.01	<.01	.02	<.01
MAR 22...	1140	<.10	<.10	<.01	.10	<.01	<.01	<.01	1.0	<.01
MAY 12...	1045	<.10	<.10	<.01	.10	<.01	<.01	<.01	.84	<.01

DATE	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)	METHYL TRI- THION, TOTAL (UG/L)
NOV 29...	<.01	<.01	<.01	<.01	<.01	.01	<.01	<.01	<.01	<.01
MAR 22...	<.01	<.01	<.01	<.01	<.01	.17	.58	<.01	<.01	<.01
MAY 12...	<.01	<.01	<.01	<.01	.01	.06	.35	<.01	<.01	<.01

DATE	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	PER- THANE 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)	SILVEX, TOTAL (UG/L)
NOV 29...	<.01	<.01	<.10	<1	<.01	.02	<.01	<.01	<.01
MAR 22...	<.01	<.01	<.10	<1	<.01	.50	<.01	<.01	<.01
MAY 12...	<.01	<.01	<.10	<1	<.01	.54	<.01	.01	.01

## SAN JACINTO RIVER BASIN

65

08069500 WEST FORK SAN JACINTO RIVER NEAR HUMBLE, TX

LOCATION.--Lat 30°01'37", long 95°15'28", Harris County, Hydrologic Unit 12040101, on right bank at 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 current year (gage heights only). 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 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.--Station discontinued as a streamflow station Sept. 30, 1954, due to backwater from Lake Houston. No large diversion above station. Only maximum daily gage heights above 15.5 ft are published.

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.

1954-83: 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, 23.48 ft May 23 at 1200 hours; minimum not determined.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		---	15.85		---	---		---			---	---
2		---	---		---	---		---			---	---
3		---	---		---	---		---			---	---
4		---	---		---	---		---			---	---
5		---	---		---	---		---			---	---
6		---	---		---	---		---			---	---
7		---	---		---	---		---			---	---
8		---	---		---	---		---			---	---
9		---	---		16.87	---		---			---	---
10		---	---		17.85	---		---			---	---
11		---	---		17.08	---		---			---	---
12		---	---		15.74	---		---			---	---
13		---	---		---	---		---			---	---
14		---	---		---	---		---			---	---
15		---	---		---	---		---			---	---
16		---	---		---	---		---			---	---
17		---	---		---	---		---			---	---
18		---	---		---	---		---			20.96	---
19		---	---		---	---		---			21.63	15.92
20		---	---		---	---		19.72			20.60	---
21		---	---		---	---		21.43			17.52	---
22		---	---		15.94	---		23.00			16.45	---
23		---	---		16.28	15.93		23.48			---	---
24		---	---		16.26	17.92		22.92			---	---
25		---	---		---	17.97		21.19			---	---
26		---	---		---	18.85		20.04			---	---
27		---	---		---	18.83		18.97			---	---
28		---	---		---	16.98		17.02			---	---
29		---	---		---	---		---			---	---
30		15.82	---		---	---		---			---	---
31		---	---		---	---		---			---	---
MAX		---	---		---	---		---			---	---
MIN		---	---		---	---		---			---	---

## 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 National Geodetic Vertical Datum of 1929. Prior to Sept. 13, 1955, at site 1,800 ft upstream at datum 5.00 ft higher.

REMARKS.--Water-discharge records good. No large diversion above station. Rain gage and gage-height telemeter located at station.

AVERAGE DISCHARGE.--44 years, 226 ft<sup>3</sup>/s (9.45 in/yr), 163,700 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, present site and datum (discharge, 53,500 ft<sup>3</sup>/s), from information by local residents.

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

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 26	0300	4,260	15.98
May 22	1100	*17,600	20.68
Aug. 20	1200	8,630	18.36

Minimum discharge, 13 ft<sup>3</sup>/s Oct. 1-8

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	26	646	859	358	119	256	41	128	94	33	131
2	13	26	374	1050	730	110	188	42	115	79	32	205
3	13	88	373	1110	1050	102	146	39	103	70	32	198
4	13	105	441	963	992	116	126	40	93	63	31	187
5	13	71	432	479	418	305	117	36	90	56	32	126
6	13	79	274	300	816	424	109	33	106	57	38	109
7	13	57	191	252	1410	423	101	31	130	55	46	132
8	13	41	143	227	1870	219	96	30	107	47	91	164
9	14	32	117	207	1550	139	90	29	92	42	77	196
10	37	26	103	190	1080	109	84	88	76	39	300	170
11	28	24	111	166	1480	92	78	303	67	37	1200	236
12	26	22	138	151	1910	82	74	289	61	40	1800	247
13	63	22	224	135	1470	78	73	146	55	48	800	167
14	42	22	247	125	397	75	73	85	51	81	400	121
15	22	20	283	116	256	74	95	330	64	106	200	95
16	23	21	571	111	206	73	90	1120	354	204	150	79
17	21	53	599	106	175	71	69	742	853	635	120	71
18	19	210	341	102	149	68	63	260	1220	523	600	88
19	17	166	195	136	133	66	58	138	458	463	2700	346
20	16	269	147	213	124	78	55	2420	195	391	7170	725
21	16	327	121	253	512	94	54	7650	123	295	5600	970
22	15	230	108	260	862	93	58	15700	99	125	3550	937
23	15	142	189	202	1000	296	58	7960	85	85	2200	808
24	15	108	370	164	799	1280	52	3980	92	67	670	555
25	15	83	301	140	313	2800	46	2350	146	56	304	223
26	15	133	754	126	207	3840	44	667	602	50	218	152
27	14	835	1460	115	160	2440	43	343	807	46	174	124
28	14	1100	1740	106	130	1300	43	253	478	42	152	108
29	21	1110	1910	103	---	793	43	198	198	40	139	97
30	59	992	1660	99	---	395	41	165	123	37	130	89
31	38	---	826	100	---	451	---	149	---	35	111	---
TOTAL	669	6440	15389	8666	20557	16605	2523	45657	7171	4008	29100	7856
MEAN	21.6	215	496	280	734	536	84.1	1473	239	129	939	262
MAX	63	1110	1910	1110	1910	3840	256	15700	1220	635	7170	970
MIN	13	20	103	99	124	66	41	29	51	35	31	71
CFSM	.07	.66	1.53	.86	2.26	1.65	.26	4.53	.74	.40	2.89	.61
IN.	.08	.74	1.76	.99	2.35	1.90	.29	5.23	.82	.46	3.33	.90
AC-FT	1330	12770	30520	17190	40770	32940	5000	90560	14220	7950	57720	15580
CAL YR 1982	TOTAL	81776	MEAN 224	MAX 7910	MIN 13	CFSM .69	IN 9.36	AC-FT 162200				
WTR YR 1983	TOTAL	164641	MEAN 451	MAX 15700	MIN 13	CFSM 1.39	IN 18.85	AC-FT 326600				

## SAN JACINTO RIVER BASIN

67

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

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: January 1968 to current year. Biochemical and pesticide analyses: August to September 1983.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)
OCT												
26...	1215	14	200	--	14.5	--	--	--	--	--	--	--
DEC												
16...	1600	592	159	--	12.0	--	--	--	--	--	--	--
JAN												
18...	0840	105	272	--	10.5	--	--	--	--	--	--	--
FEB												
28...	1200	134	222	--	12.5	--	--	--	--	--	--	--
APR												
06...	1700	108	242	--	15.5	--	--	--	--	--	--	--
MAY												
17...	1720	625	135	--	19.5	--	--	--	--	--	--	--
JUN												
23...	0810	88	180	--	23.5	--	--	--	--	--	--	--
AUG												
09...	1520	77	126	--	25.5	--	--	--	--	--	--	--
18...	1340	522	138	7.1	24.0	100	50	6.5	88	3.9	5400	6300
19...	1015	2700	39	6.1	24.0	100	50	5.4	65	3.7	2100	6600
21...	1430	5260	59	6.8	26.0	100	27	4.7	60	2.6	130	2300
31...	1420	111	207	7.2	26.0	80	26	6.5	80	1.3	88	260
SEP												
22...	1010	966	126	--	20.5	--	--	--	--	--	--	--

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 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)
OCT											
26...	38	17	11	2.5	23	1.7	1.3	21	6.0	47	<.10
DEC											
16...	50	12	17	1.8	9.6	.6	2.9	38	11	19	<.10
JAN											
18...	69	28	23	2.9	24	1.3	1.5	41	11	51	<.10
FEB											
28...	62	23	21	2.4	19	1.1	1.5	39	10	42	<.10
APR											
06...	65	24	22	2.5	21	1.2	1.5	41	10	43	<.10
MAY											
17...	36	11	12	1.4	13	1.0	2.3	25	12	21	<.10
JUN											
23...	48	14	16	2.0	15	1.0	1.4	34	10	28	<.10
AUG											
09...	31	9	10	1.5	12	1.0	1.3	22	10	21	.10
18...	35	9	12	1.3	11	.8	2.2	26	10	20	.10
19...	12	4	4.1	.5	3.4	.4	1.6	8.0	5.0	6.1	<.10
21...	26	8	8.7	1.0	2.6	.2	2.5	18	10	4.5	.10
31...	54	17	18	2.3	17	1.0	1.7	38	10	34	<.10
SEP											
22...	41	8	14	1.5	8.0	.6	2.6	33	10	15	<.10



## SAN JACINTO RIVER BASIN

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 26...	12	115	--	--	--	--	--	--	--	--	--
DEC 16...	10	94	--	--	--	--	--	--	--	--	--
JAN 18...	17	155	--	--	--	--	--	--	--	--	--
FEB 28...	15	134	--	--	--	--	--	--	--	--	--
APR 06...	16	141	--	--	--	--	--	--	--	--	--
MAY 17...	8.1	85	--	--	--	--	--	--	--	--	--
JUN 23...	14	107	--	--	--	--	--	--	--	--	--
AUG 09...	11	80	--	--	--	--	--	--	--	--	--
18...	9.9	83	110	40	.080	<.10	.110	.99	1.10	.110	14
19...	4.3	30	87	40	.040	<.10	.070	1.0	1.10	.040	19
21...	6.5	47	15	4	.030	<.10	.120	.68	.80	.020	16
31...	16	122	28	<1	.020	<.10	.140	.26	.40	.050	7.9
SEP 22...	11	82	--	--	--	--	--	--	--	--	--

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIIUM, 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)
AUG 18...	1340	1	68	<1	<10	<1	330
19...	1015	1	30	<1	<10	8	340
21...	1430	1	43	<1	<10	1	210

DATE	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)
AUG 18...	<1	63	<.1	<1	<1	7
19...	<1	49	<.1	<1	<1	24
21...	3	7	<.1	<1	<1	10

DATE	TIME	AME- TRYNE TOTAL (UG/L)	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
AUG 18...	1340	<.10	<.10	<.10	<.10	<.10	<2.0	<.1

DATE	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
AUG 18...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

## SAN JACINTO RIVER BASIN

69

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

LOCATION.--Lat 30°08'43", long 95°07'27", Montgomery County, Hydrologic Unit 12040103, at bridge on Farm Road 1485, and 5.5 mi east of New Caney.

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

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)	
AUG 31...	1350	140	196	7.0	26.5	80	29	5.8	72	1.3	120	180	
DATE	TIME	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 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)
AUG 31...	52	11	17	2.2	16	1.0	2.0	41	10	29	.20	16	
DATE	TIME	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	
AUG 31...	118	32	5	.07	.030	.10	.140	.26	.40	.100	9.0		
DATE	TIME	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)						
AUG 31...	1350	1	87	<1	<10	1	460						
DATE	TIME	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)						
AUG 31...	1	54	<.1	<1	<1	6							
DATE	TIME	AME- TRYNE TOTAL (UG/L)	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)					
AUG 31...	1350	<.10	<.10	<.10	<.10	<.10	<2.0	<.1					
DATE	TIME	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)					
AUG 31...		<.1	<.10	<2.0	<2.0	<.10	<.10	<.1					

## SAN JACINTO RIVER BASIN

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 Gulf, 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 National Geodetic Vertical Datum of 1929. Prior to June 17, 1965, at site 170 ft upstream at datum 5.00 ft higher.

REMARKS.--Water-discharge records good. No diversion above station.

AVERAGE DISCHARGE.--40 years, 76.9 ft<sup>3</sup>/s (9.94 in/yr), 55,710 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 above base of 1,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 24	2200	3,090	16.15
May 21	0200	*6,650	20.50
Aug. 20	0300	3,110	16.20

Minimum discharge, 13 ft<sup>3</sup>/s Oct. 1-6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	14	20	86	317	650	49	90	25	65	30	24	57		
2	13	21	75	497	571	47	75	25	57	29	23	106		
3	13	66	69	179	113	45	65	24	50	27	23	66		
4	13	47	82	106	79	54	60	24	45	25	22	50		
5	13	30	62	85	98	156	55	23	42	24	22	44		
6	13	23	50	74	822	113	52	23	50	23	22	42		
7	14	21	43	68	297	66	50	22	62	22	22	43		
8	15	19	41	65	115	54	48	22	54	22	22	43		
9	16	19	38	62	218	48	46	21	47	20	30	62		
10	23	19	38	58	922	44	43	50	43	19	67	71		
11	19	19	42	53	600	41	42	110	40	19	555	94		
12	24	19	51	50	120	39	41	110	38	19	622	70		
13	33	19	47	48	80	38	40	70	36	23	126	51		
14	25	18	43	47	70	38	43	50	34	32	67	42		
15	20	18	126	46	65	38	49	190	34	37	50	38		
16	19	18	147	45	62	38	40	350	60	584	42	34		
17	18	65	73	44	60	37	37	110	88	515	37	34		
18	17	98	58	45	58	37	36	62	73	167	741	34		
19	17	54	51	58	56	36	35	53	51	96	2390	97		
20	21	100	46	95	54	43	34	2190	48	66	2240	363		
21	28	63	44	86	800	52	34	5660	37	53	270	510		
22	16	38	43	69	400	42	33	4360	34	43	130	170		
23	16	31	69	59	130	219	35	1660	33	39	92	86		
24	15	35	69	53	90	1800	32	500	36	36	77	64		
25	15	30	74	49	70	1220	30	300	80	31	68	57		
26	15	29	251	48	60	150	29	200	101	29	62	52		
27	15	296	430	46	55	110	28	160	78	28	58	49		
28	15	538	565	44	52	90	27	130	45	26	54	47		
29	27	126	151	43	---	80	26	110	35	26	58	46		
30	36	73	89	43	---	75	26	90	31	26	57	43		
31	25	---	80	47	---	100	---	75	---	25	49	---		
TOTAL	583	1972	3133	2629	6767	4999	1281	16799	1527	2161	8122	2565		
MEAN	18.8	65.7	101	84.8	242	161	42.7	542	50.9	69.7	262	85.5		
MAX	36	538	565	497	922	1800	90	5660	101	584	2390	510		
MIN	13	18	38	43	52	36	26	21	31	19	22	34		
CFSM	.18	.63	.96	.81	2.31	1.53	.41	5.16	.49	.66	2.50	.81		
IN.	.21	.70	1.11	.93	2.40	1.77	.45	5.95	.54	.77	2.88	.91		
AC-FT	1160	3910	6210	5210	13420	9920	2540	33320	3030	4290	16110	5090		
CAL YR 1982	TOTAL	31708	MEAN	86.9	MAX	3390	MIN	13	CFSM	.83	IN	11.23	AC-FT	62890
WTR YR 1983	TOTAL	52538	MEAN	144	MAX	5660	MIN	13	CFSM	1.37	IN	18.61	AC-FT	104200

## SAN JACINTO RIVER BASIN

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08070500 CANEY CREEK NEAR SPLENDORA, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: August to September 1983.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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- FORM, FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
AUG												
18...	1505	36	6.4	24.0	100	100	6.6	90	6.3	3100	10000	11
18...	1920	24	6.4	22.5	100	100	6.4	84	5.6	5400	7200	8
19...	0930	32	6.1	24.0	100	56	5.8	69	4.4	2800	5200	11
20...	1025	68	6.5	24.5	120	26	5.2	61	3.8	390	1000	28
31...	1045	130	6.8	27.0	60	11	6.8	86	.4	130	620	40

DATE	HARD- NESS, NONCAR- BONATE (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 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)
AUG											
18...	4	3.4	.6	3.0	.4	1.6	7.0	--	5.2	<.10	5.4
18...	1	2.6	.5	1.7	.3	1.4	7.0	--	2.9	<.10	3.4
19...	3	3.7	.5	2.3	.3	1.5	8.0	--	4.1	<.10	5.0
20...	2	9.4	1.0	2.2	.2	2.8	26	--	4.0	.10	7.2
31...	6	13	1.9	8.8	.6	1.7	34	9.5	14	<.10	15

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
AUG											
18...	--	320	80	.00	.140	.10	.180	1.2	1.40	.080	21
18...	--	261	53	.00	.120	.10	.180	1.2	1.40	.070	22
19...	--	101	21	--	.080	<.10	.140	1.1	1.20	.070	17
20...	--	46	27	--	.040	<.10	.120	.68	.80	.080	15
31...	85	21	<1	--	<.020	.10	.060	.44	.50	.050	5.1

DATE	TIME	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)
AUG							
18...	1505	<1	26	<1	<10	<1	340
18...	1920	<1	21	<1	<10	<1	300
19...	0930	<1	25	<1	<10	1	370
20...	1025	1	43	<1	<10	2	300
31...	1045	1	61	<1	<10	1	730

DATE	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)
AUG						
18...	2	18	<.1	<1	<1	12
18...	2	25	<.1	<1	1	10
19...	<1	20	<.1	<1	<1	12
20...	1	9	<.1	<1	<1	13
31...	2	42	<.1	<1	<1	8



## SAN JACINTO RIVER BASIN

08070500 CANEY CREEK NEAR SPLENDORA, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
AUG								
18...	1505	<.10	<.10	<.10	<.10	<.10	<2.0	<.1
31...	1045	<.10	<.10	<.10	<.10	<.10	<2.0	<.1

DATE	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
AUG							
18...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
31...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

## 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 by 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, 217,700 acre-ft Apr. 19, 1979 (gage height, 49.50 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, 201,800 acre-ft May 23 at 1300 to 1400 hours (gage height, 48.50 ft); minimum, 114,100 acre-ft Oct. 5 (gage height, 41.61 ft).

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

41.0	107,900	45.0	152,900
43.0	129,100	48.0	194,200
		49.0	209,600

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	114500	132200	165200	163300	155700	155700	159300	148000	156500	148600	146700	155100
2	114400	133900	162500	163300	157400	156100	157500	147600	156300	148400	146100	155100
3	114300	136100	161000	162500	158900	156100	157400	147500	155700	147900	145300	155200
4	114300	136600	160200	161700	159700	156100	157000	147000	155700	147500	145500	155200
5	114300	137000	160000	160600	161600	156900	156100	145900	155100	147100	145800	155200
6	114400	137200	158900	159200	161000	158200	155100	145800	154300	146700	145500	156800
7	114800	137300	157400	157800	160800	158300	154200	145900	153600	146100	145500	156500
8	115000	137300	156300	157000	160900	157700	153300	145500	153800	145700	146400	156600
9	115700	137200	154900	156300	167800	155500	153100	145200	153500	145200	147400	156400
10	115800	137000	155000	155600	172000	154900	153200	149000	153200	144800	148800	157400
11	115900	137000	153600	155100	168600	154000	153200	153600	153500	144600	151000	158000
12	122100	137300	152600	154500	165200	153800	153300	155900	153100	144300	157400	157500
13	125100	136100	153600	154500	163400	153800	153800	156000	152900	147600	155100	156100
14	126900	136200	154500	154200	161700	153700	151500	155700	152600	148700	153200	155200
15	128000	135400	155700	153600	159700	153600	151000	154700	152900	149800	151700	154700
16	128700	137200	157500	153300	158000	153600	150700	158400	153600	160600	150600	154500
17	128800	147700	157700	153600	158000	150700	150700	159500	152600	160900	149500	154900
18	128800	154300	157200	154000	157900	150600	150800	158200	152300	164300	180800	155600
19	128800	158800	155900	156400	157300	150700	150700	156300	151700	161600	187700	172400
20	128400	160200	155200	157400	157400	150000	150600	171700	151300	159300	180300	172300
21	128000	158800	154900	158300	163000	149800	150600	191700	149700	158300	175300	168200
22	127400	157900	154500	157800	165900	150200	150800	198600	149000	156600	170900	165100
23	126800	156900	154300	157200	166200	148800	149200	199200	148700	155100	166300	162600
24	126100	154300	155700	156400	165100	170900	149200	185500	150700	153800	161900	160600
25	125600	154200	157900	155600	162300	171400	148800	176800	154600	152400	159800	159100
26	125000	158200	161600	154200	159100	172700	148600	172000	154200	151600	158000	157800
27	124700	163000	167000	153700	157000	171400	148500	168200	153200	150700	156900	156800
28	124500	164800	167100	154200	156100	167100	148200	162900	151900	150200	156100	155900
29	128800	164800	163900	154200	---	164200	148200	159600	150500	148800	155500	155400
30	130500	165200	162200	154000	---	161700	147900	158200	149200	147700	155100	155200
31	131200	---	161800	154600	---	160200	---	157700	---	147000	154600	---
MAX	131200	165200	167100	163300	172000	172700	159300	199200	156500	164300	187700	172400
MIN	114300	132200	152600	153300	155700	148800	147900	145200	148700	144300	145300	154500
(†)	43.18	45.95	45.69	45.13	45.25	45.57	44.59	45.37	44.70	44.52	45.13	45.18
(‡)	+16500	+34000	-3400	-7200	+1500	+4100	-12300	+9800	-8500	-2200	+7600	+600
(††)	21500	17900	18040	19200	16400	19740	19130	20140	19040	19600	19980	18790

CAL YR 1982 MAX 181500 MIN 114300 † +10600 †† 241720  
WTR YR 1983 MAX 199200 MIN 114300 † +40500 †† 229460

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet.

†† Diversions, in acre-feet, for municipal and industrial uses by San Jacinto River Authority and city of Houston

## SAN JACINTO RIVER BASIN

08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JAN 17...	1540	119	11.5	35	14	11	1.8	9.9

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY 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)
JAN 17...	.8	2.2	21	16	15	<.10	7.3	76

## SAN JACINTO RIVER BASIN

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08072000 LAKE HOUSTON NEAR SHELDON, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: December 1969 to current year. Biochemical analyses: August to September 1983.  
Pesticide analyses: May 1968 to August 1972.

## 295505095083101 LAKE HOUSTON SITE AR

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)
AUG												
25...	1342	1.00	55	6.4	32.5	.24	5.5	75	<.10	1.10	.050	
25...	1344	5.00	55	6.0	29.0	--	2.6	33	--	--	--	--
25...	1346	10.0	55	5.9	27.5	--	1.0	13	--	--	--	--
25...	1348	15.0	55	5.8	26.5	--	.2	2	--	--	--	--
25...	1350	18.0	55	6.0	26.5	--	.0	0	<.10	1.10	.110	

## 295516095080801 LAKE HOUSTON SITE AC

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)
AUG												
25...	1400	1.00	55	6.6	32.5	.25	100	24	6.8	93	4.5	84
25...	1401	.41	--	--	--	--	--	--	--	--	--	--
25...	1402	10.0	55	5.9	27.5	--	--	--	.9	11	--	--
25...	1404	20.0	60	6.0	26.0	--	--	--	.5	6	--	--
25...	1406	30.0	75	6.0	25.5	--	--	--	.0	0	--	--
25...	1408	40.0	70	6.0	25.5	--	--	--	.0	0	--	--
25...	1410	48.0	70	6.0	25.5	--	100	35	.0	0	2.2	--

DATE	TIME	STREP- TOCOC FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
AUG												
25...	140	19	5	5.8	1.0	4.2	.4	2.0	14	13	6.6	
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	21	2	6.8	1.0	5.0	.5	1.6	19	12	7.5	

DATE	TIME	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDE (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)
AUG												
25...	.10	4.4	46	18	<1	<.10	1.10	.050	<1	40	<1	
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	<.10	1.20	.050	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	.10	4.6	51	24	<1	<.10	1.10	.080	2	47	<1	



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

295516095080801 LAKE HOUSTON SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	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)	PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)
AUG											
25...	10	2	220	1	7	<.1	<1	<1	7	--	--
25...	--	--	--	--	--	--	--	--	--	20.0	3.10
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	<10	1	340	1	230	<.1	<1	<1	11	--	--

295527095074501 LAKE HOUSTON SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATURATION)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
AUG											
25...	1440	1.00	55	6.5	31.5	.25	6.0	81	<.10	.90	.040
25...	1442	10.0	55	6.1	28.0	--	2.2	28	--	--	--
25...	1444	20.0	80	6.1	25.5	--	.0	0	--	--	--
25...	1446	32.0	75	6.1	25.5	--	.0	0	<.10	1.60	.110

295656095090201 LAKE HOUSTON SITE BL

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATURATION)
AUG								
25...	1220	1.00	55	6.1	30.0	.16	4.3	56
25...	1222	5.00	55	6.0	28.0	--	2.1	27
25...	1224	10.0	50	5.8	27.0	--	.4	5
25...	1226	15.0	50	5.8	26.5	--	.2	2
25...	1228	20.0	55	5.9	26.0	--	.0	0

295702095091401 LAKE HOUSTON SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATURATION)
AUG								
25...	1238	1.00	60	6.2	31.0	.15	4.4	59
25...	1240	5.00	55	6.0	28.5	--	2.6	33
25...	1242	10.0	55	5.8	27.0	--	.5	6
25...	1244	15.0	55	5.8	26.5	--	.3	4
25...	1246	20.0	55	5.8	26.0	--	.0	0
25...	1248	25.0	55	5.8	25.5	--	.0	0
25...	1250	30.0	55	5.8	25.5	--	.0	0
25...	1252	37.0	55	5.9	25.5	--	.0	0

## SAN JACINTO RIVER BASIN

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## LAKE HOUSTON NEAR SHELDON, TX--Continued

## 295902095073001 LAKE HOUSTON SITE CL

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)
AUG											
25...	1140	1.00	60	6.1	29.5	.14	3.1	40	<.10	1.10	.040
25...	1142	5.00	55	6.0	27.5	--	1.5	19	--	--	--
25...	1144	10.0	60	6.0	27.5	--	.7	9	--	--	--
25...	1146	14.0	70	6.0	27.5	--	.0	0	<.10	1.40	.130

## 295902095074201 LAKE HOUSTON SITE CC

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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 SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)
AUG											
25...	1046	1.00	60	6.2	30.0	.11	150	66	3.8	50	2.9
25...	1047	.18	--	--	--	--	--	--	--	--	--
25...	1048	5.00	60	6.1	28.5	--	--	--	2.4	31	--
25...	1050	10.0	75	6.2	28.0	--	--	--	.7	9	--
25...	1052	15.0	70	6.2	27.5	--	--	--	.5	6	--
25...	1054	20.0	70	6.1	27.5	--	--	--	.3	4	--
25...	1056	25.0	65	6.0	27.0	--	--	--	.0	0	--
25...	1058	31.0	65	6.0	26.0	--	150	80	.0	0	2.3

DATE	TIME	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 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)
AUG												
25...	21	2		6.4	1.1	3.7	.4	2.1	19	12	6.1	.10
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	21	5		6.6	1.1	4.3	.4	1.7	16	9.9	6.4	.10

DATE	TIME	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDE (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)
AUG												
25...	5.2	48	52	15	<.10	1.20	.040	240	35	--	--	--
25...	--	--	--	--	--	--	--	--	--	11.0	1.60	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	<.10	1.20	.100	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	4.3	45	68	7	<.10	1.30	.080	400	200	--	--	--

## 295902095075301 LAKE HOUSTON SITE CR

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)
AUG											
25...	1124	1.00	60	6.2	29.5	.07	3.4	44	<.10	1.40	.060
25...	1126	5.00	70	6.1	29.0	--	2.3	30	--	--	--
25...	1128	10.0	75	6.1	28.0	--	.7	9	--	--	--
25...	1130	14.0	65	6.0	28.0	--	.3	4	<.10	1.20	.090

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

300016095072301 LAKE HOUSTON SITE DL

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
AUG								
25...	0910	1.00	60	6.2	29.0	.14	3.0	39
25...	0912	5.00	55	6.1	28.5	--	2.4	31
25...	0914	10.0	50	6.0	27.5	--	.9	11
25...	0916	15.0	50	5.9	27.0	--	.6	7
25...	0918	20.0	50	5.9	26.5	--	.2	2

300016095073401 LAKE HOUSTON SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
AUG								
25...	0928	1.00	65	6.2	29.5	.11	3.4	44
25...	0930	5.00	55	6.0	28.5	--	2.0	26
25...	0932	10.0	55	6.0	28.0	--	1.4	18
25...	0934	15.0	60	6.0	27.5	--	1.0	13
25...	0936	22.0	65	6.1	27.5	--	.4	5

300016095075601 LAKE HOUSTON SITE DR

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
AUG								
25...	0946	1.00	70	6.4	30.0	.10	4.0	52
25...	0948	5.00	65	6.3	29.0	--	2.9	37
25...	0950	10.0	90	6.2	28.5	--	1.2	15
25...	0952	15.0	80	6.1	28.0	--	.7	9
25...	0954	23.0	80	6.1	27.5	--	.2	3

300156095074001 LAKE HOUSTON SITE EL

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	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- PHORUS, TOTAL (MG/L AS P)
AUG											
24...	1006	1.00	40	6.1	29.0	.34	3.2	41	<.10	1.20	.010
24...	1008	5.00	55	6.2	27.5	--	3.5	44	--	--	--
24...	1010	12.0	65	6.4	27.5	--	3.8	48	<.10	1.50	.040

## SAN JACINTO RIVER BASIN

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## LAKE HOUSTON NEAR SHELDON, TX--Continued

300158095074601 LAKE HOUSTON SITE EC

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)
AUG											
24...	1020	1.00	45	6.0	29.0	.29	150	11	2.7	35	2.7
24...	1022	5.00	60	6.1	28.0	--	--	--	3.0	38	--
24...	1024	10.0	60	6.1	27.5	--	--	--	3.1	39	--
24...	1026	15.0	60	6.1	27.5	--	--	--	3.1	39	--
24...	1028	23.0	65	6.1	27.5	--	150	30	3.5	44	2.6

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCHI KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (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 FIELD (MG/L CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
AUG												
24...	120	580	18	6	5.2	1.1	2.5	.3	1.8	12	11	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	26	5	8.3	1.2	3.2	.3	2.1	21	11	--

DATE	TIME	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)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	SOLIDS, VOL- TILE, SUS- PENDE (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)
AUG												
24...	4.5	.10	4.0	38	13	<1	<.10	1.30	.020	1	45	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	5.5	.10	6.7	51	34	6	<.10	1.40	.040	<1	51	--

DATE	TIME	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)
AUG											
24...		<1	10	3	320	1	36	<.1	<1	<1	12
24...		--	--	--	--	--	--	--	--	--	--
24...		--	--	--	--	--	--	--	--	--	--
24...		--	--	--	--	--	--	--	--	--	--
24...		<1	<10	3	410	3	110	<.1	<1	<1	12

300202095075701 LAKE HOUSTON SITE ER

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	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- PHORUS, TOTAL (MG/L AS P)
AUG											
24...	1058	1.00	60	6.2	29.5	.28	4.5	58	<.10	1.20	.030
24...	1100	5.00	60	6.0	28.0	--	2.5	32	--	--	--
24...	1102	13.0	65	6.0	27.5	--	2.3	29	<.10	1.20	.040



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

300202095091701 LAKE HOUSTON SITE FR  
WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)
AUG											
24...	1156	1.00	125	6.4	30.0	.08	3.7	48	<.10	1.30	.170
24...	1158	5.00	125	6.3	29.0	--	3.1	40	--	--	--
24...	1200	12.0	120	6.4	29.0	--	3.6	46	<.10	1.30	.180

300209095091201 LAKE HOUSTON SITE FC  
WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)
AUG												
24...	1210	1.00	110	6.4	31.0	.07	150	82	3.8	51	3.8	210
24...	1212	5.00	120	6.3	29.0	--	--	--	2.5	32	--	--
24...	1214	10.0	120	6.1	28.5	--	--	--	1.9	24	--	--
24...	1216	15.5	95	6.0	28.0	--	300	400	1.0	13	3.5	--

DATE	TIME	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
AUG												
24...	160	35	3	11	1.9	8.3	.6	3.2	32	15	13	
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	30	2	9.6	1.4	7.1	.6	2.9	28	15	11	

DATE	TIME	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDE (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)
AUG												
24...	.20	9.5	82	62	<1	<.10	1.30	.170	1	69	<1	
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	.20	8.5	73	164	49	<.10	1.70	.270	2	58	<1	

DATE	TIME	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)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)
AUG												
24...	<10	3	240	2	29	<.1	<1	<1	6	18.0	2.00	
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	10	4	270	3	100	<.1	<1	<1	7	--	--	--

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

300214095090901 LAKE HOUSTON SITE FL

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	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- PHORUS, TOTAL (MG/L AS P)
AUG											
24...	1256	1.00	115	6.4	30.5	.06	3.4	45	<.10	1.30	.170
24...	1258	5.00	115	6.2	29.0	--	1.8	23	--	--	--
24...	1300	11.0	105	6.3	29.0	--	1.0	13	<.10	1.50	.200

295516095080801 LAKE HOUSTON SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)
AUG 25...	1400	1.00	<.10	<.10	<.10	<.10	<.10	<2.0
DATE	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- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
AUG 25...	<.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

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

295516095080801 LAKE HOUSTON SITE AC

PHYTOPLANKTON ANALYSES, OCTOBER 1982 TO AUGUST 1983

DATE	AUG 25, 83	
TIME	1401	
TOTAL CELLS/ML	7000	
DIVERSITY: DIVISION	1.8	
..CLASS	1.8	
..ORDER	2.7	
...FAMILY	3.0	
....GENUS	3.4	
ORGANISM	CELLS	PER-
	/ML	CENT
BACILLARIOPHYTA (DIATOMS)		
..BACILLARIOPHYCEAE		
...BACILLARIALES		
....NITZSCHIA	70	1
....EUPODISCALES		
....COSCONODISCACEAE		
....CYCLOTELLA	350	5
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCALES		
....CHLOROCOCCACEAE		
....SCHROEDERIA	70	1
....TETRAEDRON	*	0
....OOCYSTACEAE		
....ANKISTRODESMUS	170	2
....KIRCHNERIELLA	380	5
....TREUBARIA	140	2
....SCENEDESMACEAE		
....CRUCIGENIA	280	4
....SCENEDESMUS	350	5
..VOLVOCALES		
...CHLAMYDOMONADACEAE		
....CHLAMYDOMONAS	1200#	17
....CHLOROGONIUM	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...CHROOCOCCALES		
....CHROOCOCCACEAE		
....AGMENELLUM	140	2
....ANACYSTIS	940	13
...NOSTOCALES		
....NOSTOCACEAE		
....ANABAENA	140	2
...OSCILLATORIALES		
....OSCILLATORIA	1500#	21
EUGLENOPHYTA (EUGLENOIDS)		
..EUGLENOPHYCEAE		
...EUGLENALES		
....EUGLENACEAE		
....PHACUS	70	1
....TRACHELOMONAS	940	13
PYRRHOPHYTA (FIRE ALGAE)		
..DINOPHYCEAE		
...DINOKONTAE		
....PERIDINIACEAE		
....PERIDINIUM	140	2

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%  
\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## LAKE HOUSTON NEAR SHELDON, TX--Continued

295902095074201 LAKE HOUSTON SITE CC

## PHYTOPLANKTON ANALYSES, OCTOBER 1982 TO AUGUST 1983

DATE	AUG 25, 83	
TIME	1047	
TOTAL CELLS/ML	1500	
DIVERSITY: DIVISION	1.4	
..CLASS	1.4	
..ORDER	2.0	
...FAMILY	3.1	
....GENUS	3.3	
ORGANISM	CELLS /ML	PER- CENT
PACILLARIOPHYTA (DIATOMS)		
.BACILLARIOPHYCEAE		
..BACILLARIALES		
...NITZSCHIA	14	1
..FRAGILARIALES		
...FRAGILARIACEAE	14	1
....SYNEDRA		
CHLOROPHYTA (GREEN ALGAE)		
.CHLOROPHYCEAE		
..CHLOROCOCCALES		
...CHLOROCOCCACEAE		
....TETRAEDRON	70	5
...COCCOMYXACEAE		
....ELAKATOTHRIX	56	4
..DICTYOSPHAERIALES		
...DICTYOSPHAERIUM	270#	17
..MICRACTINIACEAE		
...GOLLENKINIA	14	1
...OOCYSTACEAE		
....ANKISTRODESMUS	28	2
....KIRCHNERIELLA	28	2
...OOCYSTIS	42	3
..SCENEDESMACEAE		
...SCENEDESMUS	280#	18
..VOLVOCALES		
...CHLAMYDOMONADACEAE		
....CHLAMYDOMONAS	250#	16
CHRYSOPHYTA		
.CHRYSOPHYCEAE		
..CHROMONADALES		
...DINOBRYACEAE		
....PSEUDOKEPHYRION	28	2
.XANTHOPHYCEAE		
..MISCHOCOCCALES		
...SCIADACEAE		
....CENTRITRACTUS	14	1
CYANOPHYTA (BLUE-GREEN ALGAE)		
.CYANOPHYCEAE		
..CHROOCOCCALES		
...CHROOCOCCACEAE		
....AGMENELLUM	110	7
....ANACYSTIS	140	9
EUGLENOPHYTA (EUGLENOIDS)		
.EUGLENOPHYCEAE		
..EUGLENALES		
...EUGLENACEAE		
....TRACHELOMONAS	180	12

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%



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

300158095074601 LAKE HOUSTON SITE EC  
PHYTOPLANKTON ANALYSES, OCTOBER 1982 TO AUGUST 1983

DATE	AUG 24, 83
TIME	1021
TOTAL CELLS/ML	2600
DIVERSITY: DIVISION	0.7
.CLASS	0.7
..ORDER	1.6
...FAMILY	1.8
....GENUS	1.9

ORGANISM	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)		
.BACILLARIOPHYCEAE		
..EUPODISCALES		
...COSCINODISCACEAE		
....MELOSIRA	28	1
CHLOROPHYTA (GREEN ALGAE)		
.CHLOROPHYCEAE		
..CHLOROCOCCALES		
...OOCYSTACEAE		
....ANKISTRODESMUS	150	6
....KIRCHNERIELLA	28	1
....OOCYSTIS	14	1
...SCENEDESMACEAE		
....CRUCIGENIA	56	2
....SCENEDESMUS	56	2
..VOLVOCALES		
...CHLAMYDOMONADACEAE		
....CHLAMYDOMONAS	130	5
CYANOPHYTA (BLUE-GREEN ALGAE)		
.CYANOPHYCEAE		
..CHROOCOCCALES		
...CHROOCOCCACEAE		
....ANACYSTIS	700#	27
..NOSTOCALES		
...HAMMATOIDEACEAE		
....RAPHIDIOPSIS	1400#	55

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%  
\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## SAN JACINTO RIVER BASIN

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## LAKE HOUSTON NEAR SHELDON, TX--Continued

300209095091201 LAKE HOUSTON SITE FC

## PHYTOPLANKTON ANALYSES, OCTOBER 1982 TO AUGUST 1983

DATE	AUG 24, 83	
TIME	1210	
TOTAL CELLS/ML	5100	
DIVERSITY: DIVISION	1.3	
..CLASS	1.3	
...ORDER	2.0	
...FAMILY	2.2	
....GENUS	2.9	
ORGANISM	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)		
.BACILLARIOPHYCEAE		
..BACILLARIALES		
...NITZSCHIAEAE		
....NITZSCHIA	42	1
..EUPODISCALES		
...COSCINODISCACEAE		
....CYCLOTELLA	180	4
CHLOROPHYTA (GREEN ALGAE)		
.CHLOROPHYCEAE		
..CHLOROCOCCALES		
...OOCYSTACEAE		
....ANKISTRODESMUS	220	4
....KIRCHNERIELLA	240	5
....NEPHROCYTIUM	140	3
...SCENEDESMACEAE		
....CRUCIGENIA	110	2
....GLOEOACTINIUM	150	3
....SCENEDESMUS	110	2
..VOLVOCALES		
...CHLAMYDOMONADACEAE		
....CHLAMYDOMONAS	240	5
..ZYGNEATALES		
...DESMIDIACEAE		
....COSMARIUM	28	1
CHRYSTOPHYTA		
.XANTHOPHYCEAE		
..MISCHOCOCCALES		
...SCIADACEAE		
....CENTRITRACTUS	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)		
.CYANOPHYCEAE		
..CHROOCOCCALES		
...CHROOCOCCACEAE		
....ANACYSTIS	780#	15
..OSCILLATORIALES		
...OSCILLATORIAEAE		
....LYNGBYA	560	11
....OSCILLATORIA	2100#	41
EUGLENOPHYTA (EUGLENOIDS)		
.EUGLENOPHYCEAE		
..EUGLENALES		
...EUGLENACEAE		
....EUGLENA	28	1
....PHACUS	110	2
....TRACHELOMONAS	42	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## SAN JACINTO RIVER BASIN

08072020 LAKE HOUSTON PLANT INTAKE AT GALENA PARK, TX

LOCATION.--Lat 29°44'01", long 95°12'58", Harris County, Hydrologic Unit 12040104, at city of Houston municipal water plant intake from Lake Houston West Canal and 1 mi east of Galena Park.

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

PERIOD OF RECORD.--Periodic chemical analyses: May 1972 to current year. Pesticide analyses: May 1968 to September 1981.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	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)
NOV 30...	1225	3	100	1	<10	4	20
MAR 22...	1405	1	100	<1	10	2	270
MAY 13...	1115	1	100	<1	<10	2	250
SEP 15...	1242	<1	<100	<1	<10	8	10

DATE	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 30...	<1	<10	<.1	<1	1	<10
MAR 22...	3	<10	<.1	<1	<1	10
MAY 13...	<1	10	<.1	<1	<1	<10
SEP 15...	2	10	.1	<1	<1	10

## SAN JACINTO RIVER BASIN

87

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 only prior to 1973, beginning 1973 gage heights only).

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.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 20.12 ft June 15, 1973; minimum elevation, -2.36 ft Feb. 13, 1971.

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, 17.50 ft May 23 at 2000 hours; minimum gage height, -1.50 ft Mar. 21.

## GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT	
	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.
1	3.24	2.10	3.28	1.69	-	-	-	-	-	-	2.17	1.27	3.88	1.37	3.57	1.24	-	-	-	-	2.12	.57	2.14	.23
2	3.65	1.80	3.24	1.50	-	-	-	-	-	-	2.16	1.35	2.26	-.84	3.53	1.51	-	-	-	-	1.93	.53	2.24	.23
3	3.45	2.10	3.19	.13	-	-	-	-	-	-	-	1.06	2.63	-.63	2.72	1.01	-	-	-	-	2.12	.48	2.64	.43
4	3.35	1.60	1.47	.05	-	-	-	-	-	-	1.27	3.41	1.26	2.46	.46	-	-	-	-	-	2.65	.89	2.18	.72
5	3.20	1.63	2.33	.75	-	-	-	-	-	-	-	1.52	3.16	1.55	2.65	.69	-	-	-	-	2.54	.68	3.37	1.14
6	3.43	2.19	2.85	1.10	-	-	-	-	-	-	2.87	1.27	-	.24	3.64	2.11	-	-	-	-	2.25	.38	4.45	1.47
7	3.45	1.45	2.95	1.05	-	-	-	-	-	-	2.85	1.36	-	-	3.12	1.77	-	-	-	-	2.20	.13	3.78	1.84
8	3.20	1.85	2.88	1.20	-	-	-	-	-	-	2.77	.92	-	-	2.06	.49	-	-	-	-	2.78	.24	3.40	1.66
9	3.43	.98	3.07	1.07	-	-	-	-	-	-	2.22	.22	-	-	3.31	1.65	-	-	-	-	2.56	.10	3.30	1.87
10	2.70	.45	2.77	1.05	-	-	-	-	-	-	1.54	-.74	-	-	3.53	2.42	-	-	-	-	2.73	.33	3.03	1.76
11	2.30	.54	3.07	1.22	-	-	-	-	-	-	1.66	-.16	-	-	3.63	2.52	-	-	-	-	3.07	.84	3.17	1.24
12	2.76	.90	2.72	.51	-	-	-	-	-	-	2.22	.15	-	-	3.58	1.97	-	-	-	-	2.42	1.06	2.66	.64
13	2.17	.64	2.46	-.38	-	-	-	-	-	-	2.26	.81	2.79	1.42	3.74	1.97	-	-	-	-	2.41	1.28	2.28	.46
14	2.34	.45	2.93	1.15	-	-	-	-	-	-	2.44	.82	2.13	-.37	4.00	2.10	-	-	-	-	2.00	.49	2.43	.71
15	2.48	.94	2.38	.31	-	-	-	-	-	-	2.97	1.65	2.01	-.05	3.12	1.53	-	-	3.65	-	1.65	.60	2.63	1.01
16	2.24	.70	-	-	-	-	-	-	-	-	3.42	1.98	2.55	.46	2.58	.32	-	-	4.60	3.33	2.61	.61	2.64	.92
17	2.63	1.05	-	-	-	-	-	-	-	-	2.26	-.70	2.80	.70	4.12	1.38	-	-	4.86	3.98	5.00	1.36	2.60	.87
18	2.60	.88	-	-	-	-	-	-	-	-	2.31	-.67	2.19	.43	4.15	2.43	-	-	4.10	2.39	12.35	3.37	3.03	1.36
19	2.50	1.25	-	-	-	-	-	-	-	-	2.41	.65	3.56	.59	3.47	1.73	-	-	3.07	1.57	13.70	11.95	6.68	1.49
20	2.58	.27	-	-	-	-	-	-	-	-	2.16	-.05	3.60	1.83	6.18	2.20	-	-	2.57	.97	13.68	11.45	7.14	6.47
21	2.40	.60	-	-	-	-	-	-	-	-	1.09	-1.50	3.55	2.02	13.38	6.18	-	-	1.94	.48	11.45	7.98	6.84	4.28
22	1.90	.53	-	-	-	-	-	-	-	-	2.84	-.01	3.13	1.50	16.17	13.38	-	-	2.38	.45	7.98	5.72	4.28	3.62
23	-	-	-	-	-	-	-	-	-	-	4.12	1.79	2.19	.05	17.50	16.17	-	-	2.33	.04	5.72	3.60	3.95	2.92
24	-	-	-	-	-	-	-	-	-	-	5.29	2.38	1.47	-.37	17.40	-	-	-	2.23	.43	3.30	2.61	3.58	2.50
25	-	-	-	-	-	-	-	-	-	-	6.16	5.29	2.83	.23	-	-	-	-	2.26	.32	2.62	1.64	3.38	2.31
26	-	-	-	-	-	-	-	-	-	-	6.67	6.00	2.78	1.42	-	-	-	-	1.98	.23	2.75	1.05	3.44	1.92
27	2.40	.70	-	-	-	-	-	-	-	-	6.33	5.48	2.89	1.23	-	-	-	-	1.95	.19	3.13	1.17	3.18	1.82
28	2.80	1.17	-	-	-	-	-	-	2.15	1.19	5.49	3.63	2.78	.99	-	-	-	-	1.81	.23	3.38	1.97	3.21	1.53
29	2.70	1.60	-	-	-	-	-	-	-----	-----	4.17	3.60	3.05	1.06	-	-	-	-	2.37	.28	2.73	1.11	3.26	1.46
30	3.00	1.70	-	-	-	-	-	-	-----	-----	3.90	2.98	3.10	1.06	-	-	-	-	2.57	1.61	2.88	.48	3.07	1.14
31	3.25	1.73	-----	-----	-	-	-	-	-----	-----	3.36	2.08	-----	-----	-	-	-----	-----	2.75	1.66	1.85	.34	-----	-----



## SAN JACINTO RIVER BASIN

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 National Geodetic Vertical Datum of 1929, 1973 adjustment.

REMARKS.--Records good. Diversions and return of irrigation water from area above station.

AVERAGE DISCHARGE.--6 years, 57.5 ft<sup>3</sup>/s (41,660 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, 0.80 ft<sup>3</sup>/s Nov. 20-22, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,150 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)
Nov. 19	2200	1,410	33.48	Mar. 23	2000	1,200	32.45
Nov. 30	2200	1,200	32.45	May 21	unknown	1,320	33.46
Feb. 10	0100	*1,520	33.56	Sept. 19	1100	1,430	33.87

Minimum daily discharges, 1.5 ft<sup>3</sup>/s Nov. 14, 15, Mar. 12, 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	8.5	834	79	15	6.1	30	9.5	11	5.1	19	3.9
2	1.6	18	335	64	15	4.9	15	10	9.5	3.6	35	4.7
3	2.7	122	736	31	7.9	4.3	8.0	6.2	7.5	2.9	20	4.9
4	2.0	63	500	18	5.3	5.4	4.0	5.3	4.8	3.1	15	5.7
5	7.2	28	240	13	73	8.3	3.0	4.0	4.1	3.1	14	6.3
6	5.3	15	140	11	104	4.3	2.5	3.6	3.7	4.4	13	6.8
7	11	8.8	75	12	35	2.9	2.2	6.4	4.1	4.2	15	8.1
8	45	5.4	52	11	17	2.4	2.0	3.8	3.9	3.3	39	8.3
9	41	4.2	41	8.2	464	2.1	2.0	6.0	3.6	3.0	117	6.4
10	38	3.5	36	5.4	1300	2.0	1.9	40	3.6	2.7	166	21
11	33	2.6	39	5.7	481	1.8	1.9	41	3.5	3.4	129	18
12	819	2.2	48	4.1	170	1.5	1.8	18	3.9	3.0	76	10
13	875	1.7	32	3.2	78	1.5	5.0	8.7	3.5	48	75	7.4
14	376	1.5	42	2.8	40	2.1	2.5	5.9	2.3	34	61	7.6
15	180	1.5	249	2.5	307	1.9	2.0	5.1	4.8	226	39	6.4
16	121	4.0	122	2.2	461	7.4	1.8	4.5	8.7	933	22	5.7
17	72	897	58	2.1	151	7.4	1.8	4.0	158	606	14	6.2
18	40	502	32	3.1	64	3.5	2.0	6.8	223	322	313	12
19	24	715	24	401	35	2.0	2.0	6.9	124	199	529	1160
20	14	1030	18	453	28	2.2	2.2	150	59	133	196	904
21	10	476	14	172	495	2.9	2.5	700	24	107	113	515
22	8.7	246	12	91	254	2.5	2.5	1150	13	123	71	214
23	9.5	138	9.7	50	121	476	2.2	520	8.5	136	38	119
24	5.6	89	8.6	40	50	741	2.0	260	7.1	106	26	80
25	3.8	49	40	90	26	259	2.2	150	12	81	17	49
26	2.6	87	30	64	17	190	2.2	76	17	79	10	32
27	2.0	872	23	42	11	108	1.9	43	9.5	64	6.9	23
28	2.0	499	22	24	7.9	42	1.8	31	6.4	49	6.6	16
29	11	202	14	16	---	22	2.6	23	5.0	47	6.4	12
30	18	589	9.0	15	---	30	4.3	18	4.7	43	5.3	8.9
31	15	---	13	11	---	60	---	14	---	27	4.7	---
TOTAL	2798.2	6680.9	3848.3	1747.3	4833.1	2007.4	117.8	3330.7	753.7	3404.8	2211.9	3282.3
MEAN	90.3	223	124	56.4	173	64.8	3.93	107	25.1	110	71.4	109
MAX	875	1030	834	453	1300	741	30	1150	223	933	529	1160
MIN	1.6	1.5	8.6	2.1	5.3	1.5	1.8	3.6	2.3	2.7	4.7	3.9
AC-FT	5550	13250	7630	3470	9590	3980	234	6610	1490	6750	4390	6510
CAL YR 1982	TOTAL	19787.71	MEAN	54.2	MAX	1560	MIN	.92	AC-FT	39250		
WTR YR 1983	TOTAL	35016.40	MEAN	95.9	MAX	1300	MIN	1.5	AC-FT	69460		

## SAN JACINTO RIVER BASIN

89

## 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 to 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.

REVISED RECORDS.--WDR TX-77-1: Drainage area.

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 by 7 ft wide, each controlled by a vertical slide gate. 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 Corps of Engineers, is based on extensive releveing 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, 18,200 acre-ft Aug. 22 at 1200 to 1700 hours (elevation, 90.56 ft); maximum, 0.12 acre-ft Apr. 29, 30 (elevation, 73.68 ft).

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

73.2	0	78.4	14	81.6	193	86.0	3,979
75.8	1	79.2	22	82.2	331	87.0	6,005
76.3	2	79.8	32	83.0	671	88.5	10,100
76.9	4	80.4	49	84.0	1,367	90.0	15,620
77.6	8	81.0	100	85.0	2,433	91.0	20,530

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.18	.32	8580.00	9.30	.77	.27	.49	.23	3850.00	.17	.2	9030.0
2	.16	.49	8580.00	15.60	.43	.25	.35	.22	2930.00	.17	.3	8220.0
3	.16	16.70	8300.00	1.00	.32	.23	.28	.20	1970.00	.17	.2	7420.0
4	.17	24.30	8580.00	.43	.27	.24	.24	.20	1110.00	.18	.2	6570.0
5	.16	1.10	8380.00	.35	66.00	.36	.21	.17	273.00	.18	.2	5580.0
6	.21	.39	7650.00	.31	594.00	.25	.20	.16	6.10	.20	.3	4650.0
7	.38	.30	6420.00	.30	464.00	.21	.18	.20	.22	.21	.2	3690.0
8	.48	.25	5030.00	.29	13.10	.17	.17	.19	.21	.19	665.0	2660.0
9	.53	.20	3570.00	.26	17.00	.16	.16	.21	.20	.19	1790.0	1750.0
10	.50	1.20	2530.00	.24	1340.00	.15	.16	57.50	.18	.18	3040.0	1370.0
11	.45	4.00	1690.00	.21	3690.00	.15	.16	565.00	.17	.27	4990.0	1380.0
12	9.40	7.60	878.00	.20	4040.00	.15	.16	467.00	.19	.21	6780.0	1030.0
13	271.00	10.80	6.90	.19	3440.00	.16	.17	154.00	.19	18.40	7450.0	350.0
14	1370.00	13.30	.48	.18	2790.00	.16	.20	11.00	.19	456.00	7760.0	13.5
15	1900.00	15.80	4.20	.17	2750.00	.15	.16	.35	.18	1140.00	7550.0	.2
16	1900.00	23.30	19.30	.16	3500.00	.34	.15	.36	.34	4240.00	6470.0	.2
17	1650.00	506.00	16.50	.16	3040.00	.33	.15	.23	36.20	7830.00	5700.0	.3
18	1220.00	1780.00	.76	.22	1900.00	.21	.15	.22	526.00	9570.00	8530.0	3.3
19	689.00	2880.00	20.90	27.50	624.00	.18	.15	.22	1140.00	9410.00	13960.0	2250.0
20	160.00	5860.00	57.50	1190.00	12.30	.15	.15	285.00	1170.00	8450.00	16540.0	9060.0
21	.48	8250.00	123.00	2170.00	188.00	.20	.16	2300.00	583.00	7860.00	17800.0	13110.0
22	.30	8580.00	11.80	2110.00	901.00	.19	.15	6130.00	160.00	7220.00	18080.0	14610.0
23	.31	7290.00	.30	1620.00	789.00	239.00	.18	8960.00	.32	6130.00	17470.0	14690.0
24	.30	5740.00	.27	618.00	237.00	2350.00	.16	10360.00	1.20	4850.00	16540.0	14110.0
25	.24	4080.00	.63	7.40	10.60	3360.00	.15	10490.00	.76	3610.00	15750.0	13220.0
26	.20	3580.00	1.30	1.30	.46	3070.00	.13	9850.00	.43	2120.00	15110.0	11950.0
27	.16	5760.00	1.90	.67	.38	2390.00	.14	9030.00	.29	624.00	14340.0	10650.0
28	.15	8380.00	.73	.44	.32	1080.00	.14	8140.00	.23	.49	13570.0	9150.0
29	.45	8930.00	.37	.35	---	18.00	.12	7240.00	.20	.39	12450.0	7730.0
30	.44	8200.00	.30	.32	---	.58	.16	6260.00	.17	.37	11250.0	6260.0
31	.32	---	.49	.75	---	1.40	---	5050.00	---	.29	10010.0	---
MAX	1900	8930	8580	2170	4040	3360	.49	10490	3850	9570	18080	14690
MIN	.15	.20	.27	.16	.27	.15	.12	.16	.17	.17	.20	.20
CAL YR 1982	MAX	12110	MIN	.13								
WTR YR 1983	MAX	18080	MIN	.12								

SAN JACINTO RIVER BASIN  
08072730 BEAR CREEK NEAR BARKER, TX

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

DRAINAGE AREA.--19.8 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 and crest-stage gage. Datum of gage is 100.00 ft National Geodetic Vertical Datum of 1929, 1973 adjustment.

REMARKS.--Records poor. Channel rectified in 1981 water year. Diversions and return of irrigation water from area above station.

AVERAGE DISCHARGE.--6 years, 23.6 ft<sup>3</sup>/s (17,100 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 rectification; no flow for many days.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 400 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)
Oct. 12	2000	571	11.42	Feb. 10	unknown	643	11.83
Nov. 17	1300	418	10.38	May 22	0200	764	12.41
Nov. 20	0200	500	10.95	July 16	1500	498	10.94
Nov. 27	1400	473	10.77	Aug. 18	2300	850	12.79
Dec. 1	unknown	450	unknown	Sept. 20	unknown	626	11.72

Minimum discharge, no flow May 7, July 7, 9 (result of pumping).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.35	2.2	360	59	15	2.0	10	1.1	10	2.3	15	.10
2	.61	4.4	200	52	5.0	1.5	6.0	.41	7.5	1.8	25	1.0
3	.46	16	100	26	3.0	1.2	4.0	.86	6.0	1.4	18	.50
4	.37	23	85	13	2.0	2.0	3.0	.36	4.5	2.8	11	.20
5	.98	15	50	7.9	55	3.0	2.5	.26	3.5	2.4	6.0	.10
6	.40	6.9	35	5.4	50	1.5	2.0	.31	2.8	.15	5.2	.05
7	3.9	3.6	28	4.3	20	1.0	1.7	.00	2.2	.00	5.7	1.0
8	7.3	2.3	22	3.7	10	.79	1.5	.22	1.8	.05	35	20
9	5.8	2.1	14	3.0	100	.71	1.3	.58	1.6	.00	30	10
10	4.4	2.5	11	2.1	450	.49	1.2	14	1.3	.05	40	15
11	4.0	1.7	12	1.9	180	.31	1.1	9.7	1.1	.20	25	100
12	355	.83	14	2.1	70	.20	1.0	5.2	1.0	.30	48	30
13	403	.50	10	1.4	40	.14	1.0	2.3	.90	19	61	10
14	216	.52	18	1.2	24	.10	1.4	1.3	.80	11	22	5.0
15	132	.50	79	1.1	60	.09	2.0	.79	.75	80	10	2.0
16	80	5.3	47	1.0	100	.08	1.1	.94	2.0	434	5.0	1.0
17	47	330	23	.90	40	.62	.82	.65	50	316	1.8	.80
18	28	242	14	7.0	20	.30	.25	.52	60	160	354	10
19	17	263	9.2	100	10	.15	.55	.52	20	75	478	400
20	9.4	412	6.3	150	15	.30	.93	106	6.0	35	213	550
21	5.2	247	4.4	80	90	.20	2.1	456	5.4	40	113	300
22	2.8	155	3.4	35	60	.15	2.1	621	3.1	70	54	150
23	2.2	104	2.7	17	20	100	1.2	339	1.2	50	27	80
24	1.6	77	2.0	9.0	10	240	.50	388	.65	30	14	40
25	.91	45	3.5	6.0	7.0	90	.20	365	1.6	20	8.3	25
26	.79	45	25	4.5	5.0	55	.05	224	3.4	12	5.4	18
27	1.3	380	31	3.5	3.5	40	.41	111	1.9	8.0	4.9	12
28	1.1	260	24	3.0	2.5	15	.72	58	3.0	6.0	5.4	8.0
29	7.1	140	13	2.5	---	6.0	.31	31	4.1	5.0	3.1	4.9
30	5.4	160	7.6	2.5	---	20	.36	20	3.1	10	1.7	3.8
31	4.7	---	13	12	---	22	---	14	---	12	.36	---
TOTAL	1349.07	2947.35	1267.1	618.00	1467.0	604.83	51.30	2773.02	211.20	1404.45	1645.86	1798.45
MEAN	43.5	98.2	40.9	19.9	52.4	19.5	1.71	89.5	7.04	45.3	53.1	59.9
MAX	403	412	360	150	450	240	10	621	60	434	478	550
MIN	.35	.50	2.0	.90	2.0	.08	.05	.00	.65	.00	.36	.05
AC-FT	2680	5850	2510	1230	2910	1200	102	5500	419	2790	3260	3570

WTR YR 1983 TOTAL 16137.63 MEAN 44.2 MAX 621 MIN .00 AC-FT 32010

NOTE.--No gage-height record Jan. 15 to Mar. 7.

## 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, 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 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.

REVISED RECORDS.--WDR TX-77-1: Drainage area.

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 by 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 give here in 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 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 Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 24,650 acre-ft Aug. 22 at 1200 hours (elevation, 95.70 ft); minimum, 0.34 acre-ft Apr. 25, 26 (elevation, 71.65 ft).

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

71.1	0	77.2	54	83.0	598	90.0	5,707
73.6	2	78.0	85	84.5	1,033	92.0	9,926
75.1	8	79.0	134	86.0	1,676	94.0	16,700
75.7	16	80.0	202	88.0	3,190	95.7	24,650
76.4	30	81.5	351				

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.68	.9	19470.0	178.00	2.40	.67	148.00	.4	5130.00	.44	43.5	11670.0
2	.58	3.3	20320.0	293.00	1.30	.69	2.10	.4	3940.00	.43	1.2	10560.0
3	.78	19.6	20370.0	165.00	.83	.55	1.00	.4	2810.00	.39	1.1	9260.0
4	.65	2.0	19660.0	2.90	.62	1.10	.38	.4	1650.00	.46	.9	8050.0
5	.57	1.4	18570.0	1.30	403.00	1.10	.38	.4	681.00	.45	2.5	6910.0
6	.52	1.0	17080.0	1.00	957.00	.62	.38	.4	214.00	.42	1.2	5520.0
7	.96	.7	15550.0	.95	598.00	.55	.38	.4	46.20	.38	.9	4230.0
8	1.30	.5	13840.0	.80	.64	.43	.38	.4	.50	.39	1940.0	3120.0
9	1.40	.4	12090.0	.70	204.00	.41	.38	.4	.42	.45	4740.0	1960.0
10	1.20	.4	11120.0	.84	3300.00	.40	.38	185.0	.40	.80	5680.0	1290.0
11	1.00	.4	10170.0	.54	4930.00	.37	.38	367.0	.38	.83	6910.0	1050.0
12	367.00	.4	9150.0	.49	4270.00	.36	.38	269.0	.38	.50	7980.0	430.0
13	2380.00	.4	7450.0	.45	2960.00	.38	.38	92.3	.43	206.00	8760.0	30.0
14	3330.00	.4	5170.0	.50	1960.00	.38	.41	.8	.40	547.00	9170.0	.6
15	3450.00	.4	3200.0	.43	2010.00	.36	.41	.8	.46	1220.00	9060.0	.4
16	3230.00	1.0	1430.0	.44	2670.00	.41	.41	.6	42.00	4390.00	8170.0	.4
17	2790.00	811.0	454.0	.41	2660.00	.54	.38	.5	364.00	7180.00	7450.0	.6
18	2250.00	2670.0	3.8	.57	2240.00	.39	.38	.4	670.00	8000.00	12170.0	1.1
19	1650.00	4230.0	1.6	298.00	1680.00	.36	.38	.4	789.00	7200.00	20850.0	3610.0
20	1120.00	7450.0	1.3	1210.00	1270.00	.53	.38	628.0	531.00	5860.00	23220.0	8310.0
21	619.00	9340.0	1.0	1520.00	2130.00	.41	.38	3850.0	151.00	4870.00	24270.0	11920.0
22	213.00	9980.0	.7	1050.00	2430.00	.36	.38	9510.0	1.20	4100.00	24500.0	13060.0
23	1.00	9870.0	.9	442.00	1360.00	568.00	.38	11760.0	.62	3080.00	23930.0	12760.0
24	.63	9590.0	.8	18.00	435.00	2990.00	.38	12610.0	1.40	1700.00	22790.0	12030.0
25	.50	9120.0	1.7	1.50	1.60	3650.00	.34	12610.0	.90	584.00	21420.0	11280.0
26	.44	9560.0	18.0	1.40	1.40	3540.00	.36	12030.0	.70	14.70	20130.0	10230.0
27	.43	12460.0	64.8	1.20	1.00	3150.00	.41	11230.0	.70	.96	18850.0	9010.0
28	.41	15070.0	51.9	.87	.85	2320.00	.37	10200.0	.56	1.00	17450.0	7860.0
29	33.30	15850.0	1.8	.68	---	1300.00	.36	8980.0	.59	.95	16260.0	6750.0
30	1.90	17150.0	1.4	.57	---	653.00	.37	7780.0	.48	.88	14660.0	5360.0
31	1.30	---	8.4	2.50	---	405.00	---	6410.0	---	.85	12940.0	---
MAX	3450	17150	20370	1520	4930	3650	148	12610	5130	8000	24500	13060
MIN	.41	.40	.70	.41	.62	.36	.34	.40	.38	.38	.90	.40
CAL YR 1982	MAX	20370	MIN	.29								
WTR YR 1983	MAX	24500	MIN	.34								



## SAN JACINTO RIVER BASIN

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, 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 fair. Floodflow 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.

AVERAGE DISCHARGE.--38 years, 215 ft<sup>3</sup>/s (155,800 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, 2,310 ft<sup>3</sup>/s Aug. 18 at 2300 hours (gage height, 68.37 ft); minimum daily, 19 ft<sup>3</sup>/s Oct. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	51	1480	390	315	51	568	23	1090	31	200	1280
2	30	99	1410	489	159	45	310	29	856	29	200	1050
3	30	353	1440	458	74	42	72	29	828	29	122	1040
4	31	318	1480	296	53	42	43	25	794	29	87	1020
5	30	248	1460	97	546	64	35	23	743	32	120	1000
6	30	92	1500	67	756	51	29	23	530	32	181	1140
7	39	51	1610	56	834	36	26	21	165	32	157	1310
8	65	39	1670	52	955	33	25	24	74	31	432	1350
9	100	33	1630	48	589	29	23	31	36	32	290	1180
10	93	28	1410	46	734	28	21	190	32	32	388	907
11	82	24	1020	41	1030	27	21	78	29	58	444	916
12	308	24	983	37	1580	27	23	188	29	42	261	846
13	535	22	1190	35	1540	27	23	322	31	156	127	717
14	596	22	1420	33	1190	28	28	231	34	73	90	348
15	618	22	1690	33	762	30	24	97	34	394	378	139
16	613	35	1560	33	968	35	21	52	185	655	883	70
17	605	404	985	32	1260	51	20	37	370	272	733	81
18	591	571	594	44	1170	40	21	27	70	487	1180	238
19	573	894	110	451	1070	32	21	27	30	959	1360	1140
20	543	223	43	712	918	34	21	451	200	1320	418	807
21	461	76	37	816	728	33	23	607	520	1340	358	646
22	262	472	141	968	836	31	28	418	390	1450	550	967
23	174	1320	86	900	1230	396	29	357	252	1320	1110	1370
24	33	1290	53	869	1230	620	26	664	129	1220	1170	1300
25	25	1230	69	603	640	1130	23	895	157	1120	1570	1230
26	22	1060	301	201	157	1320	23	990	152	973	1200	1260
27	20	311	323	128	84	1250	23	961	90	650	1150	1330
28	19	140	372	83	60	1240	24	945	42	500	1140	1300
29	110	518	221	60	---	1240	23	929	34	220	1330	1270
30	189	1430	90	52	---	799	24	912	32	140	1510	1320
31	100	---	120	115	---	624	---	973	---	160	1460	---
TOTAL	6964	11400	26498	8245	21468	9435	1621	10579	7958	13818	20599	28572
MEAN	225	380	855	266	767	304	54.0	341	265	446	664	952
MAX	618	1430	1690	968	1580	1320	568	990	1090	1450	1570	1370
MIN	19	22	37	32	53	27	20	21	29	29	87	70
AC-FT	13810	22610	52560	16350	42580	18710	3220	20980	15780	27410	40860	56670
CAL YR 1982	TOTAL	76879	MEAN 211	MAX 1690	MIN 15	AC-FT 152500						
WTR YR 1983	TOTAL	167157	MEAN 458	MAX 1690	MIN 19	AC-FT 331600						

## SAN JACINTO RIVER BASIN

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## 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.--Water-discharge records fair. Floodflow regulated by Barker and Addicks Reservoirs (stations 08072500 and 08073000) 10.1 and 10.3 mi upstream, respectively. Low flow is sustained by sewage effluent from Houston suburbs. Gage-height telemeter at station.

AVERAGE DISCHARGE.--12 years, 327 ft<sup>3</sup>/s (236,900 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, 25 ft<sup>3</sup>/s Nov. 21, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,810 ft<sup>3</sup>/s Sept. 19 at 1030 hours (gage height, 61.48 ft); minimum daily, 43 ft<sup>3</sup>/s July 3, 4, 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	100	1500	387	316	90	620	56	1130	48	256	1340
2	67	235	1460	478	196	80	350	62	904	46	259	1080
3	66	478	1480	458	117	74	110	64	870	43	180	1040
4	68	352	1500	315	89	70	70	57	833	43	121	1020
5	67	284	1480	143	594	100	60	55	782	46	150	1000
6	71	141	1540	108	781	85	56	55	577	46	248	1090
7	90	89	1650	93	803	72	54	54	228	45	232	1290
8	112	72	1700	88	1000	66	54	57	112	43	662	1410
9	146	64	1680	83	800	63	52	79	55	44	576	1250
10	137	58	1540	80	690	63	52	425	54	44	583	1030
11	142	54	1070	77	936	63	52	138	49	71	735	1210
12	424	53	998	71	1590	62	54	224	48	62	496	909
13	557	51	1110	69	1600	62	55	369	48	366	217	839
14	633	50	1470	66	1340	62	56	292	48	218	124	441
15	660	50	1750	66	948	64	54	217	52	555	364	192
16	657	100	1710	63	962	75	52	104	420	1220	872	91
17	654	655	1090	62	1290	94	50	72	735	379	890	96
18	648	505	628	87	1220	80	52	60	99	460	1840	286
19	631	1300	164	578	1110	68	50	55	55	917	2320	2410
20	598	377	75	757	1010	77	51	805	258	1320	634	1590
21	519	128	65	816	990	72	52	900	586	1390	424	833
22	306	436	139	1010	792	70	64	582	452	1500	520	955
23	228	1290	200	948	1230	500	59	391	365	1360	1080	1390
24	75	1290	85	900	1300	650	54	676	232	1270	1160	1350
25	61	1240	242	693	756	1200	52	908	217	1180	1570	1290
26	57	1250	310	247	195	1350	51	1020	209	1050	1280	1290
27	62	595	339	170	123	1300	54	1000	135	811	1120	1380
28	54	200	359	128	100	1300	56	984	68	648	1110	1350
29	235	516	238	101	---	1300	56	965	54	259	1270	1320
30	264	1440	121	88	---	850	57	949	51	207	1580	1330
31	165	---	162	275	---	670	---	994	---	209	1440	---
TOTAL	8525	13453	27855	9505	22878	10732	2559	12669	9726	15900	24313	32102
MEAN	275	448	899	307	817	346	85.3	409	324	513	784	1070
MAX	660	1440	1750	1010	1600	1350	620	1020	1130	1500	2320	2410
MIN	54	50	65	62	89	62	50	54	48	43	121	91
AC-FT	16910	26680	55250	18850	45380	21290	5080	25130	19290	31540	48220	63670

CAL YR 1982 TOTAL 92931 MEAN 255 MAX 1750 MIN 50 AC-FT 184300  
WTR YR 1983 TOTAL 190217 MEAN 521 MAX 2410 MIN 43 AC-FT 377300

## SAN JACINTO RIVER BASIN

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

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: December 1978 to current year. Pesticide analyses: June 1978 to March 1983.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: June 1979 to current year.

WATER TEMPERATURES: June 1979 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

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

WATER TEMPERATURES (1979-80): Maximum daily, 30.5°C July 1, 1978; minimum daily, 8.5°C Jan. 23, 1981.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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 24...	0945	1290	124	6.8	18.0	--	23	7.7	81	3.5	250
FEB 16...	1030	891	150	7.4	13.0	--	280	9.7	92	3.5	190
MAR 02...	1248	85	640	7.8	20.5	40	52	8.6	95	9.9	K1
MAY 11...	1217	148	420	7.3	23.5	--	210	6.0	71	7.5	62
AUG 02...	1050	284	323	7.2	26.5	--	180	7.0	87	3.9	80

DATE	100 ML)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER CAC03)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
NOV 24...	920	36	0	11	2.1	9.5	.7	4.8	41	8.0	10	
FEB 16...	1700	42	0	13	2.4	13	.9	2.7	44	10	12	
MAR 02...	330	130	0	39	7.1	79	3.2	4.7	170	24	74	
MAY 11...	500	95	0	29	5.3	43	2.0	4.6	110	21	44	
AUG 02...	600	78	0	25	3.8	37	1.9	4.6	87	16	36	

DATE	AS F)	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)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDE (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, NO2+NO3 DIS- SOLVED (MG/L AS N)
NOV 24...	.10	8.7	94	80	--	--	--	--	--	--	.13
FEB 16...	.20	7.5	92	89	--	--	--	--	--	--	.34
MAR 02...	.40	17	--	347	54	13	1.3	.600	1.9	--	--
MAY 11...	.30	12	228	231	--	--	--	--	5.6	.79	--
AUG 02...	.30	13	199	191	--	--	--	--	--	--	1.2

DATE	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- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 24...	--	.190	--	1.50	.380	.320	--	45	157	70	
FEB 16...	--	.300	--	2.20	.390	.290	--	79	190	87	
MAR 02...	3.50	--	1.2	4.70	1.80	--	12	--	--	--	
MAY 11...	--	2.30	--	2.70	.840	.660	--	259	103	98	
AUG 02...	--	.490	--	2.40	.820	.670	--	188	144	97	

## SAN JACINTO RIVER BASIN

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	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 24...	0945	2	63	<1	<1	<1	<3	6	180	1
FEB 16...	1030	2	56	<1	<1	<1	<3	4	250	<1
MAR 02...	1248	3	160	--	<1	<10	--	5	130	<1
MAY 11...	1217	4	110	<1	<1	<1	<3	5	65	<1
AUG 02...	1050	3	110	1	2	<1	<3	3	65	<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 24...	7	10	.1	<10	<1	<1	<1	56	<6.0	32
FEB 16...	<4	8	<.1	<10	2	<1	<1	78	<6.0	34
MAR 02...	--	48	<.1	--	--	<1	<1	--	--	11
MAY 11...	12	8	<.1	<10	2	1	<1	220	<6.0	46
AUG 02...	10	5	<.1	<10	<1	<1	<1	180	<6.0	7

DATE	TIME	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
MAR 02...	1248	<.10	<.10	.20	<.10	<.10	<2.0	<.1

DATE	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
MAR 02...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1



## SAN JACINTO RIVER BASIN

08073630 BETTINA STREET DITCH AT KIMBERLY STREET AT HOUSTON, TX  
(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°46'32", long 95°32'23", Harris County, Hydrologic Unit 12040104, at intersection of Bettina Street ditch and Kimberly Street in west Houston.

DRAINAGE AREA.--1.37 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1978 to current year.

GAGE.--Flood-hydrograph and rainfall recorder, automatic water-quality sampler, and crest-stage gage. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Additional storm rainfall-runoff data for this site can be obtained from the report "Hydrologic Data for Urban Studies in the Houston, Texas Metropolitan Area, 1983."

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 562 ft<sup>3</sup>/s Aug. 31, 1981 (elevation, 81.69 ft).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 360 ft<sup>3</sup>/s Sept. 19 (elevation, 80.18 ft, from crest-stage gage), no other peak above base of 300 ft<sup>3</sup>/s; minimum not determined.

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1981 to September 1983.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

								OXYGEN, DIS- SOLVED	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)		
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	(PER- CENT SATUR- ATION)	(MG/L)			
NOV													
02...	1655	3.6	116	--	--	40	22	--	--	--	--	--	
02...	1710	150	51	--	--	15	50	--	--	--	--	--	
02...	1725	195	85	--	--	30	64	--	--	--	--	--	
02...	1810	140	62	--	--	30	56	--	--	--	--	--	
MAR													
02...	1055	.30	959	8.8	22.0	5	21	14.5	166	165	5700	2000	
MAY													
20...	1300	5.6	--	--	--	45	1.9	--	--	--	--	--	
20...	1345	23	--	--	--	15	24	--	--	--	--	--	
20...	1415	47	--	--	--	25	27	--	--	--	--	--	
21...	1104	170	64	7.9	20.0	20	39	8.4	92	8.0	54000	100000	
21...	1153	119	61	--	20.5	25	18	--	--	5.5	60000	82000	
21...	1233	71	74	7.3	20.5	35	13	7.6	84	6.0	110000	110000	
		HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 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)
DATE													
NOV													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
02...	190	0	61	10	130	4.2	8.2	250	52	130	.50	23	
MAY													
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	21	0	7.8	.5	2.3	.2	1.5	21	6.4	3.0	<.10	1.7	
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	28	2	9.9	.7	2.5	.2	2.1	26	6.4	2.5	<.10	3.0	
		SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	
DATE													
NOV													
02...	--	186	50	--	.030	<.10	.080	2.8	2.90	.540	25		
02...	--	216	34	.15	.050	.20	.080	.92	1.00	.340	18		
02...	--	117	17	.08	.020	.10	<.060	--	2.30	2.50	23		
02...	--	168	29	.17	.030	.20	<.060	--	1.60	.420	14		
MAR													
02...	565	32	26	.14	.060	.20	.200	1.0	1.20	2.30	9.8		
MAY													
20...	--	6	<1	.52	.080	.60	.360	1.2	1.60	.480	12		
20...	--	.76	62	.53	.070	.60	.960	1.7	2.70	.240	19		
20...	--	45	26	.43	.070	.50	.830	1.7	2.50	.280	18		
21...	36	112	40	.24	.060	.30	.740	.96	1.70	.210	14		
21...	--	32	2	.23	.070	.30	.770	.93	1.70	.230	9.2		
21...	43	80	25	.26	.040	.30	.600	.80	1.40	.300	11		

## SAN JACINTO RIVER BASIN

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08073630 BETTINA STREET DITCH AT KIMBERLY STREET AT HOUSTON, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

		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)	
DATE	TIME							
MAR 02...	1055		5	170	<1	<10	11	52
MAY 21...	1104		2	13	<1	<10	3	44
21...	1233		2	18	1	<10	3	65
		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)	
DATE	TIME							
MAR 02...		<1	12	<.1	<1	<1	300	
MAY 21...		4	1	<.1	<1	<1	14	
21...		7	3	<.1	<1	<1	32	
DATE	TIME	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
MAR 02...	1055	<.10	<.10	.40	<.10	<.10	--	<.1
MAY 21...	1104	<.10	<.10	.10	<.10	<.10	<2.0	.3
21...	1233	<.10	<.10	.50	<.10	<.10	<2.0	.1
DATE	TIME	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
MAR 02...		<.1	<.10	--	--	<.10	<.10	<.1
MAY 21...		<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
21...		<.1	<.10	<2.0	<2.0	.10	<.10	<.1

## 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 downstream 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, October 1976 to current year (gage heights only).

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

REMARKS.--Station is operated for the purpose of gate regulations at Barker and Addicks Reservoirs (stations 08072500 and 08073000), located 14.0 and 13.8 mi upstream, respectively. Low flow is partly sustained by sewage effluent from Houston suburbs. Gage-height telemeter at station.

AVERAGE DISCHARGE.--13 years (water years 1963-76), 265 ft<sup>3</sup>/s (192,000 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); minimum daily, 6.0 ft<sup>3</sup>/s Dec. 6, 7, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 55.60 ft Sept. 19 at 1200 hours; minimum, 32.50 ft July 10.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33.55	34.64	43.93	37.75	37.65	34.30	38.50	33.17	42.63	33.00	37.10	44.32
2	33.42	40.27	43.43	37.95	36.44	34.08	37.84	33.27	41.43	32.93	36.51	43.10
3	33.39	39.95	43.49	---	34.96	34.05	34.98	33.36	40.75	32.80	35.46	42.37
4	33.48	37.06	43.58	---	34.27	35.35	34.02	33.19	40.53	32.95	35.12	42.13
5	33.40	36.66	43.52	36.07	41.05	35.39	33.70	33.17	40.28	32.96	35.86	41.94
6	33.77	35.81	43.85	34.52	40.27	34.43	33.47	33.11	39.83	32.97	35.77	43.50
7	34.36	34.31	44.25	34.22	41.09	33.90	33.35	---	36.31	38.85	40.10	43.55
8	34.58	33.84	44.47	34.07	41.31	33.80	---	---	34.75	32.85	40.85	44.90
9	34.87	33.70	45.40	34.02	44.13	33.68	---	---	33.72	32.94	42.60	44.50
10	34.81	33.52	44.30	34.05	42.25	33.56	---	42.92	33.66	32.84	44.35	45.75
11	35.07	33.31	42.45	34.09	42.78	33.52	---	36.28	33.50	33.53	45.50	45.50
12	38.08	33.33	41.33	33.69	43.91	33.58	---	36.78	33.32	33.50	43.30	43.15
13	38.70	33.30	43.02	33.65	43.91	33.49	---	36.81	33.22	40.35	37.70	41.50
14	38.98	33.28	43.67	33.58	43.72	33.48	---	36.38	33.18	38.55	34.55	39.60
15	39.08	33.33	44.57	33.62	42.76	33.52	---	37.96	33.83	44.90	40.25	36.90
16	39.09	40.35	44.72	33.59	41.98	34.77	---	35.10	---	46.45	---	34.45
17	39.04	41.97	43.28	33.53	42.58	34.74	---	33.87	---	39.50	43.00	35.10
18	39.00	40.27	39.85	36.27	42.37	34.13	---	33.48	39.10	40.30	53.35	37.70
19	38.87	45.50	37.88	40.25	41.85	33.45	---	33.26	33.34	42.45	53.35	55.60
20	38.76	44.71	34.25	40.00	44.20	33.95	---	45.28	38.70	43.35	45.45	50.00
21	38.50	35.38	33.89	40.70	44.15	33.35	---	45.03	39.04	45.00	37.95	44.90
22	37.55	41.40	36.15	40.96	41.60	33.32	34.32	43.83	37.73	45.00	41.07	42.85
23	36.28	42.77	37.55	40.84	42.74	45.39	33.55	38.28	39.27	43.94	42.65	---
24	35.35	42.77	34.65	40.59	42.72	42.40	33.12	40.22	39.12	43.39	43.80	---
25	33.67	42.56	37.97	40.59	41.88	42.15	33.04	41.40	36.73	42.81	46.10	---
26	33.48	43.47	37.16	37.80	36.45	42.86	---	41.64	35.20	42.30	45.65	---
27	33.27	43.15	37.17	35.54	35.10	42.47	---	41.56	34.56	41.49	42.85	---
28	33.17	37.25	---	35.00	34.60	42.28	---	41.47	33.57	39.75	42.70	---
29	38.05	41.70	---	34.49	---	42.33	33.15	41.36	33.13	37.90	45.85	---
30	36.83	43.95	---	34.19	---	42.00	33.25	41.25	32.99	35.50	45.90	---
31	36.42	---	---	39.18	---	39.36	---	42.22	---	36.23	44.65	---
MAX	39.09	45.50	---	---	44.20	45.39	---	---	---	46.45	---	---
MIN	33.17	33.28	---	---	34.27	33.32	---	---	---	32.80	---	---

## SAN JACINTO RIVER BASIN

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08074000 BUFFALO BAYOU AT HOUSTON, TX

LOCATION.--Lat 29°45'36", long 95°24'30", Harris County, Hydrologic Unit 12040104, at 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.

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). Water-quality records.--Chemical, biochemical, and pesticide analysis: October 1968 to September 1981.

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 poor. 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 1,500 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; minimum daily, 1.3 ft<sup>3</sup>/s May 24, 1939, Nov. 5, 1950.

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, 8,490 ft<sup>3</sup>/s Aug. 18 at 1700 hours (gage height, 25.67 ft); minimum discharge not determined (affected by tides).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		---	1600		---	---		---	1240	---	---	1500
2		---	1600		---	---		---	1070	---	---	1270
3		---	1600		---	---		---	965	---	---	1140
4		---	1600		---	---		---	968	---	---	1040
5		---	1600		---	---		---	840	---	---	1050
6		---	1700		---	---		---	687	---	---	1510
7		---	1820		1160	---		---	---	---	---	1540
8		---	1920		1440	---		---	---	---	684	1570
9		---	1930		1560	---		264	---	---	1330	1810
10		---	1990		1420	---		1540	---	---	1060	1730
11		---	1500		932	---		677	---	---	2690	2260
12		---	1190		1540	---		---	---	---	2340	1470
13		---	1170		1820	---		---	---	904	491	1020
14		---	1610		1740	---		---	---	646	---	581
15		---	1850		1500	---		---	---	875	---	---
16		110	1980		1300	---		---	718	2970	796	---
17		1400	1620		1500	---		---	2000	824	1360	---
18		579	995		1500	---		---	524	110	5870	400
19		1560	478		1300	---		---	---	791	5320	5520
20		1680	---		1200	---		2680	---	1360	1780	4560
21		203	---		1400	---		2010	---	1650	---	1860
22		123	---		1200	---		1590	---	1930	---	856
23		1180	---		1800	1840		336	---	1620	873	1310
24		1470	---		1700	1560		563	---	1450	1140	1470
25		1470	791		1000	1250		891	---	1340	1680	1390
26		1670	764		300	1800		1080	---	1210	1880	1400
27		1910	---		---	1540		1120	---	938	1190	1510
28		300	---		---	1460		1080	---	620	1250	1420
29		700	---		---	1510		1060	---	200	1220	1400
30		1550	---		---	1480		1030	---	---	1840	1400
31		---	---		---	965		1020	---	---	1580	---
TOTAL		---	---		---	---		---	---	---	---	---
MEAN		---	---		---	---		---	---	---	---	---
MAX		---	---		---	---		---	---	---	---	---
MIN		---	---		---	---		---	---	---	---	---
AC-FT		---	---		---	---		---	---	---	---	---

## SAN JACINTO RIVER BASIN

08074145 BINGLE ROAD STORM SEWER AT HOUSTON, TX  
(Flood-hydrograph partial-record station)

LOCATION.--Lat-29°51'31", long 95°29'09", Harris County, Hydrologic Unit 12040104, over a 60-inch storm sewer in the center median at Bingle Road and 3,000 ft north of the station Cole Creek at Deihl Road, Houston (08074150).

DRAINAGE AREA.--0.21 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1980 to current year.

GAGE.--Flood-hydrograph and rainfall recorder and crest-stage gage. Datum of gage is arbitrary.

REMARKS.--Additional storm rainfall-runoff data for this site can be obtained from the reports "Hydrologic Data for Urban Studies in the Houston, Texas Metropolitan Area."

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge not determined, rating definition pending; maximum gage height, 13.97 ft Aug. 31, 1981, is a recorded pressure head in the access pipe and exceeds gage height for full pipe flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base gage height of 11.00 ft and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
July 21	1722	(a)	b11.81
Aug. 18	1807	(a)	b*13.27

a Discharge not determined; rating definition pending.

b Recorded pressure head; gage height for full pipe flow exceeded.

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: May 1980 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)
NOV												
02...	1650	6.2	98	--	--	25	34	--	--	--	--	--
02...	1705	85	48	--	--	30	70	--	--	--	--	--
02...	1720	38	58	--	--	50	100	--	--	--	--	--
02...	1735	16	75	--	--	40	80	--	--	--	--	--
02...	1805	8.8	90	--	--	50	56	--	--	--	--	--
16...	1805	4.9	71	--	--	30	33	--	--	--	--	--
16...	1820	14	125	--	--	50	95	--	--	--	--	--
16...	1920	13	58	--	--	30	27	--	--	--	--	--
19...	0905	4.9	117	--	--	40	100	--	--	--	--	--
19...	0920	46	67	--	--	50	100	--	--	--	--	--
19...	1005	7.4	108	--	--	70	80	--	--	--	--	--
19...	1020	7.9	110	--	--	70	120	--	--	--	--	--
FEB												
05...	0617	5.0	202	--	--	15	34	--	--	--	--	--
05...	0632	5.9	176	--	--	10	31	--	--	--	--	--
05...	0702	2.5	120	--	--	5	17	--	--	--	--	--
05...	0732	5.0	99	--	--	10	13	--	--	--	--	--
09...	1155	5.9	87	--	--	5	34	--	--	--	--	--
09...	1225	27	70	--	--	35	70	--	--	--	--	--
09...	1240	65	71	--	--	45	70	--	--	--	--	--
15...	0650	4.9	162	--	--	20	43	--	--	--	--	--
15...	0920	11	95	--	--	45	45	--	--	--	--	--
20...	2102	4.9	95	--	--	20	64	--	--	--	--	--
20...	2132	62	66	--	--	25	68	--	--	--	--	--
20...	2202	41	62	--	--	40	150	--	--	--	--	--
20...	2232	16	86	--	--	130	80	--	--	--	--	--
20...	2302	23	74	--	--	130	45	--	--	--	--	--
20...	2332	16	85	--	--	65	60	--	--	--	--	--
MAR												
02...	1245	.43	629	7.5	21.0	<1	10	5.4	60	7.1	60	40
JUN												
15...	1342	5.5	120	--	--	10	88	--	--	--	--	--
15...	1412	9.8	141	--	--	35	20	--	--	--	--	--
15...	1442	18	111	--	--	30	16	--	--	--	--	--
15...	1542	5.9	127	--	--	40	12	--	--	--	--	--



08074145 BINGLE ROAD STORM SEWER AT HOUSTON, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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- LILITY 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												
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
05...	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
02...	140	0	44	7.7	77	2.9	2.6	210	12	65	1.3	22
JUN												
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLATILE, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	
NOV												
02...	--	141	23	.27	.030	.30	.070	1.0	1.10	.270	8.9	
02...	--	358	39	.07	.030	.10	<.060	--	1.20	.340	19	
02...	--	219	20	.16	.040	.20	<.060	--	1.40	.440	16	
02...	--	98	17	.16	.040	.20	<.060	--	1.40	.310	15	
02...	--	81	33	.16	.040	.20	<.060	--	1.50	.460	16	
16...	--	73	28	.74	.060	.80	.300	1.7	2.00	.160	13	
16...	--	174	64	.92	.080	1.0	.180	1.5	1.70	.170	35	
16...	--	37	34	.26	.040	.30	.140	.86	1.00	.130	9.6	
19...	--	80	9	.60	.100	.70	.120	1.6	1.70	.740	28	
19...	--	257	56	.25	.050	.30	.130	1.3	1.40	.200	24	
19...	--	124	16	.23	.070	.30	.120	2.0	2.10	.190	16	
19...	--	44	41	.22	.080	.30	.130	1.4	1.50	.220	22	
FEB												
05...	--	66	37	.84	.060	.90	.220	1.4	1.60	1.80	19	
05...	--	72	47	.82	.080	.90	.200	1.2	1.40	.310	23	
05...	--	29	<1	.72	.080	.80	.260	.84	1.10	.210	16	
05...	--	11	<1	.54	.060	.60	.290	.81	1.10	.210	8.6	
09...	--	137	43	.36	.040	.40	.150	1.8	1.90	.090	11	
09...	--	164	102	.17	.030	.20	.100	.80	.90	.140	18	
09...	--	262	80	.16	.040	.20	.120	1.8	1.90	.170	19	
15...	--	114	40	.53	.070	.60	.170	1.4	1.60	.180	20	
15...	--	68	31	.14	.060	.20	.150	.65	.80	.110	14	
20...	--	164	30	.85	.050	.90	.320	2.0	2.30	.180	17	
20...	--	221	29	.37	.030	.40	.160	1.6	1.80	.210	24	
20...	--	266	38	.25	.050	.30	.150	1.1	1.20	.140	12	
20...	--	114	3	.27	.030	.30	.120	1.4	1.50	.140	12	
20...	--	62	2	.26	.040	.30	.130	1.1	1.20	.390	11	
20...	--	4	<1	.26	.040	.30	.120	.98	1.10	.150	11	
MAR												
02...	358	20	9	--	<.020	<.10	.110	.49	.60	.220	5.5	
JUN												
15...	--	261	41	1.5	.140	1.6	.200	2.3	2.50	.320	24	
15...	--	96	27	.94	.060	1.0	.160	1.9	2.10	.340	26	
15...	--	125	28	.64	.060	.70	.140	1.5	1.60	.340	20	
15...	--	22	4	.45	.050	.50	.120	1.3	1.40	.400	15	

## SAN JACINTO RIVER BASIN

08074145 BINGLE ROAD STORM SEWER AT HOUSTON, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	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)	
MAR 02...	1245	3	240	<1	<10	4	25	
DATE	TIME	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)	
MAR 02...		<1	9	<.1	2	<1	49	
DATE	TIME	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
MAR 02...	1245	<.10	<.10	<.10	<.10	<.10	<2.0	.1
DATE	TIME	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
MAR 02...		<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

## SAN JACINTO RIVER BASIN

103

08074150 COLE CREEK AT DEIHL ROAD, HOUSTON, TX

LOCATION.--Lat 29°51'04", long 95°29'16", Harris County, Hydrologic Unit 12040104, on downstream side of bridge at Deihl Road in northwest Houston and 1.8 mi upstream from mouth.

DRAINAGE AREA.--7.50 mi<sup>2</sup>. Prior to Oct. 1, 1976, 8.05 mi<sup>2</sup>. Prior to Oct. 1, 1979, 7.33 mi<sup>2</sup>. Drainage area changes are the result of drainage ditch relocations and extensions.

PERIOD OF RECORD.--April 1964 to current year. Gage at temporary location 1.0 mi downstream at Antoine Drive May 18, 1965, to Sept. 1, 1966, due to bridge construction and channel rectification.

REVISED RECORDS.--WRD TX-74-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is National Geodetic Vertical Datum of 1929, 1957 adjustment; unadjusted for land-surface subsidence.

REMARKS.--Records fair. No diversion above station. Low flow is partly sustained by sewage effluent from Houston suburbs. Recording rain gage at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--19 years, 7.92 ft<sup>3</sup>/s, 5,740 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,020 ft<sup>3</sup>/s Mar. 20, 1972 (elevation, 78.60 ft); no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base 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)
Mar. 23	1500	490	74.80	Aug. 18	1800	*1,340	77.87
Mar. 30	1100	446	74.60	Sept. 19	0830	792	75.92
May 21	1530	536	75.20				

Minimum daily discharge, 0.45 ft<sup>3</sup>/s Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.48	1.3	14	11	6.2	1.6	3.1	1.6	1.3	1.2	2.6	3.9
2	.64	17	9.7	3.8	2.2	1.5	2.0	1.4	4.8	1.2	1.8	5.3
3	.65	22	8.1	2.3	1.9	1.4	2.2	1.9	3.2	1.3	1.5	5.5
4	.57	2.2	2.8	2.9	1.4	4.9	2.3	1.3	1.4	1.2	1.5	2.6
5	.45	1.5	1.8	2.5	56	5.8	2.0	1.4	1.3	1.2	2.7	2.7
6	.62	1.2	1.4	1.7	14	1.6	1.7	1.1	1.2	1.0	1.6	29
7	1.5	1.1	1.4	1.7	2.8	1.4	2.2	1.2	1.4	1.0	2.8	3.3
8	2.1	.94	1.2	1.4	2.2	1.3	5.8	1.2	1.7	.87	12	3.1
9	.78	1.0	1.3	1.3	93	1.3	2.6	1.3	1.7	.83	33	6.6
10	.53	.85	2.4	1.2	25	1.5	1.4	50	2.7	.77	9.0	3.5
11	1.7	1.1	4.2	1.2	5.0	1.2	1.3	4.6	2.7	.92	45	3.5
12	76	1.1	1.9	1.2	2.7	1.3	1.5	1.6	1.6	1.1	55	2.6
13	10	.89	1.4	1.2	2.2	1.3	1.5	1.4	1.5	26	10	2.4
14	1.4	.78	3.2	1.2	2.4	1.4	1.2	1.5	1.5	13	3.0	2.0
15	.96	.92	6.7	1.1	20	1.4	1.3	6.1	23	70	6.9	2.0
16	.73	19	2.1	1.3	13	2.9	1.3	2.0	51	170	3.9	2.0
17	.61	72	1.6	1.5	3.7	1.9	1.2	1.6	55	30	5.0	2.7
18	.72	5.0	1.4	3.0	2.6	1.3	1.4	1.7	8.9	5.9	591	8.2
19	.65	63	1.3	35	2.1	1.3	1.4	1.3	2.2	2.0	467	239
20	.68	34	1.2	13	28	3.5	1.4	161	5.5	1.5	71	97
21	.72	5.8	1.5	3.5	72	1.5	1.5	240	4.1	84	17	49
22	.83	2.1	1.3	2.1	11	1.4	2.3	105	2.6	52	6.1	6.7
23	.60	2.5	9.0	1.8	4.0	146	2.0	19	1.7	32	7.4	3.3
24	.57	3.1	2.7	1.7	2.1	33	1.4	4.2	1.7	3.9	6.0	2.6
25	.56	1.4	15	1.6	1.8	5.8	1.2	2.0	31	2.2	6.4	2.0
26	.57	17	13	2.3	1.6	10	1.4	1.7	6.9	2.0	5.5	4.8
27	.56	56	9.2	1.8	1.6	3.0	1.4	1.5	3.0	1.9	6.1	1.9
28	.59	13	2.9	1.4	1.6	2.0	1.4	1.4	1.6	1.8	12	1.6
29	33	2.8	1.8	1.5	---	3.5	1.3	1.4	1.4	1.6	3.9	1.5
30	5.7	16	1.6	1.4	---	66	2.0	1.4	1.2	1.7	2.9	1.4
31	5.8	---	9.9	13	---	72	---	1.4	---	2.1	17	---
TOTAL	151.27	366.58	137.0	121.6	382.1	384.0	54.7	624.2	228.8	516.19	1416.6	501.7
MEAN	4.88	12.2	4.42	3.92	13.6	12.4	1.82	20.1	7.63	16.7	45.7	16.7
MAX	76	72	15	35	93	146	5.8	240	55	170	591	239
MIN	.45	.78	1.2	1.1	1.4	1.2	1.2	1.1	1.2	.77	1.5	1.4
AC-FT	300	727	272	241	758	762	108	1240	454	1020	2810	995

WTR YR 1983 TOTAL 4884.74 MEAN 13.4 MAX 591 MIN .45 AC-FT 9690

## SAN JACINTO RIVER BASIN

08074250 BRICKHOUSE GULLY AT COSTA RICA STREET, HOUSTON, TX  
(Flood-hydrograph partial-record station)

LOCATION.--29°49'40", long 95°28'09", Harris County, Hydrologic Unit 12040104, at downstream side of bridge at Costa Rica Street in northwest Houston and 1.0 mi upstream from Whiteoak Bayou.

DRAINAGE AREA.--11.4 mi<sup>2</sup>. Prior to Oct. 1, 1973, 11.6 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1964 to current year (operated as a continuous-recording station prior to Oct. 1, 1981).

REVISED RECORDS.--WRD TX-74-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Low-water concrete control since Dec. 9, 1970. Datum of gage is National Geodetic Vertical Datum of 1929, 1957 adjustment; unadjusted for land-surface subsidence.

REMARKS.--Water-discharge records good. Low flow is partially sustained by sewage effluent. No know diversion above station. Recording rain gage at station.

AVERAGE DISCHARGE.--17 years (water years 1965-81), 14.0 ft<sup>3</sup>/s (10,140 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,800 ft<sup>3</sup>/s Mar: 20, 1972 (elevation, 69.20 ft); no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,600 ft<sup>3</sup>/s (revised) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Elevation (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Elevation (ft)
May 20	a0430	2,240	a63.09	Aug. 11	1345	2,320	63.28
June 17	a1400	2,500	unknown	Aug. 18	2200	2,400	63.47
July 21	1830	2,280	63.20	Sept. 19	0730	*4,050	66.65

a From crest-stage gage peak mark.  
b About.

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1970 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 KF AGAR (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	
MAR 02...	1055	3.0	639	8.7	21.5	25	4.5	4.0	1500	520	200	
		HARD- NESS, NONCAR- BONATE (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 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)
MAR 02...	0	61	11	70	2.3	2.1	250	20	58	.30	13	
		SOLIDS, SUM OF CONSI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	
MAR 02...	386	13	13	.020	<.10	.110	.89	1.00	.430	7.0		
				ARSENIC DIS- SOLVED (UG/L AS AS)	BARIIUM, 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)			
MAR 02...	1055			3	350	<1	<10	1	10			
				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)			
MAR 02...				<1	21	.1	3	2	4			
				AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)		
MAR 02...	1055			<.10	<.10	.30	<.10	<.10	<2.0	.1		
				PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)		
MAR 02...				<.1	<.10	<2.0	<2.0	<.10	<.10	<.1		

## SAN JACINTO RIVER BASIN

105

08074400 LAZYBROOK STREET STORM SEWER AT HOUSTON, TX  
(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°48'15", long 95°26'04", Harris County, Hydrologic Unit 12040104, over a 54-inch storm sewer 30 ft north of the intersection of Lazybrook Street and West T. C. Jester Boulevard, Houston.

DRAINAGE AREA.--0.13 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1978 to current year.

GAGE.--Flood-hydrograph and rainfall recorder. Datum of gage is -0.10 ft National Geodetic Vertical Datum of 1929, 1973 adjustment.

REMARKS.--Additional storm rainfall-runoff data for this site can be obtained from the reports "Hydrologic Data for Urban Studies in the Houston, Texas Metropolitan Area."

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 119 ft<sup>3</sup>/s represents full storm sewer discharge and usually occurs many times annually, gage height, 58.09 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 85 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 17	1100	94	57.66	Sept. 19	0605	*119	58.16
Aug. 11	1317	93	57.64	Sept. 20	1735	116	58.04
Sept. 10	1805	111	57.95				

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: March 1980 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)
NOV												
02...	1700	.59	307	--	--	40	23	--	--	--	--	--
02...	1715	13	53	--	--	40	40	--	--	--	--	--
02...	1745	5.0	215	--	--	35	23	--	--	--	--	--
02...	1815	2.4	166	--	--	50	15	--	--	--	--	--
16...	1807	.55	397	--	--	20	18	--	--	--	--	--
16...	1822	2.0	210	--	--	35	15	--	--	--	--	--
16...	1922	3.0	276	--	--	40	9.0	--	--	--	--	--
FEB												
09...	1143	.55	569	--	--	<1	3.7	--	--	--	--	--
09...	1158	6.3	103	--	--	15	17	--	--	--	--	--
09...	1243	7.6	66	--	--	40	12	--	--	--	--	--
09...	1258	5.9	99	--	--	70	5.1	--	--	--	--	--
15...	0640	.55	605	--	--	<1	12	--	--	--	--	--
15...	0755	3.7	94	--	--	20	19	--	--	--	--	--
20...	2117	.63	559	--	--	5	2.5	--	--	--	--	--
20...	2132	43	66	--	--	40	28	--	--	--	--	--
20...	2147	46	60	--	--	80	20	--	--	--	--	--
20...	2202	20	82	--	--	90	17	--	--	--	--	--
20...	2217	11	68	--	--	100	13	--	--	--	--	--
20...	2232	22	55	--	--	60	12	--	--	--	--	--
MAR												
02...	0935	.27	567	7.8	21.5	<1	3.6	4.4	50	.9	130	110
MAY												
10-10	0800	6.7	106	--	--	30	6.3	--	--	7.7	--	--
JUL												
21-21	1645	3.9	172	--	--	35	4.0	--	--	6.3	--	--



## SAN JACINTO RIVER BASIN

08074400 LAZYBROOK STREET STORM SEWER AT HOUSTON, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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- LILITY 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												
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
02...	200	0	61	11	69	2.2	2.2	210	11	55	.40	13
MAY												
10-10	24	0	7.9	1.0	10	.9	3.5	25	12	8.9	<.10	2.9
JUL												
21-21	--	--	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
NOV											
02...	--	122	21	--	<.020	<.10	<.060	--	2.60	.190	17
02...	--	556	40	--	<.020	.20	<.060	--	2.90	.200	25
02...	--	134	21	--	<.020	<.10	<.060	--	1.90	.240	13
02...	--	67	25	.18	.020	.20	.070	1.1	1.20	.240	12
16...	--	41	34	.08	.020	.10	.100	.90	1.00	.130	8.1
16...	--	75	39	--	.020	<.10	.300	5.5	5.80	.490	23
16...	--	18	4	--	<.020	<.10	.190	1.3	1.50	.250	14
FEB											
09...	--	13	12	--	<.020	<.10	.060	.34	.40	.050	.5
09...	--	196	66	.44	.060	.50	.150	2.7	2.80	.470	18
09...	--	122	60	.38	.020	.40	.120	1.8	1.90	.370	15
09...	--	58	25	.37	.030	.40	.160	1.3	1.50	.430	15
15...	--	11	4	--	<.020	.10	.140	.06	.20	.060	3.2
15...	--	22	19	.47	.030	.50	.190	1.1	1.30	.270	12
20...	--	30	<1	--	<.020	<.10	.060	.24	.30	.030	1.1
20...	--	152	29	.37	.030	.40	1.00	5.1	6.10	.890	36
20...	--	71	17	.48	.020	.50	.670	2.2	2.90	.590	14
20...	--	34	<1	.58	.020	.60	.580	2.2	2.80	.600	12
20...	--	24	<1	.67	.030	.70	.650	2.2	2.80	.690	12
20...	--	35	5	.48	.020	.50	.760	2.2	3.00	.670	13
MAR											
02...	349	12	11	--	<.020	<.10	.080	.22	.30	.050	1.1
MAY											
10-10	61	48	10	.65	.050	.70	1.00	2.0	3.00	.780	15
JUL											
21-21	--	33	2	.58	.020	.60	.480	1.5	2.00	.510	10

DATE	TIME	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)
MAR							
02...	0935	3	350	<1	<10	3	16
MAY							
10-10	0800	1	24	<1	<10	1	63

## SAN JACINTO RIVER BASIN

08074400 LAZYBROOK STREET STORM SEWER AT HOUSTON, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	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)
MAR 02...	<1	23	<.1	1	1	8
MAY 10-10	14	6	<.1	1	<1	77

DATE	TIME	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
MAR 02...	0935	<.10	<.10	<.10	<.10	<.10	<2.0	<.1

DATE	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
MAR 02...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

## SAN JACINTO RIVER BASIN

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.--Water-discharge records good except those for period of no gage-height record, which are poor. Low flow is partly sustained by industrial waste. No diversion above station.

AVERAGE DISCHARGE.--47 years, 83.8 ft<sup>3</sup>/s (60,710 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,300 ft<sup>3</sup>/s Mar. 20, 1972 (gage height, 43.50 ft); maximum gage height, 43.60 ft Nov. 13, 1961; 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 above base 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)
Mar. 23	1600	4,660	27.67	Aug. 18	unknown	*11,500	a36.79
May 20	1615	5,090	28.35	Sept. 19	1000	11,200	36.45
May 21	1645	5,960	29.65	Sept. 20	1930	5,970	29.67

a From crest-stage gage peak mark.

Minimum daily discharge, 26 ft<sup>3</sup>/s Oct. 25, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	37	497	335	128	43	109	32	38	37	120	56
2	28	216	200	154	50	43	65	31	38	34	60	50
3	44	426	120	78	40	42	48	45	42	34	50	48
4	28	69	50	56	36	115	50	32	155	32	75	32
5	29	44	45	50	695	193	49	37	44	34	65	31
6	28	34	42	47	278	55	44	32	87	34	70	374
7	40	34	43	43	105	43	40	31	40	32	320	82
8	42	33	38	41	69	40	44	32	35	33	280	50
9	34	29	36	39	1030	37	42	71	37	32	340	217
10	30	30	79	37	614	35	38	738	36	33	400	468
11	41	30	120	36	221	34	37	143	34	32	1350	154
12	1240	34	67	35	143	35	37	42	33	36	550	60
13	350	29	42	34	91	37	38	34	34	464	155	42
14	71	28	65	33	65	38	38	34	36	260	75	34
15	38	28	250	33	430	39	37	85	507	1100	80	34
16	34	169	80	33	312	79	35	40	658	1700	75	33
17	32	1290	47	34	114	68	34	35	1220	320	70	36
18	31	221	40	68	70	37	35	32	213	120	7600	136
19	35	900	38	665	56	37	33	32	55	55	3250	3920
20	29	650	36	323	344	116	33	1820	45	50	550	1920
21	29	169	35	146	1100	48	35	2650	193	1450	200	810
22	27	93	36	81	228	37	110	1040	122	560	110	233
23	28	76	124	67	140	1660	46	383	71	330	115	132
24	27	91	66	45	88	635	34	197	168	90	80	82
25	26	42	585	43	67	208	32	114	446	70	105	59
26	29	302	383	40	55	332	32	72	436	50	80	164
27	26	1200	348	39	52	160	32	53	174	45	50	62
28	27	356	136	35	46	75	33	44	67	50	123	48
29	578	138	65	36	---	55	33	41	44	45	76	43
30	162	455	48	39	---	709	38	37	38	45	41	43
31	100	---	199	196	---	244	---	40	---	50	55	---
TOTAL	3291	7253	3960	2941	6667	5329	1311	8049	5146	7257	16570	9453
MEAN	106	242	128	94.9	238	172	43.7	260	172	234	535	315
MAX	1240	1290	585	665	1100	1660	110	2650	1220	1700	7600	3920
MIN	26	28	35	33	36	34	32	31	33	32	41	31
AC-FT	6530	14390	7850	5830	13220	10570	2600	15970	10210	14390	32870	18750

CAL YR 1982 TOTAL 39247 MEAN 108 MAX 2910 MIN 25 AC-FT 77850  
WTR YR 1983 TOTAL 77227 MEAN 212 MAX 7600 MIN 26 AC-FT 153200

NOTE.--No gage-height record July 14 to Aug. 24.

## SAN JACINTO RIVER BASIN

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08074500 WHITEOAK BAYOU AT HOUSTON, TX--Continued

## WATER-QUALITY RECORDS

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

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)
MAR 01...	0906	40	831	8.0	17.0	15	23	9.2	95	6.5	160	150
MAY 20...	1330	881	294	8.0	19.5	60	350	7.2	79	10	25000	56000
20...	1555	4730	121	8.0	21.5	130	430	7.0	80	8.0	160000	280000
20...	1805	4180	118	--	20.0	120	470	--	--	7.5	150000	310000
21...	1000	693	188	7.0	20.0	130	170	6.8	75	7.0	34000	35000
21...	1330	3930	118	--	20.5	75	190	--	--	7.2	180000	260000
22...	0940	1030	147	--	20.5	50	92	--	--	5.2	--	--

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 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)
MAR 01...	200	0	62	12	94	3.0	4.8	250	27	92	.30	20
MAY 20...	64	0	21	2.9	21	1.2	4.8	67	15	20	.20	7.1
20...	39	0	13	1.6	7.8	.6	3.0	39	12	7.5	.20	4.6
20...	--	--	--	--	--	--	--	--	--	--	--	--
21...	61	0	20	2.6	12	.7	3.6	62	12	10	.20	7.4
21...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
MAR 01...	462	44	29	2.8	.320	3.1	.910	1.7	2.60	2.30	11
MAY 20...	132	608	192	.55	.250	.80	.870	1.5	2.40	.870	20
20...	73	676	92	.18	.220	.40	.760	1.9	2.70	.600	21
20...	--	808	172	.23	.170	.40	.750	1.2	1.90	.520	21
21...	105	212	38	.32	.180	.50	.670	1.0	1.70	.530	14
21...	--	392	136	.13	.170	.30	.760	1.4	2.20	.500	16
22...	--	184	34	.12	.080	.20	.270	.93	1.20	.340	12

DATE	TIME	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)
MAR 01...	0906	10	270	<1	20	3	7
MAY 20...	1330	8	85	<1	<10	5	110
20...	1555	4	49	<1	<10	4	100
21...	1000	3	86	<1	<10	4	150

DATE	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)
MAR 01...	<1	94	<.1	1	<1	16
MAY 20...	1	9	<.1	<1	<1	11
20...	3	4	<.1	<1	<1	9
21...	1	6	<.1	<1	<1	14.

## SAN JACINTO RIVER BASIN

08074500 WHITEOAK BAYOU AT HOUSTON, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
MAR								
01...	0906	<.10	<.10	.10	<.10	<.10	--	.2
MAY								
20...	1330	<.10	<.10	1.2	<.10	<.10	<2.0	.7
20...	1555	<.10	<.10	1.1	<.10	<.10	<2.0	.3
21...	1000	<.10	<.10	.70	<.10	<.10	<2.0	.7

DATE	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
MAR							
01...	<.1	<.10	--	--	<.10	<.10	<.1
MAY							
20...	<.1	<.10	<2.0	<2.0	.10	<.10	<.1
20...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
21...	<.1	<.10	<2.0	<2.0	.10	<.10	<.1



08074540 LITTLE WHITEOAK BAYOU AT TRIMBLE STREET AT HOUSTON, TX  
(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°47'33", long 95°22'06", Harris County, Hydrologic Unit 12040104, at downstream side of bridge at Trimble Street, Houston.

DRAINAGE AREA.--18.0 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1979 to current year. June to September 1979 published as Little Whiteoak Bayou at Houston (08074550).

GAGE.--Flood-hydrograph and rainfall recorder and crest-stage gage. Datum of gage is National Geodetic Vertical Datum of 1929, 1973 adjustment. Prior to June 1979 occasional discharge measurements to arbitrary datum and water-quality samples were obtained at site 6,200 ft downstream at North Main Street bridge (station 08074550, Little Whiteoak Bayou at Houston).

REMARKS.--Additional storm rainfall-runoff data for this site can be obtained from the report "Hydrologic Data for Urban Studies in the Houston, Texas Metropolitan Area." The record for June to September 1979 was published in the 1979 edition of this publication as station Little Whiteoak Bayou at Houston (08074550).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,860 ft<sup>3</sup>/s Aug. 18, 1983 (elevation, 39.42 ft).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1.600 ft<sup>3</sup>/s (revised) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Elevation (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Elevation (ft)
Feb. 20	2400	2,160	31.79	Aug. 18	1245	*4,860	39.42
Mar. 23	unknown	1,840	30.82	Sept. 10	1845	1,650	31.11
May 20	0445	2,670	33.24	Sept. 19	0915	4,520	38.71
June 17	1315	2,090	31.60	Sept. 20	1930	3,860	37.22

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: June 1979 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

[illegible]

## SAN JACINTO RIVER BASIN

08074540 LITTLE WHITEOAK BAYOU AT TRIMBLE ST, HOUSTON, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLATILE, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)		
MAR 01...	515	6	<1	.14	.060	.20	1.90	1.0	2.90	1.20	7.2		
JUN 15...	--	288	74	.10	.500	.60	.420	4.0	4.40	.730	39		
15...	--	490	86	.32	.080	.40	.280	4.0	4.30	.920	30		
15...	--	195	35	.52	.080	.60	.430	4.3	4.70	.810	29		
15...	--	310	74	.71	.090	.80	.210	2.7	2.90	.590	22		
JUL 13-14	--	39	21	.24	.060	.30	.330	1.3	1.60	.430	17		
21-22	--	63	1	.43	.070	.50	.290	1.4	1.70	.520	12		
SEP 19-19	--	103	18	.34	.060	.40	.220	1.4	1.60	.560	11		
				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)				
	DATE	TIME											
	MAR 01...	0948		3	250	<1	<10	2	25				
				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)				
		DATE											
	MAR 01...			<1	120	<.1	1	<1	10				
	DATE	TIME	AME- TRYNE TOTAL (UG/L)	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
MAR 01...	0948		<.10	<.10	.10	<.10	<.10	.2	<.1	<.10	<.10	<.10	<.1

## SAN JACINTO RIVER BASIN

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08074700 BUFFALO BAYOU AT 69TH STREET, HOUSTON, TX

LOCATION.--Lat 29°45'15", long 95°17'51", Harris County, Hydrologic Unit 12040104, at downstream side of bridge on 69th Street in Houston, 1.1 mi upstream from Turning Basin, 2.8 mi upstream from Brays Bayou, and 4.8 mi downstream from Whiteoak Bayou.

DRAINAGE AREA.--476 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1961 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1.73 ft below National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers), 1973 adjustment; unadjusted for land-surface subsidence.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 15.6 ft Aug. 18, 1983, result of Hurricane Alicia; minimum -3.5 ft (-1.07 m) Jan. 13, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 15.6 ft Aug. 18 at 0900 hours (result of Hurricane Alica); minimum, -0.1 ft Mar. 21.

## GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT	
	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.
1	5.0	3.9	4.7	3.2	5.7	3.8	5.5	3.1	5.0	2.5	-	-	-	-	5.0	2.8	4.1	2.0	4.6	3.1	-	-	3.9	1.9
2	5.5	3.6	4.7	3.1	6.1	4.4	4.4	1.6	3.8	0.4	-	-	-	-	5.0	3.0	4.4	2.5	4.7	3.2	-	-	3.8	1.9
3	5.0	3.9	4.6	1.8	6.3	3.8	3.6	1.7	2.6	0.5	-	-	-	-	4.2	2.5	4.7	3.2	4.4	3.4	-	-	4.1	2.0
4	4.9	3.4	3.6	1.7	4.8	2.6	4.0	2.8	4.8	2.2	-	-	-	-	4.0	2.1	4.4	2.7	4.3	3.0	-	-	4.4	2.4
5	5.0	3.4	3.9	2.3	4.6	2.7	4.2	2.9	5.1	3.8	-	-	4.6	3.0	4.1	2.3	4.2	2.8	4.0	2.3	-	-	4.9	2.7
6	5.1	3.8	4.3	2.8	4.5	2.9	4.1	2.9	3.8	2.2	-	-	3.5	1.8	5.0	3.6	3.8	2.6	3.6	2.1	-	-	4.8	3.0
7	5.2	3.1	4.5	2.7	4.8	3.7	4.4	2.9	4.1	2.1	-	-	3.4	1.8	4.6	3.2	3.6	2.4	3.9	2.1	-	-	-	-
8	4.9	3.6	4.3	2.8	5.1	3.7	4.1	2.6	4.2	2.5	4.2	2.3	3.3	2.0	3.6	2.2	4.0	2.1	4.1	2.2	-	-	-	-
9	5.1	2.8	4.3	3.0	4.6	3.4	4.3	2.3	5.3	3.1	3.8	1.4	3.2	1.5	5.0	3.2	4.1	2.4	4.5	2.4	4.8	-	-	-
10	4.4	2.2	4.5	3.0	5.8	4.5	4.0	2.3	4.3	2.2	3.0	0.9	3.2	2.0	5.6	4.0	4.5	2.4	4.8	2.6	4.3	2.2	-	-
11	4.1	2.3	4.8	3.0	5.3	2.4	3.7	1.8	3.9	2.0	3.1	1.3	3.7	2.4	5.1	4.0	4.9	2.8	4.7	2.9	5.1	2.6	-	-
12	4.6	2.7	4.5	2.3	3.4	1.3	3.3	1.1	4.0	2.4	3.6	1.7	4.2	3.0	5.1	3.6	5.0	3.0	-	-	4.3	2.6	-	-
13	3.9	2.4	4.2	1.5	5.1	3.1	3.7	1.9	3.9	2.5	3.7	2.3	4.4	3.3	5.2	3.6	5.0	2.8	-	-	3.6	2.5	-	-
14	4.0	2.3	4.6	3.0	5.3	3.6	3.7	1.9	4.0	2.5	3.8	2.3	3.9	1.5	5.5	3.7	4.7	2.9	-	-	3.4	1.9	-	-
15	4.1	2.7	4.1	2.1	5.1	2.7	3.5	1.3	4.6	3.3	4.4	3.1	3.8	2.0	4.7	3.1	4.4	2.4	-	-	3.2	2.2	-	-
16	3.9	2.5	5.0	3.1	4.6	2.7	3.9	2.3	4.2	2.6	4.8	3.2	-	-	4.2	1.9	4.3	2.2	-	-	4.3	2.3	-	-
17	4.3	2.8	5.4	3.2	4.9	3.3	3.9	2.4	3.8	2.9	3.7	0.7	-	-	5.6	2.9	4.4	2.5	-	-	6.8	3.0	-	-
18	4.2	2.7	4.6	2.7	5.1	3.4	4.2	3.1	3.8	2.8	3.6	0.8	-	-	5.6	3.9	4.5	3.1	-	-	15.6	5.3	-	-
19	4.2	3.0	4.2	2.9	4.8	2.3	4.9	4.3	4.3	2.4	3.8	2.1	-	-	5.1	3.3	4.5	3.4	-	-	7.7	3.9	-	-
20	4.3	2.1	4.6	3.0	4.1	2.8	5.1	4.0	4.6	2.8	3.4	1.3	-	-	6.4	3.6	4.4	3.1	-	-	4.6	3.2	-	-
21	4.0	2.5	4.4	3.0	4.4	3.1	5.0	3.6	4.8	3.0	2.4	-1	-	-	5.5	4.1	4.2	2.9	-	-	4.2	2.8	-	-
22	3.7	-	4.2	2.8	4.7	3.3	4.3	2.9	3.6	1.7	-	1.4	-	-	4.8	4.1	4.2	2.7	-	-	4.1	2.5	-	-
23	-	-	4.4	2.4	4.9	4.1	4.2	2.7	3.7	1.5	-	-	-	-	4.6	3.9	4.4	2.7	-	-	4.0	2.3	-	-
24	-	-	3.0	2.3	5.3	4.5	4.2	2.4	3.8	1.9	-	-	-	-	4.7	3.5	4.4	2.7	-	-	4.0	2.5	-	-
25	-	-	4.2	2.8	5.2	4.0	4.3	2.2	4.4	2.2	-	-	-	-	4.6	2.9	5.1	2.6	-	-	3.8	2.5	-	-
26	-	-	5.3	4.2	5.6	3.4	4.5	2.2	5.1	3.1	-	-	-	-	4.3	2.7	5.3	2.7	-	-	3.6	2.4	-	-
27	-	-	5.0	3.5	5.5	3.6	3.2	0.7	5.6	3.4	-	-	-	-	4.3	2.5	4.8	3.0	-	-	4.6	2.6	-	-
28	-	-	4.7	3.0	4.5	2.7	4.1	2.2	4.7	2.9	-	-	-	-	4.3	2.5	4.8	2.9	-	-	4.9	3.5	-	-
29	-	-	5.0	3.1	4.3	2.1	4.4	2.0	---	---	-	-	4.5	-	4.2	2.3	4.5	2.7	-	-	4.2	2.7	-	3.1
30	-	-	5.5	3.6	5.0	2.9	4.1	2.0	---	---	-	-	4.6	2.7	4.4	2.2	4.4	2.7	-	-	3.9	2.1	4.6	2.7
31	-	-	---	---	5.4	3.2	5.0	3.0	---	---	-	-	5.0	2.8	4.0	2.5	---	---	-	-	3.4	1.9	---	---

## SAN JACINTO RIVER BASIN

08074800 KEEGANS BAYOU AT ROARK ROAD NEAR HOUSTON, TX  
(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°39'23", long 95°33'43", Harris County, Hydrologic Unit 12040104, on left bank at downstream side of bridge on Roark Road in southwest Houston.

DRAINAGE AREA.--11.5 mi<sup>2</sup>. Oct. 1, 1976, to Dec. 31, 1977, 12.0 mi<sup>2</sup>; August 1964 to Sept. 30, 1976, 11.6 mi<sup>2</sup>. Drainage area changes were the result of ditch relocations or extensions.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1964 to current year (operated as a continuous-record station prior to Oct. 1, 1981)

REVISED RECORDS.--WRD TX-74-1: Drainage area. WDR TX-77-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is National Geodetic Vertical Datum of 1929, 1957 adjustment; unadjusted for land-surface subsidence.

REMARKS.--Water-discharge records poor. Channel was rectified during latter part of 1981 water year. Recording rain gage at station. Additional storm rainfall-runoff data for this site can be obtained from the report "Hydrologic Data for Urban Studies in the Houston, Texas Metropolitan Area, 1983."

AVERAGE DISCHARGE.--17 years (water years 1965-81), 12.3 ft<sup>3</sup>/s (8,910 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,250 ft<sup>3</sup>/s Sept. 19, 1983 (elevation, 75.00 ft).

EXTREMES FOR CURRENT YEAR--Peak discharges above base of 1,000 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 20	0500	1,100	67.83	Aug. 15	1935	1,160	68.45
June 25	1705	1,460	69.11	Aug. 18	1215	1,900	70.93
July 15	2015	2,200	71.39	Sept. 10	2000	1,190	67.55
July 16	0100	1,730	70.00	Sept. 19	0900	*4,250	75.00
Aug. 10	1630	1,430	69.42	Sept. 20	a0500	1,250	unknown

a About.

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1968 to September 1983 (discontinued).  
Sediment analyses: October 1970 to September 1971.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- NUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)
NOV											
02...	1459	75	584	--	--	30	100	8.7	16000	12000	150
02...	1501	78	608	--	--	30	80	--	16000	25000	--
02...	1700	338	85	--	--	50	340	--	35000	70000	--
02...	1800	275	161	--	--	120	330	--	68000	79000	--
02...	1900	268	168	--	--	120	480	--	62000	95000	--
02...	2000	204	152	--	--	200	560	--	75000	120000	--
03...	0730	53	292	7.6	19.0	120	230	7.2	190000	34000	--
04...	0720	13	503	--	15.5	40	60	3.4	150	2700	--
19...	0908	27	491	--	--	50	140	--	--	--	--
19...	1208	73	270	--	--	60	290	--	--	--	--
19...	1308	208	182	--	--	200	180	--	--	--	--
19...	1408	255	192	--	--	70	220	--	--	--	--
20...	1050	45	--	--	20.0	65	150	2.8	--	--	--
26...	1022	27	585	--	--	40	100	--	--	--	--
26...	1122	54	357	--	--	30	80	--	--	--	--
26...	1222	60	283	--	--	40	310	--	--	--	--
26...	1422	109	225	--	--	40	160	--	--	--	--
26...	1522	84	201	--	--	50	130	--	--	--	--
JAN											
18...	1930	25	--	--	--	5	50	--	--	--	--
18...	2130	36	--	--	--	5	140	--	--	--	--
18...	2230	42	--	--	--	10	180	--	--	--	--
19...	0030	52	--	--	--	45	85	--	--	--	--
20...	0930	45	308	--	6.5	80	65	2.9	190	3000	96
FEB											
09...	1240	34	571	7.6	19.0	25	100	9.0	64	1300	160
09...	1337	220	263	--	--	40	240	--	--	--	--
09...	1437	625	161	--	--	100	520	--	--	--	--
09...	1637	462	140	--	--	90	440	--	--	--	--
10...	0745	85	182	7.5	14.0	210	270	5.2	7000	7200	63
15...	0640	34	191	--	--	130	390	--	--	--	--
15...	0740	119	196	--	--	200	380	--	--	--	--
15...	0840	214	201	--	--	130	360	--	--	--	--
15...	1040	335	215	--	--	170	270	--	--	--	--
16...	0702	110	228	--	12.0	250	230	4.2	2500	6700	77
16...	1408	73	250	--	--	170	270	3.9	230	2300	81
17...	0808	29	289	--	13.5	230	200	4.5	K6	700	95
20...	0900	34	--	--	--	--	--	--	--	--	--
20...	1000	189	--	--	--	--	--	--	--	--	--
20...	1200	210	202	--	--	80	320	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

[illegible]



## SAN JACINTO RIVER BASIN

08074800 KEEGANS BAYOU AT ROARK ROAD NEAR HOUSTON, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	
NOV												
02...	319	229	30	4.6	.260	4.9	.280	2.9	3.20	3.80	21	
02...	--	172	14	5.0	.320	5.3	.250	2.8	3.00	3.60	17	
02...	--	828	82	.36	.040	.40	<.060	--	1.30	.240	27	
02...	--	570	50	.76	.240	1.0	.210	2.1	2.30	1.50	19	
02...	--	824	68	.63	.070	.70	.090	2.1	2.20	1.20	23	
02...	--	470	52	.19	.410	.60	.300	2.3	2.60	.870	40	
03...	--	274	22	.77	.230	1.0	.480	1.9	2.40	1.20	13	
04...	--	46	4	3.6	.140	3.7	.390	1.4	1.80	2.50	6.4	
19...	--	214	54	4.9	.170	5.1	.140	1.3	1.40	1.70	11	
19...	--	363	72	2.1	.090	2.2	.060	2.5	2.60	.900	21	
19...	--	390	33	.82	.080	.90	.090	1.9	2.00	.780	18	
19...	--	342	64	1.0	.100	1.1	.120	2.2	2.30	.980	20	
20...	--	144	40	2.0	.070	2.1	.150	1.4	1.50	1.20	12	
26...	--	85	25	5.4	.150	5.5	.220	1.7	1.90	3.40	10	
26...	--	87	29	3.1	.110	3.2	.160	1.9	2.10	2.10	11	
26...	--	469	40	2.1	.170	2.3	.130	2.0	2.10	1.90	20	
26...	--	190	36	1.5	.120	1.6	.120	2.2	2.30	1.40	14	
26...	--	64	54	1.2	.120	1.3	.140	1.7	1.80	.970	11	
JAN												
18...	--	98	51	5.0	.520	5.5	.790	2.1	2.90	3.00	16	
18...	--	231	77	3.4	.300	3.7	.480	3.3	3.80	2.00	20	
18...	--	267	83	3.3	.250	3.5	.360	3.3	3.70	1.90	16	
19...	--	161	61	2.2	.190	2.4	.240	2.5	2.70	1.40	14	
20...	174	72	46	2.0	.070	2.1	.260	1.6	1.90	1.20	13	
FEB												
09...	318	186	58	4.7	.340	5.0	.600	1.7	2.30	3.60	15	
09...	--	712	196	1.9	.150	2.0	.200	3.3	3.50	1.60	30	
09...	--	1060	184	.83	.070	.90	.120	2.3	2.40	.890	34	
09...	--	660	168	.82	.080	.90	.190	2.3	2.50	.780	16	
10...	106	342	86	.74	.060	.80	.240	2.1	2.30	.600	21	
15...	--	89	37	.87	.230	1.1	.320	3.0	3.30	.690	22	
15...	--	416	176	.92	.280	1.2	.370	2.3	2.70	.720	19	
15...	--	296	84	.73	.270	1.0	.360	2.0	2.40	.670	20	
15...	--	190	86	1.0	.270	1.3	.390	2.0	2.40	.840	21	
16...	134	260	162	.92	.080	1.0	.270	1.8	2.10	.620	18	
16...	144	198	3	1.0	.200	1.2	.320	1.5	1.80	.770	19	
17...	165	192	20	1.4	.180	1.6	.350	2.2	2.50	1.10	19	
20...	--	--	--	--	--	--	--	--	--	--	--	
20...	--	--	--	--	--	--	--	--	--	--	--	
20...	--	280	6	1.1	.110	1.2	.460	2.4	2.90	1.30	15	
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)
FEB												
20...	1300	181	--	--	--	--	--	--	--	--	--	--
20...	1400	149	--	--	--	--	--	--	--	--	--	--
20...	2109	34	558	--	--	40	170	--	--	--	--	--
20...	2209	189	210	--	--	55	240	--	--	--	--	--
20...	2309	204	232	--	--	60	320	--	--	--	--	--
21...	0009	210	202	--	--	80	320	--	--	--	--	--
21...	0109	181	198	--	--	80	200	--	--	--	--	--
21...	0209	149	193	--	--	80	190	--	--	--	--	--
MAR												
02...	1225	6.0	764	8.0	21.0	5	19	7.8	87	1.6	K2	26

## SAN JACINTO RIVER BASIN

117

08074800 KEEGANS BAYOU AT ROARK ROAD NEAR HOUSTON, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 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)
FEB												
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
02...	190	0	55	12	78	2.6	7.5	200	32	86	.30	27

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLATILE, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
FEB											
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	242	9	5.1	.400	5.5	.770	2.4	3.20	4.10	15
20...	--	378	14	1.4	.120	1.5	.500	2.3	2.80	1.50	14
20...	--	396	17	1.7	.150	1.8	.470	2.7	3.20	1.70	18
21...	--	280	6	1.1	.110	1.2	.460	2.4	2.90	1.30	15
21...	--	145	9	1.1	.120	1.2	.620	2.5	3.10	1.30	15
21...	--	178	3	1.1	.110	1.2	.540	1.7	2.20	1.30	14
MAR											
02...	418	53	19	6.6	.380	7.0	.880	2.2	3.10	6.80	7.0

DATE	TIME	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)
NOV							
02...	1459	5	87	1	10	5	23
MAR							
02...	1225	4	110	<1	<10	5	<3

DATE	TIME	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							
02...		4.	22	.1	2	1	24
MAR							
02...		<1	37	<.1	2	<1	35

DATE	TIME	AME- TRYNE TOTAL (UG/L)	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
NOV								
02...	1459	.10	.10	.10	.10	.10	2.0	.1
MAR								
02...	1225	<.10	<.10	.20	<.10	<.10	<2.0	<.1

DATE	TIME	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
NOV								
02...		.1	.10	2.0	2.0	.10	.10	.1
MAR								
02...		<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

## SAN JACINTO RIVER BASIN

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.--Water-discharge records good. No diversion above station. Low flow is mostly sewage effluent from Houston suburbs.

