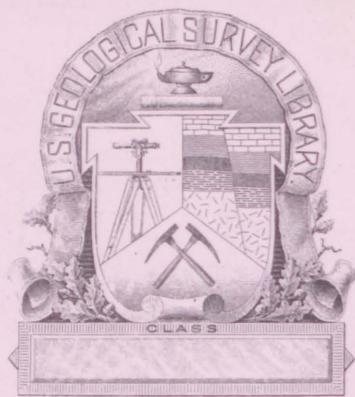
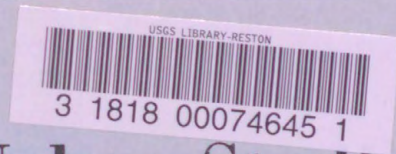






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Hydrologic Data for Urban Studies in the Houston, Texas Metropolitan Area, 1977

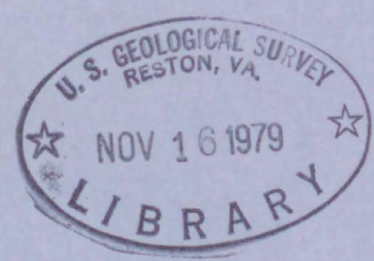
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Hydrologic Data for Urban Studies in the Houston, Texas Metropolitan Area, 1977

By James S. Hutchison

U.S. GEOLOGICAL SURVEY

OFSS 79-1294

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U.S. Geological Survey
Federal Building
200 East 12th Street
Austin, TX 78701

Prepared in cooperation with the City of Houston

August 1979

UNITED STATES DEPARTMENT OF THE INTERIOR

CECIL D. ANDRUS, Secretary

GEOLOGICAL SURVEY

H. William Menard, Director

Reproduced by the Texas Department of Water Resources
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Copies of this report may be obtained from the
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HYDROLOGIC DATA FOR URBAN STUDIES IN THE

HOUSTON, TEXAS, METROPOLITAN AREA, 1977

By

James S. Hutchison

U.S. Geological Survey

INTRODUCTION

Hydrologic investigations of urban watersheds in Texas were begun by the U.S. Geological Survey in 1954. Studies are now in progress in Austin, Dallas and Dallas County, Fort Worth, Houston, and San Antonio.

The U.S. Geological Survey, in cooperation with the city of Houston, began studies in the Houston metropolitan area in 1964. The program was expanded in 1968 to include collection of water-quality data. The objectives of the Houston urban hydrology study are as follows:

1. To determine, on the basis of historical data and hydrologic analyses, the magnitude and frequency of flood peaks and flood volume.
2. To determine the effect of urban development on flood peaks and volume.
3. To ascertain the variation in water quality for different flow conditions and different seasons.

This report, the fourteenth in a series of reports to be published annually, is primarily applicable to objective 2. The report presents the basic hydrologic data collection in the Houston urban area for the 1977 water year (October 1976 to September 1977).

A previous report by Johnson and Sayre (April 1973) utilized records collected from 1965 to 1969 to make a study of the effects of urbanization on floods in the Houston area. The report also summarizes various basin parameters.

To facilitate the publication and distribution of this report at the earliest feasible time, some material has been included that does not conform to formal publication standards of the U.S. Geological Survey.

For those readers interested in using the metric system, the inch-pound units of measurements used in this report may be converted to metric units by using the following conversion factors:

From		Multiply by	To obtain	
Unit	Abbrevia- tion		Unit	Abbrevia- tion
inch	--	25.4	millimeter	mm
foot	--	.3048	meter	m
mile	--	1.609	kilometer	km
square mile	mi ²	2.590	square kilometer	km ²
cubic foot/ per second	ft ³ /s	.02832	cubic meter per second	m ³ /s
foot per mile	ft/mi	.189	meter per kilometer	m/km
acre-foot	--	1233	cubic meter	m ³
		.001233	cubic hectometer	hm ³

LOCATION AND DESCRIPTION OF THE AREA

The Houston study area is located about 45 miles from the Gulf of Mexico, and is on an almost featureless level plain. The land surface in the area increases in altitude from 35 feet above mean sea level in the southeast to 135 feet in the northwest.

Records show that the entire Houston urban study area is being developed rapidly. Percent increases in development in various drainage basin areas in the Houston metropolitan area from 1969 to 1976 are shown in table 1.

Soils in the area are predominately clay, clay loams, and fine sandy loams of low permeability.

The major stream draining the area is Buffalo Bayou, a tributary of the San Jacinto River. Buffalo Bayou is regulated by the Barker and Addicks flood-detention reservoirs near the western limits of the area. From these reservoirs, Buffalo Bayou meanders east and is fed by five major tributaries: Whiteoak, Brays, Sims, Hunting, and Greens Bayous. The drainage area of Buffalo Bayou, downstream from the flood water-detention reservoirs, is about 810 square miles.

The climate of the Houston area is characterized by short mild winters, long hot summers, high relative humidity, and prevailing southeasterly winds. The mean annual temperature (1941-70) is 68.9°F (20.5°C); the lowest temperature recorded was 5°F (-15°C) in 1930; and the maximum recorded was 108°F (42°C) in 1909.

The 30-year average (1941-70) rainfall at the Houston Intercontinental Airport station is 48.19 inches, distributed uniformly throughout the year. The maximum annual rainfall for Houston was 72.86 inches in 1900; and the minimum was 17.66 inches in 1917.

DATA-COLLECTION METHODS

The drainage basins and locations of hydrologic-instrument installations and water-quality sampling sites in the Houston urban study area are shown on figure 1. The locations of hydrologic instruments and data-collection sites in the individual basins are shown on figures 4-16.

Precipitation Data

Precipitation data are based on 27 recording rain gages in the Houston metropolitan area. The gages are distributed throughout the drainage basins to measure total precipitation and to define rainfall intensities.

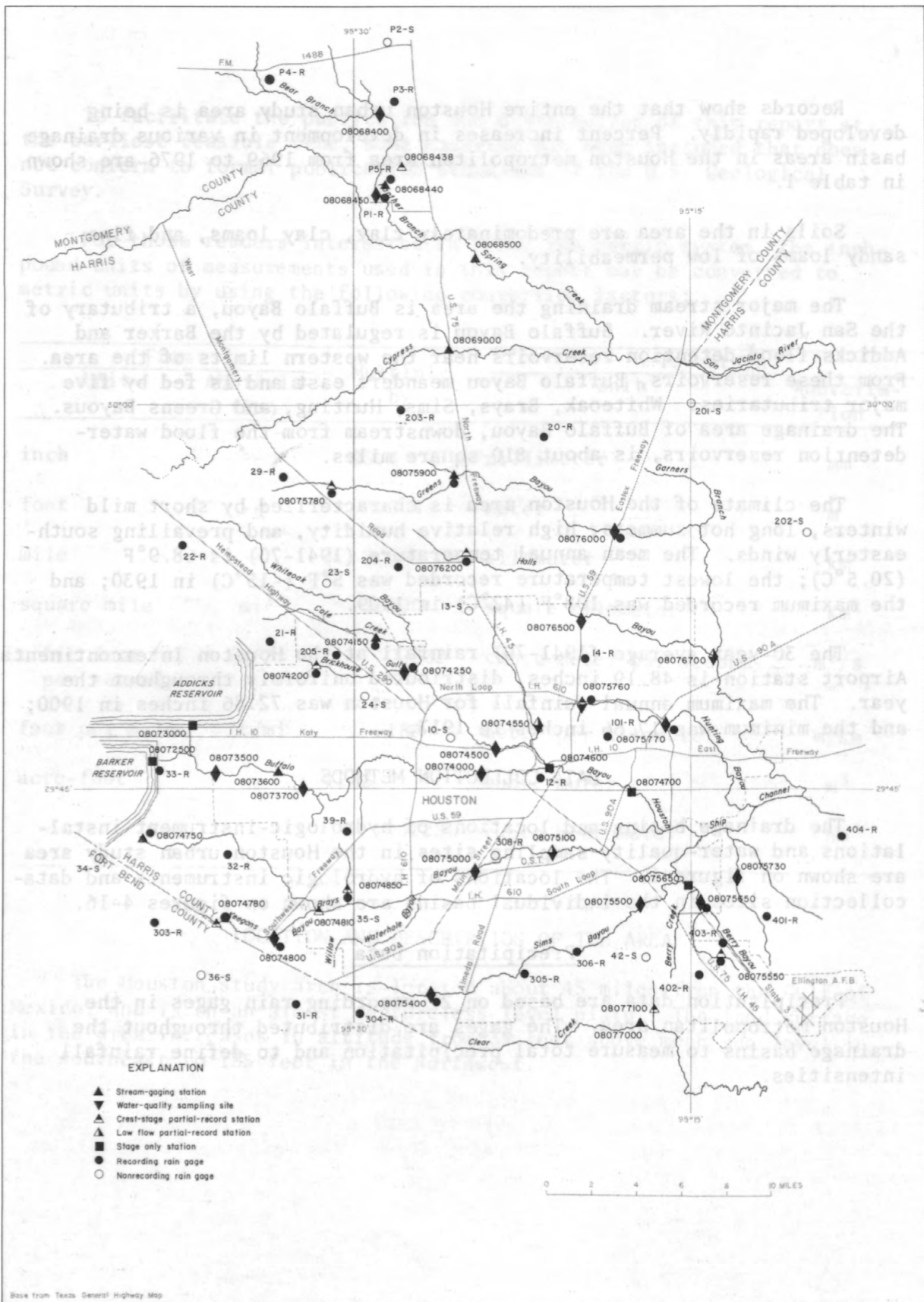


FIGURE 1.- Locations of data-collection sites in the Houston urban study area

Table 1.--Percent increase in development in various drainage areas
in the Houston metropolitan area from 1969 to 1976

Station no.	Station name	1969 a/	1976 b/	Percent increase
08074150	Cole Creek at Diehl Road	34.3	54.0	19.7
08074200	Brickhouse Gully at Clarblak Street	34.6	54.7	20.1
08074250	Brickhouse Gully at Costa Rica Street	61.0	77.5	16.5
08074500	Whiteoak Bayou at Houston	45.2	57.7	12.5
08074780	Keegans Bayou at Keegan Road	21.0	44.9	23.9
08074800	Keegans Bayou at Roark Road	26.3	55.7	29.4
08075000	Brays Bayou at Houston	44.6	64.4	19.8
08075400	Sims Bayou at Hiram Clarke Street	40.4	69.3	28.9
08075500	Sims Bayou at Houston	50.2	73.7	23.5
08075550	Berry Bayou at Gilpin Street	58.0	71.8	13.8
08075650	Berry Bayou at Forest Oaks Street	72.9	85.3	12.4
08075760	Hunting Bayou at Falls Street	95.9	98.9	3.0
08075770	Hunting Bayou at Interstate Highway 610	83.3	95.0	11.7
08075780	Greens Bayou at Cutten Road	24.4	47.2	22.8
08076000	Greens Bayou near Houston	26.3	43.9	17.6
08076200	Halls Bayou at Deertrail Street	30.4	52.8	22.4
08076500	Halls Bayou at Houston	60.3	74.1	13.8
08077100	Clark Creek Tributary at Hall Road	82.0	93.2	11.2

a/ Johnson and Sayre, 1973.

b/ Liscum and Massey, written communication, 1979.

Additional rainfall data are available from rain-gage networks operated by the National Weather Service and are given in the section "Compilation of data." Locations of recording and nonrecording rain gages at sites other than stream-gaging stations are given in table 10.

Precipitation at individual gages and weighted precipitation in each study basin is given in the section "Compilation of data." Weighted-mean precipitation equations are shown in table 2. Daily and monthly rainfall for gages north of Buffalo Bayou and south of Buffalo Bayou are given in the section "Compilation of data."

Rainfall for the current year was unevenly distributed over the area. Individual station totals ranged from 29.1 inches at the Keegans Bayou at Roark Road station (08074800) to 53.9 inches at the Edgebrook rain gage (station 403R). Figure 2 shows the comparison of accumulated monthly rainfall for the 1977 water year over four widely separated drainage basins with the 30-year average (1941-70) of 48.19 inches at the Houston Intercontinental Airport rain gage (station 20R).

Only three storms occurring during the 1977 water year produced rainfall totals over 2.5 inches. The storms of April 20 and Sept. 6-9 were the only area-wide storms. The storm of June 15 was confined to the area north of Buffalo Bayou. None of the storms produced rainfall totals in excess of 5 inches.

Runoff Data

Runoff data are based on discharge measurements and stage records at 18 continuous-record stream gaging stations, 11 partial-record stream-gaging stations, and 2 reservoir-content stations.

Annual records of daily discharge at continuous-record stream-gaging stations, maximum discharge at crest-stage partial-record stations, and daily contents of reservoirs are given in the section "Compilation of data."

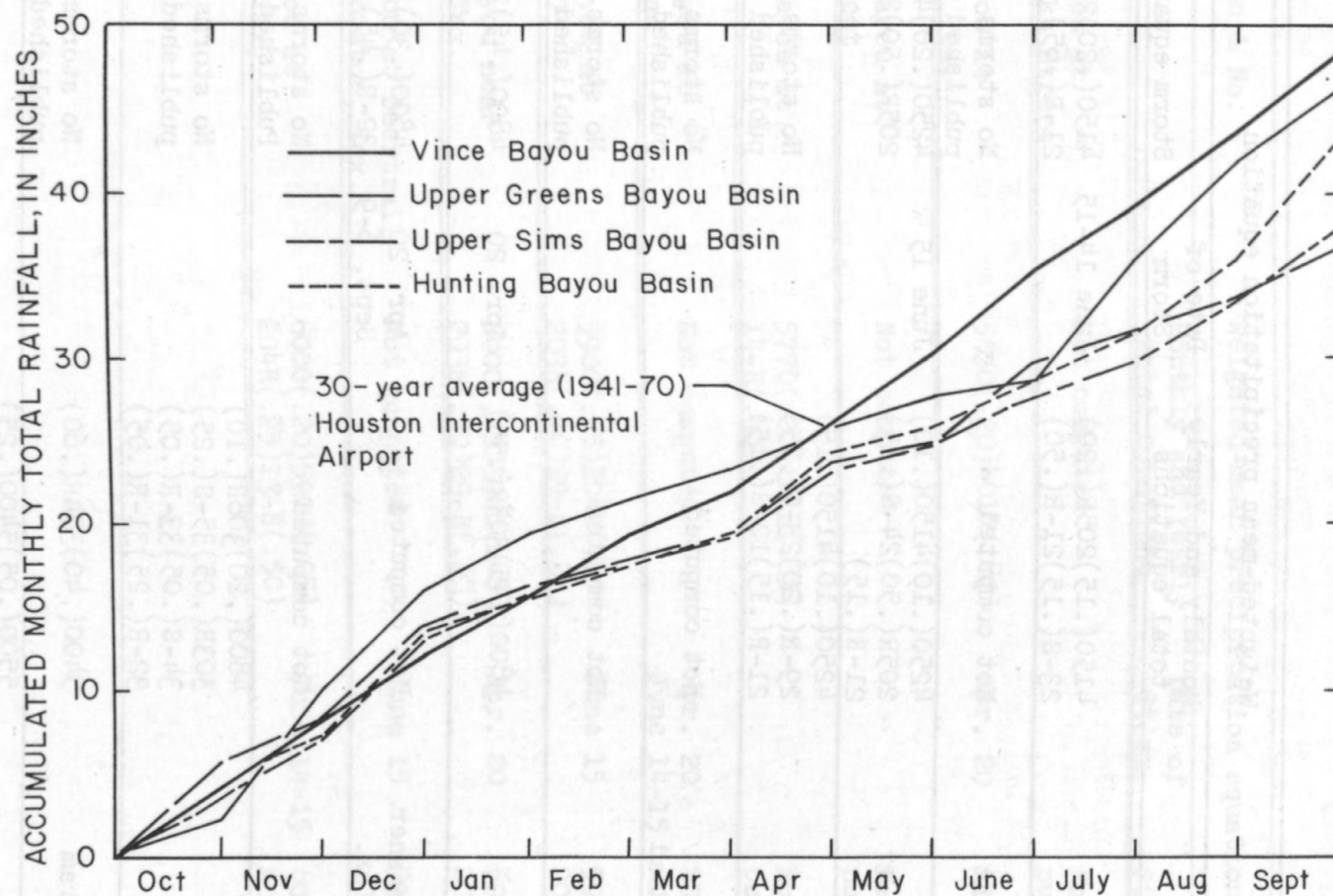


FIGURE 2.- Rainfall at four drainage basins in the Houston metropolitan area, 1977 water year

Table 2.--Weighted-mean precipitation equations for drainage basins
above stations in the Houston metropolitan area

Station & No.	Weighted-mean precipitation equation		
	Monthly and Yearly total equations	Date of Storm	Storm equations
08074150 Cole Creek at Deihl Road	4150(.15)205R(.20) 23-S(.15)21-R(.50)	June 14-15	4150(.20)205R(.15) 21-R(.65)
08074200 Brickhouse Gully at Clarblak Street	Not computed		No storms published
08074250 Brickhouse Gully at Costa Rica Street	4250(.10)4150(.10) 205R(.50)24-S(.15) 21-R(.15)	June 15	4250(.20)4150(.10) 205R(.50)21-R(.20)
08074500 Whiteoak Bayou at Houston, Tex.	4250(.10)4150(.15) 29-R(.20)23-S(.25) 21-R(.15)10-S(.15)		No storms published
08074750 Brays Bayou at Addicks-Clodine Road	Not computed		No storms published
08074780 Keegans Bayou at Keegans Road	Not computed		No storms published
08074800 Keegans Bayou at Roark Road	4800(.45)303R(.55)	Apr. 20	4800(.45)303R(.55)
08074810 Brays Bayou at Gessner Drive, Houston, Tex.	Not computed	Apr. 20 Sept. 6-9	4800(.30)303R(.25) 32-R(.45)
08074850 Bintliff Ditch at Bissonnet Street	Not computed		No storms Published
08075000 Brays Bayou at Houston, Tex.	4800(.20)308R(.10) 303R(.05)35-S(.25) 34-S(.05)33-R(.05) 32-R(.25)31-R(.05)		No storms published
08075400 Sims Bayou at Hiram Clarke Street	5400(.40)304R(.60)		No storms published
08075500 Sims Bayou at Houston, Tex.	5500(.05)5400(.25) 306R(.20)305R(.25) 304R(.20)42-S(.05)		No storms published
08075550 Berry Bayou at Gilpin Street	Not computed		No storms Published

Table 2.--Weighted-mean precipitation equations for drainage basins
above stations in the Houston metropolitan area--Cont'd

Station & No.	Weighted-mean precipitation equation		
	Monthly and Yearly total equations	Date of Storm	Storm equations
08075650 Berry Bayou at Forest Oaks Street	Not computed		No storms published
08075730 Vince Bayou at Pasadena, Tex.	5650(.20)401R(.80)	Apr. 20	401R(1.00)
08075760 Hunting Bayou at Falls Street	Not computed		No storms published
08075770 Hunting Bayou at IH-610	5770(.20)101R(.35) 14-R(.45)		No storms published
08075780 Greens Bayou at Cutten Road	Not computed	Apr. 20 June 14-15	29-R(1.00)
08075900 Greens Bayou at U.S. Hwy 75	5900(.25)204R(.10) 203R(.40)29-R(.25)	June 15	5900(.25)204R(.10) 203R(.40)29-R(.25)
08076000 Greens Bayou near Houston, Tex.	6000(.15)5900(.45) 203R(.20)29-R(.20)	Apr. 20	6000(.15)5900(.45) 203R(.20)29-R(.20)
08076200 Halls Bayou at Deertrail Street, Houston, Tex.	Not computed	June 15	5900(.06)204R(.94)
08076500 Halls Bayou at Houston, Tex.	6000(.20)5900(.05) 204R(.25)13-S(.50)	June 14-15	6000(.45)5900(.10) 204R(.45)

Figure 3 shows the accumulated monthly runoff from three basins for the 1977 water year and the average runoff for the period 1953-70. The average rainfall for the 1953-70 period was 46 inches or approximately equal to the 30-year (1941-70) rainfall average of 48.19 inches at the Houston Intercontinental Airport.

Water-Quality Data

Water-quality data for sites in the Houston metropolitan area are presented in downstream order along with the streamflow in the section "Compilation of data." A complete tabulation of data, including laboratory analyses for the 1977 water year for the San Jacinto River basin, is given in Water Resources Data for Texas, TX 77-2, 1977.