AVERAGE DISCHARGE.--47 years, 125 ft<sup>3</sup>/s (90,560 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 above base of 6,000 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)
Mar. 23	1500	6,670	36.34	Aug. 11	1430	10,300	39.79
May 10	1030	6,310	35.96	Aug. 18	1245	20,200	47.25
May 20	0530	7,940	37.63	Sept. 19	0100	*29,000	a52.13
July 15	2215	8,260	37.94				

a From peak mark.  
b About.

Minimum daily discharge, 94 ft<sup>3</sup>/s Jan. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	113	123	215	257	246	105	105	102	100	99	119	155
2	117	578	154	171	118	103	100	101	102	97	152	307
3	119	671	268	125	102	101	100	153	103	94	116	187
4	124	163	143	115	99	144	102	126	107	95	118	131
5	118	110	117	110	1120	235	102	101	111	104	112	111
6	120	106	108	107	315	113	100	97	110	100	489	665
7	183	108	105	107	158	104	100	99	109	97	352	233
8	159	105	100	107	125	101	100	101	104	96	857	693
9	126	96	96	108	1350	105	98	133	102	112	1410	467
10	125	98	253	109	497	99	96	1440	108	126	2020	1000
11	164	103	200	106	200	98	100	272	113	105	2640	1250
12	367	104	142	103	150	107	100	113	116	147	2020	485
13	173	100	110	100	120	105	100	101	120	1310	652	234
14	115	95	131	95	110	115	100	100	124	833	226	145
15	110	98	227	97	1300	118	98	400	141	2390	342	122
16	107	126	135	98	800	192	98	229	909	3920	423	121
17	103	855	116	101	300	203	102	132	1600	639	161	153
18	108	189	107	140	180	112	106	134	444	237	9440	368
19	106	1190	103	905	120	103	104	138	142	163	2670	12900
20	104	735	107	469	300	207	104	2480	116	138	541	2740
21	100	176	105	195	600	122	103	1630	186	195	227	991
22	99	126	99	140	250	127	147	509	130	234	166	304
23	99	119	124	119	170	2360	181	130	113	140	147	192
24	99	115	142	113	130	610	128	110	358	119	135	152
25	98	104	991	109	120	212	111	100	879	114	476	137
26	96	428	442	105	109	403	105	100	529	111	163	398
27	96	1530	442	101	112	184	102	110	163	111	249	225
28	105	406	179	100	110	129	100	105	116	108	295	144
29	412	173	124	101	---	113	99	102	104	109	194	130
30	167	215	110	101	---	150	101	99	101	110	230	123
31	139	---	165	194	---	110	---	99	---	509	126	---
TOTAL	4271	9145	5860	4908	9311	7090	3192	9646	7560	12762	27268	25263
MEAN	138	305	189	158	333	229	106	311	252	412	880	842
MAX	412	1530	991	905	1350	2360	181	2480	1600	3920	9440	12900
MIN	96	95	96	95	99	98	96	97	100	94	112	111
AC-FT	8470	18140	11620	9740	18470	14060	6330	19130	15000	25310	54090	50110
CAL YR 1982	TOTAL	69187	MEAN 190	MAX 4440	MIN 83	AC-FT 137200						
WTR YR 1983	TOTAL	126276	MEAN 346	MAX 12900	MIN 94	AC-FT 250500						

NOTE.--No gage-height record Sept. 19.

## SAN JACINTO RIVER BASIN

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08075000 BRAYS BAYOU AT HOUSTON, TX--Continued

## WATER-QUALITY RECORDS

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

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

								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)		
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)					
FEB													
09...	1450	4170	147	7.5	15.5	55	100	9.8	98	9.9	22000		
09...	1659	4360	170	7.9	15.5	110	240	9.5	95	9.0	21000		
10...	1041	545	310	8.0	16.0	55	230	8.3	84	2.1	230		
MAR													
02...	0950	91	843	8.0	20.0	5	7.4	11.2	123	1.0	K6		
SEP													
19...	1140	27900	67	8.4	22.0	90	120	7.6	87	3.3	29000		
20...	1025	3280	161	7.2	26.0	100	200	8.2	101	4.5	23000		
21...	0935	964	248	8.3	21.0	80	110	8.2	91	3.0	700		
		HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 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)
FEB													
09...	46	0	15	2.1	11	.7	1.9	49	14	9.1	.10	5.7	
09...	49	0	15	2.7	13	.8	2.3	52	11	11	.20	6.1	
10...	88	0	26	5.5	28	1.4	3.4	95	22	19	.30	12	
MAR													
02...	170	0	50	11	110	3.8	6.3	240	43	95	.60	24	
SEP													
19...	25	0	8.0	1.3	3.7	.3	2.1	26	6.3	3.1	<.10	3.3	
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	SOLIDS, VOLATILE, SUS- PENDE (MG/L)	NITRO- GEN, NITRATE (MG/L AS N)	NITRO- GEN, NITRITE (MG/L AS N)	NITRO- GEN, NO2+NO3 (MG/L AS N)	NITRO- GEN, AMMONIA (MG/L AS N)	NITRO- GEN, ORGANIC (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
FEB											
09...	88	354	92	.40	.100	.50	.460	2.1	2.60	.620	15
09...	93	660	176	.51	.090	.60	.460	2.5	3.00	.840	17
10...	173	274	74	.76	.240	1.0	.730	2.1	2.80	.720	17
MAR											
02...	484	17	10	2.1	.500	2.6	5.10	1.3	6.40	2.60	8.2
SEP											
19...	43	236	62	.05	.050	.10	.240	1.2	1.40	.360	14
20...	--	252	50	.00	.210	.20	.360	1.1	1.50	.450	10
21...	--	108	12	.12	.180	.30	.860	1.5	2.40	1.00	14

DATE	TIME	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)
FEB							
09...	1450	2	33	<1	<10	6	69
09...	1659	4	34	<1	<10	3	49
10...	1041	7	64	<1	<10	6	78
MAR							
02...	0950	4	150	<1	10	4	12
SEP							
19...	1140	3	18	<1	<10	1	54

## SAN JACINTO RIVER BASIN

08075000 BRAYS BAYOU AT HOUSTON, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	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						
09...	2	4	<.1	<1	<1	27
09...	<1	2	<.1	<1	<1	18
10...	<1	7	<.1	1	<1	17
MAR						
02...	<1	27	<.1	1	<1	52
SEP						
19...	1	4	<.1	<1	<1	4

DATE	TIME	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
FEB								
09...	1450	<.10	<.10	.60	<.10	<.10	<2.0	.1
09...	1659	<.10	<.10	.60	<.10	<.10	<2.0	.1
10...	1041	<.10	<.10	.90	<.10	<.10	<2.0	.2
MAR								
02...	0950	<.10	<.10	.40	<.10	<.10	<2.0	<.1
SEP								
19...	1140	<.10	<.10	.10	<.10	<.10	<2.0	<.1

DATE	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
FEB							
09...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
09...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
10...	<.1	<.10	<2.0	<2.0	.10	<.10	<.1
MAR							
02...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
SEP							
19...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1



## SAN JACINTO RIVER BASIN

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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>.

## WATER-DISCHARGE RECORDS

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

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.--Water-discharge records good. Channel bed was lowered 5 to 6 ft during rectification of 1978. 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 719 acre-ft of ground water was used for cooling purposes then released to the bayou about 200 ft upstream from gage. Rain gage and gage-height telemeters located at station.

AVERAGE DISCHARGE.--18 years (water years 1965-78, 1980-83), 28.9 ft<sup>3</sup>/s (20,940 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,660 ft<sup>3</sup>/s Sept 19, 1983 (elevation, 54.50 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 above base of 700 ft<sup>3</sup>/s (revised) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Elevation (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Elevation (ft)
Mar. 23	1530	902	44.72	Aug. 11	1730	884	44.36
June 16	2045	1,190	46.60	Aug. 18	1815	3,730	53.20
July 16	0530	1,190	45.67	Sept. 19	1030	*4,660	54.50
Aug. 10	1945	945	44.64				

Minimum daily discharge, 12 ft<sup>3</sup>/s for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	12	28	22	18	14	16	13	14	12	14	17
2	14	44	19	19	13	14	14	13	14	13	14	18
3	14	99	34	15	12	14	16	15	14	14	17	32
4	13	21	22	14	12	14	17	13	15	13	23	21
5	13	16	18	13	231	20	18	12	14	13	16	17
6	15	17	17	13	69	16	15	13	14	14	15	30
7	21	14	14	13	25	15	15	13	16	13	16	25
8	22	13	14	14	18	14	18	13	15	12	68	81
9	15	14	13	13	211	15	13	14	15	12	183	74
10	15	13	29	12	133	15	14	65	15	13	296	24
11	19	14	27	13	37	14	14	32	15	13	433	23
12	25	13	19	12	24	15	14	15	15	14	338	19
13	16	13	15	14	17	14	13	14	14	128	124	25
14	13	13	16	13	15	14	13	14	14	141	39	16
15	12	13	19	13	181	14	12	66	14	354	20	14
16	13	13	15	13	170	29	13	47	272	704	20	16
17	13	52	14	13	41	26	13	17	284	132	17	16
18	12	19	15	15	24	15	12	15	53	38	2050	20
19	12	100	15	144	18	15	13	14	21	20	722	2130
20	12	106	14	96	43	24	12	252	15	18	105	331
21	12	29	15	31	304	16	13	218	19	17	35	84
22	14	15	14	21	55	14	14	128	22	17	25	28
23	13	15	14	17	28	312	13	31	19	16	21	19
24	15	15	15	15	20	136	13	20	29	16	19	16
25	14	15	110	14	17	39	13	17	62	15	25	16
26	14	28	93	13	17	52	12	16	40	15	20	40
27	13	195	85	13	16	28	14	16	25	14	21	32
28	13	47	30	12	15	17	13	15	14	14	17	17
29	24	21	17	13	---	15	13	15	13	15	16	14
30	18	24	14	13	---	26	13	14	13	15	16	15
31	15	---	16	19	---	24	---	14	---	17	16	---
TOTAL	466	1023	800	675	1784	1010	416	1174	1119	1862	4761	3230
MEAN	15.0	34.1	25.8	21.8	63.7	32.6	13.9	37.9	37.3	60.1	154	108
MAX	25	195	110	144	304	312	18	252	284	704	2050	2130
MIN	12	12	13	12	12	14	12	12	13	12	14	14
AC-FT	924	2030	1590	1340	3540	2000	825	2330	2220	3690	9440	6410
CAL YR 1982	TOTAL	8851	MEAN 24.2	MAX 562	MIN 11	AC-FT 17560						
WTR YR 1983	TOTAL	18320	MEAN 50.2	MAX 2130	MIN 12	AC-FT 36340						

## SAN JACINTO RIVER BASIN

08075400 SIMS BAYOU AT HIRAM CLARKE STREET, HOUSTON, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1970 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)
FEB 15...	1546	321	290	7.8	14.0	90	180	8.8	86	8.4	580	5300
MAR 02...	1048	14	931	7.9	19.0	5	17	8.5	91	3.2	K1	130

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 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)
FEB 15...	73	0	22	4.3	31	1.6	3.8	89	21	24	.20	9.9
MAR 02...	190	0	54	13	130	4.3	4.6	260	72	94	.50	23

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
FEB 15...	170	230	104	.78	.120	.90	.860	3.0	3.90	1.40	20
MAR 02...	547	23	3	3.1	.540	3.6	2.80	3.7	6.50	3.50	6.1

DATE	TIME	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)
MAR 02...	1048	4	170	<1	<10	3	10

DATE	TIME	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)
MAR 02...		<1	36	<.1	<1	<1	13

DATE	TIME	AME- TRYNE TOTAL (UG/L)	ATRA- ZONE TOTAL (UG/L)	ATRA- ZONE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPR- AZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
MAR 02...	1048	<.10	<.10	.10	<.10	<.10	<2.0	<.1

DATE	TIME	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
MAR 02...		<.1	<.10	<2.0	<2.0	.10	<.10	<.1

## SAN JACINTO RIVER BASIN

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08075500 SIMS BAYOU AT HOUSTON, TX

LOCATION.--Lat 29°40'27", long 95°17'21", Harris County, Hydrologic Unit 12040104, on left bank at downstream side of bridge 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. WDR TX-76-2: 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.--Water-discharge records fair. Low flow is largely sustained by sewage effluent from Houston suburbs and industrial wastes. Rainfall and gage-height telemeter at station.

AVERAGE DISCHARGE.--31 years, 83.8 ft<sup>3</sup>/s (60,710 acre-ft/yr).

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

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,200 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)
July 16	0930	2,460	20.83	Aug. 18	2100	*11,400	33.23
Aug. 11	1630	2,810	22.04	Sept. 19	1600	9,110	31.77

Minimum daily discharge, 33 ft<sup>3</sup>/s Apr. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	45	90	106	101	57	49	36	40	43	44	68
2	40	150	60	85	53	56	45	34	41	43	41	88
3	45	320	100	60	49	51	47	36	40	41	46	84
4	42	75	70	50	44	57	48	34	43	38	70	76
5	41	60	55	48	906	67	46	49	43	47	48	42
6	41	65	54	46	381	54	45	51	43	44	45	286
7	56	55	53	44	128	48	45	49	41	40	60	184
8	60	48	48	45	96	53	47	51	41	41	139	221
9	50	50	49	44	565	58	44	50	40	39	500	793
10	45	50	107	43	570	56	46	187	39	38	385	233
11	55	47	96	41	140	55	42	105	36	38	1520	95
12	75	47	65	38	90	51	37	51	35	52	1120	95
13	50	41	52	37	80	50	35	45	35	395	518	81
14	48	43	60	38	75	49	36	41	37	410	139	49
15	46	43	74	36	600	46	38	109	36	484	78	60
16	45	52	52	35	550	58	41	139	494	1570	65	45
17	45	124	44	36	150	72	40	54	1390	373	70	48
18	44	65	51	35	90	49	41	46	310	119	6630	92
19	44	203	49	237	75	46	33	44	105	70	3930	4840
20	43	350	50	251	90	87	42	697	70	58	357	1530
21	43	90	47	86	1200	56	41	654	53	61	105	278
22	45	60	49	78	200	49	48	443	68	55	68	102
23	45	55	54	63	100	879	46	104	64	50	55	65
24	50	52	52	56	68	594	45	68	55	48	51	51
25	50	50	307	52	57	138	43	54	135	44	92	49
26	45	140	463	49	53	148	42	50	119	44	89	48
27	42	780	421	44	52	93	40	47	86	43	75	92
28	40	180	179	48	52	62	41	49	51	42	101	54
29	75	75	82	46	---	52	40	44	46	43	56	47
30	55	75	64	46	---	63	45	42	44	43	51	48
31	48	---	79	140	---	66	---	43	---	65	41	---
TOTAL	1489	3490	3076	2063	6615	3320	1278	3506	3680	4521	16589	9844
MEAN	48.0	116	99.2	66.5	236	107	42.6	113	123	146	535	328
MAX	75	780	463	251	1200	879	49	697	1390	1570	6630	4840
MIN	36	41	44	35	44	46	33	34	35	38	41	42
AC-FT	2950	6920	6100	4090	13120	6590	2530	6950	7300	8970	32900	19530
CAL YR 1982	TOTAL	29173	MEAN	79.9	MAX	1910	MIN	30	AC-FT	57860		
WTR YR 1983	TOTAL	59471	MEAN	163	MAX	6630	MIN	33	AC-FT	118000		

## SAN JACINTO RIVER BASIN

08075500 SIMS BAYOU AT HOUSTON, TX--Continued

## WATER-QUALITY RECORDS

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

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)
MAR 01...	0915	51	1000	7.6	17.0	5	28	5.8	60	7.8	58000	4500
MAY 10...	1200	460	400	8.1	24.5	25	300	8.3	99	16	50000	81000
MAY 11...	1135	86	645	7.5	23.5	15	200	3.8	45	8.4	200000	160000
SEP 19...	1330	8240	90	8.4	22.0	100	270	6.5	74	4.7	160000	260000
SEP 20...	1157	1040	206	7.2	26.0	55	90	4.9	60	3.9	140000	48000
SEP 21...	1035	279	363	6.8	21.5	40	90	6.8	76	5.5	15000	29000

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L 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)
MAR 01...	170	0	48	12	150	5.2	6.1	200	120	110	.60	18
MAY 10...	66	0	21	3.2	54	3.0	3.6	67	37	51	.20	4.9
MAY 11...	98	0	29	6.1	90	4.1	5.8	110	83	65	.40	9.9
SEP 19...	29	0	9.0	1.7	6.0	.5	2.8	33	9.7	4.9	.10	4.5
SEP 20...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 21...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDEd (MG/L)	SOLIDS, VOLATILE, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
MAR 01...	585	35	13	5.1	.560	5.7	1.50	2.0	3.50	1.60	7.7
MAY 10...	215	284	31	.94	.160	1.1	.760	2.3	3.10	.950	22
MAY 11...	355	252	82	1.1	.250	1.3	.780	1.7	2.50	1.20	11
SEP 19...	59	510	70	.16	.040	.20	.150	4.9	5.00	.800	15
SEP 20...	--	138	11	.10	.100	.20	.260	1.2	1.50	.680	12
SEP 21...	--	105	30	.38	.120	.50	.380	1.3	1.70	.490	15

DATE	TIME	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)
MAR 01...	0915	3	130	<1	<10	6	6
MAY 10...	1200	18	38	<1	20	5	45
MAY 11...	1135	12	74	<1	<10	2	56
SEP 19...	1330	6	23	<1	<10	3	110

## SAN JACINTO RIVER BASIN

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08075500 SIMS BAYOU AT HOURSTON, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	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)
MAR 01...	<1	90	<.1	1	<1	74
MAY 10...	2	21	<.1	<1	<1	10
11...	7	16	<.1	1	<1	10
SEP 19...	2	4	<.1	<1	<1	5

DATE	TIME	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
MAR 01...	0915	<.10	<.10	.30	<.10	<.10	--	<.1
MAY 10...	1200	<.10	<.10	1.4	<.10	<.10	<2.0	.4
11...	1135	<.10	<.10	<.10	<.10	<.10	<2.0	<.1
SEP 19...	1330	<.10	<.10	.30	<.10	<.10	<2.0	.1

DATE	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
MAR 01...	<.1	<.10	--	--	<.10	<.10	<.1
MAY 10...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
11...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
SEP 19...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.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, at gaging station at Forest Oaks Street Bridge 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.--WRD TX-80-2: 1979(P).

GAGE.--Water-stage recorder and crest-stage gages. 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. Rain gage also located at station.

REMARKS.--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-telemeter located 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, 22.58 ft Aug. 18 at 1430 hours; minimum gage height, 2.78 ft Apr. 2, 3.

## GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT	
	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.
1	6.17	5.04	5.87	4.78	-	-	-	-	6.37	3.71	5.20	3.88	6.19	3.23	6.23	4.02	-	-	5.82	4.35	4.77	3.38	5.38	3.28
2	6.62	4.83	8.33	4.85	-	-	-	-	5.02	2.90	5.15	4.00	4.60	2.78	6.19	4.33	-	-	5.88	4.35	4.63	3.30	5.13	3.48
3	6.27	5.21	7.82	4.15	7.37	-	-	3.18	3.81	2.85	5.28	3.74	5.19	2.78	5.48	3.80	-	-	-	-	4.87	3.28	5.45	3.72
4	6.05	4.60	4.33	3.03	-	-	-	-	4.68	3.66	5.73	3.45	5.93	3.86	6.02	3.84	5.27	3.41	-	-	5.49	3.63	5.62	3.62
5	6.16	4.57	5.03	3.72	-	-	-	-	5.10	3.98	12.25	4.80	6.06	4.15	5.70	4.10	5.36	3.59	-	-	-	-	5.26	3.49
6	6.25	5.02	5.40	4.15	-	-	-	-	5.03	3.90	6.75	3.90	5.38	3.66	4.68	3.08	6.28	4.85	-	-	-	-	5.06	3.29
7	6.30	4.42	5.10	4.45	-	-	-	-	5.30	3.95	4.95	3.37	5.45	3.78	4.47	3.07	5.83	4.48	-	-	5.15	3.37	5.12	3.05
8	6.10	4.75	5.55	4.35	-	-	-	-	5.15	3.78	5.05	3.43	5.33	3.47	4.42	3.22	4.88	3.55	-	-	5.32	3.40	7.45	3.08
9	6.22	4.03	5.60	4.13	-	-	-	-	5.33	3.59	8.66	4.04	4.83	2.99	4.33	2.95	6.28	4.53	-	-	5.70	3.66	6.41	3.35
10	5.62	3.60	5.58	-	-	-	-	-	5.10	3.57	8.10	4.17	4.15	2.80	4.28	3.17	7.32	5.25	-	-	5.95	3.75	5.04	3.99
11	5.32	3.60	5.88	-	-	-	-	-	4.98	3.10	4.97	3.44	4.28	2.87	4.72	3.48	6.38	5.40	6.15	3.92	5.85	3.88	10.35	4.64
12	5.77	3.98	-	-	-	-	-	-	4.56	2.94	5.04	3.62	4.72	3.00	5.17	4.02	6.27	4.80	6.17	4.11	5.90	3.83	8.94	5.34
13	5.12	3.82	-	-	-	-	-	-	4.77	3.18	5.07	3.68	4.84	3.42	5.42	4.25	6.46	4.80	6.20	3.96	6.87	4.08	6.41	3.93
14	5.16	3.55	5.77	-	-	-	-	-	4.63	3.02	5.10	3.75	5.03	3.50	4.80	2.93	6.70	4.85	5.90	4.03	6.77	4.63	4.58	3.15
15	5.30	4.16	-	-	-	-	-	-	4.45	2.92	6.87	4.96	5.50	4.31	4.83	2.98	6.22	4.47	5.38	3.53	7.33	4.92	4.33	3.40
16	5.05	4.00	6.22	-	-	-	-	-	4.78	3.34	6.25	4.32	5.98	4.52	5.30	3.41	5.42	3.39	8.00	3.33	12.47	6.10	5.47	3.55
17	5.45	4.27	6.45	-	-	-	-	-	4.84	3.37	5.18	4.17	4.95	2.88	5.37	3.53	6.58	4.14	13.27	5.70	6.10	4.60	8.12	4.17
18	5.40	4.10	-	-	-	-	-	-	5.22	4.10	4.98	4.00	4.82	2.83	4.94	3.28	-	-	6.33	4.63	6.12	4.32	22.58	6.56
19	5.32	4.29	7.00	-	-	-	-	-	6.47	6.22	5.68	3.90	5.02	3.38	6.27	3.48	-	-	5.60	4.50	5.17	3.57	19.96	6.29
20	5.40	3.87	6.15	-	-	-	-	-	6.35	5.01	7.00	4.32	4.64	2.98	6.32	4.56	-	-	5.55	4.38	5.00	3.26	6.29	4.55
21	5.28	3.95	5.40	-	-	-	-	-	5.86	4.51	8.14	5.06	3.83	2.83	6.20	4.77	-	-	5.50	4.12	6.27	3.07	5.41	4.08
22	4.88	3.88	-	-	-	-	-	-	5.18	3.86	5.06	3.25	5.55	2.87	5.78	4.40	-	-	5.50	3.95	5.03	3.17	5.28	3.72
23	5.20	3.88	-	-	-	-	-	-	5.03	3.65	4.80	3.03	11.10	4.45	4.99	3.07	-	-	5.58	3.97	5.03	3.30	5.14	3.55
24	4.97	4.12	-	-	-	-	-	-	4.97	3.27	4.91	3.14	8.12	4.43	4.23	2.90	-	-	5.67	3.95	4.77	3.13	5.14	3.67
25	5.44	4.34	-	-	11.13	-	-	-	5.13	3.18	5.48	3.23	6.38	4.16	5.48	3.23	-	-	7.35	3.80	4.72	3.11	6.36	3.64
26	5.30	4.16	9.85	-	-	-	-	-	5.32	3.30	6.27	4.30	7.02	4.88	5.44	4.27	-	-	6.52	4.02	4.52	3.03	5.21	3.88
27	5.13	4.06	10.10	-	-	-	-	-	4.38	2.88	6.71	4.63	5.43	3.38	5.51	4.09	-	-	6.03	4.28	4.55	2.97	5.82	3.89
28	5.55	4.31	-	-	-	-	-	-	5.53	3.62	5.62	3.90	4.97	3.43	5.47	3.81	-	-	6.03	4.22	4.50	3.05	6.18	4.76
29	5.77	4.70	-	-	-	-	-	-	5.97	3.72	-----	-----	5.98	4.53	5.67	3.88	-	-	5.75	4.00	5.03	3.10	5.46	4.44
30	5.73	4.85	-	-	-	-	-	-	5.43	3.53	-----	-----	6.03	4.64	5.78	3.88	-	-	5.65	4.00	5.32	4.40	5.28	3.52
31	5.85	4.80	-----	-----	-	-	-	-	6.40	5.00	-----	-----	5.70	4.14	-----	-----	-	-	-----	-----	5.62	4.23	4.68	3.28

## SAN JACINTO RIVER BASIN

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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.--7.32 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>. Drainage area revisions due to drainage ditch changes.

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

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 Corps of Engineers).

REMARKS.--Records fair. Low flow is sustained by sewage effluent.

AVERAGE DISCHARGE.--12 years, 17.4 ft<sup>3</sup>/s (12,610 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.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base 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)
June 17	1300	1,930	14.24	Aug. 18	0915	*3,720	17.02
June 25	1445	1,530	13.47	Sept. 19	0930	2,490	15.19
July 16	0630	1,540	13.49				

Minimum daily discharge, 0.10 ft<sup>3</sup>/s Oct. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.38	.56	16	10	5.8	.67	.31	.25	.24	.23	1.2	43
2	.19	82	2.7	1.5	1.7	.51	.27	.25	.24	3.6	.39	33
3	.25	42	16	1.0	1.1	.54	.28	.30	.19	.34	.33	6.6
4	.21	1.3	2.0	.83	.76	3.0	.73	.25	.40	.18	14	1.6
5	.18	.56	1.0	.83	248	6.6	.42	.21	22	9.9	9.4	4.3
6	.21	.83	.68	.76	18	.79	.45	.25	2.0	1.2	.50	23
7	1.3	.56	.68	.68	4.4	.44	.32	.25	.52	.30	.41	42
8	.83	.44	1.0	2.8	2.0	.42	.30	.30	.23	.25	99	58
9	.25	.42	.68	1.1	88	.75	.30	.44	.21	.17	23	58
10	1.3	.35	40	.78	17	.41	.25	50	.13	.13	4.3	219
11	.83	.84	5.0	.81	3.5	.57	.21	1.9	.15	.13	222	29
12	1.5	.87	1.0	.81	1.9	.75	.22	.24	.13	2.9	161	6.1
13	.35	.34	.56	.56	2.0	1.0	.28	.21	.15	121	28	3.1
14	.21	.83	25	.59	.96	1.1	.34	.15	.15	70	2.8	3.3
15	.21	.57	1.5	.55	52	.91	.27	23	.17	282	1.4	1.8
16	.10	3.6	1.0	.52	19	5.2	.28	1.7	32	501	1.2	1.7
17	.13	16	.90	.44	2.4	2.8	.31	.30	315	23	16	8.6
18	.13	1.3	.80	1.7	1.6	1.2	.39	.74	26	10	1600	8.2
19	1.3	89	.70	89	1.2	1.2	.29	15	1.7	3.3	92	542
20	.30	11	.60	16	29	17	.30	211	2.2	1.0	7.1	108
21	.21	22	.60	4.4	141	1.9	.63	83	1.4	31	2.4	39
22	.13	3.0	.50	2.6	5.3	1.6	1.5	13	2.4	.68	1.4	4.8
23	.25	2.4	.50	1.6	2.2	183	.98	1.9	.81	.44	1.5	2.0
24	.17	1.5	.40	1.6	1.8	19	.47	.82	.55	.35	1.0	1.5
25	.44	.56	300	1.8	1.4	1.6	.21	.56	150	.25	15	.97
26	.25	202	300	2.1	1.4	22	.21	.42	89	.30	4.0	.68
27	.44	343	50	1.6	1.5	1.1	.21	.35	4.8	.30	23	.58
28	.35	12	10	.68	.95	.55	.17	.34	.32	.56	5.6	.54
29	9.9	2.4	2.0	1.0	---	.59	.21	.28	.18	.35	46	.35
30	37	47	1.0	.76	---	1.7	.44	.25	.74	.35	32	.37
31	3.3	---	4.0	41	---	.50	---	.26	---	1.7	6.1	---
TOTAL	62.60	889.23	786.80	190.40	655.87	279.40	11.55	407.92	654.01	1066.91	2422.03	1251.09
MEAN	2.02	29.6	25.4	6.14	23.4	9.01	.39	13.2	21.8	34.4	78.1	41.7
MAX	37	343	300	89	248	183	1.5	211	315	501	1600	542
MIN	.10	.34	.40	.44	.76	.41	.17	.15	.13	.13	.33	.35
AC-FT	124	1760	1560	378	1300	554	23	809	1300	2120	4800	2480
CAL YR 1982	TOTAL	4322.83	MEAN	11.8	MAX	368	MIN	.10	AC-FT	8570		
WTR YR 1983	TOTAL	8677.81	MEAN	23.8	MAX	1600	MIN	.10	AC-FT	17210		

## SAN JACINTO RIVER BASIN

08075760 HUNTING BAYOU AT FALLS STREET, HOUSTON, TX  
(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°48'22", long 95°19'50", Harris County, Hydrologic Unit 12040104, at downstream side of bridge on Falls Street in northeast Houston.

DRAINAGE AREA.--2.57 mi<sup>2</sup>. Oct. 1, 1973, to Sept. 30, 1978, 2.75 mi<sup>2</sup>. Prior to Oct. 1, 1973, 3.50 mi<sup>2</sup>. Drainage area changes due to changes in storm sewers.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1964 to current year.

GAGE.--Flood-hydrograph and rainfall recorder and crest-stage gage. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. Additional storm rainfall-runoff data for this site can be obtained from the report "Hydrologic Data for Urban Studies in the Houston, Texas Metropolitan Area, 1983."

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 778 ft<sup>3</sup>/s June 13, 1973 (elevation, 46.70 ft); maximum elevation, 47.35 ft Sept. 1, 1979.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 250 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 10	1100	262	41.34	Aug. 18	1715	*640	46.15
May 20	0445	295	41.72	Sept. 19	1030	427	44.07
Aug. 9	1345	289	41.65	Sept. 20	1915	355	43.37

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1970 to current year. Water temperatures: April 1964 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)
FEB												
15...	1020	41	300	7.3	14.5	100	120	7.6	75	19	40000	110000
15...	1200	25	280	7.8	14.0	50	85	7.4	72	>85	41000	140000
15...	1455	10	564	8.0	14.0	800	250	5.4	53	>207	120000	100000
16...	1116	3.6	750	7.4	14.0	35	19	2.0	19	20	180000	35000
MAR												
02...	0915	.93	1320	7.5	18.0	20	2.5	.4	4	44	60000	61000

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 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)
FEB												
15...	79	0	25	4.0	20	1.0	3.4	90	24	15	.20	5.2
15...	79	0	26	3.5	18	.9	3.9	85	27	15	.30	5.1
15...	110	0	35	5.7	71	3.1	11	150	69	43	.40	8.3
16...	210	0	63	12	61	1.9	5.9	220	66	57	.50	13
MAR												
02...	360	0	100	26	150	3.6	3.2	420	83	140	.90	21

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
FEB											
15...	151	129	56	.71	.090	.80	2.40	13	15.0	1.60	.25
15...	150	95	30	.92	.080	1.0	2.00	8.0	10.0	1.40	.97
15...	334	129	81	1.0	.180	1.2	3.60	29	33.0	2.60	>400
16...	410	39	<1	.90	.100	1.0	4.40	5.5	9.90	1.50	18
MAR											
02...	777	10	9	--	<.020	<.10	4.80	2.6	7.40	3.60	31

## SAN JACINTO RIVER BASIN

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08075760 HUNTING BAYOU AT FALLS ST, HOUSTON, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	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)
FEB							
15...	1020	4	33	<1	<10	7	79
15...	1200	3	40	<1	10	8	200
15...	1455	4	34	1	30	16	320
MAR							
02...	0915	3	140	<1	<10	<1	330

DATE	TIME	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							
15...		15	65	<.1	<1	<1	37
15...		8	140	<.1	<1	<1	73
15...		10	110	<.1	<1	<1	240
MAR							
02...		<1	610	<.1	<1	<1	33

DATE	TIME	AME- TRYNE TOTAL (UG/L)	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
FEB								
15...	1020	<.10	<.10	.10	<.10	<.10	<2.0	.1
15...	1200	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0	<1.0
15...	1455	<10	<10	<10	<10.0	<10	<80	<10
MAR								
02...	0915	<.10	<.10	.10	<.10	<.10	--	.2

DATE	TIME	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
FEB								
15...		<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
15...		<1.0	<1.0	<4.0	<4.0	<1.0	<1.0	<1.0
15...		<10	<10.0	<80	<80	<10.0	<10	<10
MAR								
02...		<.1	<.10	--	--	<.10	<.10	<.1

## SAN JACINTO RIVER BASIN

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.--15.8 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>. Changes due to storm sewer relocations.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1964 to current year. Prior to October 1973, published as "U.S. Highway 90-A, Houston".

REVISED RECORDS.--WRD TX-74-1: Drainage area.

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.--Water-discharge records good. Low flow is largely maintained by sewage and industrial effluent. Recording rain gage at station.

AVERAGE DISCHARGE.--19 years, 23.8 ft<sup>3</sup>/s (17,240 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,440 ft<sup>3</sup>/s Aug. 18, 1983 (elevation, 39.16 ft); maximum gage height, 39.28 ft June 15, 1976; minimum daily, 0.88 ft<sup>3</sup>/s Aug. 24, 1971.

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

Date	Time	Discharge (ft <sup>3</sup> /s)	Elevation (ft)
Aug. 18	b1800	*3,440	a39.16
Sept. 19	b1100	2,000	35.19
Sept. 20	2130	1,490	33.37

a From crest-stage gage peak mark.

b About.

Minimum daily discharge, 1.8 ft<sup>3</sup>/s Oct. 19, 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	3.4	21	18	17	7.9	18	4.1	4.7	5.3	5.8	18
2	2.4	24	10	12	7.9	7.8	12	3.9	4.7	4.7	5.3	8.2
3	2.2	49	42	8.7	6.8	6.8	9.8	16	4.2	4.3	5.2	7.0
4	2.1	7.0	12	7.4	5.6	13	8.7	4.1	21	4.6	29	6.4
5	2.0	4.3	6.3	6.8	168	20	8.3	4.1	12	4.1	18	6.4
6	2.3	3.9	5.3	6.6	47	8.1	7.9	3.7	7.0	3.8	7.0	16
7	2.4	3.0	4.9	6.1	21	6.9	7.4	3.7	5.1	4.0	17	17
8	2.7	2.8	4.1	6.2	13	6.0	7.0	3.1	4.5	3.8	12	13
9	2.1	2.4	3.6	5.5	119	6.5	8.2	14	4.1	3.5	169	19
10	2.9	2.6	20	5.1	74	5.8	5.8	220	3.7	3.6	117	119
11	4.7	4.8	19	4.9	22	5.7	5.2	33	3.6	3.8	68	92
12	28	3.9	16	4.6	15	5.4	5.2	11	3.6	3.7	127	16
13	5.2	2.5	6.5	4.4	12	5.4	5.1	6.5	3.4	111	72	11
14	3.4	2.4	8.7	4.4	10	5.1	4.9	6.8	3.6	51	15	8.3
15	3.1	2.3	12	4.5	49	5.4	4.6	24	39	245	12	9.2
16	2.8	9.7	5.6	4.2	41	18	4.4	11	36	374	9.3	8.6
17	2.2	59	4.4	4.2	16	11	10	6.6	116	45	7.6	6.8
18	2.0	7.6	3.9	6.4	12	5.2	5.5	6.6	27	25	1930	8.1
19	1.8	86	3.7	75	10	4.8	4.4	5.2	8.4	11	902	944
20	1.8	50	3.6	34	13	17	4.8	324	9.3	8.8	87	550
21	1.9	9.7	3.4	14	134	5.7	4.6	262	15	19	25	433
22	2.0	9.7	3.7	11	27	4.6	8.6	111	6.4	21	17	42
23	2.2	7.2	3.1	12	15	270	7.5	28	5.0	7.7	14	17
24	2.2	4.2	3.0	6.9	12	160	10	12	5.0	6.3	12	13
25	2.2	3.6	75	6.2	11	21	5.8	9.1	73	5.6	11	10
26	2.0	122	103	6.0	9.3	59	4.8	10	188	5.2	9.5	9.5
27	2.2	287	107	5.4	8.7	20	4.2	6.6	54	4.8	8.6	10
28	2.4	25	25	5.3	7.9	11	4.3	6.1	12	4.8	9.2	8.1
29	34	14	14	5.3	---	8.9	4.3	6.8	7.4	24	8.2	7.4
30	5.5	40	8.9	4.8	---	156	4.9	5.1	5.8	8.4	7.3	6.8
31	3.6	---	7.9	29	---	57	---	5.0	---	17	7.1	---
TOTAL	138.8	853.0	566.6	334.9	904.2	945.0	206.2	1173.1	692.5	1043.8	3744.1	2440.8
MEAN	4.48	28.4	18.3	10.8	32.3	30.5	6.87	37.8	23.1	33.7	121	81.4
MAX	34	287	107	75	168	270	18	324	188	374	1930	944
MIN	1.8	2.3	3.0	4.2	5.6	4.6	4.2	3.1	3.4	3.5	5.2	6.4
AC-FT	275	1690	1120	664	1790	1870	409	2330	1370	2070	7430	4840
CAL YR 1982	TOTAL	7450.9	MEAN	20.4	MAX	652	MIN	1.8	AC-FT	14780		
WTR YR 1983	TOTAL	13043.0	MEAN	35.7	MAX	1930	MIN	1.8	AC-FT	25870		



## SAN JACINTO RIVER BASIN

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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.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

								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- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)		
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)					
FEB													
15...	1114	77	515	7.9	14.0	50	170	7.4	72	23	11000	52000	
15...	1400	97	545	7.6	14.5	50	100	5.7	56	18	30000	60000	
15...	1753	70	415	7.6	14.5	100	75	5.9	58	18	31000	42000	
16...	1153	40	505	7.6	13.0	40	60	5.4	51	9.9	140000	32000	
17...	1138	16	715	7.5	15.0	45	17	5.4	53	8.7	29000	7000	
MAR													
02...	1050	7.2	980	7.7	19.5	10	2.2	7.5	82	7.2	580	500	
		HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L 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)
DATE													
FEB													
15...	150	0	46	8.8	52	1.9	4.2	160	46	41	.40	9.0	
15...	160	3	49	9.8	48	1.7	3.1	160	44	39	.50	9.9	
15...	130	0	41	6.8	32	1.3	3.5	130	33	25	.40	8.2	
16...	160	2	50	9.0	38	1.4	3.3	160	45	29	.50	12	
17...	220	0	66	13	61	1.9	3.4	230	58	46	.60	14	
MAR													
02...	280	0	80	20	110	3.0	3.5	310	78	88	.80	16	
		SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	
DATE													
FEB													
15...	304	244	58	1.1	.120	1.2	.710	2.1	2.80	.920	31		
15...	299	188	44	.67	.130	.80	1.20	2.1	3.30	.880	23		
15...	228	101	57	.94	.160	1.1	1.90	2.4	4.30	.870	19		
16...	283	48	30	.99	.110	1.1	1.20	2.6	3.80	.620	17		
17...	400	14	11	1.4	.230	1.6	1.30	2.1	3.40	.860	17		
MAR													
02...	583	3	<1	2.1	.570	2.7	1.10	2.2	3.30	.800	11		
				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)				
DATE	TIME												
FEB													
15...	1114			3	76	<1	<10	5	21				
15...	1753			6	72	<1	10	5	39				
16...	1153			6	99	<1	10	4	54				
MAR													
02...	1050			4	140	<1	<10	4	17				

## SAN JACINTO RIVER BASIN

08075770 HUNTING BAYOU AT INTERSTATE HIGHWAY 610, HOUSTON, TX--Continued

## WATER QUALITY DATA, WATER OCTOBER 1981 TO SEPTEMBER 1982

DATE	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						
15...	2	130	<.1	<1	<1	40
15...	5	68	<.1	<1	<1	100
16...	2	64	<.1	<1	<1	60
MAR						
02...	3	180	<.1	<1	<1	73

DATE	TIME	AME- TRYNE TOTAL (UG/L)	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
FEB								
15...	1114	<.10	<.10	.10	<.10	<.10	<2.0	.9
15...	1753	<.10	<.10	.10	<.10	<.10	<2.0	.7
16...	1153	<.10	<.10	.20	<1.0	<.10	<2.0	1.0
MAR								
02...	1050	<.10	<.10	.10	<.10	<.10	<2.0	.3

DATE	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
FEB							
15...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
15...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
16...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
MAR							
02...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

## SAN JACINTO RIVER BASIN

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## 08075900 GREENS BAYOU AT U.S. HIGHWAY 75 NEAR HOUSTON, TX

LOCATION.--Lat 29°57'24", long 95°25'04", Harris County, Hydrologic Unit 12040104, on left bank at downstream side of U.S. Highway 75 access road bridge, 9.0 mi upstream from station 08076000, and 21 mi upstream from Halls Bayou.

DRAINAGE AREA.--36.1 mi<sup>2</sup>. Prior to October 1973, 34.8 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).

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.

REMARKS.--Records fair. Channel was rectified (widened and bed lowered about 2 ft) in 1980-81. Records furnished by Houston Lighting and Power Co. show that about 1,080 acre-ft of ground water used for cooling purposes was released to bayou about 8 mi upstream from gage during the current year. No known diversion above station. Recording rain gage at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--17 years (water years 1966-80, 1982-1983), 34.5 ft<sup>3</sup>/s (25,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,910 ft<sup>3</sup>/s Aug. 18, 1983 (elevation, 86.91 ft); maximum elevation, 91.09 ft Feb. 21, 1969, 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 above base of 1,700 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)
Oct. 12	0930	2,800	83.22	May 21	1600	3,460	84.04
Nov. 17	0700	1,730	81.00	Aug 11	1700	2,120	81.91
Feb. 9	1630	2,030	81.65	Aug 18	2400	*5,910	86.91
May 20	1530	4,150	84.95				

Minimum daily discharge, 6.9 ft<sup>3</sup>/s Apr. 16, May 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	20	150	153	50	10	24	8.7	16	13	55	28
2	13	44	70	70	22	10	16	8.7	15	12	25	21
3	15	145	40	38	16	10	13	11	15	12	15	17
4	15	39	25	26	13	50	11	8.7	14	12	14	16
5	15	17	20	18	196	25	11	7.8	16	13	18	17
6	22	16	17	14	97	15	9.5	7.3	23	12	18	89
7	29	13	16	12	42	11	9.3	6.9	14	12	57	33
8	38	13	15	10	27	9.8	9.4	7.3	14	13	340	20
9	20	14	15	10	592	9.5	9.8	7.8	13	13	231	39
10	14	14	20	10	432	9.8	9.8	232	13	12	60	40
11	15	13	30	10	131	11	11	58	15	12	739	22
12	1330	15	20	10	60	12	9.1	25	14	12	484	22
13	290	12	15	8.7	41	10	9.0	20	12	127	125	17
14	60	11	21	8.2	31	9.9	9.2	15	12	79	41	15
15	30	10	87	7.3	76	12	7.4	21	109	295	24	16
16	20	123	41	7.3	83	15	6.9	20	188	984	34	15
17	15	964	26	9.2	40	18	7.2	15	219	242	20	18
18	13	149	18	11	24	11	8.8	13	48	60	2760	27
19	12	220	14	168	18	10	8.0	11	20	38	2320	595
20	12	340	13	107	50	38	7.8	1420	17	24	370	442
21	11	78	13	50	500	21	7.9	1730	52	17	123	244
22	11	41	12	32	150	13	15	716	27	18	56	60
23	11	26	57	17	50	605	15	183	14	17	34	30
24	10	23	42	11	25	304	12	67	235	17	26	20
25	10	20	115	11	17	92	13	39	195	15	24	17
26	10	150	144	9.8	14	99	9.8	30	261	13	21	17
27	9.8	200	139	9.8	12	53	8.2	25	85	13	30	15
28	9.8	70	62	9.8	11	33	8.7	21	30	12	38	15
29	277	40	37	9.8	---	25	8.7	17	19	22	27	14
30	76	100	24	9.8	---	50	9.2	15	14	16	19	14
31	41	---	64	23	---	40	---	14	---	15	17	---
TOTAL	2467.6	2940	1382	900.7	2820	1642.0	314.7	4781.2	1739	2172	8165	1955
MEAN	79.6	98.0	44.6	29.1	101	53.0	10.5	154	58.0	70.1	263	65.2
MAX	1330	964	150	168	592	605	24	1730	261	984	2760	595
MIN	9.8	10	12	7.3	11	9.5	6.9	6.9	12	12	14	14
AC-FT	4890	5830	2740	1790	5590	3260	624	9480	3450	4310	16200	3880
CAL YR 1982	TOTAL	17072.0	MEAN	46.8	MAX	1330	MIN	6.5	AC-FT	33860		
WTR YR 1983	TOTAL	31279.2	MEAN	85.7	MAX	2760	MIN	6.9	AC-FT	62040		

## 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 Halls Bayou, and 23.4 mi upstream from mouth.

DRAINAGE AREA.--69.6 mi<sup>2</sup>. Prior to Oct. 1, 1973, 72.7 mi<sup>2</sup>.

## 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.--Water-discharge records fair. Channel rectified during the water years 1974-75. No known diversion above station. Low flow is sustained by Houston Light and Power Co. effluent, which is obtained from ground-water sources. Recording rain gage at station.

AVERAGE DISCHARGE.--31 years, 62.0 ft<sup>3</sup>/s (44,920 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,730 ft<sup>3</sup>/s Apr. 18, 1976 (gage height, 61.92 ft); maximum gage height, 65.75 ft Sept. 12, 1961 (prior to channel rectification); no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,200 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)
Oct. 12	1400	2,670	58.59	May 21	1830	4,490	62.55
Feb. 9	1930	2,220	57.43	July 16	1000	2,200	58.17
Mar. 23	1800	2,610	58.45	Aug. 19	0130	4,760	64.68
May 20	1830	4,170	62.13	Sept. 19	1230	3,790	61.59

Minimum daily discharge, 18 ft<sup>3</sup>/s July 4, 7, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	37	250	287	94	38	56	27	31	23	55	60
2	26	81	150	134	47	36	44	26	30	21	39	46
3	24	308	60	72	35	35	34	33	30	19	26	36
4	25	55	40	53	31	200	36	26	31	18	29	30
5	24	31	33	45	374	80	37	23	38	20	32	28
6	29	26	32	41	233	40	33	22	99	19	29	298
7	37	24	32	39	76	33	32	23	36	18	34	145
8	45	23	33	37	54	31	31	24	26	20	451	58
9	31	24	30	34	713	30	31	23	25	20	269	61
10	26	25	36	34	928	31	30	527	20	19	129	193
11	25	26	59	31	255	31	30	179	23	18	587	159
12	1270	27	50	32	115	32	31	44	23	19	847	57
13	602	22	31	29	77	29	30	33	20	342	264	50
14	119	20	34	29	63	29	29	31	21	170	76	38
15	48	20	109	26	204	29	27	42	79	387	42	38
16	31	59	57	26	240	36	26	38	217	1560	45	36
17	28	1490	37	27	99	44	27	27	446	448	34	62
18	27	304	30	29	68	32	26	31	145	145	2410	113
19	27	425	26	436	55	29	27	24	40	106	3280	1920
20	28	715	24	311	59	68	27	1740	28	54	795	1500
21	28	126	24	105	1200	46	28	2680	80	111	216	879
22	26	71	23	66	300	31	44	1540	86	76	108	189
23	25	57	46	48	100	967	45	428	26	36	70	95
24	25	68	65	41	70	804	35	151	185	32	54	64
25	26	40	334	36	60	186	32	84	339	28	46	47
26	24	145	453	34	50	211	28	62	519	26	42	42
27	24	1000	642	31	45	113	26	50	186	25	45	39
28	25	200	157	31	40	62	25	43	55	24	68	35
29	744	60	73	30	---	49	25	35	35	36	52	35
30	152	150	50	28	---	157	30	33	26	34	37	34
31	57	---	134	51	---	92	---	43	---	23	32	---
TOTAL	3652	5659	3154	2253	5685	3631	962	8092	2945	3897	10243	6387
MEAN	118	189	102	72.7	203	117	32.1	261	98.2	126	330	213
MAX	1270	1490	642	436	1200	967	56	2680	519	1560	3280	1920
MIN	24	20	23	26	31	29	25	22	20	18	26	28
AC-FT	7240	11220	6260	4470	11280	7200	1910	16050	5840	7730	20320	12670
CAL YR 1982	TOTAL	32881	MEAN	90.1	MAX	1800	MIN	19	AC-FT	65220		
WTR YR 1983	TOTAL	56560	MEAN	155	MAX	3280	MIN	18	AC-FT	112200		

## SAN JACINTO RIVER BASIN

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08076000 GREENS BAYOU NEAR HOUSTON, TX--Continued

## WATER-QUALITY RECORDS

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

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)
MAR 01...	0955	37	820	7.7	15.5	10	28	7.2	72	11	52000	7300
MAY 10...	1310	771	325	7.3	22.0	40	400	5.6	64	17	34000	260000
10...	1450	1130	175	7.4	22.5	35	280	6.0	69	15	32000	290000
10...	1945	1020	201	7.9	23.0	50	420	5.0	58	11	29000	110000
11...	1130	108	355	7.2	23.5	30	160	6.6	77	9.6	6700	51000
DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 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)
MAR 01...	180	0	57	9.0	84	2.8	4.2	220	40	93	.40	21
MAY 10...	79	2	26	3.5	34	1.7	4.3	78	22	37	.20	9.1
10...	48	0	16	2.0	15	1.0	3.5	49	13	15	.10	5.1
10...	57	1	19	2.3	15	.9	3.6	56	17	16	.20	5.9
11...	97	2	32	4.0	33	1.5	5.3	95	24	32	.20	11
DATE	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	SOLIDS, VOLATILE, TILE, SUS- PENDE (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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	
MAR 01...	441	48	15	1.5	.500	2.0	2.00	2.1	4.10	2.20	8.4	
MAY 10...	183	916	126	.45	.150	.60	1.10	2.8	3.90	1.20	4.3	
10...	99	666	86	.38	.120	.50	.780	3.0	3.80	.870	18	
10...	113	672	130	.38	.120	.50	.800	2.4	3.20	.680	16	
11...	199	280	40	.98	.220	1.2	1.10	1.4	2.50	1.10	13	
DATE	TIME	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)					
MAR 01...	0955	4	290	<1	<10	6	13					
MAY 10...	1310	5	130	<1	<10	<1	65					
10...	1945	7	87	<1	<10	4	110					
11...	1130	15	160	<1	<10	<1	96					
DATE	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)						
MAR 01...	4	70	<.1	1	<1	14						
MAY 10...	9	26	<.1	1	<1	8						
10...	6	5	<.1	<1	<1	5						
11...	<1	33	<.1	<1	<1	14						



## SAN JACINTO RIVER BASIN

08076000 GREENS BAYOU NEAR HOUSTON, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
MAR								
01...	0955	<.10	<.10	.60	<.10	<.10	<2.0	1.0
MAY								
10...	1310	<.10	<.10	3.5	<.10	<.10	<2.0	1.7
10...	1945	<.10	<.10	1.7	<.10	<.10	<2.0	8.5
11...	1130	<.10	<.10	1.9	<.10	<.10	<2.0	5.1

DATE	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
MAR							
01...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
MAY							
10...	<.1	.40	<2.0	<2.0	.10	<.10	<.1
10...	<.1	<.10	<2.0	<2.0	.20	<.10	<.1
11...	<.1	<.10	<2.0	<2.0	.10	<.10	<.1

## SAN JACINTO RIVER BASIN

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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.--27.6 mi<sup>2</sup>. Oct. 1, 1973, to Sept. 30, 1977, 28.3 mi<sup>2</sup>. Prior to Oct. 1, 1973, 24.7 mi<sup>2</sup>. Changes were result of drainage ditch extensions or relocations.

## WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1732: Drainage area. WDR TX-76-2: 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.--Water-discharge records fair except those for period of no gage-height record, which are poor. No known diversion above station. Low flow is sustained by sewage effluent from Houston suburbs.

AVERAGE DISCHARGE.--31 years, 28.9 ft<sup>3</sup>/s (20,940 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD --Maximum discharge, 3,780 ft<sup>3</sup>/s Mar. 21, 1972 (gage height, 60.70 ft); maximum gage height, 60.75 ft June 13, 1973; no flow at times prior to 1956.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base 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 20	unknown	2,020	a58.27	Sept. 19	unknown	1,800	unknown
May 21	unknown	1,580	a57.12	Sept. 20	unknown	1,300	unknown
Aug. 18	1700	*3,120	60.91				

a From peak marks.

Minimum daily discharge, 7.0 ft<sup>3</sup>/s Oct. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.8	12	100	52	23	13	29	12	10	11	10	19
2	8.3	40	50	29	13	13	18	13	10	11	10	13
3	9.3	100	25	16	11	13	15	14	9.9	10	9.8	11
4	9.5	20	15	12	10	19	15	12	12	10	9.8	10
5	9.5	12	13	13	111	39	14	11	14	10	16	9.6
6	9.7	10	12	15	39	18	13	12	15	10	54	122
7	10	9.0	11	15	18	14	13	12	14	9.6	46	66
8	10	8.5	11	16	14	13	13	13	11	9.6	112	22
9	9.7	8.2	11	17	228	13	13	12	11	9.3	67	138
10	9.9	8.0	14	14	150	13	13	186	10	9.3	42	60
11	10	10	22	13	37	13	13	51	10	9.3	280	29
12	131	12	18	13	22	13	13	12	10	9.3	310	15
13	76	10	13	13	18	13	13	9.5	10	88	74	12
14	12	9.0	12	12	16	13	12	9.0	12	51	22	10
15	7.7	9.0	21	12	101	13	11	25	50	177	15	10
16	7.3	25	15	12	94	16	11	15	50	557	13	10
17	7.3	400	11	12	29	15	12	10	207	90	12	20
18	7.7	50	11	12	20	13	12	12	61	24	1720	40
19	8.1	100	12	137	17	13	11	10	13	15	2000	900
20	7.7	200	11	74	23	19	11	650	16	13	320	650
21	7.7	30	11	25	470	13	12	950	50	101	78	400
22	8.6	20	11	18	58	12	22	550	50	155	33	75
23	7.7	15	12	15	28	562	14	150	15	18	21	35
24	7.1	13	17	13	21	118	11	50	11	14	17	25
25	7.5	12	162	12	18	38	11	25	146	12	16	20
26	7.0	100	150	12	15	79	11	16	136	11	14	17
27	7.6	350	216	11	14	27	11	14	47	10	13	14
28	8.0	60	43	11	14	19	11	13	13	10	18	12
29	150	25	19	11	---	16	12	12	12	10	12	11
30	30	50	11	11	---	310	12	11	11	10	11	10
31	17	---	30	18	---	68	---	11	---	10	10	---
TOTAL	627.7	1727.7	1090	666	1632	1571	402	2902.5	1046.9	1494.4	5385.6	2785.6
MEAN	20.2	57.6	35.2	21.5	58.3	50.7	13.4	93.6	34.9	48.2	174	92.9
MAX	150	400	216	137	470	562	29	950	207	557	2000	900
MIN	7.0	8.0	11	11	10	12	11	9.0	9.9	9.3	9.8	9.6
AC-FT	1250	3430	2160	1320	3240	3120	797	5760	2080	2960	10680	5530

CAL YR 1982 TOTAL 12312.8 MEAN 33.7 MAX 774 MIN 6.6 AC-FT 24420  
WTR YR 1983 TOTAL 21331.4 MEAN 58.4 MAX 2000 MIN 7.0 AC-FT 42310

NOTE.--No gage-height record Oct. 29 to Dec. 5.

## SAN JACINTO RIVER BASIN

08076500 HALLS BAYOU AT HOUSTON, TX--Continued

## WATER-QUALITY RECORDS

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

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

		STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	
MAR 01...	1100	13	900	7.6	17.5	15	17	6.0	63	7.5	130	56	
MAY 10...	1150	216	255	7.4	22.0	25	200	-6.0	68	13	160000	380000	
10...	1625	471	210	7.1	23.0	40	230	4.1	48	17	150000	430000	
10...	2050	342	203	7.6	23.0	35	180	3.5	41	10	120000	260000	
11...	1125	32	367	6.9	23.5	30	22	3.9	46	9.0	120000	200000	
DATE	TIME	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 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)
MAR 01...	230	0	69	13	81	2.4	4.6	280	31	90	.40	22	
MAY 10...	74	0	24	3.4	19	1.0	4.4	74	15	21	.20	7.5	
10...	62	3	20	2.8	15	.9	3.8	59	15	16	.20	5.3	
10...	64	2	21	2.7	14	.8	3.7	62	15	16	.10	5.5	
11...	110	76	36	5.3	32	1.4	4.9	36	22	35	.20	11	
DATE	TIME	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDE (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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	
MAR 01...	479	31	21	.61	.490	1.1	4.90	4.3	9.20	3.40	11		
MAY 10...	139	350	96	.34	.060	.40	2.20	2.4	4.60	1.20	17		
10...	114	498	148	.51	.090	.60	1.70	2.9	4.60	1.10	19		
10...	115	268	64	.42	.080	.50	1.20	2.7	3.90	.870	14		
11...	168	202	64	.08	.120	.20	2.00	2.4	4.40	1.20	13		
DATE	TIME	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)						
MAR 01...	1100	4	260	<1	<10	4	16						
MAY 10...	1150	6	86	<1	<10	<1	84						
10...	1625	26	99	<1	<10	2	90						
11...	1125	14	160	<1	<10	<1	87						
DATE	TIME	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)						
MAR 01...		<1	250	<.1	1	<1	16						
MAY 10...		<1	7	<.1	<1	<1	12						
10...		2	99	<.1	<1	<1	16						
11...		<1	33	<.1	<1	<1	16						
DATE	TIME	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)					
MAR 01...	1100	<.10	<.10	.10	<.10	<.10	<2.0	<.1					
MAY 10...	1150	<.10	<.10	.20	<.10	<.10	<2.0	.4					
10...	1625	<.10	<.10	1.1	<.10	<.10	--	.4					
11...	1125	<.10	<.10	1.4	<.10	<.10	<2.0	1.1					

## SAN JACINTO RIVER BASIN

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08076500 HALLS BAYOU AT HOUSTON, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
MAR							
01...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
MAY							
10...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
10...	<.1	<.10	--	--	<.10	<.10	<.1
11...	<.1	<.10	<2.0	<2.0	.20	<.10	<.1

## 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 Halls 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 for August are good; all other records are poor. Discharge is computed for all storms that produce peak discharges over 2,000 ft<sup>3</sup>/s. Tidal influences on the stage-discharge relationship affect discharge below about 500 ft<sup>3</sup>/s. Discharge below 2,000 ft<sup>3</sup>/s is estimated following designated storm periods only. Gage-height telemeter located at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,700 ft<sup>3</sup>/s June 13, 1973 (gage height, 34.27 ft); minimum not determined (affected by tides).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base 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)
Nov. 17	unknown	4,200	unknown	May 21	unknown	11,000	unknown
Feb. 9	unknown	4,200	unknown	July 16	unknown	5,500	unknown
Mar. 23	unknown	4,700	unknown	Aug. 19	0200	*14,800	32.05
May 20	unknown	10,000	unknown	Sept. 20	unknown	11,200	28.04

Minimum discharge not determined.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---			---	---		---		---	---	---
2	---	---			---	---		---		---	---	---
3	---	---			---	---		---		---	---	---
4	---	---			---	---		---		---	---	---
5	---	---			---	---		---		---	---	---
6	---	---			---	---		---		---	---	580
7	---	---			---	---		---		---	---	1040
8	---	---			---	---		---		---	---	220
9	---	---			1750	---		---		---	---	---
10	---	---			2000	---		920		---	---	---
11	---	---			550	---		830		---	280	---
12	750	---			250	---		220		---	1850	---
13	1370	---			---	---		---		---	1070	---
14	240	---			---	---		---		---	300	---
15	---	---			---	---		---		1050	---	---
16	---	150			---	---		---		3950	---	---
17	---	3500			---	---		---		1000	---	---
18	---	650			---	---		---		300	6740	---
19	---	1000			---	---		---		---	14000	5250
20	---	1700			---	---		4000		---	6280	3950
21	---	300			3100	---		6000		---	960	2400
22	---	---			650	---		6300		---	280	500
23	---	---			250	2850		1260		---	---	250
24	---	---			---	1700		490		---	---	---
25	---	---			---	400		---		---	---	---
26	---	450			---	---		---		---	---	---
27	---	2500			---	---		---		---	---	---
28	---	500			---	---		---		---	---	---
29	---	---			---	---		---		---	---	---
30	---	---			---	---		---		---	---	---
31	---	---			---	---		---		---	---	---
TOTAL	---	---			---	---		---		---	---	---
MEAN	---	---			---	---		---		---	---	---
MAX	---	---			---	---		---		---	---	---
MIN	---	---			---	---		---		---	---	---
AC-FT	---	---			---	---		---		---	---	---
CAL YR 1982	TOTAL -	MEAN -	MAX -	MIN -	AC-FT -							
WTR YR 1983	TOTAL -	MEAN -	MAX -	MIN -	AC-FT -							

NOTE.--No gage-height record Nov. 5 to Feb. 28, Mar. 9 to Apr. 28, and other shorter periods.



## 08077000 CLEAR CREEK NEAR PEARLAND, TX

LOCATION.--Lat 29°35'50", long 95°17'11", Harris-Brazoria County line, Hydrologic Unit 12040204, 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 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.--Records good. Large area of riceland above station is irrigated with water from the Brazos River. Low flow from April to October is largely drainage from irrigated lands. Many diversions for irrigation above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--32 years (water years 1948-59, 1964-83), 37.0 ft<sup>3</sup>/s (26,810 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 above base of 600 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
July 16	1400	664	11.34
Aug. 19	0700	*1,570	18.17
Sept. 19	2100	1,210	15.97

Minimum discharge, no flow Oct. 6-12, 21-27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	.07	16	17	24	6.2	6.7	3.5	3.2	3.2	2.0	6.9
2	.15	13	6.2	24	8.1	5.0	4.4	2.3	2.8	3.0	6.8	6.4
3	.10	19	14	15	4.6	4.1	3.3	1.7	2.4	3.5	8.0	5.3
4	.05	.70	12	8.2	3.0	4.0	2.9	2.0	2.0	3.2	10	4.2
5	.02	.00	6.8	5.5	243	4.6	2.9	3.0	2.4	3.0	8.8	3.4
6	.00	.00	3.8	4.0	311	4.1	2.7	1.9	2.5	3.5	8.1	45
7	.00	.00	2.3	3.3	106	3.4	2.6	4.8	5.3	3.2	8.2	289
8	.00	.00	1.6	3.0	41	2.8	2.6	4.8	5.7	3.0	53	155
9	.00	.00	1.3	2.8	110	2.9	2.6	3.5	5.5	2.8	25	307
10	.00	.00	7.4	2.4	286	2.6	2.5	11	5.3	3.0	26	249
11	.00	.00	10	2.1	136	1.9	2.3	18	5.9	4.0	228	77
12	.00	.00	8.2	1.8	58	1.7	2.2	6.9	6.7	4.0	323	59
13	.65	.00	5.0	1.7	31	1.7	2.3	3.6	7.1	60	170	62
14	.48	.00	4.3	1.7	19	1.7	2.1	2.8	5.7	80	67	18
15	.34	.00	8.4	1.6	112	1.6	1.6	3.2	3.8	100	25	9.2
16	.27	.00	4.4	1.2	292	1.8	1.4	4.6	8.3	511	9.0	7.0
17	.15	.15	2.9	1.0	142	2.8	1.3	3.8	37	348	6.5	6.0
18	.07	.00	2.0	1.0	58	1.9	1.2	3.5	32	96	851	12
19	.03	5.4	1.5	24	30	1.8	1.2	2.8	17	36	1550	681
20	.03	27	1.2	74	25	2.8	6.7	76	13	17	1430	1070
21	.00	18	1.1	42	355	2.2	8.2	96	9.0	7.5	1100	725
22	.00	10	1.1	22	231	1.7	6.4	106	6.5	7.2	465	330
23	.00	4.4	1.1	12	87	211	4.8	40	9.5	5.6	132	112
24	.00	.51	1.0	7.0	43	322	5.3	14	12	4.2	47	43
25	.00	.05	56	4.7	25	122	8.0	7.5	30	3.1	26	23
26	.00	11	136	3.5	16	80	7.0	5.7	20	1.9	37	15
27	.00	94	136	2.7	11	53	5.9	5.0	12	1.2	31	12
28	.02	65	89	2.2	8.1	24	3.3	4.1	7.0	.88	18	10
29	.31	38	33	2.0	---	12	4.1	3.8	4.0	1.0	11	8.5
30	.00	19	14	1.7	---	9.9	7.2	3.8	3.5	1.5	8.6	7.5
31	.03	---	8.4	11	---	9.3	---	3.5	---	1.7	6.4	---
TOTAL	2.90	325.28	596.0	306.1	2815.8	906.5	115.7	453.1	287.1	1323.18	6697.4	4358.4
MEAN	.094	10.8	19.2	9.87	101	29.2	3.86	14.6	9.57	42.7	216	145
MAX	.65	94	136	74	355	322	8.2	106	37	511	1550	1070
MIN	.00	.00	1.0	1.0	3.0	1.6	1.2	1.7	2.0	.88	2.0	3.4
AC-FT	5.8	645	1180	607	5590	1800	229	899	569	2620	13280	8640
CAL YR 1982	TOTAL	8120.54	MEAN	22.2	MAX	1100	MIN	.00	AC-FT	16110		
WTR YR 1983	TOTAL	18187.46	MEAN	49.8	MAX	1550	MIN	.00	AC-FT	36070		

## COASTAL BASIN

## 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 (levels by county engineer, Galveston County), 1978 adjustment. Prior to May 19, 1933, datum of gage was 0.49 ft below NGVD, 1973 adjustment and at datum 0.80 ft lower. Prior records unadjusted for land-surface subsidence.

REMARKS.--The purpose of this station is to record gage heights elevations of high tides in Galveston Bay and the corresponding gage heights of the water surface in Moses Lake. Moses Lake is connected to Galveston Bay by gated opening through levee. No gage heights are shown for Moses Lake until they reach 3.0 ft on either side.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height (Moses Lake), 4.4 ft Sept. 20, 1979; minimum, -2.6 ft Mar. 12, 13, 1968. Maximum elevation (Galveston Bay), about 10.0 ft (Hurricane Alicia) Aug. 18, 1983; minimum not recorded but probably occurred Mar. 12 or 13, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum elevation (Moses Lake), 4.2 ft Aug. 18; minimum not determined. Maximum elevation (Galveston Bay), about 10 ft (Hurricane Alicia) Aug. 18; minimum gage height, -1.1 ft Feb. 3, Apr. 2.

MAXIMUM DAILY ELEVATION, IN FEET, GALVESTON BAY AND MOSES LAKE  
WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP	
	Galv. Bay	Moses Lake	Galv. Bay	Moses Lake	Galv. Bay	Moses Lake	Galv. Bay	Moses Lake	Galv. Bay	Moses Lake	Galv. Bay	Moses Lake	Galv. Bay	Moses Lake	Galv. Bay	Moses Lake	Galv. Bay	Moses Lake	Galv. Bay	Moses Lake	Galv. Bay	Moses Lake	Galv. Bay	Moses Lake
	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.
1	2.8	-	2.3	-	2.8	-	2.9	3.0	2.7	-	1.7	-	2.6	-	2.4	-	1.0	-	1.3	-	-	-	-	-
2	2.9	-	2.7	-	3.2	3.1	1.8	-	1.4	-	1.7	-	2.3	-	2.5	-	1.0	-	1.3	-	-	-	-	-
3	2.7	-	2.3	-	3.6	2.5	1.1	-	.7	-	1.7	-	1.5	-	2.0	-	1.3	-	1.3	-	-	-	-	-
4	2.6	-	1.4	-	2.5	-	1.4	-	2.3	-	2.9	-	2.5	-	1.7	-	1.1	-	1.2	-	-	-	-	-
5	2.6	-	1.7	-	1.5	-	1.6	-	2.7	-	2.3	-	2.3	-	1.8	-	.9	-	1.2	-	-	-	-	-
6	2.7	-	2.0	-	1.8	-	1.6	-	1.5	-	2.2	-	1.5	-	2.3	-	1.1	-	.9	-	-	-	-	-
7	2.8	-	2.2	-	1.9	-	1.8	-	1.5	-	2.3	-	1.4	-	1.9	-	.7	-	1.2	-	-	-	-	-
8	2.7	-	2.0	-	2.1	-	2.0	-	1.8	-	2.0	-	1.3	-	1.5	-	1.0	-	1.4	-	-	-	-	-
9	2.8	-	2.1	-	2.0	-	1.9	-	2.0	-	1.8	-	.8	-	2.3	-	1.1	-	1.6	-	-	-	-	-
10	2.5	-	2.1	-	2.8	-	1.9	-	1.8	-	.8	-	1.1	-	2.6	-	1.5	-	1.8	-	-	-	-	-
11	2.2	-	2.2	-	2.7	-	1.6	-	1.6	-	1.1	-	1.0	-	2.6	-	1.8	-	1.7	-	-	-	-	-
12	2.5	-	2.2	-	.9	-	1.3	-	1.8	-	1.2	-	1.6	-	2.5	-	1.9	-	1.8	-	-	-	-	-
13	1.7	-	1.9	-	2.3	-	1.4	-	1.8	-	1.5	-	2.0	-	2.8	-	2.0	-	1.8	-	-	-	-	-
14	1.5	-	2.3	-	2.4	-	1.4	-	1.6	-	1.6	-	1.4	-	-	-	1.7	-	1.8	-	-	-	-	-
15	1.6	-	1.8	-	2.3	-	1.3	-	2.3	-	2.0	-	1.4	-	2.7	-	1.2	-	1.8	-	-	-	-	-
16	1.4	-	2.4	-	1.6	-	1.5	-	2.1	-	2.7	-	1.8	-	2.0	-	1.2	-	1.8	-	-	-	-	-
17	1.8	-	2.7	-	1.9	-	1.6	-	1.5	-	.7	-	1.6	-	3.0	2.7	1.0	-	1.6	-	-	-	-	-
18	1.8	-	2.1	-	2.2	-	2.2	-	1.7	-	1.4	-	1.6	-	3.0	2.7	1.2	-	1.4	-	a10	4.2	-	-
19	1.9	-	2.0	-	1.7	-	2.9	-	2.2	-	1.7	-	2.4	-	1.8	-	1.3	-	1.3	-	2.9	3.6	-	-
20	2.1	-	2.2	-	1.3	-	2.9	-	2.3	-	1.5	-	2.7	-	2.4	-	1.6	-	1.1	-	1.6	-	-	-
21	1.9	-	2.0	-	1.6	-	2.4	-	2.3	-	.5	-	2.6	-	2.1	-	1.5	-	-	-	1.3	-	-	-
22	1.8	-	1.9	-	1.9	-	1.9	-	1.4	-	1.8	-	2.2	-	1.4	-	1.6	-	-	-	-	-	1.8	-
23	1.9	-	2.1	-	2.0	-	1.6	-	1.6	-	2.8	-	1.9	-	1.5	-	1.6	-	-	-	-	-	1.7	-
24	1.8	-	1.4	-	2.5	-	1.9	-	1.5	-	1.8	-	.6	-	1.3	-	1.5	-	-	-	-	-	2.0	-
25	2.0	-	2.1	-	2.5	-	2.0	-	2.2	-	2.1	-	1.6	-	1.3	-	1.6	-	-	-	-	-	2.0	-
26	1.8	-	2.6	-	3.0	3.0	2.0	-	3.0	2.7	3.2	2.9	1.8	-	1.3	-	1.7	-	-	-	-	-	1.9	-
27	1.7	-	2.2	-	3.0	3.0	1.0	-	3.4	3.4	2.3	-	1.9	-	1.3	-	1.8	-	-	-	-	-	1.9	-
28	2.1	-	1.9	-	2.1	-	2.2	-	2.5	-	1.0	-	1.9	-	1.2	-	1.6	-	-	-	-	-	2.0	-
29	2.0	-	2.1	-	1.9	-	2.6	-	-	-	-	-	2.0	-	1.2	-	1.5	-	-	-	-	-	2.0	-
30	2.0	-	2.6	-	2.4	-	1.9	-	---	---	-	-	2.1	-	1.1	-	1.3	-	-	-	-	-	1.8	-
31	2.1	-	---	---	2.7	-	2.7	-	---	---	-	-	---	---	1.2	-	---	---	-	-	-	-	---	---

## HIGHLAND BAYOU BASIN

143

08077690 HIGHLAND BAYOU DIVERSION CHANNEL NEAR HITCHCOCK, TX

LOCATION.--Lat 29°21'20", long 95°02'22", Galveston County, Hydrologic Unit 12040204, at downstream side of bridge on State Highway 6, 1.1 mi west of Hitchcock, and 7 mi upstream from mouth.

DRAINAGE AREA.--Not determinable.

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum, 1973 adjustment; unadjusted for land surface subsidence.

REMARKS.--This channel drains the headwaters of Highland Bayou. There is an earthen dam about 2,000 ft upstream from the gage on the natural channel. This dam diverts flood waters into the diversion channel and has a 24-inch uncontrolled outlet for maintaining base flow in the natural channel. Records prior to June 1982 were collected at gage on natural channel (station 08077700).

EXTREMES FOR PERIOD JUNE 1982 TO SEPTEMBER 1982.--Maximum elevation, 1.28 ft Sept 30; minimum, -1.38 ft Aug. 27.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 9.21 ft Aug. 18 at 0800 hours; minimum, -2.08 ft Apr. 3.

## GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT	
	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.
1	1.10	.44	.68	.25	1.53	-.14	1.73	.03	1.10	-.30	.24	-.24	1.29	-.90	.93	-.40	.50	-.64	.69	.05	.28	-.74	.31	-1.03
2	1.33	.36	.77	.37	2.10	.55	.20	-1.56	.23	-1.84	.47	-.28	-1.07	-2.00	1.09	-.15	.37	-.57	.60	-.04	.05	-.56	.45	-.62
3	1.30	.76	.90	-.73	2.34	.04	-.18	-1.18	-.84	-2.06	.67	-.56	.01	-2.08	.57	-.29	.74	-.06	.68	.10	.19	-.53	.58	-.54
4	1.06	.32	.12	-1.10	1.13	-.76	.16	-.59	1.00	-1.02	1.25	-.19	1.13	-.51	.50	-.80	.24	-.41	.52	-.18	.61	-.66	.85	-.39
5	1.17	.24	.04	-.93	.18	-.94	.19	-.40	1.66	.37	1.08	.16	.98	.09	.35	-.64	.49	-.39	.35	-.76	.59	-.65	1.06	-.40
6	1.24	.58	.23	-.76	.29	-.73	.20	-.47	.35	-.67	.75	-.38	.24	-.63	1.00	.02	.29	-.37	.21	-.70	.47	-.89	2.01	-.05
7	1.23	.03	.44	-.80	.65	-.05	.47	-.36	.21	-.96	.65	-.15	.09	-.68	.75	-.01	.45	-.56	.58	-.54	.37	-.92	1.44	.61
8	1.09	.09	.30	-.49	.76	.00	.56	-.49	.48	-.89	.52	-.45	.05	-.80	.31	-.46	.51	-.53	.88	-.54	.83	-1.12	1.30	.11
9	1.13	-.24	.49	-.36	.74	.02	.57	-.50	.74	.28	.44	-1.07	-.49	-1.37	1.17	.11	.49	-.49	.95	-.36	.49	-.90	1.40	.46
10	.77	-.54	.42	-.22	1.56	.65	.36	-.74	.39	-1.07	-.74	-1.87	-.36	-.97	1.31	.70	.84	-.58	1.18	-.35	.49	-.83	1.54	.33
11	.63	-.08	.61	-.09	1.14	-.75	.01	-1.17	.20	-1.16	-.19	-1.37	-.39	-.78	1.35	.48	1.12	-.33	1.08	-.16	.34	-.47	1.05	.12
12	1.02	.00	.56	-.86	-.51	-1.85	-.08	-1.60	.35	-.76	-.02	-1.00	.18	-.39	1.19	.32	1.30	-.20	1.14	-.28	-.02	-.59	.52	-.56
13	.38	-.60	.20	-.82	.96	-.65	.04	-.98	.37	-.65	.05	-.69	.65	-.04	1.39	.27	1.25	-.18	1.33	-.28	-.13	-.68	.22	-.73
14	.15	-.66	.51	-.20	.96	-.26	-.04	-1.24	.17	-.77	.08	-.51	.22	-.53	1.50	.38	1.06	-.06	1.63	.07	-.25	-1.00	.37	-.27
15	.11	-.32	.19	-.69	.60	-.97	-.23	-1.48	1.10	.24	.73	.09	.35	-.69	1.25	-.13	.51	-.49	1.41	.30	-.38	-.83	.67	-.23
16	-.13	-.49	.93	-.09	.28	-1.03	.24	-.71	.99	-.13	1.42	.32	.64	-.39	.68	-.67	.48	-.68	1.97	.72	.71	-.30	.71	-.42
17	.19	-.26	1.27	-.15	.62	-.59	.22	-.70	.12	-.22	-.10	-1.56	.57	-.43	1.71	-.48	.45	-.58	.97	.32	2.95	.83	.61	-.22
18	.18	-.42	.37	-.55	.73	-.46	.92	-.07	.23	-.23	.12	-1.45	.34	-.75	1.65	.62	.56	-.05	.66	-.44	9.21	2.27	.77	-.14
19	.29	-.24	.32	-.81	.23	-1.29	1.79	.94	.94	-.35	.40	-.49	1.19	-.92	1.10	-.03	.75	.17	.59	-.58	2.08	.07	1.56	-.01
20	.39	-.52	.56	-.48	.03	-.97	1.83	.94	1.03	-.16	-.10	-1.79	1.52	.31	1.67	.04	.92	.05	.33	-.92	.69	-.37	1.10	-.44
21	.32	-.19	.32	-.51	.25	-.74	1.15	.31	.78	-.09	-.58	-1.28	1.53	.65	1.49	.47	.81	-.18	-.08	-1.12	.48	-.52	.37	-.45
22	.34	-.46	.24	-.47	.45	-.39	.56	-.28	-.09	-1.32	.93	-.38	1.16	.22	.83	.17	.89	-.10	-.29	-1.09	.41	-.52	1.21	-.05
23	.25	-.35	.37	-.45	.85	.03	.24	-.56	.02	-1.61	1.30	.13	.69	-1.01	.69	-.11	.95	-.15	.31	-.84	.40	-.61	1.13	.72
24	.22	-.31	-.38	-.60	1.24	.62	.35	-1.00	.08	-1.11	.66	.10	-.67	-1.42	.60	-.37	.86	-.18	.11	-.99	.36	-.51	1.23	.78
25	.42	-.41	.55	-.36	1.11	.50	.57	-1.05	.60	-.99	1.77	.11	.34	-.86	.62	-.48	1.06	-.38	-.03	-1.10	.17	-.54	1.40	.69
26	.20	-.44	1.04	.76	1.51	.30	.57	-.77	1.68	.47	1.18	-.08	.41	-.23	.58	-.51	1.22	-.18	-.27	-1.17	.08	-.61	1.33	.50
27	.07	-.45	.81	-.28	1.40	.08	-.31	-1.85	2.18	.92	-.24	-.48	.58	-.31	.66	-.60	1.15	.00	-.27	-1.31	.93	-.52	1.17	.31
28	.52	-.21	-.05	-.79	.60	-.99	1.02	-.77	1.34	.02	-.15	-.32	.55	-.44	.58	-.61	1.03	.00	-.25	-1.14	1.33	.41	1.35	.23
29	.37	.15	.36	-.83	.55	-1.11	1.36	-.53	----	----	.88	-.18	.60	-.39	.68	-.73	.79	-.08	.11	-1.11	.63	-.16	1.37	.09
30	.39	.13	1.23	-.21	1.10	-.45	.77	-.55	----	----	1.02	.25	.76	-.47	.57	-.76	.69	-.18	.50	.01	.15	-.81	1.20	-.06
31	.53	.21	----	----	1.66	-.03	1.36	.31	----	----	.79	-.03	----	----	.44	-.68	----	----	.56	.10	-.09	-.93	----	----

## CHOCOLATE BAYOU BASIN

08078000 CHOCOLATE BAYOU NEAR ALVIN, TX  
(National stream-quality accounting network)

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.

## WATER-DISCHARGE RECORDS

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.

GAGE.--Water-stage recorder. Datum of gage is 10.31 ft 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.

REMARKS.--Water-discharge records fair except those for period of no gage-height record, which are poor. Large area of riceland above station is irrigated with water from Brazos River. Low flow from April to October is largely drainage from irrigated lands. Diversions for irrigation above station.

AVERAGE DISCHARGE.--34 years (water years 1948-57, 1960-83), 111 ft<sup>3</sup>/s (80,420 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,500 ft<sup>3</sup>/s July 26, 1979 (gage height, 23.88 ft); no flow at times. Flood of Oct. 8, 1949, reached a stage of 21.80 ft, present datum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 14, 1939, reached a stage of 22.9 ft, former site and present 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 above base 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)
Feb. 6	0400	1,320	13.66	Aug. 20	1000	*2,430	19.80
Feb. 21	unknown	1,500	unknown	Sept. 20	unknown	1,700	unknown
July 16	1400	1,310	13.58				

Minimum discharge, 0.82 ft<sup>3</sup>/s Oct. 27, Nov. 8-10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	1.3	554	126	163	21	24	66	30	36	60	16
2	14	1.9	270	297	64	18	20	50	32	32	75	14
3	14	7.5	120	114	35	16	17	44	30	35	90	12
4	14	7.8	75	58	20	15	15	53	31	35	80	11
5	13	2.7	55	40	589	16	13	44	29	28	60	10
6	13	1.2	33	32	1150	14	12	40	41	25	50	100
7	13	.84	23	29	360	13	11	66	51	25	40	500
8	12	.82	17	65	150	12	11	95	49	25	100	550
9	11	.82	13	77	300	11	10	80	39	25	80	700
10	10	.82	18	40	900	10	9.5	112	30	30	60	500
11	9.9	1.1	38	30	500	9.5	9.0	100	26	33	500	250
12	11	1.7	38	21	250	9.0	12	65	25	36	700	150
13	9.2	1.8	26	15	170	8.7	14	50	30	105	400	100
14	7.1	1.1	20	13	100	8.5	9.8	45	33	309	200	60
15	5.7	1.2	32	12	400	8.5	7.0	45	34	515	100	40
16	4.0	1.5	27	10	900	10	7.5	40	38	1140	60	25
17	2.7	20	18	9.4	500	12	11	35	77	848	36	20
18	2.5	17	14	10	250	11	9.0	30	137	240	1240	40
19	2.0	38	12	278	170	11	8.0	30	113	157	2230	1200
20	1.4	201	9.6	733	150	12	10	65	81	87	2400	1600
21	1.1	91	8.5	304	1300	11	12	100	58	62	2210	1500
22	1.1	49	6.7	166	700	10	16	90	55	273	1770	1000
23	.97	34	6.5	74	400	600	60	50	79	208	856	500
24	.92	80	6.3	50	200	900	67	18	68	109	190	250
25	1.0	44	29	38	100	500	46	11	59	67	110	150
26	.91	30	239	28	60	250	40	8.9	62	63	80	70
27	.82	667	374	31	35	200	40	12	66	70	70	40
28	.98	532	251	29	24	100	42	13	66	56	50	23
29	2.3	151	98	21	---	60	67	18	59	58	35	18
30	2.9	114	50	16	---	40	80	22	50	65	25	13
31	2.8	---	34	31	---	30	---	29	---	66	20	---
TOTAL	200.30	2102.10	2515.6	2797.4	9940	2947.2	709.8	1526.9	1578	4863	13977	9462
MEAN	6.46	70.1	81.1	90.2	355	95.1	23.7	49.3	52.6	157	451	315
MAX	15	667	554	733	1300	900	80	112	137	1140	2400	1600
MIN	.82	.82	6.3	9.4	20	8.5	7.0	8.9	25	25	20	10
AC-FT	397	4170	4990	5550	19720	5850	1410	3030	3130	9650	27720	18770
CAL YR 1982	TOTAL	26750.30	MEAN	73.3	MAX	1570	MIN	.82	AC-FT	53060		
WTR YR 1983	TOTAL	52619.30	MEAN	144	MAX	2400	MIN	.82	AC-FT	104400		

NOTE.--No gage-height record Feb. 7 to Apr. 13, Aug. 26 to Sept. 28.



## CHOCOLATE BAYOU BASIN

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08078000 CHOCOLATE BAYOU NEAR ALVIN, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: May 1971 to current year. Pesticide analyses: May 1971 to September 1981.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: February 1978 to September 1981.

WATER TEMPERATURES: February 1978 to September 1981

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,620 micromhos Apr. 18, 1981; minimum daily, 100 micromhos July 26, 1979.

WATER TEMPERATURES: Maximum daily, 32.0°C July 8, 1978; minimum, 4.0°C Jan. 2, Feb. 11, 1979.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

							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- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)				
DEC 06...	1345	32	554	7.9	15.5	8.0	10.4	103	1.9	650	600
FEB 28...	1120	25	706	8.1	12.0	43	8.2	76	1.5	780	96
MAY 24...	1550	16	697	7.7	26.0	24	8.1	100	3.6	110	3800
AUG 17...	1505	35	539	7.9	28.5	18	6.9	89	1.5	520	900
DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 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)
DEC 06...	170	46	48	11	52	1.8	3.5	120	57	71	.30
FEB 28...	200	11	57	14	65	2.1	2.3	190	36	91	.30
MAY 24...	190	81	53	14	66	2.2	3.7	110	87	98	.40
AUG 17...	160	9	46	11	47	1.7	2.8	152	26	65	.30
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, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, DIS- SOLVED TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 06...	19	355	335	<.10	.100	2.70	.130	.160	47	4.1	83
FEB 28...	15	410	396	<.10	.110	.80	.110	.060	48	3.2	99
MAY 24...	7.2	432	396	1.6	.160	1.40	.080	.020	32	1.4	99
AUG 17...	18	317	308	<.10	.100	.80	.080	.040	30	2.8	95
DATE	TIME	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)	
DEC 06...	1345	3	120	<1	<1	<1	<3	2	110	<1	
FEB 28...	1120	2	150	1	<1	<1	<3	4	130	1	
MAY 24...	1550	2	160	1	<1	<1	<3	3	42	<1	
AUG 17...	1505	5	120	<1	<1	<1	<3	1	96	1	



## CHOCOLATE BAYOU BASIN

08078000 CHOCOLATE BAYOU NEAR ALVIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

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)
DEC 06...	15	17	<.1	<10	1	1	<1	290	<6.0	8
FEB 28...	13	14	<.1	<10	2	<1	<1	340	<6.0	35
MAY 24...	17	2	<.1	<10	7	<1	<1	390	<6.0	21
AUG 17...	15	6	.1	<10	3	<1	<1	310	<6.0	4

## BRAZOS RIVER BASIN

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## 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 National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records poor. No known diversion above station.

AVERAGE DISCHARGE.--21 years (water years 1963-83), 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.--Maximum discharge, 985 ft<sup>3</sup>/s July 2 at 0430 hours (gage height, 7.20 ft), no peak above base of 2,100 ft<sup>3</sup>/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.14	2.1	.05	.00	.00	.02	.00	.00	.00
2	.00	.00	.00	.30	.63	.05	.00	.00	.01	166	.00	.00
3	.00	.00	.07	.24	.24	.10	.00	.00	.00	3.4	.00	.00
4	.00	.00	.03	.14	.30	.07	.00	.00	.00	.00	.00	.00
5	.00	.00	.02	.18	.53	.02	.00	.00	.00	.00	.00	.00
6	.00	.00	.01	.53	.37	.02	.00	.00	13	.00	.00	.00
7	.00	.00	.01	.44	.24	.02	.00	.00	3.9	.00	.00	.00
8	.00	.00	.00	.10	.18	.02	.00	.00	.10	.00	.00	.00
9	.00	.00	.00	.05	.18	.01	.00	.00	.01	.00	1.5	.00
10	.00	.00	.05	.05	.14	.00	.00	3.7	.00	.00	.42	.00
11	.00	.00	1.6	.05	.14	.00	.00	29	.00	.00	.00	.00
12	.00	.00	.10	.05	.10	.00	.00	.98	.00	.00	.00	4.8
13	.00	.00	.02	.05	.07	.00	.00	.01	.00	.00	.00	.00
14	.00	.00	.07	.03	.10	.00	.00	.01	.00	.00	.00	.00
15	.00	.00	.07	.01	.10	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.05	.01	.10	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.05	.02	.10	.00	.00	.00	.00	.00	.00	62
18	.00	.00	.05	.03	.07	.00	.00	.00	.00	.00	.00	45
19	.00	.00	.03	.03	.05	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.03	7.2	.03	.00	1.7	.00	.00	.00	.00	.00
21	7.6	.00	.03	19	.05	.00	9.1	.00	.00	.00	.00	.00
22	.45	.00	.02	12	.10	.00	.83	.00	.00	.00	.00	.00
23	.00	.00	.01	31	.10	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.01	34	.07	.00	.00	3.6	.00	.00	.00	.00
25	.00	.00	.00	39	.03	.00	.00	13	.00	.00	.00	.00
26	.00	.00	.00	27	.10	.00	.00	4.4	.00	.00	.00	.00
27	.00	.00	.02	7.3	.14	.00	.00	6.9	.00	.00	.00	.00
28	.00	.00	.07	4.1	.10	.00	.00	25	.00	.00	.00	.00
29	.00	.00	.07	1.4	---	.00	.00	.44	.00	.00	.00	.00
30	.00	.00	.05	.74	---	.00	.00	.71	.00	.00	.00	.00
31	.00	---	.07	.74	---	.00	---	.24	---	.00	.00	---
TOTAL	8.05	.00	2.61	185.93	6.46	.36	11.63	87.99	17.04	169.40	1.92	111.80
MEAN	.26	.000	.084	6.00	.23	.012	.39	2.84	.57	5.46	.062	3.73
MAX	7.6	.00	1.6	.39	2.1	.10	9.1	29	13	166	1.5	62
MIN	.00	.00	.00	.01	.03	.00	.00	.00	.00	.00	.00	.00
CFSM	.001	.000	.000	.03	.001	.000	.002	.01	.002	.02	.000	.02
IN.	.00	.00	.00	.03	.00	.00	.00	.01	.00	.03	.00	.02
AC-FT	16	.00	5.2	369	13	.7	23	175	34	336	3.8	222
CAL YR 1982	TOTAL	10621.27	MEAN	29.1	MAX	3590	MIN	.00	CFSM	.12	IN	1.62
WTR YR 1983	TOTAL	603.19	MEAN	1.65	MAX	166	MIN	.00	CFSM	.007	IN	.09
									AC-FT	21070	AC-FT	1200

## CHOCOLATE BAYOU BASIN

08078000 CHOCOLATE BAYOU NEAR ALVIN, TX  
(National stream-quality accounting network)

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.

## WATER-DISCHARGE RECORDS

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.

GAGE.--Water-stage recorder. Datum of gage is 10.31 ft 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.

REMARKS.--Water-discharge records fair except those for period of no gage-height record, which are poor. Large area of riceland above station is irrigated with water from Brazos River. Low flow from April to October is largely drainage from irrigated lands. Diversions for irrigation above station.

AVERAGE DISCHARGE.--34 years (water years 1948-57, 1960-83), 111 ft<sup>3</sup>/s (80,420 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,500 ft<sup>3</sup>/s July 26, 1979 (gage height, 23.86 ft); no flow at times. Flood of Oct. 8, 1949, reached a stage of 21.80 ft, present datum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 14, 1939, reached a stage of 22.9 ft, former site and present 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 above base 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)
Feb. 6	0400	1,320	13.66	Aug. 20	1000	*2,430	19.80
Feb. 21	unknown	1,500	unknown	Sept. 20	unknown	1,700	unknown
July 16	1400	1,310	13.58				

Minimum discharge, 0.82 ft<sup>3</sup>/s Oct. 27, Nov. 8-10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	1.3	554	126	163	21	24	66	30	36	60	16
2	14	1.9	270	297	64	18	20	50	32	32	75	14
3	14	7.5	120	114	35	16	17	44	30	35	90	12
4	14	7.8	75	58	20	15	15	53	31	35	80	11
5	13	2.7	55	42	589	16	13	44	29	28	60	10
6	13	1.2	33	32	1150	14	12	40	41	25	50	100
7	13	.84	23	29	360	13	11	66	51	25	40	500
8	12	.82	17	65	150	12	11	95	49	25	100	550
9	11	.82	13	77	300	11	10	80	39	25	80	700
10	10	.82	18	40	900	10	9.5	112	30	30	60	500
11	9.9	1.1	38	30	500	9.5	9.0	100	26	33	500	250
12	11	1.7	38	21	250	9.0	12	65	25	36	700	150
13	9.2	1.8	26	15	170	8.7	14	50	30	105	400	100
14	7.1	1.1	20	13	100	8.5	9.8	45	33	309	200	60
15	5.7	1.2	32	12	400	8.5	7.0	45	34	515	100	40
16	4.0	1.5	27	10	900	10	7.5	40	38	1140	60	25
17	2.7	20	18	9.4	500	12	11	35	77	848	36	20
18	2.5	17	14	10	250	11	9.0	30	137	240	1240	40
19	2.0	38	12	278	170	11	8.0	30	113	157	2230	1200
20	1.4	201	9.6	733	150	12	10	65	81	87	2400	1600
21	1.1	91	8.5	304	1300	11	12	100	58	62	2210	1500
22	1.1	49	6.7	166	700	10	16	90	55	273	1770	1000
23	.97	34	6.5	74	400	600	60	50	79	208	856	500
24	.92	80	6.3	50	200	900	67	18	68	109	190	250
25	1.0	44	29	38	100	500	46	11	59	67	110	150
26	.91	30	239	28	60	250	40	8.9	62	63	80	70
27	.82	667	374	31	35	200	40	12	66	70	70	40
28	.98	532	251	29	24	100	42	13	66	56	50	23
29	2.3	151	98	21	---	60	67	18	59	58	35	18
30	2.9	114	50	16	---	40	80	22	50	65	25	13
31	2.8	---	34	31	---	30	---	29	---	66	20	---
TOTAL	200.30	2102.10	2515.6	2797.4	9940	2947.2	709.8	1526.9	1578	4863	13977	9462
MEAN	6.46	70.1	81.1	90.2	355	95.1	23.7	49.3	52.6	157	451	315
MAX	15	667	554	733	1300	900	80	112	137	1140	2400	1600
MIN	.82	.82	6.3	9.4	20	8.5	7.0	8.9	25	25	20	10
AC-FT	397	4170	4990	5550	19720	5850	1410	3030	3130	9650	27720	18770

CAL YR 1982 TOTAL 26750.30 MEAN 73.3 MAX 1570 MIN .82 AC-FT 53060  
WTR YR 1983 TOTAL 52619.30 MEAN 144 MAX 2400 MIN .82 AC-FT 104400

NOTE.--No gage-height record Feb. 7 to Apr. 13, Aug. 26 to Sept. 28.

## BRAZOS RIVER BASIN

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08079600 DOUBLE MOUNTAIN FORK BRAZOS RIVER AT JUSTICEBURG, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983												
EQUIVALENT MEAN												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	17000	4960	17600	---	---	13000	---	---	---
2	---	---	---	13700	12000	17200	---	---	16400	1500	---	---
3	---	---	11200	13000	15800	16800	---	---	---	10100	---	---
4	---	---	10800	15500	17000	17200	---	---	---	---	---	---
5	---	---	16300	9380	16100	17500	---	---	---	---	---	---
6	---	---	17000	3380	17000	17900	---	---	1900	---	---	---
7	---	---	18500	4200	18300	18400	---	---	5500	---	---	---
8	---	---	---	12200	18400	18800	---	---	10300	---	---	---
9	---	---	---	21000	18300	19300	---	---	15800	---	3000	---
10	---	---	9600	21200	18200	---	---	2250	---	---	5500	---
11	---	---	6000	21000	18300	---	---	980	---	---	---	---
12	---	---	8900	20600	18900	---	---	3930	---	---	---	9300
13	---	---	12000	20800	18000	---	---	14700	---	---	---	---
14	---	---	21000	20200	17800	---	---	17200	---	---	---	---
15	---	---	19000	20700	16600	---	---	---	---	---	---	---
16	---	---	20400	21000	18900	---	---	---	---	---	---	---
17	---	---	20700	20600	17800	---	---	---	---	---	---	500
18	---	---	21000	22300	16500	---	---	---	---	---	---	9570
19	---	---	20000	22000	18100	---	---	---	---	---	---	---
20	---	---	20200	19100	18300	---	5500	---	---	---	---	---
21	2000	---	20000	14600	17500	---	2080	---	---	---	---	---
22	2750	---	20200	19800	18800	---	7670	---	---	---	---	---
23	---	---	19000	17500	17900	---	---	---	---	---	---	---
24	---	---	18200	14200	17500	---	---	2450	---	---	---	---
25	---	---	---	13100	18300	---	---	1650	---	---	---	---
26	---	---	---	12200	17200	---	---	6520	---	---	---	---
27	---	---	23000	3470	18700	---	---	23000	---	---	---	---
28	---	---	23400	5700	18400	---	---	12500	---	---	---	---
29	---	---	21000	7800	---	---	---	18800	---	---	---	---
30	---	---	21400	12000	---	---	---	16900	---	---	---	---
31	---	---	20000	14200	---	---	---	16600	---	---	---	---
MEAN	2380	---	17600	15300	17100	17900	5080	10600	10500	5800	4250	6460

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983												
ONCE-DAILY												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	.0	1.5	9.0	---	---	14.0	---	---	---
2	---	---	---	.0	1.0	8.0	---	---	18.5	20.0	---	---
3	---	---	7.5	5.0	1.5	14.0	---	---	---	22.0	---	---
4	---	---	6.0	---	1.0	12.0	---	---	---	---	---	---
5	---	---	2.5	2.5	5.0	---	---	---	---	---	---	---
6	---	---	---	2.5	---	---	---	---	---	---	---	---
7	---	---	---	4.0	7.0	---	---	---	12.0	---	---	---
8	---	---	---	4.0	8.0	---	---	---	17.5	---	---	---
9	---	---	---	4.0	8.0	---	---	---	20.5	---	---	---
10	---	---	4.5	1.0	6.0	---	---	---	---	---	23.5	---
11	---	---	2.0	2.5	8.0	---	---	17.0	---	---	---	---
12	---	---	---	1.5	3.0	---	---	19.5	---	---	---	22.5
13	---	---	1.0	3.0	4.0	---	---	20.0	---	---	---	---
14	---	---	3.5	5.0	7.5	---	---	13.0	---	---	---	---
15	---	---	1.5	.0	7.5	---	---	---	---	---	---	---
16	---	---	1.5	.5	4.0	---	---	---	---	---	---	---
17	---	---	---	3.5	6.5	---	---	---	---	---	---	---
18	---	---	5.0	5.0	5.5	---	---	---	---	---	---	19.0
19	---	---	1.5	6.0	6.0	---	---	---	---	---	---	---
20	---	---	3.0	2.5	5.0	---	---	---	---	---	---	---
21	9.0	---	2.5	.5	5.0	---	12.0	---	---	---	---	---
22	7.0	---	4.5	.5	8.0	---	16.5	---	---	---	---	---
23	---	---	7.0	.0	6.5	---	---	---	---	---	---	---
24	---	---	6.5	.5	7.0	---	---	---	---	---	---	---
25	---	---	---	2.0	6.0	---	---	17.0	---	---	---	---
26	---	---	---	1.5	7.0	---	---	19.0	---	---	---	---
27	---	---	2.0	.5	4.5	---	---	21.5	---	---	---	---
28	---	---	1.0	7.0	5.0	---	---	17.0	---	---	---	---
29	---	---	4.0	3.5	---	---	---	17.0	---	---	---	---
30	---	---	2.5	4.5	---	---	---	19.0	---	---	---	---
31	---	---	.0	8.0	---	---	---	12.0	---	---	---	---
MEAN	8.0	---	3.5	2.5	5.5	11.0	14.5	17.5	16.5	21.0	23.5	21.0

## BRAZOS RIVER BASIN

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). WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,624.79 ft 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.--Water-discharge records fair. Small diversions above station for oilfield operation.

AVERAGE DISCHARGE.--54 years (water years 1925-34, 1940-83), 160 ft<sup>3</sup>/s (1.17 in/yr), 115,900 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 above base of 8,800 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 11	0700	9,100	10.72
May 13	0800	*18,200	14.91

Minimum daily discharge, no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.80	.00	.48	17	94	18	8.4	3.0	68	14	5.9	.00
2	.40	.00	.44	20	92	17	7.3	1.9	44	9.9	14	.00
3	18	.00	.58	23	76	17	6.4	1.2	31	27	29	.00
4	6.5	.00	.80	22	70	18	5.3	.77	30	18	11	.00
5	1.4	.00	.80	24	61	17	5.6	.40	55	441	6.9	.00
6	1.0	.00	.80	25	58	16	5.6	.16	70	731	.00	.00
7	.80	.00	.80	27	57	13	5.8	.06	55	253	.00	.00
8	.64	.00	.96	30	54	12	6.8	.06	112	114	.00	.00
9	.44	.00	1.1	29	51	12	7.4	.05	97	50	.00	.00
10	.33	.00	2.2	29	47	11	7.7	9.2	79	23	7.7	.00
11	.20	.00	4.4	28	44	9.7	7.4	3040	63	4.4	6.5	.00
12	.14	.00	4.8	27	41	9.2	6.3	335	47	5.7	.00	.00
13	.07	.00	6.6	26	39	9.2	5.0	6360	36	5.5	.00	.00
14	.04	.00	8.4	24	36	8.8	4.3	1290	29	4.8	.00	.00
15	.01	.00	10	23	33	8.6	4.1	894	26	8.2	.00	.00
16	.00	.00	12	23	32	14	3.8	312	28	8.1	.00	.00
17	.00	.00	12	24	30	13	3.3	269	28	4.8	.00	.00
18	.00	.00	12	27	29	12	2.7	204	27	4.3	.00	.00
19	.00	.00	12	34	26	12	2.2	454	22	3.8	.00	.00
20	.00	.00	12	37	25	12	1.7	941	19	4.1	.00	.00
21	.00	.00	12	53	25	11	4.8	134	18	4.1	.00	.00
22	.00	.00	12	58	25	11	5.2	92	17	4.5	.00	.00
23	.00	.00	10	60	24	11	5.2	71	16	4.7	.00	.00
24	.00	.00	9.0	79	22	11	3.4	54	16	5.0	.00	.00
25	.00	2.4	7.5	83	21	12	5.1	45	15	5.0	.00	.00
26	.00	1.4	6.8	102	21	41	14	38	14	5.0	.00	.00
27	.00	1.0	9.2	94	20	21	11	89	13	5.3	.00	.00
28	.00	1.2	8.5	102	20	16	7.5	50	17	5.3	.00	.00
29	.00	.90	8.3	94	---	14	5.8	32	16	5.6	.00	.00
30	.00	.50	8.2	88	---	12	4.4	30	14	5.6	.00	.00
31	.00	---	9.2	110	---	10	---	66	---	5.9	.00	---
TOTAL	30.77	7.40	203.86	1442	1173	429.5	173.5	14816.80	1122	1790.6	81.00	.00
MEAN	.99	.25	6.58	46.5	41.9	13.9	5.78	478	37.4	57.8	2.61	.000
MAX	18	2.4	12	110	94	41	14	6360	112	731	29	.00
MIN	.00	.00	.44	17	20	8.6	1.7	.05	13	3.8	.00	.00
CFSM	.001	.000	.004	.03	.02	.007	.003	.26	.02	.03	.001	.000
IN.	.00	.00	.00	.03	.02	.01	.00	.30	.02	.04	.00	.00
AC-FT	61	15	404	2860	2330	852	344	29390	2230	3550	161	.00
CAL YR 1982	TOTAL	66054.34	MEAN	181	MAX	6370	MIN	.00	CFSM	.10	IN	1.32
WTR YR 1983	TOTAL	21270.43	MEAN	58.3	MAX	6360	MIN	.00	CFSM	.03	IN	.42
										AC-FT	131000	
										AC-FT	42190	



## BRAZOS RIVER BASIN

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08080500 DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR ASPERMONT, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1948 to November 1951, October 1956 to September 1977. Chemical and biochemical analyses: October 1977 to current year. Sediment records: November 1949 to November 1951.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1948 to November 1951, October 1956 to current year.

WATER TEMPERATURES: November 1949 to November 1951, October 1956 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, 13,100 micromhos July 29, 1980; minimum daily, 735 micromhos Oct. 24.

WATER TEMPERATURES (1945-51, 1956-83): 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, 10,000 micromhos Apr. 22, July 1; minimum daily, 1,600 micromhos May 20.

WATER TEMPERATURES: Maximum daily, 25.0°C July 11, Aug. 5, 11; minimum daily, 0.0°C Dec. 29

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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 (MG/L AS CACO3)
DEC 14...	1220	4.7	9800	7.8	8.0	4.5	11.6	106	.9	120	320	2500
FEB 08...	1330	71	4290	8.2	10.0	170	12.6	118	1.5	K100	K110	960
APR 19...	1030	4.4	8670	7.7	17.5	2.8	9.5	108	2.6	40	K20	2100
MAY 11...	1450	1930	2010	--	17.0	--	--	--	--	--	--	1100
JUN 22...	0915	15	8320	7.9	24.0	8.2	9.9	126	4.0	48	40	2000

DATE	HARD- NESS, NONCAR- BONATE (MG/L 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- LINEITY FIELD 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)
DEC 14...	2400	740	160	1500	14	10	110	2000	2600	.50	7.6
FEB 08...	730	230	92	580	8.4	14	230	740	890	2.2	13
APR 19...	2000	580	160	1200	12	15	110	1900	2000	1.2	2.2
MAY 11...	980	370	33	110	1.5	6.3	79	930	160	.30	9.3
JUN 22...	1900	580	140	1200	12	17	120	1700	2000	1.2	11

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 14...	7280	7080	<.10	<.060	.70	.020	.020	.010	48	.61	95
FEB 08...	2760	2710	.85	.070	1.40	.250	.060	.050	337	65	89
APR 19...	6180	5920	<.10	.100	1.10	.050	.020	.040	20	.24	83
MAY 11...	--	1670	--	--	--	--	--	--	--	--	--
JUN 22...	5840	5730	<.10	.110	1.00	.040	.030	.020	51	2.1	73

## BRAZOS RIVER BASIN

08080500 DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR ASPERMONT, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

		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)	
DATE	TIME										
FEB 08...	1330	10	<100	<10	1	<1	1	2	20	2	
JUN 22...	0915	4	100	<10	<1	<1	<1	1	40	<1	
		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)
FEB 08...	180	30	<.1	11	1	2	<1	6100	38	10	
JUN 22...	170	170	<.1	7	1	1	<1	5200	29	20	

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1982 TO SEPTEMBER 1983

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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.	1982	30.77	3260	2130	177	620	52	710	59	760
NOV.	1982	7.40	7050	4730	94	1600	31	1400	29	1700
DEC.	1982	203.86	7310	4910	2700	1700	912	1500	820	1800
JAN.	1983	1442	4180	2750	10700	830	3240	900	3510	990
FEB.	1983	1173	4520	2980	9420	900	2850	970	3090	1100
MAR.	1983	429.5	6910	4630	5370	1500	1780	1400	1650	1700
APR.	1983	173.5	7930	5350	2510	1800	866	1600	747	2000
MAY	1983	14816.80	2180	1410	56600	390	15600	490	19600	500
JUNE	1983	1122	5620	3740	11300	1200	3640	1200	3570	1400
JULY	1983	1790.6	2720	1780	8610	520	2510	600	2880	640
AUG.	1983	81.00	8100	5480	1200	1900	417	1600	355	2000
SEPT	1983	0.00	*	*	0.00	*	0.00	*	0.00	*
TOTAL		21270.43	**	**	109000	**	31900	**	36300	**
WTD. AVG.		58	2890	1890	**	550	**	630	**	680

## BRAZOS RIVER BASIN

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08080500 DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR ASPERMONT, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983												
DAY	EQUIVALENT MEAN											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8110	---	7160	6940	3140	6330	8020	8220	5610	10000	6150	
2	8230	---	7620	6950	3790	6180	8380	8030	6360	7730	7500	
3	2520	---	7040	6450	3900	6280	8450	8310	6190	5440	9820	
4	2750	---	7480	7080	3850	6310	8420	8470	6440	6400	7250	
5	4160	---	7410	7140	3790	6480	8270	8740	5250	2200	6690	
6	5180	---	7290	6340	4060	6590	8510	9000	4520	1620	---	
7	5490	---	7530	5510	4430	6700	8330	9310	5210	2850	---	
8	5820	---	7800	5040	4290	6800	8250	9140	4800	3100	---	
9	6140	---	7820	4950	4320	6900	8370	9210	3420	3850	---	
10	6430	---	7250	4980	4500	7100	8280	9080	3950	5310	6950	
11	6800	---	6660	5050	4620	7300	8050	2010	3700	6000	7730	
12	7170	---	8490	5020	4710	7480	7920	2200	4200	6570	---	
13	7450	---	7840	5070	4790	7590	8040	1800	4940	7100	---	
14	7690	---	9730	5290	4810	7690	8120	2030	5610	7500	---	
15	8120	---	9670	5580	4940	7780	8240	2160	6230	7720	---	
16	---	---	7820	5730	5070	7020	8330	2400	6840	7820	---	
17	---	---	6790	5650	5140	7290	8400	3300	7160	7940	---	
18	---	---	6250	5540	5230	7540	8600	4080	7320	8070	---	
19	---	---	6270	5360	5420	7550	8900	3110	7510	8150	---	
20	---	---	6450	5550	5540	7560	8930	1600	7700	8340	---	
21	---	---	6560	5390	5670	7580	8620	3150	8130	8500	---	
22	---	---	6650	5060	5720	7440	10000	5730	8440	8470	---	
23	---	---	6700	5080	5660	7430	9470	6400	8520	8390	---	
24	---	---	6850	4110	5780	7350	9270	6860	8680	8440	---	
25	---	7250	7080	3220	5990	7320	9120	7120	8810	8520	---	
26	---	7190	7260	2790	6100	5920	5650	7540	8930	8600	---	
27	---	7640	7150	2870	6120	5740	5810	5650	8980	8420	---	
28	---	6850	7520	2660	6040	7550	6380	5400	8770	8300	---	
29	---	6050	7860	2790	---	7660	6860	5550	8260	7740	---	
30	---	6790	7810	2670	---	7500	8380	6160	9710	7280	---	
31	---	---	7720	2550	---	7800	---	7150	---	6560	---	
MEAN	6140	6960	7400	4980	4910	7090	8210	5770	6670	6870	7440	

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983												
DAY	ONCE-DAILY											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.0	---	11.0	1.0	5.0	10.0	9.0	---	15.0	24.0	24.0	
2	21.0	---	12.0	1.0	1.0	11.0	7.0	15.0	19.0	24.0	---	
3	19.0	---	10.0	1.0	2.0	15.0	8.0	15.0	23.0	23.0	---	
4	19.0	---	8.0	---	3.0	14.0	11.0	16.0	23.0	23.0	---	
5	20.0	---	5.0	---	2.0	9.0	7.0	16.0	---	24.0	25.0	
6	20.0	---	6.0	2.0	3.0	---	8.0	16.0	18.0	23.0	---	
7	---	---	7.0	4.0	2.0	8.0	7.0	15.0	17.0	22.0	---	
8	---	---	7.0	7.0	5.0	12.0	7.0	15.0	21.0	24.0	---	
9	---	---	4.0	6.0	8.0	10.0	6.0	15.0	22.0	24.0	---	
10	---	---	5.0	4.0	8.0	8.0	9.0	19.0	22.0	23.0	24.0	
11	---	---	4.0	3.0	9.0	6.0	12.0	---	20.0	25.0	25.0	
12	---	---	2.0	4.0	5.0	8.0	14.0	20.0	23.0	24.0	---	
13	---	---	1.0	5.0	6.0	11.0	15.0	15.0	22.0	23.0	---	
14	---	---	4.0	7.0	9.0	11.0	10.0	18.0	20.0	23.0	---	
15	---	---	4.0	3.0	10.0	13.0	11.0	15.0	---	24.0	---	
16	---	---	4.0	2.0	6.0	10.0	12.0	17.0	21.0	23.0	---	
17	---	---	4.0	5.0	7.0	6.0	---	18.0	21.0	24.0	---	
18	---	---	7.0	---	6.0	7.0	13.0	17.0	---	24.0	---	
19	---	---	5.0	8.0	9.0	---	15.0	18.0	---	24.0	---	
20	---	---	4.0	4.0	---	---	11.0	13.0	22.0	24.0	---	
21	---	---	5.0	4.0	7.0	3.0	15.0	18.0	23.0	22.0	---	
22	---	---	6.0	5.0	8.0	6.0	17.0	19.0	24.0	---	---	
23	---	---	8.0	4.0	7.0	9.0	15.0	20.0	24.0	---	---	
24	---	---	8.0	10.0	9.0	10.0	14.0	19.0	22.0	---	---	
25	---	---	3.0	6.0	8.0	12.0	14.0	21.0	24.0	---	---	
26	---	6.0	3.0	6.0	8.0	10.0	15.0	23.0	23.0	---	---	
27	---	5.0	3.0	3.0	5.0	7.0	17.0	23.0	24.0	---	---	
28	---	4.0	2.0	6.0	8.0	8.0	17.0	---	22.0	---	---	
29	---	7.0	.0	7.0	---	11.0	20.0	22.0	22.0	---	---	
30	---	9.0	2.0	7.0	---	13.0	20.0	22.0	21.0	---	---	
31	---	---	2.0	9.0	---	13.0	---	15.0	---	---	---	
MEAN	20.0	6.0	5.0	5.0	6.0	9.5	12.5	17.5	21.5	23.5	24.5	

## 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 on 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 current year.

REVISED RECORDS.--WRD TX-72-1: 1971. WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,006.08 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several small diversions upstream from gage. Flow is affected at times by discharge from 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.--19 years, 6.21 ft<sup>3</sup>/s (4,500 acre-ft/y).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,000 ft<sup>3</sup>/s June 4, 1974 (gage height, 15.22 ft); no flow at times in 1966, 1969, 1971, 1974, and 1980-83.

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, 306 ft<sup>3</sup>/s May 20 at 2330 hours (gage height, 10.84 ft), from rating curve extended above 1,700 ft<sup>3</sup>/s; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	.99	1.7	1.9	2.2	1.8	1.5	1.3	2.4	.00	.01	.05
2	2.7	.95	1.7	2.0	2.0	1.8	1.5	1.3	2.4	.00	.00	.05
3	2.3	.99	1.9	1.8	1.9	1.8	1.5	1.3	2.2	.00	.00	.04
4	2.1	1.0	2.1	1.8	1.9	1.7	1.4	1.3	2.1	.00	.00	.06
5	1.8	1.1	1.8	1.9	2.0	1.7	1.6	1.3	2.1	.03	.00	.04
6	1.7	1.2	1.7	1.9	1.8	1.6	1.5	1.3	18	.02	.00	.03
7	1.6	1.2	1.7	1.9	1.8	1.5	1.6	1.3	4.3	.03	.00	.02
8	1.6	1.3	1.7	2.0	1.8	1.5	1.5	1.4	2.8	.03	.03	.02
9	1.5	1.3	1.8	2.0	1.8	1.5	1.5	1.4	1.9	.01	.03	.02
10	1.4	1.3	2.0	1.9	1.8	1.5	1.4	1.5	1.6	.02	.09	.02
11	1.4	1.3	2.1	1.9	1.8	1.4	1.4	1.6	1.2	.01	.07	.03
12	1.4	1.2	2.0	1.8	1.8	1.4	1.4	1.7	.96	.01	.04	.04
13	1.4	1.2	1.9	1.8	1.8	1.5	1.3	2.4	.89	.00	.03	.04
14	1.3	1.2	1.8	1.9	1.8	1.5	1.3	2.1	.92	.01	.03	.05
15	1.2	1.3	1.8	1.9	1.8	1.5	1.4	1.8	.89	.00	.03	.05
16	1.2	1.3	1.8	1.9	1.8	1.5	1.4	1.7	.85	.02	.05	.05
17	1.2	1.4	1.8	1.9	1.8	1.5	1.3	1.7	.91	.03	.08	.04
18	1.2	1.5	1.8	2.4	1.8	1.5	1.3	1.6	.67	.02	.10	.03
19	1.1	1.4	1.9	2.5	1.8	1.5	1.4	1.6	.52	.01	.08	.02
20	.99	1.4	1.9	2.7	1.8	1.5	1.4	19	.38	.00	.18	.02
21	.99	1.4	1.8	3.0	1.8	1.4	6.8	27	.31	.00	.17	.03
22	1.0	1.4	1.7	2.3	1.8	1.5	1.4	2.9	.25	.00	.11	.05
23	1.1	1.5	1.6	2.2	1.7	1.5	1.1	2.5	.19	.00	.11	.05
24	1.1	1.6	1.5	2.1	1.8	1.6	1.1	2.1	.25	.00	.12	.05
25	1.1	1.9	1.5	2.2	1.7	1.5	1.1	2.6	.19	.01	.07	.05
26	.99	2.0	1.5	2.0	1.7	1.7	1.1	2.4	.15	.00	.08	.04
27	.99	2.1	1.7	2.0	1.7	1.5	1.2	2.3	.14	.00	.08	.04
28	.99	1.8	1.6	2.1	1.7	1.5	1.2	2.2	.15	.00	.08	.04
29	.99	1.7	1.6	2.0	---	1.5	1.3	2.1	.09	.00	.08	.03
30	.99	1.7	1.7	2.0	---	1.4	1.3	2.2	.03	.02	.09	.00
31	.99	---	1.6	2.3	---	1.5	---	2.3	---	.05	.06	---
TOTAL	43.32	41.63	54.7	64.0	50.9	47.8	46.2	99.2	49.74	.33	1.90	1.10
MEAN	1.40	1.39	1.76	2.06	1.82	1.54	1.54	3.20	1.66	.011	.061	.037
MAX	3.0	2.1	2.1	3.0	2.2	1.8	6.8	27	18	.05	.18	.06
MIN	.99	.95	1.5	1.8	1.7	1.4	1.1	1.3	.03	.00	.00	.00
AC-FT	86	83	108	127	101	95	92	197	99	.7	3.8	2.2
CAL YR 1982	TOTAL	6889.26	MEAN	18.9	MAX	843	MIN	.00	AC-FT	13660		
WTR YR 1983	TOTAL	500.82	MEAN	1.37	MAX	27	MIN	.00	AC-FT	993		

## BRAZOS RIVER BASIN

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08081000 SALT FORK BRAZOS RIVER NEAR PEACOCK, TX

LOCATION.--Lat 33°12'43", long 100°25'53", Stonewall County, Hydrologic Unit 12050007, on right bank at downstream side of bridge on U.S. Highway 380, 2.9 mi northwest of Peacock, 6.2 mi upstream from Croton Creek, 13.0 mi northwest of Aspermont, and at mile 54.3 measured from confluence with Double Mountain Fork Brazos River which is at mile 923.2 on the Brazos River.

DRAINAGE AREA.--4,619 mi<sup>2</sup>, of which 2,634 mi<sup>2</sup> probably is noncontributing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1949 to September 1951, September 1964 to current year.

REVISED RECORD.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,724.32 ft National Geodetic Vertical Datum of 1929. Prior to Sept. 19, 1964, nonrecording gage at site 2.9 mi upstream at datum 19.39 ft higher.

REMARKS.--Water-discharge records fair. Some regulation by White River Reservoir (capacity, 44,900 acre-ft), 79 mi upstream. Several small diversions above station. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08080950.

AVERAGE DISCHARGE.--20 years (water years 1951, 1965-83), 36.2 ft<sup>3</sup>/s (26,230 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,000 ft<sup>3</sup>/s Aug. 13, 1972 (gage height, 13.75 ft); no flow at times most years.

Maximum stage since at least 1939, that of Aug. 13, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,920 ft<sup>3</sup>/s May 10 at 2200 hours (gage height, 9.30 ft), no other peak above base of 5,000 ft<sup>3</sup>/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	.50	6.2	7.4	15	6.6	4.3	2.5	32	.92	.00	.00
2	15	.50	9.2	9.6	11	6.2	4.0	2.3	22	.15	.00	.00
3	12	.50	9.6	10	10	6.6	3.7	1.9	16	.05	.00	.00
4	7.0	.44	8.7	9.2	10	7.0	3.7	1.8	13	.08	.00	.00
5	5.9	.39	7.0	8.2	11	7.0	6.2	1.5	27	.00	.00	.00
6	5.9	.44	6.2	7.4	9.2	6.6	5.5	.98	22	.00	.00	.00
7	5.2	.50	5.9	7.4	8.7	5.9	5.2	.89	17	.00	.00	.00
8	4.6	.50	6.2	7.4	8.2	5.2	5.0	.98	27	.00	.00	.00
9	4.0	.50	7.0	7.4	8.2	5.2	5.9	.98	23	.00	.00	.00
10	3.5	.50	9.6	6.2	7.8	5.2	4.3	577	16	.00	.00	.00
11	3.0	.50	9.6	5.9	7.8	4.9	3.5	290	12	.00	.00	.00
12	4.6	.50	9.2	5.2	7.8	4.9	3.0	43	9.0	.00	.00	.00
13	3.7	.50	8.7	5.2	7.4	4.9	2.7	480	6.8	.00	.00	.00
14	1.3	.50	7.4	5.2	7.4	4.9	2.5	343	6.1	.00	.00	.00
15	1.1	.57	5.9	5.5	7.4	4.9	2.5	117	4.9	.00	.00	.00
16	1.5	.57	5.2	5.5	7.4	4.0	2.7	37	4.0	.00	.00	.00
17	1.6	.57	5.9	5.5	7.4	5.2	2.7	29	8.3	.00	.00	.00
18	1.4	.57	5.9	7.8	7.4	5.5	2.7	17	4.6	.00	.00	.00
19	1.2	.57	5.5	9.6	7.4	5.5	2.7	22	2.9	.00	.00	.00
20	1.2	.57	4.9	11	7.8	5.9	2.5	33	1.9	.00	.00	.00
21	1.5	.64	4.9	13	8.2	5.9	37	27	1.6	.00	.00	.00
22	2.1	.72	4.9	15	10	5.5	39	37	1.2	.00	.00	.00
23	1.5	.72	4.9	18	13	5.5	15	34	1.0	.00	.00	.00
24	1.2	.72	4.9	19	14	5.2	8.7	33	.78	.00	.00	.00
25	1.1	.72	5.2	15	9.2	5.2	5.2	25	.63	.00	.00	.00
26	.98	7.4	5.2	12	7.4	5.2	4.0	29	.42	.00	.00	.00
27	.89	13	5.2	12	7.4	5.2	3.2	43	1.5	.00	.00	.00
28	.80	11	5.2	12	7.4	5.2	3.2	116	15	.00	.00	.00
29	.72	9.2	5.2	8.2	---	4.9	3.2	60	2.4	.00	.00	.00
30	.64	6.6	5.2	7.0	---	4.9	3.0	33	2.3	.00	.00	.00
31	.57	---	5.9	16	---	4.6	---	28	---	.00	.00	---
TOTAL	109.70	60.91	200.5	293.8	250.9	169.4	196.8	2466.83	302.33	1.20	.00	.00
MEAN	3.54	2.03	6.47	9.48	8.96	5.46	6.56	79.6	10.1	.039	.000	.000
MAX	15	13	9.6	19	15	7.0	39	577	32	.92	.00	.00
MIN	.57	.39	4.9	5.2	7.4	4.0	2.5	.89	.42	.00	.00	.00
AC-FT	218	121	398	583	498	336	390	4890	600	2.4	.00	.00
CAL YR 1982	TOTAL	22608.72	MEAN	61.9	MAX	2630	MIN	.02	AC-FT	44840		
WTR YR 1983	TOTAL	4052.37	MEAN	11.1	MAX	577	MIN	.00	AC-FT	8040		



## BRAZOS RIVER BASIN

08081000 SALT FORK BRAZOS RIVER NEAR PEACOCK, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: December 1949 to September 1951, October 1964 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1949 to September 1951, October 1964 to current year.

WATER TEMPERATURES: December 1949 to September 1951, October 1964 to current year.

INSTRUMENTATION.--Since January 1969, specific conductance was recorded continuously at this station (discontinued September 1983).

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, 61,100 micromhos July 31, 1966; minimum daily, 900 micromhos Aug. 31, 1966.

WATER TEMPERATURES (1964-83): Maximum daily, 39.0°C June 25, 1968; July 30, 1978; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 50,600 micromhos July 3; minimum daily, 5,000 micromhos May 13.

WATER TEMPERATURES: Maximum daily, 29.0°C June 12; minimum daily, 0.0°C Dec. 9, 29, 30, Jan. 21, 22.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (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...	1440	5.8	20500	29.0	1800	1700	490	150	4400
NOV 01	650	.50	36200	21.5	3300	3200	870	270	8000
MAR 02...	1330	622	41300	22.0	3000	2800	740	270	9000
MAY 12...	1110	38	17000	24.0	1500	1400	430	100	3400

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY 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...	46	15	120	1500	7200	.80	12	13800
NOV 01...	63	27	120	2600	13000	.60	9.5	24800
MAR 02...	74	22	110	2400	14000	.60	2.2	26500
MAY 12...	40	12	86	1200	5500	.30	6.8	10700

## BRAZOS RIVER BASIN

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08081000 SALT FORK BRAZOS RIVER NEAR PEACOCK, TX--Continued

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1982 TO SEPTEMBER 1983

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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.	1982	109.70	22100	14300	4220	7200	2140	1700	491	*
NOV.	1982	60.91	33300	21900	3600	11300	1870	2300	379	*
DEC.	1982	200.5	35300	23200	12600	12100	6550	2400	1300	*
JAN.	1983	293.8	35500	23400	18600	12200	9690	2400	1900	*
FEB.	1983	250.9	40700	27100	18400	14300	9700	2600	1780	*
MAR.	1983	169.4	41000	27300	12500	14400	6610	2600	1210	*
APR.	1983	196.8	26900	17700	9410	9200	4910	1800	966	*
MAY	1983	2466.83	12100	7730	51500	3900	25600	950	6330	*
JUNE	1983	302.33	28800	18900	15400	9800	7970	2000	1650	*
JULY	1983	1.20	40600	27000	88	14300	46	2600	8.5	*
AUG.	1983	0.00	*	*	0.00	*	0.00	*	0.00	*
SEPT	1983	0.00	*	*	0.00	*	0.00	*	0.00	*
TOTAL		4052.37	**	**	146000	**	75100	**	16000	**
WTD. AVG.		11	20500	13400	**	6900	**	1500	**	**

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
EQUIVALENT MEAN

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11000	35800	35800	33100	37600	39600	43800	46000	20300	38600		
2	15800	36500	35600	32700	39100	41000	44200	48400	20600	44800		
3	16000	36700	33300	33000	42000	41700	45700	47400	38700	50600		
4	17900	36300	33400	37400	41900	41900	45900	48000	41900	49300		
5	20500	36400	38200	38500	41700	42100	40800	49700	22500	---		
6	22300	36600	34700	40500	41600	42000	40900	49800	25200	---		
7	23500	36700	35700	38600	42000	41300	40500	49000	36700	---		
8	26400	37400	34000	38400	41800	41500	38500	48400	19500	---		
9	26300	37300	32600	38200	42200	41400	40600	48900	23600	---		
10	28400	37700	32900	38500	42100	41800	40800	7500	26100	---		
11	28700	37400	33300	39000	42200	41700	41800	11300	30000	---		
12	26900	37900	33100	38800	42300	41800	44000	17000	38500	---		
13	27600	37800	35200	38600	42000	41600	44600	5000	41700	---		
14	28100	38600	35600	40400	42100	41700	45900	6500	42800	---		
15	29600	38500	37600	39000	42300	41500	43000	10000	48000	---		
16	31100	38400	36800	39100	41600	41600	42100	12100	46700	---		
17	30900	38200	36600	38800	41400	40900	46800	20500	49000	---		
18	32300	38100	37000	36500	41300	39300	45800	29100	43200	---		
19	33600	37700	37400	34000	41500	40100	46200	32400	48200	---		
20	33300	37500	37600	32800	41200	40300	46800	35300	49600	---		
21	33000	37400	36800	29200	40300	40800	15400	37000	49200	---		
22	33300	37100	36900	29100	40100	40900	8800	27200	48700	---		
23	33700	38200	37300	28500	38900	40600	11600	30300	47600	---		
24	33600	37800	37500	27600	38200	40800	11800	36200	46900	---		
25	35800	37800	37700	34700	39500	41000	27700	39500	46300	---		
26	35600	31100	37800	41100	39600	39000	36200	37700	47500	---		
27	36500	30800	35600	40400	39700	39400	45500	29800	44900	---		
28	36800	31500	33300	39700	39500	39600	46700	15800	13500	---		
29	37000	33300	35800	41300	---	40900	46900	16900	22500	---		
30	36700	35400	33300	41700	---	42000	45600	18000	31600	---		
31	36300	---	33200	35700	---	41300	---	24900	---	---		
MEAN	29000	36600	35500	36600	40900	41000	38800	30200	37100	45800		

## BRAZOS RIVER BASIN

08081000 SALT FORK BRAZOS RIVER NEAR PEACOCK, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983											
DAY	OCT	NOV	DEC	JAN	FEB	ONCE-DAILY MAR	APR	MAY	JUN	JUL	AUG SEP
1	---	15.0	1.0	6.0	8.0	9.0	10.0	18.0	18.0	25.0	
2	23.0	11.0	2.0	---	4.0	9.0	23.0	28.0	20.0	24.0	
3	23.0	7.0	7.0	1.0	---	15.0	10.0	12.0	20.0	24.0	
4	19.0	5.0	7.0	3.0	---	14.0	10.0	15.0	---	24.0	
5	19.0	6.0	14.0	5.0	2.0	8.0	7.0	15.0	21.0	---	
6	22.0	15.0	15.0	13.0	5.0	7.0	9.0	---	22.0	---	
7	17.0	15.0	10.0	13.0	5.0	8.0	9.0	18.0	16.0	---	
8	17.0	14.0	4.0	6.0	15.0	10.0	7.0	18.0	19.0	---	
9	11.0	14.0	.0	7.0	9.0	10.0	9.0	---	21.0	---	
10	12.0	16.0	4.0	2.0	19.0	---	24.0	20.0	22.0	---	
11	13.0	17.0	2.0	15.0	8.0	5.0	15.0	20.0	19.0	---	
12	17.0	17.0	1.0	2.0	9.0	6.0	11.0	18.0	29.0	---	
13	11.0	5.0	2.0	4.0	17.0	6.0	14.0	15.0	26.0	---	
14	10.0	7.0	4.0	13.0	8.0	9.0	8.0	---	19.0	---	
15	12.0	13.0	5.0	3.0	8.5	9.0	8.0	15.0	18.0	---	
16	14.0	6.0	5.0	3.0	10.0	7.0	9.0	15.0	20.0	---	
17	14.0	16.0	16.0	5.0	10.0	17.0	26.0	14.0	20.0	---	
18	16.0	10.0	13.0	5.0	6.0	6.0	13.0	14.0	23.0	---	
19	16.0	10.0	11.0	7.0	10.0	7.0	13.0	21.0	23.0	---	
20	10.0	11.0	10.0	2.0	10.0	6.0	10.0	20.0	21.0	---	
21	11.0	14.0	5.0	.0	12.0	3.0	13.0	21.0	23.0	---	
22	11.0	14.0	7.0	.0	15.0	5.0	23.0	---	22.0	---	
23	10.0	6.0	16.0	11.0	20.0	7.0	12.0	27.0	23.0	---	
24	10.0	4.0	11.0	5.0	14.0	2.0	13.0	25.0	21.0	---	
25	9.0	2.0	8.0	11.0	9.0	12.0	13.0	24.0	26.0	---	
26	9.0	2.0	8.0	3.0	---	9.0	22.0	22.0	---	---	
27	13.0	6.0	8.0	8.0	6.0	8.0	27.0	20.0	21.0	---	
28	13.0	6.0	---	8.0	6.0	8.0	---	21.0	21.0	---	
29	11.0	---	.0	8.0	---	---	25.0	21.0	21.0	---	
30	11.0	---	.0	14.0	---	10.0	27.0	21.0	22.0	---	
31	14.0	---	---	2.0	---	12.0	---	13.0	---	---	
MEAN	14.0	10.0	7.0	6.0	10.0	8.5	14.5	19.0	21.5	24.5	

## BRAZOS RIVER BASIN

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08081200 CROTON CREEK NEAR JAYTON, TX

LOCATION.--Lat 33°17'18", long 100°25'52", Stonewall County, Hydrologic Unit 12050007, on left bank 220 ft downstream from county road, 0.9 mi upstream from mouth, and 8.5 mi northeast of Jayton.

DRAINAGE AREA.--290 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,694.45 ft National Geodetic Vertical Datum of 1929. Prior to Nov. 11, 1976, at site 680 ft upstream at same datum.

REMARKS.--Water-discharge records fair. No diversion above station.

AVERAGE DISCHARGE.--24 years, 13.8 ft<sup>3</sup>/s (0.65 in/yr), 10,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,600 ft<sup>3</sup>/s Oct. 18, 1960 (gage height, 12.40 ft), from rating curve extended above 3,100 ft<sup>3</sup>/s; maximum gage height, 12.52 ft May 20, 1977, from floodmark; no flow for many days.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1935, 13.5 ft in 1941 or 1942, present datum, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 249 ft<sup>3</sup>/s June 5 at 1800 hours (gage height, 4.50 ft), no peak above base of 1,600 ft<sup>3</sup>/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	.05	2.0	1.9	14	1.4	.68	.50	.21	.41	.00	.00
2	2.0	.07	1.7	3.4	6.7	1.3	.59	.19	.18	.06	.00	.00
3	1.8	.07	2.1	4.4	5.8	1.1	.50	.14	.07	.00	.00	.00
4	1.6	.07	4.5	3.0	5.3	1.0	.36	.10	3.6	5.0	.00	.00
5	1.6	.05	3.7	2.6	4.1	1.0	1.2	.03	103	20	.00	.00
6	1.6	.05	2.9	2.4	3.4	.89	1.4	.03	111	.55	.00	.00
7	1.6	.05	2.2	2.5	3.1	.89	1.3	.01	67	.20	.00	.00
8	1.3	.03	1.8	2.6	2.5	1.1	2.2	.01	14	.05	.00	.00
9	.89	.03	1.6	2.4	2.2	1.0	1.6	.01	6.5	.00	.00	.00
10	.88	.03	2.8	2.3	2.2	.89	1.3	.07	3.7	.00	.00	.00
11	.78	.03	4.3	2.1	2.0	1.0	1.1	.36	2.4	.00	.00	.00
12	.94	.03	4.6	2.1	2.0	1.0	.78	17	2.9	.00	.00	.00
13	1.0	.05	2.9	1.9	1.8	1.1	.43	82	1.3	.00	.00	.00
14	.81	.05	2.3	1.6	1.8	1.1	.30	6.2	.74	.00	.00	.00
15	.76	.03	2.0	1.7	1.8	1.3	.19	4.1	.39	.00	.00	.00
16	.50	.03	1.7	1.6	2.0	1.8	.19	2.5	.21	.00	.00	.00
17	.43	.05	1.7	4.9	2.5	2.2	.19	2.0	.88	.00	.00	.00
18	.43	.05	1.6	14	3.1	2.5	.14	1.4	9.3	.00	.00	.00
19	.37	.03	1.1	3.7	3.4	2.5	.07	1.0	9.1	.00	.00	.00
20	.24	.01	1.1	3.4	3.1	2.5	.08	14	3.7	.00	.00	.00
21	.24	.01	1.1	13	2.8	2.5	17	82	1.4	.00	.01	.00
22	.24	.01	.99	20	2.5	2.2	21	5.3	.69	.00	.00	.00
23	.24	.01	1.1	20	2.5	2.2	13	2.5	.40	.00	.00	.00
24	.14	.01	.97	16	2.2	2.5	7.2	1.3	.24	.00	.00	.00
25	.14	.03	.77	14	2.0	3.1	3.8	12	.14	.00	.00	.00
26	.14	2.8	.64	13	1.8	8.7	2.0	5.3	3.2	.00	.00	.00
27	.14	11	1.2	12	1.8	2.8	1.4	2.2	3.1	.00	.00	.00
28	.09	6.2	1.3	12	1.4	2.0	1.0	.83	.36	.00	.00	.00
29	.07	4.1	1.3	12	---	1.6	.78	.33	.11	.00	.00	.00
30	.07	2.5	1.3	12	---	1.1	.78	.17	3.2	.00	.00	.00
31	.07	---	1.3	19	---	.89	---	.18	---	.00	.00	---
TOTAL	23.61	27.53	60.57	227.5	89.8	57.16	82.56	243.76	353.02	26.27	.01	.00
MEAN	.76	.92	1.95	7.34	3.21	1.84	2.75	7.86	11.8	.85	.000	.000
MAX	2.5	11	4.6	20	14	8.7	21	82	111	20	.01	.00
MIN	.07	.01	.64	1.6	1.4	.89	.07	.01	.07	.00	.00	.00
CFSM	.003	.003	.007	.03	.01	.006	.009	.03	.04	.003	.000	.000
IN.	.00	.00	.01	.03	.01	.01	.01	.03	.05	.00	.00	.00
AC-FT	47	55	120	451	178	113	164	483	700	52	.02	.00

CAL YR 1982	TOTAL	6851.36	MEAN	18.8	MAX	1040	MIN	.00	CFSM	.07	IN	.88	AC-FT	13590
WTR YR 1983	TOTAL	1191.79	MEAN	3.27	MAX	111	MIN	.00	CFSM	.01	IN	.15	AC-FT	2360

## BRAZOS RIVER BASIN

08081200 CROTON CREEK NEAR JAYTON, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1959 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1961 to current year.

WATER TEMPERATURES: October 1961 to September 1973.

INSTRUMENTATION.--Since May 1968, specific conductance is recorded continuously at this station.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and 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, 60,700 micromhos Feb. 15, 1967; minimum daily, 1,570 micromhos Aug. 3, 1976.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 44,800 micromhos Nov. 24; minimum daily, 4,750 micromhos June 6.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
NOV 30...	1110	2.5	43300	10.0	4300	4200	1200	310	9600
APR 05...	1230	1.5	38200	12.5	4100	4000	1100	320	8700
MAY 12...	1010	.76	41600	23.0	4600	4500	1300	330	9000
JUN 08...	1200	14	8550	27.5	2100	2000	710	72	1300

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY 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 CONSTITU- ENTS, DIS- SOLVED (MG/L)
NOV 30...	66	28	100	3500	16000	.10	5.1	30700
APR 05...	62	23	77	3700	14000	.10	2.0	27900
MAY 12...	60	26	110	3600	14000	.20	3.7	28300
JUN 08...	13	8.3	59	2000	2000	.20	6.4	6130



## BRAZOS RIVER BASIN

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08081200 CROTON CREEK NEAR JAYTON, TX--Continued

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1982 TO SEPTEMBER 1983

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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.	1982	23.61	26200	17900	1140	8400	536	2900	183	*
NOV.	1982	27.53	37100	25100	1870	12400	921	3400	254	*
DEC.	1982	60.57	38900	26300	4310	13100	2140	3500	574	*
JAN.	1983	227.5	28600	19400	11900	9300	5700	3000	1830	*
FEB.	1983	89.8	30800	20900	5070	10100	2440	3100	754	*
MAR.	1983	57.16	35400	24000	3700	11800	1820	3300	516	*
APR.	1983	82.56	27500	18700	4170	8900	1980	2900	653	*
MAY	1983	243.76	13600	9420	6200	3900	2550	2100	1410	*
JUNE	1983	353.02	8490	5930	5650	2300	2220	1500	1400	1700
JULY	1983	26.27	9570	6630	470	2800	197	1400	103	1700
AUG.	1983	0.01	39800	27000	0.7	13400	0.4	3600	0.1	*
SEPT	1983	0.00	*	*	0.00	*	0.00	*	0.00	*
TOTAL		1191.79	**	**	44500	**	20500	**	7680	**
WTD. AVG.		3.3	20200	13800	**	6400	**	2400	**	**

## SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23000	32300	43500	42600	27000	35500	36600	33300	31200	29100	---	---
2	23700	32000	41000	40000	29500	35800	37100	34400	32000	31400	---	---
3	24400	32400	39400	38600	29300	35700	37500	35800	33300	---	---	---
4	24900	32900	36200	40400	29100	35700	38100	36900	30800	23300	---	---
5	25300	33500	41200	41300	27800	36100	38200	37900	8000	5500	---	---
6	25600	34200	41600	41700	28500	36200	40000	39500	4750	11700	---	---
7	26000	34700	40100	41400	31600	36300	39700	41300	7420	18000	---	---
8	26500	35400	40000	41100	31300	36600	40500	42700	8550	23000	---	---
9	27200	36100	39800	41600	30700	36800	41800	41200	12800	---	---	---
10	27900	36700	37200	42100	30700	36900	43400	43800	16000	---	---	---
11	28600	37400	36900	42400	31000	37300	42200	38500	18500	---	---	---
12	28200	38000	35300	42300	31300	37500	42600	22700	18800	---	---	---
13	27700	37600	35600	42500	31700	37800	41900	11500	18800	---	---	---
14	27900	38100	36100	42900	32000	38000	42200	12700	18700	---	---	---
15	28000	38900	36700	42400	32500	37900	42200	14800	19800	---	---	---
16	28300	39500	37400	42800	32500	38100	42400	18700	21200	---	---	---
17	28700	39000	37700	38700	32900	37100	42500	22700	18200	---	---	---
18	28800	39300	38200	30400	33400	36400	42700	23100	17000	---	---	---
19	29000	40200	40000	33500	33800	36300	42600	23500	16400	---	---	---
20	29400	41200	40600	35200	34300	36000	40700	22300	13000	---	---	---
21	29500	42000	40900	26900	34300	35500	30400	10600	14300	---	39800	---
22	29600	42900	41800	19800	33200	35500	19100	12400	16600	---	---	---
23	29900	43900	41500	20000	32500	35300	24100	15700	18600	---	---	---
24	30300	44800	41900	21700	33200	34700	25600	19300	20400	---	---	---
25	30400	44200	42200	23100	34200	34300	25300	13500	22800	---	---	---
26	30500	38800	42300	24900	34200	32900	26200	16100	19400	---	---	---
27	30600	34100	39700	27600	34100	33500	27000	19400	13400	---	---	---
28	31000	36900	39500	29000	34600	34200	29000	23600	19400	---	---	---
29	31200	40600	40700	30400	---	34600	30400	28100	22800	---	---	---
30	31400	43300	41200	31600	---	35300	31300	31700	25000	---	---	---
31	31500	---	43100	25700	---	36000	---	31500	---	---	---	---
MEAN	28200	38000	39700	35000	31800	36000	36100	26400	18600	20300	39800	---

## BRAZOS RIVER BASIN

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 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.--Water-discharge records poor. No large diversion above station. Some regulation by White River Reservoir (capacity, 44,900 acre-ft), 106 mi upstream.

AVERAGE DISCHARGE.--44 years (water years 1940-83), 108 ft<sup>3</sup>/s (78,250 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.--Maximum discharge, 2,060 ft<sup>3</sup>/s June 6 at 1200 hours (gage height, 5.25 ft, from flood-marks), no peak above base of 12,000 ft<sup>3</sup>/s; minimum daily, 0.02 ft<sup>3</sup>/s Aug. 10-17, 19, 21-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	.56	15	10	46	7.1	5.9	7.8	78	.46	.03	.03
2	16	.48	14	17	34	8.5	5.9	6.5	22	.33	.03	.03
3	14	.35	13	22	23	7.1	5.9	4.9	8.5	.21	.03	.03
4	14	.30	18	19	19	7.1	5.4	4.0	4.4	.22	.03	.03
5	11	.25	17	18	18	7.8	8.5	3.6	2.9	183	.03	.03
6	8.5	.35	14	14	17	7.8	13	2.9	687	14	.03	.03
7	7.1	.35	11	12	16	7.8	11	2.0	288	1.3	.03	.03
8	4.4	.41	8.5	12	16	5.9	15	1.4	58	.24	.03	.03
9	4.0	.41	7.1	13	15	4.4	14	1.4	37	.21	.03	.03
10	3.6	.76	9.2	15	13	4.0	11	.89	26	.27	.02	.03
11	4.0	2.0	16	14	12	4.4	8.5	424	17	.27	.02	102
12	4.9	1.0	19	9.2	11	4.4	5.9	238	11	.25	.02	72
13	5.4	.35	17	6.5	16	4.4	4.4	703	8.3	.21	.02	1.3
14	3.2	.48	14	5.9	18	4.9	3.6	371	5.4	.18	.02	.16
15	2.0	.41	11	5.9	15	5.9	3.2	270	3.7	.18	.02	.11
16	2.6	.48	8.5	5.9	13	7.8	2.9	134	2.9	.16	.02	.11
17	2.6	.56	7.1	8.5	11	7.8	2.9	84	22	.14	.02	.10
18	1.6	.65	8.5	15	10	6.5	2.6	53	28	.13	.03	.09
19	1.0	.56	6.5	17	9.2	6.5	2.3	40	8.2	.10	.02	.10
20	.56	.48	5.9	19	9.2	6.5	2.0	45	6.1	.10	.03	.09
21	1.0	.65	6.5	23	9.2	5.9	53	517	2.9	.08	.02	.10
22	.89	.35	6.5	50	9.2	4.9	70	76	1.8	.08	.02	.10
23	.48	.56	5.9	48	8.5	5.4	71	44	1.2	.06	.02	.10
24	.48	1.4	5.4	42	8.5	5.4	44	38	.69	.06	.02	.11
25	1.0	5.4	4.9	27	8.5	5.9	26	180	.45	.06	.02	.11
26	1.0	17	4.9	20	8.5	89	19	58	.53	.05	.02	.11
27	.65	76	7.8	18	7.1	9.2	15	34	12	.05	.02	.11
28	.89	31	7.8	16	6.5	7.8	10	32	4.4	.04	.02	.12
29	1.0	23	5.9	15	---	7.1	9.2	46	2.4	.04	.02	.12
30	.89	15	6.5	15	---	7.1	8.5	56	1.3	.04	.02	.12
31	.65	---	7.1	40	---	6.5	---	139	---	.03	.03	---
TOTAL	137.39	181.55	309.5	572.9	407.4	280.8	459.6	3617.39	1352.07	202.55	.74	177.46
MEAN	4.43	6.05	9.98	18.5	14.6	9.06	15.3	117	45.1	6.53	.024	5.92
MAX	18	76	19	50	46	89	71	703	687	183	.03	102
MIN	.48	.25	4.9	5.9	6.5	4.0	2.0	.89	.45	.03	.02	.03
AC-FT	273	360	614	1140	808	557	912	7180	2680	402	1.5	352
CAL YR 1982	TOTAL	31756.68	MEAN	87.0	MAX	2030	MIN	.13	AC-FT	62990		
WTR YR 1983	TOTAL	7699.35	MEAN	21.1	MAX	703	MIN	.02	AC-FT	15270		

## BRAZOS RIVER BASIN

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08082000 SALT FORK BRAZOS RIVER NEAR ASPERMONT, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1948 to September 1951, October 1956 to September 1974. Chemical and biochemical analyses: October 1974 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1948 to September 1951, October 1956 to September 1982.

WATER TEMPERATURES: October 1948 to September 1951, October 1956 to September 1982.

INSTRUMENTATION.--Continuous recording of specific conductance was discontinued September 1982.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
OCT 20...	1015	2.0	58500	7.5	9.2	1.4	9.8	112	1.8	K19	K2400	4200
FEB 08...	1740	20	45100	8.1	14.5	.60	11.0	136	2.1	K15	K26	3300
JUN 22...	1215	18	39200	7.8	27.0	2.8	9.2	139	5.8	84	K24	3900
AUG 16...	1450	.02	69400	7.6	37.0	5.0	7.4	148	1.9	<1	780	5800
DATE	TIME	HARD- NESS, NONCAR- BONATE (MG/L 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 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)
OCT 20...	4100	1100	340	15000	105	41	95	3000	24000		.40	6.7
FEB 08...	3200	870	280	10000	78	28	120	2300	16000		.40	5.8
JUN 22...	3800	1100	280	8300	60	27	84	3000	15000		.40	4.4
AUG 16...	5700	1600	420	22000	131	60	100	2000	37000		.40	14
DATE	TIME	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, DIS- SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 20...	43900	43600	<.10	.300	.40	.010	.010	<.010		42	.23	100
FEB 08...	32600	29600	.15	.300	.60	.040	.050	.080		187	10	98
JUN 22...	27900	27800	<.10	.150	.80	.220	.180	.030		15	.73	62
AUG 16...	67500	63200	<.10	.740	.60	.010	.040	.050		--	--	--
DATE	TIME	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 20...	1015	2	<100	<10	<2	<1	2	<2	220	8		
FEB 08...	1740	1	100	<10	1	<1	1	<1	140	1		
JUN 22...	1215	3	<100	10	<1	<1	<1	1	110	1		
AUG 16...	1450	8	100	20	<1	<1	<1	1	310	<1		
DATE	TIME	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 20...	160	280	<.1	5	6	9	<2	16000	340	120		
FEB 08...	150	120	.1	4	1	2	<1	12000	340	30		
JUN 22...	150	160	<.1	3	<1	4	<1	13000	160	30		
AUG 16...	260	210	.3	4	1	<1	<1	26000	320	50		

## BRAZOS RIVER BASIN

08082100 STINKING CREEK NEAR ASPERMONT, TX

LOCATION.--Lat 33°14'00", long 100°12'47", Stonewall County, Hydrologic Unit 12050007, at downstream side of bridge on Farm Road 1263, 4.9 mi upstream from Salt Fork Brazos River, and 6.8 mi north of Aspermont.

DRAINAGE AREA.--88.8 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1965 to September 1983 (discontinued).

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,601.5 ft National Geodetic Vertical Datum of 1929 (State Department of Highways and Public Transportation bridge plans).

REMARKS.--Water-discharge records good. No known diversion above station. Recording rain gage at station prior to May 1, 1978.

AVERAGE DISCHARGE.--18 years, 4.34 ft<sup>3</sup>/s (0.66 in/yr), 3,140 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,260 ft<sup>3</sup>/s May 5, 1982 (gage height, 12.82 ft); no flow for many days most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1925, 31 ft in September 1955, from information by local residents.

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

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 13	1430	*1,290	9.44
May 21	0130	754	7.95

Minimum discharge, no flow Aug. 15 to Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.29	.29	.29	.64	5.3	.62	1.2	.36	2.3	.43	.11	.00
2	.33	.27	.29	.54	1.9	.62	1.2	.33	2.2	.33	.09	.00
3	.32	.23	.39	.49	1.5	.62	.90	.36	2.1	.29	.06	.00
4	.32	.25	.43	.50	1.2	.62	.89	.33	1.9	.25	.06	.00
5	.32	.29	.34	.49	1.1	.62	1.1	.31	2.3	.25	.05	.00
6	.26	.29	.29	.53	1.0	.62	1.0	.29	2.6	.30	.06	.00
7	.29	.25	.25	.64	.93	.60	.92	.29	2.7	.28	.04	.00
8	.29	.25	.25	.70	.90	.52	.85	.29	2.0	.25	.04	.00
9	.25	.25	.26	.75	.90	.57	.84	.29	1.7	.25	.05	.00
10	.28	.31	.42	.80	.90	.62	.79	2.2	1.4	.25	.06	.00
11	.34	.43	.45	.57	.90	.57	.66	149	1.2	.25	.04	.00
12	.42	.26	.36	.33	.79	.52	.78	193	1.1	.25	.02	.00
13	.37	.24	.33	.42	.76	.52	1.2	851	.98	.25	.02	.00
14	.31	.26	.29	.42	.73	.52	2.0	366	.91	.25	.01	.00
15	.28	.25	.29	.42	.70	.49	1.1	108	.76	.27	.00	.00
16	.27	.28	.29	.47	.67	1.3	.67	33	.73	.27	.00	.00
17	.24	.28	.29	.47	.69	1.2	.42	12	.76	.25	.00	.00
18	.25	.29	.29	.47	.78	.92	.42	6.6	.78	.23	.00	.00
19	.24	.29	.29	.67	.73	.60	.37	14	.78	.18	.00	.00
20	.22	.27	.29	.47	.73	.62	.37	182	.62	.15	.00	.00
21	.31	.26	.29	.38	.69	.62	7.1	231	.55	.15	.00	.00
22	.33	.28	.29	.29	.67	.54	3.9	18	.51	.12	.00	.00
23	.32	.27	.29	.47	.67	.47	.89	7.5	.45	.12	.00	.00
24	.32	.30	.31	.62	.67	.47	.80	5.0	.41	.10	.00	.00
25	.32	.60	.30	.78	.67	7.4	.54	4.3	.38	.10	.00	.00
26	.31	.89	.35	.90	.67	12	.43	4.9	.38	.10	.00	.00
27	.28	.70	.59	1.0	.67	4.2	.42	4.3	.83	.09	.00	.00
28	.26	1.1	.61	1.2	.65	1.6	.36	3.2	2.8	.08	.00	.00
29	.24	.50	.37	1.4	---	1.3	.38	2.7	2.3	.06	.00	.00
30	.27	.30	.33	1.6	---	1.4	.39	2.4	.73	.07	.00	.00
31	.29	---	.45	2.2	---	1.0	---	2.3	---	.09	.00	---
TOTAL	9.14	10.73	10.56	21.63	28.47	44.29	32.89	2205.25	39.16	6.31	.71	.00
MEAN	.29	.36	.34	.70	1.02	1.43	1.10	71.1	1.31	.20	.023	.000
MAX	.42	1.1	.61	2.2	5.3	12	7.1	851	2.8	.43	.11	.00
MIN	.22	.23	.25	.29	.65	.47	.36	.29	.38	.06	.00	.00
CFSM	.003	.004	.004	.008	.01	.02	.01	.80	.02	.002	.000	.000
IN.	.00	.00	.00	.01	.01	.02	.01	.92	.02	.00	.00	.00
AC-FT	18	21	21	43	56	88	65	4370	78	13	1.4	.00

CAL YR 1982	TOTAL	5270.89	MEAN	14.4	MAX	1260	MIN	.18	CFSM	.16	IN	2.21	AC-FT	10450
WTR YR 1983	TOTAL	2409.14	MEAN	6.60	MAX	851	MIN	.00	CFSM	.07	IN	1.01	AC-FT	4780

## BRAZOS RIVER BASIN

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08082100 STINKING CREEK NEAR ASPERMONT, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1965 to current year. Periodic sediment records: October 1976 to September 1982.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
NOV 01...	1610	.28	6980	19.0	2700	2600	650	270	740
DEC 13...	1700	.38	6660	7.0	2700	2500	620	270	760
JAN 31...	1545	1.5	8080	9.0	2200	2100	510	230	980
MAR 08...	0820	.50	10400	11.5	3400	3200	720	380	1300
APR 18...	1615	.38	10400	24.0	3200	3100	690	360	1400
MAY 23...	1715	6.7	6830	27.0	1700	1500	400	170	920
JUN 27...	1555	.38	11300	32.5	3300	3200	720	360	1600
AUG 08...	1615	.05	10200	28.5	3500	3500	810	370	1200

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY 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 01...	6.4	13	94	2200	1400	.40	<1.2	5330
DEC 13...	6.6	12	150	2200	1400	.40	<1.2	5350
JAN 31...	9.3	9.2	150	1700	1700	.30	1.4	5220
MAR 08...	10	12	170	2500	2500	.30	<1.2	7520
APR 18...	11	14	92	2700	2500	.30	<1.2	7720
MAY 23...	10	11	170	1200	1700	.20	8.8	4510
JUN 27...	13	14	85	2700	2900	.30	<1.2	8350
AUG 08...	9.0	16	46	3000	2300	.40	2.8	7730



## BRAZOS RIVER BASIN

08082180 NORTH CROTON CREEK NEAR KNOX CITY, TX

LOCATION.--Lat 33°22'59", long 100°04'51", Stonewall County, Hydrologic Unit 12060101, on left bank 600 ft downstream from Wedington Creek, 9.5 mi upstream from mouth, and 15.4 mi southwest of Knox City.

DRAINAGE AREA.--251 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR TX-75-1: 1966-67, 1969-74.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,462.44 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. No diversion or regulation above station. Recording rain gage at station prior to May 1, 1978.

AVERAGE DISCHARGE.--18 years, 13.8 ft<sup>3</sup>/s (0.75 in/yr), 10,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,100 ft<sup>3</sup>/s Aug. 30, 1966 (gage height, 32.36 ft), from rating curve extended above 240 ft<sup>3</sup>/s on basis of step-backwater analysis and slope-area measurement of 2,660, 6,530, and 32,100 ft<sup>3</sup>/s; no flow at times.

Maximum stage since at least 1921, that of Aug. 30, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1932 reached a stage of about 32 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 174 ft<sup>3</sup>/s May 30 at 2000 hours (gage height, 8.03 ft), no peak above base of 500 ft<sup>3</sup>/s; no flow for many days.

DISCHARGE, IN FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.89	1.0	1.9	1.8	11	1.1	1.6	.85	31	1.3	.97	.00
2	.89	.99	1.8	2.4	17	1.1	1.6	.69	13	.53	.20	.00
3	.88	.99	1.7	2.2	7.3	.99	1.6	.61	7.5	.25	.07	.00
4	.85	.99	2.1	2.0	4.8	.99	1.5	.54	4.9	.41	.03	.00
5	.89	.99	2.1	1.8	4.0	.99	1.6	.45	3.9	34	.01	.00
6	.89	.99	1.9	1.8	3.0	.99	1.5	.27	30	8.0	.00	.00
7	.89	.89	1.7	1.6	2.5	1.0	1.5	.20	32	2.1	.00	.00
8	.89	1.2	1.4	1.5	2.1	.99	1.5	.20	16	1.1	.00	.00
9	.78	1.1	1.4	1.5	2.1	.99	1.5	.20	8.3	.33	.00	.00
10	.75	1.1	1.8	1.4	2.0	.99	1.5	17	6.2	.02	.00	.00
11	.82	1.3	2.0	1.4	1.6	.99	1.3	50	4.5	.72	.00	.00
12	1.1	1.3	2.0	1.4	1.6	.99	1.1	6.1	2.9	.16	.00	.20
13	1.3	1.2	1.6	1.2	1.6	.99	.99	20	2.1	.11	.00	.01
14	1.2	1.3	1.6	1.2	1.5	.99	.98	15	1.6	.08	.00	.00
15	1.1	.99	1.5	1.1	1.6	.99	.89	7.0	1.3	.07	.00	.00
16	.97	.99	1.2	1.1	1.5	1.5	.89	1.1	.89	.06	.00	.00
17	.89	.89	1.2	1.1	1.5	2.5	.87	.57	3.1	.06	.00	.00
18	.89	.89	1.2	1.2	1.4	1.8	.83	.23	2.7	.06	.00	.00
19	.89	.93	1.1	1.5	1.4	1.8	.89	.23	3.0	.04	.00	.00
20	.79	1.1	1.1	1.7	1.3	1.7	.90	7.2	2.7	.02	.00	.00
21	.79	1.2	1.1	3.2	1.2	1.4	2.0	41	1.9	.02	.00	.00
22	.85	1.2	1.1	3.8	1.1	1.2	32	5.9	2.0	.00	.00	.00
23	.94	1.2	1.1	3.3	1.1	1.1	11	2.4	1.1	.00	.00	.00
24	.99	1.2	1.1	3.5	1.1	1.1	4.1	1.6	.74	.00	.00	.00
25	.99	1.9	1.1	3.7	1.1	4.4	2.4	17	.52	.00	.00	.00
26	.99	3.5	1.1	3.3	1.1	4.5	1.7	6.0	.42	.00	.00	.00
27	.99	5.7	1.2	2.5	1.1	1.9	1.4	2.5	.53	.00	.00	.00
28	.99	4.1	1.2	2.3	1.1	1.5	1.1	1.4	3.4	.00	.00	.00
29	.90	3.1	1.2	1.9	---	1.5	1.1	.94	2.7	.00	.00	.00
30	.89	2.2	1.1	1.8	---	1.5	1.0	37	3.0	.00	.00	.00
31	.93	---	1.1	6.3	---	1.4	---	39	---	6.8	.00	---
TOTAL	28.80	46.43	44.7	66.5	79.7	45.88	82.84	283.18	193.90	56.24	1.28	.21
MEAN	.93	1.55	1.44	2.15	2.85	1.48	2.76	9.13	6.46	1.81	.041	.007
MAX	1.3	5.7	2.1	6.3	17	4.5	32	50	32	34	.97	.20
MIN	.75	.89	1.1	1.1	1.1	.99	.83	.20	.42	.00	.00	.00
CFSM	.004	.006	.006	.009	.01	.006	.01	.04	.03	.007	.000	.000
IN.	.00	.01	.01	.01	.01	.01	.01	.04	.03	.01	.00	.00
AC-FT	57	92	89	132	158	91	164	562	385	112	2.5	.4

CAL YR 1982	TOTAL	8044.81	MEAN	22.0	MAX	1590	MIN	.20	CFSM	.09	IN	1.19	AC-FT	15960
WTR YR 1983	TOTAL	929.66	MEAN	2.55	MAX	50	MIN	.00	CFSM	.01	IN	.14	AC-FT	1840

BRAZOS RIVER BASIN

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08082180 NORTH CROTON CREEK NEAR KNOX CITY, TX--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1965 to current year.

WATER TEMPERATURES: October 1965 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, 48,600 micromhos May 26, 1981; minimum daily, 1,060 micromhos Aug. 30, 1966.

WATER TEMPERATURES: Maximum daily, 37.0°C June 16, 1978; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 39,000 micromhos July 3; minimum daily, 3,160 micromhos May 30.

WATER TEMPERATURES: Maximum daily, 32.0°C on several days during June and July; minimum daily, 2.0°C Dec. 30, Jan. 4, 5, 17, Feb. 4.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
NOV 01...	1455	.95	22600	20.0	3700	3600	960	310	4300
MAR 07...	1430	1.1	24900	18.0	3700	3600	920	340	4700
JUN 27...	1400	.44	18100	33.0	3400	3300	880	290	3200
SEP 13...	1320	.01	20000	28.0	4600	4500	1000	500	3300

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY 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 01...	32	30	100	2700	7200	.40	.5	15600
MAR 07...	35	28	130	2500	8000	.40	1.3	16600
JUN 27...	25	25	120	2700	5200	.40	1.4	12400
SEP 13...	22	45	100	3700	5800	.40	4.8	14400

## BRAZOS RIVER RIVER

08082180 NORTH CROTON CREEK NEAR KNOX CITY, TX--Continued

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1982 TO SEPTEMBER 1983

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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.	1982	28.80	21300	14600	1140	6600	513	2700	214	*
NOV.	1982	46.43	23900	16300	2040	7600	948	2800	354	*
DEC.	1982	44.7	22800	15600	1880	7100	862	2800	338	*
JAN.	1983	66.5	23600	16100	2890	7500	1340	2800	505	*
FEB.	1983	79.7	16000	11000	2380	4700	1020	2300	502	*
MAR.	1983	45.88	24800	16800	2090	7900	980	2800	348	*
APR.	1983	82.84	16300	11300	2520	5000	1110	2200	500	*
MAY	1983	283.18	6150	4340	3310	1700	1260	1100	876	1400
JUNE	1983	193.90	10400	7260	3800	3000	1550	1700	894	*
JULY	1983	56.24	9530	6650	1010	2700	410	1600	239	2000
AUG.	1983	1.28	11000	7720	27	3100	11	1900	6.6	*
SEPT	1983	0.21	17700	12200	6.9	5300	3.0	2600	1.5	*
TOTAL		929.66	**	**	23100	**	10000	**	4780	**
WTD. AVG.		2.5	13300	9200	**	4000	**	1900	**	**

## SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17600	22700	24300	24700	12500	23500	27000	19400	6250	25200	10500	---
2	17900	23600	21900	25000	10300	24100	27700	20300	7240	38600	11900	---
3	18400	23800	19300	24000	12100	24700	27200	20400	8310	39000	12200	---
4	18900	23600	19800	23600	14000	24800	26600	21000	10300	38400	16400	---
5	19000	23100	22100	24400	14800	24900	26000	20800	12200	6510	19900	---
6	19300	23000	22400	25000	15500	25000	25500	21300	8010	10200	---	---
7	19600	23700	22600	25800	17800	25100	25400	21900	6960	13100	---	---
8	19800	22900	22700	24000	18000	25300	26500	16000	8110	12800	---	---
9	20000	23100	22200	24200	19300	25600	26400	18900	9230	14100	---	---
10	20400	23400	21600	23400	19700	25800	26700	9900	12100	15500	---	---
11	20000	23100	22100	25700	20000	25900	27200	4200	15300	17300	---	---
12	19000	22800	21700	24800	20200	25700	26900	7560	15600	20600	---	17600
13	19200	24500	22700	24900	20700	25600	27000	5160	16000	23100	---	20000
14	22000	25300	23500	24700	21000	25500	26900	8680	14300	23500	---	---
15	22200	25200	24000	24500	21300	25500	27200	13400	14500	23900	---	---
16	22500	25000	24300	26800	22400	23900	27000	23600	13400	24000	---	---
17	23000	24600	24200	23200	22200	21300	27000	19600	18500	23700	---	---
18	23100	24000	23600	25000	22700	24400	26200	12700	20900	24300	---	---
19	23200	24400	22600	23900	22200	27100	25900	9200	26200	23800	---	---
20	23300	24500	22300	24600	22800	29400	25700	5480	26400	24600	---	---
21	23000	24300	23200	24200	23600	30000	25400	4000	21700	24900	---	---
22	22800	24200	23400	23900	24200	30200	9750	10500	21100	---	---	---
23	22600	24400	23200	24100	24100	28500	11600	12000	20600	---	---	---
24	22700	24500	23500	24900	24300	26000	15200	13300	19700	---	---	---
25	22800	24300	23800	24500	24400	25200	14900	8640	19500	---	---	---
26	22800	23900	24100	24000	24500	21000	12800	9910	19300	---	---	---
27	23200	23200	24000	20800	24300	20300	15700	12300	18100	---	---	---
28	23300	23600	24300	21400	23900	21800	16300	14500	22600	---	---	---
29	23000	24500	24600	22100	---	24100	17200	16300	21800	---	---	---
30	23400	25100	25000	22700	---	25000	19100	3160	25400	---	---	---
31	23300	---	24400	19400	---	26200	---	4160	---	11700	---	---
MEAN	21300	23900	23000	24000	20100	25200	23000	13200	16000	21800	14200	18800

## BRAZOS RIVER BASIN

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08082180 NORTH CROTON CREEK NEAR KNOX CITY, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983												
ONCE-DAILY												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.0	21.0	15.0	---	---	18.0	18.0	21.0	21.0	32.0		
2	19.0	13.0	10.0	5.0	---	20.0	18.0	25.0	22.0	32.0		
3	16.0	13.0	9.0	5.0	5.0	16.0	22.0	26.0	26.0	---		
4	20.0	10.0	9.0	2.0	2.0	16.0	20.0	28.0	30.0	---		
5	22.0	16.0	10.0	2.0	---	12.0	12.0	26.0	30.0	32.0		
6	22.0	16.0	10.0	---	4.0	---	13.0	---	23.0	---		
7	---	13.0	12.0	8.0	3.0	18.0	10.0	25.0	---	32.0		
8	---	18.0	6.0	7.0	---	17.0	19.0	18.0	20.0	31.0		
9	---	---	6.0	9.0	7.0	16.0	19.0	---	26.0	32.0		
10	---	---	5.0	4.0	8.0	18.0	22.0	26.0	25.0	---		
11	---	20.0	6.0	---	8.0	17.0	22.0	---	25.0	32.0		
12	---	---	6.0	---	7.0	18.0	18.0	---	29.0	---		
13	---	10.0	---	10.0	7.0	20.0	22.0	24.0	32.0	30.0		
14	---	9.0	9.0	---	9.0	15.0	20.0	18.0	25.0	---		
15	---	7.0	9.0	8.0	10.0	15.0	20.0	24.0	30.0	30.0		
16	---	8.0	9.0	9.0	9.0	---	16.0	20.0	28.0	32.0		
17	---	---	9.0	2.0	10.0	---	12.0	25.0	29.0	28.0		
18	---	---	10.0	5.0	10.0	---	22.0	21.0	29.0	31.0		
19	---	12.0	10.0	---	10.0	---	23.0	21.0	25.0	31.0		
20	15.0	---	8.0	---	9.0	---	22.0	22.0	26.0	25.0		
21	16.0	14.0	12.0	5.0	8.0	13.0	20.0	---	28.0	---		
22	14.0	14.0	13.0	5.0	8.0	10.0	---	---	28.0	---		
23	14.0	13.0	13.0	3.0	10.0	10.0	23.0	24.0	32.0	---		
24	---	---	14.0	9.0	12.0	9.0	23.0	29.0	30.0	---		
25	---	---	---	6.0	12.0	18.0	26.0	26.0	30.0	---		
26	18.0	---	5.0	5.0	8.0	---	26.0	---	32.0	---		
27	20.0	---	5.0	10.0	8.0	---	25.0	---	---	---		
28	21.0	---	5.0	---	18.0	---	25.0	25.0	---	---		
29	22.0	12.0	4.0	---	---	---	---	---	---	---		
30	21.0	13.0	2.0	---	---	20.0	20.0	---	32.0	---		
31	22.0	---	4.0	---	---	17.0	---	20.0	---	---		
MEAN	19.0	13.5	8.5	6.0	8.5	16.0	20.0	23.5	27.5	30.5		

## BRAZOS RIVER BASIN

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 courthouse 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 National Geodetic Vertical Datum of 1929. Prior to Apr. 6, 1972, at datum 2.00 ft higher.

REMARKS.--Water-discharge records fair. Small diversions above station for irrigation and oilfield operation. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08080950. Gage-height telemeter located at station.

AVERAGE DISCHARGE.--59 years (water years 1925-83), 374 ft<sup>3</sup>/s (271,000 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.--Maximum discharge, 12,900 ft<sup>3</sup>/s May 14 at 0800 hours (gage height, 9.22 ft), no other peak above base of 11,000 ft<sup>3</sup>/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	10	31	22	406	45	46	45	337	74	.43	.00
2	80	8.6	26	37	331	40	46	37	245	59	.34	.00
3	102	5.6	26	29	203	37	44	34	203	49	.34	.00
4	42	5.4	23	33	143	37	36	33	168	38	1.6	.00
5	37	5.9	24	35	111	36	38	34	148	71	.69	.00
6	56	7.0	21	45	96	35	50	31	137	80	.45	.00
7	39	7.3	21	40	100	34	41	27	147	52	.23	.00
8	34	6.7	15	55	117	31	32	23	270	180	.18	.00
9	25	7.3	13	52	99	31	36	21	405	242	.10	.00
10	25	7.9	18	38	113	30	38	22	590	132	.08	.00
11	24	14	26	35	108	30	49	31	309	84	.07	18
12	25	9.7	25	32	99	31	38	1960	221	64	.05	43
13	27	8.7	22	27	105	35	34	2870	180	49	.00	45
14	24	7.8	24	28	111	36	27	8420	175	38	.00	18
15	25	7.1	24	24	104	37	26	2380	153	30	.00	25
16	25	7.2	23	21	89	41	26	1470	134	25	.02	15
17	23	8.3	24	22	66	68	26	799	107	21	.00	4.5
18	21	8.7	25	19	71	59	27	547	101	16	.00	1.3
19	17	11	22	19	68	46	28	383	101	12	1.7	.33
20	14	11	22	19	62	46	20	320	89	10	.00	.05
21	12	9.6	24	20	51	37	54	1070	73	7.2	.00	.04
22	11	12	23	29	53	32	55	1360	74	5.5	.00	.00
23	12	5.7	24	60	58	33	43	1100	64	5.5	.00	.00
24	12	4.5	22	60	59	34	38	564	54	4.4	.00	.00
25	11	6.3	18	62	44	37	54	370	64	3.6	.00	.00
26	11	17	16	64	40	87	58	291	67	2.5	.00	.00
27	13	38	23	59	44	92	61	333	87	1.4	.00	.00
28	12	39	24	69	49	70	57	275	318	.86	.00	.00
29	11	32	22	93	---	64	51	231	377	.65	.00	.00
30	10	29	18	83	---	64	47	210	122	.58	.00	.00
31	12	---	18	201	---	57	---	227	---	.47	.00	---
TOTAL	832	358.3	687	1432	3000	1392	1226	25518	5520	1358.66	6.28	170.22
MEAN	26.8	11.9	22.2	46.2	107	44.9	40.9	823	184	43.8	.20	5.67
MAX	102	39	31	201	406	92	61	8420	590	242	1.7	45
MIN	10	4.5	13	19	40	30	20	21	54	.47	.00	.00
AC-FT	1650	711	1360	2840	5950	2760	2430	50610	10950	2690	12	338
CAL YR 1982	TOTAL	188179.30	MEAN	516	MAX	12200	MIN	4.5	AC-FT	373300		
WTR YR 1983	TOTAL	41500.46	MEAN	114	MAX	8420	MIN	.00	AC-FT	82320		



## BRAZOS RIVER BASIN

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08082500 BRAZOS RIVER AT SEYMOUR, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: August 1959 to current year.

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 micromhos May 24, 1971; minimum daily, 559 micromhos May 22, 1979.

WATER TEMPERATURES: 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, 28,900 micromhos Jan. 27; minimum daily, 1,660 micromhos May 23.

WATER TEMPERATURES: Maximum daily, 38.0°C Aug. 1; minimum daily, 2.0°C Feb. 2.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 12...	1100	24	13100	14.0	1900	1800	550	130	2300
DEC 21...	1230	29	28100	9.0	2700	2600	710	220	5700
FEB 08...	1310	151	11300	9.0	1300	1100	330	110	2000
APR 26...	1620	62	20200	27.5	2700	2600	710	230	4000
MAY 16...	1000	1710	2780	17.0	800	710	270	31	300
SEP 30...	0910	--	22800	18.0	3300	3200	900	260	4200

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY 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 12...	24	13	110	1500	3800	.50	6.8	8370
DEC 21...	50	19	130	2100	8800	.50	3.7	17600
FEB 08...	25	11	160	1100	3100	.90	7.5	6760
APR 26...	35	24	100	2400	6200	.60	1.4	13600
MAY 16...	4.8	7.3	98	720	460	.40	9.7	1860
SEP 30...	33	31	80	2800	6900	.60	12	15200

## BRAZOS RIVER BASIN

08082500 BRAZOS RIVER AT SEYMOUR, TX--Continued

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1982 TO SEPTEMBER 1983

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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.	1982	832	13000	8290	18600	3700	8400	1500	3290	*
NOV.	1982	358.3	13300	8470	8190	3800	3690	1500	1450	*
DEC.	1982	687	19900	13000	24100	6300	11700	1900	3450	*
JAN.	1983	1432	18600	12000	46600	5800	22300	1800	6910	*
FEB.	1983	3000	11600	7360	59600	3300	26600	1300	10800	*
MAR.	1983	1392	15600	10000	37700	4700	17500	1600	6200	*
APR.	1983	1226	19200	12500	41300	6000	19900	1800	5990	*
MAY	1983	25518	4150	2570	177000	1100	73200	550	38100	620
JUNE	1983	5520	8620	5420	80800	2400	35100	1100	15700	1200
JULY	1983	1358.66	10700	6730	24700	3000	10900	1300	4630	*
AUG.	1983	6.28	19000	12300	208	5900	99	1900	32	*
SEPT	1983	170.22	5190	3230	1490	1400	621	680	312	770
TOTAL		41500.46	**	**	521000	**	230000	**	96900	**
WTD. AVG.		114	7350	4650	**	2100	**	860	**	1000

## SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	EQUIVALENT MEAN										
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
1	10300	15900	7220	17000	8500	16900	18000	22000	11900	5250	16600
2	11200	16200	13500	15100	7850	17400	18500	21700	9380	6970	17200
3	12100	15000	17700	14500	6540	17900	20900	21300	10500	9250	17700
4	5040	16100	22100	15400	5130	18100	21700	21800	11400	11000	18400
5	12200	15900	26700	16600	12300	17900	21000	21500	7940	7130	18900
6	15100	12700	24100	20000	14500	18100	10400	21100	10000	9970	19100
7	16800	15400	22900	21400	12500	17800	13600	21700	12800	12000	19300
8	12000	15300	21700	19000	11200	18000	14500	21600	11200	15900	19200
9	9000	15200	20100	22600	11400	18300	13900	21700	6500	11400	18900
10	10400	15000	18400	26700	11700	18500	15600	21300	5340	9500	19000
11	12600	13400	17000	26200	12500	18500	17400	20200	5330	8070	18800
12	13400	14400	17400	23400	13300	18300	18700	5400	7450	9050	18900
13	14200	14700	20600	20500	14000	18600	19900	4500	9590	10000	---
14	14400	14900	24300	20100	14200	18200	21400	3520	9340	9970	---
15	14700	13300	22900	19400	14400	18300	23000	3300	9450	11200	---
16	15100	12700	19500	17200	14700	17800	24500	2780	9000	11900	19600
17	15000	14800	17000	17300	15000	10400	25200	3430	8510	12500	---
18	15400	15000	20300	18800	15100	11400	24600	3650	9710	12600	---
19	16000	14800	23500	18000	15200	12200	23800	3420	12600	13000	20700
20	16500	13500	24000	16600	15600	15500	24500	3750	13200	13300	---
21	16100	12700	23500	16100	15400	17300	17400	2670	13500	13800	---
22	15600	15000	23200	15700	15900	17000	9410	2330	13000	14300	---
23	15200	15200	22600	15000	15600	17400	12500	1660	14000	14600	---
24	15100	15100	21700	15600	15900	18600	15100	3750	17500	15100	---
25	15200	14900	23000	16800	16000	19100	17200	8750	20300	15600	---
26	15300	11700	24200	22700	16100	16700	20200	7420	14600	15800	---
27	15200	12700	17800	28900	16600	13000	24100	6940	11700	16200	---
28	15000	11200	16800	23000	16300	8950	26500	6910	6390	16700	---
29	15800	9770	17100	19400	---	10200	27700	7340	2100	17100	---
30	15500	12700	17400	20700	---	14700	23400	7890	3460	17400	---
31	15700	---	17800	11100	---	17100	---	14700	---	17100	---
MEAN	13900	14200	20200	19100	13300	16400	19500	11000	10300	12400	18700

8730

## BRAZOS RIVER BASIN

173

08082500 BRAZOS RIVER AT SEYMOUR, TX--Continued

DAY	TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983											
	ONCE-DAILY											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.0	21.0	19.0	---	---	11.0	---	21.0	18.0	30.0	38.0	---
2	22.0	18.0	13.0	6.0	2.0	---	10.0	---	24.0	31.5	---	---
3	25.0	18.0	---	3.0	---	15.0	---	14.0	---	---	---	---
4	30.0	16.0	9.0	8.0	3.0	15.0	13.0	27.5	25.0	32.0	---	---
5	30.0	16.0	13.0	7.0	4.0	11.5	---	25.0	23.0	31.0	---	---
6	28.0	18.0	12.0	12.0	---	11.0	10.0	22.0	---	32.0	---	---
7	30.0	20.0	10.0	12.0	5.0	18.0	11.0	17.0	19.0	---	26.0	---
8	30.0	18.0	6.0	10.0	10.0	---	9.0	---	22.0	23.5	33.0	---
9	28.0	---	5.0	12.0	7.0	10.0	19.0	22.0	---	27.0	27.0	---
10	20.0	16.0	7.0	13.0	6.5	8.0	---	21.0	20.0	---	---	---
11	20.0	20.0	3.0	14.0	8.0	18.0	15.0	22.0	21.0	25.0	33.0	---
12	16.0	14.0	5.0	---	---	10.0	19.5	24.0	---	---	31.0	27.0
13	23.0	13.0	8.0	16.0	6.0	---	19.0	21.0	22.5	30.0	---	25.0
14	---	12.0	13.0	13.0	15.0	15.5	---	---	22.0	27.0	---	---
15	---	11.0	18.0	7.0	12.0	18.0	13.0	16.0	26.0	30.0	---	25.0
16	22.0	13.0	---	13.0	8.0	---	15.0	18.0	---	32.0	27.5	25.0
17	17.0	14.0	14.0	10.0	---	10.5	---	18.0	21.0	33.0	---	31.0
18	21.5	17.0	14.0	5.0	16.0	15.5	17.0	20.0	25.0	33.0	---	---
19	---	20.0	6.0	4.0	17.0	9.0	13.0	19.0	31.0	---	---	22.0
20	16.0	---	---	3.0	13.0	---	---	19.0	29.0	28.0	---	---
21	15.0	20.0	---	3.0	11.0	12.5	21.5	19.0	---	25.5	---	13.0
22	18.0	22.0	---	5.0	---	8.0	22.0	19.5	26.0	25.0	---	---
23	23.0	8.0	---	---	8.0	10.0	18.0	21.0	27.0	26.5	---	---
24	18.0	8.0	---	10.0	10.5	13.0	---	20.0	---	33.0	---	---
25	20.0	---	---	10.0	---	---	19.0	23.5	23.0	34.0	---	---
26	16.0	6.0	---	---	7.5	14.5	16.0	22.0	25.0	32.0	---	---
27	23.0	6.0	---	3.5	16.0	16.0	19.0	27.0	28.0	---	---	---
28	16.0	---	---	5.0	---	13.5	18.0	21.5	28.0	33.0	---	---
29	21.0	14.0	7.0	7.0	---	18.0	23.5	---	25.0	24.0	---	---
30	18.0	15.0	9.0	---	---	21.0	22.0	22.0	31.5	25.0	---	---
31	---	---	5.0	10.0	---	13.0	---	15.0	---	34.0	---	---
MEAN	21.5	15.0	10.0	8.5	9.5	13.5	16.5	20.5	24.5	29.5	31.0	24.0



## 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>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1974 to current year.

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.....	1,331.2	25,180
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 furnished by Freese and Nichols, Inc., Consulting Engineers. Record of diversions furnished 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, 22,810 acre-ft Oct. 1 at 0100 hours (elevation, 1,329.92 ft); minimum, 16,410 acre-ft Sept. 30 at 2300 hours (elevation, 1,325.74 ft).

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

1,325.0	15,470	1,328.0	19,630
1,326.0	16,760	1,329.0	21,230
1,327.0	18,130	1,330.0	22,950

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22760	22200	21620	21280	21630	21430	21530	20770	20180	19650	18700	17320
2	22790	22020	21600	21280	21670	21430	21550	20640	20260	19600	18660	17280
3	22740	21830	21600	21280	21650	21420	21530	20630	20260	19570	18600	17240
4	22740	21830	21600	21280	21650	21400	21400	20610	20180	19550	18560	17220
5	22710	21870	21600	21280	21680	21400	21370	20530	20160	19630	18510	17170
6	22690	21990	21570	21320	21670	21380	21330	20550	20080	19570	18540	17130
7	22640	22010	21570	21350	21630	21380	21330	20470	20000	19540	18440	17080
8	22670	22010	21470	21380	21630	21380	21370	20370	20020	19490	18390	17010
9	22500	21780	21470	21350	21630	21370	21380	20340	20100	19460	18390	16980
10	22430	21750	21480	21330	21620	21370	21420	20390	20050	19430	18360	16960
11	22390	21680	21480	21370	21600	21370	21430	20390	20000	19400	18350	17100
12	22360	21520	21480	21330	21600	21350	21420	20390	20000	19380	18310	17120
13	22460	21580	21370	21370	21580	21330	21320	20470	19990	19510	18280	17020
14	22430	21380	21330	21370	21570	21330	21320	20370	20000	19460	18220	17000
15	22410	21430	21350	21320	21570	21330	21320	20370	19970	19380	18190	16970
16	22340	21400	21320	21370	21550	21330	21320	20340	20000	19370	18130	16970
17	22360	21370	21450	21400	21550	21420	21320	20320	20130	19350	18100	16930
18	22360	21380	21430	21350	21530	21420	21300	20260	20050	19300	18020	16860
19	22220	21450	21380	21330	21530	21400	21000	20260	20000	19270	17990	16840
20	22110	21380	21400	21350	21520	21380	20970	20210	19960	19210	17950	16690
21	22090	21450	21380	21380	21520	21370	20980	20210	19890	19150	17890	16660
22	22130	21380	21400	21380	21500	21370	20930	20390	19820	19120	17820	16640
23	22150	21280	21380	21380	21500	21370	20930	20320	19770	19090	17770	16610
24	22110	21280	21320	21400	21500	21380	20920	20290	19770	19060	17710	16580
25	22080	21350	21150	21430	21480	21520	20880	20320	19820	19010	17670	16540
26	22130	21480	21230	21370	21480	21520	20850	20280	19750	18950	17630	16530
27	22160	21520	21220	21370	21470	21500	20840	20280	19680	18910	17600	16520
28	22180	21570	21180	21500	21450	21570	20800	20210	19690	18850	17540	16490
29	22200	21600	21150	21430	---	21530	20800	20210	19650	18820	17500	16450
30	22230	21600	21170	21470	---	21500	20820	20200	19650	18760	17460	16410
31	22230	---	21180	21600	---	21630	---	20180	---	18720	17390	---
MAX	22790	22200	21620	21600	21680	21630	21550	20770	20260	19650	18700	17320
MIN	22080	21280	21150	21280	21450	21330	20800	20180	19650	18720	17390	16410
(†)	1329.59	1329.22	1328.97	1329.22	1329.13	1329.24	1328.75	1328.35	1328.01	1327.40	1326.47	1325.74
(+)	-580	-630	-420	+420	-150	+180	-810	-640	-530	-930	-1330	-980
(††)	111	99	111	91	87	95	106	113	134	179	194	162

CAL YR 1982 MAX 53780 MIN 17740 + 2200 †† 1337  
WTR YR 1983 MAX 22790 MIN 16410 + -6400 †† 1482

† Elevation, in feet, at end of month.

+ Change in contents, in acre-feet.

†† Diversions, in acre-feet, for municipal use by North Central Texas Water Authority.



## BRAZOS RIVER BASIN

08082800 MILLERS CREEK RESERVOIR NEAR BOMARTON, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1975 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JUL 20...	0940	416	27.0	170	40	48	12	17

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY 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 CONSTI- TUENTS, DIS- SOLVED (MG/L)
JUL 20...	.6	7.6	130	41	26	.20	1.7	231

## BRAZOS RIVER BASIN

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08082950 ELM CREEK NEAR PROFFITT, TX  
(Reconnaissance partial-record station)

LOCATION.--Lat 33°11'00", long 98°53'40", Young County, Hydrologic Unit 12060101, at bridge on U.S. Highway 380 in Proffitt community, 1,000 ft (305 m) west of Farm Road 578 south, 5.5 mi (8.9 km) upstream from mouth, and about 9 mi (14 km) west of Newcastle.

DRAINAGE AREA.--275 mi<sup>2</sup> (712 km<sup>2</sup>).

PERIOD OF RECORD.--Occasional discharge measurements: October 1968 to current year. Chemical analyses: December 1968 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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...	1005	.88	4930	21.5	1200	1100	230	160	570
DEC 27...	0935	3.2	4280	4.5	1100	880	200	140	470
FEB 07...	1110	1.4	4500	3.5	1100	930	210	150	520
MAR 21...	0855	1.1	3240	7.0	740	600	140	94	360
MAY 02...	1010	.15	4690	19.5	1100	870	190	140	560
JUN 14...	1010	1.2	859	23.5	230	87	56	21	80

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY 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 04...	7.2	7.4	170	280	1500	.30	7.3	2860
DEC 27...	6.4	4.1	200	240	1200	.30	2.7	2380
FEB 07...	6.9	3.8	210	300	1200	.30	1.2	2510
MAR 21...	5.9	3.9	140	190	870	.30	1.9	1740
MAY 02...	7.7	5.7	180	260	1300	.30	3.5	2570
JUN 14...	2.4	6.4	140	43	170	.30	8.9	470

## BRAZOS RIVER BASIN

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 National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Some small diversions above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--21 years (water years 1963-83), 10.6 ft<sup>3</sup>/s (0.63 in/yr), 7,680 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.--Maximum discharge, 4,880 ft<sup>3</sup>/s May 13 at 0600 hours (gage height, 20.20 ft), no other peak above base of 300 ft<sup>3</sup>/s; minimum, 0.069 ft<sup>3</sup>/s Sept. 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	2.8	3.1	5.4	6.9	6.9	5.7	2.8	8.5	3.0	2.0	.94
2	3.1	2.9	3.1	5.4	6.6	7.0	5.7	2.7	6.0	3.0	2.1	.89
3	3.0	3.0	3.3	5.2	6.6	6.9	5.8	2.5	5.3	2.9	1.8	.87
4	3.0	3.0	3.3	5.3	6.3	6.9	5.9	2.4	4.9	2.9	1.8	.82
5	2.9	3.0	3.2	5.4	6.0	6.4	5.7	2.3	4.8	17	1.8	.79
6	2.9	2.9	3.2	5.4	5.9	6.2	5.7	2.2	30	7.7	1.7	.79
7	3.0	2.8	3.2	5.5	5.8	6.1	5.7	2.2	69	3.4	1.6	.77
8	3.0	2.8	3.2	5.6	5.8	6.1	5.8	2.1	12	2.9	1.6	.74
9	2.9	2.7	3.3	5.7	5.8	6.0	6.0	2.0	6.6	2.8	1.6	.74
10	2.9	2.7	3.6	5.6	5.7	5.8	6.1	2.2	5.5	2.8	1.5	.74
11	3.0	2.6	3.7	5.6	5.5	5.9	6.2	15	5.1	2.7	1.5	.74
12	3.3	2.6	3.7	5.7	5.3	5.9	6.1	31	4.8	2.7	1.4	.75
13	3.2	2.9	3.6	5.8	5.3	6.1	5.8	2370	4.5	2.6	1.4	.75
14	3.1	2.7	3.6	5.8	5.4	6.1	5.4	243	4.1	2.6	1.6	.74
15	3.0	2.6	3.5	5.9	5.5	6.3	5.3	68	4.0	2.7	1.5	.75
16	3.0	2.5	3.6	6.1	5.5	6.3	5.2	20	14	2.7	1.4	.79
17	3.0	2.6	3.6	6.2	5.6	6.0	5.1	10	9.0	2.7	1.3	.76
18	2.9	2.6	3.7	6.8	5.7	5.9	5.0	7.1	11	2.7	1.3	.76
19	2.9	2.6	3.7	6.9	5.9	6.1	4.7	5.9	4.7	2.5	1.3	.76
20	2.8	2.6	3.8	7.1	6.0	5.9	4.5	5.7	4.0	2.5	1.2	.75
21	2.9	2.6	3.9	8.4	6.1	5.7	4.6	11	3.8	2.5	1.2	.69
22	2.9	2.7	4.0	8.0	6.1	5.7	4.3	7.1	3.8	2.4	1.1	.69
23	2.9	2.7	4.1	7.9	6.3	5.8	4.0	5.6	3.7	2.3	1.1	.77
24	2.9	2.7	4.3	7.5	6.6	5.8	3.8	5.1	3.7	2.2	1.1	.84
25	2.9	2.9	4.2	7.3	6.6	6.0	3.8	5.1	3.5	2.2	1.0	.85
26	2.9	3.3	4.4	7.1	6.7	6.4	3.7	5.1	7.3	2.2	1.0	.85
27	2.9	3.4	4.6	7.0	6.7	5.8	3.6	5.5	3.5	2.1	1.0	.84
28	2.8	3.2	4.6	7.0	6.8	5.7	3.3	5.4	3.2	2.0	.95	.84
29	2.8	3.1	4.6	7.0	---	5.7	3.3	4.7	3.0	1.9	.97	.84
30	2.8	3.0	4.7	6.9	---	5.6	3.0	18	3.0	1.8	1.0	.79
31	2.8	---	4.9	7.8	---	5.9	---	21	---	2.0	.96	---
TOTAL	91.6	84.5	117.3	198.3	169.0	188.9	148.8	2892.7	256.3	98.4	42.78	23.64
MEAN	2.95	2.82	3.78	6.40	6.04	6.09	4.96	93.3	8.54	3.17	1.38	.79
MAX	3.3	3.4	4.9	8.4	6.9	7.0	6.2	2370	69	17	2.1	.94
MIN	2.8	2.5	3.1	5.2	5.3	5.6	3.0	2.0	3.0	1.8	.95	.69
CFSM	.01	.01	.02	.03	.03	.03	.02	.41	.04	.01	.006	.003
IN.	.01	.01	.02	.03	.03	.03	.02	.47	.04	.02	.01	.00
AC-FT	182	168	233	393	335	375	295	5740	508	195	85	47
CAL YR 1982 TOTAL	10761.75			MEAN 29.5	MAX 1940	MIN .63	CFSM .13	IN 1.76	AC-FT 21350			
WTR YR 1983 TOTAL	4312.22			MEAN 11.8	MAX 2370	MIN .69	CFSM .05	IN .70	AC-FT 8550			

BRAZOS RIVER BASIN

179

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>.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,612.45 ft National Geodetic Vertical Datum of 1929. Prior to Dec. 21, 1973, at datum 0.80 ft higher.

REMARKS.--Water-discharge records fair. Lake Sweetwater (capacity, 11,900 acre-ft) is located on a tributary upstream from gage.

AVERAGE DISCHARGE.--16 years, 54.9 ft<sup>3</sup>/s (39,780 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.

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.--Maximum discharge, 1,730 ft<sup>3</sup>/s May 16 at 0300 hours (gage height, 13.34 ft), no other peak above base of 1,000 ft<sup>3</sup>/s; minimum daily, 0.18 ft<sup>3</sup>/s Sept. 22-24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	18	19	21	319	20	20	14	30	16	5.9	1.6
2	19	18	19	22	46	20	20	14	32	12	5.9	1.9
3	23	17	19	21	29	20	20	14	25	12	5.9	1.1
4	25	17	19	20	27	20	21	14	23	11	5.5	1.1
5	23	17	19	20	26	20	21	14	25	12	5.0	2.3
6	22	17	19	20	25	20	20	13	67	12	4.7	2.1
7	22	17	20	20	24	20	21	14	36	18	6.4	2.1
8	22	17	20	20	24	20	21	14	137	25	6.4	2.1
9	21	16	20	20	23	20	22	14	67	18	6.4	2.3
10	21	16	21	21	23	20	20	14	32	13	6.4	2.9
11	20	16	21	20	24	20	15	16	26	11	5.5	3.5
12	20	16	20	20	24	20	15	23	24	10	4.8	5.1
13	20	16	20	21	24	20	15	46	23	9.3	4.7	10
14	20	15	20	20	24	20	14	166	22	8.5	4.1	1.9
15	21	15	19	21	23	20	14	938	21	13	3.7	.45
16	20	15	19	21	22	21	14	940	20	21	3.5	.51
17	20	15	19	22	22	23	14	43	20	12	3.2	8.7
18	20	15	19	24	22	21	15	29	22	7.4	2.8	3.8
19	20	16	20	22	22	20	14	25	46	6.9	2.6	1.8
20	20	16	19	22	21	20	14	23	32	6.9	2.6	1.1
21	20	16	19	24	21	20	14	25	24	6.6	2.3	.35
22	20	16	20	25	21	19	14	27	21	5.9	2.1	.18
23	20	16	20	26	21	19	18	23	20	5.9	1.9	.18
24	19	16	20	26	21	19	17	23	18	5.9	1.4	.18
25	19	16	20	25	21	19	15	21	17	5.9	2.1	.40
26	19	18	20	24	20	21	15	29	14	5.9	2.1	.48
27	19	20	20	23	21	22	15	23	14	5.7	2.1	.42
28	19	21	20	23	21	19	14	23	15	5.9	1.6	.48
29	19	20	20	23	---	18	14	28	17	5.8	1.6	.54
30	19	19	20	22	---	20	14	22	14	5.8	1.6	.54
31	18	---	20	26	---	20	---	22	---	5.9	1.6	---
TOTAL	628	503	610	685	961	621	500	2654	904	320.2	116.4	60.11
MEAN	20.3	16.8	19.7	22.1	34.3	20.0	16.7	85.6	30.1	10.3	3.75	2.00
MAX	25	21	21	26	319	23	22	940	137	25	6.4	10
MIN	18	15	19	20	20	18	14	13	14	5.7	1.4	.18
AC-FT	1250	998	1210	1360	1910	1230	992	5260	1790	635	231	119
CAL YR 1982	TOTAL	41870.00	MEAN	115	MAX	4210	MIN	15	AC-FT	83050		
WTR YR 1983	TOTAL	8562.71	MEAN	23.5	MAX	940	MIN	.18	AC-FT	16980		

## BRAZOS RIVER BASIN

08083240 CLEAR FORK BRAZOS RIVER AT HAWLEY, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1979, October 1981 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1967 to September 1979, October 1981 to current year.

WATER TEMPERATURES: October 1967 to September 1979, October 1981 to current year.

INSTRUMENTATION.--Beginning Apr. 21, 1982, specific conductance and water temperature are recorded continuously at this station.

REMARKS.--Where maximum and minimum specific conductance values are not shown, mean values are 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 (1967-70, 1972-79, 1981-83): Maximum daily, 11,500 micromhos Oct. 5, 1969; minimum daily, 163 micromhos Sept. 11, 1969.

WATER TEMPERATURES (1967-69, 1972-79, 1981-83): Maximum daily, 35.0°C Sept. 8, 1982; minimum daily, 0.0°C Dec. 16, 1967, Jan. 3, 4, 1974.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 6,800 micromhos May 14; minimum daily, 410 micromhos May 16.

WATER TEMPERATURES: Minimum daily, 4.0°C Jan. 4.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
MAY 02...	1615	13	5630	24.0	2000	1800	480	190	660
JUN 13...	1545	22	2490	24.0	810	660	200	75	240
AUG 01...	1610	5.9	4880	28.0	1600	1400	380	150	570

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY 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 02...	6.7	6.7	230	1900	830	.60	12	4220
JUN 13...	3.8	7.5	150	790	300	.40	11	1710
AUG 01...	6.5	7.6	170	1500	800	.60	11	3520



## BRAZOS RIVER BASIN

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08083240 CLEAR FORK BRAZOS RIVER AT HAWLEY, TX--Continued

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1982 TO SEPTEMBER 1983

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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.	1982	628	5180	3720	6310	810	1380	1600	2670	1700
NOV.	1982	503	5350	3850	5230	850	1150	1600	2210	1700
DEC.	1982	610	5030	3610	5940	780	1290	1500	2520	1700
JAN.	1983	685	5870	4240	7850	960	1770	1800	3330	1900
FEB.	1983	961	4450	3180	8260	680	1760	1300	3490	1500
MAR.	1983	621	5300	3810	6390	840	1400	1600	2710	1700
APR.	1983	500	5540	3990	5390	890	1200	1700	2280	1800
MAY	1983	2654	1660	1170	8410	240	1720	500	3560	570
JUNE	1983	904	2830	1990	4860	400	974	840	2050	990
JULY	1983	320.2	4770	3410	2950	740	637	1400	1250	1600
AUG.	1983	116.4	4910	3520	1110	760	239	1500	468	1600
SEPT	1983	60.11	5330	3840	623	840	137	1600	264	1700
TOTAL		8562.71	**	**	63300	**	13700	**	26800	**
WTD. AVG.		24	3830	2740	**	590	**	1200	**	1300

## SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	5370	5300	5330	5310	5190	5270	5320	5240	5270	4940	4800	4870
2	5400	5290	5350	5330	5300	5320	5250	5150	5190	4840	4790	4810
3	5360	4490	5220	5320	5210	5260	5260	5190	5220	5340	4830	4920
4	5370	3700	4940	5420	5190	5290	5230	5170	5210	5080	4970	5010
5	5400	4620	5250	5400	5300	5320	5160	5110	5130	5100	5030	5070
6	5400	5350	5380	5320	5290	5310	5150	4860	5090	5170	5110	5130
7	5480	5360	5420	5320	5170	5230	5130	5100	5120	5260	5160	5220
8	5330	5060	5160	5290	5200	5240	5140	5100	5120	5320	5250	5270
9	5120	5060	5090	5320	5260	5280	5160	5130	5150	5400	5320	5350
10	5220	5100	5180	5390	5320	5360	5130	5030	5080	5500	5400	5460
11	5180	4920	5020	5430	5380	5400	5040	4910	4990	5630	5500	5530
12	5110	4980	5060	5460	5390	5430	5130	4970	5000	5620	5540	5580
13	5020	4950	4990	5600	5430	5460	4990	4870	4920	5710	5620	5650
14	5080	4970	5020	5470	5430	5450	4920	4860	4880	5760	5670	5710
15	5030	4950	4980	5490	5430	5460	4990	4930	4960	5820	5710	5780
16	5030	4840	4930	5490	5450	5470	5050	4940	5010	5880	5820	5840
17	4920	4810	4850	5500	5470	5490	5100	4980	5020	5950	5880	5900
18	5220	4930	5100	5490	5400	5430	5040	4960	5000	6060	5970	6010
19	5290	5230	5260	5420	5390	5400	5050	4970	4990	6180	6070	6130
20	5310	5270	5290	5450	5400	5420	4980	4920	4950	6350	6180	6270
21	5310	5260	5290	5460	5420	5440	5000	4900	4930	6350	6300	6320
22	5320	5260	5280	5480	5440	5460	4960	4910	4940	6310	6260	6280
23	5340	5320	5330	5460	5440	5450	4980	4940	4960	6350	6280	6320
24	5330	5240	5270	5530	5440	5480	4990	4940	4970	6390	6300	6350
25	5290	5240	5270	5500	5400	5470	5000	4970	4990	6470	6350	6420
26	5310	5280	5300	5390	5030	5240	5090	4980	5000	6500	6460	6480
27	5340	5200	5300	5220	5000	5140	4990	4960	4970	6640	6500	6540
28	5270	4990	5130	5260	5220	5230	4980	4920	4960	6590	6550	6570
29	5310	5200	5250	5300	5230	5270	5120	4930	4970	6610	6560	6580
30	5320	5240	5270	5340	5230	5300	5060	4970	4990	6690	6620	6650
31	5290	5100	5170	---	---	---	4990	4930	4950	6720	6680	6700
MONTH	5480	3700	5180	5600	5000	5360	5320	4860	5030	6720	4790	5830

## BRAZOS RIVER BASIN

08083240 CLEAR FORK BRAZOS RIVER AT HAWLEY, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	6660	3080	4100	---	---	5310	5170	5010	5120	5630	5410	5580
2	3260	3120	3180	---	---	5310	5370	5060	5170	5630	5520	5550
3	3380	3260	3330	---	---	5310	5470	5390	5430	5550	5490	5530
4	3570	3390	3480	---	---	5310	5540	5420	5480	5610	5540	5570
5	3760	3570	3660	---	---	5310	5490	4680	5280	5660	5580	5610
6	3990	3770	3870	---	---	5310	5440	5410	5430	5690	5480	5640
7	4230	4000	4120	---	---	5310	5540	5420	5480	5720	5490	5670
8	4410	4240	4330	---	---	5310	5580	5510	5550	5710	5480	5660
9	4540	4420	4480	---	---	5310	5610	5520	5570	5680	5420	5620
10	4650	4540	4590	---	---	5310	5650	5600	5620	5650	5420	5600
11	4750	4660	4700	---	---	5310	5670	5470	5630	5580	5380	5480
12	4840	4610	4790	---	---	5310	5640	5600	5620	5780	5470	5580
13	4930	4700	4870	---	---	5310	5650	5590	5620	6570	4450	5710
14	5160	4730	4970	---	---	5310	5640	5590	5610	6800	640	4640
15	5180	5080	5130	---	---	5310	5600	5540	5580	620	540	564
16	5280	5180	5210	---	---	5270	5600	5570	5590	840	410	705
17	5260	5190	5230	---	---	5210	5690	5470	5610	1150	860	1010
18	5260	5210	5240	---	---	5270	5670	5470	5640	1510	1160	1330
19	5260	5020	5230	---	---	5310	5700	5470	5630	1870	1520	1700
20	5260	5210	5240	---	---	5310	5680	5470	5660	2230	1870	2060
21	5280	5260	5270	---	---	5310	5670	5420	5620	2660	2080	2440
22	5290	5260	5280	---	---	5340	5630	5590	5610	3080	2710	2910
23	---	---	5270	---	---	5340	5720	5610	5650	3790	3110	3420
24	---	---	5270	---	---	5340	5810	5690	5750	3870	3720	3790
25	---	---	5270	---	---	5340	5910	5760	5840	4060	3870	3970
26	---	---	5310	---	---	5270	5950	5880	5910	4510	4070	4290
27	---	---	5270	---	---	5240	5890	5390	5570	4660	4390	4550
28	---	---	5270	---	---	5340	5480	5390	5430	4540	3690	4240
29	---	---	---	5420	5300	5340	5570	5440	5490	4160	3400	3830
30	---	---	---	5330	5130	5280	5580	5490	5530	4880	3410	3960
31	---	---	---	5290	4960	5160	---	---	---	4980	3650	4660
MONTH	6660	3080	4710	5420	4960	5300	5950	4680	5560	6800	410	4090

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	5000	4520	4780	3800	3440	3640	4880	4440	4600	5140	5080	5110
2	4920	3730	4300	3990	3780	3880	4730	4480	4610	5120	5070	5090
3	4030	2980	3530	4120	3980	4050	4760	4480	4660	5120	5070	5090
4	3690	3360	3470	4290	3970	4130	4740	4490	4690	5120	5070	5090
5	4300	2300	3730	4390	4260	4320	4790	4700	4730	5130	5050	5100
6	4010	1270	2560	4430	4360	4380	4820	4720	4770	5110	5060	5080
7	2550	1860	2180	4720	4030	4250	4820	4760	4790	5330	5280	5300
8	4090	1400	2640	5560	4780	5240	4830	4770	4800	5330	5080	5280
9	1640	1320	1450	5810	5430	5700	4870	4800	4830	5270	5070	5200
10	1540	1330	1430	5960	5790	5890	4930	4850	4880	5260	5010	5190
11	1860	1470	1680	5940	5850	5910	5000	4890	4940	5240	5010	5150
12	2150	1870	2020	5840	5750	5810	5050	4960	5000	5260	5070	5190
13	2530	1990	2500	5770	5710	5750	5080	5000	5030	5290	5070	5240
14	2860	2400	2690	5720	5660	5690	5120	5020	5070	5260	4980	5190
15	2960	2870	2920	5660	4490	5410	5130	5070	5100	5260	5000	5170
16	3020	2960	2980	5120	4260	4650	5140	5070	5110	5530	5260	5420
17	3190	3030	3090	4180	2830	3830	5130	5080	5110	5580	5470	5530
18	3500	3070	3330	4880	4080	4440	5140	5070	5100	5590	5380	5520
19	5010	3480	4140	4950	4730	4880	5150	5090	5110	5890	5400	5710
20	5110	4440	4970	4730	4330	4590	5170	5110	5140	5980	5890	5950
21	4350	2280	3360	4510	4320	4480	5150	5090	5130	6000	5940	5980
22	2210	1700	1870	4750	4320	4530	5150	5080	5120	6000	5910	5960
23	1790	1700	1730	4840	4640	4770	5170	5110	5140	5920	5810	5870
24	2010	1790	1910	4560	4330	4440	5150	5110	5130	5840	5760	5800
25	2230	1980	2100	4580	4330	4450	5130	5090	5120	5830	5760	5810
26	2520	2050	2370	4710	4330	4550	5150	5090	5120	5950	5820	5890
27	2860	2380	2650	4710	4650	4680	5140	5100	5120	6020	5940	5990
28	3160	2870	3000	4700	4650	4670	5140	5090	5110	5980	5910	5950
29	3410	3180	3320	4690	4630	4660	5130	5080	5100	5940	5860	5910
30	3630	3320	3430	4660	4620	4640	5130	5080	5100	5980	5930	5960
31	---	---	---	4660	4380	4570	5140	5080	5100	---	---	---
MONTH	5110	1270	2870	5960	2830	4740	5170	4440	4980	6020	4980	5490

## BRAZOS RIVER BASIN

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08083240 CLEAR FORK BRAZOS RIVER AT HAWLEY, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	25.5	24.0	25.0	21.0	20.0	20.5	14.5	12.0	13.0	6.0	4.5	5.0
2	26.5	25.0	25.5	20.5	18.5	19.0	14.5	13.5	14.0	6.0	5.0	5.5
3	26.0	24.5	25.5	18.0	15.0	16.5	14.0	12.5	13.5	5.5	---	---
4	29.5	24.0	26.0	14.5	12.5	13.5	13.0	12.0	12.0	6.0	4.0	5.0
5	27.5	25.5	26.0	13.0	12.0	12.5	12.0	10.5	11.5	6.5	5.0	6.0
6	26.5	25.0	26.0	14.5	12.5	13.5	11.5	10.5	11.0	7.5	5.5	6.5
7	26.0	25.0	25.5	16.5	---	15.0	12.0	10.0	11.0	8.5	7.0	7.5
8	26.0	25.5	25.5	17.5	16.0	16.5	11.5	10.0	10.5	9.5	7.5	9.0
9	25.5	22.0	23.0	18.5	17.0	17.5	9.5	7.0	8.5	10.0	---	---
10	21.5	19.5	20.0	19.0	17.5	18.5	8.5	7.5	8.0	9.5	8.5	9.0
11	19.5	18.5	19.0	20.0	17.5	19.0	8.5	7.5	8.0	9.0	8.0	8.5
12	19.0	18.0	18.5	18.5	15.5	17.0	7.5	6.0	6.5	9.5	7.5	8.5
13	18.0	16.5	17.5	15.0	13.0	13.5	7.5	6.0	6.5	10.5	---	---
14	18.0	16.5	17.5	12.5	11.0	12.0	9.0	7.0	8.0	11.0	---	---
15	18.5	17.0	18.0	11.0	9.5	10.0	9.0	8.0	8.5	10.0	---	---
16	18.5	17.0	18.0	11.0	---	10.0	9.0	8.0	8.5	9.0	7.5	8.0
17	19.5	17.0	18.5	12.0	10.5	11.0	10.0	8.0	9.0	9.5	8.0	8.5
18	20.5	18.5	19.5	14.0	11.5	12.5	11.0	9.5	10.0	9.5	9.0	9.0
19	20.5	19.5	20.0	16.0	14.0	15.0	10.5	9.5	10.0	9.5	9.0	9.5
20	19.5	17.0	18.0	16.0	15.0	15.5	10.0	9.0	9.5	9.0	7.5	8.5
21	17.0	15.5	16.0	15.5	13.5	14.5	10.5	8.5	9.5	7.5	6.0	6.5
22	15.5	15.0	15.5	17.0	15.0	16.0	11.5	9.5	10.5	7.5	6.0	6.5
23	16.0	14.5	15.0	16.5	12.5	14.5	12.5	10.5	11.5	7.0	5.5	6.5
24	16.0	14.5	15.5	12.5	9.0	10.0	12.5	12.0	12.5	8.0	6.0	7.0
25	16.0	15.0	15.5	9.0	7.5	8.5	12.0	9.5	10.5	8.5	7.0	7.5
26	16.5	---	16.0	8.5	7.5	8.5	9.5	7.5	8.0	8.5	7.5	8.0
27	18.0	16.0	17.0	8.5	7.5	8.0	7.5	7.0	7.0	8.0	7.0	7.5
28	18.5	17.5	18.0	10.0	7.0	8.5	7.5	7.0	7.0	10.0	8.0	9.0
29	18.0	16.5	17.0	11.5	9.5	10.0	7.0	6.0	6.5	11.5	9.5	10.5
30	18.0	16.0	17.0	12.5	10.5	11.5	6.0	5.5	6.0	12.0	10.5	11.0
31	20.5	18.0	19.0	---	---	---	6.0	5.5	6.0	12.5	---	---
MONTH	29.5	14.5	20.0	21.0	7.0	13.5	14.5	5.5	9.5	12.5	4.0	8.0

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

## BRAZOS RIVER BASIN

08083240 CLEAR FORK BRAZOS RIVER AT HAWLEY, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	19.5	17.5	18.5	30.0	27.0	28.5						
2	24.0	19.0	21.0	30.0	27.5	29.0						
3	27.0	22.5	25.0	30.5	27.5	29.5						
4	26.5	24.5	26.0	31.0	28.5	29.5						
5	25.5	22.5	24.5	31.0	28.5	29.5						
6	24.0	13.5	19.0	28.5	26.5	27.5						
7	21.5	17.5	19.0	29.0	27.0	27.5						
8	24.0	20.0	22.0	28.5	25.5	27.0						
9	25.5	22.5	23.5	29.0	26.5	27.5						
10	25.0	24.0	24.5	29.0	27.0	27.5						
11	25.5	23.5	24.5	---	---	---						
12	27.0	24.0	25.5	---	---	---						
13	28.0	25.0	27.5	---	---	---						
14	27.5	25.5	26.5	---	---	---						
15	26.5	24.5	25.5	---	---	---						
16	25.5	24.0	24.5	---	---	---						
17	25.0	23.5	24.0	---	---	---						
18	28.0	24.0	25.5	---	---	---						
19	28.5	25.0	27.0	---	---	---						
20	29.0	26.5	27.5	---	---	---						
21	29.0	26.5	28.0	---	---	---						
22	29.0	27.0	28.0	---	---	---						
23	28.0	27.0	27.5	---	---	---						
24	28.0	26.0	27.0	---	---	---						
25	28.0	26.0	27.0	---	---	---						
26	29.0	26.0	27.5	---	---	---						
27	30.0	27.5	28.5	---	---	---						
28	29.5	27.5	28.5	---	---	---						
29	28.5	27.0	27.5	---	---	---						
30	29.0	26.0	27.0	---	---	---						
31	---	---	---	---	---	---						
MONTH	30.0	13.5	25.5	31.0	25.5	28.5						

## BRAZOS RIVER BASIN

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>.

## WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WRD TX-74-1: 1972(M).

GAGE.--Water-stage recorder. Datum of gage is 1,615.98 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair. No known diversion above station.

AVERAGE DISCHARGE.--15 years (water years 1969-83), 8.91 ft<sup>3</sup>/s (0.58 in/yr), 6,460 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.--Maximum discharge, 222 ft<sup>3</sup>/s June 5 at 2000 hours (gage height, 5.62 ft) no peak above base of 300 ft<sup>3</sup>/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.01	14	.79	.04	.04	1.3	.00	.00	.00
2	.00	.00	.00	.01	7.9	.84	.06	.00	.36	.00	.00	.00
3	8.0	.00	.00	.01	3.3	.87	.08	.00	.13	.00	.00	.00
4	.17	.00	.00	.01	1.5	.87	.08	.00	.06	.00	.00	.00
5	.07	.00	.00	.01	1.2	.88	.26	.00	47	.00	.00	.00
6	.03	.00	.00	.01	1.1	.79	.41	.00	83	.00	.00	.00
7	.02	.00	.00	.01	1.1	.79	.24	.00	8.8	.00	.00	.00
8	.00	.00	.00	.01	1.1	.79	.29	.00	1.4	.00	.00	.00
9	.00	.00	.00	.01	1.0	.79	.37	.00	.58	.00	.00	.00
10	.00	.00	.00	.01	.88	.72	.42	.00	.15	.00	.00	.00
11	.00	.00	.01	1.5	.79	.72	1.6	.00	.07	.00	.00	.00
12	.00	.00	.01	.78	.72	.72	3.1	.00	.03	.00	.00	.00
13	.00	.00	.01	.35	.88	.72	.67	.00	.01	.00	.00	.00
14	.00	.00	.01	.26	.93	.72	.30	.00	.01	.00	.00	.00
15	.00	.00	.01	.20	1.1	.80	.16	.00	.00	11	.00	.00
16	.00	.00	.01	.17	1.0	1.0	.11	.00	.00	7.5	.00	.00
17	.00	.00	.01	.16	1.0	1.0	.07	.00	6.2	3.3	.00	.00
18	.00	.00	.01	.21	1.0	1.0	.04	.00	.04	1.3	.00	1.0
19	.00	.00	.01	.34	1.0	1.0	.03	.00	.01	.24	.00	.10
20	.00	.00	.01	.31	.97	1.0	.01	.00	.01	.04	.00	.03
21	.00	.00	.01	1.5	.87	1.0	.00	.00	.00	.02	.00	.05
22	.00	.00	.01	2.5	.87	1.0	.00	.00	.00	.01	.00	.00
23	.00	.00	.01	3.6	.87	1.0	2.0	.00	.00	.00	.00	.00
24	.00	.00	.01	3.5	.87	1.0	6.8	.00	.00	.00	.00	.00
25	.00	.00	.01	2.8	.79	1.0	1.6	.00	.00	.00	.00	.00
26	.00	.00	.01	2.0	.79	2.5	1.3	.00	.00	.00	.00	.00
27	.00	.00	.01	1.2	.79	1.5	1.0	11	.00	.00	.00	.00
28	.00	.00	.01	.94	.79	1.9	.99	2.1	.00	.00	.00	.00
29	.00	.00	.01	.65	---	.79	.56	.84	.00	.00	.00	.00
30	.00	.00	.01	.50	---	.65	.20	1.5	.00	.00	.00	.00
31	.00	---	.01	6.3	---	.06	---	5.5	---	.00	.00	---
TOTAL	8.29	.00	.21	29.87	49.11	29.21	22.79	20.98	149.16	23.41	.00	1.18
MEAN	.27	.000	.007	.96	1.75	.94	.76	.68	4.97	.76	.000	.039
MAX	8.0	.00	.01	6.3	14	2.5	6.8	11	83	11	.00	1.0
MIN	.00	.00	.00	.01	.72	.06	.00	.00	.00	.00	.00	.00
CFSM	.001	.000	.000	.005	.009	.005	.004	.003	.02	.004	.000	.000
IN.	.00	.00	.00	.01	.01	.01	.00	.00	.03	.00	.00	.00
AC-FT	16	.00	.4	59	97	58	45	42	296	46	.00	2.3
CAL YR 1982	TOTAL	2317.10	MEAN	6.35	MAX	679	MIN	.00	CFSM	.03	IN	.42
WTR YR 1983	TOTAL	334.21	MEAN	.92	MAX	83	MIN	.00	CFSM	.004	IN	.06
									AC-FT	4600		
									AC-FT	663		



## BRAZOS RIVER BASIN

08083245 MULBERRY CREEK NEAR HAWLEY, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: December 1967 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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...	1455	.21	403	26.0	110	34	22	13	49
JAN 03...	1710	.01	2450	3.0	500	220	85	71	360
FEB 14...	1505	.94	3150	13.5	1100	860	190	150	310
MAR 28...	1455	2.0	4520	15.5	1600	1300	200	260	500
JUN 13...	1335	.01	1020	31.5	290	150	54	38	97

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY 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...	2.1	2.5	75	70	44	.40	5.4	251
JAN 03...	7.1	5.7	290	390	410	.40	<1.2	1500
FEB 14...	4.2	4.8	230	730	530	.60	2.6	2060
MAR 28...	5.6	4.7	270	1300	710	.70	<1.2	3140
JUN 13...	2.5	6.9	140	220	110	.30	5.2	615

## BRAZOS RIVER BASIN

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08083430 ELM CREEK AT ABILENE, TX

LOCATION.--Lat 32°30'29", long 99°44'27", Taylor County, Hydrologic Unit 12060102, on left bank at downstream side of bridge on State Highway Loop 243 in the city of Abilene and about 17 mi upstream from mouth.

DRAINAGE AREA.--422 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1979 to September 1983 (discontinued).

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 1,647.16 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Since 1921, flow largely regulated by Lake Abilene (capacity, 7,900 acre-ft), about 30 mi upstream. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,020 ft<sup>3</sup>/s Oct. 13, 1981 (gage height, 15.37 ft); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 680 ft<sup>3</sup>/s June 5 at 1800 hours (gage height, 7.09 ft, from floodmark); no flow Mar. 11-15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.04	.10	3.0	26	.44	1.4	.53	.30	12	.03	.01
2	.02	.04	.03	7.0	8.2	.44	1.1	.41	.25	2.4	.03	.01
3	17	.02	1.0	8.0	3.0	.42	1.1	.19	.20	.96	.03	.01
4	.84	.07	.50	1.8	2.7	.42	1.2	.18	4.0	.36	.02	.01
5	.30	.09	.50	1.2	5.3	.42	1.3	.19	170	.16	.03	.01
6	.17	.08	.40	1.3	2.7	.42	1.4	.24	30	.09	.03	.01
7	.14	.02	.30	1.2	1.9	.42	1.0	.24	1.0	.09	.04	.01
8	.14	.02	.05	.91	1.7	.40	.92	.25	.50	.08	.04	.01
9	.14	.02	.03	.46	1.5	.40	.90	.28	1.5	.04	.03	.01
10	.14	.02	20	.30	1.4	.23	.92	.29	.50	.04	.10	.01
11	.14	.03	50	.21	1.3	.00	.88	83	.75	.05	.05	5.4
12	18	.03	5.0	.21	1.1	.00	.88	7.1	1.0	.07	.04	.89
13	4.2	.03	2.0	.13	.81	.00	.83	.52	.32	.05	.03	.15
14	.55	.04	1.0	.13	.60	.00	.80	.28	.25	.04	.03	.10
15	.17	.04	1.0	.04	.57	.00	.76	.21	.11	105	.03	.05
16	.04	.03	.50	.04	.54	72	.76	.20	1.8	190	.04	.05
17	.04	.03	.50	.04	.52	29	.73	.20	47	35	.02	.50
18	.04	.03	.30	1.9	.50	2.0	.78	.20	36	5.0	.02	.10
19	.04	.03	.20	2.3	.51	4.3	.81	.20	3.0	1.5	.02	.05
20	.03	.03	.10	1.6	.55	4.9	.80	.20	1.0	1.0	.02	.05
21	.03	.03	.10	56	.55	1.4	.86	.20	.44	.50	.02	.04
22	.03	.03	.05	71	.53	1.1	.81	.20	.21	.30	.02	.04
23	.03	.05	.02	24	.51	1.3	.84	.20	.13	.20	.02	.04
24	.03	.12	.02	7.6	.50	1.6	.80	.20	.14	.10	.02	.04
25	.03	.32	1.5	4.8	.49	4.6	.79	.20	.21	.10	.02	.04
26	.03	133	1.5	2.7	.44	98	.69	.15	.22	.05	.02	.03
27	.04	61	2.5	2.1	.44	4.5	.69	.15	.18	.05	.02	.03
28	.52	3.5	2.0	1.9	.44	2.6	1.1	.20	.14	.05	.02	.03
29	.38	1.1	.50	1.4	---	2.1	.63	.25	18	.03	.02	.03
30	.05	.20	.50	1.0	---	2.0	.54	1.0	159	.10	.06	.02
31	.05	---	1.0	94	---	1.8	---	.50	---	.05	.02	---
TOTAL	43.37	200.09	93.20	298.27	65.30	237.21	27.02	98.16	478.15	355.46	.94	7.78
MEAN	1.40	6.67	3.01	9.62	2.33	7.65	.90	3.17	15.9	11.5	.030	.26
MAX	18	133	50	94	26	98	1.4	83	170	190	.10	5.4
MIN	.01	.02	.02	.04	.44	.00	.54	.15	.11	.03	.02	.01
AC-FT	86	397	185	592	130	471	54	195	948	705	1.9	15
CAL YR 1982	TOTAL	6810.77	MEAN	18.7	MAX	498	MIN	.01	AC-FT	13510		
WTR YR 1983	TOTAL	1904.95	MEAN	5.22	MAX	190	MIN	.00	AC-FT	3780		

## BRAZOS RIVER BASIN

08083470 CEDAR CREEK AT ABILENE, TX

LOCATION.--Lat 32°26'56", long 99°43'13", Taylor County, Hydrologic Unit 12060102, on right bank at upstream side of North Second Street Bridge and State Highway 355 at Abilene, 0.2 mi downstream from Lytle Creek, 4.1 mi downstream from Buttonwillow Creek, 5.9 mi upstream from Rainy Creek, 7.2 mi downstream from Kirby Lake, and 9.8 mi upstream from mouth.

DRAINAGE AREA.--119 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1970 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,677.67 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow is partly regulated by Lytle Lake (capacity, 1,200 acre-ft) and by Lake Kirby (capacity, 7,620 acre-ft). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--13 years, 7.55 ft<sup>3</sup>/s (5,470 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,500 ft<sup>3</sup>/s Oct. 13, 1981 (gage height, 16.80 ft, from floodmark), from rating curve extended above 5,700 ft<sup>3</sup>/s on basis of contracted-opening and flow-over-road measurement of peak flow; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 620 ft<sup>3</sup>/s June 5 at 1800 hours (gage height, 5.08 ft); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.01	3.7	12	.04	1.2	.51	.62	6.1	.81	.72
2	.00	.00	.01	11	4.3	.03	.96	.37	.17	3.2	.85	.88
3	4.5	.00	4.0	1.9	1.4	.03	.45	.20	.03	.40	.50	.88
4	.02	.00	.37	.27	2.0	.09	.59	.40	12	.06	.14	.62
5	.01	.00	.08	.53	1.4	.09	1.7	.02	76	.54	.62	.56
6	.00	.00	.01	.05	.39	.04	.45	.46	43	.28	.96	.80
7	.00	.00	.01	.03	.21	.04	.29	.88	13	.07	.38	.88
8	.00	.00	.01	.02	.18	.03	.10	.88	5.3	.11	.52	.98
9	.00	.00	.12	.07	.13	.02	.06	.75	1.7	.37	2.0	.76
10	.00	.00	9.4	.02	.11	.05	.13	.59	.40	.53	.72	1.1
11	.00	.00	13	.01	.11	.05	.14	11	.51	1.9	.09	28
12	12	.00	1.3	.01	.11	.01	.05	.94	.49	3.3	.54	2.4
13	1.6	.00	.42	.01	.09	.01	.24	.44	.25	2.7	.98	1.2
14	.02	.00	.11	.01	.10	.01	1.5	.10	.19	4.5	.69	.51
15	.01	.00	.03	.01	.34	2.0	.24	.48	.59	64	.64	.62
16	.01	.00	.01	.01	.18	18	.36	.20	4.3	50	.79	1.0
17	.00	.00	.01	.01	.15	3.8	.66	.01	7.8	13	.91	.63
18	.00	.00	.01	.95	.08	1.0	.80	.17	1.4	7.6	.88	.67
19	.00	.00	.01	.11	.07	3.0	.78	.72	.59	3.6	.74	.66
20	.02	.00	.00	1.9	.09	4.0	.25	.45	.90	.88	.63	.80
21	.01	.00	.00	20	.17	1.7	.98	.36	.75	5.3	.63	.78
22	.01	.00	.00	21	.14	.88	.47	.24	1.2	7.0	.77	.73
23	.00	.00	.00	12	.06	1.0	.02	.37	.37	5.4	.40	.55
24	.00	.00	.00	6.8	.06	.34	.00	.46	.22	4.2	.95	.67
25	.00	2.1	.08	2.2	.05	3.0	.50	.62	.35	5.4	.80	.46
26	.00	31	.07	.93	.04	14	.43	.79	.59	6.5	.88	.50
27	.00	8.3	1.7	.43	.04	3.7	.64	.28	.46	1.5	.88	.75
28	.07	.23	.11	.23	.04	1.2	.64	.61	1.3	1.0	.88	.88
29	.01	.03	.02	.15	---	.57	.48	.50	17	.50	.84	.64
30	.00	.02	.00	.11	---	.55	.28	17	26	9.0	.70	.40
31	.00	---	.10	16	---	1.1	---	5.9	---	1.5	.88	---
TOTAL	18.29	41.68	31.00	100.47	24.04	60.38	15.39	46.70	217.48	210.44	23.00	51.03
MEAN	.59	1.39	1.00	3.24	.86	1.95	.51	1.51	7.25	6.79	.74	1.70
MAX	12	31	13	21	12	18	1.7	17	76	64	2.0	28
MIN	.00	.00	.00	.01	.04	.01	.00	.01	.03	.06	.09	.40
AC-FT	36	83	61	199	48	120	31	93	431	417	46	101
CAL YR 1982	TOTAL	1574.05	MEAN	4.31	MAX	239	MIN	.00	AC-FT	3120		
WTR YR 1983	TOTAL	839.90	MEAN	2.30	MAX	76	MIN	.00	AC-FT	1670		

## 08083500 FORT PHANTOM HILL RESERVOIR NEAR NUGENT, TX

LOCATION.--Lat 32°36'58", long 99°40'05", Jones County, Hydrologic Unit 12060102, at outlet gate tower near right bank, 120 ft upstream from dam on Elm Creek, 4.3 mi upstream from mouth, and 5.4 mi south of Nugent.

DRAINAGE AREA.--470 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1940 to current year. Prior to October 1965, monthend contents only.

REVISED RECORDS.--WSP 1562: 1953-57 (figures of monthend contents). WDR TX-76-2: Drainage area.

GAGE.--Nonrecording gage. Datum of gage is 1,580.78 ft National Geodetic Vertical Datum of 1929.

REMARKS.--The reservoir is formed by a rock-faced earthfill dam 3,740 ft long. The dam was completed and storage began in October 1938. The uncontrolled service spillway is a cut channel through natural ground with a concrete ogee weir located 0.7 mi from right end of dam. The service outlet works consist of a concrete tower with a 4.0- by 7.0-foot conduit. The service tower contains five gated openings at various elevations. The dam and reservoir are owned by the city of Abilene and were built to impound water for municipal use. Since July 1974, West Texas Utility Co. has operated a steam generating powerplant on the reservoir. The capacity table was based on a survey of Oct. 2, 1953. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Gage height (feet)	Capacity (acre-feet)
Top of dam.....	69.2	-
Crest of spillway.....	55.1	74,310
Highest gated outlet (invert).....	28.0	10,330
Lowest gated outlet (invert).....	1.6	-

COOPERATION.--Record of gage heights were furnished by the city of Abilene. The capacity table was furnished by the Soil Conservation Service.

EXTREMES (at 0800) FOR PERIOD OF RECORD.--Maximum contents observed, 89,910 acre-ft May 25, 1957 (gage height, 58.7 ft); minimum observed, 19,040 acre-ft Apr. 23-25, 1953 (gage height, 34.5 ft).

EXTREMES (at 0800) FOR CURRENT YEAR.--Maximum contents observed, 63,890 acre-ft Oct. 1 (gage height, 52.4 ft); minimum observed, 38,080 acre-ft Sept. 29, 30 (gage height, 44.0 ft).

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

44.0	38,080	50.0	55,480
47.0	46,160	53.0	66,100

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63890	60290	58200	56500	56500	55160	53860	50680	49440	48230	47640	41980
2	63520	59940	57860	56500	56500	55160	53860	50680	49440	48230	47340	41720
3	63520	59940	57860	56840	56500	55160	53530	50370	49440	47940	47050	41450
4	63520	59940	57860	56840	56500	55160	53530	50370	49130	47940	47050	41180
5	63150	59580	57860	56840	56500	55160	53530	50370	49440	47640	46750	41180
6	63150	59580	57860	56840	56500	54830	53210	50060	50370	47340	46450	40910
7	63150	59580	57860	56840	56500	54830	53210	49750	50990	47340	46450	40640
8	63150	59230	57860	56500	56500	54830	53210	49440	50990	47050	46160	40640
9	62780	59230	57860	56500	56160	54510	53210	49130	50680	46750	46160	40640
10	62780	59230	57860	56500	56160	54510	52880	49130	50680	46750	45870	40380
11	62420	58880	57860	56500	56160	54510	52880	49130	50370	46450	45870	40380
12	62420	58880	57860	56500	56160	54510	52880	49130	50370	46450	45870	40380
13	62420	58880	57860	56500	56160	54180	52880	49130	50370	46160	45590	40130
14	62420	58880	57860	56500	56160	54180	52880	49130	50060	45870	45310	40130
15	62060	58540	57860	56160	56160	54180	52560	48830	50060	45870	45310	39870
16	62060	58540	57520	56160	56160	54180	52230	49750	49750	49750	45030	40130
17	62060	58200	57520	56160	55820	54180	52230	50990	49750	50060	45030	39870
18	61710	58200	57520	56160	55820	54180	52230	50990	49750	50060	44740	39620
19	61710	58200	57520	56160	55820	54180	52230	50680	49750	49750	44460	39620
20	61350	58200	57520	56160	55820	54180	51920	50370	49440	49750	44180	39360
21	61350	57860	57520	56160	55820	54180	55160	50370	49440	49440	43890	39360
22	61350	57860	57180	56500	55820	53860	51610	50370	49130	49440	43610	39100
23	61000	57860	57180	56500	55480	53860	51610	50060	49130	49130	43610	39100
24	61000	57520	57180	56500	55480	53860	51300	50060	48830	48830	43330	38850
25	61000	57520	57180	56500	55480	53860	51300	49750	48830	48830	43060	38850
26	61000	57520	56840	56500	55480	53860	51300	49750	48530	48530	43060	38590
27	60650	58200	56840	56500	55480	53860	50990	49750	48530	48230	42790	38590
28	60650	58200	56840	56500	55480	53860	50990	49440	48230	47940	42790	38340
29	60650	58200	56840	56500	---	53860	50990	49440	48230	47940	42520	38080
30	60290	58200	56500	56500	---	53860	50680	49130	48230	47640	42520	38080
31	60290	---	56500	56160	---	53860	---	49440	---	47640	42250	---
MAX	63890	60290	58200	56840	56500	55160	55160	50990	50990	50060	47640	41980
MIN	60290	57520	56500	56160	55480	53860	50680	48830	48230	45870	42250	38080
(†)	51.4	50.8	50.3	50.2	50.0	49.5	48.5	48.1	47.7	47.5	45.6	44.0
(‡)	-3600	-2090	-1700	-340	-680	-1620	-3180	-1240	-1210	-590	-5390	-4170

CAL YR 1982 MAX 79300 MIN 56500 ‡ -15810  
WTR YR 1983 MAX 63890 MIN 38080 ‡ -25810

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet.

## BRAZOS RIVER BASIN

08083500 FORT PHANTOM HILL RESERVOIR NEAR NUGENT, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
MAY 03...	0930	687	19.0	220	49	58	18	49

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY 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 03...	1.5	7.6	170	84	70	.30	5.5	394



## BRAZOS RIVER BASIN

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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 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.--Records good. Flow affected by four reservoirs with a capacity of 103,600 acre-ft. Numerous diversions above station for municipal supply and oilfield operation materially affect all flow.

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); 45 years (water years 1939-83) partially regulated, 82.2 ft<sup>3</sup>/s (59,550 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, 1,720 ft<sup>3</sup>/s July 15 at 2130 hours (gage height, 7.41 ft); minimum daily, 0.32 ft<sup>3</sup>/s Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	16	21	23	296	24	21	16	29	14	6.1	3.6
2	16	16	21	24	240	24	20	15	55	14	5.6	2.9
3	19	15	21	24	56	24	19	14	40	12	5.4	2.6
4	23	14	20	24	38	24	19	14	30	11	5.0	2.2
5	22	14	20	22	36	24	21	14	29	10	5.2	2.0
6	16	13	20	22	31	23	19	13	247	11	4.6	1.7
7	16	16	20	22	28	22	20	12	117	10	4.3	1.1
8	16	16	20	21	26	22	20	12	143	29	4.6	.71
9	15	16	19	21	26	22	21	12	252	24	4.7	1.2
10	14	16	21	22	26	22	21	13	69	15	4.8	1.4
11	14	17	24	21	26	20	22	17	39	11	4.4	1.9
12	15	16	24	21	25	21	22	21	29	9.6	4.1	2.2
13	14	15	23	21	25	21	21	49	24	9.5	4.0	1.7
14	13	15	22	21	25	22	21	146	20	8.5	4.0	3.1
15	16	16	21	20	26	22	20	364	19	306	3.7	3.7
16	16	16	20	20	25	26	20	133	18	179	3.6	2.7
17	15	17	19	20	25	29	20	63	22	24	3.1	2.2
18	15	17	19	29	24	28	20	63	27	13	3.0	1.9
19	16	18	19	27	25	26	20	42	40	11	2.8	3.5
20	16	18	18	24	24	25	19	36	88	8.9	.49	2.5
21	15	18	18	30	23	23	19	32	33	7.9	.85	1.7
22	15	18	19	35	24	23	19	31	22	7.5	3.3	1.3
23	16	18	19	38	24	23	19	30	18	7.3	2.5	1.2
24	16	18	19	35	25	23	28	31	17	7.3	1.8	.93
25	16	18	19	33	25	23	22	27	16	7.3	2.0	.74
26	16	26	19	30	23	27	20	32	15	6.7	1.8	1.0
27	16	27	19	28	24	27	18	40	14	6.1	2.3	.91
28	18	26	19	26	24	27	18	25	14	5.8	2.7	.65
29	18	24	19	25	---	25	17	39	17	5.6	2.9	.50
30	18	22	19	24	---	32	17	31	18	5.4	2.9	.32
31	18	---	19	36	---	24	---	36	---	5.6	3.1	---
TOTAL	506	532	620	789	1245	748	603	1423	1521	803.0	109.64	54.06
MEAN	16.3	17.7	20.0	25.5	44.5	24.1	20.1	45.9	50.7	25.9	3.54	1.80
MAX	23	27	24	38	296	32	28	364	252	306	6.1	3.7
MIN	13	13	18	20	23	20	17	12	14	5.4	.49	.32
AC-FT	1000	1060	1230	1560	2470	1480	1200	2820	3020	1590	217	107

CAL YR 1982 TOTAL 43754.00 MEAN 120 MAX 4190 MIN 13 AC-FT 86790  
WTR YR 1983 TOTAL 8953.70 MEAN 24.5 MAX 364 MIN .32 AC-FT 17760

## BRAZOS RIVER BASIN

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 current year. Chemical analyses: October 1967 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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 (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
OCT 20...	1520	22	1400	7.8	18.0	12.2	133	19	210	11
DEC 14...	1505	16	1660	7.7	10.0	15.2	141	23	280	73
FEB 09...	0900	16	1700	7.5	8.0	10.1	90	27	290	3
APR 19...	1320	12	1720	7.9	22.0	13.7	166	24	280	55
JUN 21...	1230	17	1330	8.2	29.5	12.2	167	19	240	60
AUG 16...	1130	20	1130	7.4	29.0	8.7	118	6.2	220	35

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 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)
OCT 20...	43	25	190	5.9	16	200	150	210	1.0
DEC 14...	62	31	230	6.1	15	210	200	280	.90
FEB 09...	66	31	210	5.5	16	290	190	230	1.0
APR 19...	59	31	220	5.9	17	220	200	230	1.3
JUN 21...	50	28	180	5.2	15	180	160	210	1.0
AUG 16...	47	26	180	5.4	18	190	140	200	1.1

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	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- PHORUS, TOTAL (MG/L AS P)
OCT 20...	13	768	3.3	.270	3.6	<.060	--	4.80	7.40
DEC 14...	9.3	954	2.3	.170	2.5	9.50	5.5	15.0	7.40
FEB 09...	12	930	.39	.110	.50	13.0	9.0	22.0	9.30
APR 19...	11	901	4.0	1.00	5.0	4.80	23	28.0	9.10
JUN 21...	11	763	2.4	.120	2.5	.060	3.0	3.10	4.90
AUG 16...	13	739	1.6	.120	1.7	.230	2.6	2.80	3.40

## 08084500 LAKE STAMFORD NEAR HASKELL, TX

LOCATION.--Lat 33°04'44", long 99°34'52", Haskell County, Hydrologic Unit 12060103, on left bank at intake structure of West Texas Utilities Co. steam powerplant at Lake Stamford on Paint Creek, 1.0 mi upstream from dam, 1.7 mi upstream from California Creek, 10 mi southeast of Haskell, and 21.8 mi upstream from mouth.

DRAINAGE AREA.--368 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1953 to current year.

REVISED RECORDS.--WDR TX-77-2: Drainage area.

GAGE.--Nonrecording gage read once daily. Datum of gage is 2.77 ft above National Geodetic Vertical Datum of 1929 (levels by Freese and Nichols, Inc., Consulting Engineers).

REMARKS.--The lake is formed by a rolled earthfill dam 3,600 ft long. The dam was completed in March 1953, and deliberate impoundment began in June 1953. The right spillway is an uncontrolled natural channel located near the right end of dam. The left spillway is an uncontrolled channel excavated through natural ground, 169 ft wide, located 900 ft to left of left end of dam. The service outlet is a controlled 24-inch-diameter concrete pipe that is used for low-flow releases. The capacity table is based on sedimentation survey of 1966. The gage-height record was furnished by the West Texas Utilities Co. from their powerplant 1.0 mi upstream from dam. Water is diverted for municipal supply for the cities of Stamford and Hamlin. 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.....	1,434.0	-
Crest of spillway.....	1,423.0	110,400
Crest of spillway.....	1,414.0	53,070
Lowest gated outlet (invert).....	1,380.0	358

COOPERATION.--The capacity table was furnished by the Soil Conservation Service. The diversions were furnished by the city of Stamford.

EXTREMES (at 0800) FOR PERIOD OF RECORD.--Maximum contents, 103,700 acre-ft Aug. 5, 1978 (gage height, 1,422.2 ft); minimum since first appreciable storage in June 1954, 14,060 acre-ft Jan. 29-31, 1957 (gage height, 1,400.2 ft).

EXTREMES (at 0800) FOR CURRENT YEAR.--Maximum contents, 54,970 acre-ft June 10-13, 20 (gage height, 1,414.4 ft); minimum, 42,670 acre-ft Sept. 30 (gage height, 1,411.6 ft).

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

1,411.0	40,330	1,414.0	53,070
1,412.0	44,280	1,415.0	57,920
1,413.0	48,530		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50760	48970	48090	47650	48530	49410	48970	47220	52600	53540	49860	45950
2	50310	48970	48090	48090	48530	49410	49410	46790	52600	53540	49860	45950
3	50760	48970	48090	48090	48970	49410	48970	46790	52600	53540	49410	45950
4	50310	48970	48090	48090	49410	49410	48970	46790	52600	54020	49410	45950
5	51210	48970	48530	48090	48970	49410	48530	46790	52600	53070	49410	45950
6	50760	48970	48090	48090	48970	49410	48530	46790	53070	53070	49410	45950
7	50760	48530	48090	48090	49410	48970	48530	46790	53070	52600	48970	45530
8	50760	48530	47650	48090	49410	49410	48530	46790	54020	52600	48970	45530
9	50760	48530	47650	48090	49860	49410	48530	46370	54490	52130	48530	45110
10	50760	48530	48090	48090	49860	49410	48530	46370	54970	52130	48530	45110
11	50310	48530	48090	47650	49860	49410	48530	46370	54970	52130	48530	45110
12	50310	48530	48090	48090	49860	49410	48530	46370	54970	52130	48530	44700
13	50310	48530	48090	48090	49860	49410	48530	47650	54970	52130	48530	44700
14	49860	48530	48090	48090	49860	48970	48530	47650	54490	52130	48530	44280
15	50310	48090	47650	48090	49860	48970	48530	49410	54020	51670	48530	44280
16	49860	48090	48090	47650	49860	49410	48530	49860	54020	51670	48530	44280
17	50310	48090	48090	47650	49860	49410	48530	50310	54020	51670	48530	43880
18	49860	48090	48090	47650	49860	49410	48090	50310	54020	51210	48530	43880
19	49860	48090	48090	48090	49860	49410	48090	50310	54020	51210	48090	43470
20	49410	48090	48090	48090	49860	49410	47650	50760	54970	51210	47650	43470
21	49410	48090	48090	48090	49860	49410	48090	51210	54020	51210	47650	43470
22	49860	48090	48090	48090	49410	48970	48090	51670	53540	51210	47650	43470
23	49860	47650	47650	48090	49410	48970	48090	52130	54020	51210	47220	43470
24	49860	47650	47650	48090	49410	48970	48090	52130	54020	50760	47220	43470
25	49410	47220	47650	48090	49410	48970	48090	52130	54020	50760	47220	43070
26	49410	47650	47650	48530	49410	48970	48090	52600	54020	50310	46790	43070
27	49410	47650	47220	48530	49410	48970	47220	52130	54020	50310	46790	43070
28	49410	48090	46790	48530	49410	48970	47220	52130	53540	50310	46790	43070
29	49410	48090	47650	48530	---	48970	47220	52130	53540	49860	46790	43070
30	49410	48090	47650	48530	---	48970	47220	51670	53540	49860	46790	42670
31	49410	---	47650	48530	---	48970	---	52130	---	49860	46790	---
MAX	51210	48970	48530	48530	49860	49410	49410	52600	54970	54020	49860	45950
MIN	49410	47220	46790	47650	48530	48970	47220	46370	52600	49860	46790	42670
(†)	1413.2	1412.9	1412.8	1413.0	1413.2	1413.1	1412.7	1413.8	1414.1	1413.3	1412.6	1411.6
(†)	-900	-1320	-440	+880	+880	-440	-1750	+4910	+1410	-3680	-3070	-4120
(††)	132	109	141	131	104	124	128	147	186	248	291	240

CAL YR 1982 MAX 70850 MIN 40720 ‡ +2950 †† 1849  
WTR YR 1983 MAX 54970 MIN 42670 ‡ -7640 †† 1981

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

†† Diversions, in acre-feet, for municipal use by the cities of Hamlin and Stamford.

## BRAZOS RIVER BASIN

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, from topographic map.

REMARKS.--Records fair. Three small diversions above station.

AVERAGE DISCHARGE.--21 years, 33.7 ft<sup>3</sup>/s (0.96 in/yr), 24,470 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 above base of 400 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Feb. 2	0930	745	14.66
May 21	2000	*1,370	18.22
June 6	0500	683	14.27

Minimum discharge, 0.06 ft<sup>3</sup>/s Sept. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	1.6	6.9	5.6	102	8.2	8.8	3.8	53	3.9	.21	.10
2	2.3	1.7	5.3	6.4	572	8.5	7.6	3.7	27	3.2	.21	.08
3	12	1.7	4.6	6.8	133	8.5	7.2	3.3	23	2.8	.26	.07
4	5.5	1.7	4.1	7.0	39	9.0	7.0	3.4	22	2.6	.30	.07
5	3.4	1.8	3.7	10	31	8.7	6.8	3.1	24	2.7	.28	.09
6	2.6	1.8	3.5	10	25	8.0	6.5	2.8	309	2.1	.28	.09
7	3.1	1.6	3.3	8.6	25	8.0	6.3	2.7	45	1.8	.28	.11
8	2.4	2.3	3.5	8.4	22	8.1	6.3	2.5	22	1.7	.25	.12
9	2.2	2.0	3.6	7.9	17	9.2	6.0	2.8	15	1.5	.23	.12
10	1.9	2.0	4.6	7.2	16	9.1	6.1	3.0	11	1.4	.23	.12
11	1.7	2.0	5.3	6.7	15	8.3	6.0	118	11	1.7	.23	.13
12	2.4	2.1	5.3	6.0	13	7.8	5.9	104	11	1.4	.21	.15
13	1.9	2.7	5.9	5.7	12	7.6	6.0	35	11	1.1	.22	.19
14	1.7	2.5	8.3	5.6	11	7.4	5.8	33	10	.86	.17	.18
15	1.4	2.4	7.7	4.9	10	7.2	5.2	39	8.8	1.5	.18	.19
16	1.4	2.7	7.0	4.3	9.7	8.6	4.8	53	7.4	2.2	.15	.24
17	1.4	3.1	5.7	4.7	9.8	10	4.7	34	30	2.0	.15	.28
18	1.3	3.0	5.0	5.2	9.6	17	4.6	23	13	1.4	.15	.25
19	2.2	2.9	4.6	6.1	9.4	19	4.5	17	8.1	1.5	.15	.23
20	1.4	2.9	4.4	6.9	9.0	13	4.3	512	6.2	1.2	.12	.22
21	1.2	2.9	4.1	11	8.6	11	5.3	1210	5.6	.66	.12	.28
22	1.3	3.2	3.9	17	8.4	9.8	5.4	660	5.6	.43	.12	.28
23	1.3	3.0	4.1	19	8.1	9.4	5.6	89	5.2	.45	.12	.30
24	1.2	2.6	3.9	21	8.2	9.1	5.3	40	4.9	.29	.12	.34
25	1.2	2.6	3.7	16	8.2	8.8	4.8	29	4.9	.23	.09	.35
26	1.5	4.7	4.3	13	8.1	9.9	5.3	26	4.7	.20	.09	.35
27	1.5	7.6	4.9	11	8.4	13	4.7	23	4.6	.18	.09	.35
28	1.9	6.0	4.5	9.2	8.5	21	4.1	21	10	.16	.09	.35
29	1.8	6.8	4.5	8.0	---	18	3.8	18	7.1	.16	.07	.35
30	1.7	9.4	4.3	7.3	---	12	3.9	22	6.2	.18	.07	.47
31	1.7	---	4.3	22	---	10	---	153	---	.15	.08	---
TOTAL	70.5	93.3	148.8	288.5	1157.0	323.2	168.6	3290.1	726.3	41.65	5.32	6.45
MEAN	2.27	3.11	4.80	9.31	41.3	10.4	5.62	106	24.2	1.34	.17	.22
MAX	12	9.4	8.3	22	572	21	8.8	1210	309	3.9	.30	.47
MIN	1.2	1.6	3.3	4.3	8.1	7.2	3.8	2.5	4.6	.15	.07	.07
CFSM	.005	.007	.01	.02	.09	.02	.01	.22	.05	.003	.000	.000
IN.	.01	.01	.01	.02	.09	.03	.01	.26	.06	.00	.00	.00
AC-FT	140	185	295	572	2290	641	334	6530	1440	83	11	13

CAL YR 1982	TOTAL	34308.90	MEAN	94.0	MAX	2950	MIN	1.2	CFSM	.20	IN	2.67	AC-FT	68050
WTR YR 1983	TOTAL	6319.72	MEAN	17.3	MAX	1210	MIN	.07	CFSM	.04	IN	.49	AC-FT	12540



## BRAZOS RIVER BASIN

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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>.

## WATER-DISCHARGE RECORDS

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 National Geodetic Vertical Datum of 1929. Prior to June 23, 1932, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records good. Diversions above station for irrigation, municipal supply, and oilfield operation materially affect low flow. Gage-height telemeter at station.

AVERAGE DISCHARGE.--59 years (water years 1925-83), 226 ft<sup>3</sup>/s (163,700 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.--Maximum discharge, 1,360 ft<sup>3</sup>/s May 22 at 1400 hours (gage height, 6.27), no peak above base of 3,900 ft<sup>3</sup>/s; no flow Sept. 26-29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	31	60	47	88	64	59	34	123	24	14	1.0
2	27	30	55	55	93	65	67	31	192	25	15	.82
3	27	31	54	58	779	69	53	28	127	43	15	.66
4	26	31	57	63	343	72	44	26	89	33	13	.58
5	26	31	57	61	191	74	38	23	95	41	11	.47
6	26	30	54	58	137	70	39	20	103	48	11	.43
7	32	28	50	54	116	65	37	20	292	35	11	.43
8	38	30	49	53	104	62	37	19	348	31	12	.30
9	35	27	48	53	94	57	39	19	202	28	12	.24
10	30	28	52	54	87	57	39	17	194	27	11	.19
11	28	31	57	54	76	57	45	18	223	26	10	.27
12	31	40	56	54	69	51	48	18	134	25	9.0	.39
13	33	36	55	52	68	44	47	484	88	25	8.0	.31
14	34	30	59	49	67	41	47	221	68	24	7.4	.29
15	38	29	59	49	67	52	43	107	54	23	7.1	.21
16	39	26	56	51	63	58	42	176	45	22	8.2	.24
17	35	29	50	51	62	65	41	282	63	644	8.3	.43
18	34	29	48	53	63	64	43	166	59	233	7.2	.48
19	33	33	50	55	63	67	42	141	103	116	5.8	.44
20	33	36	53	57	64	65	40	126	71	56	8.5	.39
21	35	36	54	73	65	62	46	556	58	46	8.7	.24
22	35	37	52	77	64	64	55	1260	72	37	11	.17
23	35	37	50	78	61	60	42	582	79	30	9.3	.12
24	34	31	49	87	63	56	34	210	55	24	7.6	.06
25	33	29	48	88	63	55	32	128	42	20	6.7	.03
26	32	42	46	93	61	68	32	126	37	17	4.4	.00
27	32	55	51	93	61	61	30	93	37	15	3.5	.00
28	38	61	49	86	63	61	42	69	37	13	2.9	.00
29	35	71	48	79	---	59	39	63	31	12	2.3	.00
30	34	69	53	76	---	55	36	78	27	14	1.9	.95
31	33	---	49	84	---	58	---	68	---	14	1.3	---
TOTAL	1009	1084	1628	1995	3195	1878	1278	5209	3148	1771	264.1	10.14
MEAN	32.5	36.1	52.5	64.4	114	60.6	42.6	168	105	57.1	8.52	.34
MAX	39	71	60	93	779	74	67	1260	348	644	15	1.0
MIN	26	26	46	47	61	41	30	17	27	12	1.3	.00
AC-FT	2000	2150	3230	3960	6340	3730	2530	10330	6240	3510	524	20
CAL YR 1982	TOTAL	144576.00	MEAN	396	MAX	8250	MIN	18	AC-FT	286800		
WTR YR 1983	TOTAL	22469.24	MEAN	61.6	MAX	1260	MIN	.00	AC-FT	44570		



## BRAZOS RIVER BASIN

08085500 CLEAR FORK BRAZOS RIVER AT FORT GRIFFIN, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: November 1949 to September 1951, November 1967 to September 1979, October 1981 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1949 to September 1951, November 1967 to September 1979, October 1981 to current year.

WATER TEMPERATURES: November 1949 to September 1951, November 1967 to September 1979, October 1981 to current year.

SUSPENDED-SEDIMENT DISCHARGE: November 1949 to September 1951.

INSTRUMENTATION.--Beginning April 1982, specific conductance and water temperature are recorded continuously at this station.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and 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. Where maximum and minimum specific conductance values are not shown, mean values are estimated.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (1949-51, 1967-77, 1981-83): Maximum daily, 7,500 micromhos May 4, 1983; minimum daily, 204 micromhos July 27, 1950.

WATER TEMPERATURES (1949-51, 1967-77, 1981-83): Maximum daily, 34.0°C June 14, 1969, June 28, 1972; minimum daily, 0.0°C on during winter months.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 7,500 micromhos May 4; minimum daily, 1,160 micromhos July 7.