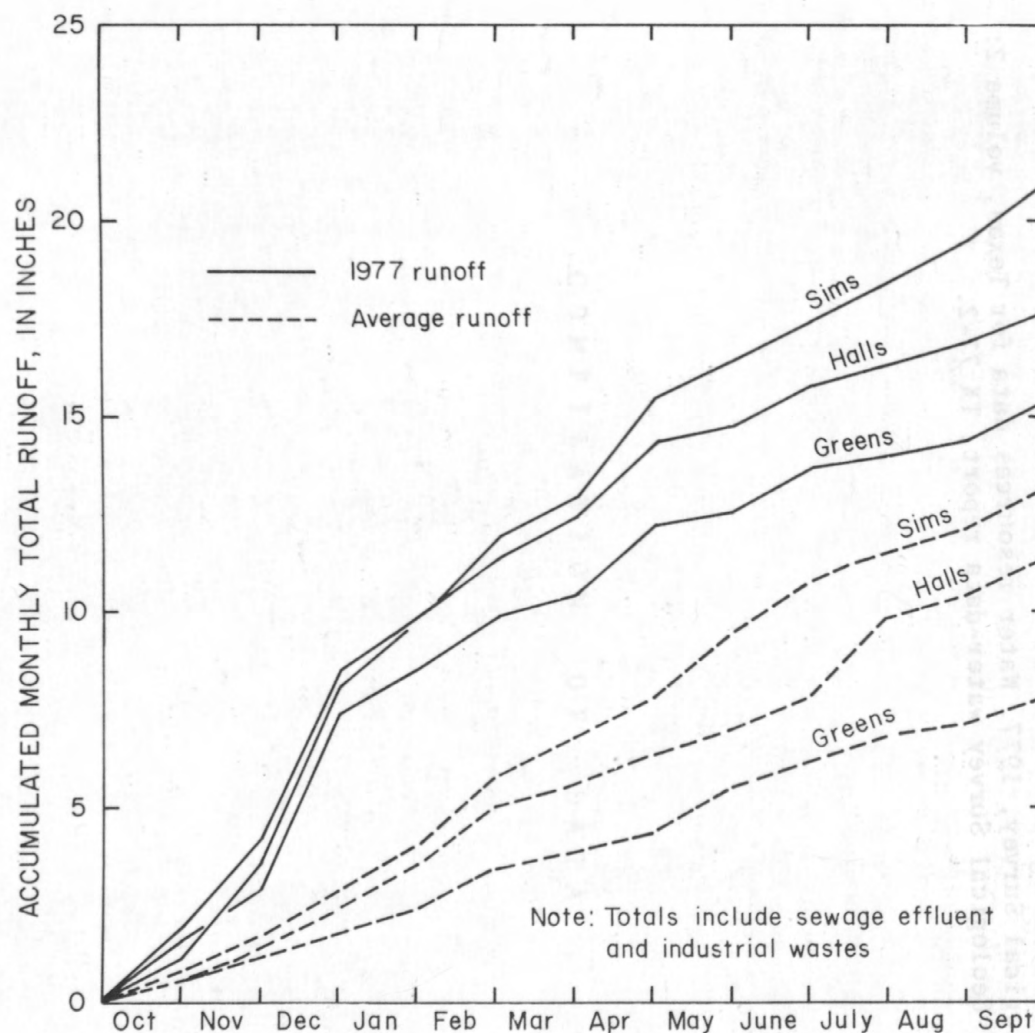
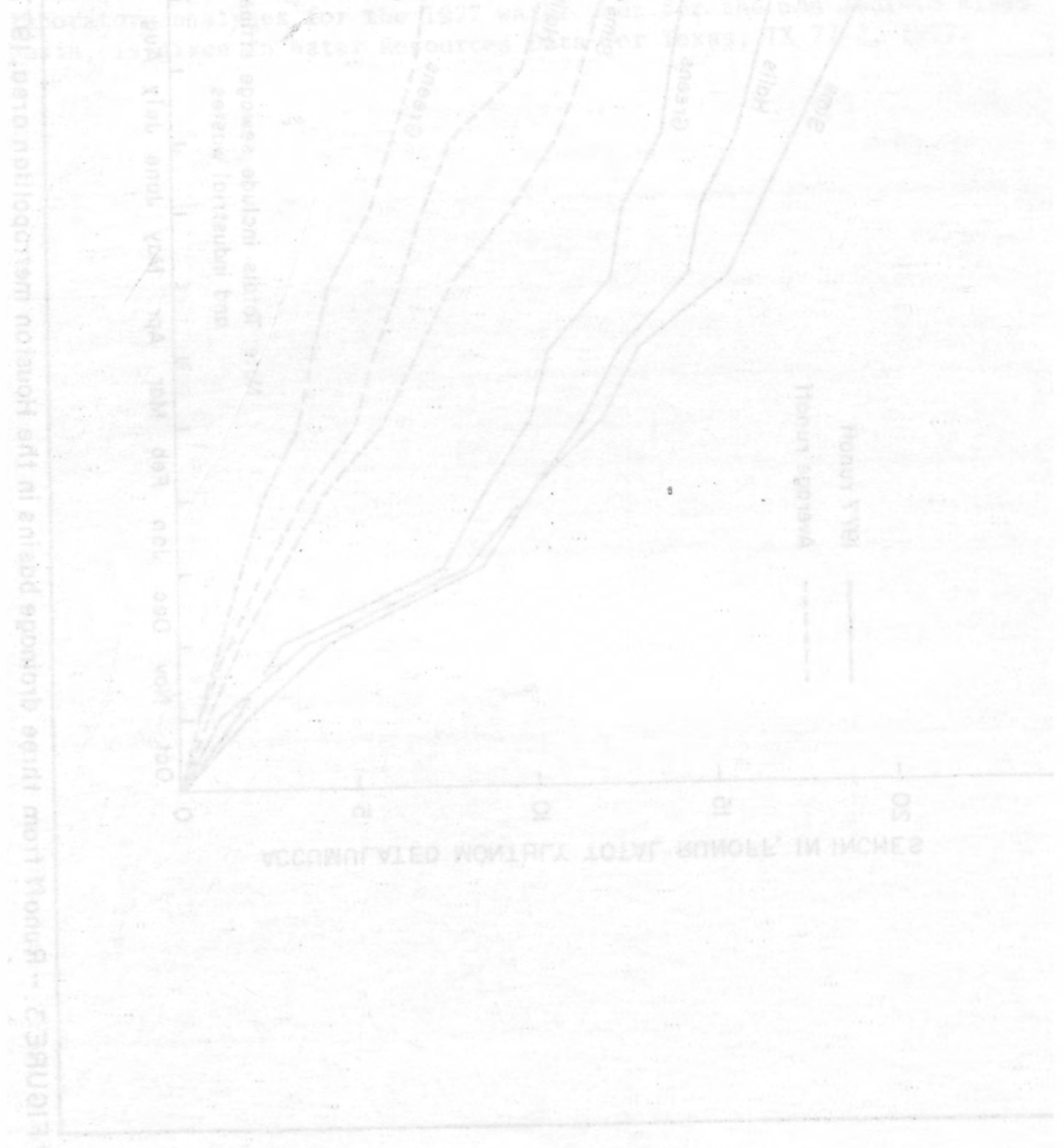


FIGURE 3.- Runoff from three drainage basins in the Houston metropolitan area, 1977 water year, and average runoff for the period 1953-70

SELECTED REFERENCES

- Johnson, S. L., and Sayre, D. M., 1973, Effects of urbanization on floods in the Houston, Texas metropolitan area: U.S. Geological Survey Water-Resources Investigations 3-73, 50 p.
- U.S. Department of Commerce, National Oceanic and Atmospheric Administration Environmental Data Service, 1973, Monthly normals of temperature, precipitation, and heating and cooling degree days, 1941-70, Texas: Climatology of the United States, No. 81 (by State).
- U.S. Geological Survey, 1977, Water resources data for Texas, volume 2: U.S. Geological Survey water-data report, TX 77-2.



SAN JACINTO RIVER BASIN

08072500 BARKER RESERVOIR NEAR ADDICKS, TX

LOCATION.--Lat 29°46'11", Long 95°38'49", Harris County, Hydrologic Unit 12040104, at dam on Buffalo Bayou, 45 ft (14 m) upstream from reservoir outlet works, 1,160 ft (354 m) upstream from Addicks-Howell county road, 1.1 mi (1.8 km) south of Addicks, and 1.2 mi (1.9 km) upstream from South Mayde Creek.

DRAINAGE AREA (revised).--128 mi² (332 km²). Prior to August 1977, 134 mi² (347 km²). 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.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorders. Datum of gage is 0.33 ft (0.101 m) below mean sea level; unadjusted for land-surface subsidence.

REMARKS.--The reservoir is formed by a rolled earthfill dam 72,900 ft (22,200 m) 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 (2.7 by 2.1 m) wide, each controlled by a vertical slide gate. 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.....	114.0	-
Ground gage height at ends of dam.....	107.0	207,000
Design flood.....	101.9	127,900
Crest of spillway (invert).....	75.0	0

COOPERATION.--Capacity curve, furnished by the Corps of Engineers, is based on a survey made in 1940.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 39,200 acre-ft (48.3 hm³) May 15, 1968, gage height, 94.60 ft (28.834 m); minimum, reservoir was dry at times.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 11,520 acre-ft (14.2 hm³) Dec. 22, gage height, 90.48 ft (27.578 m); minimum daily, 3.2 acre-ft (3,950 m³) for many days, gage height, 75.36 ft (22.970 m).

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

75.0	1.7	82.5	176
76.0	6.3	83.5	368
76.5	9.5	84.4	667
77.5	19	85.4	1,200
79.0	38	87.0	3,060
80.8	73	88.8	6,530
81.8	116	90.5	11,590

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.9	702	5.4	470	8.0	3.2	3.3	7.8	3.4	3.7	4.4	3.5
2	9.1	309	4.7	70	5.9	3.2	3.3	6.8	3.4	3.6	3.8	3.4
3	7.6	18	4.1	22	7.5	4.6	3.3	8.5	3.4	3.6	3.8	3.4
4	5.8	5.8	3.8	12	8.5	4.1	3.5	6.9	3.4	3.6	3.7	3.4
5	7.3	4.5	6.7	7.8	6.1	3.5	3.2	4.9	3.4	3.6	3.8	3.3
6	7.1	4.3	484	7.6	4.7	3.3	3.2	3.9	3.4	4.1	3.9	3.3
7	6.4	4.1	2850	7.3	4.1	3.3	3.2	3.8	3.4	5.1	5.1	7.1
8	6.0	4.0	3790	6.5	3.8	3.3	3.2	3.8	3.4	6.7	4.1	4.0
9	6.0	3.9	3740	11	3.7	3.3	3.2	9.1	3.4	6.5	3.8	6.6
10	6.0	3.9	3410	7.8	167	3.3	3.2	63	3.5	5.9	3.7	4.4
11	6.6	3.9	3940	6.5	2420	3.3	3.2	86	3.7	5.5	3.7	3.9
12	5.9	3.9	6070	5.7	4620	3.3	3.2	9.7	9.3	5.7	12	3.8
13	6.0	4.7	7310	5.8	5090	3.3	3.2	5.6	5.9	6.6	4.8	7.5
14	6.1	4.1	8040	46	4730	3.3	3.2	4.2	6.9	7.5	4.7	12
15	8.2	4.9	8790	74	4220	3.3	3.2	3.7	8.3	7.5	7.2	11
16	39	3.9	8970	15	3610	3.3	3.9	3.6	8.2	11	6.1	5.6
17	6.6	3.9	8660	7.5	2950	3.3	25	3.6	5.9	7.9	4.2	4.6
18	31	3.9	8200	6.0	2300	3.3	8.5	3.6	5.2	8.1	3.7	4.3
19	9.8	13	8390	5.3	1630	3.3	5.1	3.5	4.3	10	3.5	28
20	8.4	47	10450	4.6	1070	3.2	84	3.5	3.8	9.2	3.5	28
21	7.1	40	11460	4.2	324	3.2	1330	4.6	3.8	11	3.5	8.0
22	6.4	8.6	11250	4.4	11	3.2	2820	5.6	3.6	8.1	3.5	6.0
23	5.6	6.0	10580	5.5	3.6	3.2	3120	4.5	3.6	7.5	3.5	4.9
24	85	4.8	9670	5.5	3.3	3.2	2870	17	4.0	6.9	3.5	4.6
25	725	4.5	8880	6.0	3.3	3.3	2190	5.9	4.1	5.5	3.5	4.2
26	1480	4.4	7850	4.7	3.2	3.3	1100	4.4	3.8	5.6	3.5	3.6
27	1490	4.0	6310	4.3	3.2	3.3	140	3.9	4.6	6.7	3.5	3.6
28	1100	9.2	4850	4.6	3.2	3.4	1480	3.5	3.7	7.6	3.5	5.3
29	771	9.9	3680	4.7	---	3.3	1290	3.5	3.7	8.1	3.5	5.7
30	834	6.9	2130	5.4	---	3.3	5.7	3.4	3.7	5.7	3.5	5.3
31	936	---	1140	13	---	3.3	---	3.4	---	4.8	3.5	---
MAX	1490	702	11460	470	5090	4.6	3120	86	9.3	11	12	28
MIN	5.6	3.9	3.8	4.2	3.2	3.2	3.2	3.4	3.4	3.6	3.5	3.3

CAL YR 1976 MAX 11460 MIN 3.1
WTR YR 1977 MAX 11460 MIN 3.2

SAN JACINTO RIVER BASIN

08073000 ADDICKS RESERVOIR NEAR ADDICKS, TX

LOCATION.--Lat 29°47'28", long 95°37'24", Harris County, Hydrologic Unit 12040104, at dam on South Mayde Creek, 65 ft (20 m) upstream from reservoir outlet works, 2,700 ft (823 m) upstream from U.S. Highway 90, 1.2 mi (1.9 km) east of Addicks, and 1.4 mi (2.3 km) upstream from mouth.

DRAINAGE AREA (revised).--129 mi² (334 km²). Prior to Aug. 1, 1977, 133 mi² (344 km²). Basin boundary change due to relocation of drainage ditches. During extreme floods, basin may receive and (or) lose runoff due to basin interchange.

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

GAGE.--Water-stage recorders. Datum of gage is at mean sea level; unadjusted for land-surface subsidence.

REMARKS.--The reservoir is formed by a rolled earthfill dam 61,166 ft (18,643 m) 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 (2.4 by 1.8 m) wide, each controlled by a vertical slide gate. Runoff in excess of maximum design capacity will be discharged around both ends of dam. 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.....	123.5	-
Ground elevation at ends of dam.....	114.0	204,500
Design flood.....	113.0	188,030
Crest of spillway (invert).....	73.0	0

COOPERATION.--Capacity curve, furnished by the Corps of Engineers, was based on a survey made in 1940.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 37,460 acre-ft (46.2 hm³) May 15, 1968, elevation, 100.02 ft (30.486 m); minimum, reservoir was dry at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in December 1935 reached a stage of 89.9 ft (27.40 m) at bridge on U.S. Highway 90, 2,700 ft (823 m) downstream from gage, from information by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 3,870 acre-ft (4.77 hm³) Dec. 16, elevation, 91.73 ft (27.959 m); minimum, reservoir was dry for many days.

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

73.7	0	85.0	189
76.0	7	86.5	385
78.0	22	88.5	1,020
80.0	46	90.0	2,020
82.0	82	91.0	2,970
84.0	135	92.0	4,260

CONTENTS. IN ACRE-FEET, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.10	464.0	.20	2.40	.30	.00	.00	27.60	.00	.00	.00	.00
2	.25	260.0	.00	29.70	.00	.00	.00	56.00	.00	.00	.00	.00
3	.00	124.0	.00	58.60	3.50	.00	.00	17.00	.00	.00	.00	.00
4	.00	44.90	.00	39.80	1.40	.00	.00	2.40	.00	.00	.00	.00
5	.00	.00	13.50	.53	.30	.00	.00	.75	.00	.00	.00	.00
6	.43	.00	172.0	3.10	.00	.00	.00	.00	.00	2.00	.00	.00
7	.13	.00	1120	3.10	.00	.00	.00	.00	.00	.00	.00	1.50
8	.18	.00	1680	2.80	.00	.00	.00	.00	.00	.93	.00	5.90
9	.43	.00	1540	.97	.00	.00	.00	.00	.00	1.50	.00	2.00
10	.25	.00	1200	.00	55.00	.00	.00	1.70	.00	.30	.00	.00
11	.00	.00	1240	.00	340.0	.00	.00	.70	.50	.00	.00	.00
12	.00	.00	2100	.00	904.0	.00	.00	.00	.73	.00	.85	22.00
13	.00	.00	2920	.00	953.0	.00	.00	.00	.00	.00	14.90	19.70
14	.00	.00	3470	14.80	670.0	.00	.00	.00	28.80	.18	1.80	29.50
15	4.20	.00	3860	4.60	368.0	.00	.00	.00	71.50	.73	12.60	.93
16	73.10	.00	3770	1.00	165.0	.00	.83	.00	56.20	.83	.58	.18
17	140.0	.00	3280	.03	73.40	.00	.00	.00	.60	.68	.03	.00
18	188.0	.00	2610	.00	.00	.00	.00	.00	.00	.65	.00	.00
19	158.0	15.30	2180	.00	.00	.00	.00	.00	.00	1.60	.00	14.90
20	99.50	45.10	3090	.00	.00	.00	121.0	.00	.00	.97	.00	2.70
21	37.40	42.70	3850	.00	.00	.00	1130	.00	.00	4.80	.00	25.40
22	1.30	2.10	3460	.00	.00	.00	1800	.00	.00	1.30	.00	43.20
23	.88	.35	2650	.00	.00	.00	1350	.00	.00	.55	.00	3.90
24	51.80	.00	1750	.00	.00	.00	529.0	.00	.00	.00	.00	.00
25	213.0	.00	1020	.00	.00	.00	124.0	.00	.00	.00	.00	.00
26	511.0	.00	614.0	.00	.00	.00	7.30	.00	.00	.00	.00	.00
27	582.0	.00	358.0	.00	.00	.00	.60	.00	.00	11.50	.00	.00
28	411.0	7.90	179.0	.00	.00	.00	.00	.00	.00	13.40	.00	.05
29	372.0	3.70	93.70	.00	---	.00	.00	.00	.00	1.10	.00	.30
30	564.0	.88	35.10	.00	---	.00	.55	.00	.00	.00	.00	.50
31	622.0	---	6.20	1.90	---	.00	---	.00	---	.00	.00	---
MAX	622.0	464.0	3860	58.60	953.0	.00	1800	56.00	71.50	13.40	14.90	43.20
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

CAL YR 1976 MAX 5760 MIN .00
WTR YR 1977 MAX 3860 MIN .00

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 (2.9 km) downstream from South Mayde Creek, and 2.6 mi (4.2 km) southeast of Addicks.

DRAINAGE AREA.--293 mi² (759 km²), unadjusted for basin boundary changes.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1.40 ft (0.427 m) below mean sea level; records unadjusted to land-surface subsidence. Prior to Feb. 2, 1948, water-stage recorder at bridge on natural channel 1,200 ft (366 m) to right at same datum. Feb. 2 to May 21, 1948, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records fair. Floodflow regulated by Barker and Addicks Reservoirs (stations 08072500 and 08073000) 3.2 and 3.0 mi (5.1 and 4.8 km) upstream, respectively, total capacity 315,900 acre-ft (390 hm³). Extreme low flow is sustained by drainage from irrigated lands.

AVERAGE DISCHARGE.--32 years, 202 ft³/s (5.721 m³/s), 146,300 acre-ft/yr (180 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,200 ft³/s (317 m³/s) Aug. 29, 1945, gage height, 81.23 ft (24.759 m), former site; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1896, 85.6 ft (26.09 m) in December 1935, adjusted to former site from floodmark 0.5 mi (0.8 km) downstream, on basis of slope of flood of Aug. 29, 1945, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,450 ft³/s (41.1 m³/s) Dec. 22, gage height, 61.18 ft (18.648 m); minimum daily, 6.0 ft³/s (0.17 m³/s) Apr. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	204	701	120	438	140	17	14	170	24	36	52	28
2	141	663	88	377	114	14	16	180	21	36	44	30
3	110	589	67	299	185	28	15	231	17	33	33	27
4	77	366	51	287	214	47	13	156	17	35	34	25
5	85	170	55	242	143	36	16	75	23	35	30	25
6	105	52	439	145	86	25	14	45	25	52	27	26
7	103	42	784	135	56	20	13	33	24	80	40	80
8	95	39	869	111	41	19	11	30	23	94	43	250
9	84	36	908	140	34	16	9.9	35	20	148	35	200
10	86	128	848	164	280	17	8.5	173	20	134	30	120
11	78	51	793	99	611	18	6.9	311	28	94	32	54
12	66	29	715	74	550	21	6.0	242	53	89	86	45
13	56	51	771	61	620	17	6.9	69	81	94	171	100
14	56	52	1070	175	740	16	8.3	37	165	113	248	500
15	106	40	1090	393	720	15	9.5	30	337	119	153	320
16	447	33	1110	312	688	16	23	25	349	173	200	117
17	536	35	1050	139	653	15	102	25	249	146	103	71
18	551	34	1010	79	535	16	174	25	92	133	64	54
19	453	136	1010	54	365	17	82	23	68	183	48	350
20	387	338	1160	46	346	16	571	22	50	176	43	400
21	336	437	1260	37	320	15	754	52	42	234	39	167
22	206	443	1370	42	239	15	895	62	38	197	38	74
23	125	242	1430	45	50	15	1080	56	35	140	38	116
24	320	101	1380	47	27	15	1150	135	37	107	35	66
25	410	68	1380	50	24	17	1060	126	40	81	31	53
26	454	57	1350	66	22	18	875	56	38	58	30	47
27	615	51	1320	53	21	15	580	36	35	91	29	41
28	696	142	1240	48	20	23	215	32	37	313	30	51
29	769	269	901	43	---	23	35	27	39	219	36	82
30	742	209	1090	47	---	17	37	23	42	123	32	90
31	728	---	665	129	---	14	---	27	---	72	28	---
TOTAL	9227	5604	27394	4377	7844	593	7801.0	2569	2069	3638	1882	3609
MEAN	298	187	884	141	280	19.1	260	82.9	69.0	117	60.7	120
MAX	769	701	1430	438	740	47	1150	311	349	313	248	500
MIN	56	29	51	37	20	14	6.0	22	17	33	27	25
AC-FT	18300	11120	54340	8680	15560	1180	15470	5100	4100	7220	3730	7160
CAL YR 1976	TOTAL	84983.6	MEAN	232	MAX	1430	MIN	6.9	AC-FT	168600		
WTR YR 1977	TOTAL	76607.0	MEAN	210	MAX	1430	MIN	6.0	AC-FT	151900		