WATER TEMPERATURES: Maximum daily, 33.0°C Aug. 11-12; minimum daily, 4.0°C on several days during January and February.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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...	1420	26	4430	24.5	1400	1200	310	150	530
DEC 21...	1110	54	3380	8.5	1000	840	220	110	410
FEB 08...	1030	106	2660	5.0	820	680	200	79	280
MAY 25...	1330	129	1090	23.5	320	220	79	29	91
JUN 08...	1010	401	2410	24.0	690	590	140	83	250
SEP 07...	1140	.44	2190	26.5	610	430	150	56	230

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY 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 04...	6.4	9.4	160	1200	770	.50	8.7	3070
DEC 21...	5.8	10	160	890	580	.60	3.3	2320
FEB 08...	4.4	8.9	150	640	400	.50	8.1	1710
MAY 25...	2.3	9.5	100	240	140	.30	9.4	658
JUN 08...	4.2	9.0	100	570	410	.40	6.2	1530
SEP 07...	4.2	10	180	420	380	.60	13	1370

## BRAZOS RIVER BASIN

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08085500 CLEAR FORK BRAZOS RIVER AT FORT GRIFFIN, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1982 TO SEPTEMBER 1983

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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.	1982	1009	4030	2590	7070	690	1880	930	2530	1100
NOV.	1982	1084	3630	2350	6880	630	1840	830	2420	1000
DEC.	1982	1628	3230	2110	9270	570	2490	730	3190	940
JAN.	1983	1995	3750	2420	13100	650	3490	860	4620	1100
FEB.	1983	3195	3100	2020	17500	540	4690	700	6020	900
MAR.	1983	1878	2660	1750	8870	470	2390	590	3000	790
APR.	1983	1278	3800	2460	8490	660	2270	870	3010	1100
MAY	1983	5209	2600	1700	23900	460	6440	580	8190	760
JUNE	1983	3148	2400	1590	13500	430	3650	530	4500	720
JULY	1983	1771	2620	1730	8260	470	2230	580	2770	780
AUG.	1983	264.1	2480	1640	1170	440	317	550	389	740
SEPT	1983	10.14	2060	1370	37	370	10	440	12	620
TOTAL		22469.24	**	**	118000	**	31700	**	40700	**
10   WTD. AVG.		62	2980	1940	**	520	**	670	**	870

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	4270	4170	4260	4030	3620	3880	3130	3100	3120	3600	3560	3580
2	4290	4190	4260	3880	3640	3710	3150	3020	3110	3600	3570	3580
3	4260	4220	4240	4010	3600	3800	3130	3060	3110	3630	3580	3600
4	4430	4180	4210	4020	3670	3850	3130	2970	3070	3690	3630	3650
5	4230	4190	4210	3990	3550	3740	3120	3050	3090	3780	3690	3740
6	4290	4230	4260	3700	3470	3580	3220	3120	3170	3770	3710	3730
7	4300	4250	4270	3950	3430	3640	3290	3180	3240	3720	3660	3690
8	4310	4280	4290	3920	3080	3460	3380	3230	3300	3670	3650	3660
9	4320	4280	4290	4070	3330	3790	3330	3300	3320	3650	3630	3640
10	4320	4290	4300	4050	4030	4040	3300	3260	3280	3660	3640	3650
11	4350	4290	4320	4030	4000	4020	3260	3180	3210	3670	3650	3670
12	4430	4320	4380	4010	4000	4010	3180	3130	3160	3730	3670	3700
13	4480	4410	4450	4020	4010	4010	3190	3130	3170	3790	3730	3760
14	4460	4400	4440	4020	4010	4020	3220	3160	3190	3830	3790	3810
15	4400	3930	4250	4020	4000	4010	3210	3160	3180	3860	3830	3840
16	4240	3790	4000	4010	3970	3990	3180	3150	3170	3870	3840	3860
17	4210	3810	4000	3970	3940	3960	3180	3170	3180	3930	3870	3890
18	4180	3330	3970	3950	3920	3940	3190	2190	3140	3950	3930	3940
19	4100	3260	3900	3920	3880	3900	3200	3180	3190	3950	3920	3930
20	4060	3720	3890	3880	3800	3840	3210	3190	3200	3930	3900	3910
21	4010	3780	3890	3810	3760	3780	3380	3210	3240	3900	3840	3880
22	3880	3330	3680	3760	3670	3720	3270	3240	3250	3830	3690	3770
23	3800	3470	3640	3660	3540	3600	3240	3200	3220	3690	3650	3670
24	3770	3140	3580	3540	3380	3450	3210	3190	3200	3690	3630	3660
25	3790	3480	3620	3380	3220	3340	3230	3200	3210	3680	3640	3650
26	3830	3460	3690	3260	3120	3200	3280	3230	3250	3710	3670	3690
27	3870	3130	3700	3120	3090	3100	3360	3270	3310	3720	3700	3710
28	3880	3520	3760	3120	3100	3110	3460	2380	3330	3730	3700	3710
29	3950	3770	3850	3280	3100	3200	3520	3470	3490	3840	3700	3770
30	4020	3600	3810	3240	3130	3170	3590	3520	3540	3950	3840	3900
31	3910	3670	3810	---	---	---	3600	3590	3590	3980	3890	3940
MONTH	4480	3130	4040	4070	3080	3700	3600	2190	3230	3980	3560	3750

## BROZOS RIVER BASIN

08085500 CLEAR FORK BRAZOS RIVER AT FORT GRIFFIN, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	4020	3910	3970	1760	1510	1710	3710	3360	3570	4210	4160	4190
2	4150	3970	4040	1700	1540	1660	3730	3540	3620	4170	4130	4150
3	4420	3360	3900	1710	1580	1660	3820	3460	3640	5740	3800	4200
4	4030	2290	3090	1750	1560	1670	3890	3300	3730	7500	4100	4270
5	2640	2390	2470	1780	1590	1670	3830	3110	3620	4150	3100	3710
6	2390	2350	2370	1860	1660	1750	3820	3110	3660	4190	3140	3730
7	2550	2400	2460	1930	1690	1820	3950	3610	3770	4190	3150	3940
8	2660	---	2550	1990	1790	1900	4020	3530	3760	4280	3480	4040
9	2660	---	2630	2050	1760	1940	4210	3890	4030	4310	3680	4010
10	2680	---	2650	2100	1780	1990	4090	3790	3930	4280	3520	4030
11	2720	---	2700	2190	1900	2110	4050	3520	3920	4170	3060	3640
12	2770	---	2750	2430	2180	2310	4330	3780	4060	4260	3160	3900
13	2800	---	2790	2550	2440	2490	4280	3790	4090	4080	1880	3160
14	2810	---	2800	2670	2550	2600	4210	3920	4050	5090	2160	4020
15	2880	---	2820	2960	2670	2730	4050	3750	3870	4960	3260	4190
16	2930	2780	2880	2950	2800	2870	4020	3530	3770	4670	3730	4250
17	3010	2760	2880	3100	2950	3030	4050	3260	3630	5310	3200	4330
18	3120	2880	3000	3260	3100	3170	4070	3010	3610	3280	2880	3050
19	3410	3140	3270	3330	3270	3300	3910	3710	3800	---	2750	3270
20	3500	3280	3430	3320	3280	3300	3970	3690	3840	---	---	3400
21	3490	3080	3380	3330	3310	3320	3960	3290	3710	---	2640	3280
22	3540	3320	3430	3330	3310	3320	3890	2990	3450	---	---	1170
23	3300	2740	3040	3350	3310	3330	3680	3220	3570	---	---	1520
24	2750	2530	2640	3390	3340	3370	3940	3140	3630	---	---	2060
25	2560	2400	2470	3440	3360	3400	3890	3510	3710	---	---	2280
26	2420	2150	2300	3470	3390	3440	4390	3510	3880	---	---	2290
27	2130	1840	1990	3480	3230	3320	4140	4080	4110	---	---	2440
28	1890	1660	1790	3660	3220	3440	4170	4080	4140	---	---	2700
29	---	---	---	3700	3270	3580	4240	4090	4170	---	---	2900
30	---	---	---	3670	3350	3500	4230	3890	4190	---	---	2800
31	---	---	---	3710	3280	3510	---	---	---	---	---	3000
MONTH	4420	1660	2870	3710	1510	2680	4390	2990	3820	7500	1880	3350

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	---	---	3150	---	---	2000	2650	2460	2480	---	---	2130
2	4410	3410	4020	2450	2260	2320	2570	2470	2510	---	---	2110
3	4190	2900	3450	2430	2380	2400	2710	2470	2550	---	---	2100
4	2370	1920	2010	2410	2000	2200	2570	2420	2520	---	---	2090
5	2070	1930	1980	2270	1750	2100	2710	2540	2600	---	---	2070
6	2290	2050	2170	2250	2190	2220	2570	2420	2570	---	---	2060
7	2400	1840	2190	2230	1160	1740	---	---	2560	---	---	2040
8	2850	1640	2060	---	---	1800	2570	2480	2560	---	---	2030
9	1640	1540	1580	---	---	2000	2870	2540	2570	---	---	2040
10	1960	1640	1780	---	---	2100	2560	2480	2520	---	---	2030
11	2050	1950	1980	---	---	2200	2510	2440	2480	---	---	2020
12	2440	2070	2220	---	---	2200	---	---	2460	---	---	2000
13	3060	2850	2980	---	---	2300	---	---	2450	---	---	1990
14	3060	2740	2940	---	---	2400	---	---	2440	---	---	1990
15	2700	2470	2570	---	---	2500	---	---	2430	---	---	1980
16	2540	2330	2430	---	---	2400	---	---	2450	---	---	1990
17	2540	1230	2270	---	---	3000	---	---	2460	---	---	1990
18	2690	2540	2640	3210	2990	3100	---	---	2430	---	---	1980
19	2680	2400	2520	3000	2480	2600	---	---	2400	---	---	1980
20	3010	2520	2860	2450	1990	2210	---	---	2460	---	---	2000
21	3240	3010	3150	1990	1930	1950	---	---	2470	2020	1990	2010
22	3350	3220	3290	2030	1940	1970	---	---	2500	2030	1890	2000
23	3310	2380	2920	2140	2020	2080	---	---	2470	2030	1980	2010
24	2340	1810	1960	2220	2140	2170	---	---	2460	2040	1980	2030
25	1860	1740	1810	2310	2230	2260	---	---	2400	2060	1990	2040
26	1850	---	1820	2360	2310	2330	---	---	2350	---	---	---
27	---	---	1800	2390	2350	2360	---	---	2300	---	---	---
28	---	---	1900	2390	2360	2380	---	---	2250	---	---	---
29	---	---	1900	---	---	2400	---	---	2200	---	---	---
30	---	---	2000	2440	2290	2390	---	---	2180	2160	2120	2150
31	---	---	---	2470	2450	2460	---	---	2140	---	---	---
MONTH	4410	1230	2410	3210	1160	2280	2870	2420	2440	2160	1890	2030

## BRAZOS RIVER BASIN

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08085500 CLEAR FORK BRAZOS RIVER AT FORT GRIFFIN, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	23.5	22.5	23.0	19.0	17.5	18.0	12.0	10.0	11.0	5.0	4.0	4.5
2	24.5	22.5	23.5	18.5	17.0	18.0	12.0	11.0	11.5	5.5	4.0	4.5
3	25.5	22.5	23.5	17.0	15.0	16.0	12.0	11.0	11.5	4.5	4.0	4.5
4	24.5	22.5	23.5	15.0	14.0	14.5	11.5	10.5	11.0	5.0	4.0	4.5
5	24.5	22.5	23.5	---	---	14.5	11.5	10.0	10.5	5.5	4.0	4.5
6	26.0	23.0	24.0	---	---	14.5	11.5	10.0	10.5	6.0	4.5	5.0
7	25.0	23.0	23.5	---	---	14.5	11.5	9.5	10.5	6.5	4.5	5.5
8	25.0	23.5	24.0	15.0	14.0	14.5	10.5	9.0	10.0	7.5	5.0	6.0
9	24.0	21.5	23.0	16.0	15.0	15.5	9.0	8.0	8.5	8.0	6.0	6.5
10	22.5	20.0	21.0	17.0	16.0	16.5	8.0	8.0	8.0	8.0	6.0	6.5
11	20.5	19.5	20.0	18.0	16.5	17.5	8.0	6.5	7.5	8.0	6.0	6.5
12	19.5	18.5	19.0	17.0	15.0	16.5	7.5	6.0	6.5	8.0	6.0	7.0
13	19.5	17.5	18.5	15.0	14.0	14.5	7.0	5.5	6.0	8.5	6.5	7.5
14	19.0	16.5	17.5	---	---	12.0	7.5	5.5	6.5	9.5	7.0	8.0
15	19.5	17.0	17.5	12.0	10.5	11.0	8.0	6.0	7.0	9.0	7.0	7.5
16	19.5	16.5	17.5	11.0	10.0	10.5	8.0	6.5	7.0	8.5	6.5	7.0
17	19.0	17.0	18.0	11.5	10.0	10.5	8.0	6.5	7.0	8.0	6.0	7.0
18	19.5	17.5	18.5	12.0	10.5	11.0	9.0	7.0	8.0	7.5	6.5	7.0
19	20.5	18.0	19.0	---	---	12.5	9.5	7.5	8.0	7.0	6.5	7.0
20	19.0	17.0	18.0	---	---	13.0	9.0	7.0	8.0	6.5	6.0	6.5
21	17.5	16.0	16.5	---	---	13.5	9.0	7.0	7.5	6.0	5.0	5.5
22	16.0	15.5	15.5	---	---	14.5	9.5	7.0	8.5	6.0	5.0	5.5
23	16.0	14.5	15.5	---	---	13.5	10.5	8.0	9.5	6.0	5.0	5.5
24	16.0	14.0	15.0	12.0	10.0	11.0	11.0	9.5	10.0	6.5	5.0	5.5
25	15.5	14.0	15.0	10.0	9.0	9.5	9.5	8.5	9.0	6.5	5.0	6.0
26	15.5	14.0	15.0	9.0	8.5	9.0	8.0	7.0	7.5	7.0	5.5	6.0
27	16.5	14.5	15.5	8.5	7.5	8.0	7.5	6.5	7.0	6.5	5.5	6.0
28	17.5	15.5	16.5	9.0	7.5	8.0	7.5	6.0	6.5	7.0	5.5	6.0
29	17.0	15.0	16.0	9.5	8.0	9.0	7.0	5.5	6.0	8.0	6.5	7.0
30	17.0	15.0	16.0	10.0	9.0	9.5	6.0	5.0	5.5	8.0	7.5	7.5
31	18.0	16.0	17.0	---	---	---	5.5	5.0	5.0	8.5	8.0	8.5
MONTH	26.0	14.0	19.0	19.0	7.5	13.0	12.0	5.0	8.5	9.5	4.0	6.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	8.5	6.5	7.5	14.0	11.5	12.5	16.0	14.5	15.5	25.0	23.5	24.0
2	6.5	5.5	6.0	14.5	13.0	14.0	15.0	14.0	14.5	25.5	22.0	23.5
3	6.0	5.0	5.5	15.5	14.0	15.0	15.5	14.0	15.0	25.0	21.0	22.5
4	5.0	4.5	5.0	16.0	15.0	15.5	16.5	14.5	15.5	23.0	20.5	22.0
5	5.0	4.5	5.0	16.0	14.5	15.0	15.5	13.5	14.5	23.5	21.0	22.0
6	5.0	4.5	5.0	16.5	14.5	15.0	15.5	12.5	13.5	24.0	21.0	22.5
7	5.0	4.0	4.5	17.0	14.5	15.5	15.5	12.5	13.5	26.5	21.5	23.5
8	6.5	4.5	5.5	16.0	14.5	15.0	13.5	12.0	12.5	24.5	21.5	23.0
9	8.0	6.5	7.0	16.5	14.0	15.0	15.0	11.0	12.5	23.5	21.0	22.0
10	9.5	8.0	8.5	16.5	13.5	14.5	16.5	12.0	14.0	23.0	21.5	22.0
11	10.5	8.5	9.0	15.0	13.0	14.0	16.5	13.5	15.0	23.5	21.0	22.0
12	10.0	8.5	9.0	15.0	12.5	14.0	18.5	16.5	17.5	24.5	22.0	23.0
13	9.5	8.0	9.0	16.0	13.5	14.5	20.0	17.5	18.5	23.0	21.0	22.5
14	10.5	9.0	10.0	17.0	14.5	16.0	19.0	16.5	17.5	22.0	20.5	21.5
15	10.5	10.0	10.5	17.0	16.0	16.5	18.0	15.5	17.0	21.0	19.5	20.0
16	11.5	9.5	10.5	16.0	13.5	15.0	18.0	15.5	17.0	22.0	20.0	21.0
17	10.5	10.0	10.5	13.5	12.0	13.0	20.5	16.0	17.5	22.5	20.0	21.5
18	12.0	10.5	11.0	13.5	12.0	12.5	20.0	16.5	18.0	23.0	21.5	22.0
19	12.5	11.5	12.0	13.0	12.0	12.5	22.0	17.5	19.5	23.0	21.5	22.5
20	13.5	12.5	12.5	12.5	11.0	11.5	20.0	18.0	19.0	22.5	21.5	22.0
21	13.0	11.5	12.0	12.0	10.5	11.0	21.5	18.0	19.0	22.0	21.0	21.5
22	12.0	11.0	11.5	11.0	10.5	10.5	20.5	19.0	19.5	21.0	18.5	20.0
23	12.0	11.0	11.5	10.5	10.0	10.5	21.0	18.5	19.5	21.5	19.5	20.5
24	14.0	11.5	12.0	11.0	10.5	10.5	22.5	17.5	19.5	23.0	20.5	21.5
25	13.0	11.5	12.0	11.5	10.5	11.0	20.5	18.0	19.0	24.0	22.0	23.0
26	12.0	10.5	11.5	13.0	11.0	12.0	21.5	19.0	20.0	24.5	23.0	23.5
27	11.5	10.0	10.5	13.0	12.0	12.5	23.0	20.5	21.5	23.5	20.0	22.0
28	12.0	10.0	11.0	13.5	12.0	13.0	24.0	22.0	23.0	25.5	19.5	23.0
29	---	---	---	14.0	13.0	13.5	24.0	23.0	23.5	27.5	24.0	25.5
30	---	---	---	16.0	13.5	14.5	26.0	22.5	23.5	26.0	24.0	25.5
31	---	---	---	17.0	14.0	15.5	---	---	---	24.0	21.0	22.5
MONTH	14.0	4.0	9.0	17.0	10.0	13.5	26.0	11.0	17.5	27.5	18.5	22.5

## BRAZOS RIVER BASIN

08085500 CLEAR FORK BRAZOS RIVER AT FORT GRIFFIN, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	21.0	20.5	20.5	29.5	27.0	28.0	32.0	28.0	29.5	---	---	---
2	23.0	20.0	21.5	30.5	27.5	28.5	31.5	26.5	29.0	---	---	---
3	25.0	23.0	24.0	30.0	28.0	29.0	31.5	27.5	29.5	---	---	---
4	26.0	24.0	25.0	30.5	28.0	29.5	30.0	27.5	28.5	---	---	---
5	27.0	25.0	26.0	31.0	28.5	29.5	30.5	27.0	28.5	---	---	---
6	26.0	23.5	24.5	30.5	28.0	29.0	32.0	27.0	29.5	---	---	---
7	24.5	22.0	23.5	30.0	27.0	28.5	31.0	27.0	29.0	30.5	26.5	28.0
8	24.5	23.0	24.0	30.0	26.5	28.0	31.0	27.0	29.0	30.0	24.5	26.5
9	25.5	24.0	25.0	30.0	26.0	28.0	31.0	27.0	29.0	28.5	23.5	25.5
10	26.5	25.0	25.5	30.0	26.5	28.0	31.0	27.0	29.0	29.5	23.5	25.5
11	26.0	25.0	25.5	30.5	26.5	28.5	33.0	27.0	29.5	30.5	23.5	26.0
12	26.0	24.5	25.5	30.5	27.0	28.5	33.0	27.0	30.5	31.0	23.5	26.5
13	26.5	25.0	25.5	30.0	27.0	28.0	---	---	---	29.0	23.5	25.5
14	27.5	25.5	26.0	29.5	26.5	27.5	---	---	---	28.5	21.0	24.0
15	27.0	25.0	26.0	28.5	26.5	27.0	---	---	---	30.0	22.0	24.5
16	26.0	25.0	25.5	29.0	26.5	27.0	---	---	---	30.0	22.0	25.0
17	26.0	24.0	24.5	28.5	27.0	27.5	---	---	---	29.5	23.5	25.5
18	26.5	24.5	25.5	28.5	27.0	28.0	---	---	---	29.0	24.0	26.0
19	27.0	25.5	26.0	29.0	28.0	28.5	---	---	---	27.5	23.5	25.0
20	28.5	26.5	27.5	29.5	28.0	28.5	---	---	---	---	---	---
21	29.5	27.0	28.0	30.0	28.0	28.5	---	---	---	---	---	---
22	29.0	27.5	28.5	30.5	27.5	29.0	---	---	---	---	---	---
23	29.0	27.5	28.5	30.5	28.0	29.0	---	---	---	---	---	---
24	29.0	27.0	27.5	31.0	28.5	29.5	---	---	---	---	---	---
25	29.0	27.0	27.5	32.5	28.5	30.0	---	---	---	---	---	---
26	29.5	26.5	27.5	31.5	28.5	30.0	---	---	---	---	---	---
27	29.5	27.0	28.0	31.5	28.5	29.5	---	---	---	---	---	---
28	31.0	27.0	28.5	32.0	28.0	29.5	---	---	---	---	---	---
29	30.0	27.0	28.0	32.5	28.5	30.0	---	---	---	---	---	---
30	29.0	26.5	27.5	32.0	28.5	30.0	---	---	---	25.0	19.0	22.0
31	---	---	---	31.5	28.5	29.5	---	---	---	---	---	---
MONTH	31.0	20.0	26.0	32.5	26.0	28.5	33.0	26.5	29.0	31.0	19.0	25.5



## BRAZOS RIVER BASIN

201

## 08086150 NORTH FORK HUBBARD CREEK NEAR ALBANY, TX

LOCATION.--Lat 32°42'27", long 99°16'29", Shackelford County, Hydrologic Unit 12060105, on downstream side of bridge on U.S. 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 National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. No diversion above station.

AVERAGE DISCHARGE.--20 years (water years 1964-83), 6.75 ft<sup>3</sup>/s (2.33 in/yr), 4,890 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.--Maximum discharge, 183 ft<sup>3</sup>/s June 6 at 0030 hours (gage height, 3.64 ft), no other peak above base of 100 ft<sup>3</sup>/s; minimum, 0.12 ft<sup>3</sup>/s Sept. 22, 25-27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.15	.21	.57	.42	2.3	.73	1.4	.86	1.5	.49	.24	.17
2	.17	.19	.55	.75	1.1	.78	1.2	.76	.70	.41	.29	.17
3	.87	.17	1.0	.75	.92	.86	1.2	.68	.43	.37	.26	.17
4	.49	.17	.92	.57	.91	1.3	1.2	.61	.31	.35	.25	.17
5	.30	.18	.51	.56	1.1	1.6	1.4	.60	.27	.49	.28	.17
6	.24	.24	.42	.51	1.0	1.3	1.4	.54	59	.51	.30	.17
7	.19	.27	.37	.46	.75	1.1	1.4	.51	11	.53	.31	.17
8	.19	.27	.37	.46	.67	.92	1.4	.51	3.5	.38	.34	.15
9	.16	.27	.37	.44	.67	.81	1.3	.51	2.2	.40	.34	.15
10	.16	.24	.84	.42	.67	.67	1.3	.53	1.9	.42	.34	.15
11	.16	.23	2.8	.42	.71	.67	1.2	.60	1.4	.42	.32	.15
12	.21	.16	2.0	.37	.67	.61	1.1	.61	1.4	.42	.34	.15
13	.24	.15	.98	.36	.64	.61	2.4	.61	1.3	.38	.34	.15
14	.24	.13	.75	.34	.67	.61	2.1	.62	1.4	.34	.31	.15
15	.24	.14	.67	.32	.67	.63	1.4	.61	.87	.37	.27	.15
16	.22	.15	.64	.30	.67	15	1.2	.61	.65	.37	.25	.14
17	.22	.15	.61	.30	.69	5.1	1.1	.72	.77	.37	.22	.15
18	.22	.14	.53	1.1	.74	2.3	1.1	.60	1.1	.34	.21	.14
19	.20	.16	.46	1.4	.70	1.5	1.0	.48	.90	.34	.19	.12
20	.17	.19	.46	.87	.87	2.5	.97	.42	.64	.34	.48	.12
21	.17	.19	.46	2.2	.94	1.5	1.1	.44	.58	.37	.54	.12
22	.20	.21	.54	2.4	.84	1.3	1.1	.48	.52	.32	.49	.12
23	.25	.22	.83	.99	.89	1.2	.98	.49	.46	.24	.44	.13
24	.30	.22	.57	.68	.81	1.2	1.1	.36	.49	.24	.34	.13
25	.30	.22	.47	.60	.65	1.1	1.2	.30	.45	.24	.29	.12
26	.26	2.6	.46	.43	.67	8.1	1.0	.30	.50	.22	.26	.12
27	.24	4.4	.76	.42	.67	3.2	.89	.30	2.1	.23	.23	.12
28	.24	1.2	.78	.43	.74	2.8	.89	.30	1.1	.19	.21	.13
29	.35	.67	.56	.34	---	2.6	.89	.24	.59	.17	.19	.13
30	.36	.56	.40	.35	---	2.2	.89	7.1	.56	.15	.18	.13
31	.27	---	.37	8.9	---	1.9	---	9.7	---	.17	.18	---
TOTAL	7.98	14.30	22.02	28.86	23.33	66.70	36.81	32.00	98.59	10.58	9.23	4.31
MEAN	.26	.48	.71	.93	.83	2.15	1.23	1.03	3.29	.34	.30	.14
MAX	.87	4.4	2.8	8.9	2.3	15	2.4	9.7	59	.53	.54	.17
MIN	.15	.13	.37	.30	.64	.61	.89	.24	.27	.15	.18	.12
CFSM	.007	.01	.02	.02	.02	.06	.03	.03	.08	.009	.008	.004
IN.	.01	.01	.02	.03	.02	.06	.03	.03	.09	.01	.01	.00
AC-FT	16	28	44	57	46	132	73	63	196	21	18	8.5
CAL YR 1982	TOTAL	2256.39	MEAN	6.18	MAX	714	MIN	.13	CFSM	.16	IN	2.14
WTR YR 1983	TOTAL	354.71	MEAN	.97	MAX	59	MIN	.12	CFSM	.03	IN	.34
									AC-FT	4480		
									AC-FT	704		

## BRAZOS RIVER BASIN

08086150 NORTH FORK HUBBARD CREEK NEAR ALBANY, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: November 1962 to current year. Sediment records: October 1967 to September 1975.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1962 to current year.

WATER TEMPERATURES: November 1962 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, 9,750 micromhos Sept. 28-30, 1968; minimum measured daily, 408 micromhos Sept. 16, 1974; minimum estimated daily, 149 micromhos Aug. 4, 1978.

WATER TEMPERATURES (1962-69, 1974-76): Maximum daily, 33.0°C July 11, 1964; minimum daily, 0.0°C Jan. 12, 1963, Jan. 29, 1966.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 5,080 micromhos Sept. 11, 22, 23; minimum daily, 2,470 micromhos Mar. 20.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
DEC 01...	0920	.53	3490	13.0	740	570	190	64	430
MAY 13...	0750	.54	4340	22.0	970	800	250	85	540
JUN 09...	1010	2.1	3120	24.0	680	550	190	49	360
JUL 11...	0940	.40	4380	26.0	980	820	250	87	530

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY 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 CONSTITU- ENTS, DIS- SOLVED (MG/L)
DEC 01...	7.1	3.5	170	120	970	.40	10	1890
MAY 13...	7.8	3.0	180	150	1300	.40	11	2450
JUN 09...	6.2	3.5	130	66	900	.30	7.9	1650
JUL 11...	7.6	3.6	160	130	1300	.40	13	2410

## BRAZOS RIVER BASIN

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08086150 NORTH FORK HUBBARD CREEK NEAR ALBANY, TX--Continued

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1982 TO SEPTEMBER 1983

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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.	1982	7.98	4450	2440	53	1300	29	130	2.8	1000
NOV.	1982	14.30	4150	2280	88	1200	48	120	4.6	930
DEC.	1982	22.02	3640	2010	119	1100	64	100	6.2	810
JAN.	1983	28.86	3720	2050	160	1100	86	110	8.3	830
FEB.	1983	23.33	3340	1850	117	990	62	95	6.0	740
MAR.	1983	66.70	3060	1700	306	900	163	87	16	680
APR.	1983	36.81	3860	2130	212	1100	114	110	11	860
MAY	1983	32.00	3860	2130	184	1100	99	110	9.6	860
JUNE	1983	98.59	3450	1910	509	1000	272	99	26	770
JULY	1983	10.58	4420	2430	69	1300	38	130	3.7	990
AUG.	1983	9.23	4740	2600	65	1400	35	140	3.4	1100
SEPT	1983	4.31	5000	2730	32	1500	17	150	1.7	1100
TOTAL		354.71	**	**	1910	**	1030	**	99	**
WTD. AVG.		0.97	3620	2000	**	1100	**	100	**	800

## SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4500	4490	3490	4000	2990	3970	3690	4130	3420	4320	4530	4890
2	4480	4450	3530	4140	3010	3980	3380	4190	3500	4330	4500	4910
3	4520	4400	3370	4210	2920	3920	3340	4230	3520	4340	4570	4930
4	4360	4420	3520	4220	2930	3970	3270	4270	4450	4330	4630	4940
5	4470	4440	3600	4110	2820	3980	3540	4230	4520	4340	4670	4960
6	4170	4460	3670	4160	2810	4000	3460	4310	3430	4350	4720	4950
7	4330	4480	3680	4210	2890	3990	3580	4390	2690	4370	4710	4940
8	4500	4470	3690	4160	2930	4000	3650	4370	3240	4390	4770	4970
9	4220	4480	3760	4120	2990	4040	3710	4350	3250	4360	4690	4910
10	4320	4530	3590	4100	3060	3940	3780	4260	3310	4370	4700	4940
11	4400	4490	3400	4150	3220	4140	3850	4280	3610	4380	4750	5080
12	4480	4520	3510	4120	3280	4100	3900	4340	3650	4420	4770	5000
13	4510	4460	3710	4090	3340	4070	3960	4390	3760	4430	4750	5050
14	4490	4440	3670	4140	3370	4030	3980	4350	3810	4450	4730	5060
15	4450	4500	3690	4070	3440	4020	4000	4410	3870	4400	4780	5050
16	4440	4470	3660	4150	3480	2800	4020	4440	3920	4420	4790	5040
17	4460	4440	3620	4270	3530	2740	4010	4310	3940	4430	4770	5030
18	4450	4400	3850	4130	3560	2660	4020	4350	4050	4450	4760	5040
19	4480	4500	3630	4240	3620	2550	4040	4430	4160	4470	4780	5040
20	4430	4530	3650	4230	3690	2470	4050	4400	4190	4490	4610	4970
21	4400	4390	3660	4010	3720	2640	4080	4370	4220	4440	4630	5070
22	4410	4530	3670	3980	3800	2650	4060	4380	4240	4500	4820	5080
23	4440	4400	3690	3840	3820	2880	4090	4390	4250	4650	4830	5080
24	4450	4300	3680	3700	3860	2910	4170	4400	4300	4510	4850	5070
25	4470	4490	3760	3670	3900	3050	3990	4410	4320	4520	4840	5050
26	4500	4470	3850	3690	3980	2970	4100	4400	4160	4540	4870	5040
27	4550	3960	3880	3680	4010	3020	4180	4370	4480	4570	4910	5060
28	4500	3510	3960	3680	4000	2970	4210	4480	4380	4550	4940	5070
29	4540	3600	3990	3560	---	2940	4220	4540	4360	4540	4850	5000
30	4510	3550	4000	3620	---	2910	4170	3560	4340	4590	4860	5070
31	4530	---	4030	3030	---	2940	---	3350	---	4550	4870	---
MEAN	4440	4350	3690	3980	3390	3400	3880	4290	3910	4450	4750	5010

## BRAZOS RIVER BASIN

08086150 NORTH FORK HUBBARD CREEK NEAR ALBANY, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983												
DAY	ONCE-DAILY											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	9.0	8.0	18.0	13.0	27.0	21.0	30.0	---	---
2	24.0	11.0	15.0	10.0	10.0	16.0	17.0	---	27.0	30.0	---	27.0
3	25.0	9.0	16.0	10.0	9.0	7.0	15.0	23.0	27.0	---	---	29.0
4	---	12.0	12.0	---	12.0	---	---	24.0	27.0	29.0	---	30.0
5	27.0	---	14.0	11.0	---	14.0	15.0	21.0	---	29.0	---	25.0
6	24.0	8.0	15.0	---	7.0	---	14.0	21.0	20.0	26.0	29.0	---
7	---	---	---	10.0	13.0	---	15.0	24.0	24.0	30.0	30.0	29.0
8	24.0	---	10.0	12.0	14.0	18.0	14.0	---	25.0	31.0	30.0	30.0
9	22.0	20.0	11.0	13.0	13.0	14.0	---	24.0	26.0	---	29.0	29.0
10	---	20.0	10.0	13.0	14.0	14.0	---	24.0	27.0	---	30.0	30.0
11	18.0	21.0	---	12.0	14.0	18.0	---	23.0	26.0	---	30.0	29.0
12	---	6.0	---	12.0	---	16.0	21.0	24.0	25.0	30.0	30.0	30.0
13	20.0	11.0	11.0	14.0	---	---	19.0	23.0	27.0	29.0	31.0	29.0
14	22.0	9.0	12.0	11.0	15.0	---	17.0	---	---	28.0	30.0	---
15	22.0	9.0	12.0	13.0	13.0	16.0	17.0	---	---	29.0	31.0	28.0
16	20.0	15.0	13.0	---	---	---	---	---	26.0	30.0	---	---
17	---	16.0	12.0	---	---	13.0	---	---	25.0	---	---	27.0
18	22.0	17.0	13.0	9.0	---	16.0	18.0	---	26.0	---	29.0	---
19	21.0	12.0	13.0	9.0	---	12.0	---	25.0	28.0	24.0	31.0	28.0
20	---	15.0	---	8.0	---	12.0	19.0	21.0	---	30.0	29.0	20.0
21	20.0	16.0	15.0	8.0	13.0	14.0	18.0	25.0	29.0	---	---	21.0
22	20.0	17.0	16.0	8.0	13.0	13.0	20.0	---	---	30.0	29.0	24.0
23	---	11.0	14.0	---	---	15.0	---	24.0	27.0	30.0	---	25.0
24	19.0	---	11.0	9.0	16.0	12.0	23.0	---	---	31.0	30.0	24.0
25	18.0	9.0	---	9.0	13.0	---	22.0	25.0	29.0	31.0	31.0	---
26	21.0	10.0	10.0	---	---	13.0	21.0	25.0	26.0	31.0	---	26.0
27	---	11.0	11.0	10.0	16.0	15.0	---	24.0	29.0	30.0	30.0	---
28	21.0	12.0	9.0	11.0	17.0	17.0	22.0	27.0	30.0	---	31.0	24.0
29	19.0	13.0	10.0	12.0	---	16.0	24.0	28.0	---	31.0	32.0	25.0
30	20.0	17.0	---	---	---	17.0	26.0	---	30.0	---	30.0	27.0
31	22.0	---	10.0	11.0	---	21.0	---	19.0	---	29.0	29.0	---
MEAN	21.5	13.0	12.5	10.5	13.0	15.0	18.5	24.0	26.5	29.5	30.0	27.0

BRAZOS RIVER BASIN

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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 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.--Water-discharge records good.

AVERAGE DISCHARGE.--17 years, 69.5 ft<sup>3</sup>/s (1.54 in/yr), 50,350 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.--Maximum discharge, 1,380 ft<sup>3</sup>/s June 6 at 0700 hours (gage height, 860 ft), no peak above base of 2,000 ft<sup>3</sup>/s no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.36	.31	2.4	3.1	1.7	2.8	4.5	1.8	27	.74	.00	.00
2	.31	.37	1.3	4.1	13	2.7	3.9	1.6	14	.39	.00	.00
3	.68	.32	1.6	4.1	11	2.6	3.1	1.4	7.9	.20	.00	.00
4	.66	.16	1.6	4.5	8.8	2.8	2.6	1.3	5.2	.21	.00	.00
5	.23	.18	2.6	4.6	7.9	7.0	2.6	1.1	3.5	.91	.00	.00
6	.02	.18	3.1	3.9	6.8	14	2.7	.96	361	.82	.00	.00
7	.08	.28	3.2	3.6	5.9	9.3	2.8	.90	38	.67	.00	.00
8	.22	.92	2.6	3.4	5.3	6.0	2.8	.85	16	.66	.00	.00
9	.69	1.0	2.4	3.1	4.9	4.4	2.8	.69	9.6	.66	.00	.00
10	1.0	3.4	2.3	2.9	4.8	3.6	2.7	.61	6.1	.49	.00	.00
11	1.1	2.7	2.8	2.7	4.5	3.0	2.4	.51	4.7	.21	.00	.00
12	.88	1.1	5.1	3.3	4.4	2.7	2.2	.46	3.9	.18	.00	.00
13	.31	.93	7.9	4.8	3.9	2.5	2.3	.31	3.0	.25	.00	.00
14	.31	1.1	6.1	3.4	3.7	2.1	2.3	.22	2.8	.12	.00	.00
15	.27	1.1	4.6	2.6	3.7	2.2	2.3	.26	2.4	.05	.00	.00
16	.22	1.1	3.9	2.4	3.4	2.7	2.5	.32	2.0	.00	.00	.00
17	.22	1.1	3.3	2.8	3.2	8.3	2.7	.41	1.8	.06	.00	.00
18	.21	1.2	2.8	4.3	3.1	14	2.6	.41	1.8	.34	.00	.00
19	.04	1.3	2.6	3.2	3.0	9.3	2.3	.41	1.5	.15	.00	.00
20	.11	1.6	2.5	2.9	3.1	7.0	2.1	.49	1.3	.05	.00	.00
21	.14	1.7	2.3	3.7	3.3	8.7	1.8	.54	.88	.04	.00	.00
22	.14	1.5	2.1	5.1	3.5	7.7	1.9	.51	.81	.03	.00	.00
23	.14	1.4	1.9	6.9	3.5	5.7	2.1	.46	.81	.03	.00	.00
24	.14	1.4	1.7	6.9	3.5	4.7	2.2	.47	.87	.02	.00	.00
25	.14	1.5	1.9	6.1	3.2	4.2	2.5	.40	.61	.02	.00	.00
26	.14	5.9	1.9	5.0	2.9	7.9	2.9	.31	.73	.01	.00	.00
27	.25	8.1	2.2	4.2	2.9	19	2.4	.29	3.0	.00	.00	.00
28	.36	7.0	2.3	3.6	2.8	12	2.1	.10	1.7	.00	.00	.00
29	.41	4.6	2.3	2.9	---	10	2.0	.03	1.2	.00	.00	.00
30	.35	3.7	2.3	2.2	---	7.5	2.0	.81	1.1	.00	.00	.00
31	.31	---	2.3	1.8	---	5.5	---	77	---	.00	.00	---
TOTAL	10.44	57.15	87.9	118.1	131.7	201.9	76.1	95.93	525.21	7.31	.00	.00
MEAN	.34	1.91	2.84	3.81	4.70	6.51	2.54	3.09	17.5	.24	.000	.000
MAX	1.1	8.1	7.9	6.9	13	19	4.5	.77	361	.91	.00	.00
MIN	.02	.16	1.3	1.8	1.7	2.1	1.8	.03	.61	.00	.00	.00
CFSM	.001	.003	.005	.006	.008	.01	.004	.005	.03	.000	.000	.000
IN.	.00	.00	.01	.01	.01	.01	.00	.01	.03	.00	.00	.00
AC-FT	21	113	174	234	261	400	151	190	1040	14	.00	.00
CAL YR 1982	TOTAL	16892.33	MEAN	46.3	MAX	5630	MIN	.02	CFSM	.08	IN	1.03
WTR YR 1983	TOTAL	1311.74	MEAN	3.59	MAX	361	MIN	.00	CFSM	.006	IN	.08
									AC-FT	33510		
									AC-FT	2600		



## BRAZOS RIVER BASIN

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 TEMPERATURES: October 1966 to current year.

INSTRUMENTATION.--Beginning Mar. 30, 1982, specific conductance and water temperature are recorded continuously at this station.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and 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, 21,200 micromhos Feb. 15, 21, 1978; minimum measured daily, 253 micromhos Sept. 8, 1967; minimum estimated daily, 129 micromhos Aug. 4, 1978.

WATER TEMPERATURES (1966-80, 1983): Maximum daily, 37.0°C July 11, 1969; minimum daily, 0.0°C Dec. 11, 1972, Jan. 8, 10, 1973.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 5,460 micromhos Oct. 3, May 13; minimum daily, 1,020 micromhos June 7.

WATER TEMPERATURES: Minimum daily, 3.5°C Jan. 3, 4, Feb. 7.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983-

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (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...	1245	.78	5060	26.0	940	820	230	89	770
MAY 13...	0820	.38	5460	23.5	1100	980	270	110	740
JUN 09...	1200	9.8	1680	22.0	350	250	89	30	190
JUL 11...	1040	.23	2880	30.0	560	450	140	50	360

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY 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 04...	11	5.9	120	290	1600	.30	9.9	3070
MAY 13...	9.9	5.5	150	410	1600	.30	4.2	3230
JUN 09...	4.6	5.6	92	86	420	.20	5.6	882
JUL 11...	6.9	6.8	110	110	820	.30	8.5	1560

## 08086212 HUBBARD CREEK BELOW ALBANY, TX--Continued

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1982 TO SEPTEMBER 1983

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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.	1982	10.44	4870	2700	76	1400	40	200	5.6	1000
NOV.	1982	57.15	4210	2320	358	1200	188	180	27	870
DEC.	1982	87.9	3790	2070	491	1100	256	160	39	780
JAN.	1983	118.1	3320	1800	575	940	299	150	46	690
FEB.	1983	131.7	3370	1830	652	950	339	150	52	700
MAR.	1983	201.9	3690	2010	1100	1100	573	160	87	760
APR.	1983	76.1	4510	2490	511	1300	269	190	39	930
MAY	1983	95.93	3740	2040	530	1100	277	160	42	770
JUNE	1983	525.21	1430	762	1080	390	553	66	94	300
JULY	1983	7.31	2850	1540	30	790	16	130	2.5	590
AUG.	1983	0.00	*	*	0.00	*	0.00	*	0.00	*
SEPT	1983	0.00	*	*	0.00	*	0.00	*	0.00	*
TOTAL		1311.74	**	**	5400	**	2810	**	434	**
WTD. AVG.		3.6	2800	1520	**	790	**	120	**	580

## SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	5060	4820	4920	4920	4860	4880	3760	3520	3680	3800	3700	3730
2	5320	4900	5090	4900	4840	4880	3920	3740	3870	3740	3360	3660
3	5460	4960	5230	5000	4860	4950	4040	3860	3920	3720	3120	3580
4	5220	4960	5060	5020	4880	4950	4100	3860	4000	3660	3040	3260
5	5060	4960	5010	5060	4960	5000	3940	3740	3840	3380	3060	3270
6	5080	4980	5010	5100	4880	5030	3960	3800	3860	3380	2940	3260
7	5040	4980	5010	5160	5000	5060	3880	3820	3850	3340	3280	3340
8	5020	4920	4970	5140	5020	5070	3960	3780	3890	3360	3340	3360
9	4980	4900	4950	5140	5060	5080	4060	3860	3960	3360	2940	3220
10	4940	4820	4880	5120	4280	4850	4040	3860	3960	3360	2900	3260
11	4920	4720	4800	4540	4300	4380	4240	3860	4110	3360	2960	3250
12	4880	4720	4780	4500	4380	4460	4240	3420	3790	3380	2520	3230
13	4780	4620	4720	4580	3680	4440	3820	3480	3630	3320	3000	3230
14	4740	4620	4660	4700	2500	4210	3820	3700	3740	3360	3320	3340
15	4720	4620	4660	4760	1960	4230	3940	3560	3750	3380	2640	3250
16	4720	4580	4680	4800	4660	4750	3620	3540	3570	3420	2660	3270
17	4720	4660	4690	4840	4680	4760	3720	3620	3690	3420	3380	3410
18	4720	4520	4680	4840	4680	4770	3860	3720	3810	3420	3200	3330
19	4780	4680	4730	4760	4700	4740	3880	3700	3800	3400	3360	3380
20	4800	4720	4760	4760	4700	4740	3840	3700	3780	3420	3380	3400
21	4780	4720	4760	4720	4620	4680	3820	3720	3790	3400	3220	3370
22	4760	4740	4750	4720	4620	4680	3820	3780	3800	3380	3320	3350
23	4780	4720	4750	4760	4700	4720	3860	3800	3820	3340	2980	3240
24	4780	4680	4750	4760	4720	4740	3840	3780	3820	3320	3000	3200
25	4780	4700	4770	4760	4320	4710	3820	3780	3810	3300	2940	3200
26	4880	4780	4790	4400	4080	4150	3820	3800	3810	3340	3300	3320
27	4900	4800	4830	4120	3700	4040	3840	3740	3790	3340	3060	3260
28	4920	4800	4840	3680	3360	3460	3780	3740	3760	3360	3020	3230
29	4820	4740	4800	3600	3380	3450	3840	3380	3680	3380	2920	3290
30	4840	4720	4810	3600	3420	3510	3780	3400	3730	3400	3100	3290
31	4900	4800	4850	---	---	---	3760	3720	3750	3420	3280	3360
MONTH	5460	4520	4840	5160	1960	4580	4240	3380	3810	3800	2520	3330

## BRAZOS RIVER BASIN

08086212 HUBBARD CREEK BELOW ALBANY, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	3380	3140	3280	3870	3780	3800	---	---	4380	4540	4460	4500
2	3240	3200	3190	---	---	3910	---	---	4500	4600	4540	4570
3	3320	3020	3190	---	---	3970	---	---	4580	4880	4620	4770
4	3300	2900	3190	---	---	3950	4740	4560	4640	4880	4740	4820
5	3300	3200	3250	---	---	3880	4840	4720	4800	4940	4820	4890
6	3300	2700	3230	---	---	3490	4820	4640	4730	5000	4880	4940
7	3300	3080	3250	---	---	3540	4700	4560	4620	5100	4940	5020
8	3280	2900	3170	---	---	3660	4740	4660	4700	5120	4960	5050
9	3360	3280	3300	---	---	3790	4700	4320	4500	5140	4980	5040
10	3360	3020	3300	---	---	3910	4360	4240	4310	5260	5040	5130
11	3360	3320	3340	---	---	4030	4320	4260	4280	5280	5060	5140
12	3380	3000	3330	---	---	4150	4360	4240	4310	5360	5140	5220
13	3400	3140	3330	---	---	4280	4460	4160	4300	5460	5180	5250
14	3420	3100	3370	---	---	4400	4600	4420	4530	5360	5200	5270
15	3480	3260	3380	---	---	4380	4620	4460	4530	---	---	5240
16	3520	3160	3420	---	---	4340	4480	4260	4370	---	---	5200
17	3520	3480	3500	---	---	3920	4420	4260	4330	---	---	5140
18	3580	3420	3530	---	---	3490	4460	4380	4420	---	---	5120
19	3640	3500	3570	---	---	3330	4420	4340	4400	---	---	5090
20	3620	3560	3580	---	---	3400	4720	4400	4600	---	---	5020
21	3660	3500	3620	---	---	3350	4680	4560	4630	---	---	4960
22	3660	3620	3640	---	---	3430	4560	4400	4490	5000	4800	4940
23	3680	3520	3660	---	---	3520	4600	4400	4500	5020	4800	4950
24	3800	3660	3700	---	---	3600	4680	4580	4630	4980	4900	4930
25	3840	3740	3800	---	---	3720	4640	4560	4610	4940	4840	4920
26	3800	3760	3780	---	---	3610	4580	4520	4570	---	---	5040
27	3800	3740	3780	---	---	3240	4580	4480	4540	---	---	5070
28	3820	3760	3790	---	---	3820	4540	4460	4500	---	---	5150
29	---	---	---	---	---	4080	4520	4460	4490	---	---	5290
30	---	---	---	---	---	4220	4540	4460	4500	---	---	5200
31	---	---	---	---	---	4310	---	---	---	---	---	3450
MONTH	3840	2700	3450	3870	3780	3820	4840	4160	4510	5460	4460	4980

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	---	---	3750	---	---	2740	---	---	---	---	---	---
2	---	---	3790	---	---	2790	---	---	---	---	---	---
3	---	---	3900	---	---	2920	---	---	---	---	---	---
4	---	---	3960	---	---	2910	---	---	---	---	---	---
5	---	---	4040	---	---	2800	---	---	---	---	---	---
6	---	---	1050	---	---	2730	---	---	---	---	---	---
7	---	---	1020	---	---	2780	---	---	---	---	---	---
8	---	---	1200	---	---	2810	---	---	---	---	---	---
9	---	---	1280	---	---	2840	---	---	---	---	---	---
10	---	---	1370	---	---	2860	---	---	---	---	---	---
11	---	---	1460	---	---	2880	---	---	---	---	---	---
12	---	---	1540	---	---	2940	---	---	---	---	---	---
13	---	---	1630	---	---	2920	---	---	---	---	---	---
14	1760	1600	1690	---	---	3010	---	---	---	---	---	---
15	---	---	1770	---	---	3150	---	---	---	---	---	---
16	---	---	1880	---	---	---	---	---	---	---	---	---
17	2000	1800	1920	---	---	3200	---	---	---	---	---	---
18	---	---	2030	---	---	3060	---	---	---	---	---	---
19	---	---	2150	---	---	3080	---	---	---	---	---	---
20	---	---	2250	---	---	3100	---	---	---	---	---	---
21	---	---	2330	---	---	3130	---	---	---	---	---	---
22	---	---	2460	---	---	3170	---	---	---	---	---	---
23	---	---	2510	---	---	3200	---	---	---	---	---	---
24	---	---	2470	---	---	3220	---	---	---	---	---	---
25	---	---	2620	3440	3160	3230	---	---	---	---	---	---
26	---	---	2600	3480	3160	3250	---	---	---	---	---	---
27	---	---	2420	---	---	---	---	---	---	---	---	---
28	---	---	2550	---	---	---	---	---	---	---	---	---
29	---	---	2650	---	---	---	---	---	---	---	---	---
30	---	---	2680	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	2000	1600	2300	3480	3160	2990	---	---	---	---	---	---

## 08086212 HUBBARD CREEK BELOW ALBANY, TX--Continued

## TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	24.0	22.0	23.0	21.5	19.5	20.5	15.0	11.0	13.5	5.5	4.0	5.0
2	26.0	23.0	24.5	20.5	16.0	18.5	14.0	13.0	13.5	7.5	5.0	6.0
3	28.5	22.5	25.5	16.5	12.5	14.5	13.0	11.5	12.0	5.0	3.5	4.0
4	27.5	23.0	25.0	15.0	10.5	13.0	11.5	10.5	11.0	7.5	3.5	6.5
5	26.0	23.5	25.0	14.0	10.5	12.5	12.5	9.5	11.0	8.0	4.0	6.0
6	30.0	23.5	26.0	15.0	11.5	13.5	13.0	9.0	11.0	9.0	4.0	6.5
7	27.5	24.0	25.5	16.5	14.0	15.5	13.0	10.0	11.5	8.0	5.0	6.5
8	27.0	24.0	25.5	16.5	15.5	16.0	12.0	8.5	10.0	9.0	6.5	7.5
9	26.0	20.5	23.0	17.0	16.0	16.5	8.0	7.5	7.5	9.5	5.5	7.5
10	24.0	18.5	21.0	18.5	16.5	17.5	8.5	8.0	8.5	9.0	5.5	7.5
11	23.5	19.5	20.5	21.0	17.0	19.0	8.5	6.5	7.5	10.0	6.0	8.0
12	20.0	18.0	19.0	17.0	13.5	15.5	8.0	5.0	6.0	10.0	6.0	8.0
13	22.5	17.0	19.5	14.0	11.0	12.5	8.5	5.0	6.5	11.5	6.5	9.0
14	20.5	17.0	19.0	12.0	9.0	10.5	10.5	6.0	8.0	10.5	7.5	9.0
15	23.0	17.0	19.5	10.5	7.0	9.0	9.5	6.0	8.0	9.5	6.5	8.0
16	23.0	17.5	20.0	11.0	8.5	9.5	9.5	6.0	7.5	9.5	5.5	7.5
17	20.5	18.5	19.5	13.0	9.5	11.0	10.5	6.5	8.5	8.5	7.0	8.0
18	21.0	18.5	20.0	13.0	11.0	12.0	11.5	8.5	9.5	8.5	8.0	8.0
19	23.5	17.5	20.5	16.0	13.0	14.5	10.0	7.5	9.0	8.0	6.5	7.0
20	20.0	16.0	17.5	15.5	13.5	14.5	10.5	7.0	9.0	6.5	6.0	6.0
21	16.5	15.5	16.0	15.5	12.5	14.0	11.0	7.5	9.5	6.0	5.0	5.5
22	17.5	15.0	16.0	17.0	15.0	16.0	12.0	9.0	10.5	7.5	5.0	6.0
23	18.0	13.5	16.0	15.5	8.5	12.5	13.5	10.0	11.5	8.0	4.0	6.0
24	19.0	14.0	16.5	8.5	6.5	7.0	12.5	10.5	11.5	9.5	5.0	6.5
25	16.5	14.0	15.5	8.0	7.0	7.5	10.5	7.5	8.5	9.0	5.0	7.0
26	16.5	14.0	15.5	8.5	7.0	8.0	7.5	6.0	6.5	9.0	6.0	7.0
27	18.5	15.0	17.0	8.5	7.5	8.0	9.0	6.0	7.5	8.5	4.5	6.5
28	21.5	17.0	19.0	10.5	6.0	8.5	8.5	6.0	7.0	10.0	6.0	8.0
29	18.0	15.0	17.0	12.0	7.5	10.0	7.5	5.0	6.0	11.0	7.0	9.0
30	19.5	15.0	17.5	12.5	8.5	10.5	5.5	5.0	5.5	10.0	7.0	8.5
31	20.5	18.0	19.5	---	---	---	5.5	5.0	5.0	10.5	8.5	9.5
MONTH	30.0	13.5	20.0	21.5	6.0	13.0	15.0	5.0	9.0	11.5	3.5	7.0

## TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	8.0	7.0	7.5	13.5	12.0	12.5	---	---	---	25.5	23.5	24.5
2	6.5	6.0	6.5	---	---	---	---	---	---	23.5	21.5	22.5
3	8.0	5.0	6.0	---	---	---	---	---	---	25.5	19.5	22.5
4	6.0	5.5	5.5	---	---	---	18.0	15.0	17.0	24.0	19.0	22.0
5	7.0	5.0	6.0	---	---	---	14.0	12.0	13.0	23.0	18.5	21.0
6	6.0	4.5	5.0	---	---	---	15.0	10.5	12.5	24.0	18.5	21.5
7	7.0	3.5	5.0	---	---	---	15.0	11.0	13.0	28.0	20.0	23.5
8	10.5	5.0	7.5	---	---	---	12.5	11.0	12.0	26.5	20.0	22.5
9	11.0	7.0	9.0	---	---	---	14.5	9.5	12.0	24.0	19.5	21.5
10	12.0	8.0	10.0	---	---	---	17.5	11.0	14.0	23.0	20.5	22.0
11	12.0	8.5	10.0	---	---	---	18.0	14.0	16.5	23.5	20.0	22.5
12	11.0	7.0	9.0	---	---	---	20.0	16.0	18.0	25.0	22.0	23.5
13	11.0	7.0	9.0	---	---	---	21.0	17.0	19.0	24.5	23.0	23.5
14	13.0	8.5	11.0	---	---	---	18.5	14.5	16.5	23.0	19.0	21.0
15	12.0	10.5	11.0	---	---	---	20.0	13.0	16.5	---	---	---
16	13.5	9.0	11.0	---	---	---	18.5	13.5	16.5	---	---	---
17	13.0	8.5	11.0	---	---	---	21.5	15.0	18.0	---	---	---
18	15.0	10.5	12.5	---	---	---	23.0	16.0	19.5	---	---	---
19	14.5	10.5	13.0	---	---	---	23.0	17.5	20.0	---	---	---
20	15.5	12.0	13.5	---	---	---	19.0	16.5	17.5	---	---	---
21	12.5	10.5	11.0	---	---	---	21.0	16.5	19.0	---	---	---
22	12.5	10.5	11.0	---	---	---	21.5	19.0	20.0	---	---	---
23	14.0	9.5	12.0	---	---	---	21.0	17.0	19.0	---	---	---
24	16.5	11.5	13.5	---	---	---	23.0	16.0	19.5	---	---	---
25	12.5	10.0	11.5	---	---	---	20.5	17.0	19.0	---	---	---
26	11.5	10.0	10.5	---	---	---	22.0	17.5	21.5	---	---	---
27	12.5	8.5	10.5	---	---	---	23.5	19.5	22.0	---	---	---
28	14.0	10.0	12.0	---	---	---	24.5	21.0	23.0	---	---	---
29	---	---	---	---	---	---	24.0	22.5	23.0	---	---	---
30	---	---	---	---	---	---	26.0	22.0	24.5	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	16.5	3.5	9.5	13.5	12.0	12.5	26.0	9.5	18.0	28.0	18.5	22.5

## BRAZOS RIVER BASIN

08086212 HUBBARD CREEK BELOW ALBANY, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983--Continued

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



BRAZOS RIVER BASIN

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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 National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1975, at site 1.6 mi downstream at datum 7.41 ft lower.

REMARKS.--Water-discharge records fair. Flow is affected by Lake Cisco (capacity 25,600 acre-ft).

AVERAGE DISCHARGE.--21 years (water years 1963-83), 28.4 ft<sup>3</sup>/s (1.38 in/yr), 20,580 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.--Maximum discharge, 2,920 ft<sup>3</sup>/s May 28 at 0030 hours (gage height, 15.56 ft), no other peak above base of 2,000 ft<sup>3</sup>/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.03	.07	.13	.10	.21	.09	5.4	.11	.00	.00
2	.00	.00	.03	.07	.06	.10	.18	.07	5.0	.09	.00	.00
3	.00	.00	.08	.07	.04	.13	.15	.07	4.6	.07	.00	.00
4	.00	.00	.07	.06	.04	.25	.15	.07	4.6	.07	.00	.00
5	.00	.00	.07	.06	.04	.18	.13	.06	4.6	.06	.00	.00
6	.00	.00	.07	.06	.04	5.5	.13	.06	4.6	.06	.00	.00
7	.00	.00	.07	.06	.04	.69	.13	.06	4.6	.04	.00	.00
8	.00	.00	.07	.06	.04	.25	.13	.06	4.6	.04	.00	.00
9	.00	.00	.07	.06	.04	.18	.13	.06	4.2	.03	.00	.00
10	.20	.00	.12	.06	.03	.13	.11	.06	3.1	.03	.00	.00
11	.71	.00	.06	.06	.04	.11	.11	.04	1.6	.03	.00	.00
12	.35	.00	.13	.09	.06	.09	.11	.04	1.0	.03	.00	.00
13	.25	.00	.11	.08	.07	.07	.11	.04	.34	.03	.00	.00
14	.21	.00	.09	.07	.15	.06	.11	.04	.13	.03	.00	.00
15	.21	.00	.07	.06	.18	.04	.11	.05	.13	.03	.00	.00
16	.21	.00	.07	.06	.18	.03	.11	.04	.13	.04	.00	.00
17	.18	.00	.07	.06	.15	.02	.11	.04	.13	.04	.00	.00
18	.18	.00	.07	.06	.15	4.1	.11	.04	.13	.04	.00	.00
19	.18	.00	.07	.07	.15	.47	.11	.11	.13	.04	.00	.00
20	.09	.00	.07	.07	.15	2.0	.11	.09	.11	.04	.00	.00
21	.00	.02	.07	.08	.13	2.3	.11	.09	.09	.04	.00	.00
22	.00	.02	.07	.09	.13	.78	.11	.10	.09	.04	.00	.00
23	.00	.02	.07	.09	.13	.25	.11	.09	.07	.04	.00	.00
24	.00	.02	.15	.09	.13	.07	.09	.08	.07	.04	.00	.00
25	.00	.03	.13	.11	.13	.01	.09	.07	.07	.03	.00	.00
26	.00	.03	.13	.13	.13	1.3	.09	.07	.07	.01	.00	.00
27	.00	.03	.13	.13	.11	230	.09	282	.07	.00	.00	.00
28	.00	.03	.13	.13	.11	191	.09	927	.07	.00	.00	.00
29	.00	.03	.18	.13	---	22	.09	82	.07	.00	.00	.00
30	.00	.03	.11	.13	---	1.4	.09	16	.11	.00	.00	.00
31	.00	---	.08	.15	---	.25	---	8.4	---	.00	.00	---
TOTAL	2.77	.26	2.74	2.57	2.78	463.86	3.51	1317.09	49.91	1.15	.00	.00
MEAN	.089	.009	.088	.083	.099	15.0	.12	42.5	1.66	.037	.000	.000
MAX	.71	.03	.18	.15	.18	230	.21	927	5.4	.11	.00	.00
MIN	.00	.00	.03	.06	.03	.01	.09	.04	.07	.00	.00	.00
CFSM	.000	.000	.000	.000	.000	.05	.000	.15	.006	.000	.000	.000
IN.	.00	.00	.00	.00	.00	.06	.00	.17	.01	.00	.00	.00
AC-FT	5.5	.5	5.4	5.1	5.5	920	7.0	2610	99	2.3	.00	.00

CAL YR 1982	TOTAL	4670.35	MEAN	12.8	MAX	2020	MIN	.00	CFSM	.05	IN	.62	AC-FT	9260
WTR YR 1983	TOTAL	1846.64	MEAN	5.06	MAX	927	MIN	.00	CFSM	.02	IN	.25	AC-FT	3660

## BRAZOS RIVER BASIN

08086290 BIG SANDY CREEK ABOVE BRECKENRIDGE, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: February 1962 to current year. Sediment records: October 1967 to September 1975.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: February 1962 to current year.

WATER TEMPERATURES: February 1962 to August 1979, March 1982 to current year.

INSTRUMENTATION.--Beginning Mar. 30, 1982, specific conductance and water temperature are recorded continuously at this station.

REMARKS.--When maximum and 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, 28,700 micromhos Apr. 5, 10, 1976; minimum daily, 59 micromhos Nov. 21, 1963.

WATER TEMPERATURES (1976-77, 1982-83): Maximum daily, 35.5°C July 21, 22, 24, Aug. 15, 16, 1982; minimum daily, 0.0°C Jan. 9, 10, 1977.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 19,300 micromhos Nov. 24; minimum daily, 308 micromhos May 28.

WATER TEMPERATURES: Maximum daily, 35.0°C July 25, 26.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
DEC 01...	1420	.03	10000	17.0	1600	1500	460	110	1600
APR 04...	1450	.15	5130	18.5	950	840	290	56	720
MAY 13...	1135	.04	18100	24.5	3400	3200	980	220	3000
JUN 09...	1630	4.2	1090	28.0	220	120	68	11	120

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY 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)
DEC 01...	18	9.6	100	490	3300	.20	5.0	6030
APR 04...	11	5.2	120	240	1600	.20	3.1	2990
MAY 13...	23	4.6	130	910	6100	.20	4.9	11300
JUN 09...	3.7	5.6	94	47	250	.20	6.8	565

## BRAZOS RIVER BASIN

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08086290 BIG SANDY CREEK ABOVE BRECKENRIDGE, TX--Continued

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1982 TO SEPTEMBER 1983

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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.	1982	2.77	17600	11200	84	6300	47	710	5.3	*
NOV.	1982	0.26	14000	8680	6.1	4900	3.4	560	0.4	*
DEC.	1982	2.74	12800	7760	57	4300	32	520	3.8	*
JAN.	1983	2.57	15800	9850	68	5500	38	630	4.4	*
FEB.	1983	2.78	15500	9670	73	5400	41	620	4.7	*
MAR.	1983	463.86	2100	1170	1470	640	800	86	108	380
APR.	1983	3.51	7230	4200	40	2300	22	290	2.8	1300
MAY	1983	1317.09	819	445	1580	240	854	34	120	150
JUNE	1983	49.91	1240	682	92	370	50	51	6.9	220
JULY	1983	1.15	12500	7550	23	4200	13	500	1.6	*
AUG.	1983	0.00	*	*	0.00	*	0.00	*	0.00	*
SEPT	1983	0.00	*	*	0.00	*	0.00	*	0.00	*
TOTAL		1846.64	**	**	3490	**	1900	**	258	**
WTD. AVG.		5.1	1260	701	**	380	**	52	**	230

## SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	---	---	---	10200	9940	10000	16200	15100	15700
2	---	---	---	---	---	---	10400	10100	10300	16300	15500	16100
3	---	---	---	---	---	---	10600	9940	10300	16200	16100	16100
4	---	---	---	---	---	---	10400	10100	10300	16100	15400	15700
5	---	---	---	---	---	---	10600	10300	10500	15700	15400	15400
6	---	---	---	---	---	---	11000	10600	10800	15900	15500	15700
7	---	---	---	---	---	---	11500	11000	11200	16000	15100	15700
8	---	---	---	---	---	---	11500	10900	11100	15800	15300	15600
9	---	---	---	---	---	---	12400	11500	11900	16100	15700	15800
10	18600	18300	18500	---	---	---	12800	12200	12600	16100	15800	15900
11	18800	18400	18600	---	---	---	12500	11000	11700	16200	15800	16100
12	18600	16600	17700	---	---	---	12700	12400	12600	16400	16200	16300
13	17600	16200	17000	---	---	---	12600	10000	11000	16600	16300	16400
14	17200	16400	16900	---	---	---	10200	9700	9890	16700	16400	16600
15	17200	16800	17100	---	---	---	10100	9920	10000	16800	16700	16700
16	17200	16900	17100	---	---	---	10200	9880	10100	16900	16700	16800
17	17100	17000	17100	---	---	---	11800	10200	11000	16900	16800	16900
18	17200	17000	17100	---	---	---	12000	10800	11500	17100	16800	16900
19	17300	17000	17100	---	---	---	12000	11600	11800	17200	16800	17100
20	17200	17000	17100	---	---	---	12100	11600	11800	17200	16300	16800
21	---	---	---	18900	18600	18800	13100	12000	12600	16800	15900	16200
22	---	---	---	18900	18700	18800	13500	12900	13100	15800	14500	15200
23	---	---	---	19000	18900	18900	14400	13300	13800	15300	13700	14500
24	---	---	---	19300	19000	19000	15000	13900	14400	15000	13000	14100
25	---	---	---	19200	18900	19000	14800	14300	14500	15500	14800	15100
26	---	---	---	18200	7500	13600	15600	14800	15100	15500	14400	14800
27	---	---	---	10400	6100	8080	15500	15100	15300	16000	15100	15600
28	---	---	---	10300	9460	10000	15300	15100	15100	15600	15400	15500
29	---	---	---	10500	10000	10100	15300	15000	15200	16000	15400	15600
30	---	---	---	10200	9860	10000	15300	15100	15300	15900	15500	15800
31	---	---	---	---	---	---	15500	15100	15300	15900	15500	15700
MONTH	18800	16200	17400	19300	6100	14600	15600	9700	12300	17200	13000	15900

## BRAZOS RIVER BASIN

08086290 BIG SANDY CREEK ABOVE BRECKENRIDGE, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	15800	15100	15300	16200	15300	15600	3340	2760	3090	15600	15200	15400
2	15900	14900	15400	15900	15600	15800	3620	3340	3470	16200	15200	15700
3	15700	15200	15400	16100	15800	15900	4520	3640	4030	16500	15800	16100
4	15600	15200	15300	16100	14800	15400	5340	4540	4740	16900	16100	16500
5	15700	15300	15500	15300	14600	15000	5680	5260	5380	17100	16500	16800
6	15700	13800	15000	15600	8180	12700	7280	5720	6320	17500	16700	17100
7	15200	15000	15100	16300	14600	15600	8120	7240	7480	18000	17300	17500
8	15300	14900	15200	---	---	15800	8260	8060	8130	17900	17600	17700
9	15000	14600	14800	---	---	15900	10100	7920	9090	18200	17600	17900
10	15200	14900	15000	---	---	16000	7500	4340	5350	18200	17800	18000
11	15500	15100	15300	---	---	16100	7240	5560	6440	18300	17700	18100
12	15600	15300	15500	---	---	16000	6340	5660	6090	18400	17900	18200
13	15900	15600	15800	---	---	16200	6440	5820	6140	18600	18100	18300
14	16400	15800	16100	---	---	16400	7500	6440	6950	18400	17800	18100
15	16300	16100	16200	---	---	16300	7560	3000	4590	18400	17700	18100
16	16300	15900	16100	---	---	16500	4560	3460	3990	18700	18000	18400
17	16300	15700	16100	---	---	16700	5340	4660	5110	18800	18000	18400
18	15900	15100	15500	---	---	13300	6460	5340	5770	18900	18200	18700
19	15900	15400	15700	---	---	15400	7040	6300	6660	19200	18600	18900
20	15600	15200	15500	---	---	14000	7400	6880	7120	19000	18200	18700
21	15500	15000	15200	---	---	13600	8920	7460	8090	18600	18000	18200
22	15400	15000	15200	---	---	14900	9660	8600	9200	18600	17800	18300
23	15300	14900	15100	---	---	15200	10100	9540	9740	18700	18300	18500
24	15300	14900	15200	---	---	15700	10900	9880	10100	18900	18400	18600
25	15400	15200	15300	---	---	16000	11600	10800	11200	19000	18600	18800
26	15500	15400	15400	---	---	14800	12700	11300	12100	19100	18700	18800
27	15600	15200	15400	1620	1460	1560	13600	12400	13000	---	---	2550
28	15800	15400	15600	1680	1540	1600	13900	13300	13600	---	---	308
29	---	---	---	1940	1700	1810	14500	13900	14200	---	---	349
30	---	---	---	2280	1960	2090	15500	14500	15000	---	---	564
31	---	---	---	2740	2280	2520	---	---	---	---	---	675
MONTH	16400	13800	15400	16300	1460	13200	15500	2760	7740	19200	15200	15100

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	710	13900	13300	13600						
2	---	---	750	14200	13600	13900						
3	---	---	783	---	---	14100						
4	---	---	819	---	---	13700						
5	---	---	856	---	---	13200						
6	---	---	892	---	---	12600						
7	---	---	928	---	---	12200						
8	---	---	964	---	---	11100						
9	1180	840	1000	---	---	10400						
10	1700	1160	1380	---	---	10000						
11	2360	1720	1990	9760	9620	9700						
12	3040	2400	2720	9960	9540	9770						
13	3920	3040	3520	10300	9820	10000						
14	5060	3820	4100	10600	10200	10400						
15	6080	4920	5410	10800	10500	10600						
16	6800	6020	6310	11300	10700	11000						
17	7720	6660	7070	11600	11200	11400						
18	8560	7540	7960	12200	11600	11900						
19	8720	8280	8500	12400	12000	12200						
20	8660	8460	8560	12700	12300	12500						
21	9220	8480	8790	13000	12500	12800						
22	9600	8840	9150	13300	12800	13100						
23	10100	9340	9680	13700	13300	13400						
24	10700	10100	10300	14000	13600	13700						
25	11300	10700	11000	14300	13900	14100						
26	12300	11400	11800	14500	14100	14300						
27	12600	11800	12200	---	---	---						
28	12700	12300	12600	---	---	---						
29	13400	12600	13000	---	---	---						
30	13500	12800	13200	---	---	---						
31	---	---	---	---	---	---						
MONTH	13500	840	5900	14500	9540	12100						

08086290 BIG SANDY CREEK ABOVE BRECKENRIDGE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

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	21.5	17.5	19.5	---	---	---						
11	21.0	18.5	19.5	---	---	---						
12	19.5	17.5	18.5	---	---	---						
13	20.5	18.5	19.0	---	---	---						
14	21.0	16.0	18.5	---	---	---						
15	21.0	17.5	19.0	---	---	---						
16	21.0	17.0	18.5	---	---	---						
17	21.0	18.0	19.5	---	---	---						
18	22.0	18.5	20.0	---	---	---						
19	23.0	19.5	20.5	---	---	---						
20	18.5	16.0	17.0	---	---	---						
21	---	---	---	22.5	12.5	15.5						
22	---	---	---	23.5	20.0	21.5						
23	---	---	---	21.5	16.5	19.5						
24	---	---	---	16.0	12.5	13.5						
25	---	---	---	13.5	11.0	---						
26	---	---	---	13.5	12.5	---						
27	---	---	---	13.0	11.5	---						
28	---	---	---	18.0	11.5	---						
29	---	---	---	---	---	---						
30	---	---	---	---	---	---						
31	---	---	---	---	---	---						
MONTH	23.0	16.0	19.0	23.5	11.0	17.5						

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	16.0	11.5	13.5	19.0	14.0	16.5	28.0	24.0	26.0
2	---	---	---	17.5	13.0	15.5	20.0	11.5	15.0	26.5	22.5	24.5
3	6.5	2.5	5.0	17.5	16.0	16.5	19.5	13.5	16.5	26.5	19.5	23.0
4	5.5	5.0	5.0	18.0	16.0	17.0	19.5	16.5	18.0	27.0	19.0	23.0
5	7.0	5.0	6.0	17.0	14.0	15.5	16.0	11.5	13.5	26.0	20.5	23.0
6	6.5	4.5	5.5	19.5	13.0	16.0	15.5	9.5	12.5	27.5	20.5	23.5
7	9.0	5.0	6.5	19.5	12.5	15.5	16.5	11.0	14.0	28.0	22.0	25.0
8	11.5	7.5	9.5	16.0	12.5	14.5	14.0	11.0	12.5	26.5	21.0	23.5
9	12.5	9.0	10.5	17.0	12.5	14.5	18.5	9.5	13.5	25.5	20.0	22.0
10	13.5	10.5	12.0	16.0	11.0	13.5	22.5	10.0	16.5	23.5	21.0	22.0
11	12.5	10.5	11.5	15.5	11.5	13.5	24.0	14.5	19.5	26.0	20.5	23.5
12	11.0	9.0	10.0	15.5	12.0	13.5	23.5	17.0	20.5	26.5	22.5	24.0
13	11.0	7.0	9.0	19.0	14.5	16.5	24.0	19.0	21.0	26.0	23.0	24.5
14	13.5	8.5	11.0	21.0	16.0	18.5	21.0	15.0	18.0	24.0	19.0	21.5
15	12.5	11.0	11.5	19.0	16.5	18.0	22.0	11.5	17.0	24.5	17.0	20.5
16	13.0	9.0	11.0	16.0	12.5	14.5	21.5	12.0	16.5	27.0	18.5	22.5
17	13.0	9.0	11.0	12.5	11.0	12.0	22.5	15.5	19.0	27.5	20.5	23.5
18	15.0	10.5	12.5	16.0	10.5	12.5	26.5	16.0	20.5	28.0	21.5	24.0
19	16.0	11.5	13.5	14.5	11.5	12.5	25.5	18.0	21.5	28.5	20.0	23.5
20	17.0	13.5	14.5	12.0	10.0	11.0	20.5	17.5	18.5	24.0	21.5	23.0
21	14.0	11.0	12.0	14.0	8.0	10.5	23.5	16.5	19.5	24.5	21.0	22.5
22	12.5	10.5	11.5	11.0	9.0	10.0	23.5	20.0	21.5	29.0	20.0	24.0
23	13.5	9.5	11.5	12.0	10.0	11.0	22.0	18.0	20.0	28.0	22.5	25.0
24	16.0	11.0	13.0	14.0	11.0	12.5	24.0	16.0	20.0	30.0	21.5	25.5
25	13.5	11.0	12.0	14.0	9.5	12.5	24.0	17.5	20.5	29.5	24.0	26.0
26	11.5	9.5	10.5	13.5	10.0	12.0	25.0	19.0	21.5	29.5	24.0	26.0
27	12.5	7.5	9.5	15.5	11.5	13.0	27.5	21.0	23.5	30.5	23.0	26.5
28	14.0	9.5	11.5	17.0	11.5	14.0	27.0	22.5	24.5	31.5	24.5	27.5
29	---	---	---	17.0	13.0	14.5	25.5	23.5	24.5	31.5	24.5	28.0
30	---	---	---	19.0	14.0	16.0	29.0	23.0	25.5	27.0	18.0	23.5
31	---	---	---	23.5	14.5	18.5	---	---	---	19.0	17.0	17.5
MONTH	17.0	2.5	10.5	23.5	8.0	14.0	29.0	9.5	18.5	31.5	17.0	24.0



## BRAZOS RIVER BASIN

08086290 BIG SANDY CREEK ABOVE BRECKENRIDGE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	18.0	16.5	17.0	33.0	27.0	29.5						
2	25.0	17.5	21.0	33.0	28.0	30.5						
3	30.0	22.5	25.5	33.0	28.5	30.5						
4	30.0	23.0	26.0	---	---	---						
5	30.5	22.5	26.0	---	---	---						
6	25.5	12.0	16.5	---	---	---						
7	21.0	16.0	18.0	---	---	---						
8	24.5	19.0	21.5	---	---	---						
9	28.0	21.5	24.5	---	---	---						
10	29.5	22.5	25.5	---	---	---						
11	26.5	22.5	24.5	33.0	30.0	32.0						
12	30.0	22.0	25.5	32.0	27.0	29.5						
13	28.5	23.0	25.5	31.5	26.5	29.0						
14	28.0	23.0	25.5	31.5	26.5	28.5						
15	28.5	22.5	25.5	29.5	27.0	28.0						
16	28.0	22.5	25.5	31.0	26.5	28.0						
17	26.5	23.5	24.5	31.0	27.0	28.5						
18	32.5	23.5	27.5	33.5	27.0	30.0						
19	33.5	25.5	29.0	33.0	28.0	30.0						
20	33.5	26.0	29.5	33.0	27.0	30.0						
21	33.0	26.5	29.5	33.0	27.5	30.0						
22	32.5	26.5	29.5	33.0	27.0	30.0						
23	30.5	26.5	28.5	34.0	28.0	30.5						
24	30.5	25.5	28.0	34.5	28.0	31.0						
25	31.0	25.5	28.0	35.0	29.0	31.5						
26	33.5	26.0	29.0	35.0	29.0	31.5						
27	34.0	27.0	30.0	---	---	---						
28	32.0	27.5	29.5	---	---	---						
29	34.0	26.5	29.5	---	---	---						
30	31.0	26.0	28.0	---	---	---						
31	---	---	---	---	---	---						
MONTH	34.0	12.0	26.0	35.0	26.5	30.0						

## 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 and 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. The District has a permit to divert 56,000 acre-ft annually for municipal, mining, and industrial uses. Diversions during the current year are as follows: 1,390 acre-ft for municipal use, 3,680 acre-ft for oilfield operation, and 2,050 acre-ft for irrigation and domestic uses. 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 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, 171,200 acre-ft Oct. 18-20, 1972 (elevation, 1,171.3 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 260,600 acre-ft Oct. 2-5 for several hours (elevation, 1,178.99 ft); minimum, 216,800 acre-ft Sept. 30 (elevation, 1,175.49 ft).

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

1,175.0	211,000
1,177.0	235,000
1,179.0	260,700

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	259100	254300	252400	251700	251300	250700	250700	246700	244800	243700	235100	225700
2	260600	253900	252300	251800	251300	250700	250200	246200	244700	243200	234700	225500
3	260300	253500	252300	251800	251000	251500	250400	246100	244600	243100	234400	225100
4	260300	253100	252600	251900	251100	251800	250100	245600	244200	242600	233900	224600
5	259900	253200	252400	251800	251400	251500	250000	245100	244000	243100	233800	224300
6	259600	253000	252400	251800	251400	251400	249600	244600	247700	242800	233500	224000
7	259600	252700	252200	251500	251300	251100	249400	244500	247900	242400	233300	223500
8	259600	252800	251700	251900	251400	251000	249700	244300	247900	242200	233000	223300
9	258700	252700	251800	251800	251100	250700	249400	244000	247700	241900	233000	222800
10	258200	251700	252600	251700	251100	250600	249600	244100	247500	241700	232800	222300
11	257900	251800	252700	251500	251000	250500	249600	244100	247500	241300	232600	221800
12	258300	251500	252800	251700	251000	250500	249200	244000	247000	241000	232300	221700
13	257900	251800	252700	251800	251100	250500	248800	243900	247000	240700	232100	221400
14	258100	251000	252700	251500	251000	250500	248800	243300	246500	240700	231600	221100
15	257700	250900	252700	251400	251000	250700	248500	243200	246200	240200	231300	220900
16	257400	250700	252600	251400	251000	250900	248800	243100	246600	240000	230800	220700
17	257300	250600	252400	251100	251000	250600	248400	243100	246700	239900	230600	220400
18	257300	250900	252300	251400	251300	250500	248300	242600	246600	239500	229900	220000
19	256400	251000	252400	251100	251300	250900	247900	242100	246500	239300	229500	219800
20	256100	250400	252200	251100	251300	250500	247900	242100	246200	238900	229900	219600
21	256100	250500	252300	251500	251300	250400	248000	241900	246000	238600	229600	219500
22	256000	250400	252600	251500	251300	250200	247700	241700	245700	238300	229100	219100
23	255700	249400	252400	251700	251300	250200	247600	241700	245600	238000	228800	219100
24	255500	249300	251800	251500	251000	250000	247400	241600	245300	237800	228400	218800
25	255300	250600	251000	251400	251000	251300	247200	241400	245200	237300	228300	218400
26	255200	252300	251700	251000	251000	251300	247200	241900	245000	237000	227800	218200
27	255100	252400	251700	251100	251000	250700	247100	242100	245000	236500	227500	217800
28	254800	252600	251400	251300	250900	250900	247100	241700	244300	236100	227400	217500
29	254800	252700	251300	251100	---	250900	247000	242100	244100	235700	226900	217100
30	254800	252200	251300	251000	---	250900	246700	242300	243800	235500	226700	216800
31	254800	---	251300	251500	---	250700	---	244500	---	235400	226000	---
MAX	260600	254300	252800	251900	251400	251800	250700	246700	247900	243700	235100	225700
MIN	254800	249300	251000	251000	250900	250000	246700	241200	243800	235400	226000	216800
(+)	1178.55	1178.35	1178.28	1178.30	1178.25	1178.24	1177.93	1177.75	1177.73	1177.03	1176.26	1175.49
(#)	-4500	-2600	-900	+200	-600	-200	-4000	-2200	-700	-8400	-9400	-9200
CAL YR 1982	MAX 309800	MIN 249300	+ -31500									
WTR YR 1983	MAX 260600	MIN 216800	+ -43000									

+ Elevation, in feet, at end of month.

# Change in contents, in acre-feet.

## BRAZOS RIVER BASIN

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 CREEK RESERVOIR SITE P1

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
JAN									
17...	1505	1.00	706	8.3	7.5	1.30	10.9	94	190
17...	1507	10.0	706	8.3	7.0	--	10.8	92	--
17...	1509	20.0	706	8.3	7.0	--	10.7	91	--
17...	1511	30.0	705	8.3	7.0	--	10.7	91	--
17...	1513	40.0	705	8.3	7.0	--	10.6	91	--
17...	1515	50.0	705	8.3	7.0	--	10.6	91	--
17...	1517	61.0	705	8.3	7.0	--	10.5	90	190
AUG									
24...	0812	1.00	780	8.1	28.0	1.70	6.9	92	200
24...	0814	10.0	780	8.0	28.0	--	6.6	88	--
24...	0816	20.0	780	7.9	28.0	--	6.6	88	--
24...	0818	30.0	780	7.8	28.0	--	6.2	83	--
24...	0820	40.0	780	7.5	26.5	--	1.9	25	--
24...	0822	50.0	780	7.4	26.0	--	.0	0	--
24...	0824	60.0	780	7.5	24.5	--	.0	0	220

DATE	HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN									
17...	87	55	12	60	2.0	5.8	100	30	150
17...	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
17...	87	55	12	61	2.0	5.7	100	29	150
AUG									
24...	100	60	13	70	2.2	8.4	100	36	170
24...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
24...	89	66	13	69	2.1	7.4	130	23	160

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- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
17...	.30	5.5	379	<.10	.50	.030	9	1
17...	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--
17...	--	--	--	<.10	.50	.010	20	10
17...	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--
17...	--	5.7	378	<.10	.40	.020	10	14
AUG								
24...	.40	6.3	424	<.10	.70	<.010	42	61
24...	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--
24...	--	--	--	<.10	.60	.010	330	380
24...	--	--	--	<.10	.70	<.010	120	210
24...	--	--	--	--	--	--	--	--
24...	--	8.1	427	<.10	1.20	.010	940	1300

BRAZOS RIVER BASIN  
HUBBARD CREEK RESERVOIR NEAR BRECKENRIDGE, TX--Continued

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324712098575701 HUBBARD CREEK RESERVOIR SITE P4  
WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
AUG							
24...	1200	1.00	785	8.2	29.0	7.3	99
24...	1202	10.0	788	8.1	28.0	6.6	88
24...	1204	15.0	788	8.1	28.0	6.4	85

324843098582901 HUBBARD CREEK RESERVOIR SITE P6  
WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
AUG							
24...	1112	1.00	784	8.2	29.0	7.1	96
24...	1114	10.0	784	8.1	29.0	7.0	95
24...	1116	20.0	784	8.0	28.5	6.7	90
24...	1118	30.0	785	7.8	28.0	4.8	64
24...	1120	40.0	785	7.6	27.5	3.8	50
24...	1122	50.0	790	7.5	26.5	.0	0
24...	1124	59.0	800	7.6	25.5	.0	0

324649099000501 HUBBARD CREEK RESERVOIR SITE P9  
WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
JAN									
18...	0940	1.00	708	8.4	7.0	1.00	11.3	96	190
18...	0942	10.0	708	8.4	7.0	--	11.3	97	--
18...	0944	20.0	708	8.4	7.0	--	11.3	97	--
18...	0946	30.0	710	8.3	7.0	--	11.2	96	--
18...	0948	40.0	710	8.3	7.0	--	10.8	92	--
18...	0950	44.0	710	8.3	7.0	--	10.6	91	190
AUG									
24...	1236	1.00	777	8.1	29.0	.70	7.3	99	200
24...	1238	10.0	780	8.0	28.0	--	6.7	89	--
24...	1240	20.0	780	8.0	28.0	--	6.2	83	--
24...	1242	30.0	780	7.8	28.0	--	5.1	68	--
24...	1244	40.0	780	7.8	27.5	--	3.2	42	--
24...	1246	45.0	780	7.8	27.5	--	3.1	41	200

DATE	HARD- NESS, NONCAR- BONATE (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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN									
18...	87	55	12	61	2.0	5.6	100	27	140
18...	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--
18...	90	56	12	61	2.0	5.7	100	27	140
AUG									
24...	94	60	13	71	2.3	8.1	110	32	170
24...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
24...	95	59	14	72	2.3	8.4	110	34	170

## BRAZOS RIVER BASIN

## HUBBARD CREEK RESERVOIR NEAR BRECKENRIDGE, TX--Continued

324649099000501 HUBBARD CREEK RESERVOIR SITE P9--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
18...	5.6	366	.20	.90	1.1	.010	13	<1
18...	--	--	--	--	--	--	--	--
18...	--	--	<.10	.80	--	.030	20	<10
18...	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--
18...	5.7	367	<.10	.70	--	.030	15	24
AUG								
24...	6.0	426	<.10	.90	--	<.010	14	9
24...	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--
24...	--	--	<.10	.80	--	<.010	90	50
24...	--	--	<.10	.80	--	.030	150	160
24...	6.5	430	<.10	.90	--	.010	45	200

324606099000201 HUBBARD CREEK RESERVOIR SITE P10

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
17...	1440	1.00	706	8.2	7.5	10.5	91
17...	1442	10.0	706	8.1	7.5	10.4	90
17...	1444	20.0	706	8.0	7.5	10.2	88
17...	1446	34.0	706	7.7	7.5	9.8	84
AUG							
24...	0748	1.00	794	7.8	27.5	6.6	87
24...	0750	10.0	793	7.8	27.5	6.6	87
24...	0752	20.0	796	7.6	27.0	6.1	80
24...	0754	32.0	796	7.5	27.0	5.6	73

324514099010201 HUBBARD CREEK RESERVOIR SITE P11

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
18...	0900	1.00	709	8.2	7.5	11.1	96
18...	0902	10.0	709	8.2	7.5	11.0	96
18...	0904	20.0	709	8.2	7.5	11.0	95
18...	0906	25.0	709	8.1	7.5	11.0	95
AUG							
24...	1308	1.00	790	8.2	30.0	7.8	108
24...	1310	10.0	794	8.0	28.0	5.9	79
24...	1312	23.0	800	7.9	27.5	4.4	58



## BRAZOS RIVER BASIN

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## HUBBARD CREEK RESERVOIR NEAR BRECKENRIDGE, TX--Continued

## 324301099001701 HUBBARD CREEK RESERVOIR SITE P12

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

								OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	
DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)		
JAN									
18...	0920	1.00	782	8.2	8.0	.50	10.5	92	
18...	0922	10.0	784	8.2	7.5	--	10.4	90	
18...	0924	15.0	788	8.2	7.5	--	10.2	88	
AUG									
24...	1326	1.00	819	8.1	30.5	.20	7.4	103	
24...	1328	13.0	803	7.9	28.0	--	3.9	52	
DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JAN									
18...	210	100	64	13	70	2.2	5.6	110	32
18...	--	--	--	--	--	--	--	--	--
18...	210	100	63	13	70	2.2	5.7	110	31
AUG									
24...	210	100	64	13	74	2.3	8.2	110	32
24...	210	99	62	13	71	2.2	8.3	110	33
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- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	
JAN									
18...	170	4.6	425	<.10	.80	.020	41	5	
18...	--	--	--	--	--	--	--	--	
18...	170	4.5	423	<.10	.90	.030	14	8	
AUG									
24...	180	6.1	443	<.10	1.10	.020	25	11	
24...	170	6.4	430	<.10	1.30	.060	30	130	

## 324949098594301 HUBBARD CREEK RESERVOIR SITE P13

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
17...	1530	1.00	708	8.4	7.5	11.0	95
17...	1532	10.0	708	8.3	7.5	10.9	94
17...	1534	20.0	708	8.3	7.5	10.9	94
17...	1536	30.0	708	8.3	7.5	10.8	93
17...	1538	40.0	708	8.3	7.0	10.7	91
17...	1540	50.0	708	8.3	7.0	10.6	91
17...	1542	57.0	708	8.3	7.0	10.4	89
AUG							
24...	0844	1.00	784	8.2	28.5	7.1	95
24...	0846	10.0	784	8.1	28.0	6.8	91
24...	0848	20.0	784	8.1	28.0	6.8	91
24...	0850	30.0	784	7.9	28.0	6.4	85
24...	0852	40.0	784	7.7	27.5	5.3	70
24...	0854	50.0	792	7.5	25.5	.0	0
24...	0856	55.0	792	7.6	25.5	.0	0

## BRAZOS RIVER BASIN

## HUBBARD CREEK RESERVOIR NEAR BRECKENRIDGE, TX--Continued

324802099021601 HUBBARD CREEK RESERVOIR SITE P15

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
17...	1600	1.00	726	8.3	7.5	10.9	94
17...	1602	10.0	729	8.3	7.5	10.8	93
17...	1604	20.0	718	8.3	7.0	10.7	91
17...	1606	30.0	722	8.3	7.0	10.6	91
17...	1608	35.0	727	8.3	7.0	10.4	89
AUG							
24...	0912	1.00	792	8.1	28.0	6.7	89
24...	0914	10.0	792	8.1	28.0	6.4	85
24...	0916	20.0	792	8.0	27.5	6.4	85
24...	0918	32.0	792	8.0	27.5	5.2	69

324653099032401 HUBBARD CREEK RESERVOIR SITE P16

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

		SPE- CIFIC CON- DUCT- ANCE (UMHOS)		PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
DATE	TIME	SAM- PLING DEPTH (FEET)							
JAN									
17...	1615	1.00	760	8.3	7.5	.60	10.8	94	200
17...	1617	10.0	760	8.3	7.5	--	10.7	92	--
17...	1619	20.0	829	8.2	7.5	--	10.3	89	--
17...	1621	24.0	1370	7.9	7.5	--	8.2	71	330
AUG									
24...	0932	1.00	788	8.0	27.5	.40	6.4	85	200
24...	0934	10.0	790	8.0	27.0	--	6.1	80	--
24...	0936	22.0	793	8.0	27.0	--	5.9	77	200
	HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN									
17...	91	59	13	66	2.1	5.8	110	31	160
17...	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
17...	210	92	25	150	3.7	5.5	120	93	320
AUG									
24...	100	60	13	71	2.3	7.7	100	34	170
24...	--	--	--	--	--	--	--	--	--
24...	100	60	13	72	2.3	8.3	100	31	170

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
17...	5.4	406	<.10	.90	--	.040	73	9
17...	--	--	--	--	--	--	--	--
17...	--	--	.10	.60	.70	.030	20	10
17...	6.1	764	.40	.60	1.0	.050	390	140
AUG								
24...	6.7	423	<.10	.80	--	.010	240	46
24...	--	--	<.10	.70	--	.010	340	60
24...	6.8	421	<.10	.90	--	.030	160	29

## BRAZOS RIVER BASIN

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## HUBBARD CREEK RESERVOIR NEAR BRECKENRIDGE, TX--Continued

## 324608099042101 HUBBARD CREEK RESERVOIR SITE P17

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
17...	1650	1.00	889	8.3	8.0	10.9	96
17...	1652	10.0	930	8.2	8.0	10.8	95
17...	1654	20.0	1630	8.0	8.0	8.5	75
AUG							
24...	1003	1.00	870	8.0	28.5	7.0	94
24...	1005	10.0	821	7.7	27.0	2.6	34
24...	1007	17.0	820	7.7	27.0	2.3	30

## 324541099053601 HUBBARD CREEK RESERVOIR SITE P18

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

							OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)		
DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)			
JAN										
17...	1710	1.00	1170	8.2	8.0	.80	10.9	96	290	
17...	1712	10.0	1320	8.2	8.0	--	10.7	94	--	
17...	1714	16.0	1970	8.0	8.0	--	9.5	83	460	
AUG										
24...	1024	1.00	1010	7.8	28.5	.50	5.2	70	240	
24...	1026	10.0	860	7.5	27.5	--	.0	0	--	
24...	1028	15.0	858	7.6	27.5	--	.0	0	220	
DATE		HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN										
17...	160	81	21	120	3.2	5.5	130	71	270	
17...	--	--	--	--	--	--	--	--	--	--
17...	320	120	39	230	4.8	5.2	140	160	490	
AUG										
24...	140	66	18	97	2.8	7.7	100	56	240	
24...	--	--	--	--	--	--	--	--	--	--
24...	110	65	15	77	2.3	8.2	110	38	190	

DATE	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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
17...	4.4	651	.20	.50	.70	.020	12	3
17...	--	--	--	--	--	--	--	--
17...	5.0	1130	1.0	.80	1.8	.030	16	7
AUG								
24...	7.7	553	<.10	1.00	--	.010	280	220
24...	--	--	--	--	--	--	--	--
24...	7.9	468	<.10	1.80	--	.080	730	610

## BRAZOS RIVER BASIN

08086500 HUBBARD CREEK NEAR BRECKENRIDGE, TX

LOCATION.--Lat 32°50'13", long 98°56'52", Stephens County, Hydrologic Unit 12060105, on downstream side of pier of bridge on U.S. Highway 183, 1.4 mi downstream from Hubbard Creek Reservoir, 6.8 mi northwest of Breckenridge, 8.2 mi upstream from Gonzales Creek, and 11.2 mi upstream from Clear Fork Brazos River.

DRAINAGE AREA.--1,089 mi<sup>2</sup>, of which 1,085 mi<sup>2</sup> is above Hubbard Creek Dam.

PERIOD OF RECORD.--April 1955 to current year.

Water-quality records: Chemical analyses: April 1955 to September 1975. Water temperatures: April 1955 to September 1975.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,092.12 ft National Geodetic Vertical Datum of 1929. Prior to July 16, 1959, at site 300 ft upstream at same datum.

REMARKS.--Records good. Flow is regulated by Hubbard Creek Reservoir (station 08086400). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--7 years (water years 1956-62) prior to completion of Hubbard Creek Dam, 170 ft<sup>3</sup>/s (123,200 acre-ft/yr); 21 years (water years 1963-83) regulated, 47.1 ft<sup>3</sup>/s (34,120 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,500 ft<sup>3</sup>/s May 26, 1957 (gage height, 34.00 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1925, 34.2 ft July 20, 1953, from information by local resident and State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3.9 ft<sup>3</sup>/s Mar. 26 at 0900 hours (gage height, 4.34 ft); no flow July 23 to Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.13	.22	.57	.36	.30	.29	.13	.55	.01	.00	.00
2	.12	.14	.21	.52	.30	.29	.30	.13	.30	.05	.00	.00
3	1.1	.13	.28	.45	.28	.32	.22	.11	.19	.09	.00	.00
4	.25	.10	.27	.35	.30	.62	.25	.10	.17	.08	.00	.00
5	.12	.11	.26	.31	.34	.54	.31	.09	.18	.15	.00	.00
6	.10	.12	.24	.30	.30	.37	.27	.10	.52	.17	.00	.00
7	.10	.13	.22	.30	.28	.34	.23	.12	.53	.12	.00	.00
8	.10	.16	.22	.31	.29	.33	.22	.12	.32	.10	.00	.00
9	.09	.16	.22	.31	.38	.31	.22	.12	.22	.09	.00	.00
10	.09	.17	.41	.29	.35	.28	.22	.13	.17	.07	.00	.00
11	.10	.22	.89	.29	.34	.27	.22	.15	.13	.06	.00	.00
12	.18	.30	.73	.29	.32	.28	.23	.14	.12	.05	.00	.00
13	.18	.29	.34	.30	.30	.30	.28	.17	.12	.04	.00	.00
14	.13	.24	.32	.32	.33	.30	.26	.20	.10	.03	.00	.00
15	.12	.22	.33	.30	.31	.35	.24	.19	.10	.03	.00	.00
16	.14	.24	.30	.28	.34	.53	.21	.14	.14	.03	.00	.00
17	.14	.25	.28	.31	.40	.40	.20	.16	.26	.04	.00	.00
18	.14	.25	.28	.33	.39	.32	.21	.18	.27	.05	.00	.00
19	.14	.24	.34	.26	.33	.33	.21	.18	.20	.04	.00	.00
20	.12	.23	.33	.24	.30	.34	.21	.22	.13	.03	.00	.00
21	.17	.20	.31	.28	.31	.28	.23	.26	.11	.02	.00	.00
22	.19	.20	.30	.27	.32	.27	.21	.25	.08	.01	.00	.00
23	.18	.21	.28	.23	.30	.28	.21	.24	.05	.00	.00	.00
24	.16	.19	.28	.23	.29	.29	.16	.21	.05	.00	.00	.00
25	.14	.20	.34	.22	.29	.29	.14	.20	.04	.00	.00	.00
26	.13	2.0	.39	.22	.28	2.1	.15	.19	.04	.00	.00	.00
27	.14	1.9	.56	.22	.31	.66	.16	.21	.04	.00	.00	.00
28	.14	.45	.47	.22	.31	.34	.16	.22	.02	.00	.00	.00
29	.14	.25	.38	.24	---	.32	.16	.21	.02	.00	.00	.00
30	.13	.22	.33	.25	---	.33	.16	.44	.01	.00	.00	.00
31	.14	---	.36	.35	---	.30	---	.94	---	.00	.00	---
TOTAL	5.17	9.65	10.69	9.36	8.95	12.58	6.54	6.25	5.18	1.36	.00	.00
MEAN	.17	.32	.34	.30	.32	.41	.22	.20	.17	.044	.000	.000
MAX	1.1	2.0	.89	.57	.40	2.1	.31	.94	.55	.17	.00	.00
MIN	.05	.10	.21	.22	.28	.27	.14	.09	.01	.00	.00	.00
AC-FT	10	19	21	19	18	25	13	12	10	2.7	.00	.00

CAL YR 1982 TOTAL 36248.15 MEAN 99.3 MAX 3830 MIN .04 AC-FT 71900  
WTR YR 1983 TOTAL 75.73 MEAN .21 MAX 2.1 MIN .00 AC-FT 150

## BRAZOS RIVER BASIN

225

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 National Geodetic Vertical Datum of 1929. Prior to Feb. 23, 1939, nonrecording gage at site 255 ft upstream. Feb. 23, 1939, to Mar. 9, 1961, water-stage recorder at site 225 ft upstream.

REMARKS.--Water-discharge records good. Many small diversions above stations for municipal supply and oilfield operation. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08080950. Gage-height telemeter at station.

AVERAGE DISCHARGE.--45 years, 836 ft<sup>3</sup>/s (605,700 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 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.--Maximum discharge, 7,440 ft<sup>3</sup>/s May 15 at 0600 hours (gage height, 14.19 ft), no peak above base of 11,000 ft<sup>3</sup>/s; minimum daily, 0.24 ft<sup>3</sup>/s Sept. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	133	77	158	108	237	135	178	103	473	426	17	1.9
2	120	71	144	120	360	131	168	91	384	259	15	1.7
3	136	60	138	114	561	133	159	83	444	185	13	1.3
4	127	62	130	118	957	146	149	81	446	133	12	1.0
5	126	59	125	124	692	149	148	79	364	116	12	.88
6	113	62	124	129	457	143	120	72	365	137	12	.76
7	112	63	117	131	353	133	109	62	520	135	10	.50
8	97	63	107	129	310	127	111	53	470	152	12	.45
9	89	60	102	128	291	119	125	51	537	137	19	.24
10	93	60	121	123	282	116	118	53	490	104	12	.30
11	91	71	143	120	260	112	109	53	527	258	10	.45
12	92	57	164	120	246	111	102	53	693	209	11	.40
13	93	57	151	121	234	112	112	1080	474	154	11	.32
14	87	54	130	117	220	109	120	3040	353	115	9.7	.39
15	84	64	124	114	209	105	124	5670	1620	95	8.8	.60
16	80	65	122	113	201	128	118	2410	758	78	8.3	.52
17	81	63	116	103	194	137	102	1660	371	80	7.0	.58
18	82	63	110	102	194	145	97	1450	324	367	5.3	.84
19	76	65	102	108	191	147	91	1020	341	334	5.0	1.1
20	71	63	97	109	193	175	88	925	277	212	5.1	.55
21	78	61	95	118	222	162	97	994	254	143	4.8	.40
22	80	65	93	129	211	148	98	1670	229	102	4.1	.40
23	80	59	94	140	179	139	86	5510	197	77	4.2	.40
24	79	59	92	149	160	140	106	3660	186	62	4.0	.40
25	75	71	82	153	149	137	124	1380	193	49	3.5	.40
26	73	144	96	181	143	197	102	1050	178	43	3.4	.40
27	72	230	122	200	140	196	93	1110	174	36	3.0	.40
28	70	184	106	217	137	177	88	707	273	29	2.9	.54
29	89	145	99	217	---	218	98	621	515	24	2.8	.51
30	94	143	100	215	---	219	101	530	421	21	2.6	.41
31	86	---	100	219	---	207	---	580	---	19	2.1	---
TOTAL	2859	2420	3604	4289	7983	4553	3441	35901	12851	4291	252.6	19.04
MEAN	92.2	80.7	116	138	285	147	115	1158	428	138	8.15	.63
MAX	136	230	164	219	957	219	178	5670	1620	426	19	1.9
MIN	70	54	82	102	137	105	86	51	174	19	2.1	.24
AC-FT	5670	4800	7150	8510	15830	9030	6830	71210	25490	8510	501	38
CAL YR 1982	TOTAL	559059.00	MEAN	1532	MAX	30800	MIN	52	AC-FT	1109000		
WTR YR 1983	TOTAL	82463.64	MEAN	226	MAX	5670	MIN	.24	AC-FT	163600		



## BRAZOS RIVER BASIN

08088000 BRAZOS RIVER NEAR SOUTH BEND, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: January 1942 to March 1948, October 1968 to September 1969. Chemical and biochemical analyses: November 1977 to current year. Pesticide analyses: March 1968 to September 1982.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1977 to September 1981.

WATER TEMPERATURES: November 1977 to September 1981.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 14,000 micromhos Dec. 4, 1979; minimum daily, 350 micromhos Aug. 6, 1978.

WATER TEMPERATURES: 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 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)	COLL- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER AS)	HARD- NESS (MG/L AS CACO3)
OCT 27...	1100	129	6250	8.0	16.0	100	13.4	144	4.3	96	430	1300
JAN 05...	1000	123	8250	7.8	4.5	3.0	15.1	124	2.1	K17	170	1300
MAR 30...	1230	218	10000	8.5	13.0	23	12.8	130	3.6	K40	--	1400
MAY 11...	1115	53	13400	8.0	21.0	58	9.6	117	2.1	270	K10000	1700
JUL 19...	1200	338	3950	7.9	29.0	86	8.9	121	3.3	440	800	920
AUG 31...	1130	2.1	8800	7.9	30.5	82	8.5	122	3.4	K90	9200	1400

DATE	HARD- NESS, NONCAR- BONATE (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 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)
OCT 27...	1100	320	120	970	12	9.3	160	1000	1600	.50	7.7
JAN 05...	1100	320	110	1300	17	9.9	170	1000	2200	.50	2.9
MAR 30...	1200	350	120	1800	22	10	150	1100	2900	.50	<1.2
MAY 11...	1500	420	160	2200	24	14	180	1300	3500	.50	3.9
JUL 19...	780	240	79	530	7.8	10	150	750	850	.50	5.0
AUG 31...	1200	340	120	1500	18	12	120	1100	2500	.50	8.4

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 27...	4230	4130	<.10	.060	1.30	.050	.010	<.010	46	16	93
JAN 05...	5280	5040	<.10	.120	.60	.040	.030	<.010	18	6.0	71
MAR 30...	6900	6370	<.10	.100	1.50	.130	.080	.070	46	27	93
MAY 11...	8680	7710	<.10	.080	1.30	.200	.060	.030	58	8.3	96
JUL 19...	2560	2560	<.10	.060	1.30	.210	.070	.030	89	81	96
AUG 31...	5660	5660	<.10	.140	1.10	.020	<.010	<.010	103	.58	99

## BRAZOS RIVER BASIN

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08088000 BRAZOS RIVER NEAR SOUTH BEND, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	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 27...	1100	2	100	<10	<5	<1	<5	<5	40	25
MAR 30...	1230	2	<100	<10	<1	<1	1	1	40	<1
MAY 11...	1115	3	<100	<10	20	<1	<1	2	30	1
AUG 31...	1130	2	200	<10	<1	<1	1	4	30	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 27...	100	60	.1	3	10	2	<5	5600	35	20
MAR 30...	110	40	<.1	4	2	2	<1	6000	57	20
MAY 11...	130	210	<.1	3	1	2	<1	7300	34	10
AUG 31...	130	530	<.1	3	3	1	<1	6300	20	10

## BRAZOS RIVER BASIN

08088300 BRIAR CREEK NEAR GRAHAM, TX

LOCATION.--Lat 33°12'43", long 98°37'06", Young County, Hydrologic Unit 12060201, near right bank on 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 current year. 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. Altitude of gage is 1,090 ft, from topographic map.

REMARKS.--Records fair. No diversion above station.

AVERAGE DISCHARGE.--25 years (water years 1959-83), 3.67 ft<sup>3</sup>/s (2.06 in/yr), 2,660 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,690 ft<sup>3</sup>/s May 22, 1982 (gage height, 13.54 ft), from rating curve extended above 2,300 ft<sup>3</sup>/s; 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 above base of 200 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 23	0100	374	6.34
June 14	1330	*723	9.88

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.41	.00	1.1	.08	.00	.00
2	.00	.00	.00	.00	.00	.00	.13	.00	.60	.03	.00	.00
3	.00	.00	.00	.00	.00	.00	.07	.00	.20	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.04	.00	.04	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.08	19	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	2.8	6.9	390	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.46	1.2	62	.00	.00	.00
16	.00	.00	.00	.00	.00	.03	.13	.26	5.3	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.06	.06	2.3	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.03	.02	1.2	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.01	.00	.67	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	4.2	.36	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	1.9	.24	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	8.8	.11	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	184	.07	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	18	.04	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	2.5	.03	.00	.00	.00
26	.00	.00	.00	.00	.00	.40	.00	.98	4.4	.00	.00	.00
27	.00	.00	.05	.00	.00	.41	.00	.34	1.8	.00	.00	.00
28	.00	.00	.00	.00	.00	.09	.00	.10	.64	.00	.00	.00
29	.00	.00	.00	.00	---	.01	.00	.02	.32	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.29	.23	.00	.00	.00
31	.00	---	.00	.00	---	1.5	---	.84	---	.00	.00	---
TOTAL	.00	.00	.07	.00	.00	2.44	4.24	249.41	471.65	.11	.00	.00
MEAN	.000	.000	.002	.000	.000	.079	.14	8.05	15.7	.004	.000	.000
MAX	.00	.00	.05	.00	.00	1.5	2.8	184	390	.08	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
CFSM	.000	.000	.000	.000	.000	.003	.006	.33	.65	.000	.000	.000
IN.	.00	.00	.00	.00	.00	.00	.01	.38	.72	.00	.00	.00
AC-FT	.00	.00	.1	.00	.00	4.8	8.4	495	936	.2	.00	.00
CAL YR 1982	TOTAL	2719.85	MEAN 7.45	MAX 665	MIN .00	CFSM .31	IN 4.18	AC-FT 5390				
WTR YR 1983	TOTAL	727.92	MEAN 1.99	MAX 390	MIN .00	CFSM .08	IN 1.12	AC-FT 1440				

## 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>.

## WATER-DISCHARGE RECORDS

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 Salt Creek datum. 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 furnished by Freese, Nichols, and Endress, Consulting Engineers. Record of diversions furnished by the city of Graham and the Texas Electric Service Co.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 61,120 acre-ft Apr. 30, 1970 (gage height, 1,077.77 ft); minimum, 28,760 acre-ft Sept. 30, 1979 (gage height, 1,064.09 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 55,300 acre-ft June 16 at 0100 hours (gage height, 1,075.62 ft); minimum, 40,930 acre-ft May 12, 13 (gage height, 1,069.76 ft).

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

1,068.0	36,940	1,074.0	51,140
1,070.0	41,480	1,076.0	56,290
1,072.0	46,220		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45640	44130	43450	43190	42700	42230	42210	41550	46270	54020	51620	48560
2	45600	44010	43400	43160	42700	42230	42160	41480	46290	53910	51520	48460
3	45600	43920	43420	43140	42670	42180	42090	41430	46290	53810	51420	48390
4	45600	43870	43350	43140	42630	42280	42110	41370	46220	53760	51340	48250
5	45480	43820	43350	43090	42700	42230	42140	41270	46270	53680	51290	48150
6	45400	43770	43310	43140	42630	42180	42090	41180	46290	53600	51190	48050
7	45330	43750	43310	43090	42630	42140	42070	41160	46270	53500	50890	47950
8	45280	43700	43210	43090	42630	42140	42040	41070	46220	53400	50870	47830
9	45190	43680	43210	43070	42600	42110	42040	41000	46200	53350	50820	47730
10	45090	43630	43350	43070	42600	42020	42020	41000	46120	53250	50740	47660
11	45020	43680	43490	43050	42560	41950	41970	40950	46120	53170	50640	47610
12	45020	43520	43490	43020	42530	41900	41970	40950	46050	53100	50570	47510
13	44970	43420	43450	43020	42510	41900	42040	41460	46000	52990	50500	47420
14	44920	43330	43450	43000	42510	41830	42040	41640	51470	52890	50470	47340
15	44880	43260	43470	42930	42490	41880	41990	41690	55220	52790	50370	47340
16	44830	43260	43450	42930	42440	42090	41970	41640	55250	52740	50270	47320
17	44730	43210	43400	42910	42440	42110	41970	41570	55090	52740	50170	47220
18	44710	43190	43380	42910	42440	42070	41920	41640	54930	52660	50050	47100
19	44590	43210	43350	42860	42490	42070	41920	41810	54800	52560	49900	47000
20	44520	43160	43330	42860	42460	41990	41810	41690	54670	52460	49800	46830
21	44490	43140	43310	42840	42440	41950	41900	41850	54570	52560	49730	46730
22	44440	43090	43310	42840	42420	41880	41880	42600	54490	52490	49630	46660
23	44370	42950	43310	42840	42420	41880	41830	45000	54410	52410	49500	46560
24	44350	42930	43280	42840	42370	41830	41760	45620	54310	52330	49430	46440
25	44300	43020	43260	42790	42350	41920	41710	45720	54200	52230	49330	46440
26	44200	43380	43260	42740	42300	42140	41670	45670	54180	52160	49260	46390
27	44200	43450	43260	42670	42250	42180	41640	45740	54150	52030	49130	46320
28	44200	43450	43160	42670	42250	42140	41620	45720	54180	51980	49060	46240
29	44110	43420	43140	42670	---	42180	41570	45690	54100	51830	48930	46240
30	44130	43420	43120	42670	---	42320	41570	46150	54100	51700	48860	46150
31	44130	---	43090	42740	---	42320	---	46200	---	51700	48780	---
MAX	45640	44130	43490	43190	42700	42320	42210	46200	55250	54020	51620	48560
MIN	44110	42930	43090	42670	42250	41830	41570	40950	46000	51700	48780	46150
(†)	1071.13	1070.83	1070.69	1070.54	1070.33	1070.36	1070.04	1071.99	1075.16	1074.22	1073.05	1071.97
(‡)	-1560	-710	-330	-350	-490	+70	-750	+4630	+7900	-2400	-2920	-2630
(††)	340	319	295	372	337	430	327	319	455	645	670	502

CAL YR 1982 MAX 60300 MIN 42930 ‡ -8940 †† 4770  
WTR YR 1983 MAX 55250 MIN 40950 ‡ +460 †† 5020

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet.

†† Diversions, in acre-feet, for municipal use by the the city of Graham and for use by Texas Electric Service Co. powerplant.

## BRAZOS RIVER BASIN

08088400 LAKE GRAHAM NEAR GRAHAM, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JUL 25...	1055	545	28.5	150	53	47	7.8	43

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY 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)
JUL 25...	1.6	8.0	97	17	100	.20	6.9	288



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.

PERIOD OF RECORD.--December 1964 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,090 ft, from topographic map.

REMARKS.--Records fair. No regulation or diversion above station.

AVERAGE DISCHARGE.--18 years (water years 1966-83), 13.8 ft<sup>3</sup>/s (1.93 in/yr), 10,000 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.--Maximum discharge, 44 ft<sup>3</sup>/s May 31 at 0530 hours (gage height, 4.61 ft), no peak above base of 1,000 ft<sup>3</sup>/s; no flow for many days.

[illegible]

## 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 was installed at station on 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 furnished 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 observed, 273,000 acre-ft Feb. 19 to Mar. 17, 1953 (gage height, 967.0 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 553,700 acre-ft June 13 at 1300 hours (gage height, 999.05 ft); minimum, 437,300 acre-ft Sept. 30 (gage height, 991.35 ft).

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

990.0	419,800	996.0	504,000
992.0	446,100	998.0	536,000
994.0	474,100	1,000.0	570,200

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	516300	514700	502500	501600	497100	505900	497600	478000	546700	536000	499100	465200
2	516300	514500	502500	501900	495800	505900	495200	475800	547800	535000	499000	464900
3	516100	513100	502300	501700	495000	505900	494100	475300	548400	533700	498500	464000
4	516600	512100	502200	501900	496100	505900	494100	471800	548400	532700	497000	463400
5	516600	511700	502500	502300	499000	507000	491800	471400	548600	531600	496100	463000
6	516100	511400	502500	502300	500200	507300	489900	471200	548400	531300	494500	461300
7	515900	510900	502600	502300	501000	507100	489900	470100	549400	529600	494100	460800
8	515600	510300	502200	501000	502900	507100	489900	469400	550100	529100	494900	460400
9	515300	509500	502000	501400	503600	507100	489900	468900	550100	527200	493600	459900
10	515000	508900	503100	501600	503300	507100	489600	469100	551100	524300	492700	459400
11	514800	508200	503300	502000	503900	507100	489600	467900	551700	522500	492600	458900
12	515900	507600	503100	502200	503400	507300	489600	467500	552300	520600	492100	457100
13	515600	506800	502900	502500	503900	507900	487600	468400	552500	519400	491400	456500
14	515800	506800	502200	502300	504200	507900	486000	469900	550100	520100	490200	456000
15	515600	504200	500600	498000	504000	507900	484800	478200	551000	519900	490000	455700
16	515600	503300	499400	499100	504300	509200	485100	485800	551100	519300	487800	453300
17	515500	502500	499300	500200	504300	508400	485200	490000	549400	519600	487600	452900
18	515500	502200	499400	500300	504800	508100	484100	492900	548300	517100	483900	452400
19	515300	502600	499600	499600	505000	507100	484100	495200	547900	516300	482900	451300
20	514700	502500	499700	500800	505700	505700	481400	497600	547800	514200	482400	450600
21	514800	502500	500000	500800	504000	503400	478800	499600	547400	513200	481800	449600
22	515200	502500	500200	499600	503900	501600	478800	504000	546900	512100	479900	449200
23	515200	501900	500000	499700	504200	498400	478500	517700	546400	511500	479800	448700
24	515000	501300	500000	500200	504300	497100	477900	529000	543900	510400	478300	448400
25	514800	501300	500000	500200	504500	497100	477900	534700	543700	508500	478000	447200
26	514500	503600	500200	499000	504300	498400	477900	536000	543500	506400	476400	444400
27	514700	503400	501100	498500	504500	498400	477900	538900	542200	504600	473800	441800
28	514800	502600	500700	498500	505000	498200	477900	539700	539700	503100	472100	439300
29	514700	501600	500300	497900	---	498700	477900	540700	538500	501300	469500	438000
30	514700	501900	502000	497600	---	499000	477900	544500	537400	500000	468100	437300
31	514700	---	502200	497700	---	499100	---	545700	---	499700	465600	---
MAX	516600	514700	503300	502500	505700	509200	497600	545700	552500	536000	499100	465200
MIN	514500	501300	499300	497600	495000	497100	477900	467500	537400	499700	465600	437300
(+)	996.68	995.86	995.88	995.59	996.06	995.68	994.26	998.58	998.08	995.72	993.41	991.35
(#)	-3500	-12800	+300	-4500	+7300	-5900	-21200	+67800	-8300	-37700	-34100	-28300

CAL YR 1982 MAX 562200 MIN 497100 # -21400  
WTR YR 1983 MAX 552500 MIN 437300 # -80900

† Gage height, in feet, at end of month.

# Change in contents, in acre-feet.

## BRAZOS RIVER BASIN

08088500 POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: March 1962 to current year.

325208098254201 POSSUM KINGDOM LAKE SITE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
19...	1206	1.00	1620	7.9	9.0	9.3	83
19...	1208	10.0	1620	7.9	9.0	9.3	83
19...	1210	20.0	1620	7.9	9.0	9.2	82
19...	1212	30.0	1640	7.9	9.0	9.0	80
19...	1214	40.0	1660	7.8	9.0	8.7	78
19...	1216	50.0	1940	7.6	9.5	3.1	28
19...	1218	59.0	1960	7.6	9.5	3.5	32
MAY							
10...	1640	1.00	1910	8.4	20.5	9.3	108
10...	1642	10.0	1910	8.4	20.0	9.2	106
10...	1644	20.0	1910	8.2	19.5	8.9	101
10...	1646	30.0	1910	8.0	16.5	7.0	75
10...	1648	40.0	1930	8.0	14.0	6.7	68
10...	1650	50.0	1970	8.0	13.0	6.5	64
10...	1652	62.0	2150	8.1	12.5	5.4	53
AUG							
23...	1333	1.00	2270	8.0	30.0	6.6	91
23...	1335	10.0	2270	7.9	29.5	6.6	90
23...	1337	20.0	2270	7.7	28.0	5.0	67
23...	1339	30.0	2270	7.5	27.5	3.2	42
23...	1341	40.0	2220	7.3	24.0	.0	0
23...	1343	50.0	2220	7.4	20.5	.0	0
23...	1345	62.0	2320	7.6	17.5	.0	0

325218098254101 POSSUM KINGDOM LAKE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
JAN									
19...	1128	1.00	1620	7.9	9.0	2.80	9.5	85	340
19...	1130	10.0	1620	7.9	9.0	--	9.5	85	--
19...	1132	20.0	1620	7.9	9.0	--	9.4	84	--
19...	1134	30.0	1620	7.9	9.0	--	9.4	84	--
19...	1136	40.0	1620	7.8	9.0	--	9.3	83	--
19...	1138	50.0	1950	7.6	9.5	--	2.7	24	--
19...	1140	60.0	1960	7.7	9.0	--	4.2	38	--
19...	1142	70.0	2080	7.8	8.5	--	6.9	61	--
19...	1144	80.0	2240	7.7	8.0	--	6.0	52	--
19...	1146	90.0	2510	7.6	9.0	--	3.3	29	--
19...	1148	97.0	2540	7.6	9.0	--	1.6	14	500
MAY									
10...	1600	1.00	1910	8.4	20.5	2.10	9.2	107	360
10...	1602	10.0	1910	8.3	20.0	--	8.9	102	--
10...	1604	20.0	1910	8.3	20.0	--	8.9	102	--
10...	1606	30.0	1910	8.0	17.5	--	7.1	77	--
10...	1608	40.0	1910	7.8	14.0	--	6.5	66	--
10...	1610	50.0	1960	7.8	12.5	--	6.5	64	--
10...	1612	60.0	2120	7.7	12.0	--	5.4	52	--
10...	1614	70.0	2440	7.6	11.5	--	3.3	32	--
10...	1616	80.0	2920	7.5	10.0	--	1.3	12	--
10...	1618	90.0	3290	7.6	10.0	--	.4	4	--
10...	1620	94.0	3400	7.7	10.0	--	.3	3	590
AUG									
23...	1300	1.00	2300	7.9	29.5	3.8	6.5	89	440
23...	1302	10.0	2300	7.9	29.5	--	6.5	89	--
23...	1304	20.0	2300	7.8	28.5	--	5.0	67	--
23...	1306	30.0	2290	7.5	27.5	--	3.2	42	--
23...	1308	40.0	2220	7.3	24.0	--	.0	0	--
23...	1310	50.0	2230	7.3	20.0	--	.0	0	--
23...	1312	60.0	2310	7.4	17.5	--	.0	0	--
23...	1314	70.0	2400	7.4	16.5	--	.0	0	--
23...	1316	80.0	2530	7.4	15.5	--	.0	0	--
23...	1318	90.0	2770	7.5	15.0	--	.0	0	--
23...	1320	95.0	2840	7.6	15.0	--	.0	0	500

## BRAZOS RIVER BASIN

POSSUM KINGDOM LAKE NEAR GRANFORD, TX--Continued

325218098254101 POSSUM KINGDOM LAKE SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN									
19...	230	97	24	200	4.9	6.8	110	220	320
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	380	140	37	340	6.8	7.0	120	320	600
MAY									
10...	240	100	27	240	5.7	6.9	120	240	380
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	450	160	47	510	9.4	7.3	140	400	820
AUG									
23...	330	120	33	300	6.5	9.0	110	300	500
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	360	140	37	400	8.1	8.7	140	360	650
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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN									
19...	.30	8.4	942	.20	.60	.80	.040	9	3
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	.20	.70	.90	.030	20	10
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	.30	.70	1.0	.030	20	290
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	8.2	1520	<.10	1.20	--	.050	30	620
MAY									
10...	.30	7.4	1070	<.10	.80	--	.020	21	8
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	<.10	.60	--	.030	20	200
10...	--	--	--	<.10	1.10	--	.020	30	--
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	--	8.1	2040	.20	1.30	1.5	.130	140	1000
AUG									
23...	.50	6.8	1340	<.10	.80	--	<.010	80	30
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	<.10	.60	--	<.010	110	230
23...	--	--	--	<.10	.90	--	<.010	100	110
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	--	10	1690	<.10	1.40	--	.210	240	810



## BRAZOS RIVER BASIN

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## POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325250098275301 POSSUM KINGDOM LAKE SITE BR

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
19...	1105	1.00	1600	8.0	8.5	10.1	89
19...	1107	10.0	1600	8.0	8.5	10.1	89
19...	1109	20.0	1600	8.0	8.5	10.1	89
19...	1111	30.0	1600	8.0	9.0	10.1	90
19...	1113	40.0	1600	8.0	9.0	10.0	89
19...	1115	50.0	1600	8.0	9.0	10.1	90
19...	1117	60.0	1600	8.0	8.5	9.9	87
MAY							
10...	1540	1.00	1920	8.4	20.0	8.9	102
10...	1542	20.0	1920	8.3	20.0	8.8	101
10...	1546	30.0	1990	8.0	18.5	7.2	80
10...	1548	40.0	2060	8.0	14.5	5.9	60
10...	1550	50.0	2010	8.0	13.5	6.1	61
10...	1552	60.0	2130	8.0	13.0	5.4	53
AUG							
23...	1236	1.00	2370	8.0	30.0	6.6	91
23...	1238	10.0	2370	7.9	29.5	6.5	89
23...	1240	20.0	2370	7.7	28.5	6.1	82
23...	1242	30.0	2430	7.3	27.0	.0	0
23...	1244	40.0	2450	7.3	24.5	.0	0
23...	1246	50.0	2500	7.4	21.0	.0	0
23...	1248	62.0	2580	7.6	19.0	.0	0

325256098275301 POSSUM KINGDOM LAKE SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
19...	1043	1.00	1600	8.0	8.5	10.2	89
19...	1045	10.0	1600	8.0	9.0	10.2	91
19...	1047	20.0	1600	8.0	9.0	10.2	91
19...	1049	30.0	1600	8.0	9.0	10.2	91
19...	1051	40.0	1600	8.0	9.0	10.1	90
19...	1053	50.0	1600	8.0	9.0	10.1	90
19...	1055	60.0	1600	8.0	9.0	10.0	89
19...	1057	70.0	1810	8.0	7.5	9.5	82
19...	1059	80.0	2170	7.9	7.5	8.6	74
19...	1101	90.0	2460	7.8	7.5	6.6	57
MAY							
10...	1500	1.00	1910	8.4	20.0	8.9	102
10...	1502	10.0	1910	8.3	20.0	8.9	102
10...	1504	20.0	1910	8.3	20.0	8.8	101
10...	1506	30.0	1910	8.1	19.5	8.5	97
10...	1508	40.0	1970	7.8	14.5	6.3	64
10...	1510	50.0	2000	7.8	13.5	6.3	63
10...	1512	60.0	2200	7.7	12.5	5.4	53
10...	1514	70.0	2510	7.6	12.5	3.7	36
10...	1516	80.0	2760	7.6	12.0	1.4	14
10...	1518	86.0	2980	7.8	11.0	.4	4
AUG							
23...	1210	1.00	2350	8.0	29.5	6.5	89
23...	1212	10.0	2350	7.9	29.0	6.4	87
23...	1214	20.0	2350	7.8	28.5	5.8	78
23...	1216	30.0	2430	7.3	27.0	.9	12
23...	1218	40.0	2490	7.3	24.5	.0	0
23...	1220	50.0	2490	7.3	21.0	.0	0
23...	1222	60.0	2590	7.3	19.0	.0	0
23...	1224	70.0	2730	7.4	17.5	.0	0
23...	1226	80.0	2820	7.4	16.5	.0	0
23...	1228	86.0	2880	7.5	16.0	.0	0



BRAZOS RIVER BASIN  
POSSUM KINGDOM LAKE GRAFORD, TX--Continued

325129098311801 POSSUM KINGDOM LAKE SITE CC  
WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
19...	1005	1.00	1590	8.1	8.0	11.0	96
19...	1007	10.0	1590	8.1	8.0	10.9	95
19...	1009	20.0	1590	8.1	8.0	10.9	95
19...	1011	30.0	1590	8.1	8.0	10.9	95
19...	1013	40.0	1600	8.1	8.0	10.7	93
19...	1015	50.0	1610	8.1	8.0	10.6	92
19...	1017	60.0	1760	8.0	7.5	10.1	87
19...	1019	72.0	2960	7.7	7.5	9.1	78
MAY							
10...	1430	1.00	2020	8.3	20.5	8.8	102
10...	1432	10.0	2020	8.3	20.5	8.8	102
10...	1434	20.0	2010	8.2	20.0	8.6	99
10...	1436	30.0	2020	8.1	20.0	8.4	96
10...	1438	40.0	2190	7.7	16.5	5.2	56
10...	1440	50.0	2340	7.7	14.5	4.0	41
10...	1442	60.0	2440	7.7	14.0	3.4	34
10...	1444	68.0	2650	7.7	13.5	1.2	12
AUG							
23...	1137	1.00	2430	8.0	29.0	6.6	89
23...	1139	10.0	2430	8.0	29.0	6.5	88
23...	1141	20.0	2440	7.9	28.5	6.2	83
23...	1143	30.0	2480	7.6	28.0	4.9	65
23...	1145	40.0	2790	7.2	25.0	.0	0
23...	1147	50.0	2830	7.3	21.5	.0	0
23...	1149	60.0	2990	7.4	19.5	.0	0
23...	1151	70.0	3160	7.4	19.0	.0	0

325327098314001 POSSUM KINGDOM LAKE SITE DC  
WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CaCO3)
JAN									
19...	0930	1.00	1590	8.1	8.0	2.30	11.3	99	340
19...	0932	10.0	1590	8.1	8.0	--	11.3	98	--
19...	0934	20.0	1590	8.1	8.0	--	11.3	98	--
19...	0936	30.0	1590	8.1	8.0	--	11.3	98	--
19...	0938	40.0	1590	8.1	8.0	--	11.3	98	--
19...	0940	50.0	1590	8.1	8.0	--	11.3	98	--
19...	0942	60.0	1600	8.0	8.0	--	11.1	97	--
19...	0944	66.0	2880	7.5	7.5	--	7.4	64	540
MAY									
10...	1350	1.00	2170	8.3	21.0	1.70	8.5	100	430
10...	1352	10.0	2170	8.3	21.0	--	8.5	100	--
10...	1354	20.0	2170	8.1	20.5	--	8.3	96	--
10...	1356	30.0	2160	8.1	20.5	--	8.2	95	--
10...	1358	40.0	2260	7.6	17.0	--	4.7	51	--
10...	1400	50.0	2390	7.5	15.5	--	3.6	38	--
10...	1402	61.0	2460	7.5	14.5	--	2.5	26	470
AUG									
23...	1108	1.00	2480	8.0	30.0	2.30	6.6	91	470
23...	1110	10.0	2470	7.9	30.0	--	6.6	91	--
23...	1112	20.0	2550	7.6	29.0	--	4.9	66	--
23...	1114	30.0	2780	7.3	28.5	--	1.1	15	--
23...	1116	40.0	3080	7.1	26.0	--	.0	0	--
23...	1118	50.0	2880	7.2	22.0	--	.0	0	--
23...	1120	63.0	3260	7.3	20.0	--	.0	0	570

## BRAZOS RIVER BASIN

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## POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325327098314001 POSSUM KINGDOM LAKE SITE DC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN									
19...	230	97	24	200	4.9	6.8	110	220	320
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	420	150	40	420	8.2	7.2	120	360	690
MAY									
10...	310	120	31	290	6.3	7.1	120	280	460
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	340	130	35	340	7.1	7.0	130	300	550
AUG									
23...	370	130	35	340	7.1	8.8	98	350	550
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	430	160	41	480	9.1	9.4	140	420	760

DATE	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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
19...	7.8	942	.10	.90	1.0	.020	25	3
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	--	--	<.10	.80	--	.020	20	10
19...	--	--	--	--	--	--	--	--
19...	--	--	<.10	.70	--	.010	30	10
19...	6.9	1750	<.10	.80	--	.040	70	70
MAY								
10...	6.2	1270	<.10	.60	--	.020	40	10
10...	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--
10...	--	--	<.10	.70	--	.020	50	20
10...	--	--	<.10	.80	--	.010	90	20
10...	--	--	--	--	--	--	--	--
10...	6.5	1450	<.10	.40	--	.020	200	160
AUG								
23...	6.8	1480	<.10	.70	--	.010	50	20
23...	--	--	--	--	--	--	--	--
23...	--	--	<.10	.70	--	.010	70	210
23...	--	--	<.10	.60	--	<.010	70	160
23...	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--
23...	10	1970	<.10	1.30	--	.090	310	770

## BRAZOS RIVER BASIN

## POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325347098265701 POSSUM KINGDOM LAKE SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
19...	1436	1.00	1660	8.3	7.5	11.5	99
19...	1438	10.0	1670	8.3	7.5	11.5	99
19...	1440	20.0	1670	8.2	7.5	11.4	98
19...	1442	30.0	1740	8.2	7.5	11.3	97
19...	1444	40.0	1820	8.1	7.5	11.0	95
19...	1446	50.0	1940	8.1	7.5	10.7	92
MAY							
10...	1034	1.00	2460	8.2	21.5	7.6	90
10...	1036	10.0	2460	8.2	21.0	7.5	88
10...	1038	20.0	2460	8.1	20.5	7.0	81
10...	1040	30.0	2540	7.8	19.5	4.4	50
10...	1042	44.0	2610	7.9	18.0	2.5	28
AUG							
22...	1350	1.00	2650	8.0	30.5	6.7	93
22...	1352	10.0	2650	8.0	29.5	6.7	92
22...	1354	20.0	2660	7.7	29.0	5.4	73
22...	1356	30.0	2660	7.7	29.0	4.9	66
22...	1358	40.0	2680	7.6	29.0	4.3	58
22...	1400	46.0	2750	7.4	28.0	.0	0

325557098264401 POSSUM KINGDOM LAKE SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
19...	1457	1.00	1680	8.3	7.5	11.8	102
19...	1459	10.0	1680	8.3	7.5	11.8	102
19...	1501	20.0	1680	8.3	7.5	11.8	102
19...	1503	30.0	2200	8.2	7.5	11.0	95
19...	1505	36.0	4420	7.9	8.0	9.5	83
MAY							
11...	1048	1.00	2610	8.2	22.0	7.8	93
11...	1050	10.0	2670	8.2	21.5	7.4	88
11...	1052	20.0	2660	8.1	21.5	7.2	85
11...	1054	31.0	3800	7.7	22.0	2.4	29
AUG							
22...	1414	1.00	2700	8.1	31.0	7.3	103
22...	1416	10.0	2700	8.0	29.5	6.7	92
22...	1418	20.0	2700	7.9	29.0	6.2	84
22...	1420	30.0	2700	7.8	28.5	5.3	71
22...	1422	34.0	2700	7.9	28.5	5.2	70

325715098250501 POSSUM KINGDOM LAKE SITE GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN								
19...	1515	1.00	1770	8.3	7.0	2.00	11.8	101
19...	1517	10.0	1770	8.3	7.0	--	11.8	100
19...	1519	20.0	1810	8.3	7.0	--	11.6	98
19...	1521	28.0	4100	8.0	7.5	--	10.5	91
MAY								
11...	1107	1.00	2880	8.2	22.0	.70	7.7	92
11...	1109	10.0	3060	8.2	22.0	--	7.1	85
11...	1111	20.0	3110	8.1	22.0	--	6.9	83
11...	1113	26.0	3500	8.0	22.0	--	5.4	65
AUG								
22...	1434	1.00	2730	8.1	30.5	.90	7.5	104
22...	1436	10.0	2790	8.1	29.5	--	7.3	100
22...	1438	20.0	2820	7.8	29.0	--	4.7	64
22...	1440	25.0	2850	7.8	29.0	--	3.1	42

## POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325715098250501 POSSUM KINGDOM LAKE SITE GC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JAN									
19...	360	250	100	26	220	5.3	6.7	110	230
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	680	560	180	57	600	10	7.6	130	480
MAY									
11...	510	380	140	40	400	8.0	7.4	130	340
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
11...	600	470	160	48	510	9.4	7.8	130	390
AUG									
22...	510	420	140	38	380	7.6	9.7	87	390
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	510	430	140	40	400	8.0	10	85	410

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- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
19...	370	7.4	1030	<.10	.50	.010	13	2
19...	--	--	--	--	--	--	--	--
19...	--	--	--	<.10	.40	.020	20	10
19...	1000	4.8	2410	<.10	.80	.050	20	30
MAY								
11...	650	5.4	1660	<.10	.80	.030	90	30
11...	--	--	--	<.10	.90	.030	20	10
11...	--	--	--	<.10	.70	.020	100	70
11...	800	5.2	2000	<.10	1.60	.050	60	180
AUG								
22...	610	7.4	1630	<.10	.70	.010	100	20
22...	--	--	--	<.10	1.00	.010	60	20
22...	--	--	--	<.10	.90	.010	110	40
22...	650	7.6	1710	<.10	.90	.010	170	140

325047098291201 POSSUM KINGDOM LAKE SITE P3

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
19...	1245	1.00	1580	8.1	8.5	10.5	92
19...	1247	10.0	1580	8.1	8.5	10.5	92
19...	1249	20.0	1580	8.1	8.5	10.5	92
19...	1251	30.0	1580	8.0	8.5	10.5	92
19...	1253	40.0	1580	8.0	8.5	10.5	92
19...	1255	50.0	1580	8.0	8.5	10.5	92
19...	1257	56.0	1590	7.7	8.5	10.0	88
MAY							
10...	1710	1.00	1950	8.3	21.5	8.7	103
10...	1712	10.0	1960	8.2	20.0	8.5	98
10...	1714	20.0	1970	8.1	19.5	7.8	89
10...	1716	30.0	1980	7.9	17.5	6.0	65
10...	1718	40.0	2080	7.8	15.5	5.2	54
10...	1720	50.0	2170	7.8	13.5	3.9	39
10...	1722	55.0	2200	8.0	14.0	3.2	32
AUG							
23...	1406	1.00	2430	7.9	30.0	6.2	86
23...	1408	10.0	2430	7.9	29.0	5.9	80
23...	1410	20.0	2430	7.7	28.5	5.1	69
23...	1412	30.0	2460	7.3	28.0	.5	7
23...	1414	40.0	2480	7.3	24.5	.0	0
23...	1416	50.0	2480	7.4	21.0	.0	0
23...	1418	55.0	2480	7.5	20.5	.0	0

## BRAZOS RIVER BASIN

## POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325125098323701 POSSUM KINGDOM LAKE SITE P5

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
19...	1315	1.00	1580	8.1	7.5	11.3	97
19...	1317	10.0	1580	8.1	7.5	11.2	97
19...	1319	20.0	1580	8.1	7.5	11.2	97
19...	1321	25.0	1580	8.1	7.0	11.2	95
MAY							
11...	0956	1.00	2080	8.3	21.5	8.3	98
11...	0958	10.0	2080	8.3	21.0	8.2	96
11...	1000	16.0	2080	8.3	21.0	8.0	94
AUG							
23...	1452	1.00	2460	8.1	30.0	7.0	97
23...	1454	10.0	2460	8.1	29.0	6.7	91
23...	1456	23.0	2460	7.9	29.0	4.8	65

325301098342901 POSSUM KINGDOM LAKE SITE P7

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
19...	1337	1.00	1570	8.1	7.5	11.1	96
19...	1339	10.0	1570	8.1	7.5	11.1	96
19...	1341	20.0	1570	8.1	7.5	11.1	96
19...	1343	30.0	1570	8.1	7.5	11.1	96
19...	1345	40.0	1570	8.1	7.5	11.1	96
19...	1347	50.0	1570	8.1	7.5	11.1	96
19...	1349	59.0	1570	8.1	7.5	11.0	95
MAY							
11...	0925	1.00	2070	8.3	21.5	8.4	99
11...	0927	10.0	2070	8.2	21.5	8.3	98
11...	0929	20.0	2080	8.1	21.0	8.1	95
11...	0931	30.0	2080	7.9	20.5	7.8	90
11...	0933	40.0	2080	7.3	16.5	2.2	23
11...	0935	50.0	2240	7.3	14.5	.1	1
11...	0937	56.0	2280	7.5	14.5	.0	0
AUG							
23...	1512	1.00	2450	8.2	30.5	7.4	103
23...	1514	10.0	2450	8.0	29.5	6.9	94
23...	1516	20.0	2450	7.9	29.5	6.4	88
23...	1518	30.0	2420	7.5	28.5	4.0	54
23...	1520	40.0	2580	7.3	24.5	.0	0
23...	1522	50.0	2480	7.4	21.0	.0	0
23...	1524	57.0	2520	7.6	19.5	.0	0

325915098243001 POSSUM KINGDOM LAKE SITE P9

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
19...	1546	1.00	1850	8.2	7.0	11.7	99
19...	1548	10.0	1850	8.2	7.0	11.7	99
19...	1550	20.0	1860	8.1	7.0	11.4	97
19...	1552	27.0	4730	7.4	8.0	.3	3
MAY							
11...	1132	1.00	2900	8.2	22.5	7.5	91
11...	1134	10.0	2900	8.2	22.0	7.4	89
11...	1136	17.0	2910	8.2	22.0	6.9	83
AUG							
22...	1458	1.00	2830	8.4	31.0	7.5	105
22...	1500	10.0	2830	8.2	30.0	6.6	91
22...	1502	18.0	2830	8.0	29.5	5.5	75



## BRAZOS RIVER BASIN

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## POSSUM KINGDOM LAKE NEAR GRAFORD, TX--Continued

325725098280301 POSSUM KINGDOM LAKE SITE P10

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)
JAN									
19...	1608	1.00	2390	8.4	6.0	.90	11.9		99
19...	1610	7.00	6180	8.0	6.5	--	11.5		97
MAY									
11...	1156	1.00	4710	8.2	22.5	.30	8.5		103
11...	1158	5.00	6450	8.0	22.0	--	6.2		75
AUG									
22...	1536	1.00	3510	8.3	31.0	.20	7.6		107
22...	1538	4.00	3440	8.1	29.0	--	4.9		67

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JAN									
19...	430	310	120	31	330	7.2	7.1	120	310
19...	1000	880	260	89	1000	14	8.6	140	840
MAY									
11...	770	640	200	65	760	12	8.6	130	510
11...	960	820	250	82	1000	15	9.3	140	680
AUG									
22...	640	560	170	53	520	9.2	11	84	520
22...	690	600	180	58	530	9.1	11	85	530

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- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
19...	540	6.4	1420	<.10	.60	.020	440	10
19...	1600	2.0	3880	<.10	.70	.050	20	20
MAY								
11...	1200	4.8	2830	<.10	1.20	.080	40	50
11...	1700	4.7	3810	<.10	1.10	.100	30	110
AUG								
22...	800	9.0	2130	<.10	1.50	.050	170	80
22...	820	7.8	2190	<.10	1.50	.050	560	270

## BRAZOS RIVER BASIN

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: January 1942 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1942 to current year.

WATER TEMPERATURES: 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 micromhos Feb. 20, 1961; minimum daily, 494 micromhos May 4, 1957.

WATER TEMPERATURES: Maximum daily, 28.0°C Aug. 19, Sept. 1, 28, 1983; minimum daily, 6.5°C Jan. 20, 1978.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,490 micromhos Sept. 27-30; minimum daily, 949 micromhos Oct. 1.

WATER TEMPERATURES: Maximum daily, 28.0°C Aug. 19, Sept. 1, 28; minimum daily, 10.0°C Feb. 5, 7, 8.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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...	0825	20	973	25.0	230	130	68	14	100
DEC 29...	1410	20	1600	13.0	330	210	94	23	190
APR 30...	0816	25	1860	17.0	360	240	100	26	230
MAY 31...	0810	25	1910	18.0	390	270	110	28	250
JUL 30...	0900	573	2200	26.0	430	320	120	31	280
AUG 31...	0903	1100	2290	26.0	460	350	130	33	310

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY 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 04...	3.0	5.9	98	130	170	.30	9.3	556
DEC 29...	4.7	6.7	120	200	310	.30	8.5	904
APR 30...	5.5	6.7	120	240	380	.30	7.4	1060
MAY 31...	5.7	6.9	120	270	410	.30	7.2	1150
JUL 30...	6.1	7.2	110	300	470	.50	6.8	1280
AUG 31...	6.5	7.4	110	330	510	.30	7.1	1390

## 08088600 BRAZOS RIVER AT MORRIS SHEPPARD DAM NEAR GRAFORD, TX--Continued

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1982 TO SEPTEMBER 1983

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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.	1982	1611	1240	702	3060	270	1190	140	606	220
NOV.	1982	7468	1530	866	17500	340	6830	170	3470	270
DEC.	1982	3870	1590	902	9430	350	3690	180	1870	280
JAN.	1983	5128	1660	941	13000	370	5110	190	2590	290
FEB.	1983	4427	1720	981	11700	390	4610	200	2330	300
MAR.	1983	10400	1760	1000	28100	390	11100	200	5600	310
APR.	1983	12961	1830	1040	36500	410	14400	210	7270	320
MAY	1983	7441	1880	1080	21600	420	8520	210	4310	330
JUNE	1983	16094	1950	1120	48500	440	19100	220	9670	340
JULY	1983	18396	2060	1180	58500	470	23100	240	11700	350
AUG.	1983	13291	2240	1290	46200	510	18300	260	9230	380
SEPT	1983	9134	2450	1420	34900	560	13900	280	7000	420
TOTAL		110221	**	**	329000	**	130000	**	65600	**
WTD. AVG.		302	1930	1110	**	440	**	220	**	330

## SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

SPECIFIC CONDUCTANCE (MICROHMS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1962 TO SEPTEMBER 1963												
DAY	EQUIVALENT MEAN											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	949	1550	1520	1610	1700	1740	1800	1860	1900	2000	2160	2330
2	972	1520	1580	1610	1730	1730	1800	1870	1900	2000	2160	2360
3	975	1510	1560	1620	1730	1730	1810	1870	1900	2000	2160	2330
4	973	1510	1530	1620	1730	1730	1810	1870	1890	2000	2160	2350
5	982	1520	1530	1620	1730	1730	1810	1880	1890	2000	2180	2360
6	1160	1520	1540	1620	1730	1730	1820	1870	1890	2000	2190	2380
7	1160	1530	1540	1620	1730	1720	1820	1880	1900	2000	2200	2390
8	1170	1530	1570	1620	1730	1730	1820	1880	1900	2000	2200	2410
9	1170	1540	1620	1620	1740	1740	1830	1880	1900	2000	2180	2410
10	1200	1540	1620	1620	1740	1730	1830	1880	1910	2000	2180	2420
11	1220	1530	1620	1620	1730	1730	1830	1880	1910	2000	2190	2430
12	1250	1540	1610	1620	1730	1750	1850	1880	1910	2000	2190	2440
13	1310	1540	1590	1620	1720	1750	1850	1890	1940	2000	2200	2440
14	1330	1540	1590	1620	1720	1740	1840	1890	1940	2000	2200	2430
15	1380	1540	1580	1620	1740	1810	1840	1890	1940	2100	2190	2440
16	1380	1540	1600	1620	1730	1750	1840	1890	1940	2100	2210	2440
17	1380	1540	1620	1640	1730	1750	1840	1900	1940	2100	2210	2440
18	1400	1530	1630	1640	1720	1750	1840	1910	1940	2100	2200	2440
19	1400	1530	1580	1630	1720	1750	1850	1910	1940	2100	2250	2460
20	1510	1530	1580	1650	1730	1750	1850	1910	1950	2100	2240	2460
21	1580	1530	1580	1670	1730	1750	1850	1910	1950	2100	2250	2460
22	1580	1510	1580	1690	1730	1750	1850	1910	1960	2100	2260	2460
23	1570	1510	1580	1690	1730	1760	1850	1910	1960	2100	2260	2460
24	1610	1510	1580	1690	1730	1760	1850	1900	1970	2100	2250	2460
25	1600	1510	1590	1690	1730	1760	1850	1900	1970	2100	2260	2460
26	1650	1510	1590	1690	1730	1770	1860	1910	1960	2100	2270	2480
27	1640	1510	1600	1700	1740	1770	1850	1910	1950	2100	2280	2490
28	1570	1510	1610	1720	1740	1780	1860	1900	1980	2100	2290	2490
29	1570	1520	1600	1720	---	1780	1860	1910	1990	2100	2280	2490
30	1570	1520	1600	1720	---	1780	1860	1910	2000	2200	2280	2490
31	1570	---	1600	1720	---	1780	---	1910	---	2200	2290	---
MEAN	1350	1530	1580	1650	1730	1750	1840	1890	1930	2060	2220	2430

## BRAZOS RIVER BASIN

08088600 BRAZOS RIVER AT MORRIS SHEPPARD DAM NEAR GRAFORD, TX--Continued

DAY	TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983											
	ONCE-DAILY											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.0	22.0	18.0	---	11.5	12.0	---	16.0	18.0	23.5	25.0	28.0
2	25.0	22.0	15.5	12.5	10.5	12.0	14.0	16.0	20.0	23.0	25.0	---
3	25.0	21.0	---	13.0	11.5	---	14.0	18.0	20.0	23.5	---	26.0
4	25.0	22.5	18.0	12.5	10.5	---	14.0	19.0	20.0	---	26.0	26.0
5	25.0	21.0	17.5	14.0	10.0	13.5	---	17.0	---	21.0	---	27.0
6	26.0	21.0	---	12.5	11.5	13.5	14.0	---	---	---	---	27.0
7	---	22.0	17.0	---	10.0	13.0	---	18.0	---	23.0	26.0	27.0
8	---	21.0	17.0	12.5	10.0	13.5	---	18.0	---	23.0	26.0	27.0
9	25.0	21.0	17.0	12.5	11.0	14.0	14.0	18.0	---	---	26.0	---
10	24.5	---	---	13.0	---	---	14.0	18.0	---	---	---	---
11	25.0	21.0	15.5	14.0	---	13.5	14.0	18.0	---	24.0	26.0	---
12	24.5	20.0	16.0	14.0	10.5	12.0	14.0	---	---	25.0	---	---
13	24.5	20.0	16.0	---	11.0	13.5	---	---	---	23.0	---	---
14	---	---	16.0	---	11.0	13.5	15.0	18.0	---	24.0	26.0	---
15	25.0	19.5	14.5	14.5	10.5	13.0	---	19.0	---	22.0	26.0	27.0
16	24.5	19.5	---	13.5	---	14.0	14.0	19.0	---	---	26.0	26.0
17	24.0	19.0	---	14.0	11.5	---	15.0	18.0	---	22.0	26.0	26.0
18	24.5	---	16.5	---	---	---	14.0	19.0	21.0	23.0	26.0	26.0
19	24.0	19.5	15.0	12.0	11.0	14.0	14.0	18.0	19.0	24.0	28.0	25.0
20	24.0	19.0	14.5	---	---	14.0	14.0	19.0	21.0	25.0	26.0	26.0
21	24.0	19.5	15.0	---	13.0	13.0	---	19.0	22.0	---	26.0	25.0
22	---	18.0	15.0	12.0	11.5	13.0	---	19.0	21.0	---	26.0	---
23	23.5	19.0	15.5	11.0	---	13.5	---	19.0	---	23.0	26.0	---
24	23.0	17.0	---	11.5	12.5	---	16.0	19.0	---	25.0	25.0	24.0
25	23.0	---	---	12.0	---	14.0	16.0	20.0	21.0	25.0	---	24.0
26	22.5	17.0	14.0	13.0	11.5	13.5	16.0	19.0	21.0	26.0	---	26.0
27	22.5	17.0	---	---	12.0	13.0	16.0	20.0	21.0	---	26.0	25.0
28	23.0	17.0	13.5	10.5	13.0	13.0	16.0	19.0	22.0	25.0	26.0	28.0
29	23.0	17.0	13.0	11.5	---	---	---	20.0	---	25.0	26.0	---
30	22.5	17.5	---	12.0	---	14.0	17.0	19.0	22.0	26.0	26.0	---
31	22.5	---	---	12.0	---	---	---	18.0	---	---	26.0	---
MEAN	24.0	19.5	15.5	12.5	11.0	13.5	15.0	18.5	20.5	24.0	26.0	26.0

BRAZOS RIVER BASIN

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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 831.23 ft National Geodetic Vertical Datum of 1929. Prior to Nov. 15, 1933, nonrecording gage at site 19 mi downstream at datum 38.19 ft lower.

REMARKS.--Records good. 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); 43 years (water years 1941-83) regulated, 940 ft<sup>3</sup>/s (681,000 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 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, 8,220 ft<sup>3</sup>/s May 23 at 0900 hours (gage height, 7.12 ft); minimum daily, 19 ft<sup>3</sup>/s Sept. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	38	79	60	166	47	175	77	70	967	80	916
2	102	37	57	63	600	45	1170	514	70	613	47	88
3	153	148	55	65	70	43	878	545	60	388	37	57
4	51	101	53	107	253	66	425	757	56	536	31	181
5	36	268	51	71	190	77	696	1060	533	939	494	72
6	31	172	50	60	56	56	1460	90	92	89	410	47
7	300	232	49	643	39	48	320	63	63	206	507	495
8	72	277	48	269	39	45	79	610	57	473	75	74
9	44	342	208	80	40	43	95	84	54	340	43	42
10	33	314	84	62	40	41	227	49	205	1060	288	32
11	30	546	65	56	304	38	178	247	75	1210	193	27
12	38	158	83	53	102	39	66	681	55	1020	54	206
13	45	65	72	51	64	39	826	129	50	584	36	621
14	38	39	63	48	45	34	478	67	1070	439	319	114
15	33	298	1080	970	446	39	729	53	852	80	349	52
16	30	1070	641	379	78	421	219	46	1260	46	125	114
17	31	268	515	75	98	93	69	39	1320	37	621	759
18	33	239	121	59	132	213	279	36	985	234	568	70
19	37	86	72	48	60	398	231	36	720	945	900	137
20	38	59	56	47	51	1080	682	43	230	865	189	428
21	44	51	51	59	136	697	1650	125	394	736	74	68
22	46	48	51	108	716	1080	655	91	236	658	220	36
23	43	48	52	91	167	1480	182	2680	419	408	471	24
24	41	119	51	59	67	1380	107	412	583	390	76	22
25	40	79	47	62	53	888	88	96	952	375	422	19
26	41	69	55	120	48	468	81	223	90	881	99	752
27	110	70	229	56	46	106	138	515	815	701	678	1070
28	86	698	90	220	46	136	199	72	1080	419	965	1060
29	55	388	67	149	---	144	101	52	1010	732	728	867
30	45	439	58	290	---	71	84	51	1110	630	847	382
31	41	---	56	190	---	288	---	81	---	489	607	---
TOTAL	1795	6766	4309	4670	4152	9643	12567	9624	14566	17490	10553	8832
MEAN	57.9	226	139	151	148	311	419	310	486	564	340	294
MAX	300	1070	1080	970	716	1480	1650	2680	1320	1210	965	1070
MIN	28	37	47	47	39	34	66	36	50	37	31	19
AC-FT	3560	13420	8550	9260	8240	19130	24930	19090	28890	34690	20930	17520

CAL YR 1982 TOTAL 682742 MEAN 1871 MAX 29400 MIN 26 AC-FT 1354000  
WTR YR 1983 TOTAL 104967 MEAN 288 MAX 2680 MIN 19 AC-FT 208200



## BRAZOS RIVER BASIN

08090800 BRAZOS RIVER NEAR DENNIS, TX

LOCATION.--Lat 32°36'56", long 97°55'32", Parker County, Hydrologic Unit 12060201, at downstream side of bridge on Farm Road 1543, 0.2 mi south of Dennis, 1.0 mi upstream from Patrick Creek, and at mile 589.8.

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 National Geodetic Vertical Datum of 1929 (State Department of Highways and Public Transportation bench marks).

REMARKS.--Water-discharge records good. Flow is largely regulated by releases from storage in Possum Kingdom Lake (station 08088500) and Lake Palo Pinto (station 08090300). Flow is affected at times by discharge from the flood-detention pools of eleven floodwater-retarding structures with a combined detention capacity of 12,480 acre-ft. These structures control runoff from 47.7 mi<sup>2</sup> in the East Keechi and Pollard Creeks drainage basins. There are many diversions above station for irrigation, municipal supply, and oilfield operations. Gage-height telemeter located at station.

AVERAGE DISCHARGE.--15 years (water years 1969-83), 1,000 ft<sup>3</sup>/s (724,500 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, 14,700 ft<sup>3</sup>/s May 23 at 1430 hours (gage height, 15.15 ft); minimum, 22 ft<sup>3</sup>/s Oct. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	102	82	664	145	360	99	336	161	719	1210	603	881
2	79	60	598	121	430	79	321	113	692	1230	571	983
3	59	44	301	101	447	67	649	76	405	835	250	761
4	55	30	190	85	668	80	1270	278	342	629	147	320
5	84	30	136	76	359	599	1060	549	262	419	103	180
6	177	31	104	67	272	577	702	1260	201	914	87	117
7	124	121	81	80	469	407	1210	726	515	681	252	154
8	84	309	69	106	283	270	1380	314	300	268	565	116
9	72	208	61	325	186	189	611	174	174	152	586	243
10	206	350	61	491	133	141	340	478	125	435	269	254
11	156	395	73	255	105	110	219	292	98	686	151	143
12	119	423	205	158	86	91	201	174	89	1200	103	95
13	97	600	202	115	80	79	359	144	165	1340	306	64
14	74	402	139	88	265	69	234	670	128	878	185	64
15	59	225	102	71	212	60	739	341	99	1110	117	479
16	50	146	157	62	157	215	680	187	972	680	92	253
17	46	245	816	701	249	1120	883	112	1060	309	360	170
18	43	972	820	614	329	1090	489	76	1430	176	278	172
19	35	498	683	326	197	567	258	52	1440	110	567	565
20	28	457	350	203	209	517	174	83	1140	342	970	272
21	27	308	242	146	265	788	410	1850	760	924	742	153
22	34	191	166	117	185	1150	1200	1280	356	961	364	384
23	38	132	121	100	136	1080	1440	9950	407	794	248	250
24	42	97	94	88	625	1400	738	7080	305	597	163	137
25	44	82	75	127	469	1880	379	1830	411	449	491	92
26	36	96	66	155	281	1640	229	869	869	415	255	67
27	33	211	86	132	185	2050	154	525	839	672	342	47
28	30	310	142	97	133	1230	112	571	358	931	237	696
29	28	211	158	157	---	647	86	650	1050	597	879	1150
30	27	502	277	138	---	446	84	358	1120	603	921	1190
31	69	---	189	271	---	481	---	594	---	651	1020	---
TOTAL	2157	7768	7428	5718	7775	19218	16947	31817	16831	21198	12224	10452
MEAN	69.6	259	240	184	278	620	565	1026	561	684	394	348
MAX	206	972	820	701	668	2050	1440	9950	1440	1340	1020	1190
MIN	27	30	61	62	80	60	84	52	89	110	87	47
AC-FT	4280	15410	14730	11340	15420	38120	33610	63110	33380	42050	24250	20730

CAL YR 1982	TOTAL	923565	MEAN	2530	MAX	39200	MIN	27	AC-FT	1832000
WTR YR 1983	TOTAL	159533	MEAN	437	MAX	9950	MIN	27	AC-FT	316400

## BRAZOS RIVER BASIN

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 TEMPERATURES: 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, 4,880 micromhos Aug. 29, 1976; minimum daily, 200 micromhos Oct. 13, 1981.  
 WATER TEMPERATURES: Maximum daily, 38.5°C July 26, 1976; minimum daily, 0.0°C on several days during winter months 1977-79.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,770 micromhos Mar. 23; minimum daily, 300 micromhos May 23.  
 WATER TEMPERATURES: Maximum daily, 35.0°C Aug. 15; minimum daily, 3.0°C Feb. 5.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
DEC 31...	1540	154	1460	4.0	320	200	92	23	170
FEB 28...	1535	127	2330	16.5	440	330	120	35	310
APR 12...	1754	202	2220	21.5	460	320	130	33	310
MAY 25...	1306	1760	550	22.0	150	59	47	7.7	51
JUL 06...	1827	1390	2300	30.5	440	320	120	33	300
AUG 31...	1845	1330	2460	31.0	470	350	130	35	330

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY 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)
DEC 31...	4.3	5.7	130	190	270	.30	3.1	832
FEB 28...	6.6	6.5	110	280	500	.30	3.1	1320
APR 12...	6.5	6.8	140	290	480	.30	5.0	1340
MAY 25...	1.9	4.2	90	54	78	.20	6.3	302
JUL 06...	6.5	7.0	120	300	500	.50	5.7	1340
AUG 31...	6.9	7.2	120	320	550	.30	6.6	1450

## BRAZOS RIVER BASIN

08090800 BRAZOS RIVER NEAR DENNIS, TX--Continued

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1982 TO SEPTEMBER 1983

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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.	1982	2157	1480	826	4810	310	1810	150	899	280
NOV.	1982	7768	1600	895	18800	340	7100	170	3520	300
DEC.	1982	7428	1530	852	17100	320	6450	160	3200	290
JAN.	1983	5718	1620	910	14000	340	5320	170	2640	300
FEB.	1983	7775	1930	1090	22900	420	8780	210	4380	360
MAR.	1983	19218	1950	1110	57800	430	22300	210	11200	360
APR.	1983	16947	2270	1300	59600	510	23100	250	11600	410
MAY	1983	31817	850	475	40800	180	15400	89	7640	160
JUNE	1983	16831	1940	1100	50200	420	19300	210	9640	360
JULY	1983	21198	2190	1250	71700	480	27700	240	13900	400
AUG.	1983	12224	2410	1390	45800	540	17800	270	8930	430
SEPT	1983	10452	2570	1490	42000	580	16400	290	8250	460
TOTAL		159533	**	**	446000	**	172000	**	85700	**
WTD. AVG.		437	1820	1030	**	400	**	200	**	330

## SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	EQUIVALENT MEAN											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1490	1540	1420	1450	1800	2430	1330	2330	820	2200	2360	2480
2	1510	1540	1520	1350	1840	2450	1310	2380	1070	2300	2380	2490
3	1520	1530	1530	1390	1850	2460	1470	2370	1160	2200	2370	2500
4	1530	1510	1520	1440	2000	2360	1620	2360	1250	2000	2370	2510
5	1520	1520	1510	1470	1980	1730	2450	2350	1130	2200	2340	2520
6	1450	1510	1520	1490	1970	1740	2480	2390	900	2300	2310	2530
7	1470	1530	1530	1510	1970	1900	2410	2430	1080	2250	2340	2530
8	1460	1540	1540	1520	1960	1340	2350	2390	1240	2300	2380	2540
9	1480	1510	1560	1550	1950	1670	2410	2400	1260	2350	2390	2540
10	1430	1600	1530	1500	1940	1990	2360	2350	1300	2300	2340	2560
11	1460	1680	1500	1530	1940	2040	2320	2370	1350	2250	2380	2570
12	1430	1860	1540	1540	1930	1980	2230	2360	1490	2300	2370	2580
13	1410	1720	1510	1550	1930	1670	2290	2350	1600	2260	2360	2590
14	1430	1630	1490	1560	1940	1520	2300	2350	1680	2200	2350	2600
15	1450	1640	1500	1570	1960	1430	2260	2360	1670	1400	2380	2630
16	1470	1620	1480	1600	1930	1340	2280	2360	1790	1750	2390	2620
17	1480	1640	1500	1620	1910	1170	2440	2370	2240	2100	2450	2640
18	1500	1610	1570	1650	1900	927	2480	2380	2150	2000	2440	2650
19	1510	1620	1580	1690	1880	1000	2510	2370	2300	2150	2370	2630
20	1520	1630	1600	1710	1820	1090	2490	2340	2290	2000	2400	2610
21	1510	1620	1590	1700	1810	1350	2410	680	2270	2200	2380	2640
22	1550	1610	1580	1690	1800	1610	2390	910	2280	2230	2400	2590
23	1550	1610	1590	1720	1820	2770	2510	300	2300	2260	2410	2530
24	1560	1620	1600	1730	1930	2760	2490	450	2260	2280	2400	2480
25	1570	1620	1610	1740	1900	2730	2470	550	2250	2300	2430	2530
26	1580	1550	1620	1770	2030	2440	2450	630	2290	2310	2420	2560
27	1570	1460	1570	1790	2180	2210	2420	700	2270	2360	2430	2570
28	1520	1370	1560	1800	2330	2200	2400	710	2140	2300	2450	2600
29	1570	1360	1530	1800	---	1660	2360	680	2220	2340	2480	2640
30	1560	1410	1380	1810	---	1430	2340	760	2280	2300	2460	2600
31	1530	---	1460	1810	---	1380	---	900	---	2350	2470	---
MEAN	1500	1570	1530	1610	1940	1830	2270	1760	1740	2190	2390	2570

## BRAZOS RIVER BASIN

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08090800 BRAZOS RIVER NEAR DENNIS, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	ONCE-DAILY											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25.5	23.0	17.0	4.0	7.0	18.5	15.0	26.0	20.0	31.0	33.0	31.0
2	26.0	19.5	14.5	6.0	7.0	19.5	15.0	24.0	20.0	28.0	33.0	29.0
3	29.0	---	14.0	4.0	7.0	18.0	16.0	25.0	27.0	31.0	31.0	30.0
4	28.5	16.5	12.0	5.0	4.5	18.0	17.0	25.0	26.0	32.0	29.0	30.0
5	28.0	15.5	12.0	7.0	3.0	16.0	15.0	25.0	30.0	31.5	32.0	30.0
6	28.5	15.5	13.5	9.0	5.0	17.0	15.0	---	24.0	30.5	28.0	31.0
7	29.0	17.0	13.0	7.0	5.0	16.0	---	24.0	26.0	30.0	30.0	30.0
8	27.0	15.5	11.0	10.0	9.0	15.5	13.0	24.0	28.0	31.0	31.0	29.0
9	21.0	18.0	10.0	11.0	12.0	16.0	14.0	21.0	25.0	27.0	33.0	29.0
10	22.5	19.0	8.5	9.5	13.5	17.0	19.0	23.0	28.0	30.0	33.0	21.0
11	19.0	20.0	7.5	10.0	14.0	16.5	22.0	24.0	25.0	---	34.0	28.0
12	20.0	15.5	5.5	11.0	---	13.0	22.0	27.0	29.0	30.5	32.0	31.0
13	22.0	13.0	7.0	9.0	13.0	20.0	22.0	28.0	25.0	28.5	33.0	29.0
14	23.0	11.0	9.5	11.5	13.0	19.0	19.0	23.0	27.0	28.0	34.0	30.0
15	21.0	10.0	10.0	10.0	15.0	---	19.0	23.0	27.0	26.0	35.0	29.0
16	23.0	11.0	10.0	10.5	15.5	15.0	17.0	24.0	25.0	28.0	34.0	28.0
17	24.0	12.0	10.0	7.0	14.0	12.0	21.0	23.0	28.0	30.5	32.0	28.0
18	24.0	12.0	11.0	8.0	15.5	13.5	22.0	24.0	25.0	32.0	30.0	30.0
19	25.0	16.0	10.5	5.5	16.0	12.0	23.0	27.0	29.0	33.0	27.0	26.0
20	20.0	16.0	9.0	5.0	16.0	11.5	18.0	23.0	26.0	32.5	31.0	26.0
21	15.5	15.5	10.0	5.5	12.0	11.5	19.0	21.0	31.0	32.0	---	22.0
22	16.0	20.0	14.0	4.5	13.0	9.0	20.0	25.0	30.0	33.0	30.0	20.0
23	---	14.0	15.5	8.0	15.5	8.5	20.0	16.0	31.0	33.5	---	18.0
24	18.5	9.0	15.0	9.0	16.0	9.5	20.0	22.0	29.0	34.0	34.0	22.0
25	16.5	8.0	10.5	9.5	12.0	9.0	21.0	22.0	29.0	34.0	31.0	24.0
26	18.0	8.0	10.0	8.0	13.0	12.0	23.0	26.0	30.0	33.0	31.0	28.0
27	19.0	---	5.0	8.0	14.5	14.0	24.0	28.0	27.0	33.0	32.0	27.0
28	18.5	10.0	7.5	7.5	16.5	15.0	26.0	25.0	31.0	30.0	31.0	26.0
29	19.0	13.0	5.0	---	---	15.5	---	29.0	32.0	33.5	31.0	26.0
30	21.0	12.0	4.0	11.0	---	17.5	27.0	24.0	29.0	31.0	33.0	24.0
31	20.0	---	4.0	11.0	---	20.0	---	20.0	---	32.0	31.0	---
MEAN	22.5	14.5	10.0	8.0	12.0	15.0	19.5	24.0	27.5	31.0	31.5	27.0



## BRAZOS RIVER BASIN

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 National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

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. Stage telemeter located at station. 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 Keechi, 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. 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 furnished by the 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, 153,300 acre-ft Apr. 1 at 1900 hours (elevation, 692.98 ft); minimum, 145,000 acre-ft Nov. 6 (elevation, 692.00 ft).

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

692.0	145,000
693.0	153,500

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	146700	146100	150000	149200	147900	149100	150700	149600	148600	150200	150500	150000
2	146800	146700	149700	149400	147400	149200	149600	150300	149400	150100	150700	149500
3	147000	146200	148400	149300	148000	149300	148800	150400	151400	149500	151200	149400
4	147000	146100	148000	149600	148700	150100	150500	150400	149900	149200	151100	149500
5	146800	145400	148300	149700	148300	150200	150000	150400	147800	148900	150800	149600
6	147100	145400	148300	149400	148000	150200	149300	151000	147600	149500	150700	149500
7	147300	145600	148500	148800	148400	149700	148600	151000	148300	150800	150600	149500
8	147100	145400	148800	149100	149100	149300	149400	149500	148800	151000	151700	148800
9	147600	145900	148700	149500	149700	148800	149800	149400	149200	150000	151900	147800
10	147700	146500	149500	149900	149900	149300	149400	150500	149300	149400	151100	148100
11	147700	146700	149300	149200	150200	149200	148600	150400	147800	149800	150700	148100
12	148400	146400	148300	149400	150300	149200	149200	150400	147400	150900	150400	148200
13	148400	146900	148400	149700	150300	149400	150300	150000	147800	151200	150200	147500
14	148500	147800	149100	149500	150400	149500	150000	150800	147900	150800	150300	146600
15	148300	147800	149200	149600	150000	150000	149900	149600	147100	151500	150200	146700
16	148300	148100	148800	149700	149900	150200	149900	149400	147300	151200	150000	147200
17	148100	148300	148300	149600	149900	148600	150500	149600	147200	151000	150400	147100
18	148100	149400	148200	149100	150400	148400	150100	150000	148100	150500	151100	146300
19	148800	148600	147700	148600	149400	148500	150400	150400	148600	150100	150000	146300
20	148300	148600	148300	148600	149500	148600	150400	149300	148600	150100	148400	147100
21	147900	149000	148800	148400	149400	148800	149600	150400	148800	151000	149900	146700
22	147000	149600	149100	148400	149400	149300	150100	148800	148800	151500	150200	146900
23	146900	149600	149500	148600	149600	149200	150100	148300	149700	150800	150500	147100
24	146900	148300	150000	148900	150100	149200	149500	149400	150200	149200	150600	147100
25	147000	148300	149300	148800	149900	148200	149200	148800	149800	149600	150900	147200
26	146900	149900	149200	149400	149300	149100	149400	149200	150000	150200	150600	147200
27	146700	148400	149000	148600	148800	148300	149800	149400	149000	150100	150900	147100
28	146500	148300	149400	148300	148900	148300	150000	149300	149400	150300	151200	147500
29	145800	148700	149400	148700	---	148600	150000	149500	150000	150400	151200	149300
30	145700	149300	149200	148800	---	149500	148800	149600	149500	150200	150800	150300
31	145700	---	148600	149300	---	150100	---	148800	---	150500	150500	---
MAX	148800	149900	150000	149900	150400	150200	150700	151000	151400	151500	151900	150300
MIN	145700	145400	147700	148300	147400	148200	148600	148300	147100	148900	148400	146300
(†)	692.09	692.51	692.43	692.51	692.47	692.61	692.45	692.46	692.54	692.65	692.65	692.63
(*)	-1400	+3600	-700	+700	-400	+1200	-1300	0	+700	+1000	0	-200
CAL YR 1982	MAX	152300	MIN	128000	*	-1800						
WTR YR 1983	MAX	151900	MIN	145400	*	+3200						

† Elevation, in feet, at end of month.

\* Change in contents, in acre-feet.



08090900 LAKE GRANBURY NEAR GRANBURY, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD---Chemical and biochemical analyses: September 1970 to current year.

32227097412101 LAKE GRANBURY SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

		SPE- CIFIC CON- DUCT- ANCE (UMHOS)		PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)	
DATE	TIME	SAM- PLING DEPTH (FEET)								
JAN										
11...	1223	1.00	1130	8.2	9.5	1.30	10.9	95	270	
11...	1225	10.0	1130	8.2	9.0	--	10.8	95	--	
11...	1227	20.0	1130	8.2	9.0	--	10.6	93	--	
11...	1229	30.0	1130	8.2	9.0	--	10.4	91	--	
11...	1231	40.0	1140	8.2	9.0	--	10.3	90	--	
11...	1233	50.0	1140	8.2	9.0	--	10.3	90	--	
11...	1235	60.0	1140	8.2	9.0	--	10.3	90	--	
11...	1237	69.0	1140	8.1	9.0	--	9.3	82	270	
MAY										
10...	1300	1.00	1470	8.1	21.0	1.20	8.1	93	330	
10...	1302	10.0	1480	8.1	20.5	--	8.2	94	--	
10...	1304	20.0	1480	8.1	20.5	--	8.2	94	--	
10...	1306	30.0	1500	7.8	19.0	--	6.1	68	--	
10...	1308	40.0	1530	7.6	17.5	--	4.7	51	--	
10...	1310	50.0	1530	7.5	16.5	--	3.5	37	--	
10...	1312	60.0	1500	7.4	16.0	--	2.9	30	--	
10...	1314	68.0	1490	7.5	16.0	--	2.4	25	350	
AUG										
16...	1030	1.00	1580	8.1	30.5	1.80	7.6	103	310	
16...	1032	10.0	1580	8.1	30.0	--	7.2	97	--	
16...	1034	15.0	1580	8.0	30.0	--	7.0	94	--	
16...	1036	20.0	1580	7.1	29.0	--	.2	3	--	
16...	1038	25.0	1570	7.2	29.0	--	.2	3	--	
16...	1040	30.0	1540	7.1	27.5	--	.2	3	--	
16...	1042	40.0	1540	7.1	25.5	--	.2	2	--	
16...	1044	50.0	1450	7.2	23.0	--	.2	2	--	
16...	1046	60.0	1530	7.3	21.5	--	.2	2	--	
16...	1048	66.0	1560	7.4	21.0	--	.2	2	330	
		HARD- NESS, NONCAR- BONATE (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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN										
11...	140	79	18	130	3.6	5.7	130	140	200	
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	140	79	18	130	3.6	5.6	130	140	200	
MAY										
10...	200	96	23	180	4.4	5.7	140	190	280	
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	210	100	24	180	4.4	5.7	140	190	290	
AUG										
16...	210	86	23	200	5.1	6.3	100	200	330	
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	140	95	23	190	4.7	5.8	190	140	310	

## BRAZOS RIVER BASIN

## LAKE GRANBURY NEAR GRANBURY, TX--Continued

## 322227097412101 LAKE GRANBURY SITE AC--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN									
11...	.30	7.2	658	.10	.70	.80	.010	<3	2
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	<.10	.60	--	<.010	30	10
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
11...	--	7.3	658	.10	.80	.90	.040	11	100
MAY									
10...	.30	5.1	864	<.10	.50	--	.010	<3	<1
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	<.10	.60	--	.010	20	<10
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	.10	.60	.70	.010	20	40
10...	--	--	--	--	--	--	--	--	--
10...	--	6.1	880	.20	.90	1.1	.070	58	150
AUG									
16...	.30	5.6	911	<.10	.80	--	<.010	<3	1
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	<.10	.80	--	<.010	50	20
16...	--	--	--	<.10	.70	--	<.010	20	70
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	10	889	<.10	2.40	--	.240	310	1200

## 322231097412001 LAKE GRANBURY SITE AL

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
11...	1245	1.00	1130	8.2	9.5	10.9	97
11...	1247	10.0	1130	8.2	9.0	10.7	94
11...	1249	20.0	1130	8.2	9.0	10.4	91
11...	1251	32.0	1130	8.2	9.0	9.9	87
MAY							
10...	1335	1.00	1490	8.1	21.0	8.2	95
10...	1338	10.0	1490	8.1	21.0	8.2	95
10...	1340	20.0	1490	8.1	20.5	7.8	89
10...	1342	30.0	1490	7.9	19.0	6.0	67
10...	1344	37.0	1500	7.8	19.0	5.2	58
AUG							
16...	1125	1.00	1580	8.1	30.5	7.8	106
16...	1127	10.0	1580	8.1	30.0	7.7	104
16...	1129	15.0	1580	8.0	30.0	7.2	97
16...	1131	20.0	1580	7.2	29.0	1.0	13
16...	1133	25.0	1580	7.2	28.5	.1	2
16...	1135	30.0	1540	7.2	28.0	.2	2
16...	1137	37.0	1520	7.2	27.5	.2	3

## LAKE GRANBURY NEAR GRANBURY, TX--Continued

322422097423901 LAKE GRANBURY SITE BR

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
11...	1207	1.00	1150	8.2	10.0	10.9	98
11...	1209	10.0	1150	8.2	9.5	10.7	96
11...	1211	19.0	1150	8.2	9.5	10.2	91
MAY							
10...	1210	1.00	1460	8.2	21.0	8.2	95
10...	1212	10.0	1460	8.2	21.0	8.1	93
10...	1214	20.0	1460	8.1	21.0	8.1	93
AUG							
16...	1215	1.00	1600	8.1	32.0	7.7	107
16...	1217	10.0	1620	8.1	31.0	7.2	99
16...	1219	15.0	1630	7.5	30.5	2.7	37
16...	1221	18.0	1630	7.5	30.5	2.5	34

322341097420601 LAKE GRANBURY SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
11...	1148	1.00	1150	8.2	10.0	11.0	99
11...	1150	10.0	1150	8.2	9.5	10.8	96
11...	1152	20.0	1150	8.2	9.5	10.6	95
11...	1154	30.0	1150	8.2	9.0	10.4	91
11...	1156	40.0	1140	8.1	9.0	10.2	89
11...	1158	50.0	1140	8.1	8.5	10.1	88
11...	1200	60.0	1140	8.1	8.5	9.8	85
11...	1202	65.0	1140	8.1	8.5	9.6	83
MAY							
10...	1225	1.00	1460	8.2	21.0	8.1	93
10...	1228	10.0	1460	8.1	21.0	8.1	93
10...	1230	20.0	1460	8.1	20.5	8.3	95
10...	1232	30.0	1490	7.8	20.0	6.7	76
10...	1234	40.0	1580	7.5	18.0	4.0	43
10...	1236	50.0	1560	7.5	17.0	2.8	30
10...	1238	60.0	1520	7.5	16.5	2.6	27
10...	1240	67.0	1460	7.5	16.0	1.8	19
AUG							
16...	1145	1.00	1600	8.1	31.5	7.6	105
16...	1147	10.0	1620	8.0	31.0	7.2	99
16...	1149	15.0	1630	7.4	30.5	3.0	41
16...	1151	20.0	1630	7.1	29.0	.2	2
16...	1153	25.0	1740	7.1	28.5	.2	2
16...	1155	30.0	1720	7.1	28.0	.2	2
16...	1156	40.0	1650	7.2	26.0	.2	2
16...	1157	50.0	1430	7.4	23.0	.2	2
16...	1159	63.0	1500	7.5	22.0	.2	2

322337097415401 LAKE GRANBURY SITE BL

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
11...	1135	1.00	1150	8.2	10.0	10.7	96
11...	1137	10.0	1150	8.2	9.5	10.7	96
11...	1139	17.0	1150	8.2	9.5	10.6	95
MAY							
10...	1245	1.00	1460	8.2	21.0	8.2	95
10...	1248	10.0	1460	8.1	21.0	8.0	92
10...	1250	20.0	1460	8.1	21.0	7.8	90
10...	1252	28.0	1460	8.0	20.5	7.2	82
AUG							
16...	1225	1.00	1600	8.1	31.5	7.7	107
16...	1227	10.0	1610	8.1	31.0	7.5	103
16...	1229	15.0	1610	7.6	30.5	4.0	54
16...	1231	20.0	1640	7.3	30.0	.3	4

BRAZOS RIVER BASIN  
LAKE GRANBURY NEAR GRANBURY, TX--Continued

322537097414501 LAKE GRANBURY SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
11...	1120	1.00	1150	8.2	9.0	10.6	93
11...	1122	11.0	1150	8.2	9.5	10.0	89
MAY							
10...	1155	1.00	1460	8.1	20.5	7.7	88
10...	1158	7.00	1460	8.0	20.0	7.1	80
AUG							
16...	1245	1.00	1650	8.0	33.0	6.9	98
16...	1247	8.00	1650	7.9	32.0	5.5	77

322422097423901 LAKE GRANBURY SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
11...	1053	1.00	1160	8.1	10.5	10.4	94
11...	1055	10.0	1160	8.1	10.5	10.7	96
11...	1057	20.0	1160	8.1	9.0	10.1	88
11...	1059	30.0	1170	8.0	9.0	9.4	82
11...	1101	40.0	1200	8.0	8.5	9.5	82
11...	1103	50.0	1220	8.0	8.5	9.3	80
11...	1105	62.0	1220	7.9	8.5	8.7	75
MAY							
10...	1115	1.00	1550	8.1	21.0	7.8	90
10...	1118	10.0	1530	8.1	21.0	7.9	91
10...	1120	20.0	1520	8.1	20.5	7.9	90
10...	1122	30.0	1560	8.0	20.5	7.6	87
10...	1124	40.0	1710	7.6	19.0	3.9	43
10...	1126	50.0	1690	7.4	17.5	2.4	26
10...	1128	60.0	1640	7.5	16.5	1.5	16
AUG							
26...	1300	1.00	1680	7.8	32.5	7.1	100
26...	1302	10.0	1680	7.9	31.0	7.3	100
26...	1304	20.0	1900	7.1	29.5	.1	2
26...	1306	30.0	1910	7.1	28.5	.2	2
26...	1308	40.0	1730	7.3	26.0	.2	2
26...	1310	50.0	1540	7.4	24.0	.2	2
26...	1312	57.0	1400	7.6	22.5	.2	2

322437097423901 LAKE GRANBURY SITE DL

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
11...	1030	1.00	1160	8.1	9.5	10.6	95
11...	1032	10.0	1160	8.1	9.5	10.4	93
11...	1034	20.0	1160	8.1	9.0	10.1	89
MAY							
10...	1135	1.00	1530	8.1	21.0	7.9	91
10...	1138	10.0	1530	8.1	21.0	7.9	91
10...	1140	17.0	1510	8.1	20.5	7.9	90
AUG							
16...	1320	1.00	1680	7.9	32.5	7.3	103
16...	1322	10.0	1680	7.9	31.5	6.6	91
16...	1324	20.0	1880	7.1	30.0	.2	3

## LAKE GRANBURY NEAR GRANBURY, TX--Continued

322458097443101 LAKE GRANBURY SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
11...	1007	1.00	1170	8.2	9.5	11.0	98
11...	1009	10.0	1170	8.2	9.5	11.1	99
11...	1011	20.0	1170	8.1	9.5	10.7	96
11...	1013	30.0	1200	8.1	8.5	10.2	89
11...	1015	40.0	1240	8.1	8.0	10.1	86
11...	1017	54.0	1300	8.0	7.5	8.8	75
MAY							
10...	1050	1.00	1610	8.1	21.0	7.9	91
10...	1052	10.0	1630	8.1	21.0	7.8	90
10...	1054	20.0	1640	8.0	21.0	7.7	89
10...	1056	30.0	1660	8.0	21.0	7.4	85
10...	1058	40.0	1770	7.5	20.0	4.6	52
10...	1102	56.0	1710	7.1	17.0	1.0	11
AUG							
16...	1330	1.00	1700	7.8	33.0	6.8	97
16...	1332	10.0	1700	7.8	31.5	7.0	97
16...	1334	20.0	1810	7.2	30.0	1.5	20
16...	1336	30.0	2000	7.1	29.0	.2	2
16...	1338	40.0	1770	7.4	26.5	.2	2
16...	1340	52.0	1510	7.4	24.5	.2	2

322619097463301 LAKE GRANBURY SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN								
11...	1340	1.00	1230	8.4	9.0	1.20	11.4	100
11...	1342	10.0	1230	8.4	9.0	--	11.5	101
11...	1344	20.0	1230	8.4	9.0	--	11.7	103
11...	1346	30.0	1340	8.3	8.0	--	10.8	92
11...	1348	40.0	1410	8.2	7.5	--	8.9	75
MAY								
10...	1420	1.00	1860	8.2	22.0	.90	7.9	93
10...	1422	10.0	1870	8.1	22.0	--	7.7	91
10...	1424	20.0	1890	8.0	21.5	--	6.9	81
10...	1426	30.0	2030	7.8	21.5	--	5.4	63
10...	1428	41.0	1900	7.6	20.5	--	2.6	30
AUG								
16...	1400	1.00	1650	8.2	33.0	1.20	8.8	125
16...	1402	10.0	1660	8.0	31.5	--	7.3	101
16...	1404	20.0	1800	7.4	30.5	--	3.6	49
16...	1406	25.0	1860	7.2	30.5	--	1.0	14
16...	1408	30.0	2020	7.1	30.0	--	.2	3
16...	1410	40.0	1890	7.3	27.5	--	.2	3

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JAN									
11...	290	160	83	20	140	3.7	5.7	130	150
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
11...	320	180	92	23	160	4.0	5.6	140	180
MAY									
10...	390	250	110	28	240	5.5	6.0	140	230
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	370	230	100	28	240	5.7	6.0	140	230
AUG									
16...	320	220	89	24	210	5.3	6.5	100	210
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	360	220	100	27	250	5.9	6.8	140	220



BRAZOS RIVER BASIN  
LAKE GRANBURY NEAR GRANBURY, TX--Continued

322619097463301 LAKE GRANBURY SITE FC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

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- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
11...	220	6.8	703	<.10	.70	.010	3	2
11...	--	--	--	--	--	--	--	--
11...	--	--	--	<.10	.50	.010	10	10
11...	--	--	--	--	--	--	--	--
11...	260	6.7	811	<.10	.50	.020	9	34
MAY								
10...	400	4.1	1100	<.10	.40	.020	<3	8
10...	--	--	--	--	--	--	--	--
10...	--	--	--	<.10	.80	.020	20	<10
10...	--	--	--	<.10	.90	.040	20	10
10...	400	5.2	1090	<.10	.80	.040	<3	160
AUG								
16...	350	6.1	956	<.10	.80	.010	34	15
16...	--	--	--	<.10	.70	.010	80	20
16...	--	--	--	--	--	--	--	--
16...	--	--	--	<.10	.80	.020	100	100
16...	--	--	--	--	--	--	--	--
16...	400	8.7	1100	<.10	1.90	.050	210	1700

322703097451401 LAKE GRANBURY SITE GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
11...	1631	1.00	1240	8.4	9.0	11.5	100
11...	1633	10.0	1240	8.4	9.0	11.4	99
11...	1635	24.0	1240	8.2	9.0	9.6	83
AUG							
15...	1645	1.00	1660	8.2	34.0	9.0	130
15...	1647	10.0	1630	8.2	31.0	8.4	116
15...	1649	20.0	1630	7.4	30.5	.2	3
15...	1651	24.0	1630	7.4	30.5	.2	2

322834097470801 LAKE GRANBURY SITE HC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)
JAN							
11...	1704	1.00	1420	8.3	8.5	1.10	11.5
11...	1706	10.0	1420	8.3	8.0	--	11.5
11...	1708	20.0	1420	8.3	8.0	--	11.6
11...	1710	34.0	1430	8.2	7.5	--	9.7
MAY							
10...	1650	1.00	2270	8.1	22.0	.60	8.0
10...	1652	10.0	2270	8.1	21.5	--	7.1
10...	1654	20.0	2270	8.0	21.5	--	6.8
10...	1656	30.0	2300	8.0	21.5	--	6.1
10...	1658	34.0	2300	8.0	22.0	--	6.0
AUG							
15...	1615	1.00	1680	8.2	34.0	1.20	9.2
15...	1617	10.0	1750	8.2	31.0	--	8.4
15...	1619	20.0	2010	7.5	30.5	--	2.9
15...	1621	30.0	2070	7.4	30.5	--	.9
15...	1623	34.0	2090	7.4	30.5	--	.2

## BRAZOS RIVER BASIN

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## LAKE GRANBURY NEAR GRANBURY, TX--Continued

322834097470801 LAKE GRANBURY SITE HC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

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- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN						
11...	100	<.10	.60	.010	30	10
11...	98	--	--	--	--	--
11...	99	--	--	--	--	--
11...	82	<.10	.80	.040	30	30
MAY						
10...	95	<.10	.90	.030	10	<10
10...	83	--	--	--	--	--
10...	80	<.10	.70	.030	40	10
10...	72	--	--	--	--	--
10...	71	<.10	.70	.060	130	60
AUG						
15...	133	<.10	.70	.010	70	<10
15...	116	--	--	--	--	--
15...	40	<.10	1.10	.030	60	60
15...	12	--	--	--	--	--
15...	3	<.10	1.30	.050	20	160

322819097483201 LAKE GRANBURY SITE IC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
11...	1442	1.00	1430	8.3	8.5	11.5	100
11...	1444	10.0	1430	8.3	8.5	11.6	101
11...	1446	20.0	1440	8.3	8.0	10.5	90
MAY							
10...	1525	1.00	2270	8.0	22.0	6.8	80
10...	1528	10.0	2290	8.0	22.0	6.8	80
10...	1530	19.0	2290	8.0	22.0	6.0	71
AUG							
15...	1440	1.00	1750	8.1	33.5	9.1	130
15...	1442	10.0	1830	8.0	31.0	6.6	91
15...	1444	15.0	1900	7.5	30.5	3.4	46
15...	1446	20.0	1900	7.1	30.5	.2	3

323318097480101 LAKE GRANBURY SITE JC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
11...	1515	1.00	1460	8.4	8.5	12.9	112
11...	1517	10.0	1460	8.4	8.5	11.5	100
11...	1519	18.0	1470	8.3	8.5	10.1	88
MAY							
10...	1550	1.00	2430	8.1	24.0	7.8	96
10...	1552	10.0	2420	8.0	22.5	6.5	78
10...	1554	24.0	2400	8.0	22.0	5.7	67
AUG							
15...	1505	1.00	2360	8.1	34.5	10.7	156
15...	1507	10.0	2310	7.8	32.0	6.7	94
15...	1509	15.0	2340	7.3	31.0	.9	12
15...	1511	23.0	2340	7.3	30.5	.2	2

BRAZOS RIVER BASIN  
LAKE GRANBURY NEAR GRANBURY, TX--Continued  
323435097492001 LAKE GRANBURY SITE KC  
WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)
JAN									
11...	1536	1.00	1520	8.3	9.5	.80	11.9		106
11...	1538	10.0	1510	8.3	9.0	--	11.9		104
11...	1540	17.0	1490	8.0	8.0	--	9.5		81
MAY									
10...	1610	1.00	2470	8.0	23.0	.60	7.2		87
10...	1612	10.0	2460	8.0	23.0	--	6.8		82
10...	1614	19.0	2450	7.8	22.5	--	5.2		62
AUG									
15...	1530	1.00	2390	8.0	35.5	.90	8.4		125
15...	1532	10.0	2410	7.8	32.0	--	6.3		88
15...	1534	18.0	2350	7.3	30.5	--	.2		3

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JAN									
11...	360	210	99	27	180	4.3	5.4	150	200
11...	--	--	--	--	--	--	--	--	--
11...	350	200	97	26	170	4.1	5.8	150	200
MAY									
10...	470	340	130	36	350	7.3	7.1	130	310
10...	--	--	--	--	--	--	--	--	--
10...	470	340	130	36	350	7.3	7.2	130	310
AUG									
15...	440	330	120	34	320	6.9	7.4	110	310
15...	--	--	--	--	--	--	--	--	--
15...	410	280	110	33	320	7.1	7.2	130	280

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	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- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
11...	280	1.9	883	<.10	.40	.010	<3	6
11...	--	--	--	--	--	--	--	--
11...	270	4.7	863	<.10	.70	.040	<3	26
MAY								
10...	540	5.2	1460	<.10	1.60	.050	10	10
10...	--	--	--	--	--	--	--	--
10...	530	5.3	1450	<.10	1.50	.060	60	80
AUG								
15...	530	5.3	1390	<.10	.70	<.010	80	10
15...	--	--	--	<.10	.60	.010	50	50
15...	510	7.1	1350	<.10	1.00	.030	80	1300

## BRAZOS RIVER BASIN

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## 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.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to current year.

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 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.--Water-discharge records good. Flow is largely regulated since September 1969 by Lake Granbury (station 08090900) 31 mi upstream. Many diversions above station for irrigation, municipal supply, and oilfield operation.

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); 14 years (water years 1970-83) regulated, 1,019 ft<sup>3</sup>/s (738,300 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. 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, 17,700 ft<sup>3</sup>/s May 24 at 0200 hours (gage height, 16.40 ft); minimum, 3.5 ft<sup>3</sup>/s Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	33	40	397	532	85	42	349	1180	697	370	841
2	52	40	257	79	880	41	226	108	576	991	370	776
3	68	31	861	38	267	29	478	49	234	1060	180	788
4	31	27	833	27	64	29	435	32	894	1030	58	583
5	19	20	258	22	237	27	965	22	1000	585	37	120
6	16	95	67	18	505	186	1020	97	1630	535	33	41
7	12	78	38	237	350	529	998	485	414	303	40	22
8	11	37	29	229	85	529	1000	1190	91	88	32	16
9	63	135	22	49	41	524	664	715	51	83	27	224
10	64	82	23	35	29	219	478	203	38	363	107	464
11	32	40	24	248	22	63	472	73	70	380	340	99
12	25	479	356	439	19	36	196	130	518	184	190	38
13	21	255	281	78	17	26	62	190	479	186	71	20
14	18	60	70	37	14	21	37	112	145	1280	167	221
15	15	33	38	123	16	18	75	690	150	564	54	261
16	51	24	26	73	411	19	461	506	563	397	29	60
17	64	22	231	35	211	558	472	184	583	401	23	25
18	32	19	833	495	61	1070	472	62	1020	402	18	19
19	23	230	847	847	112	1030	461	35	1050	407	32	281
20	16	833	594	452	565	558	196	26	1060	217	1680	330
21	15	273	117	351	551	233	62	241	1020	74	712	74
22	233	73	49	233	222	94	754	2870	549	115	150	34
23	270	43	33	58	63	896	1060	7280	231	316	54	21
24	59	273	24	33	38	961	1060	12500	59	1040	23	16
25	32	439	19	24	95	1460	1010	4680	145	826	16	12
26	23	117	460	20	508	1990	229	1090	443	126	14	10
27	17	206	251	16	518	2380	64	613	1190	50	223	10
28	15	833	67	228	347	1740	38	549	713	139	85	8.9
29	261	243	37	235	---	1030	29	538	533	361	36	6.8
30	244	67	26	55	---	276	61	545	791	369	356	4.6
31	58	---	336	35	---	69	---	886	---	367	826	---
TOTAL	1872	5140	7147	5246	6780	16726	13577	37050	17420	13936	6353	5426.3
MEAN	60.4	171	231	169	242	540	453	1195	581	450	205	181
MAX	270	833	861	847	880	2380	1060	12500	1630	1280	1680	841
MIN	11	19	19	16	14	18	29	22	38	50	14	4.6
AC-FT	3710	10200	14180	10410	13450	33180	26930	73490	34550	27640	12600	10760

CAL YR 1982 TOTAL 983747.0 MEAN 2695 MAX 41400 MIN 11 AC-FT 1951000  
WTR YR 1983 TOTAL 136673.3 MEAN 374 MAX 12500 MIN 4.6 AC-FT 271100

## BRAZOS RIVER BASIN

08091000 BRAZOS RIVER NEAR GLEN ROSE, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1980 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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 (MG/L AS CACO3)
MAR 09...	0920	543	1170	8.4	12.5	<1	1.4	10.4	100	1.3	290
APR 20...	0920	222	1320	8.3	17.0	5	2.8	8.8	94	1.4	300
JUN 08...	0915	100	1500	8.1	24.0	5	22	8.4	102	1.5	310
AUG 02...	1430	378	1430	8.3	31.0	<1	5.4	8.1	111	1.1	290
SEP 14...	1405	18	1670	8.1	29.0	<1	2.3	8.3	110	2.8	310

DATE	HARD- NESS, NONCAR- BONATE (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 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)
MAR 09...	160	82	20	140	3.7	5.6	130	150	220	.40	6.1
APR 20...	170	86	22	160	4.1	6.0	140	180	260	.30	4.6
JUN 08...	190	87	22	180	4.6	5.4	120	180	290	.30	5.5
AUG 02...	180	80	21	180	4.8	6.9	110	170	290	.30	5.8
SEP 14...	210	82	26	220	5.6	6.8	100	210	350	.30	6.0

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLATILE, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
MAR 09...	702	2	<1	--	<.020	.10	.090	3.2	3.30	.030	4.6
APR 20...	803	6	<1	--	<.020	<.10	.120	.78	.90	.030	2.9
JUN 08...	842	25	7	.08	.020	.10	.100	.70	.80	.060	4.2
AUG 02...	820	14	9	--	<.020	<.10	.100	.90	1.00	.050	4.6
SEP 14...	961	17	<1	--	<.020	<.10	.160	.74	.90	.030	4.8

DATE	TIME	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)
MAR 09...	0920	1	150	<1	<10	1	<3
JUN 08...	0915	1	150	<1	<10	1	3
SEP 14...	1405	<1	140	11	<10	3	<3

DATE	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)
MAR 09...	10	2	<.1	<1	<1	14
JUN 08...	9	5	.1	1	<1	7
SEP 14...	1	9	.1	<1	<1	93



## BRAZOS RIVER BASIN

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## 08091500 PALUXY RIVER AT GLEN ROSE, TX

LOCATION.--Lat 32°13'53", long 97°46'37", Somervell County, Hydrologic Unit 12060202, 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.

DRAINAGE AREA.--410 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1923 to September 1925, May 1947 to current year. Prior to October 1965, published as Paluxy Creek at Glen Rose.

REVISED RECORDS.--WSP 1392: 1949, 1952. WSP 2122: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 609.66 ft National Geodetic Vertical Datum of 1929. Oct. 27, 1923, to Sept. 30, 1925, nonrecording gage at bridge 1.8 mi downstream at datum 13.62 ft lower.

REMARKS.--Records good. Flow is affected at times by discharge from the flood-dentention pools of nine floodwater-retarding structures with a combined detention capacity of 14,740 acre-ft. These structures control runoff from 65.0 mi<sup>2</sup>. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--37 years (water years 1925, 1948-83), 64.6 ft<sup>3</sup>/s (2.14 in/yr), 46,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft<sup>3</sup>/s Oct. 4, 1959 (gage height, 25.4 ft), from rating curve extended above 32,000 ft<sup>3</sup>/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1877, 27.2 ft Apr. 17, 1908, present site and datum (discharge, 59,000 ft<sup>3</sup>/s), from rating curve extended as explained above. Flood of May 21, 1922, reached a stage of 26.0 ft, present site and datum (discharge, 53,000 ft<sup>3</sup>/s), from rating curve extended as explained above. Flood in November 1918 reached about the same stage as flood of May 21, 1922, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,150 ft<sup>3</sup>/s May 23 at 0330 hours (gage height, 4.79 ft), no peak above base of 4,000 ft<sup>3</sup>/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	6.7	13	15	13	11	12	8.4	53	3.8	.10	.00
2	4.8	18	12	15	12	10	11	22	40	3.6	.09	.00
3	4.7	6.5	11	15	12	10	11	17	31	3.3	.08	.00
4	4.5	5.6	11	14	12	14	11	14	26	2.8	.10	.00
5	4.2	5.5	11	14	12	15	11	13	23	1.9	.12	.00
6	4.2	6.0	11	13	12	14	10	10	38	1.9	.10	.00
7	4.2	6.4	11	13	13	13	10	9.1	34	1.8	.09	.00
8	4.8	6.8	10	13	12	12	10	8.2	26	1.8	.07	.00
9	7.9	7.3	10	13	12	11	10	7.8	22	1.4	.06	.00
10	5.6	8.4	12	12	12	11	11	8.1	19	1.2	.06	.00
11	4.9	9.4	15	12	11	10	11	16	18	1.1	.06	.00
12	7.1	9.3	15	12	11	10	10	24	16	1.0	.06	.00
13	7.2	8.0	14	12	11	10	9.8	14	14	.92	.04	.00
14	6.6	7.4	13	11	11	11	9.2	31	14	1.0	.03	.00
15	6.0	7.3	13	11	11	11	9.0	22	14	.96	.03	.00
16	5.8	7.7	12	11	11	13	9.0	21	14	1.0	.02	.00
17	5.6	8.3	12	11	11	12	9.2	15	13	1.6	.02	.00
18	5.6	8.8	12	12	11	12	9.1	13	12	3.1	.01	.02
19	5.4	9.2	12	13	11	13	8.9	11	11	4.3	.49	.07
20	4.8	9.5	11	13	12	13	8.8	10	9.5	3.2	.12	.03
21	5.5	9.0	11	14	12	12	8.9	11	9.0	2.3	.07	.00
22	6.0	9.6	12	14	12	11	11	11	8.4	1.7	.05	.00
23	6.8	8.9	11	13	12	11	11	182	7.8	1.2	.04	.00
24	6.5	8.4	12	13	12	11	10	85	7.3	.72	.03	.00
25	6.5	8.5	11	12	11	11	9.6	48	7.3	.47	.03	.00
26	6.5	18	12	12	11	26	9.0	34	6.8	.39	.02	.00
27	6.5	26	16	11	11	31	9.0	27	6.4	.31	.02	.00
28	6.5	21	18	11	11	24	8.8	24	5.2	.27	.00	.00
29	6.1	17	19	11	---	17	8.9	23	4.5	.22	.00	.00
30	6.1	14	16	11	---	15	8.7	27	4.2	.13	.00	.00
31	6.3	---	15	13	---	14	---	38	---	.12	.00	---
TOTAL	178.0	302.5	394	390	325	419	295.9	804.6	514.4	49.51	2.01	.12
MEAN	5.74	10.1	12.7	12.6	11.6	13.5	9.86	26.0	17.1	1.60	.065	.004
MAX	7.9	26	19	15	13	31	12	182	53	4.3	.49	.07
MIN	4.2	5.5	10	11	11	10	8.7	7.8	4.2	.12	.00	.00
CFSM	.01	.03	.03	.03	.03	.03	.02	.06	.04	.004	.000	.000
IN.	.02	.03	.04	.04	.03	.04	.03	.07	.05	.00	.00	.00
AC-FT	353	600	781	774	645	831	587	1600	1020	98	4.0	.2
CAL YR 1982	TOTAL	31538.70	MEAN	86.4	MAX	4700	MIN	4.2	CFSM	.21	IN	2.86
WTR YR 1983	TOTAL	3675.04	MEAN	10.1	MAX	182	MIN	.00	CFSM	.03	IN	.33
									AC-FT	62560	AC-FT	7290

## BRAZOS RIVER BASIN

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, 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>.

## WATER-DISCHARGE RECORDS

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 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 tables:

	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, furnished by Texas Utilities Services Inc., was prepared by Freese and Nichols Inc., Consulting Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 154,800 acre-ft May 26, 1982 (elevation, 776.16 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, 146,500 acre-ft Oct. 1 at 0100 hours (elevation, 773.64 ft); minimum, 142,700 acre-ft May 20 (elevation, 772.44 ft).

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

772.0	141,300
773.0	144,500
774.0	147,700

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	146500	145300	144800	144500	144000	143700	143500	142800	144200	143800	144300	145600
2	146400	145400	144800	144500	144000	143700	143400	143000	144200	143700	144300	145600
3	146400	145200	144800	144500	144000	143700	143400	142900	144200	143600	144300	145600
4	146400	145200	144800	144400	144000	143900	143400	142900	144200	143500	144400	145600
5	146300	145100	144700	144400	144000	143800	143400	142800	144200	143500	144400	145600
6	146300	145100	144700	144400	144000	143800	143300	142800	144800	143400	144500	145600
7	146300	145000	144700	144400	143900	143800	143300	142800	144800	143400	144500	145500
8	146300	145000	144600	144300	143900	143800	143200	142700	144700	143500	144500	145500
9	146400	145000	144600	144300	143900	143700	143200	142700	144600	143500	144500	145500
10	146300	145100	144800	144300	143900	143700	143200	142700	144600	143500	144500	145500
11	146200	145100	144800	144300	143900	143700	143200	142700	144600	143600	144500	145500
12	146300	145000	144700	144300	143800	143600	143200	142700	144500	143600	144600	145600
13	146300	144900	144700	144300	143800	143600	143100	142700	144500	143700	144600	145600
14	146200	144800	144600	144300	143800	143600	143000	142900	144600	143800	144600	145700
15	146100	144600	144600	144200	143800	143700	143000	142800	144500	143900	144600	145600
16	146100	144600	144600	144200	143800	143700	143000	142700	144500	143900	144600	145700
17	146000	144600	144600	144200	143800	143700	143000	142800	144400	144000	144600	145700
18	145900	144600	144600	144200	143800	143700	143000	142700	144400	144000	144800	146300
19	145900	144600	144500	144200	143800	143700	143000	142700	144300	144000	145300	146300
20	145700	144500	144500	144200	143800	143600	142900	142700	144300	144100	145300	146200
21	145800	144500	144500	144200	143800	143500	142900	142900	144300	144100	145300	146100
22	145700	144500	144500	144200	143800	143500	142900	143600	144200	144100	145300	146100
23	145600	144500	144500	144200	143800	143500	142900	144200	144200	144200	145400	146100
24	145600	144400	144500	144100	143800	143400	142900	144200	144200	144200	145400	146100
25	145500	144300	144500	144100	143800	143700	142800	144100	144100	144200	145400	146100
26	145500	144900	144500	144000	143800	143700	142800	144200	144100	144200	145500	146100
27	145400	144900	144600	144000	143700	143700	142700	144100	144000	144200	145500	146100
28	145400	144800	144500	144000	143700	143600	142700	144100	144000	144200	145600	146200
29	145400	144800	144500	144000	---	143600	142800	144100	143800	144200	145600	146200
30	145300	144800	144500	144000	---	143600	142800	144200	143800	144200	145600	146200
31	145300	---	144500	144100	---	143600	---	144300	---	144300	145700	---
MAX	146500	145400	144800	144500	144000	143900	143500	144300	144800	144300	145700	146300
MIN	145300	144300	144500	144000	143700	143400	142700	142700	143800	143400	144300	145500
(†)	773.26	773.11	773.00	772.88	772.76	772.72	772.46	772.93	772.79	772.93	773.37	773.53
(‡)	-1200	-500	-300	-400	-400	-100	-800	+1500	-500	+500	+1400	+500
CAL YR 1982	MAX	154600	MIN	144300	‡	-4100						
WTR YR 1983	MAX	146500	MIN	142700	‡	-300						

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

08091730 SQUAW CREEK RESERVOIR NEAR GLEN ROSE, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1982 to September 1983.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
SEP 14...	1545	2370	29.5	370	286	93	33	340
DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY 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)
SEP 14...	8.0	8.8	83	270	540	.30	<1.6	1340

## 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 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 National Geodetic Vertical Datum of 1929.

REMARKS.--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.--7 years (water years 1977-83), 7.59 ft<sup>3</sup>/s (5,500 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, 520 ft<sup>3</sup>/s May 23 at 0300 hours (gage height, 5.17 ft); minimum, 1.9 ft<sup>3</sup>/s Aug. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	2.9	3.4	4.3	4.9	4.3	3.7	3.6	3.7	4.0	2.7	2.2
2	3.4	4.8	3.2	4.3	4.9	4.3	4.4	5.9	3.7	4.0	2.7	2.2
3	3.7	3.2	3.2	4.3	4.9	4.3	4.0	3.7	3.7	4.0	2.9	2.2
4	3.9	3.2	3.2	4.3	4.7	5.2	4.0	3.7	3.7	4.0	3.0	2.2
5	3.7	3.4	3.2	4.3	4.6	4.6	4.0	3.4	3.5	4.0	3.2	2.2
6	3.7	3.4	3.2	4.3	4.6	4.6	3.7	3.4	37	4.0	3.1	2.2
7	3.7	3.4	3.2	4.3	4.6	4.3	3.7	3.4	3.7	4.0	2.8	2.7
8	4.1	3.4	3.2	4.3	4.6	4.3	3.7	3.4	3.4	4.0	2.7	3.4
9	5.3	3.4	3.2	4.3	4.6	4.3	3.8	3.4	3.7	4.0	2.7	3.4
10	3.3	3.4	3.6	4.3	4.6	4.3	4.0	3.3	2.9	4.1	2.7	3.4
11	3.2	3.5	4.1	4.3	4.6	4.3	4.0	3.8	2.9	3.7	2.9	3.4
12	3.5	3.7	3.7	4.3	4.6	4.3	4.0	4.0	2.9	3.7	2.9	3.4
13	3.2	3.7	3.7	4.3	4.6	4.3	4.0	4.0	2.9	3.7	2.9	3.4
14	3.2	3.7	3.6	4.3	4.6	4.3	4.0	7.3	3.2	3.8	2.7	4.0
15	3.4	3.7	3.4	4.3	4.3	4.3	4.0	4.0	3.5	4.3	2.7	5.3
16	3.4	3.7	3.4	4.3	4.3	4.3	4.0	3.9	3.4	4.3	2.7	5.3
17	3.4	3.7	3.4	4.3	4.3	4.0	4.0	3.4	3.4	4.3	2.9	4.0
18	3.4	3.2	3.4	4.3	4.3	4.0	4.0	3.9	3.4	4.2	2.9	3.4
19	3.4	3.2	3.4	4.3	4.3	4.0	4.0	4.0	3.7	3.9	7.2	3.4
20	3.4	3.2	3.4	4.3	4.3	4.0	4.0	4.0	3.7	3.7	3.4	3.4
21	3.6	3.2	3.4	4.3	4.3	4.0	4.0	5.3	3.7	3.5	3.4	2.9
22	3.7	3.2	3.4	4.3	4.3	4.0	4.1	4.1	3.7	3.2	3.4	2.9
23	3.7	3.2	3.4	4.0	4.3	4.0	3.7	62	3.7	3.2	3.4	2.9
24	3.6	3.2	3.4	4.0	4.3	4.0	3.7	2.9	3.7	3.2	3.4	2.9
25	3.4	3.7	3.4	4.0	4.3	4.0	4.0	2.9	3.7	3.2	2.9	2.9
26	3.2	7.4	3.9	4.0	4.3	6.2	4.0	2.9	3.7	3.4	2.5	3.2
27	3.0	5.0	4.5	4.0	4.3	3.2	3.9	2.9	3.7	3.3	2.5	3.2
28	2.9	3.7	4.3	4.0	4.3	2.9	3.7	2.9	3.7	3.2	2.5	3.2
29	2.9	3.4	4.3	4.0	---	2.9	3.7	3.2	4.0	2.9	2.5	3.2
30	2.9	3.4	4.0	4.0	---	2.9	3.7	3.6	4.0	2.8	2.5	3.2
31	2.9	---	4.0	4.5	---	2.9	---	5.5	---	2.7	2.5	---
TOTAL	107.5	109.2	110.1	131.1	125.6	127.3	117.5	177.7	139.6	114.3	93.2	95.6
MEAN	3.47	3.64	3.55	4.23	4.49	4.11	3.92	5.73	4.65	3.69	3.01	3.19
MAX	5.3	7.4	4.5	4.5	4.9	6.2	4.4	62	37	4.3	7.2	5.3
MIN	2.9	2.9	3.2	4.0	4.3	2.9	3.7	2.9	2.9	2.7	2.5	2.2
AC-FT	213	217	218	260	249	252	233	352	277	227	185	190
CAL YR 1982	TOTAL	7789.2	MEAN	21.3	MAX	353	MIN	2.7	AC-FT	15450		
WTR YR 1983	TOTAL	1448.7	MEAN	3.97	MAX	62	MIN	2.2	AC-FT	2870		

## 08091900 LAKE PAT CLEBURNE NEAR CLEBURNE, TX

LOCATION.--Lat 32°17'20", long 97°24'54", Johnson County, Hydrologic Unit 12030109, at side of walkway from dam to outlet structure, near left end of Cleburne Dam on Nolan River, 2.2 mi upstream from Buffalo Creek, 4.3 mi south of Cleburne, and 21.4 mi upstream from mouth.

DRAINAGE AREA.--100 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Homer Hunter Associates, Consulting Engineers bench mark).

REMARKS.--The lake is formed by a rock-faced earthfill dam 5,050 ft long, including a 150-foot-wide uncontrolled concrete service spillway at left end of dam. An emergency spillway, 500 ft wide, is cut in natural ground on the right bank about 400 ft from right end of dam. Storage began Aug. 4, 1964. Lake is the property of city of Cleburne and was built to impound water for municipal use. Capacity table based on survey of 1958 from Geological Survey topographic maps. 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.....	753.0	-
Top of design flood pool.....	752.3	66,700
Crest of spillway.....	744.0	45,430
Crest of spillway (top of conservation pool).....	733.5	25,560
Lowest gated outlet (invert).....	690.0	115

COOPERATION.--Capacity table furnished by Homer Hunter Associates, Consulting Engineers for the city of Cleburne.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 39,850 acre-ft May 3, 1979 (elevation, 741.41 ft); minimum, 31,870 acre-ft Jan. 16, 17, 1979 (elevation, 724.23 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 24,180 acre-ft June 26, 27 (elevation, 732.59 ft); minimum, 20,960 acre-ft Sept. 30 (elevation, 730.31 ft).

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

730.0	20,560	732.0	23,320
731.0	21,900	733.0	24,790

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22580	22170	21930	22000	21970	21960	21970	21400	23000	24040	22890	22060
2	22560	22270	21930	22000	21960	21960	21900	21490	23000	23980	22860	22010
3	22530	22200	21920	21990	21950	21970	21890	21450	23220	23900	22820	21970
4	22500	22170	21900	21970	21990	22060	21890	21420	23330	23870	22770	21900
5	22460	22130	21900	21970	22000	22060	21850	21380	23320	23920	22750	21850
6	22790	22100	21900	21970	22000	22060	21840	21320	24120	23870	22720	21810
7	22770	22080	21880	21970	21990	22040	21820	21320	24170	23830	22680	21770
8	22760	22070	21880	21970	22000	22040	21810	21270	24150	23790	22620	21740
9	22790	22060	21840	21970	22010	22000	21790	21230	24120	23760	22590	21700
10	22750	22070	21900	21950	22010	21970	21780	21210	24120	23730	22550	21660
11	22690	22100	21950	21950	22010	21950	21770	21250	24110	23680	22490	21630
12	22730	22040	21890	21930	22010	21920	21740	21230	24090	23650	22460	21600
13	22700	21990	21860	21930	21990	21900	21720	21210	24080	23610	22410	21560
14	22680	21960	21880	21930	22000	21900	21700	21660	24120	23710	22360	21480
15	22630	21920	21850	21900	22000	21930	21680	21610	24090	23680	22320	21420
16	22600	21900	21840	21900	22000	21900	21660	21590	24060	23670	22270	21380
17	22580	21890	21840	21900	21990	21900	21630	21550	24050	23620	22220	21360
18	22500	21890	21840	21900	21990	21890	21610	21600	24040	23600	22250	21420
19	22490	21880	21790	21900	21990	21890	21570	21530	24010	23550	22480	21380
20	22420	21880	21790	21900	22010	21860	21550	21520	23980	23520	22460	21320
21	22410	21860	21790	21900	22010	21840	21530	21630	23960	23480	22420	21270
22	22390	21850	21790	21890	22010	21820	21570	21640	23920	23430	22390	21220
23	22360	21820	21790	21880	22010	21810	21520	23060	24010	23380	22360	21180
24	22340	21780	21780	21880	22000	21810	21480	23070	23980	23330	22320	21140
25	22310	21750	21770	21860	21990	21860	21450	23070	24110	23250	22280	21110
26	22270	21970	21930	21850	21970	21990	21420	23070	24180	23170	22250	21090
27	22220	21970	22000	21840	21970	21990	21400	23040	24180	23100	22210	21060
28	22240	21970	22000	21840	21960	21970	21400	23000	24150	23060	22180	21020
29	22200	21960	21990	21820	---	21970	21400	22990	24120	23020	22140	20990
30	22180	21950	21970	21820	---	21970	21410	23030	24050	22960	22110	20970
31	22180	---	22000	21900	---	21970	---	23020	---	22920	22060	---
MAX	22790	22270	22000	22000	22010	22060	21970	23070	24180	24040	22890	22060
MIN	22180	21750	21770	21820	21950	21810	21400	21210	23000	22920	22060	20970
(+)	731.20	731.03	731.07	731.00	731.04	731.05	730.64	731.79	732.50	731.72	731.11	730.31
(-)	-420	-230	+50	-100	+60	+10	-560	+1610	+1030	-1130	-860	-1090

CAL YR 1982 MAX 26980 MIN 18670 † +3120  
WTR YR 1983 MAX 24180 MIN 20970 † -1630

† Elevation, in feet, at end of month.  
‡ Change in contents, in acre-feet.



## BRAZOS RIVER BASIN

08091900 LAKE PAT CLEBURNE NEAR CLEBURNE, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD---Chemical analyses: October 1969 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
SEP 14...	1310	275	28.0	100	4	33	4.8	15

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LILITY 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)
SEP 14...	.7	4.7	98	18	15	.30	6.0	156

## BRAZOS RIVER BASIN

267

08092000 NOLAN RIVER AT BLUM, TX

LOCATION.--Lat 32°09'02", long 97°24'09", Hill County, Hydrologic Unit 12060202, 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.

DRAINAGE AREA.--282 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1924 to September 1925, November 1947 to current year.

REVISED RECORDS.--WSP 1312: 1925(M). WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 551.48 ft National Geodetic Vertical Datum of 1929. July 29, 1924, to Sept. 30, 1925, and Nov. 14, 1947, to May 28, 1949, nonrecording gage at railway bridge (now abandoned) 0.5 mi upstream at datum 5.00 ft higher. May 29 to July 7, 1949, nonrecording gage at present site and datum then in use, 5.00 ft higher than present datum.

REMARKS.--Records good. Since August 1964, the flow from 100 mi<sup>2</sup> affected by storage in Lake Pat Cleburne (station 08091900) located 13 mi upstream. The city of Cleburne diverts water from Lake Pat Cleburne and returns sewage effluent to a tributary upstream from the gage. Gage-height telemeter installed Apr. 20, 1983.

AVERAGE DISCHARGE.--18 years (water years 1925, 1949-64) prior to regulation by Lake Pat Cleburne, 66.1 ft<sup>3</sup>/s (47,890 acre-ft/yr); 19 years (water years 1965-83) regulated, 87.7 ft<sup>3</sup>/s (63,540 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62,200 ft<sup>3</sup>/s May 7, 1969 (gage height, 31.23 ft), from rating curve extended above 22,200 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1887, 35.0 ft May 8, 1922, present site and datum, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,310 ft<sup>3</sup>/s May 23 at 0715 hours (gage height, 6.32 ft), no peak above base of 5,000 ft<sup>3</sup>/s; minimum daily, 0.25 ft<sup>3</sup>/s Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.25	3.9	7.8	9.5	24	7.0	4.3	1.8	35	6.7	1.4	1.4
2	.28	10	7.7	9.4	8.8	7.3	4.3	4.0	24	6.4	1.3	1.4
3	.27	14	7.0	8.5	6.1	6.7	4.9	7.5	21	6.4	1.6	1.4
4	.48	6.1	6.7	7.7	5.3	9.2	4.7	3.5	70	5.3	1.4	1.6
5	.30	4.7	8.0	7.4	8.2	19	5.0	2.1	35	6.1	1.6	1.6
6	.29	4.0	7.6	7.2	8.2	8.8	5.1	1.6	179	13	1.9	1.4
7	69	5.6	7.4	7.1	6.1	7.3	5.2	1.3	68	7.6	1.0	1.2
8	8.7	5.0	7.2	7.5	6.4	6.7	5.7	2.1	36	6.1	3.8	1.6
9	6.3	5.3	7.0	7.8	6.7	6.7	6.4	1.2	25	5.6	2.9	1.6
10	8.4	5.1	8.1	7.7	6.4	6.7	6.9	1.3	20	5.0	1.3	1.6
11	4.1	5.2	15	7.2	6.4	7.0	7.3	2.6	18	6.1	.87	1.5
12	3.9	5.0	19	7.0	6.4	7.0	9.1	3.6	16	5.8	.80	1.5
13	7.4	5.6	11	7.5	6.7	7.0	9.1	2.7	15	5.8	1.3	1.4
14	5.6	5.4	9.3	7.0	6.4	7.0	8.1	27	14	8.5	1.2	1.1
15	3.5	4.4	9.0	7.2	6.4	7.8	9.4	101	20	14	.91	2.0
16	3.7	4.7	8.7	7.3	6.7	9.1	8.0	6.3	15	9.4	.98	1.3
17	2.8	4.6	8.3	7.6	6.7	8.5	7.6	2.1	13	8.2	.66	.83
18	3.0	5.0	8.4	7.6	7.0	8.5	9.1	1.7	12	7.8	.61	.59
19	2.6	4.9	8.9	7.6	7.8	7.6	7.0	1.5	13	7.0	83	.57
20	2.2	5.3	8.4	8.8	7.3	8.2	7.3	1.3	16	6.4	13	1.9
21	2.5	5.5	8.2	7.8	7.6	8.8	6.2	7.1	15	4.6	3.9	2.8
22	3.2	6.1	8.1	7.6	7.3	6.4	6.9	7.9	14	4.3	1.9	2.4
23	5.3	5.5	8.6	7.6	7.8	6.1	9.0	519	13	4.6	1.3	2.0
24	3.5	4.6	8.8	7.6	7.3	7.2	8.4	52	23	3.8	1.0	1.2
25	3.1	5.0	8.4	7.6	6.7	7.1	6.7	28	44	3.6	.95	.83
26	2.9	13	19	7.0	6.1	34	5.7	21	42	2.9	.82	.53
27	3.1	47	87	7.0	6.7	13	5.0	17	31	2.5	.66	.79
28	3.0	15	38	7.0	7.0	6.4	4.8	18	14	1.9	1.0	.71
29	2.6	10	16	7.0	---	4.9	4.4	17	13	1.9	1.1	.61
30	2.6	8.1	11	7.0	---	4.6	3.7	17	10	1.9	1.1	.47
31	3.1	---	8.9	7.8	---	4.9	---	33	---	1.8	1.2	---
TOTAL	167.97	233.6	402.5	235.6	210.5	266.5	195.3	913.2	884	181.0	136.46	39.83
MEAN	5.42	7.79	13.0	7.60	7.52	8.60	6.51	29.5	29.5	5.84	4.40	1.33
MAX	69	47	87	9.5	24	34	9.4	519	179	14	83	2.8
MIN	.25	3.9	6.7	7.0	5.3	4.6	3.7	1.2	10	1.8	.61	.47
AC-FT	333	463	798	467	418	529	387	1810	1750	359	271	79
CAL YR 1982	TOTAL	14135.41	MEAN 38.7	MAX 1250	MIN .24	AC-FT 28040						
WTR YR 1983	TOTAL	3866.46	MEAN 10.6	MAX 519	MIN .25	AC-FT 7670						

## BRAZOS RIVER BASIN

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.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1951 to current year. Prior to October 1970, published as Whitney Reservoir. Prior to October 1980, published as Whitney Lake.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by 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. The concrete spillway is 680 ft long and includes 17 tainter gates 38.0 by 40.0 ft each. The 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 a 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. Flow is affected at times by discharge from the flood-detention pools of four floodwater retarding structures with a combined detention capacity of 2,690 acre-ft. These structures control runoff from 12.2 mi<sup>2</sup> in the Paluxy River drainage basin. 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 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 daily contents, 548,720 acre-ft Oct. 1 (elevation, 529.51 ft); minimum daily, 433,400 acre-ft Feb. 16 (elevation, 523.36 ft).

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

523.0	427,400	528.0	517,100
524.0	444,000	530.0	559,200
526.0	478,800		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	548300	523100	510200	501600	450900	442000	448600	449100	504700	509600	486000	462600
2	548100	523100	511400	501000	451600	442000	445300	451300	505500	509800	485300	463600
3	547200	521200	512800	499600	451600	441800	442100	450400	506700	509100	486200	464500
4	546400	519200	513800	497400	448400	444500	442600	449400	507500	510400	485100	465600
5	546100	517500	514400	496500	449200	444100	441500	448200	508500	513000	483800	465600
6	544000	515700	514800	495800	449600	444800	442300	446900	511800	512400	482700	465400
7	544000	514200	514800	492800	448000	445000	443600	446300	512800	512000	482900	465200
8	543800	512600	513800	491700	448400	445800	444800	447400	512800	510600	482700	465200
9	544200	511000	513000	491800	448600	446700	446200	449100	512600	508500	481400	465400
10	544000	509200	513800	491700	448600	447500	447000	448200	512400	505900	479600	465400
11	543800	508100	512800	491800	446300	447500	447200	451800	510800	506100	478400	464900
12	543800	508300	512800	490700	444600	447400	445800	451800	509600	505100	476400	465100
13	543400	508700	513000	489800	442800	447400	447000	451800	510200	503700	474500	464700
14	543100	508300	509600	485500	439000	447700	447400	454000	510600	505300	472300	463600
15	542900	506300	507500	479500	436700	448200	446700	453800	510400	507100	470200	463400
16	541600	504700	503900	477500	433400	445100	446300	454300	510200	509600	467900	463300
17	540100	504100	502600	476100	433900	448900	447200	454300	508500	509300	465600	462900
18	537400	504100	502400	474500	434400	449700	447000	455500	508300	509100	465400	462600
19	535300	503700	503500	473100	434900	451400	446700	455500	508500	508300	467200	462000
20	533600	504700	504700	472300	436500	449600	444800	456000	508300	507700	468100	464300
21	532800	505500	503200	470900	436500	447500	444100	457400	508100	505900	468800	461700
22	531800	505700	503300	469700	436500	445300	445200	459900	507500	504900	467200	461300
23	530800	506500	503000	468600	439300	443800	445800	469300	507900	503000	465100	460300
24	529700	506500	503200	466700	440200	443300	445800	492800	507300	500800	462700	459400
25	528300	506900	503700	463800	439700	443100	448200	501600	506900	499800	460600	459100
26	526200	510400	504700	462400	439800	447500	449900	503500	506500	497400	460400	459100
27	525800	509800	504900	459800	440600	450100	448600	502800	507300	494800	460300	458700
28	525600	508900	501600	457400	441500	451800	448200	503200	509800	492600	460400	458600
29	525000	509600	501800	456000	---	452600	447900	502600	510000	490300	460100	458400
30	523900	509800	501200	454000	---	451800	447900	504900	509400	488700	459900	458200
31	523100	---	501000	453500	---	449600	---	503000	---	486600	461000	---
MAX	548300	523100	514800	501600	451600	452600	449900	504900	512800	513000	486200	465600
MIN	523100	503700	501000	453500	433400	441800	441500	446300	504700	486600	459900	458200
(†)	528.29	527.63	527.18	524.56	523.85	524.33	524.23	527.28	527.61	526.42	525.00	524.84
(‡)	-25800	-13300	-8800	-47500	-12000	+8100	-1700	+55100	+6400	-22800	-25600	-2800

CAL YR 1982 MAX 824100 MIN 501000 † -90700  
WTR YR 1983 MAX 548300 MIN 433400 ‡ -111200

† Elevation, in feet, at end of month.  
‡ Change in contents, in acre-feet.

08092500 LAKE WHITNEY NEAR WHITNEY, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: November 1961 to current year.

315203097222601 LAKE WHITNEY SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

			SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)	
DATE	TIME	SAM- PLING DEPTH (FEET)									
JAN											
12...	0915	1.00	1200	8.2	9.5	1.30	9.4	82	<1	58	
12...	0917	10.0	1200	8.2	9.5	--	9.4	82	--	--	
12...	0919	20.0	1200	8.2	9.0	--	9.4	81	--	--	
12...	0921	30.0	1200	8.2	9.0	--	9.3	80	--	--	
12...	0923	40.0	1200	8.2	9.0	--	9.2	79	--	--	
12...	0925	50.0	1200	8.2	9.0	--	9.2	79	--	--	
12...	0927	60.0	1200	8.2	9.0	--	9.2	79	--	--	
12...	0929	70.0	1200	8.1	9.0	--	9.0	78	--	--	
12...	0931	80.0	1200	8.1	9.0	--	8.8	76	--	--	
12...	0933	90.0	1200	8.1	9.0	--	8.6	74	--	--	
12...	0935	105	1200	8.0	9.0	--	8.1	70	--	--	
MAY											
11...	1000	1.00	1190	8.1	20.5	2.20	7.7	87	K7	44	
11...	1002	10.0	1190	8.1	20.0	--	7.6	85	--	--	
11...	1004	20.0	1200	8.0	20.0	--	7.3	82	--	--	
11...	1006	30.0	1210	7.9	19.5	--	6.9	77	--	--	
11...	1008	40.0	1210	7.9	19.0	--	6.6	73	--	--	
11...	1010	50.0	1210	7.8	18.5	--	6.5	71	--	--	
11...	1012	60.0	1210	7.7	18.0	--	5.6	60	--	--	
11...	1014	70.0	1210	7.7	17.5	--	5.5	59	--	--	
11...	1016	80.0	1210	7.6	16.5	--	5.4	56	--	--	
11...	1018	90.0	1210	7.6	16.5	--	5.0	52	--	--	
11...	1020	97.0	1210	7.4	16.0	--	2.0	21	--	--	
JUL											
28...	0930	1.00	1250	7.9	27.5	1.90	6.3	80	<1	91	
28...	0932	10.0	1250	7.9	27.5	--	6.1	78	--	--	
28...	0934	20.0	1250	7.8	27.5	--	6.1	78	--	--	
28...	0936	30.0	1250	7.7	27.0	--	5.8	73	--	--	
28...	0938	40.0	1240	7.3	26.5	--	2.0	25	--	--	
28...	0940	50.0	1230	7.2	24.5	--	.1	1	--	--	
28...	0942	60.0	1230	7.3	23.0	--	.1	1	--	--	
28...	0944	70.0	1220	7.3	22.0	--	.2	2	--	--	
28...	0946	80.0	1220	7.4	21.0	--	.2	2	--	--	
28...	0948	90.0	1220	7.5	20.0	--	.2	2	--	--	
28...	0950	99.0	1220	7.6	19.5	--	.2	2	--	--	
		HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN											
12...	270	160	79	17	130	3.6	5.9	110	150	220	
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	270	160	79	17	140	3.9	5.8	110	150	220	
MAY											
11...	290	170	87	17	130	3.5	5.5	120	150	220	
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	290	160	87	18	130	3.4	5.6	130	150	220	
JUL											
28...	270	160	77	20	150	4.1	5.9	110	160	240	
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	290	140	85	18	140	3.7	5.7	150	140	220	



BRAZOS RIVER BASIN  
LAKE WHITNEY NEAR WHITNEY, TX--Continued

315203097222601 LAKE WHITNEY SITE AC--Continued  
WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN									
12...	.30	6.8	675	<.10	.70	--	.030	<3	1
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12	--	--	--	--	--	--	--	--	--
12...	--	--	--	<.10	.80	--	.030	10	10
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	--	7.3	685	<.10	1.10	--	.080	7	160
MAY									
11...	.30	6.4	688	<.10	.70	--	.010	<3	3
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	<.10	.80	--	.010	20	30
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
11...	--	7.8	697	.10	1.60	1.7	.120	71	500
JUL									
28...	.30	6.5	726	<.10	.70	--	.040	8	7
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	<.10	.60	--	.030	20	30
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	<.10	.90	--	.040	30	130
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	13	714	<.10	1.80	--	.290	960	1200

315214097222001 LAKE WHITNEY SITE AL  
WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
12...	0950	1.00	1200	8.2	9.5	9.4	82
12...	0952	10.0	1200	8.2	9.5	9.4	82
12...	0954	20.0	1200	8.2	9.5	9.4	82
12...	0956	30.0	1200	8.2	9.0	9.2	79
12...	0958	38.0	1200	8.2	9.0	9.1	78
MAY							
11...	1050	1.00	1190	8.1	20.0	7.7	86
11...	1052	10.0	1190	8.1	20.0	7.5	84
11...	1054	20.0	1190	8.1	20.0	7.5	84
11...	1056	30.0	1200	8.0	19.5	6.7	74
11...	1058	37.0	1200	7.9	19.5	6.3	70
JUL							
28...	1005	1.00	1250	7.9	27.5	6.4	82
28...	1007	10.0	1250	7.9	27.5	6.4	82
28...	1009	20.0	1250	7.9	27.5	6.3	80
28...	1011	30.0	1250	7.9	27.5	6.3	80
28...	1013	38.0	1250	7.9	27.5	6.2	79



## BRAZOS RIVER BASIN

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## LAKE WHITNEY NEAR WHITNEY, TX--Continued

315432097234601 LAKE WHITNEY SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
12...	1347	1.00	1200	8.4	10.5	10.0	90
12...	1349	10.0	1200	8.4	9.5	9.6	84
12...	1351	20.0	1200	8.4	9.5	9.4	82
12...	1353	30.0	1200	8.4	9.5	9.4	82
12...	1355	40.0	1200	8.4	9.5	9.5	83
12...	1357	50.0	1200	8.4	9.5	9.4	82
12...	1359	60.0	1200	8.4	9.5	9.2	81
12...	1400	70.0	1200	8.3	9.0	8.8	77
12...	1402	80.0	1200	8.2	9.0	7.9	69
12...	1404	90.0	1200	8.2	9.0	6.9	60
MAY							
11...	1140	1.00	1200	8.2	20.5	7.9	90
11...	1142	10.0	1200	8.2	20.5	7.9	90
11...	1144	20.0	1200	8.2	20.5	7.8	88
11...	1146	30.0	1200	8.1	20.5	7.7	87
11...	1148	40.0	1200	8.1	20.0	7.7	86
11...	1150	50.0	1200	7.8	19.0	6.0	66
11...	1152	60.0	1200	7.6	18.0	4.9	53
11...	1154	70.0	1200	7.6	17.5	4.3	46
11...	1156	80.0	1200	7.6	17.0	3.6	38
11...	1158	87.0	1200	7.6	17.0	3.0	32
JUL							
28...	1050	1.00	1270	8.0	29.0	6.9	90
28...	1052	10.0	1270	8.0	29.0	7.0	92
28...	1054	20.0	1270	7.9	28.5	6.2	80
28...	1056	30.0	1310	7.4	28.0	2.3	30
28...	1058	40.0	1260	7.2	26.5	.3	4
28...	1100	50.0	1250	7.3	25.0	.1	1
28...	1102	60.0	1250	7.4	23.5	.1	1
28...	1104	70.0	1250	7.4	22.5	.2	2
28...	1106	80.0	1240	7.5	21.5	.2	2
28...	1108	90.0	1240	7.6	21.0	.2	2

315722097240201 LAKE WHITNEY SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)
JAN									
12...	1311	1.00	1200	8.5	10.0	1.10	10.1	89	<1
12...	1313	10.0	1200	8.5	9.5	--	9.8	86	--
12...	1315	20.0	1200	8.4	9.5	--	9.6	84	--
12...	1317	30.0	1200	8.4	9.0	--	9.5	83	--
12...	1319	40.0	1200	8.4	9.0	--	9.4	82	--
12...	1321	50.0	1200	8.4	9.0	--	9.2	80	--
12...	1323	60.0	1200	8.3	9.0	--	8.7	76	--
12...	1325	70.0	1200	8.2	8.5	--	8.2	70	--
12...	1327	82.0	1200	8.2	8.5	--	7.6	65	--
MAY									
11...	1220	1.00	1200	8.2	21.0	1.20	7.7	88	K3
11...	1222	10.0	1200	8.2	21.0	--	7.7	88	--
11...	1224	20.0	1200	8.1	21.0	--	7.4	85	--
11...	1226	30.0	1210	8.1	20.5	--	7.2	82	--
11...	1228	40.0	1210	8.0	20.5	--	6.4	73	--
11...	1230	50.0	1210	7.9	20.0	--	6.2	70	--
11...	1232	60.0	1210	7.8	19.5	--	5.7	63	--
11...	1234	70.0	1210	7.5	19.0	--	3.6	40	--
11...	1236	75.0	1210	7.6	18.5	--	3.1	34	--
JUL									
28...	1130	1.00	1280	8.0	29.5	1.40	7.1	94	<1
28...	1132	10.0	1280	8.1	29.5	--	7.2	96	--
28...	1134	20.0	1280	8.0	29.5	--	7.3	97	--
28...	1136	30.0	1300	7.8	29.0	--	6.4	84	--
28...	1138	40.0	1360	7.3	28.0	--	1.7	22	--
28...	1140	50.0	1270	7.4	24.5	--	.1	1	--
28...	1142	60.0	1240	7.4	23.5	--	.1	1	--
28...	1144	70.0	1240	7.5	22.5	--	.1	1	--
28...	1146	78.0	1240	7.6	22.5	--	.2	2	--

BRAZOS RIVER BASIN  
LAKE WHITNEY NEAR WHITNEY, TX--Continued

315722097240201 LAKE WHITNEY SITE DC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (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 FIELD (MG/L AS CACO3)
JAN									
12...	59	270	150	79	17	130	3.6	5.8	120
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	--	270	150	79	17	140	3.9	5.7	120
MAY									
11...	26	280	150	82	18	140	3.8	5.7	130
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
11...	--	290	160	85	18	140	3.7	5.8	130
JUL									
28...	K320	270	160	74	20	150	4.1	6.0	110
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	280	130	81	19	140	3.8	5.9	150
DATE	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- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN									
12...	150	220	6.7	680	<.10	.70	.030	5	4
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	<.10	.80	.040	30	20
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	150	220	7.0	691	<.10	1.60	.100	17	82
MAY									
11...	150	220	6.1	700	<.10	.50	.030	9	3
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	<.10	.50	.020	20	20
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
11...	150	220	7.0	704	<.10	2.30	.240	110	350
JUL									
28...	160	240	6.3	722	<.10	.70	.040	<3	4
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	<.10	.90	.060	40	80
28...	--	--	--	--	<.10	1.00	.030	80	960
28...	--	--	--	--	--	--	--	--	--
28...	140	230	9.7	717	<.10	1.50	.090	240	990

## BRAZOS RIVER BASIN

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LAKE WHITNEY NEAR WHITNEY, TX--Continued

320122097260901 LAKE WHITNEY SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)
JAN							
12...	1200	1.00	1180	8.3	9.5	.60	10.0
12...	1202	10.0	1190	8.2	8.5	--	9.6
12...	1204	20.0	1190	8.2	8.5	--	9.6
12...	1206	30.0	1190	8.2	8.0	--	9.2
12...	1208	40.0	1190	8.2	8.0	--	8.8
12...	1210	51.0	1190	7.7	7.5	--	8.2
MAY							
11...	1340	1.00	1230	8.1	21.5	.80	7.4
11...	1342	10.0	1230	8.1	21.5	--	7.4
11...	1344	20.0	1230	8.0	21.0	--	6.8
11...	1346	30.0	1240	7.9	21.0	--	6.2
11...	1348	40.0	1240	7.8	20.5	--	5.4
11...	1350	48.0	1250	7.7	20.5	--	2.7
JUL							
28...	1240	1.00	1320	8.1	31.0	1.10	7.4
28...	1242	10.0	1320	8.0	30.5	--	6.5
28...	1244	20.0	1330	7.9	30.0	--	5.7
28...	1246	30.0	1350	7.7	30.0	--	4.8
28...	1248	40.0	1360	7.6	29.5	--	3.7
28...	1250	50.0	1380	7.3	28.0	--	.1
28...	1252	53.0	1370	7.4	27.5	--	.2

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- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN						
12...	88	<.10	.70	.020	10	<10
12...	82	--	--	--	--	--
12...	82	<.10	.80	.010	20	<10
12...	78	--	--	--	--	--
12...	75	--	--	--	--	--
12...	68	<.10	.90	.040	20	40
MAY						
11...	86	<.10	.60	.020	30	10
11...	86	--	--	--	--	--
11...	78	<.10	.60	.020	20	10
11...	71	--	--	--	--	--
11...	61	--	--	--	--	--
11...	31	<.10	1.00	.030	20	190
JUL						
28...	101	<.10	.80	.050	10	10
28...	88	--	--	--	--	--
28...	76	--	--	--	--	--
28...	64	--	--	--	--	--
28...	49	<.10	1.20	.050	20	150
28...	1	--	--	--	--	--
28...	3	<.10	3.00	.140	360	2100

BRAZOS RIVER BASIN  
LAKE WHITNEY NEAR WHITNEY, TX--Continued

315907097222801 LAKE WHITNEY SITE P7

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)
JAN							
12...	1239	1.00	1190	8.4	9.5	1.10	10.1
12...	1241	10.0	1200	8.4	9.0	--	9.5
12...	1243	20.0	1200	8.3	9.0	--	9.4
12...	1245	30.0	1200	8.3	9.0	--	9.4
12...	1247	40.0	1200	8.2	9.0	--	9.0
12...	1249	53.0	1200	8.1	9.0	--	7.7
MAY							
11...	1305	1.00	1200	8.2	21.0	1.20	8.0
11...	1308	10.0	1200	8.2	21.0	--	7.9
11...	1310	20.0	1200	8.0	20.5	--	7.0
11...	1312	30.0	1210	8.0	20.5	--	6.9
11...	1314	44.0	1210	7.8	20.0	--	4.3
JUL							
28...	1200	1.00	1300	8.1	31.0	1.50	7.7
28...	1202	10.0	1300	8.1	30.0	--	7.6
28...	1204	20.0	1300	7.8	29.5	--	5.9
28...	1206	30.0	1300	7.6	29.5	--	4.5
28...	1208	40.0	1300	7.2	28.5	--	.1
28...	1210	46.0	1300	7.3	28.0	--	.1

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- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN						
12...	89	<.10	.50	.020	10	10
12...	83	--	--	--	--	--
12...	82	--	--	--	--	--
12...	82	--	--	--	--	--
12...	78	--	--	--	--	--
12...	67	<.10	.90	.060	20	40
MAY						
11...	92	<.10	.60	.010	20	<10
11...	90	--	--	--	--	--
11...	79	--	--	--	--	--
11...	78	--	--	--	--	--
11...	48	<.10	.60	.040	40	20
JUL						
28...	104	<.10	1.50	.060	10	20
28...	101	--	--	--	--	--
28...	78	--	--	--	--	--
28...	59	--	--	--	--	--
28...	1	--	--	--	--	--
28...	1	<.10	1.00	.050	290	650

320401097291301 LAKE WHITNEY SITE P11

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED CENT SATUR- ATION	COLI- FORM, FECAL, UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JAN										
12...	1119	1.00	1100	8.3	9.0	.80	9.8	85	<1	27
12...	1121	10.0	1100	8.3	9.0	--	9.5	83	--	--
12...	1123	20.0	1110	8.2	9.0	--	9.0	78	--	--
12...	1125	33.0	1110	8.1	9.0	--	8.2	71	--	--
MAY										
11...	1420	1.00	1370	7.9	22.5	.40	6.7	79	K9	160
11...	1422	10.0	1370	7.9	22.5	--	6.3	74	--	--
11...	1424	17.0	1370	7.8	22.0	--	5.8	68	--	--
JUL										
28...	1325	1.00	1480	8.1	31.5	.50	7.4	102	K2	34
28...	1327	10.0	1480	7.9	30.5	--	5.6	76	--	--
28...	1329	20.0	1480	7.8	30.5	--	4.6	62	--	--
28...	1331	25.0	1480	7.7	31.0	--	3.7	50	--	--

## BRAZOS RIVER BASIN

## LAKE WHITNEY NEAR WHITNEY, TX--Continued

320401097291301 LAKE WHITNEY SITE P11--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JAN									
12...	270	130	78	18	120	3.3	5.1	140	130
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	280	140	79	19	120	3.3	5.0	140	130
MAY									
11...	320	180	90	23	160	4.0	5.8	140	170
11...	--	--	--	--	--	--	--	--	--
11...	310	180	88	23	160	4.1	5.8	140	170
JUL									
28...	290	170	78	23	190	5.0	6.2	120	180
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	300	180	82	23	190	5.0	6.1	120	180

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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN									
12...	190	6.6	632	.10	.70	.80	.050	<3	8
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	.10	.70	.80	.040	10	30
12...	190	6.6	634	<.10	.80	--	.060	6	53
MAY									
11...	260	4.6	797	<.10	.60	--	.050	7	8
11...	--	--	--	<.10	.80	--	.040	50	10
11...	250	4.8	786	<.10	1.20	--	.100	11	89
JUL									
28...	300	6.3	855	<.10	.90	--	.060	<3	4
28...	--	--	--	<.10	.90	--	.050	10	10
28...	--	--	--	--	--	--	--	--	--
28...	310	6.5	870	<.10	.90	--	.060	9	75

315500097204001 LAKE WHITNEY SITE P15

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)
JAN							
12...	1430	1.00	1200	8.5	10.5	1.00	10.0
12...	1432	10.0	1200	8.5	10.0	--	9.8
12...	1434	14.0	1200	8.4	10.0	--	8.7
MAY							
11...	1120	1.00	1180	8.2	20.5	1.00	8.0
11...	1122	10.0	1170	8.2	20.5	--	7.9
11...	1124	19.0	1170	8.1	20.5	--	7.5
JUL							
28...	1030	1.00	1250	8.1	29.5	--	7.2
28...	1032	10.0	1250	8.1	29.5	--	7.1
28...	1034	20.0	1250	8.0	29.0	--	6.5
28...	1036	26.0	1250	7.5	28.5	--	2.9

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- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN						
12...	90	<.10	.70	.020	10	<10
12...	87	--	--	--	--	--
12...	77	<.10	.80	.040	10	10
MAY						
11...	91	<.10	.90	.010	20	10
11...	90	--	--	--	--	--
11...	85	<.10	1.00	.020	20	20
JUL						
28...	95	<.10	.90	.020	10	10
28...	94	--	--	--	--	--
28...	85	--	--	--	--	--
28...	38	<.10	1.10	.050	20	110



## BRAZOS RIVER BASIN

## LAKE WHITNEY NEAR WHITNEY, TX--Continued

## 315500097204001 LAKE WHITNEY SITE P15--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

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- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN						
12...	90	<.10	.70	.020	10	<10
12...	87	--	--	--	--	--
12...	77	<.10	.80	.040	10	10
MAY						
11...	91	<.10	.90	.010	20	10
11...	90	--	--	--	--	--
11...	85	<.10	1.00	.020	20	20
JUL						
28...	95	<.10	.90	.020	10	10
28...	94	--	--	--	--	--
28...	85	--	--	--	--	--
28...	38	<.10	1.10	.050	20	110

## 315203097222601 LAKE WHITNEY SITE AC

## PHYTOPLANKTON ANALYSES, OCTOBER 1982 TO JULY 1983

DATE TIME	JAN 12,83 0916		MAY 11,83 1001		JUL 28,83 0931	
TOTAL CELLS/ML	1000		6000		82000	
DIVERSITY: DIVISION	1.0		1.8		0.6	
..CLASS	1.0		1.8		0.6	
..ORDER	1.7		2.4		1.9	
...FAMILY	1.7		2.7		2.2	
....GENUS	2.0		3.3		2.6	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)						
..BACILLARIOPHYCEAE						
...BACILLARIALES						
....NITZSCHIAEAE						
.....NITZSCHIA	57	5	--	-	--	-
...EUPODISCALES						
...COSCIDISCAEAE						
....CYCLOTELLA	340#	33	440	7	*	0
..FRAGILARIALES						
...FRAGILARIAEAE						
....SYNEDRA	--	-	--	-	1300	2
..NAVICULALES						
...NAVICULACEAE						
....DIPLONEIS	140	14	--	-	--	-
....NAVICULA	--	-	*	0	--	-

## BRAZOS RIVER BASIN

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LAKE WHITNEY NEAR WHITNEY, TX--Continued

315203097222601 LAKE WHITNEY SITE AC--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1982 TO JULY 1983

DATE TIME	JAN 12,83 0916		MAY 11,83 1001		JUL 28,83 0931	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHLOROCOCCACEAE						
....SCHROEDERIA	--	-	* 0		--	-
....TETRAEDRON	--	-	47 1		--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	86	8	160 3		* 0	
....KIRCHNERIELLA	--	-	* 0		--	-
...OOCYSTIS	420#	40	140 2		* 0	
...SCENEDESMACEAE						
....COELASTRUM	--	-	280 5		--	-
....CRUCIGENIA	--	-	560 9		2200 3	
....SCENEDESMUS	--	-	420 7		810 1	
....TETRASTRUM	--	-	93 2		--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	140 2		540 1	
..ZYGNEMATALES						
...DESMIDIACEAE						
....COSMARIUM	--	-	--	-	* 0	
....STAUSTRUM	--	-	--	-	* 0	
CHRYSTOPHYTA						
.CHRYSTOPHYCEAE						
..OCHROMONADALES						
...OCHROMONADACEAE						
....OCHROMONAS	--	-	400 7		1600 2	
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOMONADACEAE						
....CRYPTOMONAS	--	-	300 5		--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....AGMENELLUM	--	-	160 3		2200 3	
....ANACYSTIS	--	-	1000# 17		9800 12	
..NOSTOCALES						
...HAMMATOIDEACEAE						
....RAPHIDIOPSIS	--	-	1700# 29		4700 6	
...NOSTOCACEAE						
....CYLINDROSPERMUM	--	-	--	-	16000# 20	
..OSCILLATORIALES						
...OSCILLATORIACEAE						
....LYNGBYA	--	-	--	-	7000 9	
....OSCILLATORIA	--	-	--	-	34000# 42	
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....TRACHELOMONAS	--	-	--	-	* 0	

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

BRAZOS RIVER BASIN  
LAKE WHITNEY NEAR WHITNEY, TX--Continued

320401097291301 LAKE WHITNEY SITE P11

PHYTOPLANKTON ANALYSES, OCTOBER 1982 TO JULY 1983

DATE TIME	JAN 12,83 1120		MAY 11,83 1421		JUL 28,83 1326	
TOTAL CELLS/ML	3100		20000		280000	
DIVERSITY: DIVISION	0.9		1.6		0.5	
..CLASS	0.9		1.6		0.5	
...ORDER	1.9		1.8		1.8	
...FAMILY	2.2		2.1		2.1	
....GENUS	2.3		2.5		2.4	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)						
.BACILLARIOPHYCEAE						
..BACILLARIALES						
...NITZSCHIAEAE						
....NITZSCHIA	660#	21	560	3	*	0
..BIDDULPHIALES						
...CHAETOCERACEAE						
....CHAETOCEROS	--	-	--	-	*	0
..EUPODISCALES						
...COSCINODISCAEAE						
....CYCLOTELLA	430	14	5600#	27	2000	1
....MELOSIRA	--	-	--	-	*	0
...STEPHANODISCUS	29	1	--	-	--	-
..FRAGILARIALES						
...FRAGILARIAEAE						
....SYNEDRA	--	-	--	-	*	0
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...OOCYSTACEAE						
....ANKISTRODESMUS	570#	19	700	3	8000	3
....KIRCHNERIELLA	--	-	1300	6	*	0
....OOCYSTIS	--	-	280	1	--	-
....SELENASTRUM	--	-	--	-	*	0
...SCENEDESMACEAE						
....CRUCIGENIA	--	-	2200	11	--	-
....SCENEDESMUS	170	6	560	3	3000	1
....TETRASTRUM	110	4	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	1100#	36	280	1	1500	1
CHRYSTOPHYTA						
.CHRYSTOPHYCEAE						
..OCHROMONADALES						
...OCHROMONADACEAE						
....OCHROMONAS	--	-	140	1	*	0
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOCHRYSIDACEAE						
....CHROOMONAS	--	-	--	-	*	0
...CRYPTOMONADACEAE						
....CRYPTOMONAS	--	-	--	-	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....AGMENELLUM	--	-	1100	5	16000	6
....ANACYSTIS	--	-	7700#	38	15000	6
..NOSTOCALES						
...HAMMATOIDEACEAE						
....RAPHIDIOPSIS	--	-	--	-	20000	7
...NOSTOCACEAE						
....CYLINDROSPERMUM	--	-	--	-	70000#	25
..OSCILLATORIALES						
...OSCILLATORIAEAE						
....LYNGBYA	--	-	--	-	7000	2
....OSCILLATORIA	--	-	--	-	130000#	46
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....TRACHELOMONAS	--	-	--	-	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

BRAZOS RIVER BASIN

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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.--26,190 mi<sup>2</sup>, of which 9,566 mi<sup>2</sup> probably is noncontributing.

PERIOD OF RECORD.--Chemical analyses: October 1947 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1947 to current year.

WATER TEMPERATURES: October 1947 to current year.

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 micromhos Aug. 24, 1978; minimum daily, 203 micromhos 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, 1,300 micromhos Sept. 30; minimum daily, 1,150 micromhos Feb. 20, May 11, 21.

WATER TEMPERATURES: Maximum daily, 30.0°C on several days during September; minimum daily, 9.0°C on several days during December and January.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (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)
DEC 31...	0800	224	1190	9.0	260	160	78	17	140
MAR 31...	0807	749	1190	14.0	270	150	81	17	130
JUL 31...	0800	1400	1200	25.0	270	150	77	18	140
AUG 30...	0810	46	1220	25.0	270	150	77	18	140
SEP 14...	1000	1020	1270	24.0	280	170	79	19	150

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY 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)
DEC 31...	3.9	5.9	110	150	220	.30	6.9	684
MAR 31...	3.6	5.9	120	150	220	.30	6.4	683
JUL 31...	3.9	5.6	120	150	230	.40	7.1	700
AUG 30...	3.9	5.9	120	150	240	.30	6.9	710
SEP 14...	4.1	5.1	110	160	240	.30	7.2	727

## BRAZOS RIVER BASIN

08092600 BRAZOS RIVER AT WHITNEY DAM NEAR WHITNEY, TX--Continued

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1982 TO SEPTEMBER 1983

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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.	1982	10810	1180	647	18900	230	6820	120	3370	230
NOV.	1982	10018	1180	651	17600	230	6360	120	3140	230
DEC.	1982	9628	1190	655	17000	240	6140	120	3040	230
JAN.	1983	24963	1200	661	44600	240	16100	120	7970	230
FEB.	1983	12850.0	1190	658	22800	240	8240	120	4080	230
MAR.	1983	12324	1190	655	21800	240	7860	120	3890	230
APR.	1983	12477	1180	652	22000	240	7930	120	3920	230
MAY	1983	8611	1200	659	15300	240	5530	120	2740	230
JUNE	1983	8568	1200	659	15200	240	5510	120	2730	230
JULY	1983	20436	1200	661	36500	240	13200	120	6530	230
AUG.	1983	17545	1200	663	31400	240	11300	120	5620	230
SEPT	1983	2740	1260	698	5160	250	1870	130	930	240
TOTAL		150970.0	**	**	268000	**	96900	**	48000	**
WTD. AVG.		414	1190	658	**	240	**	120	**	230

## SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	EQUIVALENT MEAN											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1170	1210	1180	1200	1170	1190	1180	1190	1190	1200	1190	1250
2	1170	1160	1180	1200	1200	1190	1180	1200	1190	1200	1190	1250
3	1170	1180	1180	1200	1210	1190	1180	1200	1190	1200	1190	1250
4	1170	1180	1190	1200	1200	1180	1180	1200	1180	1200	1200	1250
5	1170	1180	1180	1200	1200	1190	1180	1200	1190	1200	1200	1240
6	1170	1180	1180	1200	1200	1190	1180	1200	1180	1200	1200	1240
7	1170	1180	1190	1200	1200	1190	1180	1200	1190	1200	1200	1240
8	1180	1180	1190	1200	1200	1190	1180	1200	1190	1200	1200	1240
9	1170	1180	1190	1200	1160	1190	1190	1200	1190	1200	1200	1250
10	1170	1180	1190	1200	1200	1190	1190	1200	1190	1200	1200	1250
11	1170	1180	1180	1200	1200	1190	1180	1150	1190	1200	1200	1250
12	1180	1180	1180	1200	1200	1190	1190	1200	1190	1200	1200	1250
13	1170	1180	1180	1200	1200	1190	1190	1200	1190	1200	1200	1260
14	1170	1180	1190	1200	1200	1190	1190	1200	1190	1200	1200	1260
15	1170	1190	1190	1200	1200	1190	1190	1190	1200	1200	1200	1260
16	1170	1190	1190	1200	1200	1180	1190	1200	1190	1200	1200	1250
17	1180	1190	1190	1200	1200	1190	1190	1200	1200	1200	1200	1260
18	1170	1190	1190	1200	1200	1190	1180	1200	1200	1200	1180	1260
19	1180	1190	1190	1200	1210	1190	1190	1200	1190	1200	1200	1250
20	1180	1190	1190	1200	1150	1190	1190	1200	1200	1200	1210	1250
21	1180	1190	1190	1200	1200	1190	1190	1150	1200	1200	1210	1280
22	1180	1190	1190	1200	1200	1190	1190	1200	1200	1200	1220	1280
23	1180	1190	1180	1200	1200	1190	1190	1190	1200	1200	1210	1290
24	1180	1190	1190	1200	1200	1190	1190	1200	1200	1200	1220	1290
25	1180	1190	1190	1200	1210	1190	1190	1200	1200	1200	1220	1290
26	1180	1180	1190	1200	1200	1170	1190	1200	1200	1200	1220	1290
27	1180	1180	1180	1200	1200	1190	1190	1200	1200	1200	1220	1290
28	1180	1190	1190	1200	1200	1190	1190	1200	1200	1200	1220	1290
29	1180	1180	1190	1200	---	1190	1190	1190	1200	1200	1220	1290
30	1180	1190	1190	1200	---	1190	1190	1200	1200	1200	1220	1300
31	1180	---	1190	1200	---	1190	---	1190	---	1200	1220	---
MEAN	1180	1180	1190	1200	1200	1190	1190	1200	1190	1200	1210	1260



## BRAZOS RIVER BASIN

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08092600 BRAZOS RIVER AT WHITNEY DAM NEAR WHITNEY, TX--Continued

DAY	TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983											
	ONCE-DAILY											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.0	20.0	15.0	11.0	10.0	14.0	14.0	17.0	19.0	23.0	---	---
2	23.0	20.0	15.0	10.0	10.0	12.5	14.0	17.0	21.0	23.0	23.0	30.0
3	23.0	19.0	15.0	---	10.0	12.5	13.0	18.0	21.0	23.0	24.0	30.0
4	24.0	18.5	14.0	10.0	9.5	14.0	14.0	18.0	21.0	23.0	24.0	23.0
5	23.0	18.0	14.0	12.0	10.0	12.0	14.0	18.0	21.0	23.0	24.0	25.0
6	24.0	18.0	14.0	11.0	10.0	12.0	13.0	18.0	21.0	23.0	23.0	30.0
7	24.0	18.0	14.0	12.0	10.0	13.5	13.0	17.0	21.0	23.5	24.0	25.0
8	23.5	18.0	14.0	12.0	10.5	13.0	14.0	18.0	21.0	23.0	23.0	30.0
9	23.0	18.0	14.0	11.0	12.0	13.0	14.0	18.0	20.0	22.0	25.0	30.0
10	22.0	18.5	13.5	11.0	10.0	15.0	14.0	19.0	21.0	22.0	25.0	30.0
11	21.0	19.0	13.0	10.0	---	13.0	15.0	18.0	21.0	24.0	26.0	30.0
12	22.0	16.0	11.0	12.0	---	12.0	14.5	19.0	21.0	24.0	25.0	30.0
13	22.0	15.5	12.0	13.0	---	12.0	15.0	21.0	21.0	23.0	22.0	30.0
14	21.0	15.5	12.0	11.0	10.0	14.0	14.0	---	21.0	22.0	23.0	25.0
15	21.5	16.0	---	---	12.0	14.0	12.0	19.0	22.0	23.0	24.0	25.0
16	21.0	16.5	13.0	9.0	11.0	14.0	15.0	20.0	21.0	22.0	24.0	30.0
17	21.0	16.5	13.0	13.0	12.0	13.0	15.0	20.0	22.0	23.0	25.0	24.0
18	21.5	16.0	13.0	11.0	11.0	14.0	15.0	20.0	23.0	23.5	25.0	---
19	21.5	16.0	12.0	10.0	11.0	13.0	14.0	19.0	22.0	24.0	26.0	30.0
20	20.0	16.0	14.0	10.0	11.0	12.5	14.0	20.0	23.0	24.0	22.0	30.0
21	20.0	16.0	12.5	9.5	11.0	12.0	14.0	19.0	22.0	23.0	22.0	21.0
22	20.0	16.5	15.0	9.0	11.0	13.0	17.0	19.0	21.0	24.0	25.0	22.0
23	19.0	16.0	15.0	9.0	11.0	13.5	16.0	20.0	22.0	24.0	25.0	22.0
24	19.0	14.5	15.0	9.0	11.5	12.0	16.0	20.0	22.0	23.0	26.0	24.0
25	19.0	15.0	---	10.0	10.5	12.5	15.0	20.0	22.0	---	25.0	24.0
26	19.0	14.5	11.0	---	12.0	13.0	---	20.0	22.0	25.0	25.0	22.0
27	19.0	14.0	11.0	9.0	11.0	12.0	---	21.0	22.0	25.0	23.0	22.0
28	19.5	14.0	11.0	10.0	12.0	14.0	16.0	20.0	22.0	24.0	25.0	23.0
29	20.0	14.5	10.0	10.0	---	13.0	17.0	20.0	22.0	25.0	26.0	23.0
30	19.0	14.5	10.0	9.0	---	14.0	17.0	20.0	22.0	25.0	25.0	22.0
31	20.0	---	9.0	11.0	---	14.0	---	19.0	---	25.0	---	---
MEAN	21.5	16.5	13.0	10.5	11.0	13.0	14.5	19.0	21.5	23.5	24.5	26.0

## BRAZOS RIVER BASIN

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 bridge on Farm Road 2114, 2.0 mi downstream from Tener Creek, 4.9 mi downstream from Iron Creek, 5.4 mi southwest of Aguilla, 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.--WRD TX-76-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 404.29 ft, 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.--Records fair. Most of flow is released from storage in Lake Whitney (station 08092500). 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 at this site 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); 32 years (water-years 1952-83) regulated, unadjusted, 1,450 ft<sup>3</sup>/s (1,051,000 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), site and datum then in use from 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), site and datum in use from 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, 26,460 ft<sup>3</sup>/s May 25 at 1830 hours (gage height, 22.69 ft); maximum gage height, 23.47 ft Oct. 16 at 1745 hours; minimum daily discharge, 29 ft<sup>3</sup>/s Dec. 4, June 9 (gage height, 5.96 ft).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	531	324	34	259	1270	48	1250	41	209	317	591	48
2	144	343	32	368	388	45	1270	39	77	333	601	52
3	52	687	30	488	119	46	1130	38	251	388	274	57
4	485	995	29	573	1700	247	1220	293	110	665	188	61
5	246	593	30	420	378	92	1230	105	253	526	498	59
6	673	746	30	515	121	60	502	553	85	381	551	56
7	344	793	30	1360	631	52	70	612	63	505	226	51
8	52	530	158	585	369	50	58	66	218	433	52	51
9	46	645	507	344	480	49	61	37	29	767	153	53
10	44	817	50	42	908	47	60	96	159	622	1040	91
11	42	625	237	39	449	47	59	388	207	584	441	166
12	44	77	232	551	347	47	894	221	268	666	988	71
13	106	141	33	546	605	48	176	41	202	407	1050	202
14	122	52	1020	1900	1880	49	60	37	48	317	1020	102
15	45	501	963	2770	1500	49	55	36	215	47	1010	109
16	213	832	1260	665	1130	57	54	64	269	42	1170	152
17	525	242	781	885	377	51	55	223	633	130	939	107
18	953	100	285	874	48	48	148	38	451	381	1190	92
19	801	37	268	1380	44	495	887	32	510	629	333	76
20	500	140	37	1020	530	1280	867	31	739	537	233	199
21	717	63	818	989	104	907	848	33	660	680	612	108
22	182	112	81	741	66	976	144	245	643	757	903	134
23	424	51	127	591	57	1300	74	172	383	785	952	109
24	502	127	240	974	54	897	52	522	218	1110	1050	235
25	614	43	40	1020	51	786	48	773	226	1260	959	128
26	790	35	34	1040	49	531	47	985	275	1190	290	37
27	375	64	240	689	48	500	50	895	216	1340	51	34
28	185	174	1240	792	47	841	830	304	34	967	44	33
29	341	81	369	997	---	840	229	685	468	1120	45	33
30	209	48	169	892	---	1090	49	320	449	1150	46	34
31	503	---	224	654	---	749	---	686	---	1400	45	---
TOTAL	10810	10018	9628	24963	13750	12324	12477	8611	8568	20436	17545	2740
MEAN	349	334	311	805	491	398	416	278	286	659	566	91.3
MAX	953	995	1260	2770	1880	1300	1270	985	739	1400	1190	235
MIN	42	35	29	39	44	45	47	31	29	42	44	33
AC-FT	21440	19870	19100	49510	27270	24440	24750	17080	16990	40530	34800	5430
CAL YR 1982	TOTAL	1079033	MEAN	2956	MAX	25600	MIN	29	AC-FT	2140000		
WTR YR 1983	TOTAL	151870	MEAN	416	MAX	2770	MIN	29	AC-FT	301200		

## BRAZOS RIVER BASIN

08093250 HACKBERRY CREEK AT HILLBORO, TX

LOCATION.--Lat 32°00'20", long 97°08'59", Hill County, Hydrologic Unit 12060202, at downstream side of highway embankment near 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 and crest-stage gage. Datum of gage is 546.00 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those below 1.0 ft<sup>3</sup>/s, which are fair. No known diversions above station.