SAN JACINTO RIVER BASIN
08073500 BUFFALO BAYOU NEAR ADDICKS, TX--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DTS- CHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO- MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TURBIDITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	BIO- CHEM- ICAL OXYGEN DEMAND 5 DAY (MG/L)
OCT 20...	1400	350	200	6.7	15.5	140	100	8.5	88	40
DEC 07...	1100	690	140	7.3	12.0	280	150	9.3	89	5.3
JAN 17...	0910	141	324	6.8	5.0	200	90	11.1	90	4.3
FEB 07...	0845	59	450	6.8	11.5	240	80	9.6	91	6.1
MAY 31...	1110	27	570	7.3	26.5	30	65	6.4	81	4.9
JUN 16...	0830	410	232	7.1	26.0	180	220	7.2	90	5.6
AUG 08...	1300	48	514	7.6	30.5	50	80	6.9	92	2.2
30...	1100	37	678	7.7	27.0	30	80	6.5	82	11

DATE	IMME- DIATE COLI- FORM (COL. PER 100 ML)	FECAL COLI- FORM (COL. 7UM-MF (COL./ 100 ML)	FFCAL STREP- TOCOCC KF AGAR (COL. PER 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO
OCT 20...	46000	2200	2500	49	0	15	2.7	16	1.0
DEC 07...	150000	9000	13000	--	--	--	--	--	--
JAN 17...	140000	4100	2800	--	--	--	--	--	--
FEB 07...	23000	5200	2600	--	--	--	--	--	--
MAY 31...	120000	7300	650	160	0	49	8.4	57	2.0
JUN 16...	140000	7000	3200	--	--	--	--	--	--
AUG 08...	13000	2800	780	130	5	41	6.1	50	1.9
30...	26000	3500	2200	170	0	54	8.4	66	2.2

DATE	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NON- FILTRABLE RESIDUE (MG/L)
OCT 20...	6.5	61	0	7.9	22	.3	12	112	148
DEC 07...	--	--	--	--	--	--	--	--	340
JAN 17...	--	--	--	--	--	--	--	--	98
FEB 07...	--	--	--	--	--	--	--	--	149
MAY 31...	3.9	200	0	21	60	.4	13	311	124
JUN 16...	--	--	--	--	--	--	--	--	396
AUG 08...	7.8	150	0	25	64	.3	22	290	133
30...	7.7	230	0	23	76	.4	35	384	136

SAN JACINTO RIVER BASIN

08073500 BUFFALO BAYOU NEAR ADDICKS, TX.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

		VOL. NON-FILT-RABLE RESIDUE	TOTAL NITRATE (N)	TOTAL NITRITE (N)	TOTAL AMMONIA NITRO-GEN (N)	TOTAL ORGANIC NITRO-GEN (N)	TOTAL PHOS-PHORUS (P)	TOTAL ORGANIC CARBON (C)	PHENOLS	METHY-LENE BLUE ACTIVE SUB-STANCE			
	DATE	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(UG/L)	(MG/L)			
	OCT 20...	29	.11	.02	.09	1.2	.27	12	--	.10			
	DEC 07...	76	.13	.01	.05	1.6	.37	9.1	--	.00			
	JAN 17...	32	.35	.02	.31	1.4	.37	14	--	.10			
	FEB 07...	23	.25	.02	.26	1.9	.54	8.3	13	.00			
	MAY 31...	19	.97	.13	.40	1.0	1.0	9.7	11	.20			
	JUN 16...	48	.28	.07	.21	1.3	.51	14	--	.00			
	AUG 08...	23	1.0	.09	.09	1.8	.88	7.5	3	.20			
	30...	33	1.0	.07	.09	1.2	3.3	9.4	--	.20			
				DIS-SOLVED ARSENIC (AS)	DIS-SOLVED BARIUM (BA)	DIS-SOLVED CAD-MIUM (CD)	DIS-SOLVED CHRO-MIUM (CR)	DIS-SOLVED COPPER (CU)	DIS-SOLVED IRON (FE)				
	DATE	TIME		(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)				
	MAY 31...	1110	4	0	0	0	3	20					
	AUG 08...	1300	5	200	0	0	1	50					
				DIS-SOLVED LEAD (PB)	DIS-SOLVED MAN-GANESE (MN)	DIS-SOLVED MERCURY (HG)	DIS-SOLVED SELE-NIUM (SE)	DIS-SOLVED SILVER (AG)	DIS-SOLVED ZINC (ZN)				
	DATE			(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)				
	MAY 31...		1	0	.0	0	0	10					
	AUG 08...		0	0	.0	.3	0	20					
				POLY-CHLO-RINATED NAPH-THA-LENES	TOTAL ALDRIN	TOTAL CHLOR-DANE	TOTAL DDD	TOTAL DDT	TOTAL DI-AZINON	TOTAL DI-ELDRIN	TOTAL ENDRIN	TOTAL ETHION	
	DATE	TIME	TOTAL PCB	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	
	FEB 07...	0845	.0	.00	.00	.0	.00	.00	.08	.00	.00	.00	
	MAY 31...	1110	.0	.00	.00	.0	.00	.00	.13	.00	.00	.00	
			TOTAL HEPTA-CHLOR EPOXIDE	TOTAL LINDANE	TOTAL MALA-THION	TOTAL METHYL PARA-THION	TOTAL METHYL TRI-THION	TOTAL PARA-THION	TOTAL TOX-APHENE	TOTAL TRI-THION	TOTAL 2,4-D	TOTAL 2,4,5-T	TOTAL SILVEX
	DATE		(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)
	FEB 07...	.00	.00	.00	.00	.00	.00	.00	0	.00	.00	.00	.00
	MAY 31...	.00	.00	.00	.00	.00	.00	.00	0	.00	.00	.00	.00

SAN JACINTO RIVER BASIN

08073600 BUFFALO BAYOU AT WEST BELT DRIVE, HOUSTON, TX

LOCATION.--Lat 29°45'43", long 95°33'27", Harris County, Hydrologic Unit 12040104, at downstream side of bridge on West Belt Drive in west Houston, 100 ft (30 m) downstream from Rummel Creek, 3.5 mi (5.6 km) downstream from the gage Buffalo Bayou near Addicks, and 3.7 mi (6.0 km) upstream from the gage Buffalo Bayou at Piney Point.

DRAINAGE AREA.--307 mi² (795 km²), unadjusted for basin boundary changes.

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

GAGE.--Water-stage recorder. Datum of gage is 0.67 ft (0.204 m) below mean sea level.

REMARKS.--Records fair. Floodflow regulated by Barker and Addicks Reservoirs (stations 08072500 and 08073000) 10.1 and 10.3 mi (16.3 and 16.6 km) upstream, respectively. Low flow is sustained by sewage effluent from Houston suburbs. Several observations of water temperature were made during the current year. The Corps of Engineers has a gage-height telemeter at station.

AVERAGE DISCHARGE.--6 years, 330 ft³/s (9.346 m³/s), 239,100 acre-ft/yr (295 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,770 ft³/s (107 m³/s) Mar. 20, 1972, gage height, 62.15 ft (18.943 m), revised; minimum daily, 25 ft³/s (0.71 m³/s) Nov. 21, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,610 ft³/s (45.6 m³/s) Dec. 6, gage height, 52.23 ft (15.920 m); minimum daily, 37 ft³/s (1.05 m³/s) Apr. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	229	740	143	451	221	45	45	223	65	59	71	55
2	161	700	113	432	136	44	47	223	62	58	64	60
3	132	650	89	320	271	84	44	255	60	54	56	55
4	104	450	74	282	239	73	50	173	62	57	74	50
5	119	300	133	258	172	62	45	103	65	56	59	50
6	125	100	888	193	113	51	42	78	70	73	56	55
7	119	70	907	160	84	48	42	64	66	99	67	205
8	122	65	903	130	69	47	40	59	62	152	69	650
9	106	60	963	168	62	46	40	61	60	157	60	169
10	107	240	910	176	514	47	40	165	58	146	55	128
11	100	180	1010	119	723	53	38	305	70	113	57	85
12	90	80	911	93	642	50	37	272	104	105	68	85
13	81	160	821	80	740	46	38	118	141	107	192	254
14	80	100	1160	150	798	46	40	78	255	128	306	544
15	162	70	1140	400	752	47	43	68	400	130	172	297
16	616	60	1160	350	713	46	100	65	397	167	216	147
17	558	60	1110	200	672	46	121	63	291	155	120	102
18	584	58	1050	120	573	47	159	60	109	142	85	82
19	500	379	1140	95	369	46	89	60	83	178	71	288
20	420	521	1340	80	342	45	777	60	69	181	67	372
21	363	558	1270	70	324	45	775	148	64	213	61	191
22	220	427	1400	75	252	46	809	104	60	199	62	95
23	137	169	1450	80	82	45	984	105	58	148	60	117
24	497	105	1410	82	51	58	1100	143	59	124	60	104
25	450	86	1440	82	49	53	1020	156	62	101	56	77
26	449	84	1400	95	48	48	876	101	59	85	53	70
27	605	69	1350	83	48	55	616	80	58	123	60	66
28	724	247	1310	79	46	90	256	72	60	296	55	77
29	891	327	959	75	---	50	70	67	61	223	60	104
30	760	228	1100	116	---	46	77	66	66	138	60	113
31	750	---	734	223	---	44	---	67	---	89	55	---
TOTAL	10361	7343	29788	5317	9105	1599	8460	3662	3156	4056	2627	4747
MEAN	334	245	961	172	325	51.6	282	118	105	131	84.7	158
MAX	891	740	1450	451	798	90	1100	305	400	296	306	650
MIN	80	58	74	70	46	44	37	59	58	54	53	50
AC-FT	20550	14560	59080	10550	18060	3170	16780	7260	6260	8050	5210	9420
CAL YR 1976 TOTAL	101755			MEAN 278	MAX 1680	MIN 32	AC-FT 201800					
WTR YR 1977 TOTAL	90221			MEAN 247	MAX 1450	MIN 37	AC-FT 179000					

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 (6.0 km) downstream from Rummel Creek, 7.2 mi (11.6 km), downstream from gage Buffalo Bayou near Addicks, and 12.5 mi (20.1 km) upstream from gage Buffalo Bayou at Houston.

DRAINAGE AREA.--317 mi² (821 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1963 to September 1976, October 1976 to September 1977 (gage heights only).

GAGE.--Water-stage recorder. Datum of gage is 1.35 ft (0.412 m) below mean sea level.

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 (22.5 and 22.2 km) upstream, respectively. Low flow is partly sustained by sewage effluent from Houston suburbs. Corps of Engineers gage-height telemeter at station.

AVERAGE DISCHARGE.--13 years (water years 1963-76), 265 ft³/s (7.505 m³/s), 192,000 acre-ft/yr (237 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,470 ft³/s (127 m³/s) June 13, 1973, gage height, 54.98 ft (16.758 m); minimum daily, 6.0 ft³/s (0.17 m³/s) Dec. 6, 7, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 44.42 ft (13.539 m) Dec. 20; minimum, 32.60 ft (9.936 m) for many days.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977 MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37.01	39.86	35.68	38.69	36.14	33.33	33.18	36.80	33.20	33.35	33.70	33.45
2	35.70	39.69	35.19	38.98	35.66	33.32	33.42	37.20	33.11	33.32	33.40	33.45
3	35.28	39.41	34.62	38.16	37.51	35.67	33.30	37.20	33.03	33.28	33.40	33.07
4	34.85	38.78	34.24	36.92	36.17	34.88	34.40	35.70	33.07	33.33	35.00	32.94
5	35.90	36.99	37.02	36.92	35.92	34.00	33.10	34.60	33.41	33.30	33.80	32.93
6	34.88	34.45	43.94	36.45	35.09	33.77	33.00	33.90	33.49	34.69	33.20	33.40
7	34.93	34.03	43.25	35.72	34.56	33.52	32.90	33.70	33.26	34.52	33.68	43.06
8	35.03	33.90	40.92	35.33	34.10	33.40	32.80	33.50	33.08	37.06	33.60	43.52
9	34.71	33.79	40.99	35.78	33.84	33.33	32.80	33.60	33.03	35.62	33.30	37.00
10	34.88	39.98	40.76	35.80	42.75	33.32	32.80	35.30	32.98	34.80	33.18	35.70
11	34.65	38.65	42.53	35.39	41.50	33.50	32.70	36.72	34.47	34.50	33.11	34.20
12	34.51	34.01	41.76	34.72	39.51	33.30	32.70	36.70	34.35	34.40	35.50	34.45
13	34.29	35.79	41.87	34.73	40.14	33.20	32.70	35.67	35.20	34.30	37.22	41.35
14	34.17	34.82	42.78	36.80	40.15	33.20	32.70	34.05	38.00	35.00	37.72	41.49
15	40.31	34.24	42.16	37.58	39.94	33.20	32.70	33.12	38.00	34.60	36.14	37.88
16	41.58	33.82	42.87	37.51	39.71	33.20	36.50	33.46	37.35	35.20	36.14	35.45
17	38.75	33.71	41.72	36.35	39.50	33.20	34.90	33.37	37.20	35.20	34.98	34.60
18	38.84	34.90	41.45	35.11	39.22	33.20	35.10	33.28	35.49	35.20	34.24	34.13
19	38.74	38.51	44.00	34.52	37.74	33.20	34.50	33.24	34.26	35.80	33.74	39.98
20	38.11	38.53	44.42	34.20	37.19	33.20	43.50	33.24	33.34	35.80	33.56	39.80
21	37.50	38.58	42.60	33.99	37.05	33.10	42.00	37.70	33.92	36.20	33.52	36.44
22	36.99	38.57	43.14	34.49	36.83	33.10	40.50	34.20	33.76	35.90	33.41	34.60
23	35.27	36.99	43.31	34.60	35.90	33.10	41.50	34.20	33.36	35.00	33.36	35.80
24	41.90	35.18	43.21	34.31	33.76	33.70	41.70	35.20	33.36	34.60	33.63	35.80
25	40.27	35.00	43.46	34.48	33.49	33.60	41.60	35.20	33.50	34.30	33.63	33.70
26	38.52	35.00	43.38	34.46	33.48	33.20	41.00	34.30	33.49	34.00	33.19	33.60
27	39.52	34.23	42.93	34.38	33.48	33.20	40.10	33.70	33.31	36.00	33.46	33.39
28	39.65	37.71	42.73	34.20	33.46	35.40	38.10	33.40	33.38	37.60	33.24	33.90
29	41.37	37.05	42.34	34.15	---	33.40	34.40	33.30	33.82	37.30	33.46	34.18
30	40.43	36.77	41.79	37.27	---	33.20	34.50	33.30	33.65	35.00	33.47	34.27
31	39.97	---	41.57	37.26	---	33.13	---	33.31	---	34.20	33.12	---
MAX	41.90	39.98	44.42	38.98	42.75	35.67	43.50	37.70	38.00	37.60	37.72	43.52
MIN	34.17	33.71	34.24	33.99	33.46	33.10	32.70	33.12	32.98	33.28	33.11	32.93
CAL YR 1976	MAX	---	MIN	---								
WTR YR 1977	MAX	44.42	MIN	32.70								

SAN JACINTO RIVER BASIN

08073700 BUFFALO BAYOU AT PINEY POINT, TX--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)
DEC 07...	1315	860	176	7.5	12.5	240	150	8.0	77	6.2
JAN 17...	1020	205	350	6.9	7.5	240	80	10.2	88	5.0
FEB 07...	0945	108	526	6.7	13.0	140	70	8.4	82	7.9
MAY 31...	1230	56	736	7.3	28.5	20	20	3.3	43	7.2
JUN 16...	0940	380	222	7.2	26.5	180	250	6.5	82	5.6
AUG 09...	0900	48	661	7.3	29.0	40	60	3.7	49	14
30...	1200	41	680	7.6	38.5	20	30	3.6	54	20
DATE	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. / 100 ML)	FECAL STREPTOCOCCI KF AGAR (COL. PER 100 ML)	HARDNESS (CA+MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	
DEC 07...	29000	580	4500	49	5	15	2.7	13	.8	
JAN 17...	1800	58	190	--	--	--	--	--	--	
FEB 07...	2200	980	150	--	--	--	--	--	--	
MAY 31...	79000	2400	4300	140	0	44	8.0	91	3.3	
JUN 16...	200000	4200	1600	--	--	--	--	--	--	
AUG 09...	51000	4500	1500	130	0	41	6.9	81	3.1	
30...	36000	880	950	130	0	41	7.3	80	3.0	
DATE	DISSOLVED PHOSPHATE (P) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SiO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NON-FILTERABLE RESIDUE (MG/L)	
DEC 07...	5.5	53	0	11	16	.2	7.7	97	--	
JAN 17...	--	--	--	--	--	--	--	--	109	
FEB 07...	--	--	--	--	--	--	--	--	105	
MAY 31...	7.0	260	0	30	70	.5	19	398	41	
JUN 16...	--	--	--	--	--	--	--	--	640	
AUG 09...	8.0	200	0	30	74	.6	24	364	51	
30...	7.0	210	0	26	71	.4	24	360	49	
DATE	VOL. NON-FILTERABLE RESIDUE (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	PHENOLS (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)	
DEC 07...	--	.20	.04	.09	1.5	.52	7.2	--	.00	
JAN 17...	28	.31	.07	.79	1.1	.79	12	2	.10	
FEB 07...	28	.27	.22	1.7	2.8	2.5	8.1	--	.20	
MAY 31...	13	.76	.74	4.3	5.3	4.8	10	3	.80	
JUN 16...	100	.29	.10	.36	1.4	.65	14	--	.00	
AUG 09...	10	.94	.66	3.4	.70	4.4	9.1	4	.50	
30...	24	.84	.56	3.5	2.5	7.5	8.5	--	.60	

SAN JACINTO RIVER BASIN

08073700 BUFFALO BAYOU AT PINEY POINT, TX.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

		DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)										
DATE	TIME																
MAY 31...	1230	11	100	0	0	4	20										
AUG 09...	0900	4	200	0	0	2	30										
		DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	DIS- SOLVED SILVER (AG) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)										
DATE																	
MAY 31...		2	60	.0	0	0	20										
AUG 09...		1	10	.0	1	0	30										
		POLY- CHLO- RINATED NAPH- THA- LENES (UG/L)	TOTAL ALDRIN (UG/L)	TOTAL CHLOR- DANE (UG/L)	TOTAL DDD (UG/L)	TOTAL DDE (UG/L)	TOTAL DDT (UG/L)	TOTAL DI- AZINON (UG/L)	TOTAL DI- ELDRIN (UG/L)	TOTAL ENDRIN (UG/L)	TOTAL ETHION (UG/L)						
DATE	TIME	TOTAL PCB (UG/L)															
JAN 17...	1020	.0	.00	.00	.0	.00	.00	.00	.04	.00	.00	.00					
MAY 31...	1230	.0	.00	.00	.0	.00	.00	.00	.90	.01	.00	.00					
AUG 09...	0900	--	--	--	--	--	--	--	--	--	--	--					
DATE		TOTAL HEPTA- CHLOR (UG/L)	TOTAL HEPTA- CHLOR- EPOXIDE (UG/L)	TOTAL LINDANE (UG/L)	TOTAL MALA- THION (UG/L)	TOTAL METHYL PARA- THION (UG/L)	TOTAL METHYL TRI- THION (UG/L)	TOTAL PARA- THION (UG/L)	TOTAL TOX- APHENE (UG/L)	TOTAL TRI- THION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)				
JAN 17...		.00	.00	.01	.00	.01	.00	.00	0	.00	.00	.00	.00				
MAY 31...		.00	.00	.05	.11	.00	.00	.00	0	.00	.00	.00	.00				
AUG 09...		--	--	--	--	--	--	--	--	--	.00	.04	.00				

SAN JACINTO RIVER BASIN

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 (1.3 km) upstream from Waugh Drive.

DRAINAGE AREA.--358 mi² (927 km²), unadjusted for basin boundary changes.

WATER-DISCHARGE RECORDS

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

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

GAGE.--Water-stage recorder. Datum of gage is 1.36 ft (0.414 m) below mean sea level; 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 (1.3 km) downstream at 4.08 ft (1.244 m) lower datum. Jan. 17, 1962, to Sept. 30, 1973, auxiliary water-stage recorder 0.8 mi (1.3 km) downstream. Water-stage recorder at Main Street (station 08074600) used as auxiliary gage after Sept. 30, 1973.

REMARKS.--Water-discharge records fair. Although floodflows are regulated by Barker and Addicks Reservoirs (station 08072500 and 08073000) 26.3 and 26.8 mi (42.3 and 42.6 km) 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 which produce peak discharges above 1,500 ft³/s (42.5 m³/s). Discharges below 1,000 ft³/s (28.3 m³/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, back-water from Whiteoak Bayou, and other streams. Corps of Engineers gage-height telemeter at station.

AVERAGE DISCHARGE.--8 years (1936-44) unregulated, 272 ft³/s (7.703 m³/s), 197,100 acre-ft/yr (243 hm³/yr); 26 years (1944-57, 1962-75) regulated, 274 ft³/s (7.760 m³/s), 198,500 acre-ft/yr (245 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,900 ft³/s (309 m³/s) Aug. 30, 1945, gage height, 28.82 ft (8.784 m), at site 0.8 mi (1.3 km) downstream at present datum; minimum daily, 1.3 ft³/s (0.037 m³/s) May 24, 1939, Nov. 5, 1950.