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 September 1936, from information by State Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 800 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Feb. 20	1600	*1,800	14.24
Mar. 4	1900	1,150	13.47

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.29	1.5	21	21	18	4.3	16	.00	.00	.00
2	.00	.00	.65	.80	2.3	17	17	2.3	7.9	.00	.00	.00
3	.00	.00	.29	.30	.02	16	15	16	5.2	.00	.00	.00
4	.00	.00	.01	.02	.00	473	15	15	20	.00	.00	.00
5	.00	.00	.00	.00	26	124	14	8.2	9.7	10	.00	.00
6	.00	.00	.00	.00	15	46	13	.94	12	10	.00	.00
7	.00	.00	.00	.00	2.7	33	11	.00	18	.02	.00	.00
8	.00	.00	.00	.00	.18	28	14	.00	3.9	.05	.00	.00
9	.00	.00	.00	.00	28	24	14	.00	.04	.65	.00	.00
10	.00	.00	.00	.00	22	20	12	.00	.00	1.8	.00	.00
11	.00	.00	1.5	.00	6.9	19	20	18	.00	2.7	.00	.00
12	.00	.00	16	.00	1.3	17	20	14	.00	.65	.00	.00
13	.00	.00	6.9	.00	.02	17	20	7.0	.00	.02	.00	.00
14	.00	.00	1.8	.00	.00	17	19	2.8	.00	.01	.00	.00
15	.00	.00	.05	.00	.00	16	5.0	7.4	1.3	.00	.00	.00
16	.00	.00	.01	.00	.00	16	3.3	7.0	.62	63	.00	.00
17	.00	.00	.00	.00	.00	22	2.7	7.1	.01	16	.00	.00
18	.00	.00	.00	.25	.00	16	1.3	9.1	.00	2.3	.00	.00
19	.00	.00	.00	.86	.00	16	.90	12	.00	.00	76	.00
20	.00	.00	.00	2.0	883	30	.74	11	.00	.00	28	.00
21	.00	.00	.00	2.3	190	20	.75	13	.00	.00	7.4	.00
22	.00	.00	.00	2.7	82	18	3.9	16	.00	.00	1.6	.00
23	.00	.00	.00	2.7	49	17	3.8	30	.00	.00	.16	.00
24	.00	.00	.01	2.3	38	17	.75	20	.00	.00	.01	.00
25	.00	.00	.65	1.5	29	16	.30	11	.00	.00	.00	.00
26	.00	.00	2.3	1.3	27	77	1.4	7.4	.00	.00	.00	.00
27	.00	29	37	.29	26	38	5.2	3.9	.00	.00	.00	.00
28	.00	13	29	.44	23	25	12	6.1	.00	.00	.00	.00
29	.00	2.3	11	.93	---	22	12	18	.00	.00	.00	.00
30	.00	.65	8.3	.93	---	20	9.0	11	.00	.00	.00	.00
31	.00	---	3.9	5.9	---	18	---	26	---	.00	.00	---
TOTAL	.00	44.95	119.66	27.02	1472.42	1276	285.04	304.54	94.67	107.20	113.17	.00
MEAN	.000	1.50	3.86	.87	52.6	41.2	9.50	9.82	3.16	3.46	3.65	.000
MAX	.00	29	37	5.9	883	473	20	30	20	63	76	.00
MIN	.00	.00	.00	.00	.00	16	.30	.00	.00	.00	.00	.00
AC-FT	.00	89	237	54	2920	2530	565	604	188	213	224	.00
CAL YR 1982	TOTAL	5248.74	MEAN	14.4	MAX	813	MIN	.00	AC-FT	10410		
WTR YR 1983	TOTAL	3844.67	MEAN	10.5	MAX	883	MIN	.00	AC-FT	7630		

## BRAZOS RIVER BASIN

08093250 HACKBERRY CREEK AT HILLSBORO, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1979 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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 (MG/L AS CACO3)
NOV 30...	1230	.86	759	7.9	15.0	40	26	8.5	86	1.8	270
JAN 19...	1125	.85	953	8.5	5.0	5	11	13.2	105	2.9	300
MAR 07...	1115	34	640	8.2	14.5	10	46	9.7	98	1.3	220
APR 18...	1000	2.6	715	8.3	17.5	15	56	10.8	116	3.0	230
JUN 06...	1100	4.5	744	8.2	24.5	10	45	8.5	105	2.6	230
DATE	HARD- NESS, NONCAR- BONATE (MG/L 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 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 30...	173	100	4.0	53	1.5	5.9	94	170	32	.70	11
JAN 19...	177	110	5.3	90	2.4	4.1	120	290	41	.70	--
MAR 07...	57	81	3.4	48	1.5	4.4	160	130	22	.60	7.0
APR 18...	97	84	4.2	55	1.7	3.5	130	180	34	.70	.6
JUN 06...	78	85	3.8	67	2.0	4.4	150	170	28	.80	7.5
DATE	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLATILE, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
NOV 30...	433	36	16	--	<.020	24	<.060	--	4.80	.220	12
JAN 19...	--	13	<1	4.6	.050	4.6	.090	2.3	2.40	.080	6.7
MAR 07...	392	47	10	1.8	.060	1.9	.090	1.3	1.40	.120	6.5
APR 18...	440	61	5	1.1	.060	1.2	.120	1.2	1.30	.100	4.7
JUN 06...	457	53	6	1.7	.090	1.8	.110	1.3	1.40	.210	7.6
DATE	TIME	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)				
NOV 30...	1230	9	53	<1	<10	5	10				
JAN 19...	1125	2	51	<1	<10	2	6				
APR 18...	1000	2	58	<1	10	1	6				
JUN 06...	1100	7	59	<1	<10	2	6				
DATE	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 30...	<1	9	<.1	2	1	13					
JAN 19...	<1	5	<.1	3	<1	14					
APR 18...	1	25	.1	1	<1	24					
JUN 06...	8	6	<.1	1	<1	7					

## BRAZOS RIVER BASIN

285

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 (1.1 km) downstream from Little Hackberry Creek, 0.8 mi (1.3 km) downstream from State Highway 22, and 1.4 mi (2.3 km) southwest of county courthouse in Hillsboro.

DRAINAGE AREA.--86.8 mi<sup>2</sup> (224.7 km<sup>2</sup>).

PERIOD OF RECORD.--Periodic discharge measurements and chemical analyses: October 1979 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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 (MG/L AS CACO3)
OCT 19...	1020	.89	2060	8.6	21.0	150	--	4.4	51	35	94
27...	1143	2.0	--	--	--	--	--	--	--	--	--
NOV 30...	1535	1.9	1240	8.4	13.5	150	3.6	9.9	98	52	140
JAN 19...	1450	2.5	1360	8.3	7.5	40	11	8.3	70	26	180
MAR 07...	1200	33	535	8.2	15.0	15	76	9.6	98	4.8	200
APR 18...	1200	3.3	1130	9.0	18.0	40	11	11.8	128	25	220
JUN 06...	1250	6.9	895	8.3	24.0	25	46	8.9	109	16	220
AUG 01...	1430	.87	1940	9.6	34.0	--	200	8.0	116	60	100
SEP 13...	1110	1.2	1970	9.0	27.5	300	58	2.6	34	47	100

DATE	HARD- NESS, NONCAR- BONATE (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 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)
OCT 19...	0	25	7.6	440	20	10	550	370	110	1.9	5.1
27...	--	--	--	--	--	--	--	--	--	--	--
NOV 30...	0	48	4.3	230	8.9	7.6	320	200	69	1.1	12
JAN 19...	0	65	5.6	230	7.7	7.4	330	260	72	1.0	11
MAR 07...	55	77	2.9	24	.8	4.6	150	86	15	.50	5.4
APR 18...	0	80	4.9	140	4.3	5.5	250	210	55	.90	6.2
JUN 06...	0	80	4.6	120	3.7	6.2	220	200	41	.80	9.4
AUG 01...	0	30	6.6	410	18	9.5	480	360	120	1.5	18
SEP 13...	0	29	7.7	410	18	11	530	350	110	1.6	20

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE PENDE (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDE (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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 19...	1300	100	74	.04	.760	.80	5.20	19	24.0	7.10	53
27...	--	--	--	--	--	--	--	--	--	--	--
NOV 30...	764	32	24	9.1	2.90	12	2.60	12	15.0	6.20	32
JAN 19...	850	25	<1	1.6	.040	1.6	9.90	9.1	19.0	4.30	28
MAR 07...	305	82	24	2.9	.140	3.0	.580	1.8	2.40	.380	7.6
APR 18...	653	68	23	.70	.100	.80	1.60	20	22.0	2.00	9.8
JUN 06...	594	100	16	1.1	.140	1.2	1.60	4.5	6.10	1.60	11
AUG 01...	1240	188	148	--	.040	<.10	.110	29	29.0	3.80	70
SEP 13...	1260	72	50	.00	.760	.70	2.40	15	17.0	6.90	30



## BRAZOS RIVER BASIN

08093260 HACKBERRY CREEK BELOW HILLSBORO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983.

DATE	TIME	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)
OCT 19...	1020	5	<100	<1	<10	2	30
JAN 19...	1450	1	44	<1	<10	4	52
APR 18...	1200	2	47	<1	<10	2	9
AUG 01...	1430	6	16	<1	<10	5	9

DATE	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...	4	10	2.2	<1	<1	10
JAN 19...	1	63	<.1	1	<1	9
APR 18...	1	40	<.1	1	<1	4
AUG 01...	2	3	.1	<1	<1	300

## BRAZOS RIVER BASIN

287

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 from Farm Road 310 which is located on top of Aquilla Dam, and 3.3 mi north-northeast of Aquilla.

DRAINAGE AREA.--255 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

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. Datum of gage is 478.71 ft National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Mar. 15, 1982, at site about 0.2 mi to left of current location at same datum.

REMARKS.--Water-discharge records fair except those for Oct. 1 to Dec. 17, which are poor. Daily discharges above 135 ft<sup>3</sup>/s not published. Flow was affected at times by storage in Aquilla Lake (Aquilla Dam was completed 4-29-83) 0.2 mi upstream. Deliberate impoundment of water began Apr. 29, 1983.

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 1980-83.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 8.95 ft Feb. 20 at 1900 hours; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	4.2	6.1	2.4	27	29	.01	.01	.00	.00	.00
2	.00	.01	4.3	6.4	2.4	23	25	.00	.00	.00	.00	.00
3	.00	.02	4.4	5.9	2.1	20	19	.00	.00	.00	.00	.00
4	.00	.00	3.7	6.1	2.2	---	17	.00	.00	.00	.00	.00
5	.00	.00	2.9	6.1	3.3	---	16	.00	.00	.00	.00	.00
6	.00	.02	2.9	5.9	3.1	---	14	.00	.00	.00	.00	.00
7	.00	.00	3.3	5.4	2.6	---	12	.00	.00	.00	.00	.00
8	.00	.00	4.3	4.7	2.5	34	12	.00	.00	.00	.00	.00
9	.00	.00	3.0	4.5	18	36	12	.06	.00	.00	.00	.00
10	.00	.00	2.0	4.2	64	---	12	.16	.00	.91	.00	.00
11	.00	.00	3.3	4.1	47	113	9.6	.37	.00	5.2	.00	.00
12	.00	.00	4.3	3.8	26	59	9.9	.03	.00	.05	.00	.00
13	.00	.00	6.2	3.4	16	36	11	.00	.00	.01	.00	.00
14	.00	.00	6.9	3.2	12	29	11	.00	.00	.01	.00	.00
15	.00	.00	6.5	2.9	9.4	26	9.5	.01	.00	.01	.00	.00
16	.00	.00	5.4	2.6	7.6	35	8.0	.00	.00	.01	.00	.00
17	.00	.00	4.5	2.6	6.7	55	6.1	.00	.00	.01	.00	.00
18	.00	.00	4.2	2.8	6.2	49	5.1	.00	.00	.00	.00	.00
19	.00	.00	3.7	2.8	5.6	37	4.2	.00	.00	.00	.00	.00
20	.00	.00	3.1	2.6	---	38	4.0	.00	.00	.00	.00	.00
21	.00	.00	3.0	2.7	---	41	4.3	.01	.00	.00	.00	.00
22	.00	.00	3.3	2.9	---	33	6.5	.00	.00	.00	.00	.00
23	.00	.00	3.2	2.7	---	28	7.0	.10	.00	.00	.00	.00
24	.00	.01	2.9	2.7	---	24	6.7	.01	.00	.00	.00	.00
25	.00	.00	2.7	2.5	---	21	6.1	.00	.00	.00	.00	.00
26	.00	.15	2.5	2.5	72	59	5.5	.00	.00	.00	.00	.00
27	.00	.07	2.7	2.3	43	---	5.1	.00	.00	.00	.00	.00
28	.00	1.0	3.3	2.2	32	113	4.8	.00	.00	.00	.00	.00
29	.00	3.1	4.4	2.2	---	68	2.8	.00	.00	.00	.00	.00
30	.00	4.1	5.2	2.1	---	46	.06	.00	.00	.00	.00	.00
31	.00	---	5.7	2.3	---	34	---	.04	---	.00	.00	---
TOTAL	.00	8.48	122.0	113.2	---	---	295.26	.80	.01	6.21	.00	.00
MEAN	.000	.28	3.94	3.65	---	---	9.84	.026	.000	.20	.000	.000
MAX	.00	4.1	6.9	6.4	---	---	29	.37	.01	5.2	.00	.00
MIN	.00	.00	2.0	2.1	---	---	.06	.00	.00	.00	.00	.00
AC-FT	.00	17	242	225	---	---	586	1.6	.02	12	.00	.00

## BRAZOS RIVER BASIN

08093360 AQUILLA CREEK ABOVE AQUILLA, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1979 to September 1983 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1979 to September 1983 (discontinued).

WATER TEMPERATURES: October 1979 to September 1983 (discontinued).

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (1979-81): Maximum daily, 1,840 micromhos Mar. 16, 1980; minimum daily, 159 micromhos Jan. 22, 1980.

WATER TEMPERATURES (1979-81): Maximum daily, 30.0°C Oct. 16, 1979, July 13, 1981; minimum daily, 3.0°C Dec. 30, 1979, and Jan. 30, Feb. 11, 1980.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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 (MG/L AS CACO3)	
DEC 01...	1019	4.0	743	8.1	14.0	50	55	8.8	88	10	150	
JAN 20...	1245	2.9	848	9.0	6.5	20	22	12.0	99	8.7	150	
MAR 07...	1610	73	445	7.9	16.0	30	110	9.3	97	2.6	150	
APR 18...	1420	4.5	574	8.6	21.0	10	15	11.3	130	4.7	170	
DATE	TIME	HARD- NESS, NONCAR- BONATE (MG/L 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 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)
DEC 01...	0	55	3.9	100	3.7	5.7	180	120	42	.70	6.3	
JAN 20...	0	54	4.2	130	4.8	5.5	190	170	45	.70	.1	
MAR 07...	45	54	2.5	26	1.0	4.1	100	79	11	.50	9.2	
APR 18...	48	61	3.8	52	1.8	4.4	120	130	27	.50	1.1	
DATE	TIME	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLATILE, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
DEC 01...	442	103	17	--	<.020	3.7	.120	3.2	3.30	.660	13	
JAN 20...	524	29	27	2.5	.090	2.6	.070	2.9	3.00	.320	12	
MAR 07...	246	58	16	3.6	.330	3.9	.250	1.9	2.10	.170	8.7	
APR 18...	352	31	7	.36	.040	.40	.110	1.3	1.40	.100	5.2	
DATE	TIME	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)					
DEC 01...	1019	5	52	<1	<10	3	15					
JAN 20...	1245	5	48	<1	<10	3	14					
APR 18...	1420	2	55	<1	<10	1	9					
DATE	TIME	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)					
DEC 01...		2	3	.1	1	<1	5					
JAN 20...		<1	4	<.1	1	<1	3					
APR 18...		<1	9	<.1	1	<1	5					

## BRAZOS RIVER BASIN

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08093360 AQUILLA CREEK ABOVE AQUILLA, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		---	756	876	862	575	593	610	630	---		
2		767	790	894	868	594	564	---	---	---		
3		754	873	900	863	618	572	---	---	---		
4		---	902	899	860	516	592	---	---	---		
5		---	907	918	834	485	582	---	---	---		
6		733	910	909	863	440	588	---	---	---		
7		---	907	915	844	426	594	---	---	---		
8		---	906	909	875	401	591	---	---	---		
9		---	915	910	836	475	594	760	---	---		
10		---	890	906	853	407	582	690	---	650		
11		---	872	907	793	433	575	600	---	600		
12		---	885	904	766	450	596	590	---	650		
13		---	875	898	756	488	593	---	---	640		
14		---	849	896	750	522	588	---	---	630		
15		---	853	894	744	518	596	620	---	650		
16		---	870	884	763	504	596	---	---	670		
17		---	864	881	757	468	588	---	---	750		
18		---	866	875	757	461	601	---	---	---		
19		---	867	878	755	477	598	---	---	---		
20		---	865	869	698	516	598	---	---	---		
21		---	867	852	398	524	600	650	---	---		
22		---	869	871	451	528	601	---	---	---		
23		---	867	866	462	521	601	580	---	---		
24		781	863	867	438	542	606	570	---	---		
25		---	866	864	471	575	604	---	---	---		
26		756	870	873	482	610	603	---	---	---		
27		750	861	873	511	539	604	---	---	---		
28		630	866	873	510	534	601	---	---	---		
29		833	862	878	---	553	601	---	---	---		
30		755	864	876	---	586	613	---	---	---		
31		---	862	858	---	552	---	620	---	---		
MEAN		751	869	886	708	511	594	629	630	655		

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		---	15.0	7.0	10.0	13.0	18.0	22.0	17.0	---		
2		19.0	17.0	6.0	6.0	15.0	13.0	---	---	---		
3		15.0	15.0	6.0	5.5	17.0	14.0	---	---	---		
4		---	14.0	6.0	6.5	16.0	15.0	---	---	---		
5		---	13.0	7.0	6.0	16.0	14.0	---	---	---		
6		13.0	12.0	7.0	6.0	16.0	13.0	---	---	---		
7		---	12.5	7.5	5.0	15.5	13.0	---	---	---		
8		---	13.0	9.0	6.0	16.0	14.0	---	---	---		
9		---	11.0	9.0	10.0	12.0	13.0	17.0	---	---		
10		---	10.0	8.5	10.0	14.0	15.0	19.0	---	27.0		
11		---	10.0	9.0	9.5	13.0	16.0	19.0	---	28.0		
12		---	7.0	9.0	10.0	13.0	18.0	21.0	---	27.0		
13		---	8.0	9.5	10.0	14.0	20.0	---	---	26.0		
14		---	9.0	10.0	10.0	16.0	17.0	---	---	26.0		
15		---	9.0	8.0	11.0	16.0	15.0	15.0	---	25.0		
16		---	9.0	8.0	11.0	16.5	16.0	---	---	24.0		
17		---	10.0	9.0	12.0	13.0	17.0	---	---	26.0		
18		---	10.5	10.0	12.0	12.0	18.0	---	---	---		
19		---	10.0	8.0	12.0	12.0	16.0	---	---	---		
20		---	10.0	7.0	14.0	10.0	15.0	---	---	---		
21		---	10.5	5.5	12.0	9.0	16.0	---	---	---		
22		---	14.0	6.0	12.0	11.0	18.0	---	---	---		
23		---	15.0	5.0	12.5	11.0	17.0	20.0	---	---		
24		8.0	17.5	6.5	13.0	10.5	15.0	21.0	---	---		
25		---	13.0	7.0	12.0	11.0	16.0	---	---	---		
26		8.0	9.0	7.0	11.0	10.0	17.0	---	---	---		
27		9.0	8.0	6.0	11.0	12.0	18.0	---	---	---		
28		9.5	8.0	7.0	12.0	13.0	20.0	---	---	---		
29		10.5	7.0	8.0	---	14.0	21.0	---	---	---		
30		12.0	6.5	8.5	---	15.0	21.0	---	---	---		
31		---	7.0	11.0	---	15.5	---	16.0	---	---		
MEAN		11.5	11.0	7.5	10.0	13.5	16.5	19.0	17.0	26.0		

## BRAZOS RIVER BASIN

08093500 AQUILLA CREEK NEAR AQUILLA, TX

LOCATION.--Lat 31°50'40", long 97°12'04", Hill County, Hydrologic Unit 12060202, on 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 National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Water-discharge records fair. Flow affected at times by construction activities at the Aquilla Dam located 4.7 mi upstream on Aquilla Creek, which began impounding water 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.

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, 2,810 ft<sup>3</sup>/s Feb. 20 at 1700 hours (gage height, 18.79 ft); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	4.5	10	5.3	15	13	7.0	2.7	.74	.00	.00
2	.00	.00	4.6	10	2.2	12	11	5.6	1.3	.61	.00	.00
3	.00	.00	4.8	11	1.7	11	10	5.0	.92	.60	.00	.00
4	.00	.00	5.0	11	1.5	1060	9.0	4.8	.92	.59	.00	.00
5	.00	.00	5.2	10	1.6	647	8.9	5.0	1.2	.90	.00	.00
6	.00	.00	5.5	9.2	1.9	458	7.9	5.0	1.7	.89	.00	.00
7	.00	.00	5.9	8.4	1.8	376	6.5	4.4	2.2	.79	.42	.00
8	.00	.00	6.5	7.2	1.9	179	6.4	3.1	1.3	.79	.00	.00
9	.00	.00	7.2	6.2	262	106	6.4	2.6	.98	.76	.00	.00
10	.00	.00	8.3	5.5	57	156	6.1	3.0	.86	.67	.00	.00
11	.00	.00	9.5	5.0	27	73	5.4	93	.87	5.1	.00	.00
12	.00	.00	10	4.5	15	36	4.6	5.2	.85	2.8	.00	.00
13	.00	.00	11	4.1	9.5	25	4.6	1.7	.81	1.8	.00	.00
14	.00	.00	12	3.8	7.0	19	5.0	1.1	.93	1.5	.00	.00
15	.00	.00	13	3.6	6.2	15	4.8	.83	.92	1.2	.00	.00
16	.00	.00	12	3.4	5.1	34	4.2	.70	1.4	1.4	.00	.00
17	.00	.00	11	3.2	4.1	30	4.8	.99	1.5	4.1	.00	.00
18	.00	.00	10	3.1	3.9	28	6.6	1.1	1.3	1.9	.00	.00
19	.00	.00	9.5	2.9	3.7	22	8.0	1.2	1.2	1.1	8.1	.00
20	.00	.00	8.6	3.3	1220	26	9.0	.92	1.2	.72	.92	.00
21	.00	.00	7.9	3.9	984	25	9.3	1.9	1.2	.60	.16	.00
22	.00	.00	7.2	2.5	615	20	11	2.4	1.1	.44	.09	.00
23	.00	.00	6.8	2.6	446	16	12	15	.94	.31	.05	.00
24	.00	.00	6.4	3.4	312	12	12	2.4	1.1	.21	.03	.00
25	.00	.00	6.2	2.7	114	13	11	.92	1.3	.16	.00	.00
26	.00	.00	6.0	2.5	92	261	8.9	.66	1.3	.14	.00	.00
27	.00	.00	6.8	2.1	27	118	9.3	.66	1.3	.07	.00	.00
28	.00	.05	7.6	1.9	19	64	9.8	.66	1.2	.05	.00	.00
29	.00	.92	8.4	2.0	---	36	10	1.4	1.2	.02	.00	.00
30	.00	3.5	9.4	2.2	---	26	8.9	1.2	.96	.00	.00	.00
31	.00	---	9.9	2.9	---	19	---	7.5	---	.00	.00	---
TOTAL	.00	4.47	246.7	154.1	4247.4	3938	244.4	186.94	36.66	30.96	9.77	.00
MEAN	.000	.15	7.96	4.97	152	127	8.15	6.03	1.22	1.00	.32	.000
MAX	.00	3.5	13	11	1220	1060	13	93	2.7	5.1	8.1	.00
MIN	.00	.00	4.5	1.9	1.5	11	4.2	.66	.81	.00	.00	.00
AC-FT	.00	8.9	489	306	8420	7810	485	371	73	61	19	.00

CAL YR 1982 TOTAL 18068.41 MEAN 49.5 MAX 1300 MIN .00 AC-FT 35840  
WTR YR 1983 TOTAL 9099.40 MEAN 24.9 MAX 1220 MIN .00 AC-FT 18050

NOTE.--No gage-height record Dec. 1 to Jan. 19.



## BRAZOS RIVER BASIN

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08093500 AQUILLA CREEK NEAR AQUILLA, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1965 to June 1966, October 1967 to current year. Chemical and biochemical analyses: January 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1965 to June 1966, October 1967 to September 1982.

WATER TEMPERATURES: October 1965 to June 1966, October 1967 to September 1982.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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 (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)
DEC 01...	1416	4.5	711	7.8	15.5	6.8	70	1.9	280	95
JAN 20...	1552	2.9	888	8.7	7.0	12.1	102	6.2	210	0
MAR 07...	1710	354	450	8.1	16.0	9.4	98	2.8	150	43
APR 18...	1630	7.0	640	8.0	18.5	9.2	101	2.6	220	74
JUN 06...	1625	.97	638	7.7	22.5	6.3	74	1.5	240	67

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 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)
DEC 01...	100	8.4	41	1.1	5.3	190	140	30	.50	9.0
JAN 20...	73	5.5	120	3.8	5.1	210	170	45	.70	.1
MAR 07...	57	2.5	26	1.0	4.2	110	80	12	.50	9.2
APR 18...	82	4.6	49	1.5	4.2	150	140	28	.50	2.4
JUN 06...	87	4.8	38	1.1	3.3	170	130	21	.50	7.4

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	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- PHORUS, TOTAL (MG/L AS P)
DEC 01...	449	448	--	<.020	1.4	<.060	--	1.80	.050
JAN 20...	--	545	2.0	.050	2.0	.060	3.2	3.30	.270
MAR 07...	--	257	3.6	.310	3.9	.220	1.3	1.50	.200
APR 18...	--	401	1.1	.040	1.1	.220	1.1	1.30	.120
JUN 06...	--	394	.67	.030	.70	.080	.72	.80	.080

## BRAZOS RIVER BASIN

## 08094800 NORTH BOSQUE RIVER AT HICO, TX

LOCATION.--Lat 31°58'41", long 98°02'04", Hamilton County, Hydrologic Unit 1206020204, 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 National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow is affected at times by discharge from flood-detention pools of 40 floodwater-retarding structures with 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 sewage effluent into river above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--21 years (water years 1963-83), 39.3 ft<sup>3</sup>/s (28,470 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 1978-82.

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, 2,690 ft<sup>3</sup>/s May 31 at 0115 hours (gage height, 9.26 ft), no other peak above base of 2,500 ft<sup>3</sup>/s; no flow Sept. 6-12, 28-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.50	.76	2.8	2.1	3.7	2.7	2.5	2.6	90	5.8	.69	.08
2	.53	1.4	2.4	2.3	3.9	3.1	3.0	11	48	5.3	.66	.05
3	.50	1.6	2.4	2.8	4.1	3.0	3.3	34	32	5.0	.62	.03
4	.50	1.4	2.6	2.8	4.1	4.3	3.4	6.7	24	4.2	.62	.02
5	.44	1.5	2.6	2.8	4.4	9.1	3.7	3.0	20	3.7	.62	.01
6	.48	1.4	2.8	2.6	3.9	7.7	3.7	2.1	410	3.6	.56	.00
7	.54	1.2	3.0	2.6	3.4	4.2	2.5	1.9	160	3.2	.56	.00
8	.44	1.2	3.2	2.6	3.2	3.5	2.0	1.5	73	3.2	.56	.00
9	.50	1.2	3.4	2.8	3.2	2.8	2.7	2.2	48	2.8	.56	.00
10	.65	1.3	4.1	2.8	3.2	2.7	2.6	1.7	31	2.6	13	.00
11	1.3	1.3	6.0	3.0	3.4	2.3	3.1	2.5	23	2.6	4.6	.00
12	1.3	1.3	7.4	3.0	3.2	2.2	2.7	2.8	19	2.6	2.5	.00
13	1.3	1.3	8.0	3.0	3.2	2.0	2.8	2.5	17	2.7	1.6	6.9
14	1.1	1.6	6.4	3.2	3.2	2.2	3.8	2.8	14	3.2	1.2	.54
15	1.1	1.8	5.2	3.1	3.0	2.5	8.5	4.7	12	3.2	.94	.50
16	.99	1.8	5.2	2.8	3.0	14	9.0	2.8	11	3.9	.83	.50
17	.99	2.1	4.6	3.0	3.0	26	4.0	2.6	8.6	4.3	.71	.50
18	.80	2.4	4.6	3.1	3.2	7.9	3.7	3.0	8.4	3.5	.59	.50
19	.62	3.0	4.6	3.9	3.4	4.6	4.0	2.9	7.8	3.0	2.3	.50
20	.62	4.1	4.4	4.1	4.2	4.1	3.6	4.2	7.2	2.7	1.4	.47
21	.60	4.4	4.1	4.4	5.6	3.4	2.8	3.2	4.9	2.4	.89	.40
22	.64	4.6	4.4	4.7	8.2	4.1	3.2	4.2	5.1	2.3	.68	.30
23	.69	4.4	4.1	4.6	5.6	3.9	15	7.3	5.2	2.1	.94	.20
24	.80	4.4	3.7	4.1	4.4	4.1	15	19	4.4	2.0	.85	.10
25	.83	4.9	2.6	3.9	5.7	4.1	9.8	8.7	4.8	1.9	.81	.06
26	.83	10	2.8	3.4	2.8	32	9.1	4.6	3.8	1.9	.56	.03
27	.83	14	3.2	3.4	2.6	28	6.7	3.4	4.6	1.7	.40	.01
28	.83	9.7	10	3.2	2.4	8.0	4.4	2.9	4.8	1.3	.25	.00
29	.76	3.4	3.7	3.0	---	4.3	2.7	2.8	4.4	1.0	.20	.00
30	.79	3.0	2.4	2.8	---	3.3	2.6	132	7.4	.69	.15	.00
31	.81	---	2.1	3.4	---	2.6	---	736	---	.69	.10	---
TOTAL	23.61	96.46	128.8	99.3	107.2	208.7	145.9	1021.6	1113.4	89.08	40.95	11.70
MEAN	.76	3.22	4.15	3.20	3.83	6.73	4.86	33.0	37.1	2.87	1.32	.39
MAX	1.3	14	10	4.7	8.2	32	15	736	410	5.8	13	6.9
MIN	.44	.76	2.1	2.1	2.4	2.0	2.0	1.5	3.8	.69	.10	.00
AC-FT	47	191	255	197	213	414	289	2030	2210	177	81	23
CAL YR 1982	TOTAL	9323.36	MEAN	25.5	MAX	761	MIN	.19	AC-FT	18490		
WTR YR 1983	TOTAL	3086.70	MEAN	8.46	MAX	736	MIN	.00	AC-FT	6120		

## BRAZOS RIVER BASIN

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## 08095000 NORTH BOSQUE RIVER NEAR CLIFTON, TX

LOCATION.--Lat 31°47'09", long 97°34'04", Bosque County, Hydrologic Unit 12060204, near right bank on 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 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. 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. Gage-height telemeter at station.

AVERAGE DISCHARGE.--44 years (water years 1924-67) unregulated, 195 ft<sup>3</sup>/s (141,300 acre-ft/yr); 16 years (water years 1968-83) 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.--Maximum discharge, 2,230 ft<sup>3</sup>/s May 31 at 1430 hours (gage height, 7.08 ft), no peak above base of 8,300 ft<sup>3</sup>/s; minimum daily, 0.10 ft<sup>3</sup>/s July 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	2.0	9.1	17	14	11	5.1	4.5	587	4.9	.20	.56
2	2.0	2.5	7.7	13	13	10	3.5	4.3	209	4.6	.24	.29
3	1.9	3.0	5.6	11	12	9.4	2.9	4.2	103	4.0	.28	.35
4	1.9	2.8	5.1	9.9	12	15	2.4	3.5	63	3.4	.63	.43
5	1.9	2.3	4.8	9.7	15	19	2.1	4.8	43	3.3	.70	.26
6	2.2	2.1	5.0	9.6	16	19	1.8	9.3	33	3.6	.70	.28
7	2.6	2.0	5.0	9.4	16	18	1.7	6.6	633	3.5	.76	.30
8	2.8	2.0	4.9	9.1	15	18	1.7	4.3	268	2.9	.89	.21
9	2.6	2.1	4.8	9.4	23	16	1.5	3.3	131	2.3	.81	.18
10	2.2	2.1	5.5	9.4	19	17	1.3	3.0	81	1.8	.96	.16
11	1.9	2.0	6.6	8.8	15	16	1.5	35	53	1.3	.96	.13
12	2.1	2.2	7.0	8.3	14	13	1.5	41	37	1.1	1.1	.18
13	2.3	2.1	6.8	8.6	13	12	1.6	17	27	.93	1.2	.23
14	2.2	1.7	7.2	8.5	14	11	1.7	11	21	1.0	1.1	.25
15	2.4	1.7	7.7	8.0	13	11	1.4	9.1	17	.84	1.1	.25
16	2.3	1.5	7.4	7.7	12	12	1.3	8.3	14	.91	1.1	.26
17	2.2	1.5	7.5	7.8	11	12	1.3	7.6	12	.59	1.0	.30
18	2.0	1.5	7.4	8.5	10	12	1.7	7.6	11	.39	1.1	.36
19	2.0	1.5	7.8	9.1	12	28	2.4	9.8	9.9	.33	2.0	.46
20	1.9	1.7	8.1	8.9	23	34	3.0	9.1	9.3	.37	1.4	.58
21	1.8	1.9	8.6	9.9	13	24	3.4	8.6	8.6	.23	1.1	.48
22	1.9	1.8	8.3	11	11	19	3.4	7.5	8.3	.20	1.1	.47
23	2.0	1.9	8.3	11	11	16	3.7	8.7	7.1	.17	1.0	.46
24	2.0	2.0	8.6	11	10	14	4.0	101	6.9	.10	.96	.43
25	1.9	2.1	9.1	12	9.9	12	3.6	68	9.0	.11	.91	.40
26	1.8	4.0	9.9	13	9.6	16	3.9	30	7.7	.29	.85	.40
27	2.5	5.6	11	13	11	22	3.8	21	4.9	.18	1.0	.42
28	2.2	9.1	11	12	12	32	4.4	16	5.6	.15	1.0	.43
29	2.2	7.2	11	12	---	19	5.4	14	14	.15	.78	.40
30	2.1	8.1	12	12	---	10	5.1	14	8.5	.18	.72	.37
31	2.1	---	14	15	---	6.7	---	671	---	.18	.57	---
TOTAL	65.8	84.0	242.8	323.6	379.5	504.1	82.1	1163.1	2442.8	44.00	28.22	10.28
MEAN	2.12	2.80	7.83	10.4	13.6	16.3	2.74	37.5	81.4	1.42	.91	.34
MAX	2.8	9.1	14	17	23	34	5.4	671	633	4.9	2.0	.58
MIN	1.8	1.5	4.8	7.7	9.6	6.7	1.3	3.0	4.9	.10	.20	.13
AC-FT	131	167	482	642	753	1000	163	2310	4850	87	56	20

CAL YR 1982 TOTAL 42913.20 MEAN 118 MAX 4690 MIN 1.4 AC-FT 85120  
WTR YR 1983 TOTAL 5370.30 MEAN 14.7 MAX 671 MIN .10 AC-FT 10650

## BRAZOS RIVER BASIN

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 biochemical analyses: October 1980 to September 1982.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 524.55 ft National Geodetic Vertical Datum of 1929. Prior to Dec. 29, 1959, nonrecording gage at same site and datum.

REMARKS.--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>. Several small diversions above station.

AVERAGE DISCHARGE.--8 years (water years 1960-67) unregulated, 263 ft<sup>3</sup>/s (190,500 acre-ft/yr); 16 years (water years 1968-83) regulated, 207 ft<sup>3</sup>/s (150,000 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.

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.--Maximum discharge, 1,890 ft<sup>3</sup>/s May 31 at 1930 hours (gage height, 9.21 ft), no peak above base of 8,500 ft<sup>3</sup>/s; minimum daily, 0.42 ft<sup>3</sup>/s Aug. 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	6.2	25	18	27	16	32	15	649	22	2.8	.58
2	4.5	9.3	25	24	20	13	26	13	195	11	2.3	.79
3	4.1	13	21	21	17	12	21	12	99	7.1	2.3	.73
4	4.4	9.4	16	18	18	25	20	11	69	5.5	3.1	1.0
5	3.8	7.8	15	17	21	32	19	10	59	6.3	4.0	.98
6	4.0	6.6	13	16	23	20	17	24	48	5.1	3.7	.67
7	7.0	5.8	12	15	20	20	15	34	452	4.7	3.4	1.1
8	8.3	5.2	11	15	21	19	16	23	240	4.7	3.4	.98
9	7.6	6.4	11	15	28	18	15	16	114	4.7	4.0	.98
10	6.7	7.8	11	16	30	15	16	13	80	4.0	4.8	1.3
11	5.6	8.0	14	16	23	16	15	31	60	4.4	5.6	1.6
12	5.4	8.0	15	14	20	16	16	71	48	3.4	5.1	1.3
13	6.3	6.5	14	14	19	14	16	37	40	3.1	6.3	.95
14	5.5	5.9	13	15	18	13	14	23	33	3.4	4.7	.97
15	4.4	6.3	13	14	20	12	13	16	29	6.7	4.7	.77
16	4.1	6.2	14	14	17	16	12	11	25	11	4.0	1.2
17	4.8	7.5	14	13	16	16	11	9.8	23	8.0	3.8	1.8
18	5.0	7.1	13	16	16	14	11	8.7	20	5.5	4.2	1.6
19	5.4	7.2	13	19	14	15	9.8	9.5	18	4.4	11	1.8
20	5.7	7.0	13	17	30	38	9.0	15	15	4.0	11	3.0
21	5.9	7.0	13	17	24	33	9.2	14	14	4.0	4.2	2.2
22	6.5	7.1	12	19	16	27	9.5	11	12	4.0	1.9	1.6
23	6.5	6.4	12	21	13	24	9.9	8.9	11	3.7	1.1	1.0
24	6.3	5.9	12	20	14	20	9.0	47	13	3.4	.85	.96
25	6.1	5.7	11	21	14	17	11	85	14	3.1	1.1	1.1
26	6.3	13	13	22	13	28	8.3	46	24	3.1	.89	.86
27	6.9	30	20	24	12	26	9.1	30	13	3.1	.78	1.3
28	8.1	17	17	23	14	30	9.3	24	9.5	3.4	.45	1.7
29	7.6	24	14	23	---	73	11	22	19	3.4	1.2	.76
30	5.9	22	13	20	---	54	15	16	289	3.1	.50	1.4
31	5.7	---	14	24	---	40	---	514	---	2.8	.42	---
TOTAL	179.4	285.3	447	561	538	732	425.1	1220.9	2734.5	166.1	107.59	36.98
MEAN	5.79	9.51	14.4	18.1	19.2	23.6	14.2	39.4	91.2	5.36	3.47	1.23
MAX	8.3	30	25	24	30	73	32	514	649	22	11	3.0
MIN	3.8	5.2	11	13	12	12	8.3	8.7	9.5	2.8	.42	.58
AC-FT	356	566	887	1110	1070	1450	843	2420	5420	329	213	73
CAL YR 1982	TOTAL	51844.10	MEAN	142	MAX	5490	MIN	3.8	AC-FT	102800		
WTR YR 1983	TOTAL	7433.87	MEAN	20.4	MAX	649	MIN	.42	AC-FT	14750		

BRAZOS RIVER BASIN

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08095300 MIDDLE BOSQUE RIVER NEAR MCGREGOR, TX

LOCATION.--Lat 31°30'33", long 97°21'56", McLennan County, Hydrologic Unit 12060203, 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.

DRAINAGE AREA.--182 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 530.51 ft National Geodetic Vertical Datum of 1929. Prior to Oct. 27, 1959, nonrecording gage at same site and datum.

REMARKS.--Records good. No known diversion above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--24 years, 82.0 ft<sup>3</sup>/s (59,410 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,300 ft<sup>3</sup>/s Oct. 31, 1974 (gage height, 24.62 ft); no flow at times in 1960-64, 1967, 1971, 1978-79, and 1981-83.

EXTREMES OUTSIDE PERIOD OF RECORD.--Historical flood information begins with a flood in 1889, which reached a stage of 28.5 ft. A flood in 1957 reached a stage of 28.2 ft; and floods in 1913 and 1942 or 1943 reached a stage of about 28 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,400 ft<sup>3</sup>/s Feb. 20 at 1430 hours (gage height, 12.17 ft), no other peak above base of 8,000 ft<sup>3</sup>/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.99	5.8	9.2	33	104	96	25	13	1.0	.29	.11
2	.00	2.5	6.1	10	25	94	79	24	11	.85	.29	.14
3	.00	5.4	5.9	11	21	89	77	23	9.1	.72	.42	.15
4	.00	4.1	4.7	11	20	1380	77	20	8.3	.62	.65	.10
5	.00	2.7	4.2	11	36	432	73	17	9.6	1.2	.43	.08
6	.00	2.4	4.0	11	46	261	69	15	8.6	1.8	.37	.04
7	.00	2.2	3.9	12	37	206	64	14	8.6	1.5	.37	.00
8	.45	2.0	3.9	12	37	169	63	14	7.5	1.5	.37	.00
9	5.4	2.0	3.7	12	477	149	64	12	6.4	1.5	.37	.03
10	4.5	2.0	4.1	12	219	125	60	12	5.9	1.5	.52	.07
11	2.5	2.0	6.7	10	127	111	55	26	5.2	1.5	3.5	.08
12	2.0	1.8	9.2	10	101	105	52	27	4.8	1.2	3.0	.08
13	1.8	1.5	6.0	9.8	94	101	48	19	4.7	.99	1.4	.04
14	1.4	1.4	6.0	9.8	89	97	44	15	4.2	.89	1.1	.00
15	1.3	1.4	6.2	9.8	82	97	42	17	4.2	.88	.99	.00
16	1.2	1.4	6.2	9.2	75	251	40	18	4.2	1.2	.69	.00
17	1.1	1.4	6.6	8.3	70	125	40	15	3.3	1.1	.49	.00
18	1.0	1.6	6.1	8.9	67	101	40	14	3.1	.89	.66	.00
19	.95	1.7	5.5	14	62	95	38	14	2.8	.73	1.7	.00
20	.84	1.7	4.9	15	2190	170	37	12	2.6	.66	1.3	.04
21	.66	1.8	4.8	15	434	110	36	21	2.2	.64	1.2	.08
22	.59	1.8	4.8	30	280	91	35	21	2.2	.56	1.2	.05
23	.56	1.8	4.8	22	225	91	34	15	2.2	.52	1.0	.00
24	.56	1.7	4.8	20	187	91	30	14	2.0	.44	.85	.00
25	.50	1.4	4.8	20	146	86	27	12	2.0	.37	.73	.00
26	.46	4.3	4.6	20	130	440	26	12	2.3	.37	.62	.00
27	.46	48	7.3	20	119	191	26	9.8	2.4	.37	.53	.00
28	.54	11	9.2	20	105	135	26	9.5	2.3	.37	.35	.00
29	1.0	6.1	7.3	20	---	124	25	10	1.8	.29	.29	.00
30	1.1	5.6	6.2	20	---	114	25	9.3	1.4	.29	.28	.00
31	1.0	---	7.1	25	---	105	---	15	---	.29	.20	---
TOTAL	76.42	125.69	175.4	448.0	5534	5840	1448	501.6	147.9	26.74	26.16	1.09
MEAN	2.47	4.19	5.66	14.5	198	188	48.3	16.2	4.93	.86	.84	.036
MAX	45	48	9.2	30	2190	1380	96	27	13	1.8	3.5	.15
MIN	.00	.99	3.7	8.3	20	86	25	9.3	1.4	.29	.20	.00
AC-FT	152	249	348	889	10980	11580	2870	995	293	53	52	2.2
CAL YR 1982	TOTAL	9167.84	MEAN	25.1	MAX	1020	MIN	.00	AC-FT	18180		
WTR YR 1983	TOTAL	14351.00	MEAN	39.3	MAX	2190	MIN	.00	AC-FT	28470		



## BRAZOS RIVER BASIN

08095400 HOG CREEK NEAR CRAWFORD, TX

LOCATION.--Lat 31°33'20", long 97°21'22", McLennan County, Hydrologic Unit 12060203, on downstream side of bridge on Farm Road 185, 5.6 mi east of Crawford, and 9.8 mi upstream from South Bosque River.

DRAINAGE AREA.--78.2 mi<sup>2</sup>.

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

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 560.54 ft National Geodetic Vertical Datum of 1929. Prior to Oct. 27, 1959, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow is affected at times by discharge from flood-detention pool of two floodwater-retarding structures with a detention capacity of 9,600 acre-ft. These structure control runoff from 42.0 mi<sup>2</sup> in the Hog Creek drainage basin. Several observations of water temperature were made during the year. Gage-height telemeter located at station.

AVERAGE DISCHARGE.--24 years, 34.1 ft<sup>3</sup>/s (24,710 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,400 ft<sup>3</sup>/s Oct. 4, 1959 (gage height, 14.31 ft); no flow at times in 1959, 1963-64, 1971, 1978-79, and 1983.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1900, 17.5 ft Sept. 26, 1936. Flood in April or May 1957 reached a stage of 15.7 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,720 ft<sup>3</sup>/s Feb. 20 at 1230 hours (gage height, 6.41 ft); no flow Aug. 31 and Sept. 4-6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.03	.18	1.0	.86	21	23	8.1	8.5	27	.14	.01
2	.02	.23	.21	.87	.83	19	20	8.1	6.2	18	.14	.01
3	.02	.09	.25	.82	.94	19	20	6.9	4.8	9.0	.19	.01
4	.02	.04	.26	.82	.99	261	19	6.4	4.5	4.6	.15	.00
5	.02	.03	.26	.93	1.6	66	19	5.9	4.3	8.4	.12	.00
6	.02	.03	.28	.96	1.6	45	17	5.4	4.4	5.5	.11	.00
7	.02	.03	.20	.97	1.3	36	17	4.9	3.7	2.6	.09	.01
8	.02	.03	.22	.90	1.5	32	18	4.1	3.2	1.7	.14	.02
9	.07	.03	.26	.82	23	29	18	4.1	3.0	1.3	.29	.02
10	.04	.03	.36	.85	10	26	16	4.5	3.0	1.2	.24	.02
11	.03	.03	.47	.84	7.3	24	15	7.5	3.0	.98	2.9	.04
12	.13	.05	.38	.83	6.2	23	14	6.9	2.7	.89	.21	.04
13	.11	.07	.36	.82	5.7	22	14	4.9	2.5	1.1	.13	.04
14	.09	.09	.40	.85	5.1	21	13	4.9	2.8	1.3	.08	.07
15	.08	.09	.46	.78	4.5	21	13	5.9	2.7	1.8	.05	.07
16	.08	.13	.44	.79	4.1	29	12	5.4	2.4	1.9	.04	.07
17	.07	.16	.47	.79	4.1	23	12	4.9	2.3	1.8	.05	.07
18	.02	.16	.49	.91	4.0	20	12	4.9	2.2	1.5	.10	.08
19	.01	.18	.49	.85	3.7	19	13	4.1	2.1	1.1	.12	.09
20	.02	.19	.49	.74	386	27	13	4.1	2.0	.92	.04	.11
21	.03	.21	.49	.78	73	20	12	4.9	1.7	.87	.04	.15
22	.04	.27	.52	.80	52	19	11	4.5	1.6	.65	.03	.12
23	.04	.29	.54	.72	41	18	10	3.7	1.5	.56	.03	.12
24	.04	.26	.59	.83	35	17	9.5	3.0	1.5	.51	.03	.11
25	.02	.31	.55	.85	29	17	9.5	2.7	1.6	.39	.02	.11
26	.02	.58	.54	.78	27	53	9.5	2.7	1.9	.38	.02	.12
27	.02	.29	.84	.70	25	33	8.8	2.7	1.1	.35	.02	.09
28	.04	.13	.70	.70	23	27	8.8	2.9	1.5	.35	.02	.08
29	.03	.12	.66	.70	---	25	8.8	3.4	1.6	.22	.01	.09
30	.03	.17	.61	.70	---	24	8.1	3.8	2.4	.20	.01	.10
31	.03	---	.85	.93	---	23	---	8.5	---	.16	.00	---
TOTAL	1.25	4.35	13.82	25.63	778.32	1059	414.0	154.7	86.7	97.23	5.56	1.87
MEAN	.040	.15	.45	.83	27.8	34.2	13.8	4.99	2.89	3.14	.18	.062
MAX	.13	.58	.85	1.0	386	261	23	8.5	8.5	27	2.9	.15
MIN	.01	.03	.18	.70	.83	17	8.1	2.7	1.1	.16	.00	.00
AC-FT	2.5	8.6	27	51	1540	2100	821	307	172	193	11	3.7
CAL YR 1982	TOTAL	3682.06	MEAN	10.1	MAX	313	MIN	.01	AC-FT	7300		
WTR YR 1983	TOTAL	2642.43	MEAN	7.24	MAX	386	MIN	.00	AC-FT	5240		

## BRAZOS RIVER BASIN

297

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 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. 2C is based on a sedimentation survey completed in December 1970. Flow is affected at times by discharge from the flood-detention pools of 44 floodwaterretarding 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 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, 92,880 acre-ft Oct. 25, 1978 (elevation, 446.28 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 158,300 acre-ft Mar. 6 (elevation, 456.27 ft); minimum daily, 123,200 acre-ft Sept. 30 (elevation, 451.27 ft).

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

451.0	121,400	456.0	156,500
452.0	128,100	457.0	163,900
454.0	142,000		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	133800	129100	128900	129200	130200	149100	149500	147200	148100	146100	138400	129700
2	133600	130400	129100	129200	130100	148800	149300	147100	148600	145800	138000	129400
3	133600	130400	129300	129100	130000	147900	149100	147000	148800	145400	137600	129100
4	133300	130100	129200	129100	130300	155500	149300	146700	149000	145200	137200	128900
5	133100	130000	129100	129100	130700	157400	149400	146400	149000	145300	136900	128500
6	132900	129800	129100	129000	130800	158300	149300	146200	149000	145200	136500	128300
7	132700	129700	129000	128900	130900	157800	149400	146000	149400	144800	136300	128000
8	132800	129700	128900	128900	130900	156400	149400	145800	149800	144500	136100	127800
9	132800	129600	128900	128900	132900	154900	149400	145600	149900	144200	135800	127600
10	132500	129600	129100	129200	134000	153600	149300	145600	149900	143800	135500	127400
11	132400	129400	129300	129100	134400	152500	149300	145900	149800	143400	135100	127200
12	132400	129200	129300	129100	134700	152100	149300	145900	149700	143200	134800	127000
13	132400	129000	129200	129100	135000	151600	149300	145900	149600	142800	134500	126700
14	132200	128800	129100	129000	135200	150600	149200	145900	149400	142800	134200	126600
15	132000	128600	129100	129000	135500	150300	149000	145900	149300	142700	133900	126400
16	131800	128500	129000	128900	135700	151300	149000	145900	149100	142800	133500	126100
17	131500	128500	128900	128900	135800	151400	148800	145700	148800	142900	133100	126000
18	131400	128300	128900	129000	136000	151500	148700	145600	148700	142700	133100	125900
19	131300	128300	128900	129200	136500	151800	148500	145500	148400	142500	133500	125700
20	131100	128300	128900	129300	140300	152400	148400	145800	148200	142300	133300	125500
21	130900	128300	128700	129300	144900	151100	148400	146200	148000	142000	133000	125100
22	130600	128200	128800	129400	145800	149300	148400	146100	147600	141800	132700	124800
23	130400	128000	128800	129500	146400	149200	148200	146000	147300	141600	132400	124600
24	130200	127700	128700	129600	147200	149400	148000	145900	147200	141400	132000	124300
25	130000	127700	128700	129600	147600	150100	147800	145800	147200	141100	131700	124100
26	129800	128500	128800	129600	148100	151400	147600	145700	147100	140700	131400	123900
27	129700	128900	129100	129600	148500	152000	147500	145500	146900	140300	131100	123700
28	129700	128900	129000	129600	148800	151000	147400	145400	146600	139900	130700	123500
29	129600	128900	128900	129700	---	149700	147300	145400	146200	139500	130400	123400
30	129600	128900	128800	129600	---	149600	147200	145700	146200	139100	130200	123200
31	129500	---	129100	130200	---	149600	---	147200	---	139100	129800	---
MAX	133800	130400	129300	130200	148800	158300	149500	147200	149900	146100	138400	129700
MIN	129500	127700	128700	128900	130000	147900	147200	145400	146200	139100	129800	123200
(+)	452.20	452.11	452.14	452.30	454.95	455.06	454.73	454.72	454.59	453.59	452.25	451.27
(+)	-4500	-600	+200	+1100	+18600	+800	-2400	0	-1000	-7100	-9300	-6600

CAL YR 1982 MAX 163400 MIN 127700 + -20500  
WTR YR 1983 MAX 158300 MIN 123200 + -10800

+ Elevation, in feet, at end of month.

+ Change in contents, in acre-feet.

## BRAZOS RIVER BASIN

08095600 BOSQUE RIVER NEAR WACO, TX

LOCATION.--Lat 31°36'04", long 97°11'36", McLennan County, Hydrologic Unit 12060203, on downstream side of bridge on Farm Road 1637, 1.8 mi downstream from Waco Lake Dam, 2.8 mi upstream from mouth, and 4.7 mi northwest of courthouse in Waco.

DRAINAGE AREA.--1,656 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1959 to September 1981, October 1981 to current year (daily mean discharges above 2,000 ft<sup>3</sup>/s only).

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 365.44 ft National Geodetic Vertical Datum of 1929. Prior to Jan. 21, 1960, nonrecording gage, and from Jan. 21 to Aug. 20, 1960, nonrecording gage below 11.38 ft and water-stage recorder above. All gages at same site and datum. Dec. 30, 1959, to Aug. 29, 1967, auxiliary water-stage recorder 2.7 mi downstream at datum 4.66 ft lower. Since Aug. 30, 1967, auxiliary water-stage recorder 0.7 mi downstream at datum 4.66 ft lower.

REMARKS.--Water-discharge records poor. Backwater from the Brazos River affects the stage-discharge relationship. Daily mean discharges below 2,000 ft<sup>3</sup>/s not determined. Flow is regulated by Waco Lake (see station 08095550). The city of Waco diverts water for municipal use upstream from station.

AVERAGE DISCHARGE.--22 years (water years 1960-81), 416 ft<sup>3</sup>/s (301,400 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 69,000 ft<sup>3</sup>/s Oct. 4, 1959 (gage height, 39.8 ft, from floodmark), from rating curve extended above 51,000 ft<sup>3</sup>/s on basis of computation of peak flow through gates at old Lake Waco; no flow at times in 1963-64, 1966-67, 1970, and 1972-79.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1880, 44.5 ft Sept. 27, 1936 (discharge 96,000 ft<sup>3</sup>/s), from information by local resident. Maximum stage may be the result of backwater from the Brazos River since the discharges on Apr. 22, 1945, 140,000 ft<sup>3</sup>/s, and Apr. 20, 1957, 103,000 ft<sup>3</sup>/s, exceeded the discharge corresponding to the maximum stage. The discharges for the 1936, 1945, and 1957 floods were obtained from rating curve for tainter gates at old Lake Waco.

EXTREMES FOR CURRENT YEAR.--No daily discharge above 2,000 ft<sup>3</sup>/s; maximum gage height, 12.88 ft Mar. 4, backwater from Brazos River; minimum discharge not determined.

## BRAZOS RIVER BASIN

299

## 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 La Salle 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 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.--Records fair. Flow is largely regulated by Lake Whitney and by Waco Lake (stations 08092500 and 08095550). combined capacity of 18 reservoirs above station, 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 river above station. Many other small diversions above station for municipal supply, irrigation, and oilfield operation will not appreciably affect flow. Several observations of water temperature were made during the year. Gage-height telemeter at station. Flow is affected at times by discharge from 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.

AVERAGE DISCHARGE.--42 years (water years 1899-1940) unregulated, 2,560 ft<sup>3</sup>/s (1,855,000 acre-ft/yr); 42 years (water years 1940-82) regulated, 2,273 ft<sup>3</sup>/s (1,647,000 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, 12,100 ft<sup>3</sup>/s Feb. 21 at 0145 hours (gage height, 14.75 ft); minimum daily, 11 ft<sup>3</sup>/s Oct. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2530	665	178	404	3500	34	1210	160	1130	630	1340	53
2	105	634	45	443	2170	32	1780	145	217	395	521	41
3	13	873	38	518	656	35	1450	120	319	487	634	38
4	11	1230	882	612	290	971	1530	118	364	511	218	32
5	12	972	157	786	300	3480	1500	335	200	923	420	32
6	12	826	94	620	501	903	1510	175	428	548	537	40
7	82	922	25	672	613	1040	416	676	180	619	402	33
8	175	1030	23	1660	3330	1520	217	531	310	460	365	43
9	126	852	22	1030	895	1110	192	157	195	607	143	41
10	65	1120	26	369	2950	1240	183	131	134	860	345	31
11	45	993	994	181	2320	903	181	538	381	783	966	41
12	64	692	98	148	1150	489	137	486	190	1810	497	162
13	92	257	30	624	1290	460	966	220	517	44	1100	106
14	87	250	27	741	1700	714	225	167	199	81	1060	206
15	146	144	589	2960	2320	728	166	197	275	193	1060	149
16	83	1100	1550	2230	257	366	155	131	189	518	1190	123
17	274	1060	1560	1080	3910	238	158	257	414	185	1090	153
18	541	289	2470	1170	421	218	151	206	1010	243	1230	128
19	1070	231	801	1360	227	228	230	196	703	524	1530	126
20	660	204	285	1090	536	1550	1150	218	724	658	265	190
21	655	223	37	62	6330	1990	950	192	932	630	469	129
22	447	186	31	499	2590	2290	616	127	1010	757	634	155
23	411	236	31	1050	1530	1570	223	370	954	778	936	125
24	497	171	30	867	266	1640	168	240	492	854	1030	173
25	530	465	25	1480	153	1040	148	793	391	1230	1040	268
26	657	378	23	1490	623	1690	144	1090	404	1360	1010	141
27	1050	281	39	1400	1260	1030	143	1290	398	1380	205	63
28	392	675	1970	1280	71	1900	144	1140	206	1250	138	42
29	354	658	2080	1230	---	2240	1030	479	143	1070	111	30
30	383	2130	415	1670	---	1590	218	1120	669	1250	62	30
31	521	---	325	1690	---	1550	---	682	---	1320	47	---
TOTAL	12090	19747	14900	31416	42159	34789	17291	12687	13678	22958	20595	2924
MEAN	390	658	481	1013	1506	1122	576	409	456	741	664	97.5
MAX	2530	2130	2470	2960	6330	3480	1780	1290	1130	1810	1530	268
MIN	11	144	22	62	71	32	137	118	134	44	47	30
AC-FT	23980	39170	29550	62310	83620	69000	34300	25160	27130	45540	40850	5800

CAL YR 1982 TOTAL 1194834 MEAN 3274 MAX 27000 MIN 11 AC-FT 2370000  
WTR YR 1983 TOTAL 245234 MEAN 672 MAX 6330 MIN 11 AC-FT 486400



## BRAZOS RIVER BASIN

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 National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair. Many diversions for municipal supply, irrigation, and industrial use above gage (amount unknown). Flow is affected by 20 upstream reservoirs with a combined capacity of 4,181,000 acre-ft. Water is diverted from river upstream from this station by Texas Power and light Co. to Tradinghouse Reservoir and Lake Creek Reservoir. Flow is affected at times by discharge from the flood-detention pools of 76 floodwater-retarding structures with a 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 drainage basins. Gage-height telemeter located at station.

AVERAGE DISCHARGE.--18 years, 2,570 ft<sup>3</sup>/s (1,862,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 57,900 ft<sup>3</sup>/s May 11, 1968 (gage height, 21.88 ft); minimum daily, 41 ft<sup>3</sup>/s July 12, 1978.

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, 9,170 ft<sup>3</sup>/s Feb. 21 at 2400 hours (gage height, 8.04 ft); minimum daily, 58 ft<sup>3</sup>/s Sept. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	924	386	2320	497	2090	499	1800	601	1430	469	1540	126
2	2860	695	1010	564	3740	350	1520	346	1660	682	1670	109
3	1070	800	337	559	2140	295	1950	276	835	497	931	92
4	319	1030	202	652	1020	613	1750	251	481	500	996	81
5	188	1120	707	895	934	4010	1690	249	673	574	717	77
6	160	1180	527	883	737	5190	1670	261	591	959	474	73
7	156	1000	283	869	1330	2120	1710	422	570	723	736	68
8	151	1030	208	952	1020	1790	995	691	546	679	748	63
9	310	1130	152	1640	4010	2000	529	923	336	643	748	63
10	313	936	138	1070	3110	1590	426	459	461	671	404	71
11	225	1080	138	823	4640	1600	383	1220	268	981	307	70
12	180	1180	506	375	2920	1340	344	1140	256	950	1140	65
13	170	955	736	290	1370	938	344	1100	461	2430	813	58
14	153	401	251	550	1120	843	322	741	422	450	1390	96
15	160	323	171	940	1560	979	308	447	565	181	1450	128
16	152	287	173	1500	2000	1270	281	397	307	177	1450	196
17	191	743	1460	2500	642	752	281	392	393	392	1440	171
18	160	1230	1770	1100	3460	592	262	314	355	472	1400	145
19	617	588	3050	1300	886	489	272	635	1020	252	1750	185
20	1320	376	1370	1470	398	480	273	1350	852	537	2530	162
21	1000	283	832	1600	4130	1560	1000	4750	854	847	3100	188
22	903	265	328	668	6920	2410	1140	4170	1100	841	2880	227
23	835	251	205	416	3570	2610	1010	2620	1120	930	2080	180
24	508	226	165	1090	2000	2240	470	1480	1070	1010	1350	152
25	702	243	144	1070	968	2260	352	1020	724	1100	1360	156
26	735	420	130	1390	631	2430	281	1200	675	1440	1440	172
27	833	462	128	1480	1190	3130	257	1540	610	1590	1330	284
28	1100	542	128	1450	1430	2630	255	1680	546	1580	602	165
29	619	435	2130	1230	---	2700	246	1620	500	1530	303	107
30	362	1020	2230	1280	---	2740	867	909	300	1310	189	80
31	461	---	967	1500	---	1910	---	1420	---	1470	146	---
TOTAL	17837	20617	22896	32603	59966	54360	22988	34624	19981	26867	37414	3810
MEAN	575	687	739	1052	2142	1754	766	1117	666	867	1207	127
MAX	2860	1230	3050	2500	6920	5190	1950	4750	1660	2430	3100	284
MIN	151	226	128	290	398	295	246	249	256	177	146	58
AC-FT	35380	40890	45410	64670	118900	107800	45600	68680	39630	53290	74210	7560
CAL YR 1982	TOTAL	1310094	MEAN	3589	MAX	30600	MIN	128	AC-FT	2599000		
WTR YR 1983	TOTAL	353963	MEAN	970	MAX	6920	MIN	58	AC-FT	702100		



## BRAZOS RIVER BASIN

301

08098290 BRAZOS RIVER NEAR Highbank, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: November 1967 to current year. Pesticide analyses: October 1976 to September 1981.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1967 to current year.

WATER TEMPERATURES: November 1967 to current year.

INSTRUMENTATION.--Beginning October 1980, 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 daily, 3,000 micromhos Aug. 24, 1978; minimum daily, 260 micromhos June 17, 18, 1981.

WATER TEMPERATURES: Maximum daily, 35.5°C July 15, 16, 1978; minimum daily, 0.5°C Jan. 14, 1982.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,280 micromhos July 14; minimum daily, 290 micromhos Apr. 13.

WATER TEMPERATURES: Maximum daily, 35.0°C Aug. 6; minimum daily, 6.0°C Feb. 7.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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 (MG/L AS CACO3)
NOV 08...	1130	1180	1140	8.0	18.0	15	10.1	107	.9	220	600	260
JAN 19...	1300	1420	1220	8.3	8.0	4.6	12.0	102	1.1	130	560	260
MAY 25...	1455	788	595	8.4	27.5	80	8.7	112	3.9	620	31000	190
JUL 11...	1235	1190	1130	--	30.5	--	--	--	--	--	--	250
AUG 17...	0935	1660	1190	7.7	29.5	24	6.0	79	.9	67	1200	250
DATE		HARD- NESS, NONCAR- BONATE (MG/L 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 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 08...		140	78	16	130	3.6	5.6	120	130	210	.30	5.5
JAN 19...		140	77	16	130	3.7	5.8	120	140	210	.30	5.8
MAY 25...		37	62	7.5	51	1.7	5.2	150	67	62	.40	8.9
JUL 11...		140	72	17	130	3.7	5.5	110	140	200	.30	8.1
AUG 17...		140	70	18	140	4.0	6.1	110	150	220	.30	8.1
DATE		SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 08...		670	649	.27	.110	1.10	.120	.080	.070	3	9.6	66
JAN 19...		668	658	.23	.180	.80	.060	.040	.020	10	38	99
MAY 25...		353	355	1.0	.110	1.50	.340	.220	.170	100	213	95
JUL 11...		--	639	--	--	--	--	--	--	--	--	--
AUG 17...		678	680	.32	.140	.80	.160	.160	.100	94	421	74

## BRAZOS RIVER BASIN

08098290 BRAZOS RIVER NR Highbank, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	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 08...	1130	2	120	1	<1	<1	<3	1	4	1
JAN 19...	1300	1	120	<1	<1	<1	<3	<1	4	<1
MAY 25...	1455	5	79	1	<1	<1	<3	2	8	2
AUG 17...	0935	2	120	<1	<1	<1	<3	2	3	<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 08...	31	4	<.1	<10	2	<1	<1	1000	<6.0	9
JAN 19...	22	4	<.1	<10	<1	<1	<1	1000	<6.0	8
MAY 25...	19	<1	<.1	<10	<1	1	<1	630	<6.0	<3
AUG 17...	25	4	<.1	<10	<1	<1	<1	1000	<6.0	6

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1982 TO SEPTEMBER 1983

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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.	1982	17837	1150	647	31200	190	9350	120	5870	270
NOV.	1982	20617	1080	610	34000	180	9980	110	6390	260
DEC.	1982	22896	1160	653	40400	200	12200	120	7600	270
JAN.	1983	32603	1170	659	58000	200	17500	120	10900	270
FEB.	1983	59966	925	522	84400	150	24100	98	15900	220
MAR.	1983	54360	959	540	79300	150	22500	100	14900	230
APR.	1983	22988	912	514	31900	140	8900	97	6000	220
MAY	1983	34624	772	434	40600	120	10900	82	7630	190
JUNE	1983	19981	1030	581	31400	170	9080	110	5900	250
JULY	1983	26867	1060	599	43500	180	12700	110	8180	250
AUG.	1983	37414	1040	586	59200	170	17200	110	11100	250
SEPT	1983	3810	1130	637	6560	190	1960	120	1230	260
TOTAL		353963	**	**	540000	**	156000	**	102000	**
WTD. AVG.		970	1000	565	**	160	**	110	**	240

## BRAZOS RIVER BASIN

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08098290 BRAZOS RIVER NEAR Highbank, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	1160	1140	1150	1140	1120	1130			1060	---	---	1200
2	1170	1130	1150	1150	1130	1140			1060	---	---	1190
3	1170	1140	1150	1130	1050	1070			1060	---	---	1210
4	1190	1140	1170	1060	1020	1040			1070	---	---	1210
5	1180	---	1170	1040	1020	1030			1070	---	---	1210
6	---	---	1180	1070	1020	1050			1070	---	---	1200
7	---	---	1180	1110	1040	1070			1080	---	---	1200
8	---	---	1190	1110	1080	1090			1080	---	---	1210
9	1190	---	1190	1110	1100	1100			1080	---	---	1230
10	1210	1190	1200	1130	1110	1120			1090	---	---	1230
11	1220	1180	1210	1140	1120	1130			1070	---	---	1220
12	1180	---	1130	1150	1100	1130			1050	---	---	1210
13	1150	---	1140	1120	1060	1070			1050	---	---	1200
14	---	---	1150	1080	1060	1070			1070	---	---	1190
15	---	---	1140	1080	1050	1060			1080	---	---	1180
16	---	---	1130	1060	1040	1050			1090	---	---	1170
17	---	---	1150	1050	1040	1050			1190	---	---	1160
18	1140	---	1140	1120	1050	1070			1190	---	---	1160
19	1150	1090	1130	1130	1110	1120			1230	---	---	1160
20	1100	1060	1080	1120	1110	1120			1240	---	---	1200
21	1140	1060	1100	1120	1100	1110			1230	---	---	1240
22	1170	1140	1160	1110	1060	1090			1220	---	---	1130
23	1170	1160	1160	1120	1070	1100			1210	---	---	1180
24	1170	1150	1160	1080	1070	1070			1200	---	---	1190
25	1190	1160	1170	1070	1060	1070			1190	---	---	1190
26	1200	1190	1190	1070	1060	1070			1190	---	---	1180
27	1200	1170	1180	---	---	1070			1190	---	---	1150
28	1180	1090	1140	---	---	1060			1180	---	---	1100
29	1130	1110	1120	---	---	1060			1190	1020	1010	1020
30	1130	1110	1120	---	---	1060			1190	1030	1010	1020
31	1140	1120	1130	---	---	---			1190	1080	1030	1060
17   MONTH	1220	1060	1150	1150	1020	1080			1130	1080	1010	1170

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	1140	1070	1100	---	---	850	840	810	825	1020	990	1010
2	1140	1120	1130	---	---	920	850	830	845	1000	970	986
3	1150	1130	1140	---	---	1040	870	850	865	990	970	977
4	1160	1020	1080	---	---	1050	890	860	878	1000	950	976
5	1100	1010	1060	---	---	900	910	880	897	960	930	943
6	1030	890	946	---	---	800	920	900	915	940	910	921
7	1080	1040	1060	---	---	750	940	920	934	940	900	919
8	1080	800	984	---	---	800	960	930	948	950	900	922
9	1030	930	1010	---	---	900	970	950	967	970	910	945
10	1080	1040	1060	---	---	1000	1000	970	990	920	840	899
11	1110	1080	1090	---	---	1010	1020	1000	1010	820	630	687
12	1140	1110	1130	---	---	1020	1040	1020	1030	740	620	671
13	1140	1100	1120	---	---	1020	1040	290	996	900	630	818
14	1100	1040	1070	---	---	1030	1000	970	985	910	880	894
15	1070	1040	1060	---	---	1030	990	960	977	880	850	867
16	1090	1070	1080	---	---	1040	980	950	968	920	850	883
17	1070	1020	1040	---	---	1040	1000	960	968	920	880	901
18	1090	1030	1070	---	---	1050	1000	960	980	890	860	878
19	1110	1080	1100	---	---	1040	980	970	977	880	550	806
20	1140	1110	1120	---	---	1040	970	960	962	720	550	632
21	1050	610	913	---	---	1040	970	930	956	700	550	655
22	660	470	523	---	---	1050	960	840	903	720	690	704
23	520	480	498	---	---	1040	850	790	810	750	720	730
24	560	520	540	---	---	1030	970	850	924	760	560	692
25	650	550	580	---	---	1020	990	960	978	570	480	538
26	720	650	695	---	---	1030	970	920	954	760	560	658
27	---	---	750	---	---	1040	950	920	930	770	730	748
28	---	---	800	---	---	1050	970	920	946	840	750	800
29	---	---	---	---	---	1000	980	960	967	960	840	905
30	---	---	---	---	---	900	1010	970	991	1020	960	990
31	---	---	---	820	790	805	---	---	---	1050	950	992
MONTH	1160	470	955	820	790	979	1040	290	943	1050	480	837

## BRAZOS RIVER BASIN

08098290 BRAZOS RIVER NEAR HIGHBANK, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	1060	1030	1040	---	---	1060	---	---	1070			1200
2	1060	1030	1040	---	---	1060	---	---	1080			1240
3	1080	1030	1050	---	---	1070	---	---	1080			1250
4	1060	1020	1040	---	---	1070	---	---	1070			1240
5	---	---	1060	---	---	1080	---	---	1080			1230
6	---	---	1070	---	---	1080	---	---	1080			1240
7	---	---	1070	---	---	1080	---	---	1090			1250
8	---	---	1080	---	---	1090	---	---	1100			1250
9	---	---	1070	1100	1070	1090	---	---	1110			1250
10	---	---	1070	1080	1030	1060	---	---	1120			1250
11	---	---	1060	1110	1060	1080	---	---	1130			1240
12	---	---	1050	1110	1070	1090	1140	990	1100			1230
13	---	---	1060	1120	1070	1100	1130	1000	1070			1240
14	---	---	1050	1280	1090	1160	1130	990	1100			1220
15	---	---	1040	---	---	1080	1080	930	1030			1210
16	---	---	1030	---	---	1090	1110	900	1030			1210
17	---	---	1020	---	---	1090	1190	900	1130			1190
18	---	---	1000	---	---	1060	1180	1130	1150			1150
19	---	---	950	---	---	1050	1150	1100	1130			1000
20	---	---	960	---	---	1020	1090	940	1010			1010
21	---	---	1000	---	---	1000	---	---	950			1050
22	---	---	1010	---	---	1010	---	---	930			1060
23	---	---	1020	---	---	1020	---	---	940			1030
24	---	---	1020	---	---	1030	---	---	970			1050
25	---	---	1030	---	---	1040	---	---	1000			1040
26	---	---	1030	---	---	1040	---	---	1020			1050
27	---	---	1040	---	---	1050	---	---	1030			1070
28	---	---	1040	---	---	1050	---	---	1060			1090
29	---	---	1050	---	---	1060	---	---	1080			1110
30	---	---	1050	---	---	1060	---	---	1130			1120
31	---	---	---	---	---	1070	---	---	1160			
MONTH	1080	1020	1040	1280	1030	1060	1190	900	1070			1160

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

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

## BRAZOS RIVER BASIN

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08098290 BRAZOS RIVER NEAR Highbank, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	23.5	21.0	22.0	30.5	27.0	28.5	33.0	30.0	31.5	---	---	---
2	25.5	21.5	23.0	31.0	26.5	28.5	33.0	30.0	31.5	32.5	28.0	30.0
3	27.0	23.0	25.0	31.5	26.5	28.5	31.0	28.0	29.0	32.0	27.5	29.5
4	29.5	24.5	26.5	31.0	26.0	28.5	31.0	26.5	28.5	32.0	28.0	30.0
5	30.0	24.5	27.0	29.5	26.5	28.0	33.0	27.5	30.0	31.5	27.0	29.0
6	28.0	23.5	25.5	30.5	26.5	28.5	35.0	29.0	31.5	32.0	27.5	29.5
7	27.5	22.0	25.0	30.0	26.5	28.0	34.0	30.0	31.5	32.0	25.0	29.0
8	28.5	23.0	26.0	29.0	25.5	26.5	30.5	29.0	29.5	30.0	26.5	27.5
9	29.0	23.5	26.5	33.0	28.0	30.5	31.5	28.0	29.5	29.0	25.0	27.0
10	28.5	24.0	26.0	33.0	28.5	31.0	33.5	28.0	30.5	28.0	26.0	27.0
11	27.0	23.5	25.0	33.5	29.0	31.0	34.0	28.5	31.0	31.5	11.0	27.5
12	28.5	23.5	26.0	31.5	30.0	30.5	34.0	29.5	31.5	32.0	25.5	29.5
13	29.0	24.5	26.5	30.0	28.5	29.0	34.0	29.5	31.5	32.5	27.0	29.5
14	27.0	25.0	26.0	29.0	27.0	28.0	34.5	30.0	32.0	29.5	26.5	28.0
15	29.5	24.5	27.0	28.0	26.0	27.0	34.5	30.5	32.5	29.0	25.0	27.5
16	29.0	24.5	27.0	28.5	25.5	27.0	34.0	30.5	32.5	30.5	26.5	28.0
17	30.5	24.5	27.5	32.0	26.5	29.0	33.0	30.0	31.5	30.0	26.0	28.0
18	31.0	25.0	27.5	32.5	27.5	30.0	30.5	26.5	28.5	28.5	26.5	27.5
19	30.0	26.0	28.0	32.0	28.0	30.0	27.0	25.5	26.5	27.0	25.0	26.0
20	30.5	26.5	28.5	33.5	27.5	30.5	27.0	26.0	26.5	27.5	25.0	26.0
21	31.5	26.5	29.0	34.0	29.0	31.0	---	---	---	---	---	---
22	30.5	27.0	28.5	34.0	29.5	31.5	---	---	---	---	---	---
23	30.0	27.0	28.0	34.0	30.0	32.0	---	---	---	---	---	---
24	30.0	26.5	28.0	34.0	29.5	31.5	---	---	---	24.5	19.5	22.5
25	28.5	26.5	27.5	33.5	29.5	31.5	---	---	---	25.0	20.5	23.0
26	31.0	25.5	28.0	33.5	29.5	31.5	---	---	---	24.5	22.5	23.5
27	31.0	27.0	29.0	33.0	29.5	31.5	---	---	---	---	---	---
28	31.0	26.5	28.5	33.5	29.5	31.5	---	---	---	26.5	22.5	25.0
29	32.0	27.0	29.0	33.5	30.0	31.5	---	---	---	---	---	---
30	31.5	26.5	29.0	33.5	30.0	32.0	---	---	---	---	---	---
31	---	---	---	33.0	30.5	31.5	---	---	---	---	---	---
MONTH	32.0	21.0	27.0	34.0	25.5	30.0	35.0	25.5	30.5	32.5	11.0	27.5



## BRAZOS RIVER BASIN

08099000 LEON RESERVOIR NEAR RANGER, TX

LOCATION.--Lat 32°21'46", long 98°40'32", Eastland County, Hydrologic Unit 12070201, at outlet works near left end of dam on Leon River, 7.4 mi south of Ranger, 8.7 mi southeast of Eastland, and 274.1 mi upstream from mouth.

DRAINAGE AREA.--259 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1955 to September 1983 (discontinued).

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Nonrecording gage. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The reservoir is formed by a rolled earthfill dam 3,700 ft long. Storage began in April 1954 and dam was completed in June 1954. The emergency spillway is a 1,200-foot-wide cut through natural ground near the left end of dam. The service spillway is an uncontrolled circular concrete drop inlet designed for a maximum discharge of 5,000 ft<sup>3</sup>/s through an 11-foot-diameter concrete conduit. The dam is the property of Eastland County Water Supply District and was built to impound water for municipal use by the cities of Ranger, Olden, and Eastland. The capacity table is based on a survey made in 1952. 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.....	1,398.0	-
Crest of spillway.....	1,382.0	40,210
Crest of spillway (top of conservation pool).....	1,375.0	27,290
Lowest gated outlet (invert for water supply).....	1,335.0	869

COOPERATION.--The capacity curve and reservoir elevations records were furnished by the Eastland County Water Supply District.

EXTREMES (at 1000) FOR PERIOD OF RECORD.--Maximum contents observed, 40,640 acre-ft June 13, 1967 (elevation, 1,382.2 ft); minimum observed since first appreciable storage, 15,880 acre-ft Jan. 11-21, Feb. 5-7, Apr. 29, 30, 1956 (elevation, 1,366.2 ft).

EXTREMES (at 1000) FOR CURRENT YEAR.--Maximum contents observed, 24,260 acre-ft Oct. 1-3 (elevation, 1,373.0 ft); minimum, 18,090 acre-ft Sept. 26-30 (elevation, 1,368.2 ft).

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

1,368.0	17,860
1,370.0	20,240
1,373.0	24,260

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 1000

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24260	23560	22850	22850	22720	22580	22720	22310	21510	21260	20240	19030
2	24260	23560	22850	22990	22720	22580	22720	22310	21780	21260	20120	19030
3	24260	23560	22850	22990	22720	22580	22720	22310	21780	21260	20120	18910
4	24120	23560	22850	22990	22720	22580	22720	22180	21780	21260	20120	18910
5	24120	23410	22850	22990	22720	22580	22720	22180	21780	21130	20120	18910
6	24120	23410	22850	22990	22720	22580	22720	22180	21780	21130	20120	18800
7	24120	23410	22850	22990	22720	22580	22720	22180	21780	21130	20000	18800
8	24120	23410	22850	22990	22720	22580	22580	22050	21780	21130	20000	18800
9	24120	23410	22850	22990	22720	22580	22580	22050	21780	21130	20000	18680
10	24120	23410	22850	22990	22720	22580	22580	22050	21780	21130	20000	18680
11	23980	23410	22850	22990	22720	22580	22580	22050	21640	21130	19880	18680
12	23980	23410	22850	22990	22720	22580	22580	22050	21640	21130	19880	18560
13	23980	23410	22850	22850	22720	22580	22580	21910	21640	21000	19760	18560
14	23980	23270	22990	22850	22720	22580	22580	21910	21640	21000	19760	18560
15	23980	23270	22990	22850	22720	22580	22580	21910	21640	20880	19640	18560
16	23980	23270	22990	22850	22580	22580	22580	21910	21510	20880	19640	18450
17	23980	23270	22990	22850	22580	22580	22580	21910	21510	20880	19510	18450
18	23840	23130	22990	22850	22580	22580	22580	21910	21510	20750	19510	18330
19	23840	23130	22990	22720	22580	22580	22580	21780	21510	20750	19510	18330
20	23840	23130	22990	22720	22580	22580	22580	21780	21510	20750	19510	18330
21	23840	23130	22990	22720	22580	22580	22580	21780	21510	20620	19390	18330
22	23840	22990	22990	22720	22580	22580	22580	21780	21380	20620	19390	18210
23	23840	22990	22850	22720	22580	22580	22580	21780	21380	20620	19390	18210
24	23700	22990	22850	22720	22580	22580	22580	21780	21380	20490	19270	18210
25	23700	22990	22850	22580	22580	22580	22580	21640	21380	20490	19270	18210
26	23700	22990	22850	22580	22580	22580	22450	21640	21380	20370	19270	18090
27	23700	22990	22850	22720	22580	22580	22450	21510	21380	20370	19150	18090
28	23700	22990	22850	22720	22580	22580	22450	21510	21260	20240	19150	18090
29	23700	22990	22850	22720	---	22720	22450	21510	21260	20240	19150	18090
30	23560	22850	22850	22720	---	22720	22450	21510	21260	20240	19150	18090
31	23560	---	22850	22720	---	22720	---	21510	---	20240	19030	---
MAX	24260	23560	22990	22990	22720	22720	22720	22310	21780	21260	20240	19030
MIN	23560	22850	22850	22580	22580	22580	22450	21510	21260	20240	19030	18090
(†)	1372.5	1372.0	1372.0	1371.9	1371.8	1371.9	1371.7	1371.0	1370.8	1370.0	1369.0	1368.2
(‡)	-700	-710	0	-130	-140	+140	-270	-940	-250	-1020	1,210	-940
CAL YR 1982	MAX	29430	MIN	22850	‡	-3670						
WTR YR 1983	MAX	24260	MIN	18090	‡	-6170						

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

BRAZOS RIVER BASIN

08099000 LEON RESERVOIR NEAR RANGER, TX--Continued

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WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
MAY 03...	1240	466	21.0	150	30	47	7.9	28

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY 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 03...	1.0	6.2	120	27	57	.20	1.4	247

## BRAZOS RIVER BASIN

08099100 LEON RIVER NEAR DE LEON, TX

LOCATION.--Lat 32°10'25", long 98°31'58", Comanche County, Hydrologic Unit 12070201, 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.

DRAINAGE AREA.--479 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1960 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. Datum of gage is 1,209.93 ft National Geodetic Vertical Datum of 1929. Prior to Nov. 22, 1960, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow partly regulated by Leon Reservoir (station 08099000). Numerous diversions above station for municipal, steam powerplant operation, and other uses. Recording rain gage was discontinued May 31, 1978.

AVERAGE DISCHARGE.--23 years, 40.7 ft<sup>3</sup>/s (29,490 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,540 ft<sup>3</sup>/s Jan. 21, 1968 (gage height, 15.50 ft); no flow for many days.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 19.3 ft occurred in May 1908 at a point 2,000 ft downstream from present gage site and is the highest since that time, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 566 ft<sup>3</sup>/s Aug. 8 at 2230 hours (gage height, 6.79 ft); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.68	.68	.54	2.1	.62	36	.00	.00	.00
2	.00	.00	.00	.86	.68	.54	1.4	4.2	16	.00	.00	.00
3	.00	.00	.00	1.2	.68	.52	1.2	2.8	7.7	.00	.00	.00
4	.00	.00	.00	.83	.68	22	1.2	1.0	3.8	.00	.00	.00
5	.00	.00	.00	.58	.77	25	1.1	.54	2.4	.00	.00	.00
6	.00	.00	.00	.54	.77	3.3	.89	.42	3.1	.00	.00	.00
7	.00	.00	.00	.53	.77	.98	.75	.35	18	.00	.00	.00
8	.00	.00	.00	.47	.77	.68	.68	.27	15	.00	66	.00
9	.00	.00	.00	.47	.77	.60	.73	.31	8.2	.00	56	.00
10	.00	.00	.00	.42	.77	.60	.77	.37	4.2	.00	3.1	.00
11	.00	.00	.00	.41	.68	.56	.77	.41	2.5	.00	.31	.00
12	.00	.00	.00	.32	.60	.57	.72	.42	1.5	.00	.02	.00
13	.00	.00	.00	.41	.60	.57	.98	.38	1.0	.00	.00	.00
14	.00	.00	.06	.39	.60	.42	.77	.33	.64	.00	.00	.00
15	.00	.00	.04	.42	.60	.69	.80	.33	.32	.00	.00	.00
16	.00	.00	.04	.42	.60	1.4	.82	.28	.21	.00	.00	.00
17	.00	.00	.06	.42	.60	1.1	.68	.24	.18	.00	.00	.00
18	.00	.00	.09	.57	.65	.68	.68	.26	.15	.00	.00	.00
19	.00	.00	.06	.77	.68	.57	.73	.20	.08	.00	.00	.00
20	.00	.00	.09	.77	.77	.59	.62	.23	.03	.00	.00	.00
21	.00	.00	.11	1.0	.68	.95	.60	.68	.03	.00	.00	.00
22	.00	.00	.11	1.1	.68	.85	.68	.83	.02	.00	.00	.00
23	.00	.00	.15	1.3	.68	.75	.62	.42	.02	.00	.00	.00
24	.00	.00	.18	1.1	.68	.55	.56	.18	.01	.00	.00	.00
25	.00	.00	.37	.86	.67	.56	.60	.11	.00	.00	.00	.00
26	.00	.00	.86	.77	.55	26	.59	.09	.00	.00	.00	.00
27	.00	.00	1.8	.68	.54	28	.48	.09	.00	.00	.00	.00
28	.00	.00	.54	.68	.54	14	.53	.09	.00	.00	.00	.00
29	.00	.00	.48	.60	---	5.4	.58	.09	.00	.00	.00	.00
30	.00	.00	.77	.60	---	3.3	.63	13	.00	.00	.00	.00
31	.00	---	.92	.68	---	2.6	---	244	---	.00	.00	---
TOTAL	.00	.00	6.73	20.85	18.74	144.87	24.26	273.54	121.09	.00	125.43	.00
MEAN	.000	.000	.22	.67	.67	4.67	.81	8.82	4.04	.000	4.05	.000
MAX	.00	.00	1.8	1.3	.77	28	2.1	244	36	.00	66	.00
MIN	.00	.00	.00	.32	.54	.42	.48	.09	.00	.00	.00	.00
AC-FT	.00	.00	13	41	37	287	48	543	240	.00	249	.00
CAL YR 1982	TOTAL	8735.70	MEAN	23.9	MAX	1690	MIN	.00	AC-FT	17330		
WTR YR 1983	TOTAL	735.51	MEAN	2.02	MAX	244	MIN	.00	AC-FT	1460		

## BRAZOS RIVER BASIN

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08099300 SABANA RIVER NEAR DE LEON, TX

LOCATION.--Lat 32°06'50", long 98°36'19", Comanche County, Hydrologic Unit 12070201, 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.

DRAINAGE AREA.--264 mi<sup>2</sup>.

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

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,209.59 ft National Geodetic Vertical Datum of 1929 (levels by State Department of Highways and Public Transportation). Prior to Nov. 22, 1960, nonrecording gage at present site and datum.

REMARKS.--Records good. Flow is affected by Nabors Lake (capacity unknown) on Spring Branch. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--23 years, 27.3 ft<sup>3</sup>/s (1.40 in/yr), 19,780 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,800 ft<sup>3</sup>/s June 12, 1967 (gage height, 22.05 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1890, 24 ft in May 1908, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 770 ft<sup>3</sup>/s June 4 at 0430 hours (gage height, 9.97 ft), no peak above base of 1,500 ft<sup>3</sup>/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.08	.31	.72	1.2	1.1	1.6	.18	3.8	4.4	.00	.00
2	.01	.09	.23	.83	.98	1.1	1.4	6.2	2.6	2.9	.00	.00
3	.08	.11	.31	.69	.98	1.2	1.3	14	2.0	2.4	.00	.00
4	.05	.11	.32	.60	.87	15	1.3	2.4	273	1.6	.00	.00
5	.02	.13	.32	.60	.84	47	1.3	1.1	31	1.4	.00	.00
6	.00	.18	.26	.60	.84	11	1.2	.72	7.6	.70	.00	.00
7	.01	.20	.26	.60	.84	4.0	1.2	.39	3.1	.60	.00	.00
8	.02	.20	.26	.60	.66	2.3	1.1	.28	1.5	.51	.00	.00
9	.08	.20	.26	.62	.65	1.8	1.1	.13	.84	.15	19	.00
10	.08	.30	.54	.60	.92	1.0	1.2	.11	.95	.15	4.1	.00
11	.02	.29	.76	.60	1.1	1.1	1.3	.11	1.1	.08	1.6	.00
12	.10	.16	.71	.60	1.1	.99	1.1	.10	1.3	.05	.95	.00
13	.11	.17	.62	.60	1.1	.76	1.1	.06	1.3	.01	.51	.00
14	.08	.15	.60	.61	1.1	.57	.87	.08	1.3	.25	.18	.00
15	.06	.15	.60	.60	1.1	.70	.79	.07	1.3	.51	.05	.00
16	.06	.15	.60	.60	1.1	1.3	.49	.05	.84	.39	.01	.00
17	.04	.15	.60	.60	1.2	.98	.53	.02	.84	.29	.00	.00
18	.02	.15	.60	.63	1.3	.97	.60	.03	.82	.24	.00	.00
19	.02	.14	.60	1.2	1.3	.56	.70	.01	.65	.09	.00	.00
20	.01	.08	.60	1.6	1.5	.67	.74	.04	.60	.04	.00	.00
21	.01	.08	.60	1.7	1.2	.49	.59	1.0	.50	.01	.00	.00
22	.03	.08	.60	1.8	1.1	.46	.63	.39	.49	.00	.00	.00
23	.07	.08	.60	1.2	1.1	.49	.62	.30	.34	.00	.00	.00
24	.08	.09	.49	.74	1.2	.49	.44	.15	.26	.00	.00	.00
25	.06	.12	.40	.71	1.3	.54	.20	.12	.26	.00	.00	.00
26	.06	1.5	.26	.49	.98	7.1	.20	.10	.26	.00	.00	.00
27	.06	2.3	.90	.49	.98	2.8	.22	.08	.24	.00	.00	.00
28	.05	1.1	.70	.50	.98	2.4	.12	.07	1.3	.00	.00	.00
29	.05	.67	.51	.55	---	2.5	.22	.08	1.2	.00	.00	.00
30	.07	.37	.49	.90	---	2.5	.25	.58	2.9	.00	.00	.00
31	.08	---	.55	1.5	---	1.9	---	6.6	---	.00	.00	---
TOTAL	1.49	9.58	15.46	24.68	29.52	115.77	24.41	35.55	344.19	16.77	26.40	.00
MEAN	.048	.32	.50	.80	1.05	3.73	.81	1.15	11.5	.54	.85	.000
MAX	.11	2.3	.90	1.8	1.5	.47	1.6	.14	273	4.4	.19	.00
MIN	.00	.08	.23	.49	.65	.46	.12	.01	.24	.00	.00	.00
CFSM	.000	.001	.002	.003	.004	.01	.003	.004	.04	.002	.003	.000
IN.	.00	.00	.00	.00	.00	.02	.00	.01	.05	.00	.00	.00
AC-FT	3.0	19	31	49	59	230	48	71	683	33	52	.00

CAL YR 1982	TOTAL	6310.13	MEAN	17.3	MAX	1470	MIN	.00	CFSM	.07	IN	.89	AC-FT	12520
WTR YR 1983	TOTAL	643.82	MEAN	1.76	MAX	273	MIN	.00	CFSM	.007	IN	.09	AC-FT	1280



## BRAZOS RIVER BASIN

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 Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 137,500 acre-ft Jan. 26, 1968 (elevation, 1,174.84 ft); minimum since first filling of lake, 23,050 acre-ft Jan. 9, 1979 (elevation, 1,151.35 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 52,090 acre-ft June 7 (elevation, 1,160.3 ft); minimum daily, 34,500 acre-ft Sept. 30 (elevation, 1,155.58 ft).

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

1,155.0	32,710	1,159.0	45,590
1,156.0	35,840	1,161.0	54,890

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52050	50090	49960	49230	48980	48660	50790	49390	50790	50250	45160	38790
2	52010	50290	49880	49180	48900	48580	50540	49800	50870	50130	44970	38480
3	51920	50090	49880	49100	48820	48700	50460	49920	51000	49960	44780	38310
4	51840	49960	49840	49100	48820	49230	50540	49340	51500	49960	44630	38070
5	51710	49840	49800	49100	48940	49230	50500	49720	51880	49800	44250	37830
6	51630	49800	49800	49140	48860	49430	50500	49760	52010	49680	43960	37630
7	51540	49760	49800	49100	48820	49430	50460	49630	51960	49590	43720	37430
8	51580	49720	49800	49100	48820	49470	50290	49470	51920	49470	43610	37160
9	51500	49670	49800	49100	48900	49430	50210	49390	51920	49310	43570	36930
10	51330	49670	49800	49100	48900	49350	50170	49590	51710	49140	43420	36760
11	51210	49630	49800	49100	48940	49310	50170	49800	51710	48980	43280	36630
12	51250	49590	49800	49060	48900	49270	50210	49680	51630	48780	43020	36460
13	51160	49590	49800	49020	48820	49230	50290	49630	51670	48700	42870	36700
14	51080	49470	49800	49020	48860	49180	50130	49840	51670	48460	42680	36560
15	51040	49390	49630	48940	48860	49590	50090	49590	51580	48300	42460	36400
16	50910	49310	49510	48900	48820	50250	50090	49430	51500	48260	42170	36270
17	50830	49270	49510	48900	48820	50040	50090	49470	51460	48180	41990	36170
18	50750	49230	49510	48940	48740	49920	49840	49550	51370	48060	41730	36070
19	50660	49230	49430	48980	48740	50130	49800	49430	51290	47900	41480	35970
20	50580	49270	49390	49020	48940	50250	49720	49390	51210	47780	41230	35880
21	50540	49230	49350	49230	48860	50090	49760	49590	51080	47660	41050	35650
22	50500	49230	49350	49180	48820	50040	49840	49510	50960	47420	40830	35520
23	50500	49230	49350	49180	48780	50040	49720	49590	50790	47220	40620	35360
24	50420	49180	49350	49100	48740	49960	49630	49430	50710	47020	40400	35260
25	50290	49310	49350	49060	48740	49960	49550	49390	50580	46830	40190	35170
26	50170	49880	49390	49140	48700	50420	49470	49310	50460	46630	39980	35070
27	50090	49920	49510	49020	48660	50620	49470	49230	50210	46280	39770	34910
28	50130	49880	49350	48980	48620	50540	49430	49230	50380	46130	39520	34780
29	50090	49960	49100	49020	---	50620	49390	49230	50500	45890	39350	34620
30	50090	49880	49060	48980	---	50660	49350	50330	50380	45620	39100	34500
31	50090	---	49180	48980	---	50710	---	50620	---	45430	38960	---
MAX	52050	50290	49960	49230	48980	50710	50790	50620	52010	50250	45160	38790
MIN	50090	49180	49060	48900	48620	48580	49350	49230	50210	45430	38960	34500
(†)	1159.87	1159.82	1159.65	1159.60	1159.51	1160.02	1159.69	1160.00	1159.94	1158.70	1156.93	1155.58
(‡)	-1960	-210	-700	-200	-360	+2090	-1360	+1270	-240	-4950	-6470	-4460

CAL YR 1982 MAX 97580 MIN 49060 ‡ -10770  
WTR YR 1983 MAX 52050 MIN 34500 ‡ -17550

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.



## BRAZOS RIVER BASIN

311

08099500 LEON RIVER NEAR HASSE, TX

LOCATION.--Lat 31°57'28", long 98°27'32", Comanche County, Hydrologic Unit 12070201, on left bank at downstream side 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 National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by Proctor Lake (station 08099400) since October 1963. Numerous diversions above station for municipal, steam powerplant operation, and other uses. Gage-height telemeter located 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); 20 years (water years 1964-83) regulated, 84.9 ft<sup>3</sup>/s (61,510 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, 232 ft<sup>3</sup>/s Aug. 6 at 0800 hours (gage height, 4.61 ft); minimum, 0.03 ft<sup>3</sup>/s Oct. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB.	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	.43	1.7	4.3	2.2	1.8	1.9	1.5	4.6	16	46	38
2	17	1.4	1.6	3.4	2.1	1.8	1.8	3.8	3.1	16	42	33
3	17	1.7	1.9	3.1	2.0	1.8	1.8	2.6	2.0	14	42	33
4	22	1.1	1.9	2.8	1.9	5.0	2.0	1.7	2.1	8.7	42	33
5	24	1.0	2.0	2.5	2.2	2.5	1.6	1.0	3.5	8.9	133	38
6	19	1.5	1.6	2.8	1.8	2.1	2.0	.93	2.8	8.6	134	44
7	19	1.4	1.5	2.5	1.8	1.8	1.7	.72	3.1	16	42	42
8	19	.92	1.7	2.7	1.9	1.7	1.9	.53	3.4	24	41	43
9	17	1.1	1.7	2.8	2.0	1.8	2.0	.32	2.6	16	39	40
10	17	.65	3.0	2.4	1.8	1.6	1.8	1.6	2.0	15	38	40
11	16	.69	3.1	2.6	1.9	1.1	1.4	5.8	1.5	20	38	41
12	14	.60	2.0	2.7	1.6	1.6	1.1	2.9	.98	29	38	37
13	8.8	.62	1.6	2.7	2.0	1.6	.78	1.9	.90	27	38	37
14	7.3	.95	1.6	2.5	1.9	1.5	.83	2.0	.82	20	37	24
15	2.7	1.3	84	2.8	2.0	3.7	1.3	2.2	.86	13	41	11
16	2.4	1.5	83	2.7	1.7	4.4	1.4	2.0	.88	13	45	11
17	2.7	1.7	3.1	2.5	1.5	2.4	1.2	1.6	.94	13	45	10
18	2.4	1.9	2.8	3.1	1.6	1.9	1.1	2.0	2.2	12	45	10
19	.61	1.9	2.3	3.5	1.2	2.1	1.0	2.1	2.7	12	46	11
20	.12	1.7	2.3	3.0	1.7	2.9	1.1	1.8	2.8	13	46	9.9
21	.05	1.5	2.1	4.0	1.7	1.8	1.2	3.9	9.8	16	44	8.3
22	.07	1.3	1.9	3.7	2.1	1.6	2.8	3.3	13	24	44	7.2
23	1.2	1.3	2.1	2.8	2.0	1.7	2.7	2.4	24	30	42	9.2
24	1.6	1.6	2.6	2.5	2.0	1.7	2.3	1.8	31	30	43	13
25	1.4	2.4	2.3	2.4	1.7	1.9	2.1	1.7	2.6	30	47	12
26	1.5	6.7	2.3	2.1	1.9	6.5	1.5	1.4	.96	31	48	13
27	.98	4.2	4.3	2.1	2.0	2.8	1.8	1.1	.62	34	47	19
28	.78	1.8	65	2.1	1.9	2.3	1.5	2.2	10	45	47	29
29	.97	1.4	78	2.1	---	2.0	1.4	4.7	15	51	47	23
30	.93	1.4	3.4	2.1	---	2.1	1.8	15	17	45	42	23
31	.65	---	3.1	2.3	---	2.1	---	14	---	47	38	---
TOTAL	259.16	47.66	371.5	85.6	52.1	71.6	48.81	90.50	167.76	698.2	1507	742.6
MEAN	8.36	1.59	12.0	2.76	1.86	2.31	1.63	2.92	5.59	22.5	48.6	24.8
MAX	24	6.7	84	4.3	2.2	6.5	2.8	15	31	51	134	44
MIN	.05	.43	1.5	2.1	1.2	1.1	.78	.32	.62	8.6	37	7.2
AC-FT	514	95	737	170	103	142	97	180	333	1380	2990	1470
CAL YR 1982	TOTAL	37076.48	MEAN	102	MAX	740	MIN	.05	AC-FT	73540		
WTR YR 1983	TOTAL	4142.49	MEAN	11.3	MAX	134	MIN	.05	AC-FT	8220		

## BRAZOS RIVER BASIN

08100000 LEON RIVER NEAR HAMILTON, TX

LOCATION.--Lat 31°47'19", long 98°07'16", Hamilton County, Hydrologic Unit 12070201, on 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 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.--Records poor. Since 1960, at least 10 percent of the drainage area is regulated by Proctor Lake (station 08099400) and by other smaller reservoirs. Numerous diversions above station for irrigation, municipal supply, and 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. Gage-height telemeter at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--6 years (water years 1926-31) unregulated, 130 ft<sup>3</sup>/s (94,180 acre-ft/yr); 23 years (water years 1961-83) regulated, 133 ft<sup>3</sup>/s (96,360 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, 165 ft<sup>3</sup>/s June 1 at 1400 hours (gage height, 7.66 ft); no flow Nov. 3-18, Dec. 8, 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	.02	.25	14	6.8	5.8	1.6	6.9	126	.59	.00	8.5
2	3.9	.01	.40	7.9	6.6	5.8	1.2	8.9	68	.40	.00	7.2
3	3.4	.00	.32	5.9	6.4	6.1	1.3	11	35	.91	2.5	5.9
4	3.0	.00	.12	5.3	6.8	22	1.3	12	31	3.2	4.9	4.4
5	2.0	.00	.08	4.7	7.2	49	1.3	21	66	2.8	6.2	3.1
6	.54	.00	.04	4.7	7.0	24	1.4	13	53	2.9	5.3	2.9
7	.26	.00	.02	4.4	6.8	13	1.5	7.9	36	1.6	61	2.4
8	.09	.00	.00	4.1	6.8	11	1.4	4.8	24	.94	53	1.5
9	1.3	.00	.00	4.1	6.7	9.2	1.4	4.1	16	1.5	11	.93
10	14	.00	.02	4.2	6.8	7.1	1.6	7.0	9.3	1.1	6.7	.41
11	17	.00	.40	4.1	6.6	5.9	1.8	16	5.4	.70	5.5	.13
12	18	.00	.92	4.2	6.6	4.9	2.1	20	2.6	.31	6.2	.02
13	14	.00	1.6	4.2	6.7	4.7	2.2	16	2.1	.08	5.3	3.2
14	11	.00	2.0	4.3	6.8	4.5	2.2	17	1.8	.97	4.3	9.0
15	9.1	.00	2.3	4.4	6.8	4.2	2.3	25	1.8	14	3.1	49
16	6.9	.00	3.4	4.4	6.8	5.3	2.3	23	1.8	15	3.0	24
17	5.3	.00	75	4.7	6.6	18	2.2	20	1.8	13	2.4	11
18	3.9	.00	25	5.4	6.6	9.2	2.3	18	2.0	9.6	3.1	6.9
19	3.3	.01	10	5.8	6.6	6.6	1.7	16	2.0	6.1	3.8	5.3
20	2.4	.02	7.1	5.8	7.3	4.9	1.5	16	1.6	5.8	9.0	4.5
21	1.9	.02	5.8	6.4	7.0	11	1.7	20	1.4	5.8	11	3.7
22	1.3	.02	5.4	6.8	6.8	6.6	2.7	23	1.3	4.0	9.3	4.0
23	.94	.03	6.6	6.8	6.8	4.1	3.3	27	.82	2.6	7.1	3.8
24	.74	.03	7.6	7.1	6.6	2.9	3.2	31	.45	2.4	8.5	3.8
25	.42	.04	8.5	8.4	5.8	2.2	3.4	33	.26	2.0	6.4	3.5
26	.22	.10	12	8.6	5.8	2.1	4.0	32	.14	1.6	4.4	3.5
27	.16	.18	13	7.8	5.8	1.9	4.1	30	7.3	.83	3.7	3.7
28	.10	.32	12	7.3	5.8	6.8	3.6	32	3.2	.28	6.7	4.1
29	.07	.24	12	7.1	---	4.5	4.8	34	1.4	.10	11	4.3
30	.04	.18	49	6.8	---	2.7	5.8	43	.74	.01	13	3.9
31	.03	---	43	6.8	---	2.0	---	78	---	.00	12	---
TOTAL	130.81	1.22	303.87	186.5	185.7	268.0	71.2	666.6	504.21	101.12	289.40	188.59
MEAN	4.22	.041	9.80	6.02	6.63	8.65	2.37	21.5	16.8	3.26	9.34	6.29
MAX	18	.32	75	14	7.3	49	5.8	78	126	15	61	49
MIN	.03	.00	.00	4.1	5.8	1.9	1.2	4.1	.14	.00	.00	.02
AC-FT	259	2.4	603	370	368	532	141	1320	1000	201	574	374
CAL YR 1982	TOTAL	46713.90	MEAN	128	MAX	1400	MIN	.00	AC-FT	92660		
WTR YR 1983	TOTAL	2897.22	MEAN	7.94	MAX	126	MIN	.00	AC-FT	5750		

## BRAZOS RIVER BASIN

313

## 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 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.--Records good except those for period of no gage-height record, which are poor. Some upstream regulation by Proctor Lake (08099400) and other smaller reservoirs. Flow at times slightly affected by discharge from 18 flood-water-retarding structures, having 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. Numerous diversions above station for irrigation, municipal supply, and oilfield operation. The city of Hamilton, located about 70 mi upstream from the station, diverted flow from Leon River for municipal use and returned sewage effluent. The city of Gatesville discharged sewage effluent into Leon River downstream from the station. The city of Gatesville obtains all their municipal water from ground-water wells. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--33 years, 232 ft<sup>3</sup>/s (168,100 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, all 1971, and all 1978-79.

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, 369 ft<sup>3</sup>/s Mar. 4 at 1300 hours (gage height, 4.57 ft); minimum daily, 0.07 ft<sup>3</sup>/s Aug 1, 2, 29, 30, and Sept. 15-18, 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.69	.96	1.2	3.6	13	12	15	15	11	.28	.07	.09
2	.66	1.7	1.3	3.7	11	12	14	15	9.4	.28	.07	.10
3	.55	1.3	1.3	36	10	12	14	17	29	.28	.12	.14
4	.48	.75	1.5	35	9.6	143	14	19	55	.24	.30	.17
5	.48	.76	1.6	25	10	56	13	21	29	.26	.24	.20
6	.34	.76	1.7	18	10	19	12	35	16	.26	.19	.14
7	.33	.63	1.9	13	9.7	14	12	28	10	.21	.16	.11
8	.54	1.1	2.0	11	9.3	34	12	21	21	.21	.24	.11
9	.67	1.4	2.0	9.6	18	42	12	17	22	.21	.21	.17
10	.66	1.6	2.4	8.6	14	36	12	15	15	.21	.33	.21
11	.53	1.8	2.8	8.1	12	28	12	14	7.0	.21	.35	.21
12	.67	1.8	2.4	7.5	11	23	11	16	4.2	.21	.26	.19
13	.74	1.9	2.0	7.5	10	18	11	27	3.1	.18	.21	.14
14	.68	1.9	2.3	7.5	10	17	11	42	2.4	.26	.19	.11
15	.55	1.9	1.4	7.5	10	15	10	29	2.0	.28	.14	.07
16	.55	1.9	.82	6.8	10	15	9.0	29	1.5	.28	.14	.07
17	.55	2.0	.82	7.1	11	14	7.9	35	1.3	.28	.14	.07
18	.55	2.3	.82	8.5	11	12	7.2	27	.96	.26	.14	.07
19	.53	2.2	.87	10	11	12	6.2	23	.72	.21	.21	.10
20	.45	2.0	1.4	9.8	47	19	6.0	22	.52	.21	.21	.14
21	.41	1.8	26	13	21	28	5.8	29	.39	.21	.21	.14
22	.52	1.9	18	13	14	26	5.7	28	.34	.21	.19	.14
23	.60	1.8	11	10	13	25	5.5	25	.36	.21	.14	.12
24	.62	1.7	7.3	10	10	22	6.7	24	.37	.21	.14	.08
25	.62	1.9	5.6	10	12	21	8.4	33	.41	.23	.17	.07
26	.62	3.3	4.9	9.7	12	20	9.9	33	.36	.21	.14	.11
27	.65	2.3	5.2	9.7	12	18	12	33	.33	.19	.14	.14
28	.73	1.4	4.5	9.7	9.8	17	15	33	.32	.18	.12	.14
29	.76	1.2	3.9	9.7	---	17	15	37	.28	.18	.07	.14
30	.82	1.2	3.5	9.7	---	16	15	15	.28	.14	.07	.14
31	.92	---	3.4	12	---	15	---	13	---	.12	.11	---
TOTAL	18.47	49.16	125.83	360.3	361.4	778	320.3	770	244.54	6.91	5.42	3.83
MEAN	.60	1.64	4.06	11.6	12.9	25.1	10.7	24.8	8.15	.22	.17	.13
MAX	.92	3.3	26	36	47	143	15	42	55	.28	.35	.21
MIN	.33	.63	.82	3.6	9.3	12	5.5	13	.28	.12	.07	.07
AC-FT	37	98	250	715	717	1540	635	1530	485	14	11	7.6

CAL YR 1982 TOTAL 53336.31 MEAN 146 MAX 1650 MIN .29 AC-FT 105800  
WTR YR 1983 TOTAL 3044.16 MEAN 8.34 MAX 143 MIN .07 AC-FT 6040

NOTE.--No gage-height record Mar. 22 to June 1.





## 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>.

## WATER-DISCHARGE RECORDS

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 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 oilfield 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 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 daily contents, 462,200 acre-ft May 25 at 0400 hours (elevation, 595.60 ft); minimum daily, 421,300 acre-ft Jan. 17 at 1300 hours (elevation, 592.31 ft).

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

592.0	417,600	595.0	454,500
593.0	429,700	596.0	467,300
594.0	442,000		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	431900	424600	424100	423100	422400	435300	448700	442000	455000	444700	435700	431000
2	431600	426900	424100	422800	421900	435300	448000	442200	454200	444300	434900	430800
3	431400	426600	424200	422400	421800	435300	447300	442000	453300	443700	435300	430200
4	431300	425900	424000	422400	422200	446600	447300	441900	452900	443400	435100	429800
5	431000	425800	423900	422400	422700	448900	447100	441500	451800	443600	434900	429400
6	430900	425700	423700	422300	422900	450000	446500	441200	452900	443500	434700	429100
7	430800	425600	423600	422700	422900	450400	445600	441200	452500	442500	434500	428600
8	430700	425200	423600	422500	422900	450500	445100	440900	451900	442200	435900	428300
9	430500	425100	423400	422400	425400	450100	444800	440700	451600	442400	435900	428100
10	430400	425000	423900	422300	426900	449700	444500	443500	451200	442000	435900	427700
11	430000	424800	424100	422300	427400	449000	444200	448200	451000	441700	436300	427500
12	429800	424700	423700	422200	427400	448700	444100	448700	450600	441500	436000	427300
13	429700	424500	423400	421900	427400	448400	444000	448900	450500	441200	435800	427400
14	429400	424500	423600	421900	427600	447900	443400	449900	450400	441000	435900	427100
15	429100	423400	423300	421700	427600	448700	443000	449500	450000	440700	435300	426800
16	428800	423300	422800	421500	427600	449200	442700	449500	449500	440700	434900	426400
17	428600	423000	422700	421500	427600	448700	442700	449600	449200	440500	434700	426000
18	428200	423000	422900	421700	427500	447900	442700	449600	449000	440200	435200	426000
19	427900	423000	422500	421900	427400	448500	442900	450100	448500	440100	435200	426300
20	427900	422900	422400	422100	432700	447900	442600	454400	447900	440000	434900	426200
21	427500	422900	422300	422300	434100	447000	442600	459800	447600	439800	434600	425400
22	427300	422800	422300	422400	434300	446800	442900	460900	447500	439400	434300	425000
23	426600	422500	422300	422300	434600	447000	442600	461400	447100	439000	434100	424700
24	426000	422500	422500	422300	435100	446800	442200	461800	447000	438600	433700	424200
25	425800	422500	422800	422200	435100	447000	442000	461400	446700	438100	433500	424000
26	425400	423600	422900	422200	434900	449400	441900	460000	446300	437900	432900	423700
27	425100	424400	423000	422200	435100	450000	441700	459000	446200	437400	432700	423400
28	425300	424200	422700	421900	435200	449900	441900	458000	446000	437000	432200	423100
29	425200	424100	422500	421800	---	449600	442000	456800	445300	436500	432000	422900
30	424800	424000	422500	421900	---	449400	442000	457000	445000	436200	431600	422500
31	424600	---	422700	422100	---	449000	---	456400	---	435800	431300	---
MAX	431900	426900	424200	423100	435200	450500	448700	461800	455000	444700	436300	431000
MIN	424600	422500	422300	421500	421800	435300	441700	440700	445000	435800	431300	422500
(†)	592.58	592.53	592.42	592.37	593.45	594.56	594.00	595.15	594.24	593.50	593.13	592.41
(‡)	-7500	-600	-1300	-600	+13800	+13800	-7000	-14400	-11400	-9200	-4500	-8800
CAL YR 1982	MAX	461600	MIN	422300	‡	-24900						
WTR YR 1983	MAX	461800	MIN	421500	‡	-9600						

† Elevation, in feet, at end of month.  
‡ Change in contents, in acre-feet.



## BRAZOS RIVER BASIN

08102000 BELTON LAKE NEAR BELTON, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1961 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
APR 20...	1605	382	15.5	140	23	44	8.1	20
DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LILITY 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)
APR 20...	.8	3.9	120	22	30	.30	4.3	205

BRAZOS RIVER BASIN

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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.

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 National Geodetic Vertical Datum of 1929. Prior to May 21, 1931, nonrecording gage.

REMARKS.--Records good. The city of Temple diverted water from the pool at gage for municipal use and returned sewage effluent to Little Elm Creek downstream from station. The Brazos River Authority returned sewage effluent to the Leon River downstream from station from their Temple-Belton plant. Flow regulated by Belton Lake (station 08102000) since Mar. 8, 1954. Gage-height telemeter at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--30 years (water years 1924-53) unregulated, 659 ft<sup>3</sup>/s (477,400 acre-ft/yr); 30 years (water years 1954-83) regulated, 500 ft<sup>3</sup>/s (362,200 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, 671 ft<sup>3</sup>/s May 30 at 2300 hours (gage height, 4.75 ft); no flow Apr. 29 to May 2, 9, and July 3-5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.9	6.8	10	18	9.5	1.6	358	.00	657	3.5	4.1	2.7
2	4.4	7.3	11	19	9.3	1.6	358	.00	654	.76	3.7	3.6
3	4.2	9.1	8.8	18	9.2	1.3	359	12	501	.00	4.9	1.6
4	3.4	6.7	9.3	17	9.7	3.6	359	36	272	.00	22	1.2
5	2.4	6.9	10	17	14	4.7	355	9.6	274	.00	33	1.1
6	1.4	7.6	11	17	11	3.9	350	3.0	282	.24	37	.82
7	3.1	7.7	14	17	10	3.2	354	2.2	276	.36	39	.90
8	5.4	8.0	15	17	9.7	156	268	.25	278	1.6	54	1.1
9	8.8	8.0	14	19	14	321	199	.00	213	5.6	43	1.9
10	9.1	7.1	15	18	12	341	198	.50	153	6.0	36	2.7
11	9.8	7.4	16	16	12	339	198	9.4	153	5.2	36	2.6
12	11	7.7	14	18	12	341	197	7.7	154	5.8	28	2.2
13	10	7.5	14	18	13	344	199	7.4	152	12	22	9.9
14	9.9	8.5	13	18	13	343	198	7.3	152	26	19	40
15	8.7	9.3	13	16	13	345	128	8.8	154	30	13	34
16	8.9	9.2	14	18	9.6	345	38	7.7	153	22	10	28
17	13	9.3	16	11	4.2	344	36	7.7	154	21	7.5	24
18	12	9.7	14	8.8	2.9	352	36	8.0	155	16	9.2	30
19	6.7	10	14	10	2.4	356	35	6.7	153	16	25	26
20	5.0	11	15	9.6	3.0	351	38	14	111	15	21	14
21	5.4	9.4	14	10	2.9	352	41	21	73	12	22	15
22	5.3	8.5	14	9.9	2.6	351	39	12	70	9.7	18	17
23	5.7	6.9	15	9.2	2.6	351	36	10	64	7.5	15	8.2
24	5.6	7.0	15	9.5	2.5	350	36	8.5	64	7.9	11	6.6
25	4.9	7.3	15	9.3	2.6	353	31	236	63	6.0	10	6.6
26	3.9	11	18	12	2.6	346	19	654	60	4.2	7.2	5.3
27	4.5	9.8	20	9.8	2.5	357	2.4	637	58	3.5	1.8	4.4
28	5.3	8.9	16	9.1	2.3	357	.06	639	57	3.3	1.7	4.4
29	6.6	9.0	13	9.8	---	357	.00	637	57	2.9	1.5	4.4
30	6.0	9.4	13	9.6	---	360	.00	638	37	2.9	1.5	4.4
31	6.5	---	17	9.7	---	357	---	657	---	3.0	1.6	---
TOTAL	200.8	252.0	431.1	428.3	214.1	8188.9	4465.46	4297.75	5654	249.96	558.7	304.62
MEAN	6.48	8.40	13.9	13.8	7.65	264	149	139	188	8.06	18.0	10.2
MAX	13	11	20	19	14	360	359	657	657	30	54	40
MIN	1.4	6.7	8.8	8.8	2.3	1.3	.00	.00	37	.00	1.5	.82
AC-FT	398	500	855	850	425	16240	8860	8520	11210	496	1110	604
CAL YR 1982	TOTAL	78041.62	MEAN	214	MAX	1990	MIN	.72	AC-FT	154800		
WTR YR 1983	TOTAL	25245.69	MEAN	69.2	MAX	657	MIN	.00	AC-FT	50070		

## BRAZOS RIVER BASIN

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>.

PERIOD OF RECORD.--October 1962 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. Datum of gage is 828.38 ft National Geodetic Vertical Datum of 1929. Prior to Aug. 4, 1967, at site 800 ft downstream.

REMARKS.--Water-discharge records good. At times, flow is affected by discharge from the flood-detention pools of 13 floodwaterretarding 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 the station for irrigation and municipal supply. The city of Lampasas diverts water upstream from this station and returns sewage effluent to Sulfur Creek, which is also upstream from this station. Gage-height telemeter at station.

AVERAGE DISCHARGE.--21 years, 122 ft<sup>3</sup>/s (88,390 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.--Maximum discharge, 1,900 ft<sup>3</sup>/s May 20 at 2000 hours (gage height, 6.66 ft), no peak above base of 4,000 ft<sup>3</sup>/s; minimum daily, 6.2 ft<sup>3</sup>/s July 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	14	13	18	13	12	32	22	21	11	9.8	14
2	9.4	19	13	18	13	12	30	22	18	9.5	11	14
3	9.6	35	13	16	13	13	29	25	17	10	9.6	14
4	9.6	19	13	16	13	100	29	23	15	9.5	10	13
5	9.6	16	13	16	18	37	29	18	18	8.9	10	13
6	9.6	16	12	15	18	22	28	16	33	6.2	13	13
7	14	16	12	14	15	19	27	15	37	6.4	13	13
8	14	15	12	13	14	18	27	15	39	8.4	15	13
9	13	14	12	12	91	17	27	15	28	8.6	22	13
10	13	15	15	12	27	17	27	19	21	8.9	24	13
11	12	16	19	12	17	16	27	408	19	9.6	16	13
12	13	16	21	12	15	15	26	124	17	9.5	15	13
13	15	14	16	12	14	14	24	48	16	10	16	12
14	14	14	15	12	14	14	24	34	14	11	16	12
15	14	14	14	12	13	15	23	31	12	13	17	12
16	13	13	14	12	13	17	21	30	13	11	16	12
17	13	14	14	12	12	19	21	25	13	16	11	11
18	12	14	14	13	11	17	21	24	12	12	11	11
19	12	15	14	13	10	17	21	21	11	11	12	11
20	12	16	14	13	16	20	19	219	11	11	14	11
21	12	14	14	14	17	19	19	182	11	9.7	16	11
22	12	14	22	17	14	16	20	46	9.6	10	14	10
23	13	14	17	16	13	30	21	30	18	9.4	13	10
24	13	14	12	15	13	34	21	26	11	8.6	13	10
25	13	14	14	14	13	25	21	19	11	11	13	10
26	14	27	16	14	12	160	21	19	10	9.6	15	9.8
27	15	38	21	13	12	55	24	19	11	7.8	16	9.6
28	16	20	21	12	12	38	24	17	13	8.5	16	9.6
29	16	16	18	12	---	34	22	15	12	8.6	15	9.6
30	15	14	17	12	---	32	22	14	11	9.1	15	9.6
31	14	---	17	13	---	32	---	21	---	9.3	14	---
TOTAL	393.9	510	472	425	476	906	727	1562	502.6	303.1	441.4	350.2
MEAN	12.7	17.0	15.2	13.7	17.0	29.2	24.2	50.4	16.8	9.78	14.2	11.7
MAX	16	38	22	18	91	160	32	408	39	16	24	14
MIN	9.1	13	12	12	10	12	19	14	9.6	6.2	9.6	9.6
AC-FT	781	1010	936	843	944	1800	1440	3100	997	601	876	695
CAL YR 1982	TOTAL	16487.2	MEAN	45.2	MAX	1400	MIN	6.2	AC-FT	32700		
WTR YR 1983	TOTAL	7069.2	MEAN	19.4	MAX	408	MIN	6.2	AC-FT	14020		

## BRAZOS RIVER BASIN

319

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, on 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 and concrete control. Datum of gage is 955.8 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Recording rain gage at station.

AVERAGE DISCHARGE.--20 years, 11.2 ft<sup>3</sup>/s (4.57 in/yr), 8,110 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 each year for 1963-74 and 1976-83.

Maximum stage since at least 1904, 22.70 ft June 19, 1976.

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

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 4	1000	*2,480	a8.0
June 25	2015	1,160	5.53

a From floodmark.

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT.	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP				
1	.00	.00	.00	.61	.73	15	20	4.3	5.5	4.7	.34	.00				
2	.00	.00	.00	.49	.58	14	17	4.1	4.9	4.1	.29	.00				
3	.00	.00	.00	.25	.58	14	17	4.0	4.1	3.4	.26	.00				
4	.00	.00	.00	.17	.58	379	17	3.4	3.9	3.0	.29	.00				
5	.00	.00	.00	.06	51	61	16	3.0	3.5	2.9	.26	.00				
6	.00	.00	.00	.00	12	42	15	2.7	16	2.7	.17	.00				
7	.00	.00	.00	.00	9.2	37	15	2.3	9.4	2.4	.32	.00				
8	.00	.00	.00	.00	8.8	34	15	2.3	5.7	2.3	.61	.00				
9	.00	.00	.00	.00	76	33	14	2.2	4.5	2.0	1.5	.00				
10	.00	.00	.00	.00	27	29	13	5.9	4.1	2.0	2.0	.00				
11	.00	.00	.00	.00	21	27	12	26	3.7	1.7	.67	.00				
12	.00	.00	.00	.00	18	27	12	7.1	3.3	1.5	.46	.00				
13	.00	.00	.00	.00	17	26	11	4.7	3.0	1.2	.35	.00				
14	.00	.00	.00	.00	17	25	9.6	3.9	2.8	2.2	.28	.00				
15	.00	.00	.00	.00	19	25	9.3	4.4	2.8	2.4	.23	.00				
16	.00	.00	.00	.00	18	32	9.3	5.1	2.6	2.4	.18	.00				
17	.00	.00	.00	.00	16	27	8.9	4.0	2.3	3.6	.08	.00				
18	.00	.00	.00	.00	15	24	8.5	3.6	2.0	2.6	.00	.00				
19	.00	.00	.00	.17	15	24	8.0	3.2	1.9	2.0	.00	.00				
20	.00	.00	.00	.31	34	34	7.5	4.0	1.7	1.6	.00	.00				
21	.00	.00	.00	.48	22	24	7.4	55	1.8	1.4	.00	.00				
22	.00	.00	.00	.64	19	23	7.4	11	2.6	1.2	.00	.00				
23	.00	.00	.00	.49	18	23	6.9	8.0	1.5	1.2	.00	.00				
24	.00	.00	.00	.46	18	22	5.8	7.8	1.4	.89	.00	.00				
25	.00	.00	.00	.46	17	21	5.3	6.5	89	.83	.00	.00				
26	.00	.00	.00	.48	16	61	5.1	5.7	28	.65	.00	.00				
27	.00	.76	.06	.36	16	27	5.0	5.0	6.0	.65	.00	.00				
28	.00	.14	.22	.41	15	24	4.6	4.5	28	.56	.00	.00				
29	.00	.00	.01	.52	---	24	4.3	4.2	8.6	.46	.00	.00				
30	.00	.00	.00	.52	---	24	4.3	4.0	6.6	.44	.00	.00				
31	.00	---	.08	.67	---	22	---	6.7	---	.38	.00	---				
TOTAL	.00	.90	.37	7.55	517.47	1224	311.2	218.6	261.2	59.36	8.29	.00				
MEAN	.0000	.030	.012	.24	18.5	39.5	10.4	7.05	8.71	1.91	.27	.0000				
MAX	.00	.76	.22	.67	.76	379	20	55	89	4.7	2.0	.00				
MIN	.00	.00	.00	.00	.58	14	4.3	2.2	1.4	.38	.00	.00				
CFSM	.0000	.001	.000	.007	.56	1.19	.31	.21	.26	.06	.008	.0000				
IN.	.00	.00	.00	.01	.58	1.37	.35	.24	.29	.07	.01	.00				
AC-FT	.00	1.8	.7	15	1030	2430	617	434	518	118	16	.00				
(††)	1.16	4.46	2.02	1.57	4.04	4.20	.17	4.78	4.11	.98	1.83	.52				
CAL YR 1982	TOTAL	1683.06	MEAN	4.61	MAX	351	MIN	.00	CFSM	.14	IN	1.88	AC-FT	3340	††	25.72
WTR YR 1983	TOTAL	2608.94	MEAN	7.15	MAX	379	MIN	.00	CFSM	.22	IN	2.91	AC-FT	5170	††	29.84

†† Rainfall, in inches.

## BRAZOS RIVER BASIN

08103900 SOUTH FORK ROCKY CREEK NEAR BRIGGS, TX--Continued

## 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 September 1982. Sediment records: February 1968 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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 (MG/L AS CACO3)
FEB 08...	1245	9.3	418	8.0	9.0	.50	11.4	102	.8	61	460	230
APR 04...	1250	18	476	8.1	19.5	--	9.8	111	.7	48	44	250
JUN 06...	1115	23	408	7.7	22.5	2.5	7.2	86	--	1200	2900	210
DATE		HARD- NESS, NONCAR- BONATE (MG/L 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 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)
FEB 08...	27	53	22	6.7	.2	1.3	198	24	10	.40	6.6	
APR 04...	19	60	24	7.3	.2	1.1	230	22	11	.50	6.2	
JUN 06...	13	50	21	5.8	.2	1.3	200	16	7.8	.40	8.8	
DATE		SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
FEB 08...	237	245	.20	.070	.40	.010	.010	<.010	2	.05	53	
APR 04...	250	270	<.10	.100	.40	.030	.030	.030	9	.44	46	
JUN 06...	225	233	.12	<.060	.40	.010	.010	.040	13	.81	87	
DATE	TIME	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)		
FEB 08...	1245	1	35	<1	<1	<1	<3	4	4	1		
JUN 06...	1115	<1	40	<1	<1	<1	<3	1	20	1		
DATE	TIME	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)	
FEB 08...	25	2	<.1	10	<1	1	<1	1800	<6.0	<3		
JUN 06...	11	3	<.1	<10	9	<1	<1	1800	<6.0	<3		
DATE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, BETA, 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 AS U)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)			
JUN 06...	1115	<9.2	<.4	4.8	<.4	4.0	<.4	.12	1.3			



## 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>.

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 Corps of Engineers in 1958. There are many small diversions upstream for irrigation, municipal supply, and oilfield operation. 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 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, 183,300 acre-ft Nov. 5, 1978 (elevation, 613.13 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 249,300 acre-ft May 12 (elevation, 624.08 ft); minimum daily, 225,400 acre-ft Oct. 27, Nov. 1 (elevation, 620.38 ft).

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

620.0	223,100	624.0	248,800
622.0	235,700	625.0	255,500

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	227700	225400	226900	227100	228300	236700	237700	236700	241100	237400	234100	231900
2	227600	226800	227100	227100	228100	236700	237100	236900	240200	237200	233900	231500
3	227500	226600	227000	227000	228100	236700	236700	236900	239300	237100	234200	231400
4	227400	226600	226900	227100	228100	242800	236400	236900	238900	236900	234200	231400
5	227200	226500	226900	227100	229300	244600	236000	236900	238900	236900	234100	230800
6	227400	226400	226800	227100	229600	245100	235700	236900	239400	236700	234000	230500
7	227400	226400	226800	227100	229800	244900	235600	236900	239200	236500	233800	230500
8	227500	226200	226700	227200	230000	244400	236000	236900	238900	236300	234400	230300
9	227300	226100	226700	227200	231500	243000	236300	236900	238600	236200	234500	230300
10	227100	226200	227100	227200	232300	241500	236600	240200	238500	236000	234700	230200
11	227100	226200	227000	227200	232900	240700	236700	248400	238400	235800	234700	230200
12	227200	226100	226900	227200	233000	240400	237100	248700	238400	235700	234700	230000
13	227100	226100	226800	227200	233500	239600	237400	246700	238300	235600	234700	230700
14	226900	225800	226900	227200	233800	239100	237500	244600	238000	235600	234500	230600
15	226900	225700	226700	227200	234100	239300	237500	242600	237800	235500	234500	230500
16	226800	225700	226700	227100	234400	239100	237200	240600	237600	235600	234400	230400
17	226600	225700	226700	227100	234700	238300	237000	238100	237500	235700	234200	230400
18	226500	225700	226700	227400	234900	237800	236800	237100	237500	235600	234500	230200
19	226500	225600	226700	227400	234900	237600	236500	237200	237400	235500	234400	230200
20	226200	225600	226700	227600	236300	237300	236300	237900	237400	235400	234200	230000
21	226100	225700	226700	227800	236900	237000	236200	243600	237400	235300	234000	229600
22	225800	225800	226700	227800	237100	236700	236200	245700	237400	235200	233800	229300
23	225900	225800	226700	227800	237100	236500	235900	246400	237300	235100	233600	229200
24	225700	225700	226700	227900	237100	236300	235600	246700	237300	235000	233500	229100
25	225600	225800	226700	228000	237000	236100	235800	246900	237300	234900	233300	228900
26	225500	226500	226800	227900	236900	237000	235800	246000	237300	234800	233000	228900
27	225400	226700	227000	227900	236900	237400	236000	245000	237400	234700	232800	228800
28	225600	226700	227000	228000	236800	237600	236200	244200	237600	234500	232600	228700
29	225600	226700	227000	227900	---	237800	236500	243200	237500	234400	232400	228600
30	225500	226800	227000	228000	---	238000	236600	242800	237500	234400	232200	228500
31	225600	---	227000	228300	---	238000	---	242100	---	234200	232100	---
MAX	227700	226800	227100	228300	237100	245100	237700	248700	241100	237400	234700	231900
MIN	225400	225400	226700	227000	228100	236100	235600	236700	237300	234200	232100	228500
(†)	620.40	620.60	620.63	620.84	622.17	622.36	622.14	622.99	622.77	621.43	620.87	620.87
(‡)	-2200	+1200	+200	+1300	+8500	+1200	-1400	+5500	-4600	-3300	-2100	-3600

CAL YR 1982 MAX 245900 MIN 225400 † -11900  
WTR YR 1983 MAX 248700 MIN 225400 ‡ +700

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

## 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 three 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>.

PERIOD OF RECORD.--February 1963 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. Datum of gage is 476.58 ft, State Department of Highways and Public Transportation datum.