EXTREMES OUTSIDE PERIOD OF RECORD.--All flood data at site 0.8 mi (1.3 km) downstream at present datum. Maximum gage height since at least 1835, 49.0 ft (14.94 m) Dec. 9, 1935, discharge 40,000 ft³/s (1,130 m³/s); furnished by engineer for Harris County. Flood of May 31, 1929, reached a gage height of 43.5 ft (13.26 m), discharge 19,000 ft³/s (538 m³/s) at bridge on Capitol Avenue 2.8 mi (4.5 km) downstream, from rating curve extended above 15,300 ft³/s (433 m³/s), stage-discharge relation materially affected by bridge; furnished by city of Houston.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,810 ft³/s (79.6 m³/s) Sept. 8, gage height, 13.15 ft (4.008 m); maximum gage height, 13.45 ft (4.100 m) June 15; minimum discharge not determined (affected by tides).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	111	---	---	---	---	---	---	---	---	---
6	---	---	1170	---	---	---	---	---	---	---	---	---
7	---	---	1360	---	---	---	---	---	---	---	---	137
8	---	---	1000	---	---	---	---	---	---	---	---	1600
9	---	---	---	---	---	---	---	---	---	---	---	484
10	---	---	---	---	772	---	---	---	---	---	---	---
11	---	---	1280	---	1290	---	---	---	---	---	---	---
12	---	---	1730	---	715	---	---	---	---	---	---	---
13	---	---	987	---	---	---	---	---	---	---	---	445
14	---	---	---	---	---	---	---	---	---	---	---	1170
15	---	---	---	---	---	---	---	---	1370	---	---	445
16	---	---	---	---	---	---	---	---	501	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	1400	---	---	---	---	---	---	---	---	---
20	---	---	2100	---	---	---	1170	---	---	---	---	---
21	---	---	1350	---	---	---	1280	---	---	---	---	---
22	---	---	---	---	---	---	817	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	821	---	1500	---	---	---	---	---	---	---	---	---
25	802	---	1540	---	---	---	---	---	---	---	---	---
26	410	---	1470	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
TOTAL	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---
AC-FT	---	---	---	---	---	---	---	---	---	---	---	---

SAN JACINTO RIVER BASIN

08074000 BUFFALO 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 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPECIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM COBALT UNITS)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	BIO- CHEM- ICAL OXYGEN DEMAND 5 DAY (MG/L)
OCT										
18...	1305	580	252	6.8	18.5	140	80	7.5	82	6.9
NOV										
03...	1320	600	212	7.4	16.5	200	100	8.0	84	7.5
DEC										
07...	0900	1500	198	7.6	13.5	200	180	7.9	78	11
JAN										
17...	1130	270	365	6.8	9.0	240	80	9.2	82	8.4
FEB										
02...	1110	226	415	6.8	9.0	120	120	9.6	86	12
JUN										
07...	1300	50	816	7.8	29.0	30	20	4.9	64	7.2
16...	1100	456	285	7.2	27.0	140	200	5.0	63	13
SEP										
08...	1200	1400	471	7.4	26.5	40	90	5.0	63	11
08...	1730	2610	141	8.2	26.0	60	180	6.2	78	5.1
09...	1130	275	293	7.4	27.0	70	250	4.3	54	11

DATE	IMMF- DIATE COLI- FORM (COL. PER 100 ML)	FECAL COLI- FORM (COL./ 100 ML)	FECAL STREP- TOCOCCI KF AGAR (COL. PER 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO
OCT								
18...	260000	19000	4800	--	--	--	--	--
NOV								
03...	150000	34000	2900	52	0	16	3.0	19
DEC								
07...	360000	49000	75000	--	--	--	--	--
JAN								
17...	160000	30000	14000	79	0	24	4.6	36
FEB								
02...	280000	56000	9700	--	--	--	--	--
JUN								
07...	740000	180000	15000	170	0	52	9.4	97
16...	480000	49000	6500	--	--	--	--	--
SEP								
08...	900000	140000	210000	98	0	31	4.9	49
08...	460000	110000	--	--	--	--	--	--
09...	500000	35000	11000	84	0	28	3.4	22

DATE	DIS- SOLVED PH- TAS- SIUM (K) (MG/L)	RICAR- BONATE (CO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	TOTAL NON- FILT- RABLE RESIDUE (MG/L)
OCT									
18...	--	--	--	--	--	--	--	--	155
NOV									
03...	5.2	69	0	8.1	22	.7	9.9	118	214
DEC									
07...	--	--	--	--	--	--	--	--	--
JAN									
17...	5.9	112	0	14	41	.3	9.6	191	114
FEB									
02...	--	--	--	--	--	--	--	--	124
JUN									
07...	6.4	280	0	38	86	.7	19	447	31
16...	--	--	--	--	--	--	--	--	408
SEP									
08...	5.1	150	0	18	50	.3	12	244	99
08...	--	--	--	--	--	--	--	--	460
09...	4.0	110	0	17	17	.3	9.2	155	532

SAN JACINTO RIVER BASIN

08074000 BUFFALO BAYOU AT HOUSTON, TX.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	VOL. NON- FILT- RABLE RESIDUE (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	PHENOLS (UG/L)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
OCT 18...	29	.28	.07	.40	1.4	.72	8.8	--	.20
NOV 03...	34	.37	.07	.29	1.5	.64	22	1	.10
DEC 07...	--	.26	.05	.27	1.7	.63	7.6	--	.10
JAN 17...	29	.57	.19	1.1	1.4	.93	13	--	.20
FEB 02...	119	.72	.10	1.2	2.1	.98	13	--	.20
JUN 07...	8	.62	.58	2.6	2.3	3.0	8.9	4	.30
16...	52	.31	.15	.43	1.7	.76	14	--	.10
SEP 08...	35	1.0	.07	.62	1.4	.80	9.1	5	.10
08...	58	.75	.04	.14	1.2	.39	13	--	.20
09...	22	.84	.12	.43	1.2	.72	16	--	.20

DATE	TIME	DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)
JUN 07...	1300	8	100	0	20	4	50
SEP 09...	1130	11	100	0	0	2	30

DATE	DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	DIS- SOLVED SILVER (AG) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
JUN 07...	1	0	.0	1	0	70
SEP 09...	0	0	.0	0	0	20

DATE	TIME	TOTAL PCB (UG/L)	POLY- CHLO- RINATED NAPH- THA- LENES (UG/L)	TOTAL ALDRIN (UG/L)	TOTAL CHLOR- DANE (UG/L)	TOTAL DDD (UG/L)	TOTAL DDE (UG/L)	TOTAL DDT (UG/L)	TOTAL DI- AZINON (UG/L)	TOTAL DI- ELDRIN (UG/L)	TOTAL ENDRIN (UG/L)	TOTAL ETHION (UG/L)
NOV 03...	1320	.0	.00	.00	.0	.00	.00	.00	.03	.01	.00	.00
JUN 07...	1300	.0	.00	.00	.1	.00	.00	.00	.75	.02	.00	.00
SEP 08...	1200	.1	.00	.00	.0	.00	.00	.00	.77	.01	.00	.00
DATE	TIME	TOTAL HEPTA- CHLOR EPOXIDE (UG/L)	TOTAL LINDANE (UG/L)	TOTAL MALA- THION (UG/L)	TOTAL METHYL PARA- THION (UG/L)	TOTAL METHYL TRI- THION (UG/L)	TOTAL PARA- THION (UG/L)	TOTAL TOX- APHENE (UG/L)	TOTAL TRI- THION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)
NOV 03...	.00	.00	.01	.00	.00	.00	.00	0	.00	.06	.46	.00
JUN 07...	.00	.01	.08	.03	.00	.00	.00	0	.00	.03	.14	.00
SEP 08...	.00	.01	.02	.04	.00	.00	.00	0	.00	.07	.20	.00

COLE CREEK DRAINAGE BASIN

The locations of data-collection sites in and near the Cole Creek drainage basin are shown on figure 4.

Weighted-mean rainfall in the drainage basins, based on four rain gages, for the 1977 water year was 36.4 inches, or 11.8 inches less than the 30-year (1941-70) average of 48.19 inches for the Houston Intercontinental Airport station.

The storm of June 15 was selected for analysis.

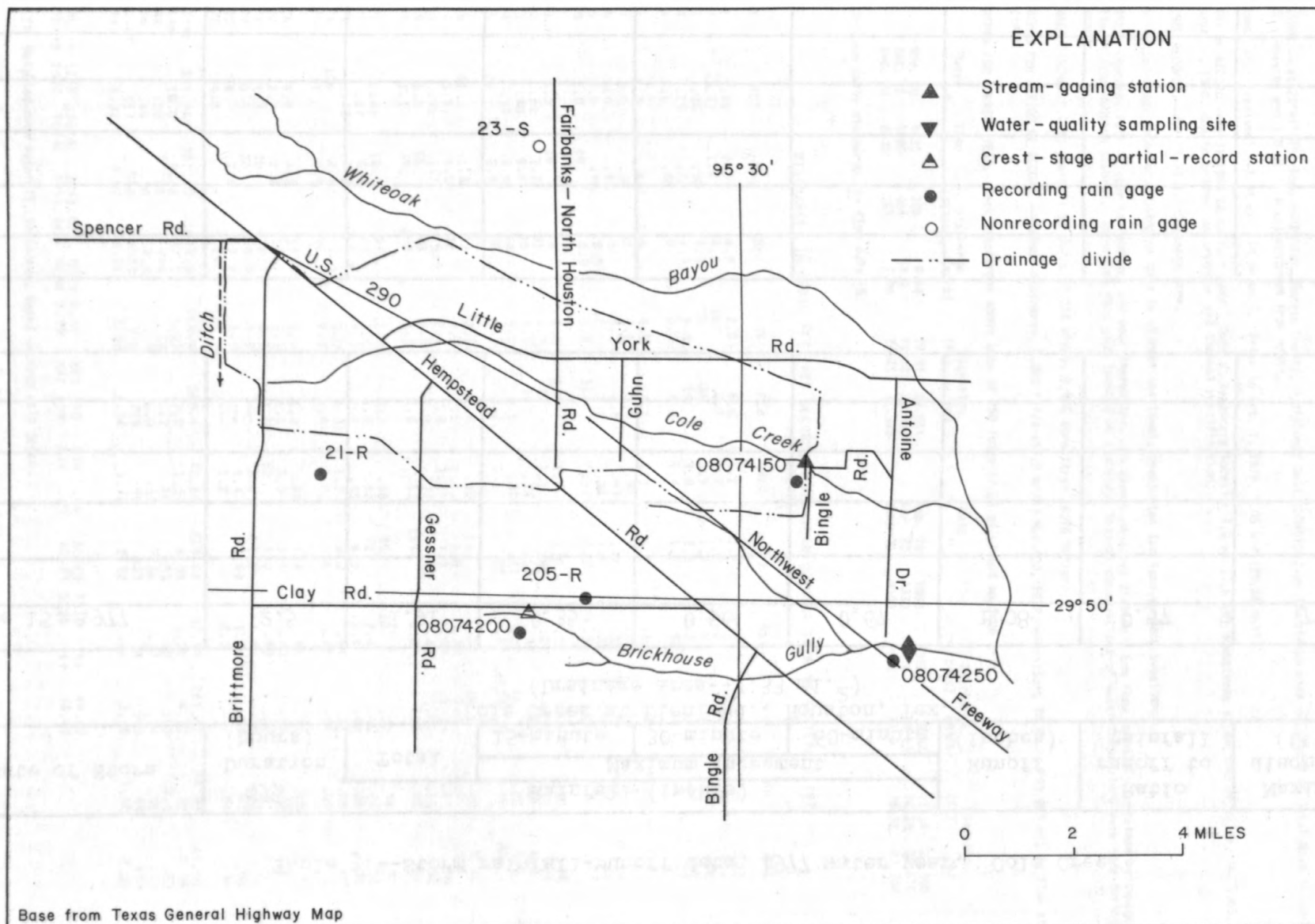


FIGURE 4.- Locations of data-collection sites in and near the Cole Creek drainage basin

GEOLOGICAL SURVEY-TEXAS DISTRICT

ANNUAL STORM RAINFALL-RUNOFF SUMMARY DATA

Table 3.--Storm rainfall-runoff data, 1977 water year, Cole Creek

[illegible]

SAN JACINTO RIVER BASIN

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 north-west Houston and 1.8 mi (2.9 km) upstream from mouth.

DRAINAGE AREA (revised).--7.33 mi² (18.98 km²). Prior to Oct. 1, 1976, 8.05 mi² (20.85 km²).

PERIOD OF RECORD.--April 1964 to current year. Gage at temporary location 1.0 mi (1.6 km) downstream at Antoine Drive May 18, 1965, to Sept. 1, 1966, due to bridge construction and channel rectification.

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

GAGE.--Water-stage recorder. Datum of gage is at mean sea level; unadjusted for land-surface subsidence.

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

AVERAGE DISCHARGE.--13 years, 7.57 ft³/s (0.214 m³/s), 5,480 acre-ft/yr (6.76 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,020 ft³/s (57.2 m³/s) Mar. 20, 1972, elevation, 78.60 ft (23.957 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 250 ft³/s (7.08 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Elevation (ft)	Elevation (m)	Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Elevation (ft)	Elevation (m)
Nov. 10	1630	305	8.64	74.97	22.851	Feb. 10	1800	352	9.97	73.36	22.360
Dec. 6	1600	454	12.9	74.92	22.836	Apr. 20	1330	326	9.23	74.20	22.616
Dec. 20	0430	281	7.96	73.41	22.375	June 15	0500	*772	21.9	76.32	23.262

Minimum daily discharge, no flow July 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.46	2.3	4.9	2.5	6.6	1.2	1.2	3.0	1.5	.24	.03	.30
2	.37	1.4	4.9	16	4.7	1.2	1.2	1.0	.80	.36	.03	.07
3	.30	.92	3.5	10	33	3.9	1.3	1.0	.50	.24	.06	1.0
4	.19	.72	2.6	8.4	14	3.8	2.5	1.2	.40	.18	.06	.63
5	7.1	.60	10	5.9	6.6	1.4	1.3	.98	.36	1.4	.07	.43
6	5.0	.45	198	8.9	4.1	1.1	1.1	.93	.40	7.1	1.6	.68
7	3.0	.38	83	7.6	3.0	.98	1.1	.87	.43	2.0	1.8	3.7
8	5.0	.43	19	5.3	2.5	.93	1.2	.50	.30	3.3	.18	7.4
9	3.0	.48	8.9	12	2.2	.94	1.4	.32	.68	.90	.54	5.0
10	2.0	49	6.9	5.9	112	.97	1.1	.33	.50	.36	.27	3.2
11	1.0	14	79	4.0	108	1.5	1.0	.33	.40	.38	.24	1.0
12	.60	3.7	91	3.3	24	1.1	.89	.27	.27	.33	.06	.77
13	.40	9.6	40	4.5	10	.74	.58	.33	.50	.07	4.3	19
14	.30	5.9	54	6.0	5.5	.81	.61	.27	48	.01	6.9	32
15	26	2.4	36	4.3	3.2	1.1	.68	.27	199	.00	33	2.8
16	54	1.5	17	3.1	2.4	.90	14	.30	18	.50	6.5	.60
17	3.8	1.0	12	2.5	2.1	2.1	1.8	.33	3.3	2.0	1.4	.13
18	.91	1.7	6.5	2.1	1.9	1.1	1.3	.98	1.3	1.8	.58	.20
19	1.0	55	43	1.8	2.0	.77	.83	.66	.87	.54	.68	2.3
20	1.1	35	168	1.9	1.8	.52	153	2.2	.50	.82	.87	4.7
21	.44	13	27	1.8	1.7	.58	55	10	.50	.54	.72	.99
22	.27	5.5	13	2.1	1.6	.52	12	2.4	.46	.24	.54	.59
23	.42	3.0	9.8	3.2	1.5	.55	4.3	1.4	.40	.09	.30	.07
24	100	2.1	7.0	3.0	1.3	1.2	2.3	.98	.27	.06	.09	.05
25	33	2.4	28	2.3	1.4	1.0	1.6	.58	.24	.04	.13	.52
26	6.8	4.8	19	2.2	1.2	.84	1.4	.46	.27	.43	1.0	.15
27	2.7	2.7	10	2.7	1.1	2.3	1.5	.43	.50	.43	1.5	.08
28	1.3	35	6.7	3.1	1.0	10	1.3	.40	.33	.27	2.0	.04
29	30	20	4.7	1.8	---	2.0	1.2	1.0	.29	.13	.77	.73
30	16	7.6	3.9	5.2	---	1.4	.99	1.5	.24	.07	.50	.74
31	4.8	---	3.2	15	---	1.2	---	2.0	---	.04	.33	---
TOTAL	311.26	282.58	1020.5	158.4	360.4	48.65	269.68	37.22	281.51	24.87	67.05	89.82
MEAN	10.0	9.42	32.9	5.11	12.9	1.57	8.99	1.20	9.38	.80	2.16	2.99
MAX	100	55	198	16	112	10	153	10	199	7.1	33	32
MIN	.19	.38	2.6	1.8	1.0	.52	.58	.27	.24	.00	.03	.02
AC-FT	617	560	2020	314	715	96	535	74	558	49	133	178
(††)	5.32	3.57	5.91	2.06	1.94	1.77	2.52	.66	3.90	1.90	2.90	3.97

CAL YR 1976 TOTAL 3643.80 MEAN 9.96 MAX 450 MIN .06 AC-FT 7230 †† 49.62
WTR YR 1977 TOTAL 2951.94 MEAN 8.09 MAX 199 MIN .00 AC-FT 5860 †† 36.42

†† Weighted-mean rainfall, in inches, based on four rain gages.

STA. NO. 08074150				STORM RAINFALL AND RUNOFF RECORD				1977 WATER YEAR		
COLE CREEK AT DEHL ROAD, HOUSTON, TX.				STORM OF JUNE 15, 1977				ACCUM. WEIGHTED PRECIP. IN.	DISCHARGE IN CFS	ACCUM. RUNOFF IN.
DATE & TIME	4150	205R	21R	G A G E N U M B E R				PRECIP. IN.	CFS	IN.
JUNE 15										
0000	0.0	0.0	0.0					0.0	31.0	0.0082
0230	0.0	0.0	0.0					0.0	21.0	0.0143
0245	0.0	0.22	0.0					0.04	20.0	0.0154
0300	0.0	0.47	0.0					0.08	20.0	0.0164
0315	0.0	0.74	0.01					0.13	21.0	0.0175
0330	0.25	0.80	0.41					0.42	25.0	0.0188
0345	0.28	1.13	0.61					0.69	47.0	0.0213
0400	0.41	1.21	0.65					0.76	89.0	0.0260
0415	0.56	1.24	0.66					0.80	295.0	0.0416
0430	1.10	1.27	0.67					0.94	527.0	0.0695
0445	1.55	1.28	0.70					1.06	715.0	0.1073
0500	2.05	1.29	0.73					1.19	772.0	0.1481
0515	2.05	1.31	0.77					1.23	754.0	0.1879
0530	2.05	1.33	0.81					1.26	654.0	0.2398
0600	2.05	1.33	0.81					1.26	548.0	0.2977
0630	2.05	1.33	0.81					1.26	468.0	0.3472
0700	2.05	1.33	0.81					1.26	408.0	0.3903
0730	2.05	1.33	0.81					1.26	362.0	0.4285
0800	2.05	1.33	0.81					1.26	324.0	0.4628
0830	2.05	1.34	0.83					1.27	287.0	0.4931
0900	2.05	1.35	0.83					1.27	258.0	0.5204
0930	2.10	1.36	0.83					1.29	229.0	0.5446
1000	2.11	1.37	0.83					1.29	213.0	0.5671
1030	2.17	1.96	0.83					1.40	201.0	0.5884
1100	2.48	1.96	1.41					1.89	241.0	0.6138
1130	2.48	1.96	1.44					1.91	241.0	0.6393
1200	2.48	1.96	1.44					1.91	242.0	0.6777
1300	2.48	1.96	1.44					1.91	228.0	0.7259
1400	2.48	1.96	1.44					1.91	203.0	0.7903
1600	2.48	1.96	1.44					1.91	154.0	0.8554
1800	2.48	1.96	1.44					1.91	111.0	0.9023
2000	2.48	1.96	1.44					1.91	81.0	0.9365
2200	2.48	1.96	1.44					1.91	61.0	0.9623
2400	2.48	1.96	1.44					1.91	45.0	0.9861
JUNE 16										
0000	2.48	1.96	1.44					1.91	45.0	0.9861
0600	2.48	1.96	1.44					1.91	25.0	1.0321
1200	2.48	1.96	1.44					1.91	13.0	1.0568
2400	2.48	1.96	1.44					1.91	6.4	1.0690
JUNE 17										
0000	2.48	1.96	1.44					1.91	6.4	1.0690

STA. NO. 08074150				STORM RAINFALL AND RUNOFF RECORD				1977 WATER YEAR		
COLE CREEK AT DEIHL ROAD, HOUSTON, TX.				STORM OF JUNE 15, 1977				ACCUM.	DISCHARGE	ACCUM.
DATE & TIME				G A G E N U M B E R				WEIGHTED PRECIP. IN.	IN CFS	RUNOFF IN.
	4150	205R	21R							
JUNE 17										
1200	2.48	1.96	1.44					1.91	2.4	1.0792
2400	2.48	1.96	1.44					1.91	1.5	1.0811

BRICKHOUSE GULLY DRAINAGE BASIN

The location of data-collection sites in and near the Brickhouse Gully drainage basin are shown on figure 5.

Weighted-mean rainfall in the drainage basin based on five rain gages for the 1977 water year was 40.3 inches or 7.9 inches less than the 30-year (1941-70) average of 48.19 inches for the Houston Intercontinental Airport station.