REMARKS.--Records good. Many small diversions above station for irrigation and municipal supply. Since Sept. 2, 1966, flow largely regulated by Stillhouse Hollow Lake (station 08104050). Gage-height telemeter located at station.

AVERAGE DISCHARGE.--3 years (water year 1964-66) unregulated, 368 ft<sup>3</sup>/s (266,600 acre-ft/yr); 17 years (water years 1967-83) regulated, 223 ft<sup>3</sup>/s (161,600 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, 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, 1,520 ft<sup>3</sup>/s May 14 at 1200 hours (gage height, 10.57 ft); minimum daily, 5.9 ft<sup>3</sup>/s for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.4	6.4	7.6	7.5	6.8	199	395	10	816	65	11	55
2	6.4	13	7.9	7.6	7.0	199	396	10	816	51	11	47
3	6.4	9.8	8.0	7.6	7.0	199	396	10	600	51	12	47
4	5.9	7.4	7.6	7.6	7.0	211	396	10	428	53	15	50
5	5.9	6.8	7.6	7.6	32	208	396	10	428	53	11	50
6	7.7	6.4	7.6	7.6	18	208	293	10	435	53	11	36
7	6.9	6.4	7.6	7.6	18	502	166	10	438	52	11	12
8	7.1	6.4	7.6	7.6	14	744	16	10	442	51	16	12
9	6.8	6.4	7.6	7.6	15	918	15	11	331	53	11	12
10	6.4	6.4	7.6	7.0	11	1070	15	14	215	53	14	12
11	5.9	6.4	7.6	7.0	10	825	13	18	219	53	11	12
12	7.0	6.4	7.6	7.0	8.8	562	12	533	221	53	13	12
13	6.6	6.4	7.6	7.0	8.8	562	11	1410	222	53	13	13
14	6.4	6.4	7.6	7.0	8.8	562	12	1470	225	53	14	13
15	6.4	6.4	7.6	7.0	9.2	563	90	1510	226	53	14	11
16	6.4	6.4	7.6	7.0	9.5	559	201	1520	226	56	14	10
17	6.4	6.4	7.6	7.0	10	554	203	1510	197	56	14	10
18	6.4	6.4	7.6	9.1	11	556	203	847	107	56	15	13
19	6.4	6.7	7.6	8.0	11	461	203	197	106	55	16	12
20	5.9	7.0	7.0	7.0	11	387	204	201	77	52	32	11
21	5.9	7.0	7.0	6.4	11	382	203	223	48	52	52	9.8
22	5.9	7.0	7.0	6.4	67	384	203	203	50	35	52	9.5
23	6.4	7.0	7.0	6.4	200	386	204	203	52	12	52	9.5
24	6.4	7.0	7.0	6.4	201	386	89	203	57	11	53	9.1
25	5.9	7.0	7.0	6.4	200	386	11	365	56	11	50	8.2
26	5.9	12	7.0	6.2	199	328	11	821	54	11	54	8.2
27	5.9	10	9.5	5.9	199	195	10	820	55	11	55	8.2
28	5.9	8.0	8.4	5.9	199	195	10	822	56	11	55	8.2
29	5.9	7.6	7.6	5.9	---	195	10	821	55	11	55	8.2
30	5.9	7.6	7.6	5.9	---	195	10	817	48	11	55	8.2
31	6.4	---	7.0	6.9	---	291	---	818	---	11	55	---
TOTAL	196.1	220.5	234.2	217.1	1509.9	13372	4397	15437	7306	1262	867	537.1
MEAN	6.33	7.35	7.55	7.00	53.9	431	147	498	244	40.7	28.0	17.9
MAX	7.7	13	9.5	9.1	201	1070	396	1520	816	65	55	55
MIN	5.9	6.4	7.0	5.9	6.8	195	10	10	48	11	11	8.2
AC-FT	389	437	465	431	2990	26520	8720	30620	14490	2500	1720	1070
CAL YR 1982	TOTAL	34327.4	MEAN	94.0	MAX	1060	MIN	5.9	AC-FT	68090		
WTR YR 1983	TOTAL	45555.9	MEAN	125	MAX	1520	MIN	5.9	AC-FT	90360		

## BRAZOS RIVER BASIN

323

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 National Geodetic Vertical Datum of 1929. Oct. 5, 1923, to May 27, 1929, nonrecording gage on railroad bridge 0.5 mi upstream at same datum.

REMARKS.--Water-discharge records good. Many small diversions 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. Gage-height telemeter at station. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08102600.

AVERAGE DISCHARGE.--5 years (water years 1924-28) unregulated, 709 ft<sup>3</sup>/s (513,700 acre-ft/yr); 21 years (water years 1963-83) regulated, 851 ft<sup>3</sup>/s (616,500 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, 4,670 ft<sup>3</sup>/s May 21 at 1500 hours (gage height, 12.66 ft); maximum gage height, 13.48 ft May 21 at 1700 hours; minimum daily discharge, 46 ft<sup>3</sup>/s Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	51	77	136	113	288	819	98	1740	159	76	108
2	49	69	76	142	81	285	807	97	1640	136	78	111
3	48	405	92	92	76	285	803	94	1460	132	88	103
4	47	97	82	85	76	1460	806	100	857	158	111	106
5	46	69	74	82	1280	902	806	104	893	128	124	105
6	64	64	73	81	385	462	763	91	1290	158	99	104
7	60	62	71	80	197	521	625	88	1120	131	91	86
8	58	62	69	80	168	929	464	86	898	126	292	76
9	66	62	70	79	995	1350	323	85	787	122	350	97
10	61	60	77	78	681	1630	303	92	512	120	124	101
11	56	62	117	77	283	1500	295	2140	498	124	142	85
12	60	68	147	76	223	1020	291	512	493	118	122	81
13	96	59	84	79	192	1020	290	1560	476	126	92	77
14	66	58	79	102	180	1010	281	1540	464	138	91	164
15	58	58	76	86	176	1010	272	1540	460	155	88	88
16	53	60	73	76	170	1210	302	1550	453	167	85	70
17	50	61	74	81	158	1100	307	1510	454	198	82	64
18	51	61	73	84	146	1040	308	1240	376	147	83	64
19	52	63	72	141	140	977	307	376	353	137	175	84
20	50	64	69	109	406	923	306	789	334	144	105	75
21	48	61	70	105	388	869	308	3040	223	133	112	66
22	51	62	71	159	214	835	306	1150	210	124	112	60
23	50	62	71	118	307	844	308	653	208	104	113	62
24	51	60	72	95	317	847	277	557	210	88	112	60
25	51	59	70	90	304	832	135	524	215	84	111	59
26	52	126	69	76	296	1380	122	1680	211	81	112	58
27	50	436	123	77	292	841	108	1680	205	79	118	54
28	51	144	148	76	289	698	100	1640	201	78	114	54
29	52	92	85	77	---	672	97	1660	198	81	113	53
30	51	82	77	77	---	660	99	1640	186	79	112	53
31	51	---	75	81	---	673	---	2160	---	76	109	---
TOTAL	1699	2799	2556	2877	8533	28073	11338	30076	17625	3831	3736	2428
MEAN	54.8	93.3	82.5	92.8	305	906	378	970	588	124	121	80.9
MAX	96	436	148	159	1280	1630	819	3040	1740	198	350	164
MIN	46	51	69	76	76	285	97	85	186	76	76	53
AC-FT	3370	5550	5070	5710	16930	55680	22490	59660	34960	7600	7410	4820
CAL YR 1982	TOTAL	143280	MEAN	393	MAX	3480	MIN	46	AC-FT	284200		
WTR YR 1983	TOTAL	115571	MEAN	317	MAX	3040	MIN	46	AC-FT	229200		

## BRAZOS RIVER BASIN

08104645 NORTH FORK SAN GABRIEL RIVER NEAR LIBERTY HILL, TX

LOCATION.--Lat 30°42'11", long 95°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 current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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 (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
DEC 06...	1005	424	8.0	11.5	15	.50	10.5	98	.7	210	30
FEB 08...	1100	420	8.2	8.0	5	4.3	10.6	92	.8	220	18
APR 04...	1025	490	8.1	17.5	<1	.50	9.4	102	.5	240	23
JUN 06...	1405	317	7.9	22.0	25	86	8.0	94	3.3	150	10
AUG 24...	1045	377	7.8	30.0	<1	2.9	7.4	100	.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 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)
DEC 06...	51	20	10	.3	1.9	180	28	12	.30	8.6	240
FEB 08...	64	14	7.8	.2	1.2	200	24	11	.30	7.4	256
APR 04...	69	17	10	.3	1.0	220	23	14	.40	6.5	273
JUN 06...	46	8.4	5.5	.2	1.9	140	12	6.7	.30	9.5	174
AUG 24...	42	17	9.3	.3	1.4	160	17	12	.40	12	207

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDE (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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
DEC 06...	1	2	--	<.020	<.10	<.060	--	1.80	.020	2.4
FEB 08...	11	<1	--	<.020	.40	.090	.21	.30	.010	2.4
APR 04...	2	2	--	<.020	.30	.080	.32	.40	.010	1.9
JUN 06...	129	24	.23	.070	.30	.440	.86	1.30	.050	8.4
AUG 24...	2	3	--	<.020	<.10	.060	.54	.60	.010	1.9

DATE	TIME	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)
DEC 06...	1005	1	41	<1	<10	<1	<3
JUN 06...	1405	1	32	<1	10	2	53
AUG 24...	1045	<1	40	2	<10	1	10

DATE	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)
DEC 06...	1	5	<.1	<1	<1	<3
JUN 06...	2	3	<.1	<1	<1	<3
AUG 24...	<1	4	<.1	<1	<1	4



## BRAZOS RIVER BASIN

325

## 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 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 and 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 contents. 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 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 daily contents, 42,400 acre-ft May 22 at 1600 hours (elevation, 794.89 ft); minimum daily, 35,260 acre-ft Oct. 31 (elevation, 789.58 ft).

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

786.0	31,000	794.0	41,150
790.0	35,790	798.0	47,100

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35700	35260	35540	35550	36530	37630	37420	37440	38430	37580	37750	37110
2	35690	35480	35580	35580	36550	37540	37290	37380	38180	37490	37740	37070
3	35680	35530	35550	35600	36560	37420	37240	37290	37900	37370	37710	37020
4	35650	35500	35540	35610	36630	40830	37240	37190	37620	37250	37690	36980
5	35640	35480	35530	35650	37020	40800	37190	37160	37380	37300	37670	36940
6	35650	35450	35510	35680	37210	40310	37170	37200	38270	37360	37660	36890
7	35660	35440	35500	35700	37340	39730	37170	37230	38490	37380	37640	36850
8	35680	35440	35490	35730	37480	39090	37190	37250	38490	37410	37830	36820
9	35720	35420	35490	35750	38590	38490	37190	37300	38430	37450	37850	36820
10	35700	35440	35510	35770	39040	38110	37210	37810	38350	37460	37890	36810
11	35680	35420	35500	35780	38970	37900	37200	41850	38230	37490	37900	36800
12	35690	35410	35490	35800	38680	37670	37210	41640	38130	37500	37900	36760
13	35660	35390	35480	35820	38340	37450	37170	40800	37980	37500	37890	36740
14	35660	35360	35490	35830	38150	37280	37150	40040	37860	37540	37870	36730
15	35610	35340	35490	35840	38220	37370	37270	39140	37780	37610	37860	36700
16	35590	35310	35460	35860	38180	37580	37410	38270	37790	37700	37830	36690
17	35580	35310	35460	35870	38110	37650	37500	37560	37790	37770	37650	36680
18	35550	35310	35460	35930	37980	37670	37620	37270	37780	37820	37490	36660
19	35530	35320	35460	35970	37870	37730	37710	37280	37740	37850	37540	36700
20	35490	35320	35460	36030	38070	37830	37820	37930	37700	37870	37520	36630
21	35480	35320	35460	36080	38100	37780	37670	42110	37660	37890	37490	36550
22	35440	35320	35460	36140	37910	37580	37340	42380	37600	37890	37460	36510
23	35410	35320	35460	36170	37650	37410	37160	42140	37520	37890	37420	36470
24	35400	35310	35460	36240	37340	37230	37190	41920	37450	37890	37400	36440
25	35370	35320	35450	36280	37340	37280	37290	41020	37400	37870	37370	36420
26	35340	35460	35480	36290	37530	37930	37370	39730	37610	37860	37330	36410
27	35320	35500	35500	36330	37710	38180	37480	38960	37600	37850	37300	36380
28	35300	35530	35510	36370	37740	38180	37580	38930	37690	37820	37270	36370
29	35290	35530	35490	36390	---	37980	37580	38820	37710	37810	37230	36340
30	35270	35530	35490	36440	---	37850	37540	38720	37660	37790	37170	36330
31	35260	---	35510	36500	---	37670	---	38640	---	37780	37130	---
MAX	35720	35530	35580	36500	39040	40830	37820	42380	38490	37890	37900	37110
MIN	35260	35260	35450	35550	36530	37230	37150	37160	37380	37250	37130	36330
(†)	789.58	789.79	789.78	790.55	791.50	791.45	791.35	792.17	791.44	791.53	791.04	790.42
(‡)	-480	+270	-20	+990	+1240	-70	-130	+1100	-980	-120	-650	-800

CAL YR 1982 MAX 42140 MIN 35260 † -1740  
WTR YR 1983 MAX 42380 MIN 35260 ‡ +590

† Elevation, in feet, at end of month.  
‡ Change in contents, in acre-feet.



## BRAZOS RIVER BASIN

08104650 LAKE GEORGETOWN NEAR GEORGETOWN, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1980 to current year.

304016097433101 LAKE GEORGETOWN SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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											
03...	1150	1.00	374	8.1	11.5	1.30	9.0	83	K2	K1	
03...	1152	10.0	374	8.1	11.0	--	8.8	81	--	--	
03...	1154	20.0	374	8.1	11.0	--	8.8	81	--	--	
03...	1156	30.0	374	8.0	11.0	--	8.8	81	--	--	
03...	1158	40.0	374	8.0	11.0	--	8.8	81	--	--	
03...	1200	50.0	374	8.0	11.0	--	8.7	80	--	--	
03...	1202	60.0	374	8.0	11.0	--	8.7	80	--	--	
03...	1204	70.0	374	8.0	11.0	--	8.7	80	--	--	
03...	1206	80.0	374	8.0	11.0	--	8.7	80	--	--	
03...	1208	90.0	374	8.0	11.0	--	8.6	79	--	--	
MAY											
03...	1020	1.00	386	8.0	20.5	2.70	8.3	94	K1	K5	
03...	1022	10.0	386	8.0	20.5	--	8.4	96	--	--	
03...	1024	20.0	386	8.0	20.5	--	8.3	94	--	--	
03...	1026	30.0	386	7.8	18.0	--	7.6	82	--	--	
03...	1028	40.0	400	7.7	16.0	--	5.6	58	--	--	
03...	1030	50.0	400	7.7	15.5	--	5.3	54	--	--	
03...	1032	60.0	400	7.6	15.0	--	4.2	43	--	--	
03...	1034	70.0	402	7.4	15.0	--	2.0	20	--	--	
03...	1036	80.0	406	7.3	14.0	--	.2	2	--	--	
03...	1038	91.0	421	7.2	13.0	--	.2	2	--	--	
JUL											
25...	1100	1.00	350	8.1	29.0	2.70	7.1	95	K1	K3	
25...	1102	10.0	350	8.1	28.5	--	7.4	98	--	--	
25...	1104	20.0	363	7.7	27.0	--	4.2	54	--	--	
25...	1106	30.0	356	7.3	24.0	--	.2	2	--	--	
25...	1108	40.0	334	7.4	20.0	--	.2	2	--	--	
25...	1110	50.0	385	7.4	18.5	--	.2	2	--	--	
25...	1112	60.0	410	7.5	17.5	--	.2	2	--	--	
25...	1114	70.0	420	7.6	16.5	--	.2	2	--	--	
25...	1116	80.0	427	7.6	16.0	--	.2	2	--	--	
25...	1118	93.0	433	7.8	15.5	--	.2	2	--	--	
DATE		HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN											
03...	180	13	50	14	8.5	.3	2.4	170	16	11	
03...	--	--	--	--	--	--	--	--	--	--	
03...	--	--	--	--	--	--	--	--	--	--	
03...	--	--	--	--	--	--	--	--	--	--	
03...	--	--	--	--	--	--	--	--	--	--	
03...	--	--	--	--	--	--	--	--	--	--	
03...	--	--	--	--	--	--	--	--	--	--	
03...	180	13	50	14	8.8	.3	2.5	170	16	10	
MAY											
03...	190	16	53	13	8.3	.3	2.0	170	18	12	
03...	--	--	--	--	--	--	--	--	--	--	
03...	--	--	--	--	--	--	--	--	--	--	
03...	--	--	--	--	--	--	--	--	--	--	
03...	--	--	--	--	--	--	--	--	--	--	
03...	--	--	--	--	--	--	--	--	--	--	
03...	--	--	--	--	--	--	--	--	--	--	
03...	--	--	--	--	--	--	--	--	--	--	
03...	210	9	59	15	8.6	.3	2.2	200	11	11	
JUL											
25...	170	11	47	13	8.3	.3	2.1	160	17	12	
25...	--	--	--	--	--	--	--	--	--	--	
25...	--	--	--	--	--	--	--	--	--	--	
25...	--	--	--	--	--	--	--	--	--	--	
25...	--	--	--	--	--	--	--	--	--	--	
25...	--	--	--	--	--	--	--	--	--	--	
25...	--	--	--	--	--	--	--	--	--	--	
25...	--	--	--	--	--	--	--	--	--	--	
25...	210	8	60	14	8.5	.3	2.5	200	9.3	13	

## BRAZOS RIVER BASIN

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## LAKE GEORGETOWN NEAR GEORGETOWN, TX--Continued

304016097433101 LAKE GEORGETOWN SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN									
03...	.20	6.8	211	.10	<.10	--	<.010	<3	1
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	.10	<.10	--	<.010	10	10
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	6.9	210	<.10	<.10	--	.030	4	11
MAY									
03...	.30	2.0	211	.10	.40	.50	.010	5	3
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	.20	.60	.80	.010	20	20
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	.20	.80	1.0	.010	50	100
03...	--	--	--	--	--	--	--	--	--
03...	--	11	241	<.10	1.70	--	.100	1500	1700
JUL									
25...	.20	4.0	200	<.10	.50	--	.020	5	4
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	<.10	.50	--	.020	20	30
25...	--	--	--	<.10	.70	--	.020	70	240
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	15	244	<.10	2.70	--	.040	1300	940

304006097452501 LAKE GEORGETOWN SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI KF AGAR (COLS. PER 100 ML)
JAN											
03...	1226	1.00	376	8.2	11.0	1.30	10.9	100	<1	K3	
03...	1228	10.0	376	8.1	11.0	--	10.6	97	--	--	--
03...	1230	20.0	376	8.1	10.5	--	9.4	85	--	--	--
03...	1232	30.0	376	8.1	10.0	--	9.3	83	--	--	--
03...	1234	40.0	376	8.2	10.0	--	9.3	83	--	--	--
03...	1236	50.0	376	8.1	10.0	--	9.3	83	--	--	--
03...	1238	61.0	376	8.1	10.0	--	9.1	81	--	--	--
MAY											
03...	1115	1.00	401	8.1	21.0	1.80	8.0	92	K4	K2	
03...	1117	10.0	403	8.0	21.0	--	8.1	93	--	--	--
03...	1119	20.0	403	8.0	21.0	--	8.0	92	--	--	--
03...	1121	30.0	415	7.6	18.0	--	4.9	53	--	--	--
03...	1123	40.0	416	7.5	17.0	--	2.9	31	--	--	--
03...	1125	50.0	416	7.5	15.5	--	1.4	14	--	--	--
03...	1127	60.0	416	7.6	15.5	--	1.0	10	--	--	--
JUL											
25...	1215	1.00	354	8.1	29.5	1.70	7.1	95	<1	<1	
25...	1217	10.0	357	8.0	28.5	--	7.3	96	--	--	--
25...	1219	20.0	370	7.6	27.0	--	3.0	39	--	--	--
25...	1221	30.0	358	7.4	22.5	--	.2	2	--	--	--
25...	1223	40.0	350	7.5	20.5	--	.2	2	--	--	--
25...	1225	50.0	395	7.6	18.5	--	.2	2	--	--	--
25...	1227	60.0	405	7.6	19.5	--	.1	1	--	--	--

## BRAZOS RIVER BASIN

## LAKE GEORGETOWN NEAR GEORGETOWN, TX--Continued

304006097452501 LAKE GEORGETOWN SITE BC--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JAN									
03...	180	13	50	14	8.5	.3	2.4	170	17
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	180	13	50	14	8.5	.3	2.5	170	17
MAY									
03...	200	15	55	14	8.5	.3	1.9	180	17
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	200	9	58	13	8.1	.3	2.0	190	18
JUL									
25...	170	14	48	13	8.5	.3	2.0	160	17
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	190	1	55	13	7.8	.3	2.2	190	10
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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN									
03...	10	--	--	<.10	<.10	--	<.010	3	2
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	<.10	.50	--	.020	20	10
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	10	6.7	211	<.10	<.10	--	.020	7	6
MAY									
03...	13	2.5	220	.10	.70	.80	.010	11	2
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	.10	.50	.60	.010	10	10
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	.20	1.30	1.5	.020	20	20
03...	--	--	--	--	--	--	--	--	--
03...	13	5.6	232	.20	1.20	1.4	.030	<3	150
JUL									
25...	12	4.3	201	<.10	.60	--	.020	<3	8
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	<.10	.60	--	.020	20	30
25...	--	--	--	<.10	.90	--	.050	340	380
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	12	9.8	225	<.10	1.50	--	.030	510	390

## BRAZOS RIVER BASIN

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## LAKE GEORGETOWN NEAR GEORGETOWN, TX--Continued

304055097471301 LAKE GEORGETOWN SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	ALKA- LITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCHI KF AGAR (COLS. PER 100 ML)
JAN												
03...	1300	1.00	377	8.2	9.0	1.20	9.9	86	K4	K6		
03...	1302	10.0	377	8.2	9.0	--	9.9	86	--	--		
03...	1304	20.0	377	8.2	9.0	--	9.6	83	--	--		
03...	1306	30.0	377	8.2	9.0	--	9.0	78	--	--		
MAY												
03...	1200	1.00	441	7.8	22.0	1.10	6.3	74	K3	K11		
03...	1202	10.0	414	7.8	21.0	--	6.3	72	--	--		
03...	1204	20.0	410	7.7	19.5	--	5.5	61	--	--		
03...	1206	32.0	430	7.4	18.0	--	.4	4	--	--		
JUL												
25...	1300	1.00	375	8.0	31.0	.70	6.5	90	K14	12		
25...	1302	10.0	396	7.6	30.0	--	3.1	42	--	--		
25...	1304	20.0	391	7.5	28.0	--	.1	1	--	--		
25...	1306	28.0	395	7.4	28.0	--	.1	1	--	--		
JAN												
03...	180	13	50	14	8.5	.3	2.4	170	17			
03...	--	--	--	--	--	--	--	--	--	--		
03...	--	--	--	--	--	--	--	--	--	--		
03...	180	13	50	14	8.5	.3	2.4	170	17			
MAY												
03...	210	14	59	16	9.4	.3	1.6	200	20			
03...	--	--	--	--	--	--	--	--	--	--		
03...	--	--	--	--	--	--	--	--	--	--		
03...	210	9	59	15	8.7	.3	1.8	200	18			
JUL												
25...	190	17	50	15	9.1	.3	1.6	170	19			
25...	--	--	--	--	--	--	--	--	--	--		
25...	--	--	--	--	--	--	--	--	--	--		
25...	200	17	54	15	8.9	.3	1.9	180	17			
JAN												
03...	13	6.4	213	<.10	.50	--	.020	5	2			
03...	--	--	--	<.10	<.10	--	.020	10	<10			
03...	--	--	--	--	--	--	--	--	--	--		
03...	10	6.4	210	<.10	<.10	--	.020	4	4			
MAY												
03...	14	4.6	245	.10	.90	1.0	.020	6	4			
03...	--	--	--	--	--	--	--	--	--	--		
03...	--	--	--	.10	.80	.90	.020	10	30			
03...	13	5.5	241	.10	.70	.80	.030	4	220			
JUL												
25...	11	6.6	214	<.10	.70	--	.030	4	5			
25...	--	--	--	<.10	.70	--	.030	10	10			
25...	--	--	--	<.10	.80	--	.050	40	70			
25...	12	7.9	225	<.10	.70	--	.030	23	19			

## BRAZOS RIVER BASIN

LAKE GEORGETOWN NEAR GEORGETOWN, TX--Continued

304016097433101 LAKE GEORGETOWN SITE AC

PHYTOPLANKTON ANALYSES, OCTOBER 1982 TO JULY 1983

DATE TIME	JAN 3,83 1151	MAY 3,83 1021	JUL 25,83 1101			
TOTAL CELLS/ML	3800	2500	10000			
DIVERSITY: DIVISION	1.1	2.2	1.6			
..CLASS	1.1	2.2	1.6			
..ORDER	1.2	2.6	2.7			
...FAMILY	1.3	3.2	2.9			
....GENUS	1.5	3.3	3.2			
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)						
.BACILLARIOPHYCEAE						
..EUPODISCALES						
...COSCINODISCAEAE						
....CYCLOTELLA	230	6	220	9	790	8
....MELOSIRA	58	2	--	-	--	-
....STEPHANODISCUS	29	1	--	-	--	-
..FRAGILARIALES						
...FRAGILARIAEAE						
....FRAGILARIA	--	-	60	2	--	-
....SYNEDRA	29	1	--	-	1600#	16
...NAVICULALES						
...NAVICULACEAE						
....NAVICULA	--	-	--	-	510	5
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...COCCOMYXACEAE						
....ELAKATOTHRIX	--	-	140	6	--	-
...DICTYOSPHAERIAEAE						
....DICTYOSPHAERIUM	--	-	--	-	230	2
...HYDRODICTYACEAE						
....PEDIASTRUM	86	2	--	-	--	-
...MICRACTINIACEAE						
....GOLENKINIOPSIS	--	-	--	-	110	1
...OOCYSTACEAE						
....ANKISTRODESMUS	43	1	--	-	450	5
....OOCYSTIS	--	-	160	6	--	-
...SCENEDESMACEAE						
....CRUCIGENIA	170	5	320	13	730	7
....GLOEOACTINIUM	72	2	--	-	--	-
....SCENEDESMUS	29	1	80	3	--	-
...VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	43	1	280	11	170	2
...ZYGNEATALES						
...DESMIDIACEAE						
....COSMARIUM	--	-	--	-	57	1
CHRYSTOPHYTA						
.CHRYSTOPHYCEAE						
...OCHROMONADALES						
...DINOBRYACEAE						
....DINOBRYON	--	-	120	5	--	-
...OCHROMONADACEAE						
....OCHROMONAS	--	-	460#	18	280	3
...SYNURACEAE						
....MALLOMONAS	--	-	20	1	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
...CRYPTOMONADALES						
...CRYPTOMONADACEAE						
....CRYPTOMONAS	--	-	120	5	57	1
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
...CHROOCOCCALES						
...CHROOCOCCACEAE						
....AGMENELLUM	--	-	--	-	900	9
....ANACYSTIS	--	-	460#	18	1800#	18
...GOMPHOSPHAERIA	2900#	77	--	-	--	-
...OSCILLATORIALES						
...OSCILLATORIAEAE						
....OSCILLATORIA	--	-	--	-	2400#	24



## BRAZOS RIVER BASIN

## LAKE GEORGETOWN NEAR GEORGETOWN, TX--Continued

## 304016097433101 LAKE GEORGETOWN SITE AC--Continued

## PHYTOPLANKTON ANALYSES, OCTOBER 1982 TO JULY 1983

DATE TIME	JAN 3,83 1151		MAY 3,83 1021		JUL 25,83 1101	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
....EUGLENACEAE						
....TRACHELOMONAS	43	1	60	2	--	-
PYRRHOPHYTA (FIRE ALGAE)						
..DINOPHYCEAE						
...DINOKONTAE						
...PERIDINIACEAE						
....PERIDINIUM	43	1	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## 304055097471301 LAKE GEORGETOWN SITE CC

## PHYTOPLANKTON ANALYSES, OCTOBER 1982 TO JULY 1983

DATE TIME	JAN 3,83 1301	MAY 3,83 1201	JUL 25,83 1301			
TOTAL CELLS/ML	3500	3800	18000			
DIVERSITY: DIVISION	0.8	1.8	1.6			
..CLASS	0.8	1.8	1.6			
...ORDER	1.1	2.1	2.4			
...FAMILY	1.3	2.9	2.8			
....GENUS	1.8	3.4	3.4			
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)						
.BACILLARIOPHYCEAE						
..BACILLARIALES						
...NITZSCHIAEAE						
....NITZSCHIA	58	2	--	-	160	1
...EUPODISCALES						
...COSCINODISCAEAE						
....CYCLOTELLA	430	12	620#	16	710	4
....MELOSIRA	2300#	65	180	5	--	-
...FRAGILARIALES						
...FRAGILARIAEAE						
....SYNEDRA	87	2	20	1	1300	7
...NAVICULALES						
...GOMPHONEMACEAE						
....GOMPHONEMA	58	2	--	-	--	-
...NAVICULACEAE						
....NAVICULA	--	-	20	1	*	0
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHLOROCOCCACEAE						
....TETRAEDRON	43	1	20	1	160	1
...COCCOMYXACEAE						
....ELAKATOTHRIX	--	-	40	1	--	-
...DICTYOSPHAERIAEAE						
....DICTYOSPHAERIUM	--	-	80	2	640	4
...HYDRODICTYACEAE						
....PEDIASTRUM	--	-	540	14	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	140	4	80	2	640	4
....KIRCHNERIELLA	--	-	40	1	320	2
...OOCYSTIS	--	-	140	4	--	-
...SCENEDESMACEAE						
....COELASTRUM	--	-	320	8	--	-
....CRUCIGENIA	--	-	260	7	1300	7
...SCENEDESMUS	320	9	80	2	640	4
....TETRASTRUM	--	-	--	-	320	2
...VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	100	3	240	1
...ZYGNEATALES						
...DESMIDIACEAE						
....COSMARIUM	--	-	40	1	--	-
....STAUSTRUM	--	-	--	-	240	1

## BRAZOS RIVER BASIN

## LAKE GEORGETOWN NEAR GEORGETOWN, TX--Continued

304055097471301 LAKE GEORGETOWN SITE CC--Continued

## PHYTOPLANKTON ANALYSES, OCTOBER 1982 TO JULY 1983

DATE TIME	JAN 3,83 1301		MAY 3,83 1201		JUL 25,83 1301	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHRYSTOPHYTA						
..CHRYSTOPHYCEAE						
...OCHROMONADALES						
....OCHROMONADACEAE						
.....OCHROMONAS	--	-	160	4	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
..CRYPTOPHYCEAE						
...CRYPTOMONADALES						
....CRYPTOCHRYSIDACEAE						
.....CHROOMONAS	--	-	20	1	--	-
....CRYPTOMONADACEAE	--	-	60	2	240	1
.....CRYPTOMONAS	--	-	60	2	240	1
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROOCOCCALES						
....CHROOCOCCACEAE						
.....AGMENELLUM	--	-	--	-	3800#	22
....ANACYSTIS	--	-	1000#	26	3500#	20
...OSCILLATORIALES						
....OSCILLATORIA	--	-	--	-	2900#	17
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
....EUGLENACEAE						
.....EUGLENA	87	2	--	-	160	1
....TRACHELOMONAS	--	-	--	-	160	1
PYRRHOPHYTA (FIRE ALGAE)						
..DINOPHYCEAE						
...DINOKONTAE						
....PERIDINIACEAE						
.....PERIDINIUM	--	-	--	-	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## BRAZOS RIVER BASIN

333

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 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 National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Beginning on Mar. 3, 1980, flow is largely regulated by Lake Georgetown (08104650) located about 1 mi upstream from gage.

AVERAGE DISCHARGE.--11 years (water years 1969-79) unregulated, 88.1 ft<sup>3</sup>/s (63,830 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, 1,000 ft<sup>3</sup>/s May 25 at 1100 hours (gage height, 7.23 ft); minimum daily, 0.02 ft<sup>3</sup>/s Nov. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	1.1	3.5	3.6	3.7	156	236	84	210	103	17	12
2	2.0	5.3	3.4	3.3	3.6	158	168	86	241	103	17	12
3	1.9	1.9	3.3	3.3	3.7	157	124	86	244	103	17	12
4	1.9	1.3	3.3	3.6	3.9	319	124	87	241	103	17	12
5	1.9	1.3	3.3	3.9	4.8	502	124	36	240	59	16	12
6	1.9	1.3	3.4	3.9	4.2	496	101	6.1	215	14	16	8.2
7	2.1	1.3	3.4	3.9	4.2	490	89	6.1	173	12	16	4.3
8	2.2	1.4	3.4	3.9	4.2	479	89	6.1	173	8.5	15	2.3
9	2.9	1.5	3.3	3.7	6.4	472	89	6.1	174	8.5	15	2.0
10	1.6	1.7	3.3	3.6	4.5	347	89	8.5	173	8.7	15	2.0
11	1.4	1.7	3.4	3.6	181	267	90	8.0	173	11	15	1.9
12	1.4	1.5	3.4	3.6	279	267	90	250	173	11	15	1.9
13	1.1	1.6	3.6	3.6	276	267	89	568	173	11	15	1.9
14	1.0	1.5	3.7	3.6	205	268	61	561	176	12	16	1.9
15	1.0	1.4	3.5	3.6	168	143	8.3	555	133	12	15	1.9
16	.92	1.5	3.6	3.6	167	133	8.5	539	97	14	15	1.9
17	.92	.96	3.7	3.6	170	133	8.7	472	98	15	85	1.9
18	.92	.02	3.7	3.9	169	133	9.3	218	98	15	100	2.1
19	.80	.39	3.6	3.9	166	134	9.0	86	99	15	12	3.0
20	.69	2.7	3.6	3.9	169	136	5.7	108	101	15	11	2.5
21	.69	3.0	3.7	4.0	167	197	158	96	101	15	10	2.5
22	.69	3.0	3.5	3.9	225	244	244	211	101	15	10	2.5
23	.59	3.0	3.6	4.0	268	247	153	339	101	15	10	2.5
24	.59	3.5	3.6	4.0	265	248	30	335	101	16	11	2.3
25	.59	3.2	3.4	3.9	108	122	1.4	723	101	16	11	2.4
26	.50	6.9	3.4	3.7	4.9	51	1.2	979	101	17	11	2.6
27	.43	4.0	3.8	3.6	4.1	49	1.2	645	101	17	12	3.1
28	.46	3.5	3.6	3.8	93	187	1.2	138	102	19	12	3.0
29	.43	3.5	3.6	3.9	---	241	54	156	103	17	11	3.1
30	.49	3.4	3.6	3.9	---	240	84	155	103	17	12	3.3
31	.65	---	3.6	3.9	---	240	---	164	---	17	12	---
TOTAL	36.56	68.37	108.8	116.2	3128.2	7523	2340.5	7717.9	4420	834.7	582	127.0
MEAN	1.18	2.28	3.51	3.75	112	243	78.0	249	147	26.9	18.8	4.23
MAX	2.9	6.9	3.8	4.0	279	502	244	979	244	103	100	12
MIN	.43	.02	3.3	3.3	3.6	49	1.2	6.1	97	8.5	10	1.9
AC-FT	73	136	216	230	6200	14920	4640	15310	8770	1660	1150	252
CAL YR 1982	TOTAL	12717.78	MEAN	34.8	MAX	652	MIN	.02	AC-FT	25230		
WTR YR 1983	TOTAL	27003.23	MEAN	74.0	MAX	979	MIN	.02	AC-FT	53560		

## BRAZOS RIVER BASIN

08104700 NORTH FORK SAN GABRIEL RIVER NEAR GEORGETOWN, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1980 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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 (MG/L AS CACO3)
JAN 04...	0905	3.9	397	7.8	9.0	<1	2.1	11.0	96	.6	190
MAY 03...	1340	86	375	8.1	21.5	<1	1.7	8.1	93	.8	180
JUL 25...	1410	14	358	7.2	30.5	<1	1.1	7.9	108	.2	160
DATE	HARD- NESS, NONCAR- BONATE (MG/L 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 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 04...	5	51	14	8.5	.3	2.2	180	17	11	.20	6.9
MAY 03...	11	51	13	8.4	.3	2.1	170	16	11	.20	2.2
JUL 25...	21	43	13	8.2	.3	1.8	140	18	12	.20	5.0
DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	
JAN 04...	219	2	9	<.020	.60	.100	.50	.60	<.010	2.8	
MAY 03...	206	7	<1	<.020	.10	<.060	--	.50	.050	4.5	
JUL 25...	185	13	2	<.020	.20	.060	.84	.90	.020	2.6	
DATE	TIME	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)				
JAN 04...	0905	1	38	<1	<10	<1	<3				
MAY 03...	1340	1	37	<1	<10	<1	<3				
JUL 25...	1410	1	35	<1	<10	<1	8				
DATE	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 04...	1	3	<.1	<1	<1	<3					
MAY 03...	<1	3	<.1	1	<1	11					
JUL 25...	<1	10	.2	<1	<1	<3					

## BRAZOS RIVER BASIN

335

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, December 1967 to current year.

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 687.72 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Several observations of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--15 years (water years 1969-83), 49.8 ft<sup>3</sup>/s (5.09 in/yr), 36,080 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 above base of 2,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 11	0430	*16,500	15.63
May 21	1400	6,160	10.32

Minimum daily discharge, 0.15 ft<sup>3</sup>/s Oct. 3.

DISCHARGE, IN FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.25	.91	7.5	16	19	41	78	43	78	36	16	1.9
2	.19	3.7	6.8	16	19	39	75	42	73	35	16	1.9
3	.15	4.4	7.0	16	18	41	74	39	72	35	15	1.8
4	.17	4.4	6.5	14	18	517	74	36	71	33	15	2.7
5	.17	4.1	6.2	13	99	239	72	34	81	32	15	3.6
6	.23	3.8	6.0	13	92	122	69	33	377	33	14	3.4
7	.43	3.5	5.9	12	37	100	67	33	192	30	19	2.5
8	.38	3.3	6.2	12	27	94	66	32	104	28	29	1.7
9	1.1	2.0	6.6	13	201	92	66	30	82	28	19	1.8
10	.70	1.9	7.0	13	139	90	65	37	73	28	14	1.4
11	.57	1.9	8.6	13	54	82	63	2690	78	24	13	1.2
12	.96	1.6	9.4	12	37	78	60	175	68	22	12	5.1
13	1.2	1.1	9.1	12	32	78	59	124	64	21	12	1.1
14	.90	1.5	9.2	13	30	76	59	110	60	25	11	.95
15	.79	1.9	8.6	13	49	77	56	112	58	20	11	.82
16	.63	1.2	8.4	14	72	86	57	115	58	30	10	.64
17	.54	1.2	8.0	14	47	90	56	99	61	26	10	.64
18	.54	1.2	8.1	15	41	77	50	96	58	23	14	2.4
19	.64	3.7	8.6	18	41	74	45	96	54	32	31	4.8
20	.64	2.7	9.0	18	69	81	45	408	50	29	15	5.6
21	.58	2.8	8.5	20	108	78	45	1300	46	26	11	2.0
22	.55	3.2	8.4	21	57	72	46	268	45	31	9.0	1.4
23	.62	2.3	9.3	23	50	73	47	150	43	26	7.0	1.1
24	.49	2.4	10	20	46	72	47	123	42	23	6.7	1.0
25	.49	3.0	10	18	46	71	45	110	43	22	5.8	.96
26	.64	8.2	10	18	46	150	43	99	72	21	4.7	1.0
27	.64	25	11	18	46	107	43	95	43	20	4.4	.96
28	.74	22	11	16	43	84	43	92	54	19	5.9	.92
29	.74	12	12	16	---	79	42	92	62	19	5.2	1.1
30	.74	8.7	11	17	---	81	42	91	40	18	3.3	.96
31	.74	---	11	17	---	85	---	83	---	17	2.2	---
TOTAL	18.15	139.61	264.9	484	1583	3126	1699	6887	2302	812	376.2	57.35
MEAN	.59	4.65	8.55	15.6	56.5	101	56.6	222	76.7	26.2	12.1	1.91
MAX	1.2	25	12	23	201	517	78	2690	377	36	31	5.6
MIN	.15	.91	5.9	12	18	39	42	30	40	17	2.2	.64
CFSM	.004	.04	.06	.12	.43	.76	.43	1.67	.58	.20	.09	.01
IN.	.01	.04	.07	.14	.44	.87	.48	1.93	.64	.23	.11	.02
AC-FT	36	277	525	960	3140	6200	3370	13660	4570	1610	746	114

CAL YR 1982 TOTAL 9572.80 MEAN 26.2 MAX 1240 MIN .15 CFMS .20 IN 2.68 AC-FT 18990  
WTR YR 1983 TOTAL 17749.21 MEAN 48.6 MAX 2690 MIN .15 CFMS .37 IN 4.96 AC-FT 35210

NOTE.--No gage-height record July 13 to Aug. 22.



## 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 63.2 mi upstream from mouth.

DRAINAGE AREA.--83.1 mi<sup>2</sup>.

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

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 659.97 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. No regulation or diversion.

AVERAGE DISCHARGE.--16 years, 26.7 ft<sup>3</sup>/s (4.36 in/yr), 19,340 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); no flow at times in 1967, 1971-72, and 1978-79, and 1982-83.

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 above base of 1,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 4	1615	*1,360	a8.63
May 21	1515	1,260	8.45

a From floodmark.

Minimum discharge, no flow Oct. 1-12, Oct. 15 to Nov. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.10	.23	.22	20	30	12	16	8.9	2.5	.68
2	.00	.18	.23	.18	.22	15	26	11	16	8.3	2.4	.62
3	.00	.12	.36	.13	.25	15	25	10	16	7.8	2.4	.66
4	.00	.07	.20	.13	.33	284	24	9.7	16	7.0	2.3	.58
5	.00	.06	.15	.12	1.9	106	24	9.3	16	6.8	2.2	.52
6	.00	.06	.10	.10	30	49	23	8.8	120	7.0	2.1	.53
7	.00	.06	.10	.10	5.8	37	22	7.7	81	6.2	1.9	.53
8	.00	.06	.10	.10	2.5	35	22	6.7	37	6.2	2.4	.64
9	.00	.06	.10	.10	100	33	21	6.5	28	6.2	2.1	.67
10	.00	.06	.10	.10	63	31	21	7.5	24	6.0	1.9	.74
11	.00	.06	.10	.10	24	29	21	60	23	5.0	1.8	.60
12	.00	.06	.10	.10	15	27	20	40	22	4.7	1.8	.53
13	.03	.06	.10	.10	12	27	20	17	21	4.6	1.7	.54
14	.01	.06	.10	.10	11	26	19	13	20	4.8	1.6	.52
15	.00	.06	.10	.10	25	26	18	14	19	4.5	1.4	.55
16	.00	.06	.08	.10	39	45	18	12	19	5.0	1.3	.51
17	.00	.06	.08	.10	23	50	17	11	19	4.3	.99	.42
18	.00	.06	.08	.13	18	34	17	11	18	4.0	1.1	.56
19	.00	.16	.08	.17	16	30	15	11	18	4.3	1.6	.78
20	.00	.09	.08	.17	42	42	15	30	17	4.1	1.4	.64
21	.00	.08	.08	.20	64	40	15	323	16	3.8	1.2	.45
22	.00	.08	.08	.22	36	32	15	84	15	3.9	1.1	.42
23	.00	.08	.08	.22	31	31	14	35	15	3.7	1.0	.39
24	.00	.07	.08	.22	30	34	13	29	14	3.7	.99	.38
25	.00	.08	.08	.22	26	32	13	25	14	3.5	1.1	.37
26	.00	1.1	.08	.22	23	103	13	21	14	3.5	1.1	.33
27	.00	.44	.10	.22	22	54	12	18	13	3.2	.96	.37
28	.00	.15	.09	.22	22	37	12	18	13	3.0	.83	.32
29	.00	.10	.09	.22	---	33	12	17	11	2.8	.67	.26
30	.00	.10	.09	.22	---	32	12	16	10	2.7	.73	.25
31	.00	---	.09	.22	---	32	---	18	---	2.6	.64	---
TOTAL	.04	3.74	3.38	4.86	683.22	1421	549	912.2	701	152.1	47.21	15.36
MEAN	.001	.12	.11	.16	24.4	45.8	18.3	29.4	23.4	4.91	1.52	.51
MAX	.03	1.1	.36	.23	100	284	30	323	120	8.9	2.5	.78
MIN	.00	.00	.08	.10	.22	15	12	6.5	10	2.6	.64	.25
CFSM	.000	.001	.001	.002	.29	.55	.22	.35	.28	.06	.02	.006
IN.	.00	.00	.00	.00	.31	.64	.25	.41	.31	.07	.02	.01
AC-FT	.08	7.4	6.7	9.6	1360	2820	1090	1810	1390	302	94	30

CAL YR 1982	TOTAL	2179.89	MEAN	5.97	MAX	367	MIN	.00	CFSM	.07	IN	.98	AC-FT	4320
WTR YR 1983	TOTAL	4493.11	MEAN	12.3	MAX	323	MIN	.00	CFSM	.15	IN	2.01	AC-FT	8910

BRAZOS RIVER BASIN

337

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 National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Flow partially regulated by Lake Georgetown (station 08104650) since March 1980. The city of Georgetown releases sewage effluent into the river 6.5 mi upstream from this station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,100 ft<sup>3</sup>/s Sept. 3, 1981 (gage height, 21.85 ft); minimum daily, 0.45 ft<sup>3</sup>/s Aug. 22, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,800 ft<sup>3</sup>/s May 11 at 0500 hours (gage height, 12.57 ft); minimum daily, 12 ft<sup>3</sup>/s Oct. 1, 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	15	45	59	38	225	389	157	306	157	39	32
2	13	26	44	53	38	225	336	156	325	153	37	33
3	13	67	55	54	36	223	256	151	317	151	34	32
4	12	31	44	47	37	1270	258	140	314	145	39	31
5	12	30	42	45	112	1420	254	119	348	132	39	31
6	14	27	40	44	159	927	236	67	1200	90	39	32
7	18	27	39	42	90	797	212	66	728	74	39	28
8	16	26	38	41	73	766	212	63	398	70	60	26
9	21	27	38	42	304	751	214	62	339	67	81	26
10	21	24	40	43	360	634	212	143	314	66	46	29
11	16	24	48	39	211	415	210	2490	322	62	55	27
12	18	23	44	39	350	405	205	499	308	60	46	27
13	22	22	43	39	342	396	204	804	299	60	43	28
14	17	22	42	38	295	397	198	734	299	71	41	26
15	16	22	41	35	303	304	130	815	279	67	40	27
16	16	23	40	35	311	325	116	738	216	91	36	28
17	15	23	39	36	254	315	114	661	215	84	47	26
18	15	23	39	45	239	275	113	407	212	86	142	26
19	15	25	39	53	234	285	109	201	206	72	79	38
20	14	28	42	47	246	338	109	1270	198	66	65	36
21	14	27	39	54	395	329	163	2610	192	61	45	30
22	14	25	37	52	306	377	302	883	190	58	43	27
23	15	25	36	54	369	393	256	653	184	56	39	27
24	14	24	38	52	363	392	142	568	184	55	38	26
25	15	26	36	47	278	318	87	530	185	52	38	26
26	15	66	34	46	117	680	86	460	223	48	36	27
27	15	92	46	43	114	335	88	400	183	45	35	26
28	15	79	41	41	138	291	85	360	167	43	35	25
29	15	62	40	39	---	399	98	340	207	43	36	25
30	15	48	39	39	---	404	153	310	166	40	36	24
31	15	---	40	40	---	413	---	292	---	42	33	---
TOTAL	478	1009	1268	1383	6112	15024	5547	17149	9024	2367	1461	852
MEAN	15.4	33.6	40.9	44.6	218	485	185	553	301	76.4	47.1	28.4
MAX	22	92	55	59	395	1420	389	2610	1200	157	142	38
MIN	12	15	34	35	36	223	85	62	166	40	33	24
AC-FT	948	2000	2520	2740	12120	29800	11000	34020	17900	4690	2900	1690
CAL YR 1982	TOTAL	37931	MEAN 104	MAX 3040	MIN 10	AC-FT 75240						
WTR YR 1983	TOTAL	61674	MEAN 169	MAX 2610	MIN 12	AC-FT 122300						

## BRAZOS RIVER BASIN

08105300 SAN GABRIEL RIVER NEAR WEIR, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1976 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: December 1976 to September 1982.

INSTRUMENTATION.--Continuous recording of water temperature station was discontinued 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 1982 TO SEPTEMBER 1983

		STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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 (MG/L AS CACO3)	
DATE	TIME											
OCT 18...	1640	15	528	8.2	22.5	15	11	11.4	134	2.8	230	
DEC 06...	1400	43	547	8.2	13.5	20	.50	11.6	113	1.4	240	
FEB 08...	1450	74	456	8.4	13.0	<1	6.5	14.8	143	2.0	220	
APR 05...	1600	249	409	8.3	19.0	<1	2.1	12.8	141	.7	210	
JUN 07...	1715	520	368	7.9	24.5	5	24	8.2	100	2.3	180	
AUG 24...	1420	39	441	7.9	31.0	5	13	7.2	98	1.3	200	
		HARD- NESS, NONCAR- BONATE (MG/L 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 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)
DATE												
OCT 18...	17	66	15	20	.6	2.1	210	20	30	.20	9.3	
DEC 06...	32	72	15	18	.5	2.0	210	28	26	.20	7.8	
FEB 08...	31	67	13	13	.4	1.5	190	27	18	.30	5.2	
APR 05...	21	63	13	11	.3	1.5	190	21	14	.30	5.7	
JUN 07...	12	58	8.9	8.7	.3	2.1	170	16	10	.30	8.7	
AUG 24...	18	56	14	13	.4	1.6	180	19	19	.30	9.5	
		SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
DATE												
OCT 18...	289	24	4	1.4	.050	1.4	.080	1.5	1.60	.310	4.8	
DEC 06...	295	10	11	1.5	.080	1.6	.080	2.4	2.50	.300	3.3	
FEB 08...	259	17	16	1.4	.040	1.4	.120	.58	.70	.170	2.6	
APR 05...	243	14	7	--	<.020	.80	.090	.61	.70	.050	4.4	
JUN 07...	215	9	5	.47	.030	.50	.370	.53	.90	.040	4.9	
AUG 24...	240	10	<1	1.4	.030	1.4	.070	.93	1.00	.070	2.8	

## BRAZOS RIVER BASIN

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08105300 SAN GABRIEL RIVER NEAR WEIR, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	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)
OCT 18...	1640	2	39	<1	<10	1	4
JUN 07...	1715	1	38	<1	<10	1	7
AUG 24...	1420	2	38	<1	<10	2	<3

DATE	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 18...	1	3	.1	<1	<1	4
JUN 07...	1	6	<.1	<1	<1	3
AUG 24...	<1	2	<.1	<1	1	<3

## BRAZOS RIVER BASIN

08105600 GRANGER LAKE NEAR GRANGER, TX

LOCATION.--Lat 30°41'34", long 97°19'34", 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 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 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 daily contents, 85,600 acre-ft May 22 at 1300 hours (elevation, 508.18 ft); minimum daily, 62,540 acre-ft Oct. 28 (elevation, 503.31 ft).

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

503.0	61,260	507.0	79,510
505.0	69,970	509.0	90,030

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63010	62670	64500	66610	67050	66830	65370	65990	65290	69380	65990	66080
2	63010	63300	64810	66700	67050	66700	65510	66040	65860	69340	65900	66040
3	62960	63430	64810	66740	66830	66480	65770	66040	66340	69290	65900	66040
4	62920	63180	64850	66830	66970	68480	66080	66120	67990	69200	65950	65950
5	62880	63350	64850	66880	67630	70970	66300	66120	69650	69290	65950	65900
6	62960	63300	64850	66830	67990	71750	66480	66120	73290	69160	65990	65820
7	63050	63300	64890	66830	68170	72030	66570	66120	73620	68930	65990	65770
8	63220	63300	64890	66830	67940	72030	66700	66080	74180	68750	67900	65770
9	63090	63300	64890	66830	68260	71750	66830	66040	75040	68570	68120	65730
10	63050	63390	65110	66830	68620	71240	67050	66880	75190	68350	68120	65860
11	63050	63430	65200	66790	68170	70420	67140	73240	74560	68170	68170	65820
12	63180	63300	65200	66740	67500	69560	67230	72820	73900	67940	68210	65770
13	63180	63260	65200	66740	66970	68800	67360	72030	73100	67770	68260	65770
14	63180	63180	65240	66700	66830	67940	67410	71100	72630	67810	68210	65680
15	63130	63090	65240	66650	67230	67860	67360	70690	72030	67630	68210	65640
16	63090	63130	65330	66610	67280	68480	67320	69740	71290	67770	68210	65600
17	63090	63130	65510	66520	67280	68570	67140	69380	70420	67680	67860	65550
18	63050	63180	65460	66700	67230	68350	67050	68170	69520	67540	68120	65680
19	63010	63260	65460	66740	67140	68030	67010	68750	68750	67410	68750	66080
20	62880	63300	65510	66790	67360	67770	66920	74520	68300	67280	68890	66040
21	62800	63300	65550	67010	67540	66880	66970	84380	68440	67100	68930	65820
22	62710	63390	65640	67010	67190	66260	67010	85230	68530	66920	68930	65770
23	62710	63350	65730	67010	66740	66430	66970	84280	68660	66700	68930	65680
24	62630	63300	65770	67010	66300	66390	66700	82670	68750	66480	68890	65640
25	62590	63350	65810	67010	66570	66390	66260	80010	68890	66340	68660	65640
26	62590	63860	65900	67010	66790	67860	66040	77620	69060	66260	67900	65640
27	62590	64070	66040	66970	67050	67720	65950	75760	69160	66170	67230	65640
28	62670	64200	66120	66970	66970	67010	65860	72540	69240	66120	66520	65600
29	62670	64290	66080	66970	---	66080	65810	69740	69290	66080	66120	65550
30	62670	64370	66080	66970	---	65510	65810	67410	69380	66040	66080	65510
31	62710	---	66260	67050	---	65590	---	65420	---	66040	66040	---
MAX	63220	64370	66260	67050	68620	72030	67410	85230	75190	69380	68930	66080
MIN	62590	62670	64500	66520	66300	65510	65370	65420	65290	66040	65900	65510
(†)	503.35	503.74	504.17	504.35	504.33	604.02	504.07	502.98	504.87	504.12	504.14	504.00
(‡)	-340	+1660	+1890	+790	-80	-1380	+220	-390	+3960	-3340	0	-530

CAL YR 1982 MAX 81280 MIN 62590 † +2460  
WTR YR 1983 MAX 85230 MIN 62590 † -1240

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.



## BRAZOS RIVER BASIN

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08105600 GRANGER LAKE NEAR GRANGER, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1980 to current year.

304132097200801 GRANGER LAKE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

		SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)	
DATE	TIME										
JAN											
04...	1345	1.00	369	8.2	8.0	1.10	10.5	89	K1	<1	
04...	1347	10.0	369	8.2	8.0	--	10.4	88	--	--	
04...	1349	20.0	369	8.2	8.0	--	10.4	88	--	--	
04...	1351	30.0	369	8.2	8.0	--	10.4	88	--	--	
04...	1353	40.0	369	8.2	8.0	--	10.3	87	--	--	
04...	1355	46.0	369	8.2	8.0	--	10.2	86	--	--	
MAY											
02...	1200	1.00	405	8.0	21.5	.60	8.0	93	<1	K1	
02...	1202	10.0	405	8.0	21.5	--	7.9	92	--	--	
02...	1204	20.0	405	8.0	21.5	--	7.9	92	--	--	
02...	1206	30.0	408	7.9	21.0	--	7.0	81	--	--	
02...	1208	40.0	415	7.6	19.5	--	4.4	49	--	--	
02...	1210	51.0	420	7.5	19.0	--	2.4	27	--	--	
JUL											
26...	1025	1.00	319	8.0	29.0	.80	7.2	95	<1	55	
26...	1027	10.0	319	8.0	29.0	--	7.2	95	--	--	
26...	1029	20.0	320	7.9	28.5	--	6.9	90	--	--	
26...	1031	30.0	338	7.2	27.5	--	.4	5	--	--	
26...	1033	40.0	346	7.2	26.5	--	.1	1	--	--	
26...	1035	49.0	356	7.2	26.5	--	.1	1	--	--	
		HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
DATE											
JAN											
04	160	18	48	9.3	15	.5	3.4	140	22	19	
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	160	18	48	9.3	15	.5	3.4	140	22	19	
MAY											
02...	180	19	55	10	14	.5	2.7	160	25	19	
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
02...	190	23	59	11	14	.5	2.7	170	23	19	
JUL											
26...	140	21	42	8.7	12	.5	2.9	120	19	17	
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	160	10	49	9.1	12	.4	2.9	150	17	16	
		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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	
DATE											
JAN											
04...	.30	5.2	206	.10	.80	.90	.020	9	<1		
04...	--	--	--	--	--	--	--	--	--	--	
04...	--	--	--	--	.10	.60	.020	10	10		
04...	--	--	--	--	--	--	--	--	--	--	
04...	--	--	--	--	--	--	--	--	--	--	
04...	--	5.2	206	.10	1.10	1.2	.080	8	10		
MAY											
02...	.30	3.2	225	.50	.80	1.3	.040	4	3		
02...	--	--	--	--	--	--	--	--	--	--	
02...	--	--	--	--	--	--	--	--	--	--	
02...	--	--	--	--	.50	1.30	.060	30	20		
02...	--	--	--	--	--	--	--	--	--	--	
02...	--	5.5	236	.40	1.40	1.8	.090	18	220		
JUL											
26...	.30	6.7	181	<.10	1.00	--	.050	5	6		
26...	--	--	--	--	--	--	--	--	--	--	
26...	--	--	--	--	<.10	1.00	.050	10	30		
26...	--	--	--	--	--	--	--	--	--	--	
26...	--	--	--	--	<.10	1.00	.050	90	470		
26...	--	9.0	206	<.10	1.70	--	.070	240	680		

## BRAZOS RIVER BASIN

GRANGER LAKE NEAR GRANGER, TX--Continued

304209097195101 GRANGER LAKE SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION)
JAN							
04...	1300	1.00	366	8.3	8.0	10.9	92
04...	1302	10.0	366	8.3	8.0	11.7	99
04...	1304	20.0	366	8.3	8.0	11.7	99
04...	1306	30.0	366	8.3	8.0	11.6	98
04...	1308	40.0	366	8.3	8.0	11.5	97
04...	1310	50.0	366	8.2	8.0	11.3	96
MAY							
02...	1130	1.00	408	8.1	22.0	8.2	96
02...	1132	10.0	408	8.0	21.5	8.2	95
02...	1134	20.0	408	8.0	21.5	8.0	93
02...	1136	30.0	408	8.0	21.5	8.0	93
02...	1138	40.0	408	8.0	21.5	7.7	90
02...	1140	47.0	420	7.6	19.5	3.8	43
JUL							
26...	1010	1.00	319	8.0	29.0	7.0	92
26...	1012	10.0	319	7.9	29.0	7.0	92
26...	1014	20.0	319	7.9	29.0	6.9	91
26...	1016	30.0	329	7.4	28.5	4.5	59
26...	1018	40.0	344	7.1	27.0	.2	3
26...	1020	46.0	347	6.9	26.5	.2	3

304206097215001 GRANGER LAKE SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK (M))	OXYGEN, DIS-SOLVED (MG/L)
JAN							
04...	1410	1.00	370	8.3	7.5	--	10.7
04...	1412	10.0	370	8.3	7.0	--	10.7
04...	1414	20.0	370	8.3	7.0	--	10.7
04...	1416	35.0	370	8.3	7.0	--	10.6
MAY							
02...	1230	1.00	405	8.1	22.5	.50	8.2
02...	1232	10.0	405	8.0	22.5	--	8.1
02...	1234	20.0	405	7.8	22.0	--	7.3
02...	1236	34.0	441	7.4	20.0	--	1.0
JUL							
26...	1100	1.00	319	7.9	29.5	.40	6.8
26...	1102	10.0	319	7.9	29.5	--	6.7
26...	1104	20.0	330	7.5	28.5	--	4.4
26...	1106	32.0	391	7.1	27.5	--	.1

DATE	OXYGEN, DIS-SOLVED (PER-CENT SATURATION)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGANESE, DIS-SOLVED (UG/L AS MN)
JAN							
04...	89	<.10	.90	--	.020	30	<10
04...	88	<.10	.60	--	.040	20	<10
04...	88	--	--	--	--	--	--
04...	88	<.10	.70	--	.020	10	10
MAY							
02...	97	.50	1.30	1.8	.060	20	<10
02...	96	--	--	--	--	--	--
02...	86	.50	1.00	1.5	.060	10	20
02...	11	1.0	1.40	2.4	.110	10	120
JUL							
26...	90	<.10	.80	--	.050	<10	10
26...	89	--	--	--	--	--	--
26...	57	<.10	1.00	--	.070	<10	50
26...	1	.10	1.50	1.6	.110	180	410

## BRAZOS RIVER BASIN

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## GRANGER LAKE NEAR GRANGER, TX--Continued

304108097215101 GRANGER LAKE SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)
JAN										
04...	1430	1.00	379	8.3	7.5	1.10	10.7	89	K2	<1
04...	1432	10.0	380	8.3	7.5	--	10.6	88	--	--
04...	1434	20.0	382	8.3	7.5	--	10.6	88	--	--
04...	1436	30.0	382	8.3	7.5	--	10.6	88	--	--
04...	1438	44.0	382	8.3	7.5	--	10.6	88	--	--
MAY										
02...	1300	1.00	412	8.0	21.5	.50	8.0	93	<1	K1
02...	1302	10.0	412	8.0	21.5	--	8.0	93	--	--
02...	1304	20.0	412	8.0	21.5	--	7.9	92	--	--
02...	1306	30.0	405	7.9	21.0	--	7.5	87	--	--
02...	1308	40.0	405	7.7	20.0	--	5.8	66	--	--
02...	1310	47.0	418	7.7	19.5	--	3.4	38	--	--
JUL										
26...	1120	1.00	339	7.8	28.5	.60	6.5	85	<1	140
26...	1122	10.0	339	7.8	28.5	--	6.4	83	--	--
26...	1124	20.0	339	7.7	28.0	--	6.3	81	--	--
26...	1126	30.0	349	7.2	27.0	--	.1	1	--	--
26...	1128	43.0	357	7.2	26.5	--	.1	1	--	--

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JAN									
04...	160	25	50	9.6	15	.5	3.3	140	23
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
04...	170	25	50	9.8	15	.5	3.4	140	24
MAY									
02...	200	25	60	11	13	.4	2.6	170	24
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	190	21	60	10	14	.5	2.7	170	25
JUL									
26...	150	18	44	9.2	12	.4	2.8	130	19
26...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
26...	160	16	48	8.8	12	.4	2.9	140	20

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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN									
04...	20	5.1	210	.20	.80	1.0	.030	<3	<1
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	.20	.70	.90	.030	10	10
04...	--	--	--	--	--	--	--	--	--
04...	24	5.1	215	.20	1.00	1.2	.040	<3	4
MAY									
02...	19	3.8	235	.60	1.00	1.6	.040	90	14
02...	--	--	--	.60	.80	1.4	.050	30	10
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	.50	.90	1.4	.070	50	10
02...	--	--	--	--	--	--	--	--	--
02...	19	5.4	238	.40	1.00	1.4	.070	160	93
JUL									
26...	16	7.5	188	.10	.90	1.0	.050	4	6
26...	--	--	--	--	--	--	--	--	--
26...	--	--	--	.10	1.10	1.2	.050	10	20
26...	--	--	--	<.10	1.20	--	.070	100	340
26...	16	8.5	201	<.10	1.00	--	.070	460	510

BRAZOS RIVER BASIN  
GRANGER LAKE NEAR GRANGER, TX--Continued

303947097231401 GRANGER LAKE SITE DC  
WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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										
04...	1450	1.00	432	8.2	7.0	.90	10.8	89	K14	K10
04...	1452	10.0	448	8.1	7.5	--	10.2	85	--	--
04...	1454	20.0	478	8.0	7.5	--	9.4	78	--	--
04...	1456	30.0	478	8.0	7.5	--	9.4	78	--	--
MAY										
02...	1330	1.00	441	7.8	23.0	.70	8.2	98	<1	K2
02...	1332	10.0	421	7.4	20.0	--	3.9	44	--	--
02...	1334	20.0	434	7.3	19.0	--	1.3	14	--	--
02...	1336	30.0	453	7.4	18.5	--	.3	3	--	--
JUL										
26...	1145	1.00	363	7.4	28.5	.50	4.4	57	K2	280
26...	1147	10.0	361	7.2	27.5	--	.2	3	--	--
26...	1149	20.0	381	7.1	27.0	--	.1	1	--	--
26...	1151	26.0	385	7.1	27.0	--	.1	1	--	--

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JAN									
04...	180	10	54	11	16	.5	2.9	170	24
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
04...	200	16	57	13	18	.6	2.5	180	26
MAY									
02...	210	19	62	13	13	.4	2.1	190	23
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	210	22	65	12	14	.4	2.1	190	23
JUL									
26...	170	16	50	10	13	.5	2.5	150	20
26...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
26...	170	6	50	10	13	.5	2.5	160	19

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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN									
04...	23	4.8	238	.70	.70	1.4	.030	<3	<1
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	1.2	.90	2.1	.060	20	10
04...	26	4.8	255	1.2	1.40	2.6	.040	<3	9
MAY									
02...	18	5.3	250	.80	.90	1.7	.060	3	10
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	.50	1.30	1.8	.060	10	80
02...	18	6.6	255	.40	1.40	1.8	.100	260	510
JUL									
26...	18	8.3	212	.20	.80	1.0	.060	<3	21
26...	--	--	--	.10	1.20	1.3	.080	30	210
26...	--	--	--	--	--	--	--	--	--
26...	17	9.7	218	<.10	1.50	--	.090	280	400

## GRANGER LAKE NEAR GRANGER, TX--Continued

304132097200801 GRANGER LAKE SITE AC

## PHYTOPLANKTON ANALYSES, OCTOBER 1982 TO JULY 1983

DATE	JAN 4,83	MAY 2,83	JUL 26,83			
TIME	1346	1201	1026			
TOTAL CELLS/ML	9900	17000	63000			
DIVERSITY: DIVISION	1.5	1.7	0.8			
..CLASS	1.5	1.7	0.8			
...ORDER	1.7	1.9	2.2			
...FAMILY	1.8	2.3	2.4			
....GENUS	2.0	2.9	2.8			
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)						
..BACILLARIOPHYCEAE						
...BACILLARIALES						
....NITZSCHIAEAE						
.....NITZSCHIA	220	2	240	1	*	0
...EUPODISCALES						
....COSCINODISCACEAE						
.....CYCLOTELLA	--	-	1500	9	780	1
.....MELOSIRA	--	-	5400#	33	--	-
...FRAGILARIALES						
....FRAGILARIAEAE						
.....SYNEDRA	5700#	58	--	-	520	1
...NAVICULALES						
....NAVICULACEAE						
.....NAVICULA	72	1	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
....CHLOROCOCCACEAE						
.....TETRAEDRON	--	-	330	2	650	1
...HYDRODICTYACEAE						
....PEDIASTRUM	--	-	--	-	520	1
...OOCYSTACEAE						
....ANKISTRODESMUS	220	2	1500	9	1000	2
....CHODATELLA	290	3	330	2	--	-
...OOCYSTIS	--	-	*	0	--	-
....TREUBARIA	--	-	--	-	*	0
...SCENEDESMACEAE						
....COELASTRUM	--	-	--	-	2100	3
....CRUCIGENIA	--	-	2000	12	520	1
....GLOEOACTINIUM	--	-	330	2	--	-
...SCENEDESMUS	290	3	330	2	520	1
....TETRASTRUM	290	3	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	140	1	410	2	390	1
CHRYSTOPHYTA						
..CHRYSTOPHYCEAE						
...OCHROMONADALES						
....OCHROMONADACEAE						
.....OCHROMONAS	--	-	--	-	1200	2
...SYNURACEAE						
....MALLOMONAS	--	-	--	-	*	0
CRYPTOPHYTA (CRYPTOMONADS)						
..CRYPTOPHYCEAE						
...CRYPTOMONADALES						
....CRYPTOMONADACEAE						
.....CRYPTOMONAS	--	-	160	1	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROOCOCCALES						
....CHROOCOCCACEAE						
.....AGMENELLUM	2300#	23	--	-	8300	13
....ANACYSTIS	--	-	3700#	22	11000#	18
...NOSTOCALES						
....HAMMATOIDEACEAE						
.....RAPHIDIOPSIS	--	-	--	-	13000#	21
...OSCILLATORIALES						
....OSCILLATORIAEAE						
.....OSCILLATORIA	--	-	--	-	21000#	33
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
....EUGLENACEAE						
.....EUGLENA	290	3	--	-	*	0
....PHACUS	--	-	*	0	--	-
...TRACHELOMONAS	72	1	*	0	*	0
PYRRHOPHYTA (FIRE ALGAE)						
..DINOPHYCEAE						
...DINOKONTAE						
....CERATIAEAE						
.....CERATIUM	--	-	*	0	--	-
...PERIDINIAEAE						
....PERIDINIUM	--	-	--	-	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%



BRAZOS RIVER BASIN  
GRANGER LAKE NEAR GRANGER, TX--Continued

303947097231401 GRANGER LAKE SITE DC						
PHYTOPLANKTON ANALYSES, OCTOBER 1982 TO JULY 1983						
DATE	JAN 4,83	MAY 2,83	JUL 26,83			
TIME	1451	1331	1146			
TOTAL CELLS/ML	6500	15000	44000			
DIVERSITY: DIVISION	0.7	1.7	0.8			
..CLASS	0.7	1.7	0.8			
..ORDER	1.3	2.0	1.3			
...FAMILY	1.3	2.3	1.5			
....GENUS	1.4	2.8	2.3			
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)						
..BACILLARIOPHYCEAE						
...BACILLARIALES						
....NITZSCHIA	120	2	87	1	*	0
....EUPODISCALES						
...COSCIINODISCACEAE						
....CYCLOTELLA	500	8	440	3	1400	3
....MELOSIRA	--	-	1300	9	--	-
...FRAGILARIALES						
...FRAGILARIAEAE						
....SYNEDRA	4900#	75	87	1	230	1
...NAVICULALES						
...NAVICULACEAE						
....NAVICULA	--	-	--	-	*	0
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
...CHLOROCOCCACEAE						
....TETRAEDRON	62	1	--	-	*	0
...HYDRODICTYACEAE						
....PEDIASTRUM	--	-	--	-	930	2
...OOCYSTACEAE						
....ANKISTRODESMUS	--	-	1200	8	580	1
....CHODATELLA	--	-	350	2	*	0
....KIRCHNERIELLA	--	-	440	3	*	0
...OOCYSTIS	--	-	--	-	470	1
....SELENASTRUM	--	-	87	1	--	-
...SCENEDESMACEAE						
....CRUCIGENIA	--	-	2100	14	470	1
....SCENEDESMUS	--	-	520	4	470	1
...VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	190	3	790	5	350	1
...VOLVOCAEAE						
....PANDORINA	--	-	--	-	930	2
CHRYSTOPHYTA						
..CHRYSTOPHYCEAE						
...OCHROMONADALES						
...OCHROMONADACEAE						
....OCHROMONAS	--	-	440	3	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
..CRYPTOPHYCEAE						
...CRYPTOMONADALES						
...CRYPTOMONADACEAE						
....CRYPTOMONAS	--	-	--	-	350	1
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROOCOCCALES						
...CHROOCOCCACEAE						
....AGMENELLUM	--	-	--	-	16000#	36
....ANACYSTIS	--	-	6600#	45	18000#	41
...NOSTOCALES						
...HAMMATOIDEACEAE						
....RAPHIDIOPSIS	--	-	--	-	2300	5
...OSCILLATORIALES						
...OSCILLATORIAEAE						
....OSCILLATORIA	--	-	--	-	700	2
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
...EUGLENACEAE						
....EUGLENA	190	3	87	1	--	-
....PHACUS	--	-	87	1	--	-
...TRACHELOMONAS	560	9	87	1	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%  
\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## BRAZOS RIVER BASIN

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 (revised) 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 National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Flow partly regulated by Granger Lake (station 08105600) since Jan. 21, 1980. Gage-height telemer at station.

AVERAGE DISCHARGE.--14 years (water years 1966-79) unregulated, 289 ft<sup>3</sup>/s (209,400 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); minimum daily, 0.28 ft<sup>3</sup>/s Aug. 25-28, 1978.

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, 2,330 ft<sup>3</sup>/s May 25 at 1830 hours (gage height, 12.60 ft); minimum daily, 0.48 ft<sup>3</sup>/s Oct. 3, 4.

## UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.67	2.7	1.9	4.3	47	170	479	134	558	141	32	12
2	.61	3.7	2.1	3.9	47	190	319	132	146	142	32	13
3	.48	5.6	3.1	3.8	47	230	140	132	144	142	26	12
4	.48	2.9	2.7	3.4	47	270	141	105	146	143	15	13
5	1.9	2.9	2.7	23	50	298	145	86	258	143	14	13
6	3.6	2.9	2.7	54	49	292	145	45	331	145	14	13
7	3.3	2.9	2.8	53	49	469	144	60	696	146	14	12
8	3.6	2.9	2.9	51	168	748	145	62	608	146	31	12
9	3.7	3.1	2.9	46	289	876	147	62	17	147	19	13
10	2.9	3.1	3.5	47	286	892	148	62	212	147	15	13
11	3.0	3.3	3.3	47	472	890	152	68	636	149	14	13
12	3.6	3.5	3.2	47	631	887	151	583	644	144	13	13
13	3.4	3.3	2.7	46	633	891	152	1150	644	138	13	12
14	2.6	3.4	2.7	46	452	890	150	1180	660	137	13	12
15	2.5	3.7	2.9	46	281	712	150	1200	643	137	12	12
16	2.2	4.0	2.7	48	281	176	150	1130	646	136	12	12
17	2.1	4.2	2.9	49	281	228	151	1140	655	136	95	12
18	2.7	4.3	3.1	49	278	332	150	1150	640	133	145	13
19	3.8	4.3	3.5	51	278	660	148	678	651	131	16	15
20	4.8	4.3	3.8	50	289	674	148	430	407	131	14	13
21	4.5	4.3	3.8	48	291	819	186	431	135	130	12	12
22	4.9	4.3	3.7	47	450	724	278	676	134	129	12	13
23	4.7	4.2	3.2	47	634	466	281	1250	135	128	12	13
24	4.5	4.3	3.1	47	626	463	282	1350	135	128	12	13
25	4.6	3.5	3.1	47	300	463	281	1900	136	90	85	13
26	4.8	7.9	3.1	46	220	492	198	2130	137	59	300	13
27	5.1	7.4	3.7	45	170	475	135	1980	137	58	300	12
28	4.9	5.3	3.5	45	160	744	135	1760	138	47	300	12
29	3.4	5.1	3.3	46	---	960	135	1690	140	34	205	11
30	3.1	2.3	3.1	47	---	834	134	1610	140	33	14	9.9
31	3.1	---	3.1	47	---	553	---	1390	---	32	12	---
TOTAL	99.54	119.6	94.8	1280.4	7806	17768	5500	25756	10709	3682	1823	374.9
MEAN	3.21	3.99	3.06	41.3	279	573	183	831	357	119	58.8	12.5
MAX	5.1	7.9	3.8	54	634	960	479	2130	696	149	300	15
MIN	.48	2.3	1.9	3.4	47	170	134	45	17	32	12	9.9
AC-FT	197	237	188	2540	15480	35240	10910	51090	21240	7300	3620	744
CAL YR 1982	TOTAL	43272.18	MEAN	119	MAX	2570	MIN	.19	AC-FT	85830		
WTR YR 1983	TOTAL	75013.24	MEAN	206	MAX	2130	MIN	.48	AC-FT	148800		

## BRAZOS RIVER BASIN

08105700 SAN GABRIEL RIVER AT LANEPORT, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: July 1972 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: December 1976 to March 1982.

INSTRUMENTATION.--Continuous recording of water temperature was discontinued 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 1982 TO SEPTEMBER 1983

									OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CACO3)	
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)				
OCT 18...	1515	4.1	446	7.8	22.0	10	6.0	8.4	97	2.4	180	
DEC 06...	1540	2.4	463	7.7	13.5	20	1.0	6.8	66	1.0	200	
FEB 07...	1520	49	398	8.5	8.0	<1	9.0	11.3	96	1.5	160	
APR 05...	1415	158	389	8.0	17.0	5	22	9.8	103	1.4	180	
JUN 07...	1540	677	345	7.7	24.0	5	31	8.2	99	2.4	150	
AUG 25...	1520	11	393	7.5	30.0	5	15	7.4	99	1.1	160	
		HARD- NESS, NONCAR- BONATE (MG/L 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 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)
DATE												
OCT 18...	16	54	10	18	.6	3.0	160	30	23	.30	8.3	
DEC 06...	25	60	11	19	.6	3.2	170	34	22	.30	7.8	
FEB 07...	25	50	9.7	16	.6	3.1	140	28	23	.30	4.0	
APR 05...	19	55	10	14	.5	2.7	160	24	20	.30	3.9	
JUN 07...	13	48	8.0	10	.4	2.8	140	19	14	.30	7.2	
AUG 25...	25	50	9.6	15	.5	2.5	140	22	18	.30	8.5	
		SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, 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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
DATE												
OCT 18...	243	6	3	.78	.020	.80	<.060	--	1.40	.100	3.8	
DEC 06...	259	6	9	--	<.020	.40	<.060	--	2.00	.030	3.8	
FEB 07...	218	19	14	--	<.020	.20	.090	.71	.80	.040	3.9	
APR 05...	226	34	10	--	<.020	.60	.120	.78	.90	.040	5.5	
JUN 07...	193	27	16	.35	.050	.40	.400	.20	.60	.030	3.9	
AUG 25...	210	17	<1	.58	.020	.60	.060	.64	.70	.010	3.0	

## BRAZOS RIVER BASIN

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08105700 SAN GABRIEL RIVER AT LANEPORT, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	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)
OCT 18...	1515	2	62	<1	<10	1	4
JUN 07...	1540	5	46	<1	<10	1	6
AUG 25...	1520	4	53	<1	<10	2	<3

DATE	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 18...	1	6	<.1	1	<1	3
JUN 07...	<1	20	<.1	<1	<1	<3
AUG 25...	<1	14	<.1	<1	<1	<3

## BRAZOS RIVER BASIN

08106310 SAN GABRIEL RIVER NEAR ROCKDALE, TX.

LOCATION.--Lat 30°43'29", long 97°02'19", Milam County, Hydrologic Unit 12070204, on left bank at downstream side of Farm Road 486, 1.2 mi downstream from Brushy Creek, 4.3 mi upstream from mouth, and 5.3 mi north of Rockdale.

DRAINAGE.--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 National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Flow is 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. Gage-height telemeter at station. Several observations of water temperature were made during the year. Backwater will occur at times from Little River.

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, 1.3 ft<sup>3</sup>/s Oct. 3, 4, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,430 ft<sup>3</sup>/s May 22 at 0100 hours (gage height, 29.61 ft); minimum daily, 1.3 ft<sup>3</sup>/s Oct. 3, 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	14	29	28	83	340	704	179	1170	215	39	41
2	1.4	17	25	56	82	370	662	179	341	207	41	38
3	1.3	25	22	67	82	400	333	177	289	200	41	34
4	1.3	40	26	58	82	519	297	169	271	197	40	32
5	4.1	44	22	44	142	1460	287	126	1580	193	24	32
6	4.7	28	23	59	435	921	278	81	2430	191	22	31
7	4.5	17	22	85	1050	679	269	79	3600	187	22	29
8	4.8	14	19	82	300	863	261	82	2190	184	444	27
9	5.2	12	18	78	500	960	255	82	757	182	1320	26
10	8.6	12	18	74	1500	968	251	78	416	181	341	27
11	9.1	12	19	74	850	958	246	751	794	180	141	35
12	7.2	12	25	73	800	948	239	1290	833	180	90	44
13	6.3	12	35	72	900	941	235	1260	802	173	66	33
14	12	12	28	71	700	937	229	1220	801	173	53	30
15	7.6	12	28	70	450	935	227	1280	865	173	42	29
16	4.7	12	24	71	440	570	210	1550	818	193	36	27
17	4.3	14	22	72	430	679	203	1180	792	188	32	26
18	4.1	14	21	74	410	557	210	1220	768	200	242	26
19	4.9	15	20	112	400	779	210	1270	764	191	513	29
20	5.0	16	19	151	390	1500	210	1350	715	182	1390	41
21	5.0	16	20	111	380	1090	209	7060	285	176	974	79
22	5.0	16	20	119	680	1040	319	8580	256	172	262	45
23	5.0	18	20	114	700	1660	350	4300	247	170	165	34
24	5.0	20	20	105	680	2870	352	1770	238	165	116	30
25	5.0	18	19	97	600	1040	346	1950	237	160	91	28
26	5.0	20	17	93	450	1830	332	2210	312	81	308	26
27	4.5	39	20	87	350	2360	191	2500	269	67	394	25
28	5.2	87	21	87	300	1080	183	1980	249	59	387	25
29	5.5	72	35	85	---	1190	182	1800	231	48	380	24
30	9.6	42	30	83	---	1100	180	1700	220	41	118	23
31	11	---	28	85	---	869	---	1500	---	40	45	---
TOTAL	168.4	702	715	2537	14166	32413	8460	48953	23540	4949	8179	976
MEAN	5.43	23.4	23.1	81.8	506	1046	282	1579	785	160	264	32.5
MAX	12	87	35	151	1500	2870	704	8580	3600	215	1390	79
MIN	1.3	12	17	28	82	340	180	78	220	40	22	23
AC-FT	334	1390	1420	5030	28100	64290	16780	97100	46690	9820	16220	1940

CAL YR 1982 TOTAL 93033.9 MEAN 255 MAX 10100 MIN 1.3 AC-FT 184500  
WTR YR 1983 TOTAL 145758.4 MEAN 399 MAX 8580 MIN 1.3 AC-FT 289100



## BRAZOS RIVER BASIN

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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 National Geodetic Vertical Datum of 1929.

REMARKS.--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 regulation by the Soil Conservation Service floodwater-retarding structures, see station No. 08106310. The Aluminum Co. of America diverted water from Little River to their plant reservoir. Gage-height telemeter at station. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 35.67 ft June 15, 1981 (discharge not determined); minimum daily discharge, 29 ft<sup>3</sup>/s Sept. 28, and Oct. 1, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, and discharge not determined; minimum daily discharge, 29 ft<sup>3</sup>/s Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	67	122	99	191	640	---	277	---	386	123	151
2	30	69	102	161	214	711	---	277	---	349	119	134
3	30	118	96	218	209	707	---	276	---	339	119	129
4	36	541	117	171	189	---	---	267	---	320	124	122
5	38	264	108	132	466	---	---	239	---	308	122	131
6	29	148	90	128	---	---	---	210	---	309	151	141
7	398	108	84	152	981	---	987	169	---	321	133	138
8	377	92	77	146	512	---	888	164	---	305	322	115
9	215	85	72	141	954	---	749	161	---	299	---	91
10	145	82	73	134	---	---	620	160	---	289	882	118
11	115	80	78	141	---	---	592	721	---	284	392	138
12	102	78	109	160	---	---	576	---	---	282	299	142
13	92	79	168	160	---	---	568	---	---	275	242	124
14	106	79	118	157	987	---	552	---	---	277	190	113
15	114	74	101	164	734	---	531	---	---	279	159	152
16	89	72	91	172	---	---	510	---	---	323	142	157
17	79	75	85	162	913	---	524	---	---	328	133	117
18	73	77	81	159	742	---	535	---	---	374	284	108
19	69	79	81	194	671	---	538	---	---	335	522	98
20	65	81	79	306	677	---	531	---	---	313	---	101
21	65	88	76	289	---	---	531	---	659	301	---	144
22	63	85	84	288	---	---	607	---	480	298	386	106
23	60	83	105	332	---	---	646	---	447	271	278	86
24	61	84	106	292	---	---	635	---	431	259	232	76
25	62	82	106	244	---	---	610	---	436	244	202	77
26	62	84	104	223	567	---	496	---	522	195	358	82
27	61	176	88	205	450	---	345	---	461	167	464	99
28	63	629	97	196	426	---	302	---	434	159	459	101
29	68	326	184	194	---	---	290	---	416	143	455	96
30	66	175	121	189	---	---	281	---	407	131	248	94
31	67	---	104	190	---	---	---	---	---	130	158	---
TOTAL	2929	4160	3107	5899	---	---	---	---	---	8593	---	3481
MEAN	94.5	139	100	190	---	---	---	---	---	277	---	116
MAX	398	629	184	332	---	---	---	---	---	386	---	157
MIN	29	67	72	99	---	---	---	---	---	130	---	76
AC-FT	5810	8250	6160	11700	---	---	---	---	---	17040	---	6900

WTR YR 1983 TOTAL - MEAN - MAX - MIN - AC-FT -

NOTE.--Discharge above 1,000 ft<sup>3</sup>/s not published.

## 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 National Geodetic Vertical Datum of 1929 (levels by 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.--Water-discharge records good. Many small diversions for irrigation and municipal supply affect very low flows. Since 1954, at least 10 percent of the drainage area has been regulated by reservoirs. Some regulation by Belton Lake (station 08102000) on Leon River beginning Mar. 8, 1954, and by Stillhouse Hollow Lake (station 08104050) on Lampasas River beginning Sept. 2, 1966. The Aluminum Co. of America diverts water from the river upstream from the gage for use at their Rockdale plant. The city of Cameron diverts water from the river and returns treated effluent to the river upstream from gage. Flow is 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<sup>2</sup> in the Nolan, Donahoe, and Brushy Creeks drainage basins. Gage-height telemeter located at station.

AVERAGE DISCHARGE.--36 years (water years 1918-53) unregulated, 1,807 ft<sup>3</sup>/s (1,309,000 acre-ft/yr); 30 years (water years 1954-83) regulated, 1,590 ft<sup>3</sup>/s (1,152,000 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, 15,400 ft<sup>3</sup>/s May 22 at 1100 hours (gage height, 29.30 ft); minimum daily, 30 ft<sup>3</sup>/s Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	74	140	103	202	598	1420	291	3530	391	130	150
2	31	81	108	122	214	724	1490	287	2220	355	125	124
3	36	93	105	225	231	724	1210	278	1870	338	123	117
4	39	498	109	202	204	819	1120	269	1700	328	127	111
5	44	349	121	143	369	4040	1130	237	2460	312	124	111
6	37	190	96	123	3200	2650	1110	228	3460	314	154	132
7	400	128	88	149	1280	1390	1070	173	5280	321	151	128
8	394	108	82	154	583	1390	937	159	4500	323	232	116
9	250	99	81	148	841	1860	808	157	2000	312	2640	87
10	156	95	80	138	4590	2190	644	151	1300	300	1060	97
11	122	93	80	135	2520	2400	606	474	1260	295	423	126
12	107	91	93	165	1390	2310	588	3580	1390	293	301	139
13	99	88	166	165	1150	1950	580	1910	1340	287	252	118
14	97	90	143	163	1050	1920	564	2530	1340	284	188	106
15	124	83	107	164	777	1920	541	2620	1430	290	159	123
16	100	78	96	178	1410	1730	521	3020	1380	336	140	166
17	87	78	89	170	1020	1900	520	2680	1300	340	132	113
18	80	78	84	161	778	1710	538	2620	1260	377	238	104
19	77	81	83	192	695	1700	539	2560	1210	358	473	101
20	72	81	81	316	671	2630	534	2000	1150	327	1540	88
21	71	87	79	336	2190	2320	532	10500	741	311	1640	128
22	69	88	77	298	1470	2020	596	14900	509	322	425	112
23	67	86	103	355	1090	2330	669	8930	456	285	274	88
24	67	86	107	332	1120	4480	662	3300	438	270	224	77
25	68	86	105	270	1120	2360	632	2760	433	248	191	73
26	68	89	100	242	682	2870	451	3050	517	222	281	70
27	67	114	95	224	482	5040	366	3890	474	181	449	89
28	69	602	80	212	455	2400	325	3720	450	169	444	90
29	71	395	177	208	---	2030	304	3510	417	158	442	86
30	72	213	142	203	---	1910	296	3450	416	136	295	81
31	72	---	108	200	---	1670	---	3490	---	133	142	---
TOTAL	3143	4402	3205	6196	31784	65985	21303	87724	46231	8916	13519	3251
MEAN	101	147	103	200	1135	2129	710	2830	1541	288	436	108
MAX	400	602	177	355	4590	5040	1490	14900	5280	391	2640	166
MIN	30	74	77	103	202	598	296	151	416	133	123	70
AC-FT	6230	8730	6360	12290	63040	130900	42250	174000	91700	17680	26810	6450
CAL YR 1982	TOTAL	255458	MEAN 700	MAX 15600	MIN 30	AC-FT 506700						
WTR YR 1983	TOTAL	295659	MEAN 810	MAX 14900	MIN 30	AC-FT 586400						

## BRAZOS RIVER BASIN

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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.

## 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 micromhos Sept. 25, 26, 1963; minimum daily, 154 micromhos Sept. 13, 1974.

WATER TEMPERATURES: Maximum daily, 33.0°C Aug. 6, 1964, Aug. 1, 1969; minimum daily, 3.0 °C Jan. 3, 14, 15, 1979.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 807 micromhos Sept. 23; minimum daily, 263 micromhos Oct. 9.

WATER TEMPERATURES: Maximum daily, 31.0°C July 31; minimum daily, 6.0°C Jan. 4, 5.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)
NOV 08...	1455	97	663	7.9	17.5	66	8.7	91	2.0	400
JAN 19...	0850	162	578	8.1	9.0	17	10.5	91	2.3	2100
MAR 02...	1137	471	507	8.2	16.0	65	9.8	100	1.2	84
MAY 25...	1115	2840	370	8.1	23.5	210	7.5	90	2.7	680
JUL 14...	1022	281	543	7.7	27.5	30	7.0	89	1.0	3500
AUG 16...	1030	135	464	7.7	30.0	42	7.5	100	.5	18000

DATE	100 ML)	STREP- TOCOCCEI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
NOV 08...	600	180	5	55	9.0	69	2.4	5.1	170	66	
JAN 19...	8000	--	--	--	--	--	--	--	200	47	
MAR 02...	K87	210	30	64	12	27	.8	2.9	180	32	
MAY 25...	12000	160	17	50	7.6	15	.5	3.1	140	25	
JUL 14...	400	210	19	63	13	31	1.0	3.2	192	35	
AUG 16...	1600	170	16	52	8.7	28	1.0	3.5	150	41	

DATE	AS CL)	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 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, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
NOV 08...	64	.70	10	387	385	2.0	.100	2.1	2.2	.260	
JAN 19...	46	.40	--	325	--	1.6	.030	1.6	1.6	.160	
MAR 02...	37	.40	6.3	291	290	.95	.050	1.0	1.0	.150	
MAY 25...	21	.30	7.6	220	214	.66	.140	.80	.78	.130	
JUL 14...	38	.30	9.2	293	308	1.3	.020	1.3	1.3	.070	
AUG 16...	28	.30	11	240	264	1.3	.020	1.3	1.4	.150	

## BRAZOS RIVER BASIN

08106500 LITTLE RIVER AT CAMERON, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

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- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 08...	.410	1.5	1.80	1.00	1.00	.960	27	7.1	97
JAN 19...	.160	.64	.80	.620	.520	.480	36	16	100
MAR 02...	.190	.85	1.00	.200	.150	.100	113	144	97
MAY 25...	.150	1.3	1.40	.320	.100	.080	489	3750	90
JUL 14...	.070	.63	.70	.280	.260	.190	66	50	95
AUG 16...	.180	.75	.90	.290	.310	.190	74	27	99

DATE	TIME	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)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
NOV 08...	1455	6	60	<1	<1	<3	1	21
MAY 25...	1115	4	51	<1	<1	<3	2	11
AUG 16...	1030	7	59	<1	<1	<3	3	50

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 08...	1	5	<.1	9	1	<1	4
MAY 25...	2	<1	<.1	<1	1	<1	<3
AUG 16...	1	4	<.1	2	1	<1	<3

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1982 TO SEPTEMBER 1983

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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.	1982	3143	584	326	2770	41	346	41	351	230
NOV.	1982	4402	624	349	4150	44	520	45	529	240
DEC.	1982	3205	658	369	3200	47	403	48	417	250
JAN.	1983	6196	639	358	5980	45	751	46	767	250
FEB.	1983	31784	434	240	20600	29	2450	27	2280	170
MAR.	1983	65985	438	242	43100	29	5150	27	4790	180
APR.	1983	21303	513	285	16400	35	1990	33	1920	200
MAY	1983	87724	375	206	48900	24	5760	22	5220	150
JUNE	1983	46231	428	236	29500	28	3520	26	3270	170
JULY	1983	8916	541	301	7240	37	886	36	866	210
AUG.	1983	13519	417	230	8410	27	1000	25	930	170
SEPT	1983	3251	661	371	3260	47	411	48	424	250
TOTAL		295659	**	**	193000	**	23200	**	21800	**
WTD. AVG.		810	438	242	**	29	**	27	**	170



## BRAZOS RIVER BASIN

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08106500 LITTLE RIVER AT CAMERON, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983												
DAY	OCT	NOV	DEC	JAN	FEB	EQUIVALENT MEAN		MAY	JUN	JUL	AUG	SEP
						MAR	APR					
1	746	717	576	728	590	580	475	583	413	540	633	583
2	744	726	529	737	589	502	479	585	432	535	641	601
3	749	698	524	696	600	511	492	589	474	540	643	613
4	744	510	531	671	603	509	502	588	478	532	645	628
5	747	532	550	777	570	395	503	590	467	533	657	627
6	743	672	551	648	386	402	500	620	412	537	659	638
7	600	729	578	659	407	412	502	624	324	531	687	651
8	572	659	593	654	448	444	506	627	339	545	670	653
9	263	612	621	650	435	465	502	649	404	540	360	657
10	292	564	640	620	378	476	515	648	468	545	345	658
11	424	554	657	596	382	475	513	600	495	538	409	673
12	465	546	669	603	376	468	522	456	440	537	400	683
13	439	532	687	595	395	465	528	385	447	543	396	711
14	510	544	671	601	412	460	527	368	448	540	409	743
15	552	551	696	606	439	461	526	452	432	541	427	710
16	594	571	723	620	500	465	525	456	465	530	456	677
17	699	595	748	622	470	507	520	460	442	545	497	650
18	733	625	740	625	484	495	516	466	441	558	529	657
19	730	647	725	616	497	482	521	461	444	564	449	641
20	731	656	710	600	503	448	540	478	441	571	402	647
21	726	672	720	633	481	443	546	293	458	535	303	664
22	713	687	692	664	436	457	547	281	524	530	422	776
23	705	709	669	640	454	460	528	291	537	524	494	807
24	704	719	670	649	412	316	528	382	541	499	527	654
25	713	736	680	664	442	429	529	390	543	501	547	615
26	724	752	704	655	482	441	525	393	546	499	500	616
27	721	726	710	627	556	375	517	422	539	532	416	629
28	708	646	723	606	570	431	567	404	559	573	421	643
29	719	672	730	596	---	432	573	409	586	580	425	660
30	725	600	700	603	---	448	583	403	551	583	423	673
31	719	---	720	614	---	461	---	415	---	627	489	---
MEAN	644	639	659	641	475	455	522	476	470	543	493	661

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983												
DAY	OCT	NOV	DEC	JAN	FEB	ONCE-DAILY		MAY	JUN	JUL	AUG	SEP
						MAR	APR					
1	24.5	21.0	14.5	7.5	12.0	13.0	18.0	22.0	19.5	28.5	28.5	29.0
2	24.0	22.0	17.0	7.0	10.0	15.0	15.0	23.0	20.0	29.0	28.5	28.0
3	24.5	19.5	14.5	7.0	9.0	16.0	15.0	21.0	21.0	29.0	29.0	28.0
4	24.0	16.5	15.0	6.0	9.0	17.0	16.0	20.5	22.0	28.0	27.0	28.0
5	26.0	15.0	14.5	6.0	8.5	16.0	15.0	21.0	22.0	28.5	27.5	27.5
6	25.0	15.0	14.5	7.0	8.0	16.0	15.0	21.0	24.0	27.5	28.5	28.0
7	25.0	15.5	12.5	8.0	6.5	15.5	14.5	23.5	21.0	27.0	29.0	28.0
8	25.0	16.5	12.0	10.0	6.5	15.0	14.0	22.0	22.5	27.0	28.5	28.0
9	24.0	17.0	12.0	9.5	10.0	15.0	14.0	21.5	22.5	26.5	24.0	27.0
10	23.0	18.0	11.5	9.0	10.0	13.5	15.0	22.0	22.5	27.0	24.0	26.5
11	21.5	19.0	11.0	9.0	12.0	13.0	16.0	22.0	23.5	28.0	26.0	26.5
12	20.0	17.0	8.5	9.0	11.0	13.0	18.0	21.5	24.0	28.0	27.0	27.0
13	20.0	16.0	8.0	8.5	9.0	14.0	20.0	21.5	24.5	27.0	27.5	26.0
14	18.0	15.0	8.0	9.5	10.0	14.5	18.0	23.0	25.0	26.0	28.0	26.0
15	18.0	15.0	9.0	9.0	11.5	15.0	17.0	20.0	24.0	26.0	28.5	26.0
16	18.0	16.0	8.0	8.5	11.0	15.0	16.0	17.5	24.0	25.5	29.0	26.0
17	19.0	16.0	8.5	9.0	11.0	14.0	17.0	19.0	24.0	26.0	29.0	27.0
18	20.0	14.5	10.0	9.5	11.5	13.0	17.5	20.0	24.5	27.0	28.0	27.5
19	20.5	15.0	10.0	9.5	11.5	13.0	18.0	19.0	25.0	27.0	26.0	26.0
20	19.0	15.5	10.0	8.0	12.5	13.0	18.5	20.0	25.0	27.0	25.0	26.0
21	18.0	16.5	11.5	7.0	13.0	11.0	18.0	20.0	25.5	27.0	25.0	22.0
22	18.0	18.0	12.5	7.0	12.0	13.0	19.0	20.0	26.0	27.5	26.0	20.0
23	16.5	19.0	14.0	6.5	11.5	12.0	18.5	22.0	26.0	27.5	27.0	20.0
24	16.0	14.5	16.0	7.0	12.0	11.0	18.0	21.5	26.0	28.0	28.0	20.0
25	16.0	13.0	14.5	7.0	12.5	12.0	17.0	22.0	26.0	28.5	28.0	20.5
26	14.5	12.5	12.0	7.5	12.0	13.0	18.5	22.5	25.5	28.5	28.0	21.0
27	15.0	11.5	12.5	8.0	12.0	11.0	19.0	23.5	26.5	28.5	28.5	22.0
28	16.0	10.0	10.5	9.0	12.0	14.0	20.0	22.0	27.0	29.0	28.0	23.0
29	17.0	11.0	8.0	9.0	---	15.0	22.0	22.0	27.5	29.0	28.0	23.0
30	19.0	11.5	8.0	9.5	---	15.5	22.0	22.0	28.0	29.0	27.5	22.0
31	20.0	---	8.0	10.5	---	15.5	---	20.0	---	31.0	28.0	---
MEAN	20.0	16.0	11.5	8.0	10.5	14.0	17.5	21.0	24.0	27.5	27.5	25.0



## BRAZOS RIVER BASIN

08109000 BRAZOS RIVER NEAR BRYAN, TX

LOCATION.--Lat 30°36'52", long 96°29'10", 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 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 good. 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 and industrial uses, and oilfield operation. Flow is affected at times by discharge from the flood-detention pools of 143 floodwater-retarding structures with a combined detention capacity of 152,100 acre-ft. These structures control runoff from 448 mi<sup>2</sup>. Since 1941, at least 10 percent of drainage area is regulated by upstream reservoirs.

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); 43 years (water years 1941-83) regulated, 4,914 ft<sup>3</sup>/s (3,560,000 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, 31,500 ft<sup>3</sup>/s May 22 at 1300 hours (gage height, 18.72 ft); minimum daily, 266 ft<sup>3</sup>/s Sept. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	619	530	999	2220	1670	2270	3690	747	4720	977	1240	640
2	755	567	1420	1680	1780	1580	3310	1070	4710	839	1260	568
3	1460	650	4670	1020	3110	1460	3150	819	3760	1030	1380	492
4	1790	838	2910	930	2180	1740	3160	682	3040	1060	1120	422
5	762	1020	1240	962	3510	4130	2920	611	2480	942	981	372
6	484	1340	1020	1020	8880	11100	2800	560	3470	977	972	346
7	570	1320	1230	1020	8040	7350	2820	508	4670	1070	695	333
8	436	1110	750	1070	5090	4020	2740	545	5810	1150	741	341
9	603	992	555	1060	3520	3440	2160	593	4680	1050	867	322
10	604	1070	486	1440	9800	3810	1680	912	2630	1050	2950	302
11	572	990	477	1260	11900	3850	1340	1020	1970	991	1890	286
12	577	962	497	1190	7890	3880	1230	5900	1760	1090	1010	290
13	514	1100	435	832	5030	3680	1160	7140	1800	1140	976	308
14	441	1010	801	653	3300	3060	1080	3620	1840	1970	1100	307
15	393	783	789	558	2730	2890	1190	3670	1800	1270	1100	275
16	362	552	553	709	2540	2950	1440	3390	2020	867	1240	266
17	372	519	455	2080	3540	3080	1120	3470	1920	906	1200	357
18	358	482	648	2650	2320	2970	997	3120	1780	849	1240	487
19	368	1090	1560	2270	3340	2600	982	3760	1690	1030	2760	1040
20	351	1040	2050	2430	2990	2600	949	4780	1930	895	3530	1400
21	759	657	1810	2100	4600	3340	944	16200	1980	799	4180	751
22	983	545	1110	2380	8620	3620	1150	30800	1650	1030	4090	509
23	854	477	768	1690	7730	6430	1650	25700	1500	1080	2870	505
24	866	520	543	1150	4900	7690	1700	13900	1510	1070	2280	506
25	694	496	463	1190	3570	7020	1380	7230	1490	1120	1520	406
26	596	449	415	1400	2660	5870	1170	4950	1470	1130	1350	351
27	702	725	463	1410	1900	8980	994	4520	1360	1280	1350	348
28	753	786	516	1600	1530	8570	841	5260	1280	1380	1480	357
29	905	916	437	1600	---	5290	708	5130	1170	1370	1300	451
30	936	1030	901	1360	---	4610	671	4830	1100	1380	986	362
31	655	---	2350	1440	---	4280	---	4410	---	1190	826	---
TOTAL	21094	24566	33321	44374	128670	138160	51126	169847	72990	33982	50484	13700
MEAN	680	819	1075	1431	4595	4457	1704	5479	2433	1096	1629	457
MAX	1790	1340	4670	2650	11900	11100	3690	30800	5810	1970	4180	1400
MIN	351	449	415	558	1530	1460	671	508	1100	799	695	266
AC-FT	41840	48730	66090	88020	255200	274000	101400	336900	144800	67400	100100	27170
CAL YR 1982	TOTAL	1597422	MEAN	4376	MAX	32000	MIN	343	AC-FT	3168000		
WTR YR 1983	TOTAL	782314	MEAN	2143	MAX	30800	MIN	266	AC-FT	1552000		

## BRAZOS RIVER BASIN

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08109500 BRAZOS RIVER NEAR COLLEGE STATION, TX

LOCATION.--Lat 30°32'33", long 96°25'21", Brazos County, Hydrologic Unit 12070101, at bridge on Farm Road 60, 6.5 mi south of College Station, 9 mi downstream from gaging station near Bryan, and at mile 271.9.

DRAINAGE AREA.--39,599 mi<sup>2</sup>, of which 9,566 mi<sup>2</sup> probably is noncontributing.

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: August 1961 to current year.

WATER TEMPERATURES: August 1961 to current year.

REMARKS.--Sampling at this site began in September 1966. From August 1961 to September 1965, samples were collected at State Highway 21 near Bryan 17 mi upstream, and from October 1965 to September 1966, at the gaging station near Bryan 9 mi upstream. 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, 2,810 micromhos Aug. 27, 1978; minimum daily, 235 micromhos Feb. 14, 1977.

WATER TEMPERATURES: Maximum daily, 34.5°C June 16, 1971; minimum daily, 2.0°C on several days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,200 micromhos Oct. 4; minimum daily, 289 micromhos May 23.

WATER TEMPERATURES: Maximum daily, 33.5°C Aug. 15, 31; minimum daily, 6.0°C Jan. 2, 3, Feb. 6, 7.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 27...	1430	679	1100	20.0	260	110	75	18	120
DEC 08...	0742	846	943	14.0	230	95	71	14	99
FEB 28...	1755	1710	511	15.0	170	28	54	8.1	32
MAR 07...	1410	7240	410	17.5	150	20	51	5.4	23
APR 15...	0840	1420	755	18.5	230	58	68	14	63
MAY 24...	1638	14400	303	24.5	130	19	45	4.1	12

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY 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 27...	3.4	5.4	150	130	180	.30	7.6	626
DEC 08...	2.9	5.1	140	120	140	.30	8.1	541
FEB 28...	1.1	4.1	140	58	34	.30	8.1	283
MAR 07...	.9	4.2	130	40	25	.30	9.0	236
APR 15...	1.9	4.0	170	82	88	.30	5.3	427
MAY 24...	.5	5.1	110	21	14	.30	11	178

## BRAZOS RIVER BASIN

08109500 BRAZOS RIVER NEAR COLLEGE STATION, TX--Continued

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1982 TO SEPTEMBER 1983

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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.	1982	21095	1070	602	34300	170	9610	110	6150	270
NOV.	1982	24566	1030	583	38700	160	10700	100	6910	260
DEC.	1982	33321	854	480	43200	130	11300	85	7610	220
JAN.	1983	44374	955	538	64400	140	17300	95	11400	250
FEB.	1983	128670	553	308	107000	69	24100	52	18200	160
MAR.	1983	138160	467	259	96600	54	20100	43	16100	140
APR.	1983	51126	753	421	58100	100	14100	73	10000	210
MAY	1983	169847	397	220	101000	45	20500	37	16800	120
JUNE	1983	72990	597	332	65500	75	14800	57	11100	170
JULY	1983	33982	925	520	47700	140	12600	92	8420	240
AUG.	1983	50484	766	429	58500	110	14700	75	10200	210
SEPT	1983	13700	772	432	16000	110	4000	75	2780	210
TOTAL		782315	**	**	731000	**	174000	**	126000	**
WTD. AVG.		2143	619	346	**	82	**	.60	**	170

## SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	EQUIVALENT MEAN											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1140	1080	917	812	876	554	629	789	555	859	1110	800
2	1150	1060	1060	671	1020	565	665	785	600	804	1120	780
3	1170	1020	535	780	1150	575	705	825	651	785	1120	850
4	1200	1050	386	909	1050	587	745	858	656	891	1110	876
5	1170	1090	562	966	826	426	780	857	591	894	1090	863
6	1140	1010	664	1000	524	430	803	851	596	884	1060	875
7	1120	1020	773	1060	369	403	809	840	459	881	1050	890
8	862	1040	825	1020	376	419	812	812	378	929	1030	895
9	1010	936	920	1040	394	402	789	773	417	910	1020	901
10	1030	984	930	1080	620	421	786	820	493	910	678	891
11	840	1090	912	1120	419	444	769	860	542	929	500	888
12	866	1070	860	1110	420	470	767	572	622	940	610	901
13	918	1110	851	1100	464	465	765	437	589	960	642	891
14	957	1150	887	1080	502	472	765	442	547	1060	950	960
15	927	1160	986	1050	529	477	754	428	619	1020	921	949
16	939	1150	942	1030	597	486	744	502	571	979	1010	930
17	947	1130	945	1110	754	483	765	504	592	880	1030	912
18	952	1100	958	1150	737	487	783	519	578	794	883	845
19	924	1070	1100	836	768	564	757	522	605	793	734	377
20	951	1060	1070	760	955	503	727	320	587	861	530	411
21	1030	1130	1170	916	391	486	728	343	650	857	742	575
22	1130	1080	1150	962	626	464	732	305	685	847	570	712
23	1060	1070	1130	893	471	335	879	289	758	874	401	852
24	997	1060	1110	847	401	396	836	302	836	838	398	915
25	1080	928	1100	832	404	466	775	326	903	846	526	905
26	1120	922	1080	880	420	485	697	377	915	893	755	915
27	1090	810	1010	960	460	500	693	418	849	929	983	923
28	1130	787	888	1030	507	476	712	454	848	1020	965	843
29	1080	1010	893	1070	---	531	744	500	873	1060	940	900
30	1120	898	917	1080	---	560	780	528	866	1080	922	955
31	1090	---	1000	814	---	593	---	530	---	1110	814	---
MEAN	1040	1040	920	967	608	481	757	571	648	913	846	839

## BRAZOS RIVER BASIN

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08109500 BRAZOS RIVER NEAR COLLEGE STATION, TX--Continued

DAY	TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.0	25.5	19.0	6.5	12.0	16.0	---	25.5	23.0	31.5	31.5	31.0
2	26.5	22.0	21.5	6.0	9.0	19.0	---	26.0	24.0	31.0	32.0	31.5
3	27.5	18.0	17.0	6.0	9.5	---	---	---	25.5	30.5	29.0	32.0
4	27.5	17.5	15.0	7.0	8.0	17.5	---	26.5	26.0	31.0	29.0	31.0
5	27.5	16.5	15.0	8.0	8.0	17.0	18.0	24.5	27.5	30.5	30.0	32.0
6	27.5	17.0	15.5	11.0	6.0	17.0	16.0	22.0	24.5	31.0	30.5	30.5
7	26.5	19.0	15.5	12.5	6.0	17.0	15.5	27.0	24.5	30.5	30.5	30.0
8	27.0	19.5	16.0	12.0	9.0	16.5	15.0	26.0	25.0	30.0	29.5	---
9	25.0	20.0	13.5	11.5	10.0	15.5	16.0	24.0	25.5	30.5	28.0	29.0
10	23.0	20.5	12.5	11.5	11.5	15.5	19.0	23.5	26.0	31.5	28.0	30.5
11	21.0	21.5	11.5	12.5	11.5	14.5	20.5	25.0	26.0	31.0	28.0	31.0
12	19.0	19.0	9.0	11.0	11.0	14.5	---	23.5	26.0	30.0	28.5	30.0
13	21.5	17.0	9.0	13.0	12.0	14.0	22.0	23.5	28.0	28.0	31.0	30.0
14	22.5	15.0	10.0	14.5	12.5	15.5	19.0	24.0	27.5	27.0	33.0	30.0
15	23.0	14.5	12.0	11.0	12.0	16.5	18.5	20.0	27.5	26.0	33.5	30.0
16	23.5	12.5	12.0	11.0	13.0	17.0	17.0	22.0	27.0	26.5	32.0	31.5
17	20.0	14.0	13.0	10.0	13.5	17.0	---	21.0	27.5	30.0	31.5	30.5
18	25.0	16.0	14.0	11.5	14.0	13.0	23.0	22.0	28.5	30.0	25.5	26.5
19	25.0	16.5	14.0	7.0	14.0	15.0	21.0	22.0	28.0	30.5	25.5	25.0
20	21.0	18.0	13.0	6.5	14.0	12.0	20.5	20.0	29.5	31.5	27.0	22.5
21	19.0	20.0	14.5	7.0	12.0	12.0	20.5	20.0	30.0	33.0	29.0	---
22	19.0	22.0	16.0	7.0	12.5	12.0	23.0	22.0	29.5	32.0	29.0	23.5
23	---	18.0	19.0	13.0	14.5	11.0	21.5	23.0	29.0	32.0	30.5	23.5
24	19.0	13.0	---	14.0	15.0	11.5	21.5	24.5	29.0	32.5	31.0	24.5
25	19.0	12.5	14.0	9.5	14.5	12.5	22.0	25.5	28.0	31.5	32.0	26.5
26	19.0	10.5	10.5	8.0	13.5	---	22.5	26.5	30.0	32.5	32.0	27.0
27	20.0	---	10.5	---	14.5	14.0	24.0	26.5	31.0	31.5	32.0	27.5
28	21.0	14.0	12.0	9.0	15.0	15.0	24.5	26.0	31.0	32.0	---	27.5
29	20.5	15.5	8.0	11.0	---	16.5	24.0	---	30.5	31.0	31.5	27.0
30	20.0	15.5	8.0	12.0	---	16.5	24.0	26.0	31.5	32.0	33.0	27.0
31	24.5	---	6.5	15.0	---	---	---	22.0	---	33.0	33.5	---
MEAN	23.0	17.5	13.0	10.0	11.5	15.0	20.5	24.0	27.5	30.5	30.0	28.5

## BRAZOS RIVER BASIN

08109700 MIDDLE YEGUA CREEK NEAR DIME BOX, TX

LOCATION.--Lat 30°20'21", long 96°54'16", Lee County, Hydrologic Unit 12070102, on right bank 25 ft upstream from centerline of State Highway 21, 4.5 mi upstream from West Yegua Creek, 5.0 mi southwest of Dime Box, and 17.5 mi upstream from mouth.

DRAINAGE AREA.--236 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 295.4 ft State Department of Highways and Public Transportation datum. June 30 to July 21, 1970, nonrecording gage at same site and datum.

REMARKS.--Records fair. Several observations of water temperature made during the year. Gage-height telemeter located at station.

AVERAGE DISCHARGE.--21 years, 52.4 ft<sup>3</sup>/s (3.02 in/yr) 37,980 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,400 ft<sup>3</sup>/s May 24, 1975 (gage height, 15.16 ft); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1851, 16 ft in December 1913, from information by local residents.

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

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 25	0700	1,220	a 10.5
May 22	2200	*2,250	b 11.5
a From floodmark			
b From graph			

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.00	.00	.00	19	17	15	41	4.0	5.8	9.9	.10	.00		
2	.00	.00	.00	8.8	11	14	30	3.5	6.1	7.3	.11	.00		
3	.00	.00	.36	11	8.6	12	26	3.2	6.2	4.3	.04	.00		
4	.00	.00	.23	13	8.0	40	24	2.6	6.2	1.7	.01	.00		
5	.00	.00	.15	12	27	26	21	2.4	6.4	.90	.17	.00		
6	.00	.00	.11	8.6	51	20	18	2.1	7.4	.54	2.8	.00		
7	.00	.00	.09	6.2	110	21	16	1.5	12	.29	1.3	.00		
8	.00	.00	.07	4.7	132	16	15	1.3	30	.20	.82	.00		
9	.00	.00	.04	4.0	239	12	13	.86	93	.09	1.5	.00		
10	.00	.00	.03	3.1	250	10	13	.80	50	.11	2.7	.00		
11	.00	.00	.05	2.3	199	9.3	12	17	23	.08	11	.00		
12	.00	.00	.06	2.6	191	8.3	11	65	12	.04	8.6	.00		
13	.00	.00	.05	2.7	205	7.9	10	96	6.0	.02	4.0	.00		
14	.00	.00	.03	2.9	79	7.3	9.8	160	3.1	.02	2.1	.00		
15	.00	.00	.02	3.6	84	7.3	9.2	141	2.9	.03	.88	.00		
16	.00	.00	.02	5.6	138	9.7	8.3	52	16	.05	.33	.00		
17	.00	.00	.01	5.1	137	19	7.5	35	16	.06	.12	.00		
18	.00	.00	.01	12	145	42	7.1	28	14	.57	.51	.00		
19	.00	.06	.00	66	94	38	7.4	22	13	5.0	7.9	.00		
20	.00	.03	.00	92	60	31	7.1	58	12	4.3	16	.00		
21	.00	.00	.00	97	138	40	6.1	340	11	26	67	.00		
22	.00	.00	.01	52	187	69	5.9	1010	9.9	24	37	.00		
23	.00	.00	.02	31	172	436	5.9	1630	7.7	6.3	6.2	.00		
24	.00	.00	.04	23	133	624	5.6	1370	5.1	1.4	.83	.00		
25	.00	.00	.19	19	48	980	5.2	894	3.6	.49	.10	.00		
26	.00	.00	.41	16	29	590	4.8	429	4.1	.27	.03	.01		
27	.00	.00	.67	13	21	415	4.4	131	32	.17	.00	.01		
28	.00	.00	.90	12	17	372	4.2	46	56	.16	.00	.01		
29	.00	.00	1.1	10	---	257	4.2	16	25	.15	.00	.01		
30	.00	.00	1.1	9.6	---	121	4.2	11	14	.08	.00	.02		
31	.00	---	.31	18	---	65	---	7.8	---	.10	.00	---		
TOTAL	.00	.09	6.08	585.8	2930.6	4334.8	356.9	6581.06	509.5	94.62	172.15	.06		
MEAN	.000	.003	.20	18.9	105	140	11.9	212	17.0	3.05	5.55	.002		
MAX	.00	.06	1.1	97	250	980	41	1630	93	26	67	.02		
MIN	.00	.00	.00	2.3	8.0	7.3	4.2	.80	2.9	.02	.00	.00		
CFSM	.000	.000	.001	.08	.45	.59	.05	.90	.07	.01	.02	.000		
IN.	.00	.00	.00	.09	.46	.68	.06	1.04	.08	.01	.03	.00		
AC-FT	.00	.2	12	1160	5810	8600	708	13050	1010	188	341	.1		
CAL YR 1982	TOTAL	10852.24	MEAN	29.7	MAX	2440	MIN	.00	CFSM	.13	IN	1.71	AC-FT	21530
WTR YR 1983	TOTAL	15571.66	MEAN	42.7	MAX	1630	MIN	.00	CFSM	.18	IN	2.45	AC-FT	30890



## BRAZOS RIVER BASIN

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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>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1962 to current year.

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.--Records good. Diversions above station for irrigation. Gage-height telemeter located at station.

AVERAGE DISCHARGE.--21 years, 57.8 ft<sup>3</sup>/s (41,880 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 above base of 1,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 13	2000	1,680	10.01
May 22	0700	*3,220	11.04

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	2.8	13	145	69	19	40	12	18	7.5	.03	7.0
2	.00	1.1	12	124	30	18	32	12	18	6.5	.02	7.0
3	.00	1.3	177	52	19	17	26	11	16	6.0	.00	6.5
4	.00	5.4	97	27	15	71	24	9.6	15	5.6	.00	6.0
5	.00	9.6	48	19	147	72	23	8.1	15	5.0	.25	6.0
6	.00	6.4	22	15	296	39	22	7.2	16	5.5	7.2	7.8
7	.60	4.5	15	14	375	24	20	7.0	38	4.7	3.8	6.6
8	.34	3.5	12	13	340	18	19	6.5	81	4.0	1.6	6.2
9	.33	2.7	11	11	131	16	19	6.3	36	3.0	5.3	6.0
10	.31	2.3	11	16	115	14	18	7.4	20	2.2	36	7.1
11	1.5	.61	14	11	80	13	19	91	14	1.3	51	17
12	3.5	.16	15	8.9	58	12	19	141	12	1.0	21	10
13	2.9	.79	16	8.1	43	12	19	129	10	.64	10	7.8
14	3.1	1.4	16	7.6	31	12	19	44	9.6	.70	6.8	6.6
15	3.7	1.4	14	7.2	38	12	17	28	20	.96	4.8	6.1
16	3.4	1.3	12	7.6	46	17	16	30	38	1.4	4.3	6.1
17	2.6	1.4	11	7.7	53	21	16	31	44	1.8	4.3	7.7
18	2.0	1.4	11	15	44	22	15	25	21	4.9	3.8	11
19	.35	61	11	202	44	18	15	22	15	6.7	15	24
20	.05	12	9.1	208	46	34	14	191	11	4.2	72	23
21	.00	5.6	13	182	143	70	13	1610	9.3	2.5	168	21
22	.00	4.3	10	82	277	61	13	2820	8.2	2.3	343	16
23	.00	4.5	9.4	43	304	923	13	1880	7.9	.56	308	12
24	.00	5.5	9.3	29	94	1320	12	1050	7.1	.27	57	10
25	.00	6.1	11	21	41	1450	12	357	7.2	.37	21	8.8
26	.00	11	9.9	17	29	1140	12	111	14	.43	15	7.9
27	.00	19	14	15	23	687	11	52	27	.40	12	7.2
28	.00	17	15	14	20	652	12	41	14	.35	11	7.0
29	81	22	13	14	---	277	13	32	9.3	.15	10	8.7
30	6.1	16	12	13	---	79	13	22	8.5	.08	8.6	10
31	4.0	---	26	55	---	51	---	19	---	.04	7.6	---
TOTAL	115.78	232.06	689.7	1404.1	2951	7191	536	8813.1	580.1	81.05	1208.40	294.1
MEAN	3.73	7.74	22.2	45.3	105	232	17.9	284	19.3	2.61	39.0	9.80
MAX	81	61	177	208	375	1450	40	2820	81	7.5	343	24
MIN	.00	.16	9.1	7.2	15	12	11	6.3	7.1	.04	.00	6.0
AC-FT	230	460	1370	2790	5850	14260	1060	17480	1150	161	2400	583

CAL YR 1982	TOTAL	8934.97	MEAN	24.5	MAX	1700	MIN	.00	AC-FT	17720
WTR YR 1983	TOTAL	24096.39	MEAN	66.0	MAX	2820	MIN	.00	AC-FT	47800

## BRAZOS RIVER BASIN

08109800 EAST YEGUA CREEK NEAR DIME BOX, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1980 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

OXYGEN, DIS-SOLVED (PER-CENT SATURATION)											OXYGEN DEMAND, BIO-CHEMICAL, 5 DAY (MG/L)	HARD-NESS (MG/L AS CaCO3)
DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (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)	HARD-NESS (MG/L AS CaCO3)	
OCT 18...	1200	2.0	812	7.4	19.5	25	17	7.4	81	3.2	250	
DEC 07...	1113	15	628	7.0	11.0	70	50	9.8	89	2.3	190	
FEB 07...	1130	398	422	7.3	6.0	150	130	11.2	90	2.7	120	
APR 05...	1040	24	1250	7.4	16.5	20	26	7.8	81	1.1	420	
JUN 07...	1120	35	1240	7.0	22.5	10	33	8.0	93	2.8	410	
AUG 25...	1145	18	786	6.8	28.5	60	32	7.5	97	1.7	250	
DATE	TIME	HARD-NESS, NONCARBONATE (MG/L 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 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)
OCT 18...	196	66	20	57	1.6	9.1	52	180	91	.30	16	
DEC 07...	148	50	15	47	1.6	8.0	39	150	74	.20	15	
FEB 07...	95	31	10	30	1.2	5.7	24	100	50	.20	10	
APR 05...	343	110	35	100	2.2	6.8	76	320	170	.40	20	
JUN 07...	318	110	34	95	2.1	6.6	97	300	160	.80	21	
AUG 25...	202	68	20	49	1.4	8.3	51	200	75	.50	17	
DATE	TIME	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, 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)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 18...	471	27	5	--	.020	<.10	.070	1.3	1.40	.100	7.3	
DEC 07...	383	84	40	.02	.080	.10	.130	2.7	2.80	.150	10	
FEB 07...	251	105	41	.03	.070	.10	.180	.92	1.10	.140	12	
APR 05...	808	55	14	--	<.020	.20	.170	.93	1.10	.060	9.7	
JUN 07...	786	83	19	.36	.040	.40	.420	.68	1.10	.060	10	
AUG 25...	469	54	9	--	.020	<.10	.110	.99	1.10	.070	11	
DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	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)					
OCT 18...	1200	<1	71	<1	<10	2	36					
JUN 07...	1120	1	100	<1	<10	1	380					
AUG 25...	1145	<1	93	1	<10	2	180					
DATE	TIME	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 18...		2	150	<.1	<1	<1	13					
JUN 07...		1	360	<.1	<1	<1	9					
AUG 25...		6	490	<.1	<1	<1	6					

## 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 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, 98,070 acre-ft Sept. 7, 1978 (elevation, 231.80 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 223,200 acre-ft May 27 at 0900 hours (elevation, 242.95 ft); minimum daily, 142,200 acre-ft Oct. 6 (elevation, 236.38 ft).

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

236.0	138,200	241.0	196,800
237.0	148,900	243.0	223,900
239.0	171,800		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	142900	144200	144200	153700	167700	181100	219000	160600	209400	162900	158600	163100
2	142800	144400	145100	155800	167700	178800	216300	160300	206700	162500	158300	163000
3	142600	144600	147600	157000	167200	176800	213900	160300	204100	162400	158100	162600
4	142500	144400	148900	157500	166800	175500	212100	160200	201500	162100	157800	162500
5	142300	144000	149400	157600	167900	174600	209400	159900	199300	162000	157700	162200
6	142200	144000	149300	157900	170100	172900	206500	159700	196900	161700	157700	162000
7	142400	143900	149300	158100	172300	170700	204100	159500	194700	161400	157600	161600
8	142900	143800	149300	158300	173000	168700	201800	159400	192400	161300	161400	161300
9	142900	143700	149400	158300	175800	166500	199600	159000	190400	161000	162900	160800
10	143700	143800	150100	158200	179000	165100	196800	159000	187900	160700	163000	160500
11	144300	143900	150100	158200	182800	164600	194900	159900	185400	160500	163100	160100
12	144900	143600	150000	157900	183900	163900	192800	160300	182800	160200	163200	160000
13	145200	143400	149800	157900	183500	163200	191000	160800	180100	160000	163200	159400
14	145100	143200	149900	157900	182800	162400	188500	161300	177600	159800	163100	158700
15	145000	142900	149900	157900	185300	161900	186000	162400	175400	160600	162900	158500
16	145000	142900	149400	157900	187900	164100	183800	162500	172900	161100	162600	158300
17	144600	143200	149700	157800	188700	163300	181400	162600	170100	161000	162000	158200
18	144800	142900	149600	158900	188200	162800	179000	162900	167700	160900	163100	159300
19	144600	142900	149600	161600	186800	162300	176600	163600	165000	160900	163200	162800
20	144600	143100	149300	164300	189100	162500	174200	173600	163800	160700	163700	163100
21	144100	143100	149400	166500	191600	161900	172400	188500	163700	160600	163900	162500
22	143800	143400	149600	167400	192500	161500	170600	200500	163700	160600	164000	162300
23	143300	143400	149700	168100	192200	173500	168200	209600	163700	160500	164300	162100
24	143200	143300	149400	168200	191000	185900	165400	216700	163600	160200	164600	161800
25	143100	143300	149300	168000	189100	194200	163000	221100	163600	160000	164700	161700
26	142900	143900	149800	167900	187300	206500	161800	222900	163600	159800	164200	161700
27	142700	144200	150100	167400	184700	214200	161300	222700	163200	159500	163700	161700
28	143700	144100	150000	167100	183000	218500	160700	220400	163300	159300	163200	161600
29	144000	144100	149900	167000	---	220400	160500	217900	163300	159200	163000	161400
30	144200	144200	149800	166500	---	220800	160700	215600	163100	159100	162600	161300
31	144200	---	150500	167100	---	220400	---	212300	---	159000	162500	---
MAX	145200	144600	150500	168200	192500	220800	219000	222900	209400	162900	164700	163100
MIN	142200	142900	144200	153700	166800	161600	160500	159000	163100	159000	157600	158200
(†)	263.57	263.57	237.15	238.60	239.92	242.75	238.05	242.16	238.26	237.90	238.21	238.10
(‡)	+1300	0	+6300	+16600	+15900	+37400	-59700	+51600	-49200	-4100	+3500	-1200

CAL YR 1982 MAX 221400 MIN 142200 ‡ -7900  
WTR YR 1983 MAX 222900 MIN 142200 ‡ +18400

† Elevation, in feet, at end of month.  
‡ Change in contents, in acre-feet.