The storm of June 15 was selected for analysis at the Costa Rica Street gaging station. No storms were analyzed at the Clarblak Street gaging station for the 1977 water year.

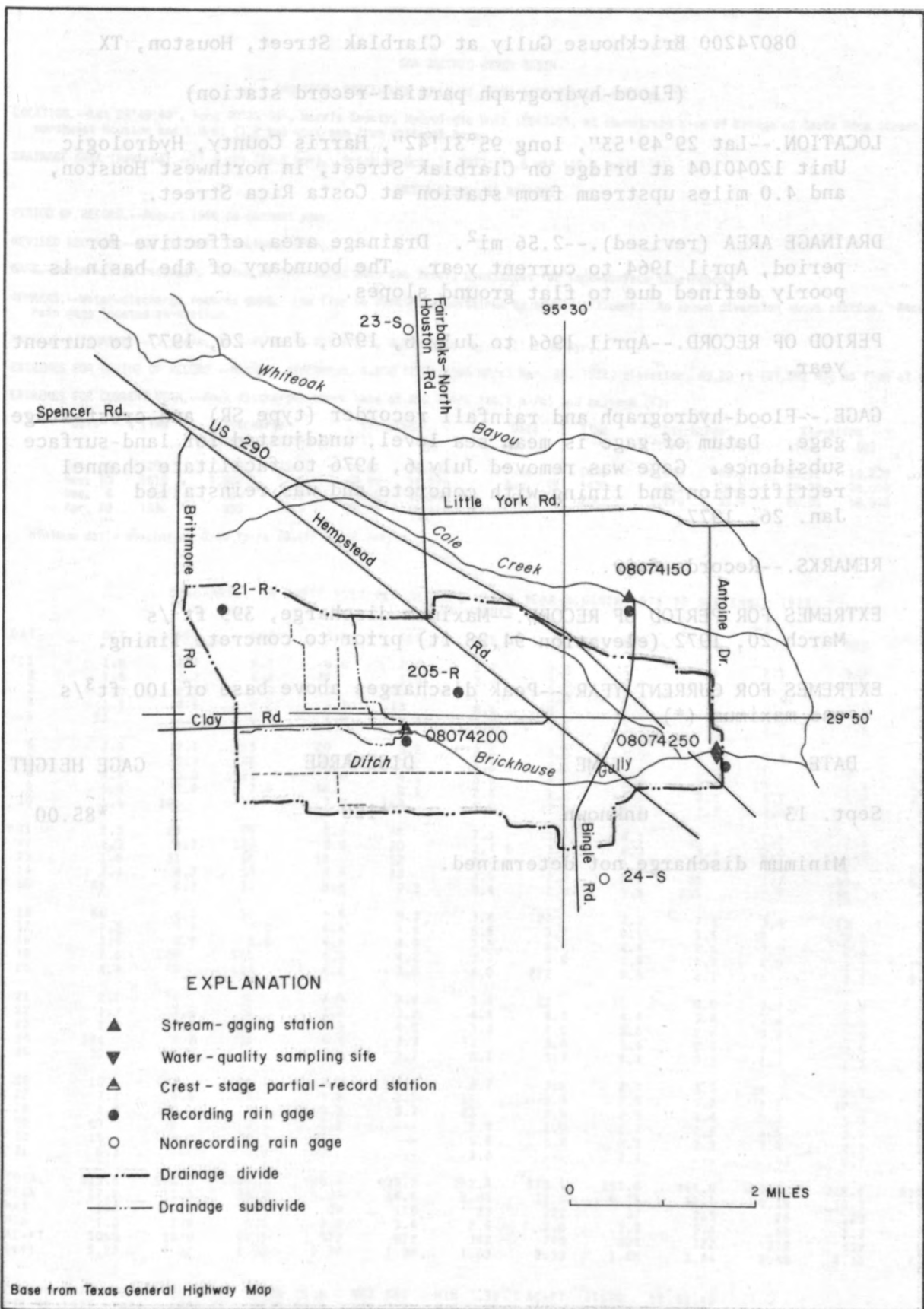


FIGURE 5.—Locations of data-collection sites in and near the Brickhouse Gully drainage basin

08074200 Brickhouse Gully at Clarblak Street, Houston, TX

(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°49'53", long 95°31'42", Harris County, Hydrologic Unit 12040104 at bridge on Clarblak Street, in northwest Houston, and 4.0 miles upstream from station at Costa Rica Street.

DRAINAGE AREA (revised).--2.56 mi². Drainage area, effective for period, April 1964 to current year. The boundary of the basin is poorly defined due to flat ground slopes.

PERIOD OF RECORD.--April 1964 to July 6, 1976, Jan. 26, 1977 to current year.

GAGE.--Flood-hydrograph and rainfall recorder (type SR) and crest-stage gage. Datum of gage is mean sea level, unadjusted for land-surface subsidence. Gage was removed July 6, 1976 to facilitate channel rectification and lining with concrete and was reinstalled Jan. 26, 1977.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 399 ft³/s March 20, 1972 (elevation 94.28 ft) prior to concrete lining.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft³/s and maximum (*).

DATE	TIME	DISCHARGE	GAGE HEIGHT
Sept. 13	unknown	*120	*85.00

Minimum discharge not determined.

SAN JACINTO RIVER BASIN

08074250 BRICKHOUSE GULLY AT COSTA RICA STREET, HOUSTON, TX

LOCATION.--Lat 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 (1.6 km) upstream from Whiteoak Bayou.

DRAINAGE AREA (revised).--11.4 mi² (29.5 km²). Prior to Oct. 1, 1973, 11.6 mi² (30.0 km²).

WATER-DISCHARGE RECORDS

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

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

GAGE.--Water-stage recorder. Datum of gage is at mean sea level; unadjusted for land-surface subsidence.

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

AVERAGE DISCHARGE.--13 years, 13.1 ft³/s (0.371 m³/s), 9,490 acre-ft/yr (11.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,800 ft³/s (164 m³/s) Mar. 20, 1972, elevation, 69.20 ft (21.092 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 850 ft³/s (24.1 m³/s) and maximum (*):

⑤	Date	* Time	Discharge (ft ³ /s)	(m ³ /s)	Elevation (ft)	(m)	Date	Time	Discharge (ft ³ /s)	(m ³ /s)	Elevation (ft)	(m)
	Oct. 24	1200	1,250	35.4	60.47	18.431	June 15	0445	*2,250	63.7	63.12	19.239
	Nov. 10	1615	1,080	30.6	59.94	18.270	Aug. 15	1430	925	26.2	59.38	18.099
	Dec. 6	1230	925	26.2	59.38	18.099	Sept. 7	2045	1,110	31.4	60.05	18.303
	Apr. 20	1330	938	26.6	59.43	18.114						

Minimum daily discharge, 0.65 ft³/s (0.018 m³/s) July 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	4.7	6.8	5.6	7.0	3.7	2.2	17	2.6	2.1	1.7	3.5
2	1.5	3.7	6.3	39	5.5	3.6	2.6	6.7	3.1	1.7	2.3	3.0
3	1.0	2.2	4.8	16	40	17	3.6	7.1	2.7	.93	1.5	2.7
4	1.1	4.6	4.2	9.3	13	8.6	18	4.2	1.6	.65	1.3	2.3
5	13	2.7	30	7.0	8.3	4.8	3.3	3.2	2.0	1.9	1.5	2.2
6	2.9	2.1	195	20	5.2	3.6	3.6	3.0	2.7	9.3	16	6.5
7	1.5	1.9	48	10	5.2	3.2	2.5	3.4	2.6	11	3.7	91
8	5.4	2.5	21	7.3	4.6	3.0	2.0	3.0	2.1	25	1.3	47
9	1.6	3.9	7.0	18	8.1	2.6	2.3	3.2	2.2	4.2	3.0	23
10	1.5	106	10	7.2	158	2.9	2.1	4.1	2.7	1.8	1.6	7.8
11	1.3	23	80	5.9	48	7.1	3.4	4.1	14	1.7	1.9	2.7
12	1.3	4.7	120	5.8	20	2.7	3.8	4.3	4.3	2.0	1.9	4.1
13	1.8	33	18	13	12	3.8	2.7	3.5	2.7	1.4	41	94
14	2.4	8.7	30	9.6	13	3.5	2.3	4.0	38	1.7	52	57
15	65	4.2	13	5.6	9.3	3.4	2.3	3.5	235	2.7	120	5.8
16	66	4.0	10	5.5	5.3	3.8	27	3.3	7.5	3.4	13	4.3
17	7.2	3.4	7.0	4.6	4.6	5.6	3.7	4.1	3.5	18	3.5	3.9
18	3.9	8.2	5.0	4.4	4.9	7.5	2.7	4.4	2.5	7.5	2.6	3.9
19	7.6	110	110	4.5	4.2	3.3	3.8	3.8	1.7	6.0	2.1	21
20	4.4	40	137	4.1	3.8	4.0	222	4.5	2.1	11	2.1	11
21	2.2	14	34	4.5	3.4	3.8	22	37	4.9	3.7	1.8	4.7
22	1.7	7.8	22	7.3	3.8	4.6	6.5	4.4	3.4	7.0	2.0	5.0
23	1.6	5.7	19	7.8	4.0	3.3	4.0	3.6	2.6	3.2	2.9	4.2
24	194	4.3	16	4.5	3.9	13	3.6	3.6	2.1	2.3	6.5	3.9
25	30	8.6	42	3.6	3.7	5.1	3.7	4.4	2.1	1.7	2.8	3.2
26	10	12	22	3.8	3.5	3.7	3.6	2.7	3.7	14	3.1	2.3
27	7.1	4.6	19	3.8	3.5	16	3.3	2.5	3.2	6.2	12	2.3
28	4.4	60	8.7	3.5	3.7	23	2.8	2.9	1.4	3.1	5.8	2.3
29	69	18	7.2	3.2	---	2.8	2.9	1.7	2.8	3.5	2.7	2.5
30	15	9.5	6.7	25	---	5.6	4.8	2.1	2.2	1.4	2.3	2.9
31	6.3	---	6.0	19	---	3.8	---	2.3	---	.93	2.7	---
TOTAL	533.5	518.0	1065.7	288.4	409.5	182.4	373.1	161.6	364.0	161.01	318.6	430.0
MEAN	17.2	17.3	34.4	9.30	14.6	5.88	12.4	5.21	12.1	5.19	10.3	14.3
MAX	194	110	195	39	158	23	222	37	235	25	120	94
MIN	1.0	1.9	4.2	3.2	3.4	2.6	2.0	1.7	1.4	.65	1.3	2.2
AC-FT	1060	1030	2110	572	812	362	740	321	722	319	632	853
(††)	5.22	4.22	6.03	2.22	1.94	1.63	3.13	1.05	3.44	2.48	4.30	4.60

CAL YR 1976 TOTAL 5811.02 MEAN 15.9 MAX 556 MIN .39 AC-FT 11530 †† 51.42
WTR YR 1977 TOTAL 4805.81 MEAN 13.2 MAX 235 MIN .65 AC-FT 9530 †† 40.26

†† Weighted-mean rainfall, in inches, based on five rain gages.

SAN JACINTO RIVER BASIN

08074250 BRICKHOUSE GULLY AT COSTA RICA 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 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)
OCT 18...	1105	2.3	364	6.7	17.0	70	30	11.1	118	3.4
NOV 08...	1230	1.9	648	7.1	18.5	30	6	20.0	220	5.2
JAN 25...	1100	2.6	718	7.1	12.0	50	10	17.9	172	3.4
FEB 07...	1040	4.7	670	7.5	11.0	40	20	17.5	164	3.9
JUN 07...	0950	2.5	784	8.2	28.5	20	4	13.9	181	3.8
15...	1130	320	184	6.9	25.0	50	120	7.1	88	7.0
AUG 09...	0945	1.8	855	8.3	30.0	20	20	14.1	188	2.1
30...	1400	2.2	755	8.9	33.5	10	30	20.0	278	5.8
DATE	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	FECAL STREPTOCOCCI KF AGAR (COL. PER 100 ML)	HARDNESS (CA+MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	
OCT 18...	190000	4000	920	110	0	33	6.2	32	1.3	
NOV 08...	4000	52	48	210	0	64	13	65	1.9	
JAN 25...	120000	8700	230	--	--	--	--	--	--	
FEB 07...	260000	38000	1300	--	--	--	--	--	--	
JUN 07...	200000	59000	980	210	0	54	18	85	2.6	
15...	460000	130000	18000	--	--	--	--	--	--	
AUG 09...	150000	2000	780	240	0	63	20	93	2.6	
30...	140000	3900	720	170	0	43	15	86	2.9	
DATE	DISSOLVED PHOSPHATE (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SiO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NON-FILTERABLE RESIDUE (MG/L)	
OCT 18...	2.7	166	0	10	25	.4	10	201	46	
NOV 08...	2.4	291	30	17	52	.5	14	401	12	
JAN 25...	--	--	--	--	--	--	--	--	11	
FEB 07...	--	--	--	--	--	--	--	--	23	
JUN 07...	1.4	310	0	22	83	.6	19	436	12	
15...	--	--	--	--	--	--	--	--	338	
AUG 09...	1.8	310	0	23	120	.5	21	495	15	
30...	2.3	210	0	16	120	.4	16	402	56	
DATE	VOL. NON-FILTERABLE RESIDUE (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	PHENOLS (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)	
OCT 18...	17	.03	.01	.03	.58	.28	13	--	.20	
NOV 08...	6	.01	.01	.02	.44	.20	7.8	1	.20	
JAN 25...	9	.01	.00	.01	.37	.16	4.2	--	.20	
FEB 07...	4	.01	.00	.04	.52	.16	8.7	4	.10	
JUN 07...	6	1.2	.01	.02	.65	5.7	5.6	0	.20	
15...	78	.14	.02	.10	1.3	.39	13	--	.10	
AUG 09...	10	.01	.00	.02	.64	.07	6.1	--	.20	
30...	30	.00	.01	.01	.64	.22	7.0	--	.30	

SAN JACINTO RIVER BASIN

08074250 BRICKHOUSE GULLY AT COSTA RICA STREET, HOUSTON, TX.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

				DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	DIS-SOLVED CADMIUM (CD) (UG/L)	DIS-SOLVED CHROMIUM (CR) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)			
DATE	TIME	DATE	TIME									
JUN 07...	0950			7	400	0	0	2	20			
		DATE	TIME	DIS-SOLVED LEAD (PB) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	DIS-SOLVED SELENIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)			
JUN 07...				1	0	.0	0	0	20			
DATE	TIME	TOTAL PCB (UG/L)	POLY-CHLORINATED NAPHTHALENES (UG/L)	TOTAL ALDRIN (UG/L)	TOTAL CHLORDANE (UG/L)	TOTAL DDD (UG/L)	TOTAL DDE (UG/L)	*TOTAL DDT (UG/L)	TOTAL DIAZINON (UG/L)	TOTAL DIELDRIN (UG/L)	TOTAL ENDRIN (UG/L)	TOTAL ETHION (UG/L)
NOV 08...	1230	.0	.00	.00	.0	.00	.00	.00	.11	.00	.00	.00
FEB 07...	1040	.0	.00	.00	.0	.00	.00	.00	.03	.00	.00	.00
JUN 07...	0950	.0	.00	.00	.0	.00	.00	.00	.03	.00	.00	.00
DATE	TIME	TOTAL HEPTACHLOR EPOXIDE (UG/L)	TOTAL LINDANE (UG/L)	TOTAL MALATHION (UG/L)	TOTAL METHYL PARATHION (UG/L)	TOTAL METHYL TRITHION (UG/L)	TOTAL PARATHION (UG/L)	TOTAL TOXAPHENE (UG/L)	TOTAL TRIETHION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)
NOV 08...		.00	.00	.00	.00	.00	.00	0	.00	.00	.00	.00
FEB 07...		.00	.00	.00	.00	.00	.00	0	.00	.00	.00	.00
JUN 07...		.00	.01	.00	.00	.00	.00	0	.00	.00	.01	.00

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GEOLOGICAL SURVEY-TEXAS DISTRICT

ANNUAL STORM RAINFALL-RUNOFF SUMMARY DATA

Table 4.--Storm rainfall-runoff data, 1977 water year, Brickhouse Gully

[illegible]

STA. NO. 08074250						STORM RAINFALL AND RUNOFF RECORD				1977 WATER YEAR		
BRICKHOUSE GULLY AT COSTA RICA STREET, HOUSTON, TX.						STORM OF JUNE 15, 1977				ACCUM.	DISCHARGE	ACCUM.
DATE & TIME						G A G E N U M B E R				WEIGHTED PRECIP.	IN	RUNOFF
						4250	4150	205R	21R	IN.	CFS	IN.
JUNE 15												
0000	0.0	0.0	0.0	0.0	0.0					0.0	13.0	0.0027
0300	0.0	0.0	0.47	0.0						0.26	7.7	0.0044
0315	0.22	0.0	0.64	0.01						0.40	7.2	0.0046
0330	0.44	0.25	0.80	0.41						0.66	146.0	0.0096
0345	0.60	0.28	0.93	0.61						0.81	266.0	0.0186
0400	1.20	0.41	1.21	0.65						1.12	647.0	0.0406
0415	2.10	0.56	1.24	0.65						1.35	1640.0	0.0963
0430	2.42	1.10	1.27	0.67						1.50	2140.0	0.1690
0445	2.46	1.55	1.28	0.70						1.57	2250.0	0.2455
0500	2.44	2.05	1.29	0.73						1.65	1820.0	0.3383
0530	2.52	2.05	1.33	0.77						1.69	1160.0	0.4171
0600	2.55	2.05	1.33	0.81						1.70	700.0	0.4647
0630	2.58	2.05	1.33	0.81						1.71	444.0	0.4949
0700	2.60	2.05	1.33	0.81						1.71	339.0	0.5294
0800	2.60	2.05	1.33	0.81						1.71	220.0	0.5593
0900	2.63	2.05	1.34	0.83						1.73	156.0	0.5752
0930	2.63	2.10	1.35	0.83						1.74	132.0	0.5820
0945	2.63	2.11	1.35	0.83						1.74	120.0	0.5860
1000	2.82	2.17	1.36	0.83						1.80	124.0	0.5902
1015	2.87	2.17	1.71	0.83						2.00	169.0	0.5989
1045	2.87	2.20	1.96	1.38						2.26	150.0	0.6116
1130	2.87	2.48	1.96	1.41						2.30	327.0	0.6394
1200	2.87	2.48	1.96	1.41						2.30	266.0	0.6846
1400	2.87	2.48	1.96	1.41						2.30	122.0	0.7177
1600	2.87	2.48	1.96	1.41						2.30	68.0	0.7362
1800	2.87	2.48	1.96	1.41						2.30	44.0	0.7512
2100	2.87	2.48	1.96	1.41						2.30	27.0	0.7622
2400	2.87	2.48	1.96	1.41						2.30	17.0	0.7674
JUNE 16												
0000	2.87	2.48	1.96	1.41						2.30	17.0	0.7674
0300	2.87	2.48	1.96	1.41						2.30	11.0	0.7727
0445	2.87	2.48	1.96	1.41						2.30	11.0	0.7749
0600	2.87	2.48	1.96	1.41						2.30	8.9	0.7763
0700	2.87	2.48	1.96	1.41						2.30	8.3	0.7792
1115	2.87	2.48	1.96	1.41						2.30	8.3	0.7825
1245	2.87	2.48	1.96	1.41						2.30	4.2	0.7831
1315	2.87	2.48	1.96	1.41						2.30	5.5	0.7848
1730	2.87	2.48	1.96	1.41						2.30	6.3	0.7877
2000	2.87	2.48	1.96	1.41						2.30	3.7	0.7894
2400	2.87	2.48	1.96	1.41						2.30	3.7	0.7904

WHITEOAK BAYOU AT HOUSTON, TX

The locations of data-collection sites used for computations for Whiteoak Bayou at Houston are shown on figure 6.

Weighted-mean rainfall in the drainage basin, based on six rain gages, for the 1977 water year was 38.9 inches or 9.3 inches less than the 30-year (1941-70) average of 48.19 inches for the Houston Intercontinental Airport station.

No storms were analyzed for the 1977 water year.

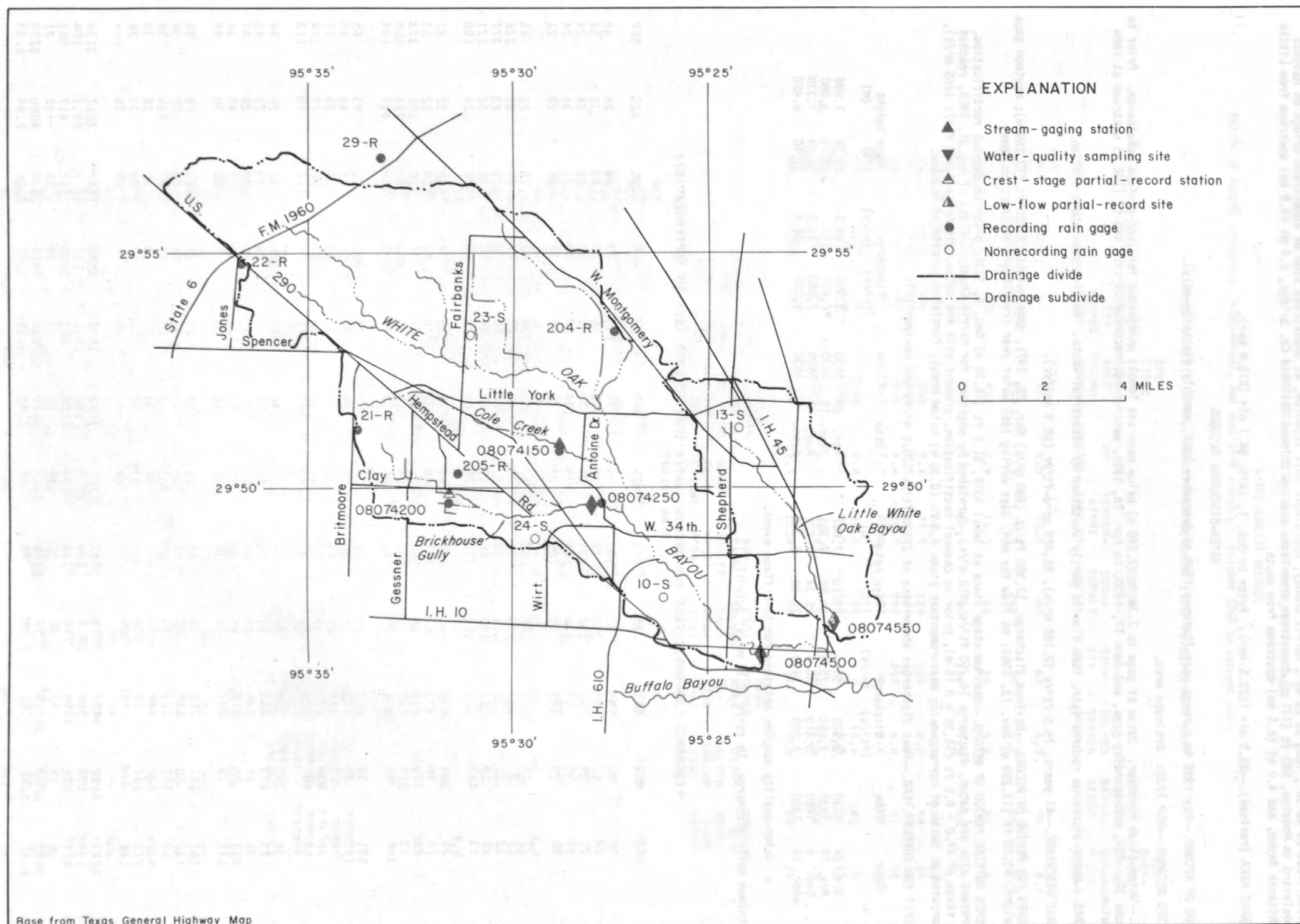


FIGURE 6.— Locations of data-collection sites in and near the Whiteoak Bayou drainage basin

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 (171 m) downstream from Texas and New Orleans Railroad Co. bridge, 2.4 mi (3.9 km) upstream from Little Whiteoak Bayou, and 4.0 mi (6.4 km) upstream from mouth.

DRAINAGE AREA (revised).--86.3 mi² (223.5 km²). Prior to Oct. 1, 1976, 84.7 mi² (219.4 km²).

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. Datum of gage is 7.35 ft (2.240 m) below mean sea level; 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 (146 m) upstream at same datum.

REMARKS.--Water-discharge records fair. Low flow is partly sustained by industrial waste. No diversion above station.

AVERAGE DISCHARGE.--41 years, 76.5 ft³/s (2.166 m³/s), 55,420 acre-ft/yr (68.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,300 ft³/s (490 m³/s) Mar. 20, 1972, gage height, 43.50 ft (13.259 m); maximum gage height, 43.60 ft (13.289 m) 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 (15.70 m) Dec. 9, 1935, prior to channel rectification, present site and datum, discharge 14,750 ft³/s (418 m³/s), furnished by engineer for Harris County. Flood of May 31, 1929, reached a stage of 47.0 + 0.5 ft (14.33 + 0.15 m), prior to channel rectification, present site and datum, discharge 9,360 ft³/s (265 m³/s), computed on basis of current-meter measurement at stage 1.0 ft (0.30 m) below crest, furnished by city of Houston.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft³/s (70.8 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Gage height (ft)	Gage height (m)
Oct. 24	1330	3,320	94.0	25.20	7.681	Apr. 20	1430	3,350	94.9	25.25	7.696
Nov. 10	1830	2,650	75.0	23.98	7.309	June 15	0630	*6,410	182	29.79	9.080
Dec. 6	1400	3,410	96.6	25.34	7.724	Aug. 15	1600	2,680	75.9	24.05	7.330
aApr. 16	1300	1,200	34.0	20.89	6.367	Sept. 8	1530	1,320	37.4	21.16	6.450

a Water-quality samples obtained for this flood event.

Minimum daily discharge, 18 ft³/s (0.51 m³/s) July 11, 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	85	99	53	103	29	25	115	23	24	26	49
2	24	57	95	250	70	30	26	60	20	23	31	36
3	21	39	67	190	271	101	31	41	20	22	24	29
4	20	35	57	126	176	76	194	29	19	21	36	24
5	90	29	169	93	106	37	29	26	19	36	23	21
6	29	25	1090	145	68	32	25	26	20	75	75	45
7	23	23	657	110	56	29	21	25	21	48	81	228
8	52	21	235	84	48	27	20	24	20	116	23	377
9	24	19	153	140	50	25	20	24	20	38	52	221
10	23	453	133	101	738	25	21	27	20	22	26	150
11	23	309	638	65	687	67	22	25	79	18	32	62
12	25	96	973	54	261	28	23	28	43	18	22	53
13	23	175	413	89	160	26	22	27	37	20	101	373
14	23	115	517	99	127	24	24	26	483	20	225	509
15	150	55	374	73	86	25	23	27	1890	19	417	104
16	591	39	207	58	58	26	283	27	302	21	93	65
17	163	35	163	57	48	27	99	29	111	71	42	49
18	74	61	124	44	45	30	38	32	46	56	35	51
19	76	636	463	39	41	25	32	30	27	68	72	174
20	52	407	1010	40	37	23	1280	31	21	142	30	113
21	32	183	319	36	35	21	546	183	26	40	25	54
22	25	113	169	61	36	22	187	50	29	33	28	40
23	21	68	146	57	34	19	108	31	23	20	29	41
24	811	55	118	44	32	60	60	26	31	19	48	36
25	511	78	277	38	30	35	44	25	26	20	30	48
26	181	121	250	34	29	25	37	23	24	80	26	38
27	117	60	159	33	27	101	31	23	24	105	76	36
28	69	381	123	33	28	203	29	23	25	107	139	36
29	526	222	95	30	---	42	30	22	30	90	78	36
30	272	137	78	138	---	33	32	23	57	30	37	36
31	146	---	61	205	---	29	---	26	---	25	35	---
TOTAL	4249	4132	9432	2619	3487	1302	3362	1134	3536	1447	2017	3134
MEAN	137	138	304	84.5	125	42.0	112	36.6	118	46.7	65.1	104
MAX	811	636	1090	250	738	203	1280	183	1890	142	417	509
MIN	20	19	57	30	27	19	20	22	19	18	22	21
AC-FT	8430	8200	18710	5190	6920	2580	6670	2250	7010	2870	4000	6220
(††)	5.41	3.41	6.61	2.08	1.80	1.66	3.40	1.09	5.01	2.06	2.94	4.39

CAL YR 1976 TOTAL 45056 MEAN 123 MAX 3180 MIN 14 AC-FT 89370 †† 49.26
WTR YR 1977 TOTAL 39851 MEAN 109 MAX 1890 MIN 18 AC-FT 79040 †† 38.86

†† Weighted-mean rainfall, in inches, based on six rain gages.

SAN JACINTO RIVER BASIN

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 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS-CHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)
OCT 18...	1245	66	477	6.5	20.0	80	60	8.3	94	8.1
DEC 07...	0945	760	230	7.5	11.5	240	90	0.3	88	9.0
JAN 17...	1200	55	957	6.9	11.5	60	20	9.2	87	16
FEB 02...	1025	70	793	9.5	10.5	50	100	9.5	88	13
APR 16...	0930	22	914	7.7	22.0	40	10	8.9	105	23
16...	1130	300	252	7.7	21.0	120	120	8.2	94	35
16...	1345	1010	268	7.5	21.0	160	150	7.6	87	35
16...	1445	730	351	7.4	20.5	200	250	6.4	73	58
17...	1300	90	618	7.7	24.0	120	70	8.6	105	9.6
JUN 07...	1120	18	1060	8.2	30.0	30	8	13.6	181	14
16...	1150	264	281	7.3	28.5	160	90	5.5	71	15
JUL 11...	1225	11	962	8.3	32.0	1	20	16.8	230	13
SEP 08...	1245	100	366	73.0	25.0	40	150	3.2	40	20

DATE	IMMEDIATE DIAPYCNIFORM (COL./100 ML)	FECAL COLIFORM (COL./100 ML)	FECAL STREPTOCOCCI (COL./100 ML)	HARDNESS (CA, MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM AD-SORPTION RATIO
OCT 18...	7000	520	590	120	0	37	7.3	47	1.8
DEC 07...	270000	34000	14000	--	--	--	--	--	--
JAN 17...	12	1	2	--	--	--	--	--	--
FEB 02...	2800	210	820	--	--	--	--	--	--
APR 16...	1600000	460000	74000	220	0	65	13	100	3.0
16...	980000	300000	230000	--	--	--	--	--	--
16...	1100000	300000	120000	--	--	--	--	--	--
16...	1100000	200000	110000	--	--	--	--	--	--
17...	140000	9300	1200	--	--	--	--	--	--
JUN 07...	120000	1300	520	220	0	64	15	130	3.8
16...	1400000	240000	23000	--	--	--	--	--	--
JUL 11...	75000	2000	130	200	0	59	13	110	3.4
SEP 08...	1600000	540000	190000	--	--	--	--	--	--

DATE	DISSOLVED PHOSPHATE (K) (MG/L)	RICARBO-NATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SiO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NON-FILTERABLE RESIDUE (MG/L)
OCT 18...	4.3	170	0	18	48	.4	13	259	149
DEC 07...	--	--	--	--	--	--	--	--	--
JAN 17...	--	--	--	--	--	--	--	--	38
FEB 02...	--	--	--	--	--	--	--	--	216
APR 16...	5.3	328	0	33	110	.5	19	508	15
16...	--	--	--	--	--	--	--	--	246
16...	--	--	--	--	--	--	--	--	410
16...	--	--	--	--	--	--	--	--	664
17...	--	--	--	--	--	--	--	--	149
JUN 07...	6.0	380	0	33	130	.6	24	590	16
16...	--	--	--	--	--	--	--	--	90
JUL 11...	6.4	340	0	30	110	.5	20	517	21
SEP 08...	--	--	--	--	--	--	--	--	318

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

		VOL. NON-FILT-RABLE RESIDUE	TOTAL NITRATE (N)	TOTAL NITRITE (N)	TOTAL AMMONIA NITRO-GEN (N)	TOTAL ORGANIC NITRO-GEN (N)	TOTAL PHOS-PHORUS (P)	TOTAL ORGANIC CARBON (C)	PHENOLS	METHY-LENE BLUE ACTIVE SUB-STANCE		
	DATE	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(UG/L)	(MG/L)		
	OCT 18...	35	.42	.54	.96	1.1	1.2	14	--	.20		
	DEC 07...	--	.13	.00	.18	1.4	.48	8.0	--	.10		
	JAN 17...	20	.99	.41	2.8	1.5	2.1	12	--	.40		
	FEB 02...	36	.64	.20	1.6	1.4	1.1	11	--	.20		
	APR 16...	5	.92	.48	3.0	3.2	3.4	3.6	--	.80		
	16...	104	.68	.08	2.0	5.3	1.4	7.7	--	.40		
	16...	76	.51	.04	1.1	4.8	1.9	11	--	.40		
	16...	114	.68	.10	1.8	1.8	2.8	14	--	.40		
	17...	34	.42	.22	1.5	8.0	1.6	8.9	--	.30		
	JUN 07...	4	.26	.74	3.3	6.4	5.1	14	5	.90		
	16...	20	.09	.04	.81	2.3	.95	16	--	.10		
	JUL 11...	16	.65	.85	3.9	7.1	4.5	14	2	.80		
	SEP 08...	72	.94	.16	2.1	.40	2.2	17	6	.10		
	DATE	TIME	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)				
	JUN 07...	1120	28	300	0	0	8	50				
	JUL 11...	1225	24	200	0	0	6	40				
	DATE	TIME	DIS-SOLVED LEAD (PB) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)				
	JUN 07...		1	0	.0	2	0	20				
	JUL 11...		0	10	.0	0	0	10				
DATE	TIME	TOTAL PCB (UG/L)	POLY-CHLO-RINATED NAPHTHA-LENES (UG/L)	TOTAL ALDRIN (UG/L)	TOTAL CHLOR-DANE (UG/L)	TOTAL DDD (UG/L)	TOTAL DDE (UG/L)	TOTAL DDT (UG/L)	TOTAL DI-AZINON (UG/L)	TOTAL DI-ELDRIN (UG/L)	TOTAL ENDRIN (UG/L)	TOTAL ETHION (UG/L)
JUN 07...	1120	.0	.00	.00	.1	.00	.00	.00	.60	.02	.00	.00
JUL 11...	1225	.0	.00	.00	.0	.00	.00	.00	.94	.01	.00	.00
SEP 08...	1245	.0	.00	.00	.1	.00	.00	.00	.49	.01	.00	.00
DATE	TIME	TOTAL HEPTA-CHLOR EPOXIDE (UG/L)	TOTAL LINDANE (UG/L)	TOTAL MALA-THION (UG/L)	TOTAL METHYL PARA-THION (UG/L)	TOTAL METHYL TRI-THION (UG/L)	TOTAL PARA-THION (UG/L)	TOTAL TOX-APHENE (UG/L)	TOTAL TRI-THION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)
JUN 07...		.01	.00	.11	.12	.00	.00	.00	0	.00	.00	.06
JUL 11...		.00	.00	.00	.03	.00	.00	.00	0	.00	.04	.06
SEP 08...		.00	.01	.01	.02	.00	.00	.00	0	.00	.02	.12

SAN JACINTO RIVER BASIN

08074550 LITTLE WHITEOAK BAYOU AT HOUSTON, TX
(Low-flow partial-record station)

LOCATION.--Lat 29°47'05", long 95°21'56", Harris County, Hydrologic Unit 12040104, at bridge on North Main Street, 0.8 mi (1.3 km) upstream from mouth, and 1.7 mi (2.7 km) north of Harris County courthouse.

DRAINAGE AREA.--20.9 mi² (54.1 km²).

PERIOD OF RECORD.--Occasional discharge measurements and water-quality data: May 1971 to current year.

DISCHARGE AND WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)
DEC 28...	1245	14	872	6.9	17.5	30	7	5.1	55	7.5
JAN 26...	0950	11	908	6.9	14.5	40	8	4.3	43	6.4
FEB 09...	1130	12	938	7.0	15.0	30	10	5.5	56	11
JUN 08...	0900	5.4	1080	7.3	27.0	90	20	.3	4	44
15...	1000	1800	142	6.9	24.5	110	200	6.1	74	9.9
JUL 13...	1315	3.9	838	8.3	31.0	5	30	7.6	103	9.6
AUG 09...	1300	5.0	743	7.8	30.5	20	20	4.9	65	11
31...	0945	9.2	590	7.4	27.5	20	9	1.6	21	12

DATE	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. / 100 ML)	FECAL STREPTOCOCCI (COL. PER 100 ML)	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO
DEC 28...	250000	26000	2500	230	0	68	15	95	2.7
JAN 26...	1600000	420000	21000	--	--	--	--	--	--
FEB 09...	720000	110000	7700	--	--	--	--	--	--
JUN 08...	9900000	2800000	240000	160	0	44	11	160	5.6
15...	960000	220000	300000	--	--	--	--	--	--
JUL 13...	56000	11000	1000	170	0	48	12	120	4.0
AUG 09...	3200000	940000	13000	140	0	42	8.0	100	3.7
31...	2400000	680000	46000	130	0	41	6.2	67	2.6

SAN JACINTO RIVER BASIN
08074550 LITTLE WHITEOAK BAYOU AT HOUSTON, TX.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS-SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	TOTAL NON- FILT- RABLE RESIDUE (MG/L)
DEC 28...	3.0	350	0	44	76	.7	18	492	16
JAN 26...	--	--	--	--	--	--	--	--	11
FEB 09...	--	--	--	--	--	--	--	--	8
JUN 08...	6.2	400	0	23	120	.9	21	584	25
15...	--	--	--	--	--	--	--	--	400
JUL 13...	3.9	340	0	28	93	.6	16	489	32
AUG 09...	4.3	280	0	21	77	.6	17	408	31
31...	4.1	240	0	23	50	.5	15	325	14

DATE	VOL. NON- FILT- RABLE RESIDUE (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	PHENOLS (UG/L)	METHY- LFNE BLUF ACTIVE SUB- STANCE (MG/L)
DEC 28...	12	.36	.04	1.7	.80	.89	8.9	2	.40
JAN 26...	7	.36	.03	.95	2.5	1.1	13	--	.60
FEB 09...	1	.00	.00	.82	2.6	1.1	9.2	--	.30
JUN 08...	15	.00	.01	6.2	9.8	2.8	35	18	1.6
15...	48	.24	.02	.19	.91	.46	11	--	.00
JUL 13...	15	.07	.06	.75	1.1	.90	8.0	--	.20
AUG 09...	9	.04	.03	2.4	1.9	2.6	11	--	.50
31...	13	.00	.01	2.2	.10	1.5	13	8	.80

SAN JACINTO RIVER BASIN

08074550 LITTLE WHITEOAK BAYOU AT HOUSTON, TX.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

		DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)						
DATE	TIME												
JUN 08...	0900	5	100	10	90	3	110						
		DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	DIS- SOLVED SILVER (AG) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)						
DATE	TIME												
JUN 08...		1	180	.0	1	0	90						
DATE	TIME	TOTAL PCB (UG/L)	POLY- CHLO- RINATED NAPH- THA- LENES (UG/L)	TOTAL ALDRIN (UG/L)	TOTAL CHLOR- DANE (UG/L)	TOTAL DDD (UG/L)	TOTAL DDE (UG/L)	TOTAL DDT (UG/L)	TOTAL DI- AZINON (UG/L)	TOTAL DI- ELDRIN (UG/L)	TOTAL ENDRIN (UG/L)	TOTAL ETHION (UG/L)	
DEC 28...	1245	.0	.00	.00	.0	.00	.00	.00	.14	.01	.00	.00	
JUN 08...	0900	.0	.00	.00	.0	.00	.00	.00	.51	.00	.00	.00	
AUG 31...	0945	.0	.00	.00	.0	.00	.00	.00	.34	.01	.00	.00	
DATE	TIME	TOTAL HEPTA- CHLOR (UG/L)	TOTAL HEPTA- CHLOR EPOXIDE (UG/L)	TOTAL LINDANE (UG/L)	TOTAL MALA- THION (UG/L)	TOTAL METHYL PARA- THION (UG/L)	TOTAL METHYL TRI- THION (UG/L)	TOTAL PARA- THION (UG/L)	TOTAL TOX- APHENE (UG/L)	TOTAL TRI- THION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)
DEC 28...	.00	.00	.00	.00	.00	.00	.00	.00	0	.00	.00	.00	.04
JUN 08...	.00	.00	.00	.00	.00	.00	.00	.00	0	.00	.00	.00	.11
AUG 31...	.00	.00	.03	.25	.00	.00	.00	.00	0	.00	1.8	.04	.30

BRAYS BAYOU DRAINAGE BASIN

The locations of data-collection sites in and near the Brays Bayou drainage basin are shown on figure 7.

Flood-hydrograph partial record station Brays Bayou at Gessner Drive was put into operation Feb. 1, 1977. Flood hydrograph partial-record station Brays Bayou at Addicks-Clodine Road was discontinued June 7, 1977.

Bintliff Ditch and Keegans Bayou are shown as separate drainage basins within the Brays Bayou section.

Weighted-mean rainfall in the drainage basin for the 1977 water year based on eight rain gages was 40.0 inches or 8.2 inches less than the 30-year (1941-70) average for the Houston Intercontinental Airport station.

No storms were analyzed for the 1977 water year for the gaging stations located at Addicks-Clodine Road (08074750) and at Main Street (08075000). The storms of April 20 and Sept. 6-9 were selected for analysis at the Gessner Drive gaging station (08074810).