## BRAZOS RIVER BASIN

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 SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPARANCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, (PER-CENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI, KF AGAR (COLS. PER 100 ML)
JAN										
25...	1110	1.00	381	7.8	9.5	.90	11.1	97	K16	K2
25...	1112	10.0	381	7.8	9.5	--	11.0	96	--	--
25...	1114	20.0	381	7.8	9.5	--	10.9	95	--	--
25...	1116	25.0	381	7.8	9.5	--	10.7	93	--	--
25...	1118	31.0	381	7.4	9.5	--	10.6	92	--	--
MAY										
04...	1045	1.00	321	7.4	23.0	.40	8.5	99	K2	160
04...	1047	10.0	321	7.2	22.5	--	7.7	89	--	--
04...	1049	20.0	321	7.2	22.0	--	7.6	87	--	--
04...	1051	30.0	318	6.8	22.0	--	6.6	75	--	--
AUG										
17...	1145	1.00	322	7.1	29.0	.90	4.2	55	K4	23
17...	1147	10.0	324	7.1	28.5	--	2.5	32	--	--
17...	1149	20.0	324	7.1	28.5	--	2.3	30	--	--
17...	1151	28.0	324	7.2	28.5	--	.8	10	--	--

DATE	HARDNESS (MG/L AS CAC03)	HARDNESS, NONCARBONATE (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 FIELD (MG/L AS CAC03)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS CL)
JAN										
25...	110	55	32	7.2	28	1.2	6.6	55	57	46
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	110	57	32	7.2	28	1.2	6.6	53	59	49
MAY										
04...	87	42	25	6.0	23	1.1	5.5	45	47	36
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	88	44	25	6.1	22	1.1	5.5	44	52	36
AUG										
17...	90	38	26	6.1	22	1.0	5.7	52	47	33
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	93	40	27	6.3	22	1.0	5.9	54	45	34

DATE	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGANESE, DIS-SOLVED (UG/L AS MN)
JAN									
25...	.20	9.6	220	<.10	.60	--	.050	<3	3
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	.10	.80	.90	.050	<10	10
25...	--	--	--	--	--	--	--	--	--
25...	--	9.6	223	<.10	.80	--	.050	4	11
MAY									
04...	.20	7.9	178	.30	1.30	1.6	.050	46	2
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	.30	.80	1.1	.060	50	10
04...	--	7.8	181	.30	1.30	1.6	.060	63	13
AUG									
17...	.20	8.4	180	<.10	1.10	--	.010	6	12
17...	--	--	--	<.10	1.20	--	<.010	30	10
17...	--	--	--	<.10	1.20	--	.030	40	100
17...	--	9.3	182	<.10	1.30	--	.050	22	500



## BRAZOS RIVER BASIN

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## SOMERVILLE LAKE NEAR SOMMERSVILLE, TX--Continued

301940096315801 SOMERVILLE LAKE SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
25...	1135	1.00	381	7.9	9.5	11.1	97
25...	1138	10.0	381	7.9	9.5	11.0	96
25...	1140	20.0	381	7.8	9.5	10.6	92
25...	1142	30.0	381	7.8	9.5	10.6	92
MAY							
04...	1115	1.00	324	7.5	23.0	8.4	98
04...	1118	10.0	324	7.3	22.5	7.2	83
04...	1120	20.0	324	7.3	22.5	7.2	83
04...	1122	28.0	324	7.3	22.5	6.9	79
AUG							
17...	1220	1.00	320	7.2	29.5	5.0	66
17...	1222	10.0	322	7.1	28.5	3.2	41
17...	1224	15.0	322	7.1	28.5	1.2	15
17...	1226	20.0	322	7.1	28.5	.8	10
17...	1228	28.0	324	7.1	28.5	.8	10

302026096341501 SOMERVILLE LAKE SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
25...	1150	1.00	373	7.8	9.5	10.8	94
25...	1152	10.0	373	7.8	9.5	10.7	93
25...	1154	15.0	376	7.8	9.5	10.7	93
MAY							
04...	1130	1.00	323	8.2	22.5	9.8	113
04...	1132	10.0	323	7.1	22.5	6.8	78
04...	1134	14.0	323	7.1	22.5	6.0	69
AUG							
17...	1235	1.00	323	8.7	32.0	7.1	97
17...	1237	10.0	325	7.1	30.0	2.4	32
17...	1239	13.0	327	6.9	29.5	1.4	18

301805096332501 SOMERVILLE LAKE SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
25...	1330	1.00	379	8.0	9.5	11.3	98
25...	1332	13.0	379	7.7	9.5	10.9	95
MAY							
04...	1330	1.00	324	8.3	24.0	10.4	123
04...	1332	12.0	325	7.5	22.0	7.4	84
AUG							
17...	1440	1.00	322	8.4	30.5	7.1	95
17...	1442	13.0	324	7.9	30.0	5.3	70



## BRAZOS RIVER BASIN

## SOMERVILLE LAKE NEAR SOMMERVILLE, TX--Continued

301847096334601 SOMERVILLE LAKE SITE DR

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
25...	1215	1.00	378	7.9	9.5	11.0	96
25...	1217	10.0	378	7.9	9.5	10.9	95
25...	1219	20.0	378	7.9	9.0	10.9	94
25...	1221	25.0	378	7.8	9.0	10.7	92
MAY							
04...	1215	1.00	322	8.0	24.0	9.9	117
04...	1217	10.0	322	7.3	22.5	7.3	84
04...	1220	23.0	322	7.4	22.5	6.4	74
AUG							
17...	1335	1.00	322	8.6	30.0	7.4	98
17...	1337	10.0	323	8.4	29.5	6.9	90
17...	1339	15.0	325	8.1	29.5	6.4	84
17...	1341	20.0	326	6.9	28.5	1.5	19
17...	1343	24.0	328	6.8	28.5	1.1	14

301904096335601 SOMERVILLE LAKE SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)
JAN										
25...	1200	1.00	381	7.8	9.5	.90	10.7	93	K2	K2
25...	1202	10.0	381	7.8	9.5	--	10.6	92	--	--
25...	1204	20.0	381	7.8	9.5	--	10.6	92	--	--
25...	1206	30.0	381	7.8	9.5	--	10.4	91	--	--
MAY										
04...	1140	1.00	322	7.8	24.0	.40	9.1	108	K2	190
04...	1142	10.0	325	7.2	22.5	--	7.5	86	--	--
04...	1144	20.0	325	7.1	22.5	--	7.2	83	--	--
04...	1146	28.0	325	7.1	22.5	--	5.1	59	--	--
AUG										
17...	1250	1.00	322	8.8	31.5	.90	7.6	103	K1	57
17...	1252	10.0	322	8.4	30.0	--	6.8	90	--	--
17...	1254	15.0	323	7.9	29.5	--	5.8	76	--	--
17...	1256	20.0	325	7.4	29.0	--	2.4	31	--	--
17...	1258	27.0	326	7.1	28.5	--	.8	10	--	--

DATE	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L AS CaCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JAN									
25...	110	55	32	7.2	29	1.3	6.7	55	56
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	110	55	32	7.2	28	1.2	6.6	55	57
MAY									
04...	94	49	27	6.5	24	1.1	5.5	45	54
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
04...	94	48	27	6.4	23	1.1	5.5	46	53
AUG									
17...	91	40	26	6.3	22	1.0	6.0	51	50
17...	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
17...	91	38	26	6.4	22	1.0	5.8	53	49

## BRAZOS RIVER BASIN

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## SOMERVILLE LAKE NEAR SOMMERVILLE, TX--Continued

301904096335601 SOMERVILLE LAKE SITE DC--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN									
25...	46	9.7	220	.10	.60	.70	.050	5	3
25...	--	--	--	<.10	.90	--	.050	<10	10
25...	--	--	--	--	--	--	--	--	--
25...	46	9.6	219	<.10	1.40	--	.070	14	35
MAY									
04...	37	8.2	189	.20	1.10	1.3	.060	13	<1
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	.30	1.00	1.3	.050	280	30
04...	37	8.6	188	.30	1.20	1.5	.090	40	49
AUG									
17...	35	8.1	184	<.10	1.30	--	.030	5	<1
17...	--	--	--	<.10	1.10	--	.060	70	<10
17...	--	--	--	--	--	--	--	--	--
17...	--	--	--	<.10	1.30	--	.040	80	160
17...	34	9.2	185	<.10	1.40	--	.040	14	350

301817096364101 SOMERVILLE LAKE SITE EC

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
25...	1230	1.00	379	8.0	9.5	11.2	97
25...	1232	10.0	379	8.0	9.5	11.2	97
25...	1234	20.0	379	7.9	9.5	10.9	95
25...	1236	27.0	379	7.8	9.5	10.3	90
MAY							
04...	1230	1.00	323	7.8	24.0	9.6	114
04...	1232	10.0	323	7.3	22.5	7.5	86
04...	1234	20.0	323	7.3	22.5	7.2	83
04...	1236	24.0	323	7.3	22.5	6.9	79
AUG							
17...	1350	1.00	321	8.8	30.5	7.8	104
17...	1352	10.0	321	8.8	30.5	7.7	103
17...	1354	15.0	324	8.5	30.0	6.7	89
17...	1356	20.0	333	7.0	29.0	1.2	16
17...	1358	23.0	334	7.3	29.0	.8	10

301754096380801 SOMERVILLE LAKE SITE FC

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JAN										
25...	1250	1.00	280	7.3	9.0	.20	10.4	90	360	K1100
25...	1252	12.0	284	7.6	9.0	--	10.2	88	--	--
MAY										
04...	1250	1.00	422	8.3	25.5	.20	10.2	124	K12	340
04...	1252	5.00	411	7.5	23.5	--	7.4	87	--	--
04...	1254	11.0	422	7.4	23.5	--	6.9	81	--	--
AUG										
17...	1420	1.00	347	8.6	31.5	.40	7.4	100	K7	190
17...	1422	12.0	359	7.3	30.5	--	2.9	39	--	--

## BRAZOS RIVER BASIN

## SOMERVILLE LAKE NEAR SOMMERVILLE, TX--Continued

301754096380801 SOMERVILLE LAKE FC--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JAN									
25...	79	48	22	5.8	22	1.1	5.4	31	55
25...	78	46	22	5.7	21	1.1	5.4	33	55
MAY									
04...	120	78	35	9.0	31	1.3	5.8	47	80
04...	--	--	--	--	--	--	--	--	--
04...	120	73	34	8.8	31	1.3	5.9	48	80
AUG									
17...	98	48	28	6.8	25	1.1	6.1	50	54
17...	99	45	28	7.1	25	1.1	5.9	54	54
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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN									
25...	32	9.6	171	.20	.90	1.1	.150	160	25
25...	32	9.6	171	.20	1.50	1.7	.130	160	70
MAY									
04...	53	6.1	248	<.10	1.80	--	.100	26	2
04...	--	--	--	--	--	--	--	--	--
04...	54	6.4	249	<.10	1.60	--	.120	36	20
AUG									
17...	39	9.5	198	<.10	1.40	--	.060	18	54
17...	40	10	202	<.10	2.30	--	.160	6	1

## SOMERVILLE LAKE NEAR SOMMERSVILLE, TX--Continued

301908096313101 SOMERVILLE LAKE SITE AC

## PHYTOPLANKTON ANALYSES, OCTOBER 1982 TO MAY 1983

DATE TIME	JAN 25,83 1111	MAY 4,83 1046		
TOTAL CELLS/ML	17000	42000		
DIVERSITY: DIVISION	1.6	1.5		
..CLASS	1.6	1.5		
...ORDER	1.8	1.6		
...FAMILY	2.4	2.1		
....GENUS	2.8	3.2		
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)				
..BACILLARIOPHYCEAE				
...BACILLARIALES				
...NITZSCHIA				
...EUPODISCALES				
...COSCINODISCACEAE				
...CYCLOTELLA	2100	12	12000#	29
...MELOSIRA	790	5	410	1
...FRAGILARIALES				
...FRAGILARIAEAE				
...SYNEDRA	320	2	--	-
CHLOROPHYTA (GREEN ALGAE)				
..CHLOROPHYCEAE				
...CHLOROCOCCALES				
...DICTYOSPHAERIAEAE				
...DICTYOSPHAERIUM	1300	8	--	-
...HYDRODICTYACEAE				
...PEDIASTRUM	--	-	1600	4
...MICRACTINIAEAE				
...MICRACTINIUM	420	3	--	-
...OOCYSTACEAE				
...ANKISTRODESMUS	530	3	820	2
...CHODATELLA	160	1	--	-
...KIRCHNERIELLA	2100	12	1200	3
...OOCYSTIS	--	-	620	1
...SELENASTRUM	--	-	1000	2
...TREUBARIA	110	1	--	-
...SCENEDESMACEAE				
...COELASTRUM	--	-	3300	8
...CRUCIGENIA	640	4	1600	4
...SCENEDESMUS	850	5	2900	7
...TETRASTRUM	--	-	5800	14
...ZYGNEMATALES				
...DESMIDIACEAE				
...COSMARIUM	--	-	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)				
..CYANOPHYCEAE				
...CHROOCOCCALES				
...CHROOCOCCACEAE				
...AGMENELLUM	7200#	43	3300	8
...ANACYSTIS	--	-	6400#	15
EUGLENOPHYTA (EUGLENOIDS)				
..EUGLENOPHYCEAE				
...EUGLENALES				
...EUGLENACEAE				
...TRACHELOMONAS	210	1	--	-
PYRRHOPHYTA (FIRE ALGAE)				
..DINOPHYCEAE				
...DINOKONTAE				
...PERIDINIAEAE				
...PERIDINIUM	110	1	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%  
 \* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## BRAZOS RIVER BASIN

## SOMERVILLE LAKE NEAR SOMMERVILLE, TX--Continued

301754096380801 SOMERVILLE LAKE SITE FC

## PHYTOPLANKTON ANALYSES, OCTOBER 1982 TO AUGUST 1983

DATE TIME	JAN 25,83 1251	MAY 4,83 1251	AUG 17,83 1421
TOTAL CELLS/ML	2700	87000	590000
DIVERSITY: DIVISION	1.5	1.4	0.4
..CLASS	1.5	1.4	0.4
..ORDER	1.8	1.7	1.7
...FAMILY	2.2	2.0	1.7
....GENUS	2.4	2.9	2.2

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)						
.BACILLARIOPHYCEAE						
..BACILLARIALES						
...NITZSCHIAEAE						
....NITZSCHIA	--	-	3000	3	3200	1
..EUPODISCALES						
...COSCIODISCAEAE						
....CYCLOTELLA	290	11	33000#	38	*	0
....MELOSIRA	--	-	12000	14	--	-
..FRAGILARIALES						
...FRAGILARIAEAE						
....FRAGILARIA	--	-	--	-	*	0
....SYNEDRA	1000#	37	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHLOROCOCCACEAE						
....TETRAEDRON	120	5	1000	1	--	-
...HYDRODICTYACEAE						
....PEDIASTRUM	--	-	1000	1	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	160	6	3500	4	29000	5
....CHODATELLA	--	-	2000	2	--	-
...OOCYSTIS	--	-	500	1	--	-
....TREUBARIA	--	-	500	1	*	0
...SCENEDESMACEAE						
....CRUCIGENIA	--	-	6000	7	--	-
....SCENEDESMUS	--	-	7000	8	--	-
....TETRASTRUM	740#	27	4000	5	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CARTERIA	--	-	--	-	*	0
....CHLAMYDOMONAS	--	-	500	1	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....AGMENELLUM	--	-			57000	10
....ANACYSTIS	--	-	12000	14	--	-
..NOSTOCALES						
...NOSTOCACEAE						
....ANABAENA	--	-	--	-	140000#	24
....ANABAENOPSIS	--	-	--	-	40000	7
..OSCILLATORIALES						
...OSCILLATORIAEAE						
....LYNGBYA	--	-	--	-	32000	6
....OSCILLATORIA	--	-	--	-	280000#	47
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	210	8	--	-	--	-
....TRACHELOMONAS	210	8	500	1	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%



BRAZOS RIVER BASIN

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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 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.--Water-discharge records good above 1.0 ft<sup>3</sup>/s and fair below. Flow regulated by Somerville Lake (station 08109900) since Feb. 3, 1966. Gage-height telemeter located at station.

AVERAGE DISCHARGE.--41 years (water years 1925-65) unregulated, 290 ft<sup>3</sup>/s (210,100 acre-ft/yr); 18 years (water years 1966-83) regulated, 293 ft<sup>3</sup>/s (212,300 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, 1,780 ft<sup>3</sup>/s May 30 at 1500 hours (gage height, 7.88 ft); no flow Oct. 8, 9, 11, 13-16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.70	.84	1.5	3.0	151	1280	1120	3.0	1730	5.4	7.9	2.4
2	.73	.78	1.3	5.9	151	1290	1140	1.8	1730	5.4	3.5	2.4
3	.77	1.0	7.0	5.7	152	1290	1140	1.5	1720	5.0	1.8	2.3
4	.81	1.0	7.5	5.1	151	1290	1150	1.5	1710	4.6	1.2	2.4
5	.84	.92	4.7	4.7	152	1290	1140	1.5	1720	4.3	.97	2.6
6	.70	.88	3.0	4.3	153	1280	1140	1.5	1680	4.2	.85	2.9
7	.19	.96	2.0	4.3	153	1270	1130	1.5	1660	4.3	.82	3.1
8	.00	1.1	1.5	4.2	236	1250	1130	1.6	1630	4.5	18	24
9	.00	1.2	1.2	4.1	361	1240	1120	1.7	1600	4.3	12	94
10	.01	1.3	1.3	4.2	373	940	1130	1.9	1570	4.3	7.8	98
11	.00	1.3	1.7	4.1	491	386	1120	3.0	1530	5.1	3.2	94
12	.01	1.0	2.1	3.3	726	361	1130	2.9	1510	5.5	1.8	97
13	.00	.83	2.1	3.0	835	360	1140	2.6	1490	5.6	1.4	93
14	.00	.74	2.1	3.1	844	359	1110	2.4	1460	6.1	1.3	91
15	.00	.67	2.1	3.2	865	360	1100	3.2	1440	6.6	1.3	68
16	.00	.65	2.0	3.3	864	383	1100	4.6	1430	7.4	1.1	4.7
17	.01	.63	2.0	3.2	937	360	1090	4.9	1410	7.2	56	1.3
18	.04	.64	2.0	3.3	1050	357	1090	5.1	1400	6.5	90	.85
19	.06	.65	2.0	15	1060	358	1080	5.2	1390	6.9	15	1.2
20	.12	.68	1.9	18	1080	361	1080	65	926	7.2	5.8	1.2
21	.17	.70	1.8	11	1100	357	1060	132	56	6.6	2.9	.77
22	.21	.70	1.7	7.3	1090	355	1060	68	6.7	7.0	2.0	.60
23	.27	.80	1.6	4.9	1160	331	1040	24	4.6	7.6	1.6	.53
24	.31	.96	1.5	46	1280	47	1030	9.6	4.9	8.2	1.4	.51
25	.32	1.0	1.4	147	1280	17	1020	214	5.4	8.8	24	.53
26	.33	1.3	1.3	154	1280	28	764	754	5.6	9.3	134	.53
27	.33	3.6	1.3	152	1280	12	391	1020	5.2	9.7	145	.55
28	.31	3.5	1.1	151	1280	111	386	1480	5.0	9.5	147	.55
29	1.2	2.5	1.0	152	---	508	212	1700	5.1	9.1	100	.54
30	.96	1.9	.97	151	---	871	8.9	1740	5.3	9.0	7.8	.50
31	.84	---	1.2	152	---	968	---	1730	---	9.0	3.0	---
TOTAL	10.24	34.73	65.87	1233.2	20535	19670	29351.9	8988.0	30839.8	204.2	800.44	691.96
MEAN	.33	1.16	2.12	39.8	733	635	978	290	1028	6.59	25.8	23.1
MAX	1.2	3.6	7.5	154	1280	1290	1150	1740	1730	9.7	147	98
MIN	.00	.63	.97	3.0	151	12	8.9	1.5	4.6	4.2	.82	.50
AC-FT	20	69	131	2450	40730	39020	58220	17830	61170	405	1590	1370

CAL YR 1982 TOTAL 53839.17 MEAN 148 MAX 2390 MIN .00 AC-FT 106800  
WTR YR 1983 TOTAL 112425.34 MEAN 308 MAX 1740 MIN .00 AC-FT 223000

## BRAZOS RIVER BASIN

08110000 YEGUA CREEK NEAR SOMERVILLE, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: September 1961 to September 1967, October 1968 to September 1980. Chemical and biochemical analyses: October 1980 to current year. Water temperatures: September 1961 to September 1967.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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 (MG/L AS CACO3)
JAN 25...	1430	148	390	8.1	10.0	5	4.7	11.3	100	2.1	110
MAY 04...	1420	.43	535	7.6	26.5	20	31	9.6	123	5.7	150
AUG 17...	1015	16	651	7.5	30.5	35	27	4.9	65	6.5	180

DATE	HARD- NESS, NONCAR- BONATE (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 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 25...	59	33	7.5	29	1.2	6.6	55	59	51	.20	9.9
MAY 04...	107	45	9.4	42	1.5	6.4	44	92	75	.20	10
AUG 17...	136	54	11	50	1.7	7.9	44	130	92	.20	13

DATE	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE D (MG/L)	SOLIDS, VOLATILE, SUS- PENDE D (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- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
JAN 25...	229	5	<1	--	<.020	<.10	.060	.74	.80	.050	9.3
MAY 04...	307	70	23	.16	.040	.20	.080	1.5	1.60	.120	9.1
AUG 17...	386	67	27	--	.020	<.10	.130	1.7	1.80	.090	9.4

DATE	TIME	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)
JAN 25...	1430	1	100	<1	<10	<1	6
MAY 04...	1420	1	100	<1	<10	1	16
AUG 17...	1015	2	160	<1	<10	2	600

DATE	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 25...	<1	7	<.1	1	<1	6
MAY 04...	2	170	<.1	1	<1	8
AUG 17...	<1	530	<.1	<1	<1	5

## BRAZOS RIVER BASIN

373

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 National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. The city of Caldwell discharges sewage effluent into creek above station. Several observations of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--21 years, 69.6 ft<sup>3</sup>/s (4.85 in/yr), 50,430 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 each year.

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 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)
Dec. 4	1300	1,560	14.53	Mar. 24	0530	4,210	15.97
Feb. 21	2100	2,600	15.04	May 21	0830	*6,550	16.74

Minimum discharge, no flow Oct. 1-9, 26-28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	15	7.5	829	338	27	50	5.3	13	5.0	1.2	2.6
2	.00	11	6.1	1120	92	25	38	5.1	16	4.0	1.0	2.7
3	.00	18	720	286	33	23	29	4.7	15	3.4	1.0	2.3
4	.00	46	1360	49	22	31	24	4.4	21	3.0	.83	2.1
5	.00	29	287	21	204	412	21	4.4	18	2.6	.68	1.6
6	.00	13	37	16	899	167	17	4.4	20	2.4	.65	1.5
7	.00	5.5	14	13	555	56	16	4.1	19	2.2	.74	1.4
8	.00	2.6	10	12	191	37	16	3.4	22	2.1	20	1.3
9	.00	1.3	8.7	11	185	31	14	3.1	29	2.0	61	1.3
10	7.3	.85	7.9	9.9	750	27	14	3.5	17	1.9	6.6	1.3
11	8.8	.82	11	9.2	352	24	13	368	11	1.8	3.7	1.4
12	2.1	.95	54	8.4	120	21	12	321	8.2	1.7	2.9	1.4
13	16	.89	31	7.9	58	20	11	72	6.6	1.6	3.9	1.3
14	14	.80	14	7.5	46	20	11	34	5.7	1.6	3.3	1.2
15	13	.74	11	7.2	244	20	11	34	5.5	1.9	2.2	1.1
16	6.4	.73	9.2	7.1	528	56	10	49	5.1	3.1	1.8	.90
17	1.4	.80	8.3	7.1	130	38	8.7	28	4.7	8.2	1.5	.88
18	.23	.98	8.2	8.1	67	25	8.0	17	5.0	6.1	8.8	4.7
19	.14	8.4	8.3	589	49	18	7.2	13	6.5	3.0	189	554
20	.11	279	8.2	1260	129	79	7.0	1530	6.2	2.4	606	738
21	.07	26	8.0	547	1610	125	6.9	5060	5.3	2.2	135	168
22	.06	11	8.3	135	1210	54	6.5	3160	4.3	2.2	29	32
23	.05	7.1	7.9	66	183	1200	6.5	1440	3.7	1.9	13	10
24	.02	5.9	8.0	38	72	2910	6.5	835	3.3	1.6	6.1	4.8
25	.01	4.6	9.8	26	47	1290	6.4	183	4.9	1.5	4.2	3.1
26	.00	4.0	11	22	37	1200	6.1	61	316	1.4	3.2	2.4
27	.00	44	62	19	34	1250	5.8	37	77	1.3	2.6	2.1
28	.00	96	116	17	28	459	5.7	25	24	1.2	2.4	1.9
29	234	25	32	16	---	121	5.4	19	11	1.1	2.1	1.8
30	181	10	14	16	---	72	5.4	17	6.4	1.5	1.9	1.6
31	32	---	98	16	---	60	---	14	---	1.6	1.8	---
TOTAL	516.69	669.96	2996.4	5196.4	8213	9898	399.1	13359.4	710.4	77.5	1118.10	1550.68
MEAN	16.7	22.3	96.7	168	293	319	13.3	431	23.7	2.50	36.1	51.7
MAX	234	279	1360	1260	1610	2910	50	5060	316	8.2	606	738
MIN	.00	.73	6.1	7.1	22	18	5.4	3.1	3.3	1.1	.65	.88
CFSM	.09	.11	.50	.86	1.50	1.64	.07	2.21	.12	.01	.19	.27
IN.	.10	.13	.57	.99	1.57	1.89	.08	2.55	.14	.01	.21	.30
AC-FT	1020	1330	5940	10310	16290	19630	792	26500	1410	154	2220	3080
CAL YR 1982	TOTAL	20209.85	MEAN	55.4	MAX	5300	MIN	.00	CFSM	.28	IN	3.86
WTR YR 1983	TOTAL	44705.63	MEAN	122	MAX	5060	MIN	.00	CFSM	.63	IN	8.53
									AC-FT	40090		
									AC-FT	88670		

## BRAZOS RIVER BASIN

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. Converted to stage only site October 1983. 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 National Geodetic Vertical Datum of 1929. Auxiliary water-stage recorder 1.8 mi downstream at same datum.

REMARKS.--Records fair. Backwater at times from Navasota River. Many diversions above station for irrigation, municipal, industrial, and oilfield operations. At times, flow is affected by five upstream reservoirs with a combined capacity of 4,955,000 acre-ft. Flow is also affected at times by discharge from the flood-detention pools of 145 floodwater-retarding structures with a combined detention capacity of 152,600 acre-ft. These structures control runoff from 449 mi<sup>2</sup> above station. Several observations of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--17 years, 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 discharge, 40,200 May 22 at 2400 hours (gage height, 27.85 ft); maximum gage height, 27.87 ft May 23 at 0300 hours (backwater from Navasota River); minimum daily discharge, 296 ft<sup>3</sup>/s Oct. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	623	614	986	3000	2470	2900	6160	851	5360	918	1550	1290
2	552	546	916	3710	2140	3600	5450	880	5380	836	1600	1160
3	656	603	2340	2810	2090	2900	4980	1230	5500	731	1710	985
4	1680	622	7600	1640	2670	2800	4910	970	4660	881	1920	844
5	1680	747	4500	833	2390	3100	6700	812	3950	901	1460	734
6	728	966	3000	707	7420	6900	4790	727	3540	833	1240	648
7	482	1200	2000	752	9320	12000	5050	662	5520	860	1300	598
8	505	1230	1400	841	7480	8900	5290	645	6960	859	2100	554
9	383	1020	1450	957	5080	5400	5140	621	8360	978	2000	556
10	537	959	800	1030	5170	4800	4580	679	5820	950	1800	682
11	501	1010	550	1430	12500	4800	3780	1240	3310	958	3000	682
12	610	912	550	1320	10500	4300	3410	2280	2870	889	2000	673
13	648	858	690	1230	7830	4300	3270	9970	3050	1070	1020	646
14	520	1010	550	879	4750	3790	3100	7300	3170	1220	1000	660
15	445	909	850	673	3900	3390	2940	4670	3270	2390	1100	656
16	388	696	830	562	3580	3670	3110	5490	3270	1550	1100	592
17	344	497	600	640	3790	4410	3310	4470	3450	937	1200	466
18	353	409	500	2230	3830	4380	2900	4150	3260	896	1250	481
19	332	412	800	3380	3110	4000	2740	3550	3140	849	1350	817
20	308	918	1300	4480	4350	3740	2600	12200	3080	1070	2900	5380
21	296	1180	2090	4030	6030	4200	2630	20800	2830	947	4500	4140
22	622	668	1740	3360	7450	4760	2590	35800	1960	824	5600	1790
23	879	453	1170	2760	12500	7360	2940	39600	1570	1120	4400	875
24	778	373	836	1890	9250	15000	3500	28700	1460	1240	3600	703
25	778	368	570	1310	6250	13200	3420	14400	1500	1240	2600	796
26	667	405	444	1360	4750	12100	3010	7170	1350	1330	2100	701
27	566	684	402	1470	3820	11300	2250	4460	1580	1380	1800	521
28	654	990	438	1530	3300	13300	1660	4420	1400	1600	1900	546
29	886	815	658	1710	---	9730	1440	5280	1170	1740	2090	505
30	959	899	487	1710	---	6500	1080	5250	1040	1800	1790	608
31	930	---	962	1820	---	6380	---	5050	---	1860	1340	---
TOTAL	20290	22973	42009	56054	157720	197910	108730	234327	102780	35657	64320	30289
MEAN	655	766	1355	1808	5633	6384	3624	7559	3426	1150	2075	1010
MAX	1680	1230	7600	4480	12500	15000	6700	39600	8360	2390	5600	5380
MIN	296	368	402	562	2090	2800	1080	621	1040	731	1000	466
AC-FT	40250	45570	83320	111200	312800	392600	215700	464800	203900	70730	127600	60080

CAL YR 1982 TOTAL 1692732 MEAN 4638 MAX 42700 MIN 296 AC-FT 3358000  
WTR YR 1983 TOTAL 1073059 MEAN 2940 MAX 39600 MIN 296 AC-FT 2128000



## BRAZOS RIVER BASIN

375

08110300 LAKE MEXIA NEAR MEXIA, TX

LOCATION.--Lat 31°38'37", long 96°34'43", Limestone County, Hydrologic Unit 12070103, 550 ft downstream from Cedar Creek, 610 ft upstream from spillway of dam on Navasota River, 1.0 mi upstream from Echo Dam, 1.6 mi upstream from Jacks Creek, 6 mi southwest of Mexia, and 180.0 mi upstream from mouth.

DRAINAGE AREA.--196 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 420.0 ft National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by an earthfill dam, 1,645 ft long, including a 520-foot uncontrolled concrete ogee-type spillway near the center of dam. The dam was completed and deliberate impoundment of water began June 5, 1961. 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.....	42.3	-
Crest of spillway.....	28.3	9,400
Lowest gated outlet (invert).....	2.1	531

COOPERATION.--Capacity table was computed from data furnished by Fowler and Grafe, Inc., Consulting Engineers, Dallas. Data was based on a preconstruction survey in 1958 and was not adjusted for borrow in the lake area. Diversions from lake for municipal use were furnished by the Bistone Municipal Water Supply District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 22,460 acre-ft May 11, 1979 (gage height, 35.36 ft); minimum, 3,730 acre-ft Jan. 15, 1964 (gage height, 21.40 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 11,110 acre-ft Feb. 21 at 1700 hours (gage height, 29.44 ft); minimum, 6,180 acre-ft Oct. 27 at 2100 hours (gage height, 25.47 ft).

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

24.0	5,020	28.0	8,970
26.0	6,650	30.0	12,010

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6480	6260	6520	8370	8970	9480	9410	8720	8430	7730	7000	9140
2	6460	6430	6870	8370	8920	9450	9300	8720	8410	7700	6970	9110
3	6440	6430	7630	8360	8910	9470	9210	8680	8410	7650	7000	9070
4	6420	6420	7680	8360	8930	9710	9270	8640	8360	7630	6980	9010
5	6400	6380	7690	8350	10150	9950	9240	8590	8360	7630	6970	8970
6	6400	6370	7660	8350	9900	9700	9210	8560	8360	7600	6950	8930
7	6380	6370	7650	8350	9670	9600	9200	8560	8330	7570	6950	8890
8	6420	6350	7640	8330	9580	9570	9170	8510	8290	7530	6930	8890
9	6440	6350	7620	8330	10530	9480	9140	8470	8260	7510	6930	8870
10	6420	6340	7680	8320	10590	9450	9130	8490	8170	7470	6870	8840
11	6410	6350	7880	8310	9840	9440	9070	8610	8180	7440	6850	8820
12	6450	6340	7930	8290	9640	9420	9070	8590	8170	7410	6820	8790
13	6420	6320	7930	8270	9550	9420	9080	8580	8130	7390	6800	8760
14	6410	6310	7930	8260	9520	9380	9030	8580	8180	7370	6780	8780
15	6400	6280	7920	8240	9510	9410	8980	8580	8160	7390	6750	8730
16	6390	6290	7900	8230	9480	9470	8960	8560	8130	7440	6720	8720
17	6360	6290	7890	8220	9480	9370	8930	8520	8110	7420	6690	8680
18	6350	6280	7920	8230	9470	9340	8910	8540	8070	7380	6730	8680
19	6340	6330	7890	8330	9440	9380	8870	8560	8070	7360	10010	8740
20	6310	6330	7880	8410	10420	9340	8860	8570	8030	7350	9680	8740
21	6280	6320	7870	8530	11020	9310	8860	8620	7990	7310	9550	8670
22	6270	6320	7900	8690	9920	9280	8860	8610	7960	7300	9510	8630
23	6260	6310	7920	8740	9690	9310	8830	8590	7930	7270	9470	8610
24	6250	6280	7920	8770	9570	9310	8790	8570	7930	7240	9410	8580
25	6240	6270	7890	8750	9550	9240	8760	8530	7940	7200	9390	8560
26	6220	6420	7950	8780	9520	9540	8740	8510	7940	7160	9350	8540
27	6200	6520	8240	8740	9510	9510	8710	8470	7860	7130	9320	8520
28	6300	6540	8310	8730	9480	9530	8740	8460	7820	7100	9260	8490
29	6280	6540	8310	8730	---	9510	8730	8430	7810	7090	9250	8470
30	6270	6530	8290	8720	---	9500	8730	8470	7780	7060	9210	8440
31	6260	---	8310	8820	---	9480	---	8460	---	7040	9180	---
MAX	6480	6540	8310	8820	11020	9950	9410	8720	8430	7730	10010	9140
MIN	6200	6260	6520	8220	8910	9240	8710	8430	7780	7040	6690	8440
(†)	25.56	25.87	27.47	27.88	28.36	28.36	27.81	27.59	27.05	26.36	28.15	27.58
(‡)	-290	+270	+1780	+510	+660	0	-750	-270	-680	-750	+2150	-740

CAL YR 1982 MAX 11460 MIN 6200 † -670  
WTR YR 1983 MAX 11020 MIN 6200 ‡ +1890

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet.



## BRAZOS RIVER BASIN

08110300 LAKE MEXIA NEAR MEXIA, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
NOV 16...	0735	325	10.0	120	0	41	3.8	18

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY 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 16...	.8	6.3	120	20	22	.30	5.3	189

## BRAZOS RIVER BASIN

377

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 National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Flow is partly regulated by Lake Mexia (station 08110300) 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 oilfield operation (total amount unknown). The city of Groesbeck diverts water from pool at gage for municipal use and returns washwater and sewage effluent into river downstream from gage. Gage-height telemeter located at station.

AVERAGE DISCHARGE.--5 years, 90.2 ft<sup>3</sup>/s (65,350 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, 6,450 ft<sup>3</sup>/s Aug. 19 at 1300 hours (gage height, 9.04 ft); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	.23	.55	21	15	17	34	.77	2.1	.48	.00	1.0
2	1.0	2.8	14	21	15	13	24	.81	1.2	.48	.00	.86
3	.90	2.1	687	15	3.4	9.2	8.1	1.1	.89	.43	.00	.70
4	1.1	.39	128	11	1.8	18	5.8	1.1	1.2	.34	.00	.88
5	1.1	.18	56	9.4	155	100	12	.64	1.1	.41	.05	.92
6	1.7	.07	37	7.7	461	194	7.5	.59	2.2	.48	.13	.67
7	2.3	.10	24	7.2	233	105	4.9	.69	2.5	.54	.21	.76
8	.94	.14	17	7.1	108	62	4.9	.56	1.4	.45	.31	.84
9	.69	.14	12	5.5	225	51	3.6	.56	.78	.27	.28	1.0
10	.31	.14	11	5.6	1070	28	2.1	.82	.57	.21	.29	1.0
11	.14	.14	24	4.2	729	19	1.9	5.9	.70	.14	.25	.85
12	.18	.18	32	3.4	212	14	2.0	1.4	.76	.08	.42	.77
13	.18	.14	22	2.6	93	9.8	3.3	1.2	.68	.10	.27	.66
14	.07	.14	17	3.4	62	8.4	3.7	1.6	1.0	.11	.15	.66
15	.05	.14	15	4.1	47	6.9	1.6	3.8	.74	.24	.07	.68
16	.03	.22	8.4	1.9	36	12	1.4	1.6	.60	.79	.02	.70
17	.02	.32	6.5	1.5	26	18	1.3	1.1	.56	.56	.00	.64
18	.02	.27	6.1	1.5	20	5.8	1.4	1.3	.65	.42	.09	.71
19	.00	1.7	5.6	2.6	14	3.7	1.3	1.3	.70	.47	2340	2.1
20	.00	1.0	4.1	5.3	47	12	1.2	3.0	.49	.44	517	2.5
21	.00	.58	3.1	8.5	1130	5.6	.97	11	.32	.37	129	1.2
22	.00	.50	2.9	17	1040	2.4	.72	16	.30	.30	69	.73
23	.00	.44	2.7	18	266	3.6	2.5	13	.26	.24	46	.58
24	.00	.31	3.0	17	109	3.9	1.1	8.2	.65	.20	30	.46
25	.00	.32	4.2	14	61	2.8	.65	4.9	.83	.15	21	.51
26	.00	1.8	6.1	18	43	24	.60	3.0	.72	.12	13	.50
27	.00	5.6	100	9.1	32	34	.76	1.8	.67	.08	8.6	.51
28	.10	1.0	96	4.9	23	25	.91	1.3	.60	.02	5.4	.53
29	.71	.63	52	7.3	---	18	1.1	2.0	.46	.01	3.4	.52
30	.35	.57	31	4.3	---	17	.91	1.5	.54	.01	2.3	.49
31	.29	---	24	5.1	---	14	---	4.1	---	.00	1.6	---
TOTAL	13.28	22.29	1452.25	264.2	6277.2	857.1	136.22	96.64	26.17	8.94	3188.84	24.93
MEAN	.43	.74	46.8	8.52	224	27.6	4.54	3.12	.87	.29	103	.83
MAX	2.3	5.6	687	21	1130	194	34	16	2.5	.79	2340	2.5
MIN	.00	.07	.55	1.5	1.8	2.4	.60	.56	.26	.00	.00	.46
AC-FT	26	44	2880	524	12450	1700	270	192	52	18	6330	49
CAL YR 1982	TOTAL	11782.24	MEAN	32.3	MAX	1480	MIN	.00	AC-FT	23370		
WTR YR 1983	TOTAL	12368.06	MEAN	33.9	MAX	2340	MIN	.00	AC-FT	24530		

## BRAZOS RIVER BASIN

08110325 NAVASOTA RIVER ABOVE GROESBECK, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: November 1967 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1967 to current year.

WATER TEMPERATURES: November 1967 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, 6,590 micromhos Oct. 8, 9, 1969; minimum daily, 71 micromhos June 4, 1973.

WATER TEMPERATURES: Maximum daily, 38.0°C on several days during July 1974, May 28, 1978; minimum daily, 1.5°C Jan. 10, 1973.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 492 micromhos July 8; minimum daily, 126 micromhos Aug. 20.

WATER TEMPERATURES: Maximum daily, 30.0°C July 27; minimum daily, 7.0°C Jan. 6, 7, Feb. 7.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (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 31...	0800	.58	426	18.5	190	7	69	3.5	15
DEC 31...	0800	29	294	9.0	100	8	37	3.0	15
JAN 31...	0800	3.0	342	9.5	130	9	46	3.4	17
FEB 28...	0800	29	235	14.0	93	9	33	2.6	9.9
APR 27...	1720	1.0	471	21.0	180	8	63	4.9	23
JUL 18...	1535	.79	457	29.5	210	9	77	3.9	13
AUG 22...	0800	87	154	27.0	47	24	16	1.6	9.6

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY 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 CONSTI- TUENTS, DIS- SOLVED (MG/L)
OCT 31...	.5	3.3	180	13	25	.20	11	248
DEC 31...	.7	4.1	97	14	24	.20	7.9	163
JAN 31...	.7	4.0	120	16	27	.20	8.1	194
FEB 28...	.5	4.0	84	15	11	.20	8.6	135
APR 27...	.8	3.9	170	23	32	.20	1.5	253
JUL 18...	.4	2.2	200	11	20	.20	4.8	252
AUG 22...	.6	3.3	23	29	13	.20	5.2	92

## BRAZOS RIVER BASIN

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08110325 NAVASOTA RIVER ABOVE GROESBECK, TX--Continued

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1982 TO SEPTEMBER 1983

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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.	1982	13.28	426	245	8.8	23	0.8	13	0.5	190
NOV.	1982	22.29	423	244	15	23	1.4	13	0.8	180
DEC.	1982	1452.25	281	158	621	18	72	12	47	110
JAN.	1983	264.2	330	188	134	20	14	13	9.0	130
FEB.	1983	6277.2	246	138	2340	16	279	11	186	91
MAR.	1983	857.1	262	147	340	17	40	11	27	98
APR.	1983	136.22	330	187	69	20	7.4	13	4.7	130
MAY	1983	96.64	447	258	67	24	6.1	13	3.4	200
JUNE	1983	26.17	457	264	19	24	1.7	13	0.9	210
JULY	1983	8.94	483	280	6.8	24	0.6	13	0.3	220
AUG.	1983	3188.84	264	149	1280	17	147	11	96	100
SEPT	1983	24.93	282	159	11	18	1.2	12	0.8	110
TOTAL		12368.06	**	**	4910	**	572	**	376	**
WTD. AVG.		34	261	147	**	17	**	11	**	99

## SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	433	427	447	276	339	240	310	455	429	480	---	214
2	431	395	410	284	361	250	311	458	438	485	---	224
3	432	378	300	289	353	263	303	461	437	480	---	223
4	431	385	241	293	350	272	309	465	439	490	---	228
5	429	398	227	290	347	273	310	472	441	487	465	231
6	430	406	230	295	326	227	321	474	448	485	448	238
7	424	415	234	302	305	242	330	478	440	491	432	242
8	422	429	237	310	294	246	337	477	449	492	438	250
9	421	433	246	323	300	244	340	476	459	491	417	260
10	415	438	253	334	290	252	341	483	458	490	445	263
11	414	440	261	339	237	255	345	448	467	489	446	266
12	416	443	272	349	238	257	358	437	470	483	441	268
13	409	445	270	348	243	261	359	452	472	479	443	272
14	416	444	258	353	250	270	356	466	476	482	446	274
15	412	446	272	370	254	285	354	467	473	484	448	278
16	415	450	281	371	260	295	374	468	471	485	451	282
17	418	451	275	364	267	310	383	467	465	483	---	292
18	419	454	278	380	272	307	386	476	480	480	445	299
19	---	443	288	374	280	296	391	473	477	482	309	302
20	---	452	300	378	278	299	395	475	479	477	126	304
21	---	443	302	373	198	302	398	408	477	473	145	305
22	---	445	311	375	194	308	401	477	475	472	155	306
23	---	450	318	379	192	311	413	457	472	473	163	318
24	---	455	312	377	204	324	419	450	475	474	172	328
25	---	456	341	349	211	323	425	407	481	472	180	342
26	---	445	350	335	218	332	431	401	459	469	185	350
27	---	420	300	330	223	335	435	404	484	465	191	355
28	425	431	257	331	232	300	441	405	483	468	197	359
29	407	423	262	332	---	301	448	412	482	475	201	365
30	421	444	268	334	---	296	454	417	479	479	207	372
31	427	---	275	340	---	308	---	418	---	---	209	---
MEAN	421	433	286	338	268	283	373	451	465	481	316	287

## BRAZOS RIVER BASIN

08110325 NAVASOTA RIVER ABOVE GROESBECK, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.5	20.0	14.5	8.0	10.5	14.0	15.5	21.0	23.0	28.5	---	29.5
2	24.5	21.0	16.0	8.0	10.5	16.0	16.5	22.0	23.0	28.5	---	29.5
3	25.0	19.5	18.0	8.0	10.0	16.0	16.0	21.5	23.0	29.0	---	29.0
4	25.0	18.5	17.0	8.0	10.0	17.0	16.0	21.5	24.0	29.0	---	28.5
5	25.0	18.0	15.5	7.5	9.5	17.5	16.5	21.5	25.0	29.5	---	28.0
6	25.0	17.0	15.0	7.0	7.5	17.5	16.0	21.0	25.5	29.0	29.0	29.0
7	25.0	17.5	15.0	7.0	7.0	17.5	16.0	22.0	25.0	29.0	29.5	28.0
8	25.0	17.5	14.0	8.5	7.5	17.5	16.0	23.0	25.0	28.5	29.0	28.5
9	25.0	18.0	14.0	9.5	8.0	17.5	15.0	23.0	25.0	28.0	29.0	28.0
10	25.0	18.0	13.0	9.5	10.0	16.5	15.0	23.0	25.0	28.0	29.0	28.0
11	24.0	18.5	13.0	10.0	10.0	16.0	16.0	22.0	25.0	28.5	29.0	28.0
12	23.5	19.0	12.0	10.5	11.0	15.5	17.0	23.0	25.0	29.0	29.0	28.0
13	23.0	18.0	10.0	9.5	11.0	15.5	17.5	23.0	25.0	28.5	29.0	28.0
14	22.5	17.5	9.0	9.5	11.5	16.0	18.0	23.5	25.5	28.5	29.5	28.0
15	22.0	16.5	10.0	10.0	12.0	16.5	18.5	23.0	25.5	28.0	29.5	27.5
16	21.5	16.0	10.0	10.0	12.0	17.0	18.0	22.0	25.5	27.5	---	27.5
17	21.5	16.0	10.0	9.5	12.5	17.0	17.5	22.0	25.5	27.5	---	27.5
18	21.5	16.5	10.0	10.0	14.0	15.5	18.0	22.0	25.5	28.0	---	27.5
19	---	16.5	11.0	10.0	13.5	15.5	18.5	22.0	26.0	28.0	27.0	27.0
20	---	16.0	11.0	9.5	14.5	15.0	19.0	22.0	26.5	28.5	27.0	27.0
21	---	17.0	10.5	9.5	14.5	14.0	18.5	22.0	27.0	28.5	26.5	25.0
22	---	17.0	11.0	9.0	13.5	14.0	19.0	22.0	27.0	28.5	27.0	24.5
23	---	17.5	13.0	9.0	13.0	14.0	19.0	23.0	27.5	29.0	27.0	24.0
24	---	16.0	12.5	8.5	14.5	14.0	19.0	23.0	27.0	29.0	28.0	23.5
25	---	15.5	12.5	9.0	16.0	13.5	19.0	23.0	27.0	29.5	29.0	23.0
26	---	15.0	14.0	9.0	14.5	14.0	19.0	23.5	27.0	29.5	29.0	23.5
27	---	14.5	12.5	8.5	14.5	14.5	19.5	24.0	27.0	30.0	29.0	23.5
28	---	14.5	10.5	8.5	14.0	14.5	20.0	24.0	27.5	---	29.0	23.5
29	19.0	14.0	9.5	8.5	---	14.5	20.5	24.0	28.0	---	29.0	23.5
30	19.0	14.0	9.0	9.0	---	15.0	21.0	24.0	28.0	---	29.0	24.0
31	18.5	---	9.0	9.5	---	15.5	---	24.0	---	---	29.5	---
MEAN	23.0	17.0	12.5	9.0	11.5	15.5	17.5	22.5	25.5	28.5	28.5	26.5



BRAZOS RIVER BASIN

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08110430 BIG CREEK NEAR FREESTONE, TX

LOCATION.--Lat 31°30'25", long 96°19'31", Limestone County, Hydrologic Unit 12070103, on left bank at downstream side 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 National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--5 years, 36.2 ft<sup>3</sup>/s (8.61 in/yr), 26,230 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,160 ft<sup>3</sup>/s Dec. 3, 1983 (gage height, 14.13 ft); no flow Sept. 23-26, 1978, Aug. 4-8, 1980, and Sept. 29-30, 1983.

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 above base 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)
Dec. 3	1430	*2,160	14.13	Feb. 21	1000	1,070	12.98
Feb. 6	0430	1,020	12.92	May 20	2300	879	12.71
Feb. 10	0930	965	12.84				

Minimum discharge, no flow Sept. 29-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.07	.04	6.6	24	53	19	17	2.9	21	2.7	.53	.25		
2	.07	.17	36	34	107	17	15	3.0	16	3.8	.44	.20		
3	.07	.20	1500	37	33	17	12	3.0	11	2.4	.53	.16		
4	.06	.04	923	23	17	298	9.4	2.5	9.8	1.5	.60	.13		
5	.06	.65	364	16	390	595	8.4	2.4	12	1.2	.43	.11		
6	.07	.45	109	13	908	280	8.0	2.3	27	.96	.36	.10		
7	.08	.27	39	12	436	79	8.3	2.0	33	.78	.34	.09		
8	.07	.19	22	11	155	41	7.9	1.8	18	.69	.38	.08		
9	.08	.10	14	9.9	238	30	7.5	1.6	11	.69	.40	.08		
10	.07	.06	12	9.4	835	23	6.4	1.4	6.8	.47	.46	.08		
11	.06	.05	30	9.0	489	18	5.8	65	4.5	.35	.72	.08		
12	.08	.06	115	8.2	179	16	5.7	285	3.8	.33	.67	.08		
13	.07	.03	78	7.5	69	14	5.8	220	3.3	.33	.52	.08		
14	.06	.03	28	7.0	42	13	6.6	42	3.0	.32	.42	.08		
15	.06	.04	18	6.8	31	13	6.6	22	2.8	.35	.32	.08		
16	.06	.04	13	6.8	25	13	5.4	19	3.3	4.3	.28	.08		
17	.06	.05	10	7.0	20	14	4.3	14	3.3	33	.27	.08		
18	.06	.04	8.2	6.9	17	15	3.9	20	2.9	11	.70	.11		
19	.06	.59	7.8	13	15	13	3.7	170	2.5	5.2	4.3	.20		
20	.05	14	7.0	26	216	18	3.5	669	2.4	3.4	88	1.0		
21	.05	22	6.2	20	931	20	3.4	784	2.4	2.7	93	1.0		
22	.05	6.9	6.2	18	525	16	3.6	630	2.4	2.4	8.0	.33		
23	.05	4.1	6.2	27	198	26	4.0	297	2.1	1.8	2.3	.15		
24	.05	2.4	6.4	19	77	29	4.1	69	2.1	1.4	1.4	.10		
25	.05	1.4	6.1	13	46	24	3.4	31	11	1.0	1.0	.06		
26	.05	2.1	5.7	11	33	135	3.0	20	14	.80	.74	.04		
27	.04	26	65	9.8	25	205	2.9	15	5.7	.68	.55	.04		
28	.06	157	426	9.4	21	63	2.8	11	3.5	.58	.46	.02		
29	.06	58	286	8.4	---	31	2.6	9.1	2.4	.59	.39	.00		
30	.05	12	70	7.9	---	23	3.0	8.0	1.9	.58	.36	.00		
31	.04	---	30	7.9	---	19	---	14	---	.60	.28	---		
TOTAL	1.87	309.00	4254.4	438.9	6131	2137	184.0	3437.0	244.9	86.90	209.15	4.89		
MEAN	.060	10.3	137	14.2	219	68.9	6.13	111	8.16	2.80	6.75	.16		
MAX	.08	157	1500	37	931	595	17	784	33	33	93	1.0		
MIN	.04	.03	5.7	6.8	15	13	2.6	1.4	1.9	.32	.27	.00		
CFSM	.001	.18	2.40	.25	3.84	1.21	.11	1.94	.14	.05	.12	.003		
IN.	.00	.20	2.77	.29	3.99	1.39	.12	2.24	.16	.06	.14	.00		
AC-FT	3.7	613	8440	871	12160	4240	365	6820	486	172	415	9.7		
CAL YR 1982	TOTAL	8342.00	MEAN	22.9	MAX	1500	MIN	.03	CFSM	.40	IN	5.43	AC-FT	16550
WTR YR 1983	TOTAL	17439.01	MEAN	47.8	MAX	1500	MIN	.00	CFSM	.84	IN	11.36	AC-FT	34590

## BRAZOS RIVER BASIN

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.

REMARK.--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, 241,100 acre-ft May 30, 1979 (elevation, 364.12 ft); minimum, 10,740 acre-ft Nov. 30, 1978 (elevation, 332.63 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 235,800 acre-ft May 21 at 2300 hours (elevation, 363.74 ft); minimum, 196,100 acre-ft Oct. 27 at 2100 hours (elevation, 360.76 ft).

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

360.0	186,600
362.0	212,000
364.0	239,400

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	198200	196900	202200	225600	225900	225200	225300	222400	225200	224000	220700	225200
2	198200	199300	208400	225400	225300	225300	224800	222900	224900	223700	220300	224800
3	198100	199800	227100	225300	224900	225700	223800	222500	225900	223400	221800	224100
4	197800	199200	227800	225400	225000	230200	224900	222200	226300	223600	221400	224000
5	197600	198600	226100	225400	223200	231000	225300	221400	225400	223700	221400	223600
6	198300	198400	225300	225400	232800	229500	225000	221100	226400	223400	221100	223600
7	198700	198600	225300	225600	227500	226700	224800	221800	225900	223200	221000	223200
8	198800	198400	226700	225900	225600	225300	224600	221500	225700	222800	220700	223000
9	199400	198600	225400	225700	229800	224500	224400	221100	225400	222500	220600	222800
10	199100	198400	226100	225700	230300	224600	224200	222100	221900	222200	220200	222800
11	199300	198600	227100	226300	227500	224400	223700	224500	224900	221900	220200	222600
12	200100	198700	225400	225600	225000	224200	224100	223600	224900	221800	219900	222500
13	199400	197800	224900	225400	224900	224200	225600	223400	224800	221800	219800	222600
14	199300	198300	225400	226100	225300	224000	224200	225000	225000	221400	219700	221800
15	199200	197400	225400	225400	225700	224600	223800	224400	224800	221800	219400	221400
16	198900	197800	225300	225300	225700	226800	223700	224100	224600	223400	219100	221300
17	198700	197800	225200	225400	225900	225200	223300	223800	224400	223600	219000	221300
18	198400	197700	225700	225900	225900	224800	223600	225200	224200	223300	219700	221500
19	200200	198600	225400	226800	226000	225700	223700	226800	224000	223600	221700	222200
20	198200	198800	225300	226700	231400	225700	223200	230900	224000	223300	229800	223400
21	197900	198900	225600	226300	231000	224600	223200	235800	223700	223000	229500	221400
22	197700	198900	225300	225700	227100	224800	223400	231400	223600	222900	227500	221000
23	197400	200500	225300	225200	226000	227300	223200	226100	223400	222600	226700	220600
24	197200	198800	225700	225300	226300	226400	222900	224800	223700	222400	226300	220200
25	197100	198400	226700	225200	225200	224600	222200	224900	224200	222100	226300	220100
26	196600	200200	226100	226300	225000	228100	222400	224900	224400	221700	226100	220100
27	196200	201500	227100	225200	225200	227400	222200	224800	223700	221500	226100	219900
28	197400	202600	227800	225000	225000	225400	222200	224900	223300	221300	225700	219800
29	197300	203100	224800	225300	---	224900	222400	224800	223400	221300	225600	219700
30	197100	203200	224200	225200	---	224900	222400	224900	224400	221100	225400	219500
31	196900	---	224800	226000	---	224500	---	225400	---	220900	225200	---
MAX	200200	203200	227800	226800	232800	231000	225600	235800	226400	224000	229800	225200
MIN	196200	196900	202200	225000	224900	224000	222200	221100	221900	220900	219000	219500
(†)	360.83	361.32	362.95	363.04	362.97	362.93	362.77	363.00	362.92	362.66	362.98	362.56
(*)	-1300	+6300	+21600	+1200	-1000	-500	-2100	+3000	-1000	-3500	+4300	-5700
CAL YR 1982	MAX	234900	MIN	196200	*	+3000						
WTR YR 1983	MAX	235800	MIN	196200	*	+21300						

† Elevation, in feet, at end of month.

\* Change in contents, in acre-feet.

. 08110470 LAKE LIMESTONE NEAR MARQUEZ, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1979 to current year.

311937096194601 LAKE LIMESTONE SITE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
10...	1245	1.00	290	7.9	9.5	11.0	97
10...	1247	10.0	290	8.0	9.5	11.0	97
10...	1249	20.0	290	8.0	9.5	10.9	96
10...	1251	33.0	290	8.0	9.5	10.6	94
MAY							
09...	1300	1.00	251	7.7	21.5	8.4	96
09...	1302	10.0	251	7.6	21.5	8.2	94
09...	1304	20.0	251	7.5	21.5	8.1	93
09...	1306	28.0	251	6.9	21.0	6.8	77
JUL							
27...	1230	1.00	269	7.2	29.0	5.1	67
27...	1232	10.0	269	6.9	28.0	2.6	33
27...	1234	20.0	269	6.8	28.0	.3	4
27...	1236	30.0	274	6.8	26.5	.1	1
27...	1238	35.0	287	6.9	25.0	.1	1

311941096191401 LAKE LIMESTONE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
JAN									
10...	1300	1.00	289	7.9	10.0	1.00	11.0	98	89
10...	1302	10.0	289	7.9	9.5	--	10.8	96	--
10...	1304	20.0	289	7.9	9.5	--	10.8	96	--
10...	1306	30.0	289	7.9	9.5	--	10.8	96	--
10...	1308	40.0	289	7.9	9.5	--	10.8	96	--
10...	1310	52.0	289	7.9	9.5	--	10.3	91	89
MAY									
09...	1320	1.00	251	7.8	22.0	.80	8.6	99	76
09...	1322	10.0	251	7.7	21.5	--	8.3	95	--
09...	1324	20.0	251	7.5	21.0	--	8.0	91	--
09...	1326	30.0	251	7.2	20.5	--	7.2	81	--
09...	1328	40.0	251	7.1	19.5	--	5.7	63	--
09...	1330	45.0	263	7.1	17.5	--	.3	3	--
09...	1332	52.0	270	7.1	17.5	--	.3	3	83
JUL									
27...	1245	1.00	271	7.4	29.0	1.90	6.1	80	80
27...	1247	10.0	271	7.3	28.5	--	5.8	75	--
27...	1249	15.0	270	7.0	28.5	--	3.0	39	--
27...	1251	20.0	269	6.8	27.5	--	.5	6	--
27...	1253	30.0	272	6.8	26.0	--	.1	1	--
27...	1255	40.0	315	7.0	22.5	--	.1	1	--
27...	1257	49.0	341	7.2	21.5	--	.1	1	100

BRAZOS RIVER BASIN  
LAKE LIMESTONE NEAR MARQUEZ, TX--Continued

311941096191401 LAKE LIMESTONE SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN									
10...	7	27	5.2	19	.9	5.7	82	17	28
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	9	27	5.2	19	.9	5.7	80	18	28
MAY									
09...	13	23	4.6	18	.9	4.7	63	17	27
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	11	25	4.9	18	.9	4.8	72	19	27
JUL									
27...	15	24	4.9	19	1.0	4.7	65	18	29
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	0	31	5.8	19	.9	4.8	110	9.5	28
DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN									
10...	.20	2.8	154	.10	.80	.90	.010	<3	2
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	.10	.80	.90	.010	20	10
10...	--	--	--	--	--	--	--	--	--
10...	--	2.8	154	.10	1.10	1.2	.080	3	43
MAY									
09...	.20	3.9	136	.30	.70	1.0	.040	34	14
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	.40	1.00	1.4	.050	40	220
09...	--	--	--	.50	1.40	1.9	.110	30	1300
09...	--	6.4	150	.30	1.40	1.7	.130	26	1900
JUL									
27...	.20	2.2	141	<.10	1.10	--	.050	4	24
27...	--	--	--	<.10	1.00	--	.040	30	100
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	<.10	1.30	--	.050	240	1000
27...	--	--	--	--	--	--	--	--	--
27...	--	13	189	<.10	3.40	--	.580	5800	5800

## BRAZOS RIVER BASIN

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## LAKE LIMESTONE NEAR MARQUEZ, TX--Continued

312458096205101 LAKE LIMESTONE SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (AS CACO3)
JAN									
10...	1328	1.00	289	7.9	10.0	1.00	11.0	98	88
10...	1330	10.0	289	7.9	9.5	--	10.8	96	--
10...	1332	20.0	289	7.9	9.5	--	10.7	95	--
10...	1334	30.0	289	7.8	9.5	--	10.6	94	--
10...	1336	38.0	289	7.8	9.5	--	10.3	91	88
MAY									
09...	1415	1.00	253	7.9	22.5	.60	8.6	100	76
09...	1418	10.0	253	7.7	21.5	--	8.1	93	--
09...	1420	20.0	253	7.3	21.0	--	6.8	77	--
09...	1422	30.0	253	7.2	20.5	--	5.9	66	--
09...	1424	35.0	253	7.2	20.5	--	5.7	64	77
JUL									
27...	1325	1.00	274	8.0	30.5	1.00	6.7	90	80
27...	1327	10.0	274	7.7	30.0	--	6.5	86	--
27...	1329	20.0	274	7.6	30.0	--	6.1	81	--
27...	1331	30.0	299	7.0	26.5	--	.1	1	--
27...	1333	41.0	337	7.2	24.0	--	.1	1	100

DATE	HARD- NESS, NONCAR- BONATE (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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN									
10...	7	27	5.1	19	.9	5.8	82	18	28
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	7	27	5.1	19	.9	5.6	82	17	28
MAY									
09...	15	23	4.6	18	.9	4.6	61	19	28
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	14	23	4.7	18	.9	4.7	63	17	27
JUL									
27...	14	24	4.8	19	1.0	4.8	66	18	30
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	1	31	5.8	19	.9	4.5	100	13	28

DATE	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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
10...	2.7	155	.10	.90	1.0	.010	<3	1
10...	--	--	--	--	--	--	--	--
10...	--	--	.10	.90	1.0	.010	10	<10
10...	--	--	--	--	--	--	--	--
10...	2.8	154	.10	1.10	1.2	.050	<3	10
MAY								
09...	4.1	138	.20	1.00	1.2	.040	74	11
09...	--	--	.30	1.20	1.5	.050	40	10
09...	--	--	.30	1.10	1.4	.040	40	10
09...	--	--	--	--	--	--	--	--
09...	4.3	137	.40	1.30	1.7	.080	20	65
JUL								
27...	2.4	143	<.10	1.20	--	.050	49	150
27...	--	--	--	--	--	--	--	--
27...	--	--	<.10	1.30	--	.040	130	250
27...	--	--	<.10	1.30	--	.260	2100	2000
27...	9.4	181	<.10	3.80	--	.720	6000	3900



BRAZOS RIVER BASIN  
LAKE LIMESTONE NEAR MARQUEZ, TX--Continued

312625096205901 LAKE LIMESTONE SITE CC  
WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
10...	1354	1.00	288	8.2	10.5	11.8	106
10...	1356	10.0	288	8.1	10.0	11.5	103
10...	1358	22.0	292	7.6	9.5	8.6	76
MAY							
09...	1500	1.00	260	8.0	22.5	8.6	100
09...	1502	10.0	263	7.7	22.0	7.8	90
09...	1504	20.0	263	7.2	21.5	4.7	54
JUL							
27...	1350	1.00	278	8.2	31.5	6.8	93
27...	1352	10.0	280	7.9	30.5	5.8	78
27...	1354	18.0	281	7.5	30.5	4.3	58

312622096224201 LAKE LIMESTONE SITE DC  
WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
10...	1450	1.00	207	7.5	9.5	10.4	92
10...	1452	10.0	207	7.5	9.0	10.2	89
10...	1454	18.0	207	7.6	9.0	9.8	85
MAY							
09...	1510	1.00	273	8.0	23.0	8.6	101
09...	1512	10.0	281	7.5	22.0	7.2	83
09...	1514	20.0	281	7.5	22.0	6.6	76
09...	1516	25.0	281	7.5	22.0	6.4	74
JUL							
27...	1410	1.00	282	8.4	31.5	7.6	104
27...	1412	10.0	284	8.2	31.0	7.2	97
27...	1414	15.0	290	7.2	30.0	3.8	51
27...	1416	22.0	577	6.7	28.0	.1	1

312726096240001 LAKE LIMESTONE SITE EC  
WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CaCO3)
JAN									
10...	1535	1.00	200	7.2	10.0	.30	9.1	81	61
10...	1538	11.0	200	7.2	9.5	--	8.5	75	61
MAY									
09...	1535	1.00	291	8.3	24.0	.40	10.2	123	90
09...	1538	10.0	297	7.4	22.0	--	6.0	69	--
09...	1540	19.0	297	7.3	22.0	--	3.5	40	93
JUL									
27...	1430	1.00	296	7.7	32.0	.60	6.6	91	88
27...	1432	10.0	294	7.2	31.0	--	4.3	58	--
27...	1434	15.0	577	6.6	28.5	--	.1	1	--
27...	1436	18.0	614	6.6	28.0	--	.1	1	170

## BRAZOS RIVER BASIN

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## LAKE LIMESTONE NEAR MARQUEZ, TX--Continued

312726096240001 LAKE LIMESTONE SITE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	HARD- NESS, NONCAR- BONATE (MG/L CA CO3)	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 FIELD (MG/L AS CA CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JAN									
10...	10	19	3.2	14	.8	4.4	51	21	18
10...	10	19	3.2	14	.8	4.3	51	22	18
MAY									
09...	19	28	4.9	21	1.0	4.4	71	24	32
09...	--	--	--	--	--	--	--	--	--
09...	19	29	5.0	22	1.0	4.3	74	24	33
JUL									
27...	18	27	4.9	21	1.0	4.6	70	19	32
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	48	51	9.7	57	2.0	3.0	120	49	85

DATE	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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
10...	7.2	118	.40	1.10	1.5	.110	110	11
10...	7.7	119	.40	1.30	1.7	.110	160	20
MAY								
09...	3.9	161	<.10	1.30	--	.090	29	3
09...	--	--	<.10	1.00	--	.090	50	30
09...	4.6	166	<.10	1.80	--	.120	27	170
JUL								
27...	3.3	154	<.10	1.30	--	.050	71	47
27...	--	--	<.10	1.60	--	.080	40	50
27...	--	--	--	--	--	--	--	--
27...	8.7	338	<.10	1.80	--	.300	2300	710

## 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>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1924 to current year.

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 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.--Water-discharge records fair. Flow is largely regulated by Lakes Mexia and by Lake Limestone (stations 08110300 and 08110470). Numerous diversions above station for irrigation, municipal supply, and oilfield operation. Gage-height 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; 23 years (water years 1961-83) regulated, 443 ft<sup>3</sup>/s (6.21 in/yr), 321,000 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 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, 11,200 ft<sup>3</sup>/s May 22 at 1000 hours (gage height, 21.90 ft); minimum daily, 1.6 ft<sup>3</sup>/s Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	2.0	2.7	26	70	68	50	65	20	67	10	2.4	11		
2	2.2	4.8	21	67	66	46	60	20	70	18	2.3	11		
3	2.1	9.6	918	69	64	46	50	27	55	24	5.3	10		
4	2.0	6.2	2320	57	105	258	40	22	53	15	28	9.5		
5	1.6	7.4	4530	49	699	2020	37	18	39	10	24	9.2		
6	2.7	6.5	3580	43	3050	2980	35	16	39	9.6	9.8	9.0		
7	12	5.8	968	38	5770	2810	34	16	37	8.5	9.2	9.0		
8	13	5.1	73	35	5180	2060	32	12	33	7.2	7.0	7.6		
9	8.5	4.9	36	33	3280	992	29	8.6	29	5.6	5.2	5.6		
10	5.6	4.8	25	32	2830	308	28	8.5	26	5.4	5.1	5.1		
11	6.6	4.9	20	30	4580	65	27	176	24	5.4	10	4.9		
12	11	4.9	19	27	4930	48	29	1430	22	4.9	9.4	4.6		
13	13	4.9	19	26	3290	41	29	2460	22	4.4	5.4	4.4		
14	9.6	4.9	24	25	578	38	31	1350	20	5.1	4.0	4.2		
15	5.8	4.9	29	24	94	40	33	135	21	6.7	2.7	4.0		
16	4.2	5.4	32	23	72	50	24	81	21	17	2.2	3.8		
17	3.2	6.7	28	23	61	80	22	58	21	29	1.8	4.5		
18	2.9	7.0	24	30	56	60	22	64	25	25	9.1	20		
19	2.6	7.7	22	60	54	48	21	811	22	17	116	57		
20	2.4	10	19	110	330	514	21	2180	19	12	489	67		
21	2.2	12	18	250	3490	411	20	5570	17	9.0	1100	58		
22	2.3	8.7	18	210	5870	149	20	10300	13	6.9	1300	56		
23	2.3	7.9	18	170	5280	417	22	8380	12	5.6	1190	73		
24	3.0	13	17	190	2960	1240	26	6130	16	5.1	535	61		
25	2.9	16	17	220	740	1350	21	2450	15	4.9	102	15		
26	2.9	24	19	250	191	1200	19	244	14	4.6	25	7.4		
27	2.9	36	197	170	75	1960	19	77	17	4.0	16	5.9		
28	3.6	35	688	120	57	2210	19	58	13	3.8	15	5.6		
29	5.1	38	1490	100	---	1690	19	46	10	3.3	15	5.2		
30	3.6	46	1860	80	---	489	20	39	9.8	3.0	14	4.7		
31	3.2	---	416	70	---	116	---	59	---	2.7	13	---		
TOTAL	147.0	355.7	17491	2701	53820	23786	874	42266.1	801.8	292.7	5072.9	553.2		
MEAN	4.74	11.9	564	87.1	1922	767	29.1	1363	26.7	9.44	164	18.4		
MAX	13	46	4530	250	5870	2980	65	10300	70	29	1300	73		
MIN	1.6	2.7	17	23	54	38	19	8.5	9.8	2.7	1.8	3.8		
CFSM	.005	.01	.58	.09	1.99	.79	.03	1.41	.03	.01	.17	.02		
IN.	.01	.01	.67	.10	2.07	.91	.03	1.62	.03	.01	.19	.02		
AC-FT	292	706	34690	5360	106800	47180	1730	83830	1590	581	10060	1100		
CAL YR 1982	TOTAL	57369.29	MEAN	157	MAX	4530	MIN	.24	CFSM	.16	IN	2.20	AC-FT	113800
WTR YR 1983	TOTAL	148161.40	MEAN	406	MAX	10300	MIN	1.6	CFSM	.42	IN	5.69	AC-FT	293900

## BRAZOS RIVER BASIN

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08110500 NAVASOTA RIVER NEAR EASTERLY, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1968 to current year. Sediment records: October 1968 to September 1973.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
NOV 10...	1435	4.8	367	20.0	85	33	23	6.6	38
DEC 23...	1235	17	400	15.5	110	55	30	8.1	34
FEB 04...	1305	62	347	8.0	98	34	28	6.9	27
MAR 18...	1450	60	576	14.5	150	99	40	13	50
APR 27...	1045	18	656	20.5	170	110	46	14	63
JUN 09...	1545	28	553	28.0	150	81	39	12	52
JUL 19...	0925	18	487	27.0	120	56	31	9.8	47
SEP 01...	1210	12	367	29.0	93	26	26	6.8	32

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY 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 10...	1.9	3.6	52	48	52	.20	12	215
DEC 23...	1.5	4.6	53	58	51	.20	13	231
FEB 04...	1.2	5.1	64	36	41	.20	6.4	189
MAR 18...	1.8	4.3	55	92	84	.10	12	328
APR 27...	2.2	4.1	66	98	100	.20	11	376
JUN 09...	1.9	4.2	66	78	80	.20	8.9	314
JUL 19...	2.0	4.0	62	60	73	.20	12	274
SEP 01...	1.5	4.1	67	35	46	.20	11	201

## BRAZOS RIVER BASIN

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. Datum of gage is 224.64 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Flow is largely regulated by Lakes Mexia and Limestone (stations 08110300 and 08110470). There are numerous diversions above station for irrigation, municipal, and oilfield operation. Several observations of water temperature made during the year.

AVERAGE DISCHARGE.--9 years (water years 1952-60) unregulated, 437 ft<sup>3</sup>/s (316,600 acre-ft/yr); 23 years (water years 1961-83) regulated, 596 ft<sup>3</sup>/s (431,800 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, 12,000 ft<sup>3</sup>/s May 24 at 0600 hours (gage height, 14.29 ft); minimum daily, 3.1 ft<sup>3</sup>/s Oct. 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	22	84	1560	179	546	1560	57	236	40	19	50
2	3.4	21	82	1560	182	210	619	59	227	35	18	44
3	3.3	22	415	703	342	176	240	60	200	32	19	40
4	3.1	27	737	296	420	838	165	59	168	30	36	37
5	3.1	32	962	163	1040	2260	139	59	145	35	42	35
6	3.6	31	1370	123	3320	2800	124	58	818	38	57	32
7	20	25	2040	100	2560	2600	115	51	1370	33	60	30
8	34	21	3140	96	2980	2400	109	46	273	29	49	29
9	21	20	2890	88	5320	2950	104	43	147	26	37	28
10	29	19	1460	83	7360	1700	100	41	119	24	31	32
11	29	17	556	78	6120	1000	96	94	99	22	29	32
12	25	17	454	73	5120	600	93	152	84	21	51	31
13	22	17	716	68	5130	350	92	512	74	21	55	29
14	23	17	876	64	5600	200	91	990	68	20	53	26
15	26	17	704	61	5040	130	97	1490	65	21	40	24
16	24	17	285	59	3020	126	99	1630	63	28	29	23
17	20	17	138	57	1260	183	97	945	64	40	23	22
18	17	17	104	57	403	183	84	333	63	90	25	23
19	15	22	86	67	196	177	76	190	58	102	762	97
20	13	28	74	176	186	230	71	454	56	86	2360	455
21	11	30	67	219	1200	447	69	2220	54	65	1810	592
22	10	25	62	605	1470	814	69	3940	48	63	1420	427
23	10	24	59	844	2780	1300	69	6580	46	98	1330	182
24	10	40	58	846	6130	2240	69	11800	44	104	1340	123
25	10	60	57	700	6470	1720	68	9600	42	102	1320	108
26	10	36	56	500	5040	2050	66	7260	50	100	976	95
27	10	254	67	400	3010	2530	65	5380	64	94	322	65
28	10	222	124	320	1520	2380	60	3160	62	69	131	46
29	12	115	325	270	---	2370	58	1540	55	40	87	38
30	15	99	774	230	---	2520	57	557	48	28	68	34
31	21	---	1150	200	---	2410	---	293	---	22	57	---
TOTAL	467.3	1331	19972	10666	83398	40440	4821	59653	4910	1558	12656	2829
MEAN	15.1	44.4	644	344	2979	1305	161	1924	164	50.3	408	94.3
MAX	34	254	3140	1560	7360	2950	1560	11800	1370	104	2360	592
MIN	3.1	17	56	57	179	126	57	41	42	20	18	22
AC-FT	927	2640	39610	21160	165400	80210	9560	118300	9740	3090	25100	5610
CAL YR 1982	TOTAL	88789.6	MEAN	243	MAX	4960	MIN	3.1	AC-FT	176100		
WTR YR 1983	TOTAL	242701.3	MEAN	665	MAX	11800	MIN	3.1	AC-FT	481400		



## BRAZOS RIVER BASIN

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08111010 NAVASOTA RIVER NEAR COLLEGE STATION, TX

LOCATION.--Lat 30°36'26", long 96°10'53", Grimes County, Hydrologic Unit 12070103, on left bank at downstream side of bridge on State Highway 30, 0.5 mi downstream from Wickson Creek, 9.8 mi east of the post office in College Station, and 35.2 mi upstream from mouth.

DRAINAGE AREA.--1,809 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder. Datum of gage is 178.00 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Since 1961, flow regulated to some extent by upstream reservoirs. Numerous diversions above station for irrigation, municipal, and oilfield operation. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--6 years (water years 1978-83), 620 ft<sup>3</sup>/s (449,190 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,400 ft<sup>3</sup>/s June 2, 1979 (gage height, 22.13 ft); minimum daily, 0.07 ft<sup>3</sup>/s Aug. 31, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1896, 41 ft (+ 3 ft) in 1899. Flood of 1913 reached a stage of about 36 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,500 ft<sup>3</sup>/s May 25 at 2400 hours (gage height, 19.53 ft); minimum daily, 2.3 ft<sup>3</sup>/s Oct. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.7	13	195	787	807	4000	2350	68	1700	59	27	83
2	4.0	18	136	1360	779	2500	2290	67	793	52	22	65
3	3.5	32	326	1540	531	1200	1930	66	484	44	17	58
4	2.8	34	578	1560	392	600	1170	67	397	37	17	52
5	2.6	30	638	1070	608	1000	522	66	313	33	17	47
6	2.3	29	744	499	1960	1500	309	64	278	30	26	42
7	13	28	737	276	3780	2000	228	62	447	31	41	36
8	3.7	28	800	187	5090	3100	192	60	1010	33	67	31
9	23	26	992	146	3780	3000	172	55	1340	31	78	29
10	49	23	1370	124	3120	2800	157	52	719	27	102	27
11	36	20	1750	111	5310	3500	147	168	301	23	55	26
12	48	18	1780	102	6740	2000	139	224	182	22	42	28
13	90	17	1090	94	5470	1300	133	229	140	20	96	29
14	31	15	625	87	4460	800	129	336	116	20	66	29
15	24	15	586	80	4200	517	123	608	102	20	59	27
16	22	15	612	74	4500	311	122	928	138	26	52	24
17	23	15	522	69	4210	344	126	1180	122	32	41	22
18	24	16	316	91	3120	351	125	1380	98	30	55	23
19	21	16	179	110	1620	361	117	1180	84	46	567	315
20	18	17	127	140	1020	361	104	2380	76	93	700	1730
21	15	35	103	170	2020	461	96	5740	68	100	858	2590
22	14	48	89	200	2460	549	91	7280	64	81	1290	2270
23	12	37	81	350	2370	949	88	7390	61	64	1670	1490
24	10	29	75	600	2620	2730	85	6570	55	67	1700	818
25	9.7	24	69	840	3500	4440	83	8080	52	94	1500	413
26	9.4	48	64	840	5000	4620	81	9880	54	100	1330	239
27	9.2	184	62	750	6000	3910	79	8140	78	97	1260	177
28	9.4	289	74	610	7000	3200	76	6810	110	94	1100	137
29	38	367	132	540	---	3030	75	5640	90	84	583	98
30	16	338	208	620	---	2750	71	4490	73	64	229	73
31	11	---	358	800	---	2460	---	3110	---	40	122	---
TOTAL	599.3	1824	15418	14827	92467	60644	11410	82370	9545	1594	13789	11028
MEAN	19.3	60.8	497	478	3302	1956	380	2657	318	51.4	445	368
MAX	90	367	1780	1560	7000	4620	2350	9880	1700	100	1700	2590
MIN	2.3	13	62	69	392	311	71	52	52	20	17	22
AC-FT	1190	3620	30580	29410	183400	120300	22630	163400	18930	3160	27350	21870
CAL YR 1982	TOTAL	117668.1	MEAN	322	MAX	11300	MIN	1.9	AC-FT	233400		
WTR YR 1983	TOTAL	315515.3	MEAN	864	MAX	9880	MIN	2.3	AC-FT	625800		

## BRAZOS RIVER BASIN

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 117.90 ft National Geodetic Vertical Datum of 1929. Prior to Nov. 1, 1940, nonrecording gage at railroad bridge 6,000 ft downstream at datum 5.80 ft lower. Nov. 1, 1940, to Sept. 30, 1963, nonrecording gage at site 1,500 ft downstream at present datum. Oct. 1, 1964, to July 31, 1974, water-stage recorder 1,500 ft downstream at present datum.

REMARKS.--Records fair. There are many small diversions above station for irrigation, municipal and industrial uses, and oilfield operations. At times, flow is affected by reservoirs on the Brazos River at 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 telemeters at station..

AVERAGE DISCHARGE.--45 years, 6,580 ft<sup>3</sup>/s (4,767,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 143,000 ft<sup>3</sup>/s May 2, 1957 (gage height, 44.21 ft), at site 1,500 ft downstream; minimum daily, 137 ft<sup>3</sup>/s Nov. 6, 1952.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1899, 56.1 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 53.6 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, 48,800 ft<sup>3</sup>/s May 23 at 0800 hours (gage height, 27.05 ft); minimum daily, 630 ft<sup>3</sup>/s Sept. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	970	1250	3540	1850	5680	7180	10300	1220	13600	1660	1800	2130
2	876	881	2750	4470	4870	8110	9110	1060	12600	1530	1610	1720
3	849	813	2920	5210	4040	8420	8160	1100	11600	1350	1620	1330
4	881	815	6530	4780	4710	7960	7610	1260	9220	1250	1680	1100
5	1630	884	6300	4060	4930	7330	7300	1070	7360	1380	1730	940
6	1580	991	4560	3590	6760	7740	6790	946	6170	1360	1440	833
7	992	1150	3110	3370	11400	12100	5940	873	6580	1270	1330	769
8	801	1360	2520	2970	11500	11500	5430	821	7750	1260	1940	714
9	798	1350	2340	2450	9980	8920	5000	765	8700	1390	3210	681
10	811	1210	2030	2050	9940	7760	4450	832	8770	1410	2890	681
11	869	1110	1930	1810	14700	7830	3830	921	6870	1320	2930	742
12	929	1150	2000	1910	15800	7380	3390	1370	5320	1300	3780	750
13	917	1080	2170	1680	13400	7230	3120	3600	4610	1270	2940	726
14	916	1020	2430	1520	11800	7290	2950	7770	4210	1390	1660	701
15	858	1100	2570	1220	11100	6950	2840	5650	4000	1790	1530	699
16	792	1050	2630	1010	11400	6730	2730	4650	3940	2570	1460	695
17	743	972	2240	917	9990	7530	2860	4430	3990	2070	1490	675
18	696	814	1810	1170	10000	6320	2850	4350	4010	1610	1610	630
19	669	793	1570	3400	9320	5420	2640	4390	3840	1520	3050	781
20	649	779	1680	6970	9160	5030	2540	9990	3680	1370	4740	2370
21	641	1190	2220	6600	13200	4960	2490	33200	3560	1470	6250	5280
22	631	1330	2560	6000	12700	5270	2450	46500	3100	1400	6470	4240
23	771	946	1970	5400	14000	6210	2410	49300	2560	1310	6650	3830
24	972	793	1470	4360	13400	9420	2710	43400	2240	1510	5390	3670
25	912	746	1140	3230	10400	13800	2970	31800	2220	1540	4360	3430
26	896	806	957	2670	8720	17300	2930	22800	2390	1500	3710	2930
27	817	1110	896	2730	7510	17700	2630	18400	2470	1560	3300	2300
28	789	1960	884	2750	6830	17600	2060	16900	2280	1600	3250	1810
29	859	1930	875	2850	---	16400	1710	16800	1960	1750	3250	1290
30	1090	1680	953	2880	---	12900	1490	16200	1780	1840	3200	984
31	1280	---	863	3190	---	11200	---	14900	---	1840	2690	---
TOTAL	27884	33063	72418	99067	277240	287490	123690	367268	161380	47390	92960	49431
MEAN	899	1102	2336	3196	9901	9274	4123	11850	5379	1529	2999	1648
MAX	1630	1960	6530	6970	15800	17700	10300	49300	13600	2570	6650	5280
MIN	631	746	863	917	4040	4960	1490	765	1780	1250	1330	630
AC-FT	55310	65580	143600	196500	549900	570200	245300	728500	320100	94000	184400	98050
CAL YR 1982	TOTAL	1912030	MEAN	5238	MAX	39300	MIN	631	AC-FT	3793000		
WTR YR 1983	TOTAL	1639281	MEAN	4491	MAX	49300	MIN	630	AC-FT	3252000		

## BRAZOS RIVER BASIN

393

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>.

## WATER-DISCHARGE RECORDS

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

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 National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair. During the year, the city of Bellville discharged about 389 acre-ft of sewage effluent into a tributary of Mill Creek above gage.

AVERAGE DISCHARGE.--20 years, 246 ft<sup>3</sup>/s (8.89 in/yr), 178,200 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 above base of 5,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 16	2000	9,430	14.01
Mar. 24	1100	*13,600	14.57
May 22	1000	11,900	14.36

Minimum daily discharge estimated, 2.0 ft<sup>3</sup>/s Oct. 3-6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	10	544	83	328	82	451	43	56	17	8.8	13
2	2.1	11	548	135	156	80	177	41	54	13	8.9	24
3	2.0	47	513	104	80	84	132	37	51	12	8.0	18
4	2.0	28	954	66	64	166	117	33	46	11	7.4	14
5	2.0	18	254	55	141	244	112	29	43	9.8	6.9	12
6	2.0	13	93	50	242	119	103	27	40	9.5	6.3	11
7	3.8	11	72	48	143	84	94	25	43	9.1	7.4	11
8	4.5	10	56	47	90	72	89	24	41	8.6	24	9.8
9	4.4	9.6	47	45	145	68	83	22	37	8.1	29	10
10	5.2	9.3	49	43	190	65	78	26	33	7.6	216	10
11	4.5	9.4	65	39	182	61	74	32	30	7.4	379	10
12	16	9.9	77	37	100	57	73	33	28	7.1	176	14
13	25	9.4	66	35	80	56	84	30	26	12	252	12
14	15	9.0	56	34	72	58	81	27	24	16	186	10
15	10	8.8	145	35	900	59	69	68	23	28	69	8.9
16	7.4	44	110	33	4180	5530	63	97	23	106	41	8.4
17	6.1	272	75	32	1950	5520	59	65	26	82	29	8.1
18	5.7	84	55	38	260	807	57	52	31	43	59	9.5
19	5.5	153	45	516	156	240	55	43	47	32	133	89
20	5.4	210	42	1470	166	190	55	2550	35	24	68	83
21	5.2	85	40	653	1290	155	55	7530	26	19	48	44
22	4.8	71	38	192	2280	133	56	11200	22	19	35	38
23	4.7	102	40	134	411	3000	55	6340	22	17	27	24
24	4.5	43	45	95	170	12100	49	1100	19	14	22	18
25	4.7	32	42	79	131	4570	44	222	22	13	20	14
26	4.8	39	42	72	109	846	42	138	23	12	18	13
27	5.0	328	50	64	96	935	40	107	20	11	16	61
28	4.8	249	70	59	87	745	40	90	18	10	16	81
29	12	98	62	59	---	228	40	78	17	9.2	15	30
30	14	61	46	56	---	379	42	69	15	9.3	14	20
31	13	---	45	165	---	526	---	61	---	8.8	13	---
TOTAL	208.3	2084.4	4386	4573	14199	37259	2569	30239	941	605.5	1958.7	728.7
MEAN	6.72	69.5	141	148	507	1202	85.6	975	31.4	19.5	63.2	24.3
MAX	25	328	954	1470	4180	12100	451	11200	56	106	379	89
MIN	2.0	8.8	38	32	64	56	40	22	15	7.1	6.3	8.1
CFSM	.02	.19	.38	.39	1.35	3.20	.23	2.59	.08	.05	.17	.07
IN.	.02	.21	.43	.45	1.40	3.69	.25	2.99	.09	.06	.19	.07
AC-FT	413	4130	8700	9070	28160	73900	5100	59980	1870	1200	3890	1450
CAL YR 1982	TOTAL	50333.5	MEAN 138	MAX 14700	MIN 2.0	CFSM .37	IN 4.98	AC-FT 99840				
WTR YR 1983	TOTAL	99751.6	MEAN 273	MAX 12100	MIN 2.0	CFSM .73	IN 9.87	AC-FT 197900				

## BRAZOS RIVER BASIN

08111700 MILL CREEK NEAR BELLVILLE, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1968 to current year. Sediment records: October 1966 to September 1975.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 28...	1300	4.7	488	20.0	170	22	61	4.8	31
DEC 29...	1145	60	528	9.0	190	23	71	3.8	29
FEB 08...	1340	89	517	9.0	180	5	68	3.6	27
MAR 22...	1600	128	560	13.0	220	2	82	4.2	29
JUN 14...	1100	24	556	27.0	210	7	75	4.6	33
JUL 27...	0900	11	502	28.0	180	14	66	4.6	31
SEP 15...	1205	9.0	489	26.5	170	17	60	4.0	29

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY 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 28...	1.1	2.9	150	15	57	.20	22	284
DEC 29...	1.0	3.3	170	20	52	.30	17	298
FEB 08...	.9	2.8	180	19	47	.20	14	290
MAR 22...	.9	2.9	220	19	44	.30	16	329
JUN 14...	1.0	2.8	200	14	54	.30	21	325
JUL 27...	1.0	3.0	170	12	52	.30	22	293
SEP 15...	1.0	3.0	150	9.8	57	.20	20	273

## BRAZOS RIVER BASIN

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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 downstream bridge on U.S. Highway 59 in Richmond, 925 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 and 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 37.94 ft (corrected) 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 7 ft higher; Oct. 1, 1931, to Sept. 30, 1975, water-stage recorder at present site at datum 3.00 ft higher.

REMARKS.--Water-discharge records good. Considerable water diverted above station for irrigation and municipal supply. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08110200. Gage-height telemeters at station.

AVERAGE DISCHARGE.--20 years (water years 1904-5, 1923-40) unregulated, 7,209 ft<sup>3</sup>/s (5,223,000 acre-ft/yr); 43 years (water years 1941-83) regulated, 7,285 ft<sup>3</sup>/s (5,278,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 123,000 ft<sup>3</sup>/s June 6, 1929 (gage height, 43.6 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, 51.2 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, 46.7 ft; June 13, 1885, 47.7 ft; July 1899, 48.6 ft; May 2, 1915, 46.3 ft; and May 9, 1922, 43.9 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 58,600 ft<sup>3</sup>/s May 24 at 0300 hours (gage height, 28.80 ft); minimum daily, 661 ft<sup>3</sup>/s Oct. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	925	1300	4160	1210	3240	7640	13000	2000	14900	2120	1780	3370
2	1020	1470	4020	1350	4700	7460	12000	1740	13800	1810	1800	2920
3	1060	1680	5820	2890	6050	8090	10600	1530	12800	1670	1690	2400
4	974	1570	5970	5120	4820	8540	9370	1340	12100	1520	1500	1960
5	821	1300	7000	5470	4770	8270	8590	1270	10500	1360	1510	1580
6	790	1140	8050	5010	5540	8460	8140	1340	8440	1120	1620	1350
7	1070	1110	6350	4370	6190	8280	7760	1200	6960	1210	1860	1170
8	1860	1200	4670	3990	10900	11900	7050	1090	6400	1300	1820	1080
9	1560	1300	3460	3690	13300	13000	6270	1060	7340	1190	1820	1020
10	1190	1510	2960	3200	13700	10200	5700	1320	8430	1080	2340	955
11	1020	1570	2700	2820	12100	8340	5320	1370	9350	1130	3710	1000
12	1010	1470	2460	2450	15600	7900	4720	1180	8240	1210	4180	896
13	1350	1360	2370	2210	16700	7720	4220	1170	6530	1360	4350	851
14	1890	1320	2410	2210	14300	7180	3840	1550	5540	1710	4750	858
15	1410	1290	2800	2030	13800	7040	3580	5630	4950	2010	3600	814
16	1170	1270	3000	1860	16300	7160	3420	7470	4740	3380	2450	696
17	1200	2020	3040	1620	16400	10100	3270	5910	4560	3770	1990	696
18	1110	4870	2950	1440	13100	11700	3180	5120	4620	3730	3280	713
19	916	4260	2580	2000	11400	8110	3260	4860	4640	3090	5820	3340
20	759	5710	2170	4900	10800	6140	3140	5830	4480	2380	4700	4520
21	736	5530	1900	8930	12600	5500	2920	18500	4220	2000	5230	2940
22	790	3640	1950	9210	18000	5170	2810	43700	4050	1780	6320	4310
23	725	2740	2410	7420	17200	5800	2740	56000	3920	1760	7000	6030
24	673	2570	2660	6570	15800	20300	2690	57700	3390	1710	7040	5140
25	661	2010	2310	5660	15300	32100	2660	49400	3070	1470	6690	4490
26	854	1520	1890	4500	12400	22900	2950	34600	2870	1510	5540	4120
27	1100	2050	1710	3600	10200	20200	3180	23800	2680	1480	4700	3750
28	1090	3600	1460	3100	8610	19700	3120	18900	2750	1400	4080	3370
29	1080	3870	1240	3070	---	19000	2810	16800	2760	1380	3710	3510
30	1000	3470	1140	3070	---	17500	2350	16500	2490	1430	3600	2440
31	1050	---	1090	3180	---	14900	---	16000	---	1620	3550	---
TOTAL	32864	69720	98700	118150	323820	356300	154660	405880	191520	55690	114030	72289
MEAN	1060	2324	3184	3811	11570	11490	5155	13090	6384	1796	3678	2410
MAX	1890	5710	8050	9210	18000	32100	13000	57700	14900	3770	7040	6030
MIN	661	1110	1090	1210	3240	5170	2350	1060	2490	1080	1500	696
AC-FT	65190	138300	195800	234400	642300	706700	306800	805100	379900	110500	226200	143400
CAL YR 1982	TOTAL	2084964	MEAN	5712	MAX	43600	MIN	661	AC-FT	4136000		
WTR YR 1983	TOTAL	1993623	MEAN	5462	MAX	57700	MIN	661	AC-FT	3954000		



## BRAZOS RIVER BASIN

08114000 BRAZOS RIVER AT RICHMOND, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1945 to current year. Chemical and biochemical analyses: January 1968 to current year. Pesticide analyses: February 1968 to September 1982.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1945 to current year.

WATER TEMPERATURES: November 1950 to current year.

SUSPENDED-SEDIMENT DISCHARGE: January 1966 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, 2,600 micromhos Sept. 4, 1978; minimum daily, 187 micromhos Aug. 31, 1947.

WATER TEMPERATURES: Maximum daily, 33.0°C Aug. 5, 1951; minimum daily, 1.0°C Jan. 8, 1970.

SEDIMENT CONCENTRATIONS: 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 LOADS: Maximum daily, 1,860,000 tons Apr. 4, 1979; minimum daily, 10 tons Oct. 15, 1980.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,140 micromhos Oct. 5; minimum daily, 227 micromhos May 23.

WATER TEMPERATURES: Maximum daily, 31.0°C Sept. 5, 6; minimum daily, 7.0°C Jan. 4.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 9,900 mg/L Mar. 24; minimum daily mean, 10 mg/L Sept. 16.

SEDIMENT LOADS: Maximum daily, 739,000 tons Mar. 24; minimum daily, 19 tons Sept. 16.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

			SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)	
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)									
OCT 27...	1030	1120	788	8.1	19.0	18	10.3	111	3.3	2100	
DEC 09...	0716	3880	--	--	15.0	--	--	--	--	--	
10...	1245	2960	302	7.6	14.0	75	10.3	100	2.7	650	
MAR 01...	1225	7610	323	8.1	15.0	330	9.8	97	2.0	2200	
09...	0630	13000	--	--	17.0	--	--	--	--	--	
25...	0710	33700	--	--	14.0	--	--	--	--	--	
APR 06...	0640	7710	--	--	15.0	--	--	--	--	--	
MAY 25...	0630	52800	--	--	23.0	--	--	--	--	--	
27...	1215	23600	220	8.2	25.5	520	5.4	66	2.7	190	
JUL 06...	1535	1110	783	8.4	31.0	25	7.0	94	2.1	700	
AUG 15...	1400	3410	692	8.0	29.5	130	6.7	88	1.1	3200	
		STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L 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 FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT 27...	200	230	36	64	16	77	2.3	4.4	190	74	
DEC 09...	--	--	--	--	--	--	--	--	--	--	
10...	3300	94	17	30	4.6	22	1.0	4.6	77	28	
MAR 01...	310	110	30	35	5.2	20	.9	4.6	79	36	
09...	--	--	--	--	--	--	--	--	--	--	
25...	--	--	--	--	--	--	--	--	--	--	
APR 06...	--	--	--	--	--	--	--	--	--	--	
MAY 25...	--	--	--	--	--	--	--	--	--	--	
27...	5300	90	8	30	3.6	9.5	.5	4.6	82	16	
JUL 06...	800	220	65	67	14	71	2.1	4.8	160	81	
AUG 15...	4600	170	51	50	11	69	2.4	5.0	120	70	

## BRAZOS RIVER BASIN

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08114000 BRAZOS RIVER AT RICHMOND, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	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)	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, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
OCT 27...	100	.30	7.4	465	457	--	.030	<.10	<.10	<.060
DEC 09...	--	--	--	--	--	--	--	--	--	--
10...	26	.20	9.4	174	172	.26	.240	.50	.50	.180
MAR 01...	27	.20	8.7	206	185	.98	.120	1.1	1.1	.180
09...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
APR 06...	--	--	--	--	--	--	--	--	--	--
MAY 25...	--	--	--	--	--	--	--	--	--	--
27...	12	.20	9.1	138	135	.39	.110	.50	.48	.100
JUL 06...	100	.30	10	453	444	--	.020	<.10	<.10	.060
AUG 15...	100	.20	9.6	397	388	.46	.140	.60	.56	.230

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- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, DIS- CHARGE, SUS- PENDEED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDEED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 27...	<.060	--	.90	.150	.090	.050	27	82	95
DEC 09...	--	--	--	--	--	--	877	9190	98
10...	<.060	3.3	3.50	.450	.160	.110	335	2680	99
MAR 01...	.130	1.5	1.70	.450	.080	.070	551	11300	81
09...	--	--	--	--	--	--	1450	50900	81
25...	--	--	--	--	--	--	3580	326000	79
APR 06...	--	--	--	--	--	--	518	10800	84
MAY 25...	--	--	--	--	--	--	2870	409000	84
27...	.100	1.3	1.40	.320	.080	.070	1380	87900	91
JUL 06...	.050	.84	.90	.100	.070	.030	34	102	93
AUG 15...	.070	.77	1.00	.180	.080	.080	288	2650	99

DATE	TIME	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)
DEC 10...	1245	4	57	<1	<1	<1	<3	6	120	1
MAR 01...	1225	1	62	<1	<1	<1	<3	5	85	<1
MAY 27...	1215	3	62	<1	<1	<1	<3	9	52	2
AUG 15...	1400	4	130	<1	<1	<1	<3	2	10	2

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)
DEC 10...	10	5	<.1	<10	5	1	<1	240	<6.0	15
MAR 01...	10	3	<.1	<10	25	<1	<1	290	<6.0	22
MAY 27...	7	1	<.1	<10	4	1	<1	210	<6.0	21
AUG 15...	20	1	<.1	<10	4	1	<1	520	8.0	5

## BRAZOS RIVER BASIN

08114000 BRAZOS RIVER AT RICHMOND, TX--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM
OCT 27...	1030	1120	19.0	27	82	--	--	--
DEC 09...	0716	3880	15.0	877	9190	76	78	83
10...	1245	2960	14.0	335	2680	--	--	--
MAR 01...	1225	7610	15.0	551	11300	--	--	--
09...	0630	13000	17.0	1450	50900	50	52	57
25...	0710	33700	14.0	3580	326000	42	47	51
APR 06...	0640	7710	15.0	518	10800	49	52	59
MAY 25...	0630	52800	23.0	2870	409000	52	56	62
27...	1215	23600	25.5	1380	87900	--	--	--
JUL 06...	1535	1110	31.0	34	102	--	--	--
AUG 15...	1400	3410	29.5	288	2650	--	--	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN .062 MM
OCT 27...	--	--	95	--	--	--	--
DEC 09...	84	94	98	99	100	--	--
10...	--	--	99	--	--	--	--
MAR 01...	--	--	81	--	--	--	--
09...	65	73	81	96	99	100	--
25...	59	69	79	94	99	10	--
APR 06...	64	75	84	97	99	100	--
MAY 25...	68	76	84	95	99	100	--
27...	--	--	91	--	--	--	--
JUL 06...	--	--	93	--	--	--	--
AUG 15...	--	--	99	--	--	--	83

## MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1982 TO SEPTEMBER 1983

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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.	1982	32864	962	534	47400	150	12900	92	8200	240
NOV.	1982	69720	640	354	66700	85	15900	60	11400	180
DEC.	1982	98700	485	268	71400	57	15200	45	12100	140
JAN.	1983	118150	580	321	102000	72	22800	54	17400	170
FEB.	1983	323820	382	211	184000	41	36100	35	30900	120
MAR.	1983	356300	333	183	176000	34	33000	31	29500	100
APR.	1983	154660	496	274	114000	58	24000	46	19300	150
MAY	1983	405880	302	167	183000	32	34500	28	30600	93
JUNE	1983	191520	436	240	124000	48	25000	40	20900	130
JULY	1983	55690	726	402	60400	96	14500	69	10300	200
AUG.	1983	114030	582	322	99200	74	22700	55	16900	160
SEPT	1983	72289	455	252	49100	53	10300	42	8280	130
TOTAL		1993623	**	**	1279000	**	267000	**	216000	**
WTD. AVG.		5462	430	238	**	50	**	40	**	130

## BRAZOS RIVER BASIN

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08114000 BRAZOS RIVER AT RICHMOND, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983												
DAY	EQUIVALENT MEAN											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1070	925	522	861	595	338	342	647	323	700	801	413
2	1060	968	505	826	594	340	363	633	349	702	835	511
3	1080	898	496	851	542	335	394	619	365	714	817	623
4	1090	903	425	710	535	316	416	636	384	767	859	664
5	1140	917	309	768	541	340	473	638	395	744	879	640
6	1120	846	421	595	544	356	453	605	433	791	950	628
7	1080	863	575	430	546	351	424	612	460	780	988	634
8	1070	831	454	360	713	370	442	619	479	795	1010	690
9	1100	816	355	348	511	446	472	659	522	804	1000	726
10	1120	904	313	377	344	415	534	610	473	809	971	730
11	1110	967	323	424	288	412	584	593	501	820	970	673
12	1100	934	348	497	273	385	608	700	439	807	803	694
13	1050	994	401	572	326	357	632	713	382	795	465	731
14	808	1020	444	642	374	356	626	783	380	784	525	752
15	704	1040	404	718	390	373	633	810	388	750	674	772
16	881	936	413	800	323	390	619	773	401	581	746	775
17	897	910	441	876	270	350	593	575	431	591	568	776
18	914	745	425	898	285	296	583	418	473	634	519	750
19	931	398	413	800	301	325	587	404	489	677	313	516
20	857	402	449	576	328	383	581	412	486	689	342	346
21	821	375	503	551	370	426	578	350	492	724	396	317
22	915	335	521	564	337	439	595	262	498	735	658	474
23	907	363	543	596	322	450	596	227	496	772	505	552
24	849	508	551	536	387	386	614	257	499	829	616	480
25	805	771	762	416	325	234	591	256	500	833	419	300
26	810	743	842	442	480	244	579	251	509	848	500	255
27	814	703	897	538	422	264	564	243	547	781	585	228
28	884	558	888	611	342	301	554	239	591	732	460	233
29	901	443	885	621	---	288	587	248	648	687	371	256
30	915	429	880	624	---	303	661	258	663	726	338	265
31	931	---	907	642	---	365	---	285	---	782	359	---
MEAN	959	748	536	615	415	353	543	495	467	748	653	547

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983												
DAY	ONCE-DAILY											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.0	20.0	16.0	9.0	14.0	14.0	16.0	23.0	23.0	29.0	30.0	30.0
2	22.0	20.0	---	8.0	13.0	16.0	15.0	23.0	24.0	29.0	29.0	30.0
3	---	20.0	16.0	9.0	13.0	16.0	15.0	23.0	24.0	29.0	29.0	30.0
4	22.0	16.0	---	7.0	12.0	18.0	16.0	23.0	24.0	29.0	29.0	30.0
5	22.0	16.0	16.0	8.0	10.0	18.0	16.0	23.0	25.0	29.0	29.0	31.0
6	26.0	16.0	15.0	10.0	---	17.0	15.0	23.0	25.0	29.0	29.0	31.0
7	26.0	16.0	15.0	10.0	9.0	17.0	14.0	23.0	24.0	29.0	29.0	28.0
8	---	16.0	16.0	10.0	10.0	17.0	15.0	23.0	24.0	29.0	29.0	28.0
9	26.0	16.0	15.0	11.0	11.0	17.0	15.0	23.0	25.0	29.0	29.0	28.0
10	24.0	16.0	15.0	12.0	11.0	15.0	15.0	23.0	25.0	29.0	29.0	28.0
11	23.0	16.0	15.0	11.0	11.0	16.0	17.0	23.0	25.0	29.0	29.0	27.0
12	---	20.0	15.0	11.0	11.0	---	16.0	23.0	25.0	29.0	29.0	27.0
13	19.0	16.0	9.0	12.0	11.0	15.0	19.0	24.0	25.0	---	27.0	27.0
14	19.0	16.0	9.0	12.0	11.0	15.0	17.0	24.0	25.0	26.0	---	28.0
15	19.0	16.0	9.0	12.0	---	16.0	16.0	24.0	25.0	26.0	29.0	29.0
16	19.0	16.0	10.0	---	11.0	16.0	16.0	21.0	25.0	26.0	29.0	29.0
17	19.0	16.0	10.0	12.0	11.0	14.0	17.0	---	25.0	25.0	29.0	30.0
18	20.0	16.0	10.0	12.0	13.0	14.0	18.0	23.0	25.0	26.0	28.0	---
19	20.0	16.0	12.0	---	13.0	---	19.0	23.0	25.0	26.0	25.0	25.0
20	20.0	16.0	12.0	11.0	15.0	14.0	20.0	23.0	25.0	26.0	25.0	25.0
21	19.0	---	12.0	10.0	15.0	14.0	20.0	22.0	26.0	28.0	28.0	28.0
22	18.0	16.0	13.0	8.0	14.0	14.0	20.0	23.0	26.0	28.0	28.0	21.0
23	18.0	16.0	17.0	8.0	14.0	14.0	19.0	21.0	26.0	28.0	26.0	21.0
24	18.0	15.0	17.0	8.0	14.0	14.0	19.0	21.0	26.0	28.0	28.0	21.0
25	16.0	15.0	17.0	9.0	14.0	14.0	19.0	23.0	26.0	28.0	28.0	21.0
26	---	15.0	14.0	9.0	14.0	13.0	19.0	23.0	26.0	29.0	28.0	21.0
27	16.0	15.0	13.0	8.0	13.0	13.0	20.0	23.0	26.0	29.0	28.0	22.0
28	16.0	15.0	12.0	8.0	14.0	14.0	21.0	23.0	28.0	29.0	28.0	24.0
29	16.0	---	---	11.0	---	14.0	23.0	23.0	29.0	29.0	29.0	24.0
30	---	16.0	10.0	12.0	---	16.0	23.0	24.0	30.0	29.0	29.0	23.0
31	18.0	---	10.0	15.0	---	16.0	---	24.0	---	29.0	30.0	---
MEAN	20.0	16.5	13.0	10.0	12.5	15.0	17.5	23.0	25.5	28.0	28.5	26.5



## BRAZOS RIVER BASIN

08114000 BRAZOS RIVER AT RICHMOND, TX--Continued

## SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER			NOVEMBER			DECEMBER			
1	925	40	100	1300	25	88	4160	440	4940
2	1020	35	96	1470	40	159	4020	480	5210
3	1060	25	72	1680	72	327	5820	575	9040
4	974	20	53	1570	76	322	5970	775	12500
5	821	18	40	1300	85	298	7000	975	18400
6	790	30	64	1140	60	185	8050	1100	23900
7	1070	87	251	1110	45	135	6350	970	16600
8	1860	90	452	1200	40	130	4670	1000	12600
9	1560	50	211	1300	44	154	3460	810	7570
10	1190	34	109	1510	42	171	2960	510	4080
11	1020	32	88	1570	42	178	2700	330	2410
12	1010	38	104	1470	34	135	2460	290	1930
13	1350	105	383	1360	34	125	2370	215	1380
14	1890	142	725	1320	32	114	2410	220	1430
15	1410	118	449	1290	28	98	2800	260	1970
16	1170	62	196	1270	50	171	3000	230	1860
17	1200	52	168	2020	279	1880	3040	217	1780
18	1110	40	120	4870	914	12000	2950	200	1590
19	916	32	79	4260	831	9640	2580	145	1010
20	759	32	66	5710	1110	17100	2170	130	762
21	736	27	54	5530	825	12600	1900	87	446
22	790	18	38	3640	427	4200	1950	90	474
23	725	18	35	2740	300	2220	2410	130	846
24	673	20	36	2570	180	1250	2660	133	955
25	661	25	45	2010	120	651	2310	95	593
26	854	25	58	1520	105	431	1890	87	444
27	1100	22	65	2050	275	1520	1710	73	337
28	1090	30	88	3600	475	4620	1460	50	197
29	1080	28	82	3870	400	4180	1240	35	117
30	1000	20	54	3470	370	3470	1140	28	86
31	1050	20	57	---	---	---	1090	25	74
TOTAL	32864	---	4438	69720	---	78552	98700	---	135531

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
JANUARY			FEBRUARY			MARCH			
1	1210	30	98	3240	160	1400	7640	650	13400
2	1350	35	128	4700	445	6190	7460	500	10100
3	2890	130	1010	6050	1050	17200	8090	450	9830
4	5120	410	5670	4820	697	9150	8540	420	9680
5	5470	400	5910	4770	525	6760	8270	420	9380
6	5010	525	7100	5540	450	6730	8460	400	9140
7	4370	440	5190	6190	397	6640	8280	430	9610
8	3990	315	3390	10900	1030	32600	11900	848	28300
9	3690	225	2240	13300	2330	84100	13000	1550	54300
10	3200	187	1620	13700	2460	91000	10200	1630	45300
11	2820	162	1230	12100	1820	59500	8340	1100	24800
12	2450	132	873	15600	1760	74100	7900	750	16000
13	2210	87	519	16700	2770	125000	7720	500	10400
14	2210	90	537	14300	2700	104000	7180	400	7750
15	2030	70	384	13800	2120	79000	7040	350	6650
16	1860	55	276	16300	1720	75700	7160	450	8700
17	1620	40	175	16400	1420	62900	10100	667	19000
18	1440	30	117	13100	920	32500	11700	1130	35500
19	2000	54	323	11400	750	23100	8110	864	19200
20	4900	634	8880	10800	750	21900	6140	450	7460
21	8930	858	20700	12600	1100	37400	5500	350	5200
22	9210	857	21400	18000	1670	81200	5170	300	4190
23	7420	625	12500	17200	1550	72000	5800	796	13900
24	6570	525	9310	15800	1350	57600	20300	9900	739000
25	5660	430	6570	15300	1350	55800	32100	3160	278000
26	4500	275	3340	12400	1340	44900	22900	2260	141000
27	3600	165	1600	10200	1160	31900	20200	1720	93800
28	3100	145	1210	8610	940	21900	19700	1580	84000
29	3070	140	1160	---	---	---	19000	1600	82100
30	3070	115	953	---	---	---	17500	1470	69500
31	3180	115	987	---	---	---	14900	1410	56700
TOTAL	118150	---	125400	323820	---	1322170	356300	---	1921890



## 08114000 BRAZOS RIVER AT RICHMOND, TX--Continued

## SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	13000	1170	41100	2000	84	454	14900	770	31000
2	12000	900	29200	1740	104	489	13800	650	24200
3	10600	700	20000	1530	90	372	12800	550	19000
4	9370	550	13900	1340	74	268	12100	520	17000
5	8590	480	11100	1270	68	233	10500	500	14200
6	8140	490	10800	1340	72	260	8440	420	9570
7	7760	350	7330	1200	67	217	6960	420	7890
8	7050	330	6280	1090	52	153	6400	400	6910
9	6270	304	5150	1060	42	120	7340	450	8920
10	5700	295	4540	1320	170	606	8430	670	15200
11	5320	230	3300	1370	350	1290	9350	740	18700
12	4720	226	2880	1180	115	366	8240	1150	25600
13	4220	201	2290	1170	88	278	6530	1000	17600
14	3840	192	1990	1550	220	921	5540	650	9720
15	3580	152	1470	5630	715	11700	4950	460	6150
16	3420	154	1420	7470	1150	23200	4740	480	6140
17	3270	148	1310	5910	1520	24300	4560	300	3690
18	3180	133	1140	5120	1510	20900	4620	242	3020
19	3260	123	1080	4860	1200	15700	4640	222	2780
20	3140	128	1090	5830	1200	18900	4480	182	2200
21	2920	117	922	18500	3220	216000	4220	200	2280
22	2810	98	744	43700	4680	537000	4050	202	2210
23	2740	117	866	56000	3430	518000	3920	208	2200
24	2690	116	843	57700	3530	550000	3390	185	1690
25	2660	97	697	49400	2870	384000	3070	165	1370
26	2950	110	876	34600	2310	218000	2870	160	1240
27	3180	133	1140	23800	1750	112000	2680	115	832
28	3120	139	1170	18900	1320	67400	2750	107	794
29	2810	101	766	16800	1050	47600	2760	120	894
30	2350	86	546	16500	870	38800	2490	87	585
31	---	---	---	16000	870	37600	---	---	---
TOTAL	154660	---	175940	405880	---	2847127	191520	---	263585

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
JULY			AUGUST			SEPTEMBER			
1	2120	112	641	1780	40	192	3370	160	1460
2	1810	87	425	1800	40	194	2920	120	946
3	1670	88	397	1690	44	201	2400	82	531
4	1520	75	308	1500	34	138	1960	45	238
5	1360	47	173	1510	34	139	1580	38	162
6	1120	40	121	1620	34	149	1350	20	73
7	1210	68	222	1860	31	156	1170	20	63
8	1300	56	197	1820	28	138	1080	15	44
9	1190	58	186	1820	38	187	1020	14	39
10	1080	49	143	2340	65	411	955	14	36
11	1130	71	217	3710	210	2100	1000	30	81
12	1210	63	206	4180	375	4230	896	21	51
13	1360	82	301	4350	825	9690	851	15	34
14	1710	115	531	4750	675	8660	858	14	32
15	2010	238	1470	3600	350	3400	814	16	35
16	3380	800	7300	2450	225	1490	696	10	19
17	3770	525	5340	1990	130	698	696	12	23
18	3730	375	3780	3280	561	6700	713	15	29
19	3090	225	1880	5820	1330	21200	3340	644	7590
20	2380	160	1030	4700	485	6150	4520	700	8540
21	2000	118	637	5230	425	6000	2940	325	2580
22	1780	84	404	6320	560	9560	4310	350	4070
23	1760	84	399	7000	710	13400	6030	670	10900
24	1710	68	314	7040	770	14600	5140	730	10100
25	1470	60	238	6690	825	14900	4490	700	8490
26	1510	50	204	5540	550	8230	4120	400	4450
27	1480	44	176	4700	520	6600	3750	320	3240
28	1400	46	174	4080	480	5290	3370	250	2270
29	1380	45	168	3710	375	3760	3510	300	2840
30	1430	40	154	3600	275	2670	2440	425	2800
31	1620	42	184	3550	210	2010	---	---	---
TOTAL	55690	---	27920	114030	---	153243	72289	---	71766
YEAR	1993623		7127562						

## 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 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.--Records good. Channel rectification was completed in April 1955. No diversion above station. Low flow supplemented by drainage from irrigated fields. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--33 years (water years 1948-49, 1953-83), 35.7 ft<sup>3</sup>/s (25,860 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 discharges above base 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)
Nov. 19	2230	2,200	19.59	July 16	0330	2,800	20.57
Feb. 9	1830	1,320	17.66	Aug. 18	2200	*4,380	22.20
Feb. 15	1830	2,250	19.68	Sept. 19	1600	4,200	22.11
Mar. 23	1830	1,730	18.66				

Minimum daily discharge, 0.51 ft<sup>3</sup>/s Oct. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.67	.73	64	11	16	2.4	12	2.0	2.5	3.1	7.5	1.8
2	.63	.81	35	17	4.8	2.1	5.3	2.8	2.0	2.9	11	1.8
3	.67	7.7	86	7.8	2.7	1.8	2.4	3.1	2.3	2.4	10	1.7
4	.58	3.6	79	4.9	1.9	1.7	1.7	2.4	2.3	1.7	7.9	1.7
5	.61	1.8	34	3.2	149	1.7	1.5	1.8	2.3	1.8	4.7	1.4
6	.57	1.0	16	2.5	93	1.5	1.2	2.0	2.7	1.9	76	1.5
7	2.8	1.0	8.7	2.1	33	1.3	1.1	1.9	2.3	2.1	94	4.6
8	1.7	1.1	5.5	2.0	15	1.3	1.1	1.6	2.0	2.4	225	2.4
9	.66	1.3	3.9	1.8	420	1.5	1.0	1.4	2.0	4.1	163	15
10	.56	1.4	3.3	1.7	363	1.4	1.0	4.2	5.0	4.3	188	17
11	.53	1.3	3.8	1.7	93	1.3	1.0	83	3.7	4.9	672	5.0
12	1.5	1.3	3.8	1.7	39	1.2	1.0	34	2.9	5.9	421	2.2
13	1.3	1.2	3.2	1.6	20	1.3	1.1	13	2.3	8.4	301	1.7
14	.67	1.2	7.1	1.6	12	1.3	1.0	4.8	1.9	13	107	1.7
15	.51	1.2	102	1.5	1140	1.3	.96	2.7	3.5	445	46	1.6
16	.54	1.4	41	1.6	827	4.2	.96	15	4.0	2000	22	2.2
17	.60	17	18	1.6	140	10	1.0	15	25	414	13	2.8
18	.60	12	9.5	1.7	54	2.6	1.0	6.5	66	151	1940	32
19	.66	714	6.0	325	24	1.7	1.0	3.1	36	73	3050	2660
20	.63	903	3.8	371	15	1.8	1.1	100	18	34	834	2210
21	.67	149	2.9	119	200	1.5	1.1	208	9.2	16	335	414
22	.73	59	2.3	68	81	1.4	1.2	228	5.9	8.2	125	140
23	.75	27	3.0	29	33	591	1.3	80	4.1	4.8	59	59
24	.75	16	2.2	15	17	417	3.5	35	3.6	3.3	50	28
25	.75	9.6	1.9	8.7	9.7	103	1.7	16	90	3.2	30	14
26	.75	13	1.9	6.4	5.6	66	1.7	8.8	19	2.7	9.3	7.7
27	.74	697	5.9	4.1	3.7	44	2.2	5.1	9.7	3.3	5.4	5.9
28	.68	389	5.2	2.9	2.6	20	3.7	3.3	4.5	2.6	3.8	3.1
29	.77	107	3.1	2.7	---	11	4.7	2.7	3.0	2.7	3.1	2.5
30	.77	55	2.4	2.1	---	50	3.1	2.5	2.8	3.4	2.3	2.1
31	.76	---	2.1	3.7	---	41	---	2.6	---	4.2	2.6	---
TOTAL	25.11	3195.64	566.5	1024.6	3815.0	1389.3	62.62	892.3	340.5	3230.3	8818.6	5644.4
MEAN	.81	107	18.3	33.1	136	44.8	2.09	28.8	11.4	104	284	188
MAX	2.8	903	102	371	1140	591	12	228	90	2000	3050	2660
MIN	.51	.73	1.9	1.5	1.9	1.2	.96	1.4	1.9	1.7	2.3	1.4
AC-FT	50	6340	1120	2030	7570	2760	124	1770	675	6410	17490	11200
CAL YR 1982	TOTAL	12886.14	MEAN	35.3	MAX	1990	MIN	.50	AC-FT	25560		
WTR YR 1983	TOTAL	29004.87	MEAN	79.5	MAX	3050	MIN	.51	AC-FT	57530		

## SAN BERNARD RIVER BASIN

403

08117500 SAN BERNARD RIVER NEAR BOLING, TX

LOCATION.--Lat 29°18'47", long 95°53'36", Wharton-Fort Bend County line, Hydrologic Unit 12090401, near left bank at downstream side of pile bent 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>.

## WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1712: 1958. WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 30.81 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair. Part of low flow is drainage from areas irrigated with diversions from Colorado River. Diversions above station for irrigation and other uses.

AVERAGE DISCHARGE.--29 years, 503 ft<sup>3</sup>/s (364,400 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, 2.4 ft<sup>3</sup>/s Nov. 27-30, 1956.

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 above base 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)
Nov. 23	unknown	3,400	unknown	May 25	0800	4,230	21.56
Jan. 23	1600	3,340	18.89	July 17	1200	3,230	18.76
Feb. 16	1600	5,310	24.20	Sept. 20	1700	*6,550	27.13
Mar. 27	1100	4,020	20.70				

Minimum daily discharge, 12 ft<sup>3</sup>/s Nov. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	233	18	2040	63	166	460	663	118	398	141	379	73
2	230	17	1930	85	137	318	446	139	268	116	403	74
3	218	17	1930	74	130	230	328	141	178	102	453	78
4	216	18	2450	72	166	174	251	148	132	94	496	86
5	152	19	2040	96	377	142	197	134	106	87	441	99
6	131	59	1590	106	799	122	150	130	93	86	403	146
7	152	82	1380	97	691	128	121	118	94	80	385	315
8	195	66	1160	85	532	175	97	94	101	76	400	213
9	267	61	859	74	534	197	84	86	112	75	638	263
10	317	47	628	63	1760	177	74	91	115	74	628	248
11	362	32	453	56	1440	138	65	318	115	72	975	245
12	361	23	325	50	1290	111	58	522	106	77	1510	262
13	331	19	242	47	1380	94	54	377	97	108	1620	275
14	571	17	202	44	1180	84	50	205	93	190	1410	248
15	792	14	305	40	1980	76	49	152	89	552	1010	234
16	724	12	408	39	5080	87	49	124	80	2270	553	213
17	548	60	324	37	4480	836	49	246	85	3180	345	188
18	518	85	254	36	3980	1120	48	232	175	2920	396	185
19	448	600	210	352	4160	1230	45	136	312	2730	1540	2790
20	316	2500	170	1850	3800	1730	41	101	308	2580	2480	6180
21	198	2800	134	2100	3370	1320	38	579	250	2200	2100	5800
22	117	3200	108	2570	3010	853	40	1120	203	1600	1180	4600
23	75	3350	90	3270	2600	1080	42	1820	159	982	725	3850
24	56	2900	76	3040	2850	3330	49	3640	131	653	494	3330
25	42	2100	69	2080	2480	3030	56	4180	122	495	329	2500
26	30	1600	66	1280	1540	3510	52	3690	131	367	222	1200
27	25	2300	67	868	989	3960	47	2640	138	287	155	606
28	23	2400	79	581	672	3560	53	1500	174	287	110	387
29	21	2070	82	387	---	2510	83	1030	172	289	85	261
30	22	1910	76	264	---	1400	99	779	160	300	80	191
31	20	---	67	199	---	957	---	559	---	340	71	---
TOTAL	7711	28396	19814	20005	51573	33139	3478	25149	4697	23410	22016	35140
MEAN	249	947	639	645	1842	1069	116	811	157	755	710	1171
MAX	792	3350	2450	3270	5080	3960	663	4180	398	3180	2480	6180
MIN	20	12	66	36	130	76	38	86	80	72	71	73
AC-FT	15290	56320	39300	39680	102300	65730	6900	49880	9320	46430	43670	69700
CAL YR 1982	TOTAL	150439	MEAN	412	MAX	5530	MIN	12	AC-FT	298400		
WTR YR 1983	TOTAL	274528	MEAN	752	MAX	6180	MIN	12	AC-FT	544500		

## SAN BERNARD RIVER BASIN

08117500 SAN BERNARD RIVER NEAR BOLING, TX--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: February 1978 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: February 1978 to September 1981.

WATER TEMPERATURES: February 1978 to September 1981.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (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)	HARD- NESS (MG/L AS CACO3)
DEC 08...	1140	1170	121	7.2	15.5	35	7.5	74	2.1	150	800	42
MAR 02...	1415	311	176	7.7	17.0	150	8.3	86	1.9	620	290	61
MAY 26...	1140	3740	98	6.6	24.5	55	5.2	62	2.1	340	100	33
AUG 16...	1200	549	199	7.4	28.5	48	5.7	73	1.0	1200	2000	71
DATE		HARD- NESS, NONCAR- BONATE (MG/L 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 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)
DEC 08...		3	12	3.0	7.4	.5	3.6	39	11	11	.10	13
MAR 02...		8	18	3.8	11	.6	2.9	53	11	16	.10	10
MAY 26...		5	9.6	2.2	5.3	.4	3.5	28	10	7.0	.10	8.2
AUG 16...		4	20	5.0	10	.5	4.3	67	10	15	.20	17
DATE		SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 08...	112		86	.11	.190	3.70	.210	.330	.130	63	199	83
MAR 02...	121		106	.25	.140	1.30	.220	.100	.080	73	61	97
MAY 26...	79		64	.67	.190	1.50	.140	.110	.090	22	222	98
AUG 16...	137		123	.17	.120	1.10	.240	.150	.120	52	77	97
DATE	TIME	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)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)				
DEC 08...	1140	2	53	<1	<1	<3	4	240				
MAR 02...	1415	2	60	<1	<1	<3	3	190				
MAY 26...	1140	2	53	2	<1	<3	6	150				
AUG 16...	1200	7	68	2	<1	<3	2	180				
DATE		LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)				
DEC 08...		4	9	<.1	<1	<1	<1	39				
MAR 02...		2	4	<.1	1	<1	<1	9				
MAY 26...		<1	6	<.1	34	<1	<1	70				
AUG 16...		3	6	<.1	4	<1	<1	20				

## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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 stations during water year 1983

Discharge measurements made at low-flow partial-record stations during water year 1983						
Station No.	Station name	Location	Drainage area (sq mi)	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.	(a)	1951-83	12-14-82 3- 8-83 6-28-83 9- 7-83	0.72 .82 .02 0
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.	30.7	1948, 1955, 1958, 1964-83	10-28-82 2- 8-83 5- 3-83 6-14-83 7-27-83	1.1 12.0 5.6 3.9 2.8
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.	75.3	1964-83	2- 8-83 5- 4-83 6-14-83 7-26-83	6.2 1.1 .46 .07

a Not applicable.



## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

## Crest-stage partial-record stations

The following table contains annual maximum stage and (or) discharge at partial-record stations operated primarily for the purpose of defining the flooding characteristics of the streams. At stations where discharge is given, or is footnoted "to be determined", a stage-discharge relation has been, or will be, defined by discharge measurements obtained by current meter or by indirect procedures. Water-stage recorders are located at these flood-hydrograph stations to facilitate complete hydrograph definition. At stations where only the maximum stage is given (discharge column is dashed), 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 1983							
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (ft <sup>3</sup> /s)
San Jacinto River basin							
08068400	Panther Branch near Conroe, Tex.	Lat 30°11'28", long 95°28'44", Montgomery County, 2,400 ft downstream from former gage site, 5.1 mi upstream from station 08068450, and 8 mi southwest of Conroe.	26.1	1974-76, 1980-83	5-20-83	10.09	(e)
08068438	Swale No. 8 at The Woodlands, Tex.	Lat 30°08'38", long 95°28'09", Montgomery County, at bridge on Grogans' Mill Road at The Woodlands.	.55	1975-76, 1980-83	2- 9-83	33.54	318
08068450	Panther Branch near Spring, Tex.	Lat 30°08'02", long 95°28'38", Montgomery County, at bridge on Sawdust Road, 3.0 mi upstream from Spring Creek, and 5.1 mi northwest of Spring.	34.5	1972-76, 1980-83	5-21-83	13.29	2,330
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, 1979-83	5-22-83	67.35	-
08072400	Buffalo Bayou near Clodine, Tex.	Lat 29°43'06", long 95°43'53", Fort Bend County, on private road to Cinco Ranch, 2.8 mi west of Clodine, and 9.0 mi upstream from Barker Reservoir discharge structure.	84.2	1974-83	11-20-82	*f96.40	1,980
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	1974-83	8-19-83	*106.81	1,970
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.	25.2	1977-83 <sup>‡</sup>	8- 8-83	21.79	819
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	1974-83	8-18-83	*100.25	2,400
08074200	Brickhouse Gully at Clarblak Street, Houston, Tex.	Lat 29°49'53", long 95°31'42", Harris County, at bridge on Clarblak Street in northwest Houston.	2.56	1965-83	10- 6-81 8-18-83	*87.87 *88.46	b247 300
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	1977-83	9-19-83	19.23	5,090
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.	7.47	1965-71, 1975-83	9-19-83	*81.93	2,760
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	1977-83	9-19-79 8-31-81 5-13-82 9-19-83	*59.21 *62.47 *59.18 *65.33	b9,250 b13,000 b9,220 16,800
08074910	Hummingbird Street Ditch at Mullins Street, Houston, Tex.	Lat 29°39'44", long 95°29'11", Harris County, at intersection of Hummingbird Street ditch and Mullins Street in southwest Houston.	.32	1979-83	9-19-83	*59.41	172
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.	48.4	1978-83	8-18-83	*37.82	-
08075550	Berry Bayou at Gilpin Street, Houston, Tex.	Lat 29°38'32", long 95°13'22", Harris County, at bridge on Gilpin Street in southeast Houston.	2.56	1965-83	8-18-83	*35.84	547

\* Elevation.

<sup>†</sup> Operated as a regular streamflow station "at State Highway 6," prior to 1983 water year.

b Revised.

e Not determined; rating definition pending.

f Peak stage occurred on different date.

## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Annual maximum stage and (or) discharge during water year 1983--Continued

Annual maximum stage and (or) discharge during water year 1983--Continued					Annual maximum		
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Date	Elevation (feet)	Discharge (ft <sup>3</sup> /s)
San Jacinto River basin--Continued							
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.	8.06	1965-83	8-18-83	*114.04	768
08076200	Halls Bayou at Deertrail Street near Houston, Tex.	Lat 29°54'07", long 95°25'21", Harris County, at bridge on Deertrail Street, 0.6 mi west of U.S. Highway 75, and about 11 mi northwest of Houston.	8.99	1965-83	8-18-83	*85.66	1,200
Clear Creek basin							
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 southeast of Friendswood.	-	1966-83	8-18-83	*17.29	-
Highland Bayou basin							
08077780	Highland Bayou near Texas City, Tex.	Lat 29°19'54", long 94°56'42", Galveston County, at bridge on State Highway 6, 0.4 mi southwest of U.S. Highway 75, 1.5 mi from mouth, and about 3 mi southwest of Texas City.	-	1974-83	8-18-83	*9.64	-
Brazos River basin							
08093530	Aquilla Creek at abandoned Missouri-Kansas-Texas Railroad bridge near Aquilla, Tex.	Lat 31°48'59", long 97°11'35", Hill County, on right bank at downstream side of abandoned Missouri-Kansas-Texas Railroad bridge, 0.8 mi downstream from Alligator Creek, 2.5 mi downstream from gaging station Aquilla Creek near Aquilla at Farm Road 1304 (08093500), 2.5 mi upstream from Farm Road 2114, and 2.8 mi southeast of Aquilla.	-	1976-83	-	(d)	-
08093540	Aquilla Creek at Farm Road 2114 near Aquilla, Tex.	Lat 31°47'23", long 97°11'13", McLennan County, on right bank at downstream side of bridge on Farm Road 2114, 2.1 mi upstream from Snake Creek, 3.3 mi downstream from Alligator Creek, and 4.6 mi southeast of Aquilla.	-	1976-83	2-20-83	444.81	-
08093560	Aquilla Creek at Farm Road 1858 near Ross, Tex.	Lat 31°43'33", long 97°12'39", McLennan County, on right bank at downstream side of bridge on Farm Road 1858, 0.9 mi downstream from Patten Branch, 1.6 mi upstream from Dry Creek, 3.4 mi west of Ross, and 4.4 mi upstream from Farm Road 933.	-	1976-83	2-20-83	414.52	-
08093580	Aquilla Creek at Farm Road 933 near Ross, Tex.	Lat 31°41'06", long 97°11'02", McLennan County, on left bank at downstream side of bridge on Farm Road 933, 1.5 mi downstream from Elm Creek, 2.5 mi southwest of Ross, 2.6 mi upstream from mouth (Brazos River), and 2.8 mi downstream from Dry Creek.	-	1976-83	-	(e)	-

\* Elevation.

a Approximately.

d No peak above index elevation of 455.56 ft.

e No peak above index elevation of 390.61 ft.



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## 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). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

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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