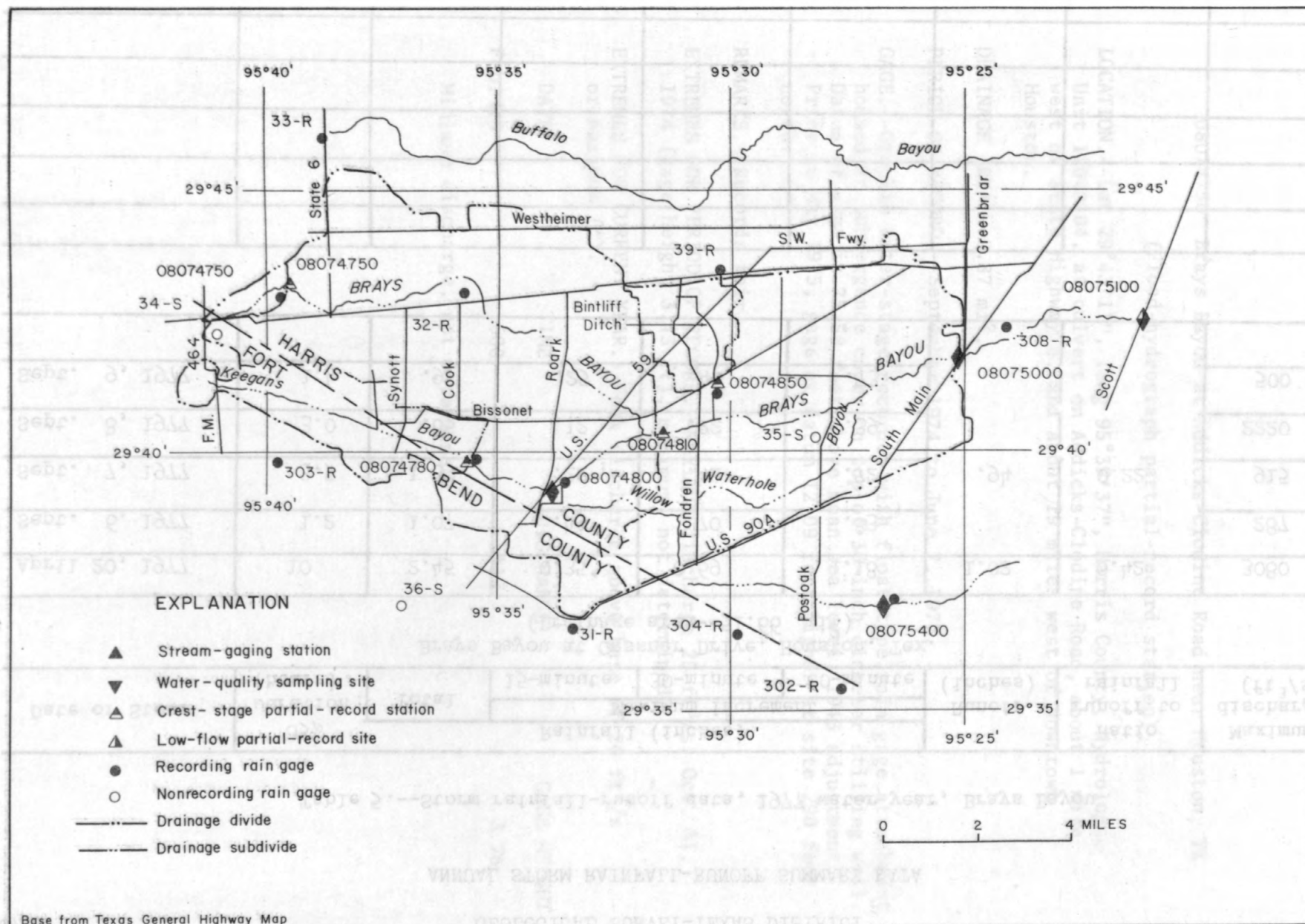


FIGURE 7.- Locations of data-collection sites in and near the Brays Bayou drainage basin

TX-35
6/69

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY-TEXAS DISTRICT

ANNUAL STORM RAINFALL-RUNOFF SUMMARY DATA

Table 5.--Storm rainfall-runoff data, 1977 water year, Brays Bayou

Date of Storm	85% Duration (hours)	Total	Rainfall (inches)			Runoff (inches)	Ratio runoff to rainfall	Maximum discharge (ft ³ /s)
			Maximum increment					
			15-minute	30-minute	60-minute			
Brays Bayou at Gessner Drive, Houston, Tex. (Drainage area--51.66 mi ²)								
April 20, 1977	10	2.45	0.35*	0.69	1.18	1.02	0.42	3080
Sept. 6, 1977	1.2	1.07	.49	.70	.83	.94	0.22	287
Sept. 7, 1977	3.5	1.39	.22	.42	.72			915
Sept. 8, 1977	3.0	.85	.12	.22	.39			2220
Sept. 9, 1977	1.4	.95	.25	.46	.73			500

08074750 Brays Bayou at Addicks-Clodine Road near Houston, TX

(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°43'11", long 95°39'37", Harris County, Hydrologic Unit 12040104, at culvert on Addicks-Clodine Road, about 1 mile west of State Highway 6, and about 19 miles west of downtown Houston.

DRAINAGE AREA.--0.87 mi².

PERIOD OF RECORD.--September 1974 to June 7, 1977.

GAGE.--Graphic water-stage recorder with float-type rain gage attachment housed in submergence cover on top of 36-inch diameter stilling well. Datum of gage is 75.58 feet above mean sea level, 1943 adjustment. Prior to May 1975, gage at datum 12.09 feet higher at site 290 feet north.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 25 ft³/s, Oct. 31, 1974 (gage height 3.43 ft), minimum, not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 20 ft³/s or maximum (*).

DATE	TIME	DISCHARGE	GAGE HEIGHT
Feb. 10	1600	*17	3.76

Minimum discharge, not determined.

KEEGANS BAYOU DRAINAGE BASIN

The locations of data-collection sites in and near the Keegans Bayou drainage basin are shown on figure 8. Flood-hydrograph partial-record station Keegans Bayou at Keegan Road was reconstructed Aug. 5, 1974.

Weighted-mean rainfall in the drainage basin, based on two rain gages for the 1977 water year was 36.1 inches or 12.1 inches less than the 30-year (1941-70) average for the Houston Intercontinental Airport station.

The storm of April 20 was selected for analysis at the Roark Road site. No storms were analyzed for the Keegan Road site.

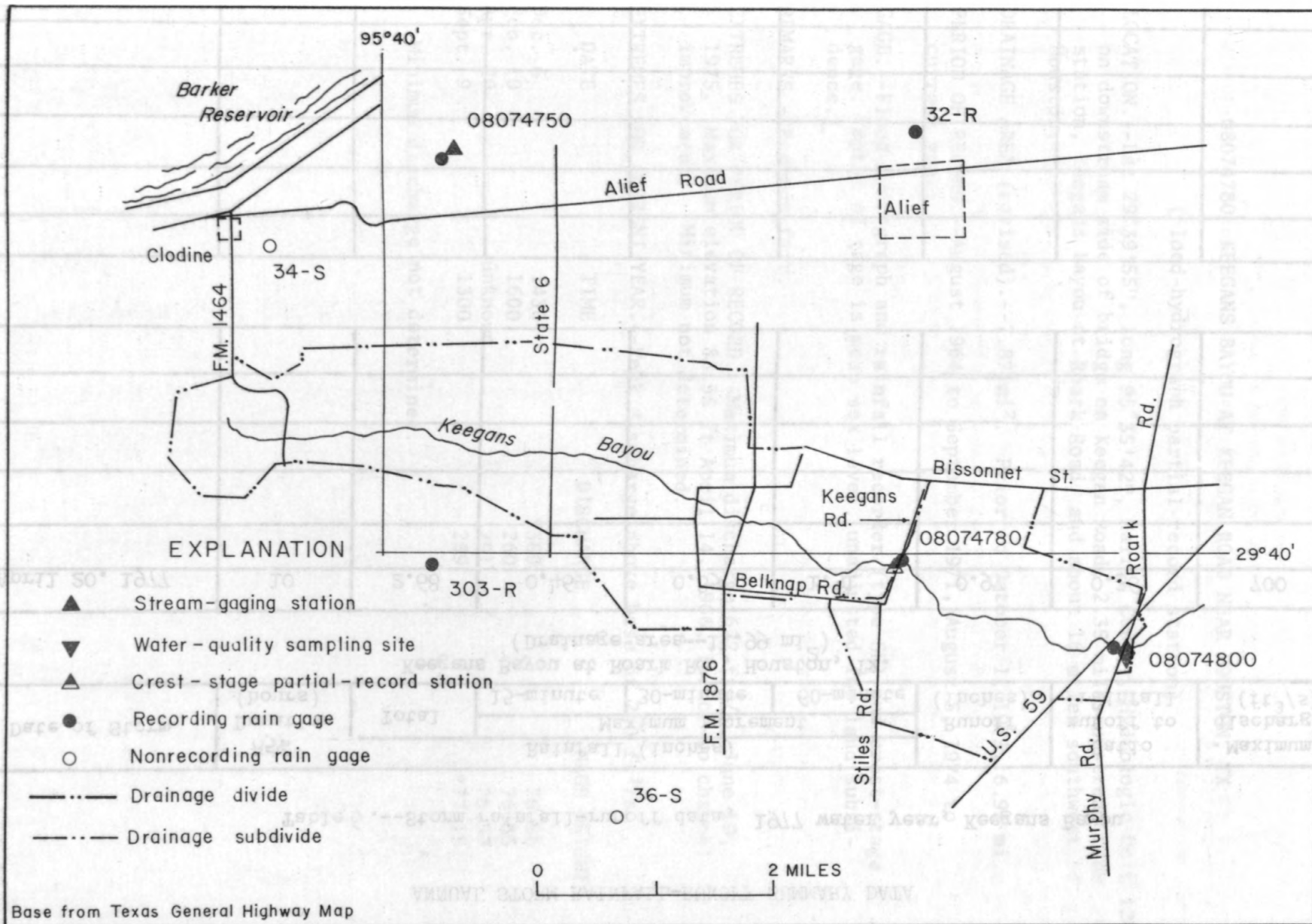


FIGURE 8.- Locations of data-collection sites in and near the Keegans Bayou drainage basin

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY-TEXAS DISTRICT

ANNUAL STORM RAINFALL-RUNOFF SUMMARY DATA

Table 6.--Storm rainfall-runoff data, 1977 water year, Keegans Bayou

[illegible]

08074780 KEEGANS BAYOU AT KEEGAN ROAD NEAR HOUSTON, TX

(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°39'55", long 95°35'42", Harris County, Hydrologic Unit 12040104 on downstream side of bridge on Keegan Road, 2.35 miles upstream from station, Keegans Bayou at Roark Road, and about 16 miles southwest of Houston.

DRAINAGE AREA (revised).--7.87 mi². Prior to October 1, 1973, 6.93 mi.

PERIOD OF RECORD.--August 1964 to September 1971, August 5, 1974 to current year.

GAGE.--Flood-hydrograph and rainfall recorder (type SR) and crest-stage gage. Datum of gage is mean sea level, unadjusted for land subsidence.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 622 ft³/s, June 10, 1975. Maximum elevation 83.55 ft April 14, 1966, (prior to channel improvement). Minimum not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 250 ft³/s.

DATE	TIME	DISCHARGE	GAGE HEIGHT
Dec. 6	1430	*369	76.86
Feb. 10	1600	260	76.65
Apr. 20	unknown	291	76.57
Sept. 9	1300	289	*77.15

Minimum discharge not determined.

SAN JACINTO RIVER BASIN

08074800 KEEGANS BAYOU AT ROARK ROAD NEAR HOUSTON, TX

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 and about 2 mi (3 km) southwest of city limits of Houston.

DRAINAGE AREA (revised).--12.0 mi² (31.1 km²). Prior to Oct. 1, 1976, 11.6 mi² (30.0 km²).

WATER-DISCHARGE RECORDS

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

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

GAGE.--Water-stage recorder. Datum of gage is at mean sea level; unadjusted for land-surface subsidence.

REMARKS.--Water-discharge records fair except those for period of no gage-height record and those below 50 ft³/s (1.42 m³/s), which are poor. Recording rain gage located at station.

AVERAGE DISCHARGE.--13 years, 10.6 ft³/s (0.300 m³/s), 7,680 acre-ft/yr (9.47 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,570 ft³/s (44.5 m³/s) June 13, 1973, elevation, 73.37 ft (22.363 m); no flow for many days.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 250 ft³/s (7.08 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Elevation (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Elevation (ft) (m)
Dec. 6	1400	598 16.9	69.73 21.254	aSept. 8	1800	188 5.32	67.11 20.455
Feb. 10	1700	357 10.1	68.11 20.760	aSept. 9	1700	113 3.20	65.78 20.050
Apr. 20	1400	*700 19.8	70.30 21.427				

a Water-quality samples were obtained for this flood event.

Minimum daily discharge, 2.4 ft³/s (0.068 m³/s) Apr. 7-9, 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	6.5	7.4	7.1	10	3.9	3.2	21	4.0	3.3	4.1	4.3
2	3.5	5.3	6.6	23	8.9	4.2	3.9	24	3.9	3.4	4.4	4.3
3	3.0	4.8	5.7	13	11	5.0	3.7	16	3.8	3.3	4.4	4.1
4	3.1	4.7	5.3	9.9	9.7	5.2	25	5.5	3.9	3.9	4.1	4.0
5	5.8	4.3	13	9.8	8.4	4.7	3.4	4.5	4.0	3.7	5.4	3.9
6	3.4	4.4	187	15	7.5	4.9	2.8	4.2	3.9	5.5	8.4	31
7	3.1	4.0	103	11	6.9	4.8	2.4	4.4	3.9	4.4	6.1	12
8	4.2	4.2	50	11	6.5	4.4	2.4	3.9	3.8	3.9	4.3	72
9	3.1	4.4	19	10	6.3	4.1	2.4	7.0	3.8	3.7	4.7	50
10	3.0	4.3	11	8.9	135	4.4	2.9	5.0	3.7	3.5	4.8	16
11	2.9	6.2	52	7.6	99	5.8	2.6	4.5	3.7	3.6	4.1	8.6
12	3.1	21	159	6.8	49	4.2	2.5	4.2	3.6	3.7	4.0	11
13	3.0	31	68	8.9	18	4.2	2.6	4.0	3.6	3.3	4.4	40
14	2.8	16	85	7.1	9.5	4.4	2.6	4.0	30	3.9	5.7	45
15	15	9.4	39	6.5	7.1	4.6	2.4	3.8	7.2	6.6	4.9	12
16	49	6.0	21	6.5	5.9	4.9	15	3.8	4.1	4.1	6.4	8.3
17	8.0	5.1	14	6.1	5.3	4.4	3.7	3.7	4.0	3.6	5.1	7.1
18	5.2	8.7	10	5.8	4.8	4.5	3.5	3.6	3.7	3.8	4.8	6.4
19	6.7	63	65	5.7	5.0	3.8	2.9	3.5	3.5	3.8	4.3	10
20	4.9	45	112	5.5	4.6	3.9	217	3.5	3.5	3.7	8.7	8.3
21	4.4	22	51	5.7	4.4	4.2	70	20	3.6	3.5	4.4	4.8
22	3.9	11	22	8.2	4.2	4.6	18	10	3.5	4.0	7.7	4.3
23	3.8	6.6	14	6.1	4.2	4.0	7.3	6.0	3.4	5.0	5.0	4.2
24	31	5.6	11	5.8	4.5	7.9	4.6	5.0	3.7	4.0	5.5	4.1
25	18	5.9	23	5.8	4.3	4.8	4.0	4.5	3.4	3.5	6.4	4.2
26	8.5	9.3	18	5.3	4.0	3.7	3.9	4.2	3.3	3.5	4.7	4.2
27	5.1	5.4	14	5.3	4.0	7.0	3.6	4.0	3.5	44	5.9	4.0
28	4.3	36	11	5.6	4.0	14	3.4	3.9	3.3	51	4.4	4.1
29	51	16	9.8	5.4	---	4.5	3.2	3.9	3.4	6.4	4.3	3.9
30	19	10	8.1	27	---	3.8	8.2	3.8	3.5	4.5	4.2	3.7
31	10	---	7.6	26	---	3.3	---	3.8	---	4.4	4.3	---
TOTAL	295.3	386.1	1222.5	291.4	452.0	152.1	433.1	203.2	140.2	212.5	159.9	399.8
MEAN	9.53	12.9	39.4	9.40	16.1	4.91	14.4	6.55	4.67	6.85	5.16	13.3
MAX	51	63	187	27	135	14	217	24	30	51	8.7	72
MIN	2.8	4.0	5.3	5.3	4.0	3.3	2.4	3.5	3.3	3.3	4.0	3.7
AC-FT	586	766	2420	578	897	302	859	403	278	421	317	793
(††)	3.68	3.67	5.63	1.76	1.69	1.51	4.50	2.39	1.84	1.58	1.57	6.28

CAL YR 1976 TOTAL 5737.8 MEAN 15.7 MAX 496 MIN 2.2 AC-FT 11380 †† 43.64
WTR YR 1977 TOTAL 4348.1 MEAN 11.9 MAX 217 MIN 2.4 AC-FT 8620 †† 36.10

†† Weighted-mean rainfall, in inches, based on two rain gages.

SAN JACINTO RIVER BASIN

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

WATER-QUALITY RECORDS

PERIOD OF RECORD---Chemical, biochemical, and pesticide analyses: October 1968 to current year. Sediment analyses: October 1970 to September 1971.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO- MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	BIO- CHEM- ICAL OXYGEN DEMAND 5 DAY (MG/L)
OCT 19...	1150	4.1	609	6.5	21.0	60	40	6.8	78	4.4
NOV 01...	1300	4.3	563	6.4	19.5	100	30	7.4	83	5.7
JAN 11...	0915	6.3	628	6.9	8.0	70	40	9.8	85	6.2
FEB 07...	1215	4.1	733	6.8	15.0	50	30	8.2	84	4.4
JUN 01...	1130	3.5	869	7.4	28.5	20	10	4.0	52	11
16...	1315	3.3	630	7.3	29.0	20	20	2.3	30	--
AUG 30...	0930	4.6	781	7.5	27.0	20	9	3.8	48	8.7
SEP 08...	0930	14	488	7.4	28.0	60	20	3.4	44	5.4
09...	0930	17	285	7.3	27.0	50	200	4.0	51	5.7

DATE	IMME- DIATE COLI- FORM (COL. PER 100 ML)	FECAL COLI- FORM (COL./ 100 ML)	FECAL STREP- TOCOC- KI AGAR (COL. PER 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO
OCT 19...	2100	74	140	--	--	--	--	--	--
NOV 01...	500	16	74	180	3	52	11	43	1.4
JAN 11...	18	1	6	--	--	--	--	--	--
FEB 07...	36	2	8	--	--	--	--	--	--
JUN 01...	26000	8700	580	240	0	73	14	80	2.2
16...	44000	7000	1700	--	--	--	--	--	--
AUG 30...	110000	3200	1000	--	--	--	--	--	--
SEP 08...	51000	25000	4600	140	5	42	7.5	39	1.5
09...	460000	9000	9100	84	3	26	4.6	18	.9

DATE	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAP- RONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLOR- IDE (CL) (MG/L)	DIS- SOLVED FLUOR- IDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NON- FILTR- ABLE RESIDUE (MG/L)
OCT 19...	--	--	--	--	--	--	--	--	59
NOV 01...	6.5	210	0	30	48	.7	21	316	62
JAN 11...	--	--	--	--	--	--	--	--	55
FEB 07...	--	--	--	--	--	--	--	--	48
JUN 01...	7.6	310	0	42	79	.4	24	473	24
16...	--	--	--	--	--	--	--	--	22
AUG 30...	--	--	--	--	--	--	--	--	14
SEP 08...	7.0	160	0	31	41	.3	17	264	61
09...	4.4	99	0	19	16	.3	10	147	438

SAN JACINTO RIVER BASIN

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	VOL. NON-FILTRABLE RESIDUE (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	PHENOLS (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 19...	17	3.8	.20	.84	1.5	4.8	7.2	--	.20
NOV 01...	8	2.2	.16	.86	1.2	3.5	7.6	0	.30
JAN 11...	10	3.5	.19	1.4	1.6	3.6	8.1	--	.10
FEB 07...	9	2.4	.08	.67	1.9	5.6	9.8	--	.20
JUN 01...	8	3.9	.52	2.4	1.8	5.5	7.4	2	.30
16...	7	.44	.17	.93	.87	4.1	8.2	--	.20
AUG 30...	13	3.4	.65	3.5	.40	20	5.4	--	.90
SEP 08...	23	2.8	.13	.63	1.2	4.7	9.2	4	.10
09...	62	1.7	.05	.27	1.0	4.2	10	--	.10

DATE	TIME	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	DIS-SOLVED CADMIUM (CD) (UG/L)	DIS-SOLVED CHROMIUM (CR) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
JUN 01...	1130	4	100	1	0	3	10
SEP 09...	0930	12	0	0	0	2	30

DATE	DIS-SOLVED LEAD (PB) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	DIS-SOLVED SELENIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
JUN 01...	1	50	.0	1	0	20
SEP 09...	0	0	.0	0	0	50

DATE	TIME	TOTAL PCB (UG/L)	POLY-CHLORINATED NAPHTHALENES (UG/L)	TOTAL ALDRIN (UG/L)	TOTAL CHLORDAN (UG/L)	TOTAL DDD (UG/L)	TOTAL DDE (UG/L)	TOTAL DDT (UG/L)	TOTAL DI-AZINON (UG/L)	TOTAL DI-ELDRIN (UG/L)	TOTAL ENDRIN (UG/L)	TOTAL ETHION (UG/L)
NOV 01...	1300	.0	.00	.00	.0	.00	.00	.00	.07	.00	.00	.00
JUN 01...	1130	.0	.00	.00	.1	.00	.00	.00	.40	.01	.00	.00
SEP 08...	0930	.0	.00	.00	.0	.00	.00	.00	.28	.01	.00	.00

DATE	TOTAL HEPTACHLOR (UG/L)	TOTAL HEPTACHLOR EPOXIDE (UG/L)	TOTAL LINDANE (UG/L)	TOTAL MALATHION (UG/L)	TOTAL METHYL PARATHION (UG/L)	TOTAL METHYL TRITHION (UG/L)	TOTAL PARATHION (UG/L)	TOTAL TOXAPHENE (UG/L)	TOTAL TRITHION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)
NOV 01...	.00	.00	.00	.00	.00	.00	.00	0	.00	.00	.02	.00
JUN 01...	.00	.00	.04	.02	.00	.00	.00	0	.00	--	--	--
SEP 08...	.00	.01	.02	.05	.00	.00	.00	0	.00	.10	.81	.01

STA. NO. 08074800		STORM RAINFALL AND RUNOFF RECORD						1977 WATER YEAR		
KEEGANS BAYOU AT PARK ROAD NEAR HOUSTON, TX.						STORM OF APR. 20, 1977		ACCUM. WEIGHTED PRECIP.	DISCHARGE IN CFS	ACCUM. RUNOFF IN.
DATE & TIME	4800	303H	G A G E			N U M B E R		IN.		IN.
APR. 20										
0000	0.0	0.0						0.0	2.9	0.0004
0200	0.0	0.03						0.02	3.8	0.0010
0230	0.0	0.03						0.02	3.8	0.0012
0300	0.27	0.46						0.37	4.5	0.0015
0330	0.45	0.80						0.64	5.4	0.0019
0400	0.50	0.82						0.68	43.0	0.0047
0430	0.50	0.84						0.69	63.0	0.0087
0500	0.53	0.94						0.76	77.0	0.0137
0530	0.53	0.94						0.76	80.0	0.0189
0600	0.53	0.94						0.76	83.0	0.0269
0700	0.53	0.94						0.76	80.0	0.0373
0800	0.53	0.98						0.78	74.0	0.0468
0900	0.62	1.19						0.93	66.0	0.0596
1100	0.62	1.26						0.97	51.0	0.0679
1130	0.80	1.37						1.11	53.0	0.0704
1145	1.15	1.40						1.29	52.0	0.0721
1200	1.60	1.55						1.57	52.0	0.0738
1215	2.10	1.84						1.96	80.0	0.0764
1230	2.40	2.44						2.42	168.0	0.0845
1300	2.64	2.67						2.66	443.0	0.1131
1330	2.67	2.67						2.67	645.0	0.1548
1400	2.67	2.67						2.67	700.0	0.2000
1430	2.67	2.67						2.67	691.0	0.2447
1500	2.67	2.67						2.67	645.0	0.3072
1600	2.67	2.67						2.67	559.0	0.3795
1700	2.69	2.67						2.68	470.0	0.4706
1900	2.69	2.67						2.68	337.0	0.5577
2100	2.69	2.67						2.68	256.0	0.6404
2400	2.69	2.67						2.68	163.0	0.6878
APR. 21										
0000	2.69	2.67						2.68	163.0	0.6878
0300	2.69	2.67						2.68	112.0	0.7470
0600	2.69	2.67						2.68	84.0	0.7796
0900	2.69	2.67						2.68	67.0	0.8056
1200	2.69	2.67						2.68	59.0	0.8284
1500	2.69	2.67						2.68	53.0	0.8490
1800	2.69	2.67						2.68	46.0	0.8668
2100	2.69	2.67						2.68	39.0	0.8819
2400	2.69	2.67						2.68	33.0	0.8926
APR. 22										
0000	2.69	2.67						2.68	33.0	0.8926

STA. NO. 08074800		STORM RAINFALL AND RUNOFF RECORD						1977 WATER YEAR		
KEEGANS BAYOU AT ROARK ROAD NEAR HOUSTON, TX.						STORM OF APR. 20, 1977		ACCUM.	DISCHARGE	ACCUM.
DATE & TIME						WEIGHTED PRECIP.		IN.	IN	RUNOFF
								IN.	CFS	IN.
APR. 22										
0400								2.68	25.0	0.9098
0800								2.68	20.0	0.9201
1200								2.68	17.0	0.9289
1600								2.68	14.0	0.9362
2000								2.68	11.0	0.9419
2400								2.68	9.9	0.9482
APR. 23										
0000								2.68	9.9	0.9482
1200								2.68	7.2	0.9633
2400								2.68	5.6	0.9676

08074810 BRAYS BAYOU AT GESSNER DRIVE, HOUSTON, TX

(Flood hydrograph-partial record station)

LOCATION.--Lat 29°40'21", long 95°31'41", Harris County, Hydrologic Unit 12040104 on right bank on downstream side of bridge at Gessner Drive in southwest Houston.

DRAINAGE AREA.--51.66 mi².

PERIOD OF RECORD.--Feb. 1, 1977 to current year.

GAGE.--Water stage recorder and crest stage gage. Datum of gages is mean sea level, unadjusted for land subsidence.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 3,080 ft³/s, April 20, 1977 (elevation 51.53 ft); minimum discharge not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 1,500 ft³/s and maximum (*):

DATE	TIME	DISCHARGE	GAGE HEIGHT
Apr. 20	1400	*3080	51.53
May 9	1400	1750	48.95
Sept. 8	1600	2220	49.93

Minimum discharge not determined.

The storms of April 20 and Sept. 6-9 were selected for analysis.

STA. NO. 08074810				STORM RAINFALL AND RUNOFF RECORD				1977 WATER YEAR		
BHAYS BAYOU AT GESSNER DRIVE, HOUSTON, TX.				STORM OF APR. 20, 1977				ACCUM.	DISCHARGE	ACCUM.
DATE & TIME				G A G E N U M B E R				WEIGHTED PRECIP.	IN	RUNOFF
				4R00	303R	32R		IN.	CFS	IN.
APR. 20										
0000	0.0	0.0	0.0					0.0	12.0	0.0004
0200	0.0	0.03	0.0					0.01	19.0	0.0011
0230	0.0	0.03	0.0					0.01	19.0	0.0014
0300	0.27	0.46	0.40					0.38	34.0	0.0019
0330	0.45	0.80	0.80					0.69	87.0	0.0032
0400	0.50	0.82	0.80					0.71	177.0	0.0058
0430	0.50	0.84	0.80					0.72	254.0	0.0096
0500	0.53	0.94	0.85					0.78	298.0	0.0141
0530	0.53	0.94	0.85					0.78	320.0	0.0237
0700	0.53	0.94	0.85					0.78	318.0	0.0332
0730	0.53	0.94	0.85					0.78	313.0	0.0379
0800	0.53	0.98	0.85					0.79	305.0	0.0448
0900	0.62	1.19	0.90					0.89	298.0	0.0537
1000	0.62	1.21	1.00					0.94	289.0	0.0624
1100	0.62	1.26	1.02					0.96	289.0	0.0689
1130	0.80	1.37	1.05					1.05	291.0	0.0733
1200	1.60	1.55	1.50					1.54	487.0	0.0788
1215	2.10	1.84	1.75					1.88	696.0	0.0840
1230	2.40	2.44	2.00					2.23	1080.0	0.0961
1300	2.64	2.67	2.16					2.43	2070.0	0.1272
1330	2.67	2.67	2.16					2.44	2790.0	0.1585
1345	2.67	2.67	2.16					2.44	3000.0	0.1810
1400	2.67	2.67	2.16					2.44	3080.0	0.2041
1415	2.67	2.67	2.16					2.44	3060.0	0.2271
1430	2.67	2.67	2.16					2.44	3010.0	0.2609
1500	2.67	2.67	2.16					2.44	2840.0	0.3035
1530	2.67	2.67	2.16					2.44	2520.0	0.3413
1600	2.67	2.67	2.16					2.44	2230.0	0.3748
1630	2.67	2.67	2.16					2.44	1980.0	0.4193
1730	2.69	2.67	2.16					2.45	1580.0	0.4667
1830	2.69	2.67	2.16					2.45	1340.0	0.5069
1930	2.69	2.67	2.16					2.45	1180.0	0.5512
2100	2.69	2.67	2.16					2.45	1000.0	0.5961
2230	2.69	2.67	2.16					2.45	867.0	0.6352
2400	2.69	2.67	2.16					2.45	763.0	0.6638
APR. 21										
0000	2.69	2.67	2.16					2.45	763.0	0.6638
0200	2.69	2.67	2.16					2.45	632.0	0.7131
0400	2.69	2.67	2.16					2.45	534.0	0.7452
0600	2.69	2.67	2.16					2.45	457.0	0.7794

STA. NO. 08074810				STORM RAINFALL AND RUNOFF RECORD				1977 WATER YEAR		
BHAYS BAYOU AT GESSNER DRIVE, HOUSTON, TX.				STORM OF APR. 20, 1977				ACCUM.	DISCHARGE	ACCUM.
DATE & TIME				G A G E N U M B E R				WEIGHTED PRECIP.	IN	RUNOFF
				4R00	303R	32R		IN.	CFS	IN.
APR. 21										
0900	2.69	2.67	2.16					2.45	365.0	0.8123
1200	2.69	2.67	2.16					2.45	305.0	0.8397
1500	2.69	2.67	2.16					2.45	266.0	0.8637
1800	2.69	2.67	2.16					2.45	230.0	0.8844
2100	2.69	2.67	2.16					2.45	204.0	0.9027
2400	2.69	2.67	2.16					2.45	173.0	0.9157
APR. 22										
0000	2.69	2.67	2.16					2.45	173.0	0.9157
0400	2.69	2.67	2.16					2.45	145.0	0.9383
0800	2.69	2.67	2.16					2.45	118.0	0.9524
1200	2.69	2.67	2.16					2.45	102.0	0.9647
1600	2.69	2.67	2.16					2.45	89.0	0.9753
2000	2.69	2.67	2.16					2.45	74.0	0.9842
2400	2.69	2.67	2.16					2.45	66.0	0.9912
APR. 23										
0000	2.69	2.67	2.16					2.45	66.0	0.9912
0600	2.69	2.67	2.16					2.45	55.0	1.0040
1200	2.69	2.67	2.16					2.45	43.0	1.0118
1800	2.69	2.67	2.16					2.45	39.0	1.0188
2400	2.69	2.67	2.16					2.45	30.0	1.0215

STA. NO. 08074810				STORM RAINFALL AND RUNOFF RECORD				1977 WATER YEAR		
BRAYS BAYOU AT GESSNER DRIVE, HOUSTON, TX.				STORM OF SEPT. 5-9, 1977				ACCUM. WEIGHTED PRECIP.	DISCHARGE IN	ACCUM. RUNOFF
DATE & TIME	G A G E N U M B E R							IN.	CFS	IN.
	4R00	303R	32R							
SEPT. 6										
0000	0.0	0.0	0.0					0.0	14.0	0.0013
0600	0.0	0.0	0.0					0.0	14.0	0.0043
1430	0.0	0.0	0.0					0.0	13.0	0.0061
1500	0.0	0.0	0.0					0.0	16.0	0.0063
1530	0.1R	0.20	0.30					0.24	32.0	0.0068
1600	0.4R	0.20	0.40					0.37	68.0	0.0075
1615	1.20	0.20	1.00					0.86	101.0	0.0083
1630	1.45	0.20	1.30					1.07	143.0	0.0099
1700	1.45	0.20	1.30					1.07	183.0	0.0140
1800	1.45	0.20	1.30					1.07	256.0	0.0198
1830	1.45	0.20	1.30					1.07	278.0	0.0240
1900	1.45	0.20	1.30					1.07	287.0	0.0283
1930	1.45	0.20	1.30					1.07	282.0	0.0346
2030	1.45	0.20	1.30					1.07	258.0	0.0443
2200	1.45	0.20	1.30					1.07	223.0	0.0560
2400	1.45	0.20	1.30					1.07	175.0	0.0652
SEPT. 7										
0000	1.45	0.20	1.30					1.07	175.0	0.0652
0300	1.45	0.20	1.30					1.07	106.0	0.0786
0600	1.45	0.20	1.30					1.07	66.0	0.0846
0900	1.45	0.20	1.30					1.07	44.0	0.0885
1200	1.45	0.20	1.30					1.07	31.0	0.0913
1500	1.45	0.20	1.30					1.07	24.0	0.0935
1800	1.45	0.20	1.30					1.07	21.0	0.0946
1830	1.45	0.50	1.60					1.28	21.0	0.0949
1900	1.45	1.10	2.20					1.70	45.0	0.0956
1930	1.60	1.40	2.60					2.00	394.0	0.1015
2000	1.65	1.50	2.80					2.13	832.0	0.1140
2030	1.65	1.52	2.85					2.16	912.0	0.1277
2100	1.65	1.54	2.90					2.18	915.0	0.1414
2130	1.65	1.58	3.00					2.24	895.0	0.1548
2200	1.72	1.62	3.10					2.32	883.0	0.1747
2300	1.79	1.64	3.20					2.39	772.0	0.1978
2400	1.79	1.70	3.30					2.45	635.0	0.2169
SEPT. 8										
0000	1.79	1.70	3.30					2.45	635.0	0.2169
0200	1.85	1.70	3.30					2.46	426.0	0.2519
0400	1.85	1.70	3.30					2.46	310.0	0.2705
0600	1.85	1.70	3.30					2.46	245.0	0.2889
0900	1.85	1.70	3.30					2.46	177.0	0.3088
1330	1.8R	1.85	3.85					2.76	121.0	0.3179

STA. NO. 08074810							STORM RAINFALL AND RUNOFF RECORD			1977 WATER YEAR		
BRAYS BAYOU AT GESSNER DRIVE, HOUSTON, TX.							STORM OF SEPT. 6-9, 1977			ACCUM.	DISCHARGE	ACCUM.
DATE & TIME							G A G E N U M B E R			WEIGHTED PRECIP.	IN	RUNOFF
										IN.	CFS	IN.
SEPT. 8												
1400	1.88	2.10	4.09							2.93	121.0	0.3197
1430	2.21	2.60	4.09							3.15	559.0	0.3281
1500	2.32	2.88	4.15							3.28	1470.0	0.3501
1530	2.32	2.90	4.15							3.29	2030.0	0.3730
1545	2.32	2.90	4.15							3.31	2200.0	0.3895
1600	2.32	2.90	4.15							3.31	2220.0	0.4061
1615	2.32	2.90	4.15							3.31	2210.0	0.4227
1630	2.32	2.90	4.15							3.31	2150.0	0.4469
1700	2.38	2.90	4.15							3.31	1930.0	0.5192
1900	2.32	2.90	4.15							3.31	964.0	0.5626
2000	2.32	2.90	4.15							3.31	729.0	0.5845
2100	2.32	2.90	4.15							3.31	599.0	0.6204
2400	2.40	2.90	4.15							3.31	397.0	0.6561
SEPT. 9												
0000	2.40	2.90	4.15							3.31	397.0	0.6561
0600	2.40	2.90	4.15							3.31	198.0	0.7007
0900	2.40	2.90	4.15							3.31	131.0	0.7145
1300	2.40	2.90	4.42							3.43	96.0	0.7210
1330	2.40	2.94	4.51							3.48	92.0	0.7223
1400	2.40	4.62	4.60							3.94	109.0	0.7240
1430	3.00	4.95	4.60							4.21	313.0	0.7287
1500	3.16	4.95	4.60							4.26	447.0	0.7387
1600	3.16	4.95	4.60							4.26	500.0	0.7537
1700	3.16	4.95	4.60							4.26	467.0	0.7817
2000	3.16	4.95	4.60							4.26	392.0	0.8229
2400	3.16	4.95	4.60							4.26	258.0	0.8461
SEPT. 1												
0000	3.16	4.95	4.60							4.26	258.0	0.8461
0400	3.16	4.95	4.60							4.26	187.0	0.8763
0800	3.16	4.95	4.60							4.26	146.0	0.8938
1200	3.16	4.95	4.60							4.26	124.0	0.9087
1600	3.16	4.95	4.60							4.26	109.0	0.9218
2000	3.16	4.95	4.60							4.26	89.0	0.9324
2400	3.16	4.95	4.60							4.26	76.0	0.9370

BINTLIFF DITCH DRAINAGE BASIN

The location of data-collection sites in and near the Bintliff Ditch drainage basin are shown on figure 9.

Weighted mean rainfall for the 1977 water year was not determined.

No storms were analyzed for the 1977 water year.

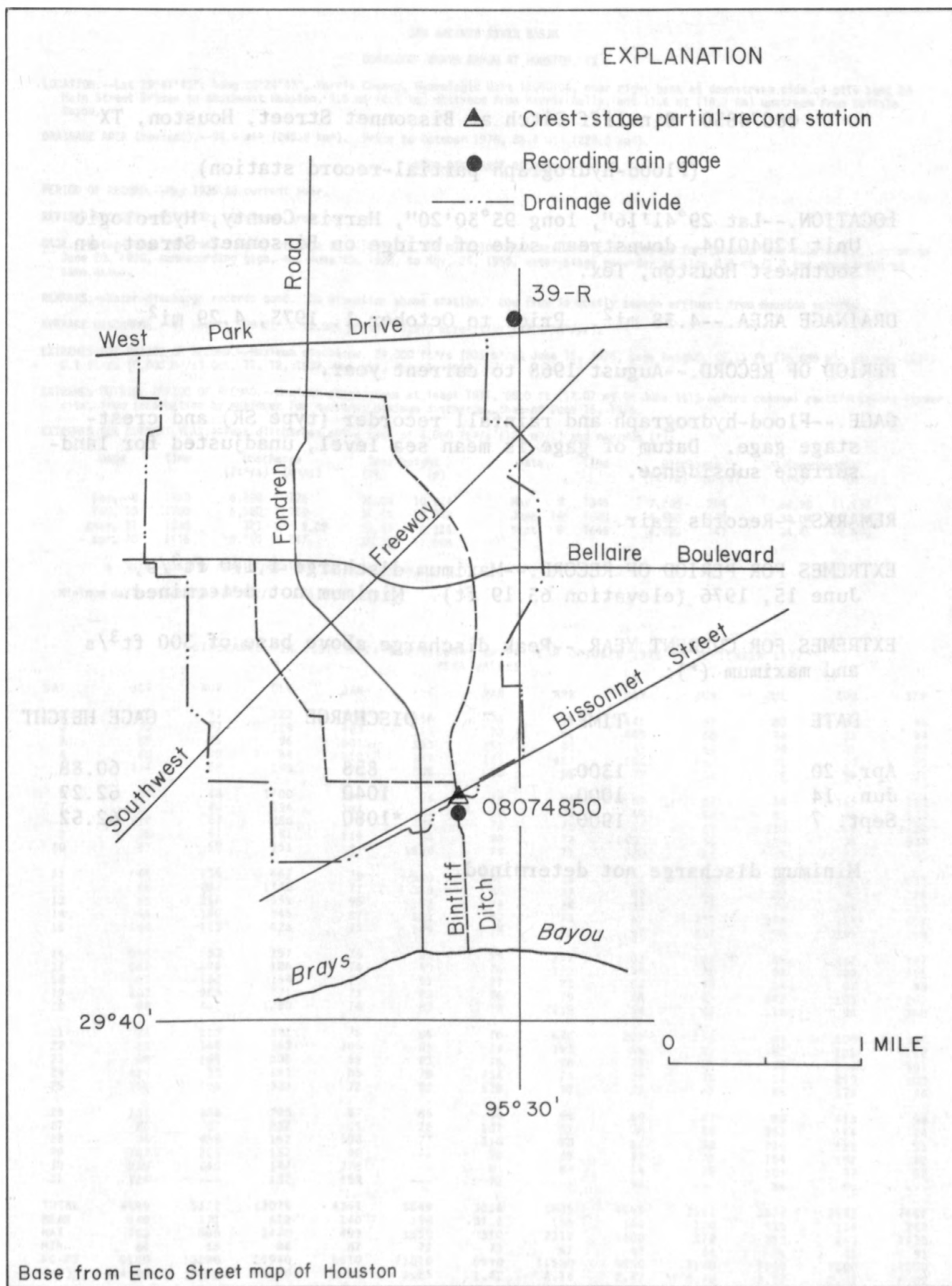


FIGURE 9. -Locations of data-collection sites in and near the Bintliff Ditch drainage basin

08074850 Bintliff Ditch at Bissonnet Street, Houston, TX

(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°41'16", long 95°30'20", Harris County, Hydrologic Unit 12040104, downstream side of bridge on Bissonnet Street, in southwest Houston, Tex.

DRAINAGE AREA.--4.38 mi². Prior to October 1, 1973, 4.29 mi².

PERIOD OF RECORD.--August 1968 to current year.

GAGE.--Flood-hydrograph and rainfall recorder (type SR) and crest-stage gage. Datum of gage is mean sea level, unadjusted for land-surface subsidence.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 1,170 ft³/s, June 15, 1976 (elevation 63.19 ft). Minimum not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 300 ft³/s and maximum (*):

DATE	TIME	DISCHARGE	GAGE HEIGHT
Apr. 20	1300	858	60.88
Jun. 14	1000	1040	62.27
Sept. 7	1900	*1080	62.52

Minimum discharge not determined.

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 pile bent of Main Street Bridge in southwest Houston, 1.6 mi (2.6 km) upstream from Harris Gully, and 11.6 mi (18.7 km) upstream from Buffalo Bayou.

DRAINAGE AREA (revised).--94.9 mi² (245.8 km²). Prior to October 1976, 88.4 mi² (229.0 km²).

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 (2.182 m) below mean sea level; 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 (1.3 km) downstream at same datum.

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

AVERAGE DISCHARGE.--41 years, 109 ft³/s (3.087 m³/s), 78,970 acre-ft/yr (97.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,000 ft³/s (821 m³/s) June 15, 1976, gage height, 52.13 ft (15.889 m); minimum daily, 0.1 ft³/s (0.003 m³/s) Oct. 11, 12, 1937, Mar. 14, Apr. 1, 1958.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1911, 56.0 ft (17.07 m) in June 1919 before channel rectification, former site, from information by engineer for Houston; maximum discharge, that of June 15, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,500 ft³/s (127 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 6	1430	6,200 176	35.84 10.924	May 9	1345	7,200 204	36.90 11.247
Feb. 10	1700	5,980 169	35.59 10.848	June 14	1030	4,650 132	34.04 10.375
aMar. 11	1330	321 9.09	27.31 8.324	Sept. 8	1645	4,990 141	34.45 10.500
Apr. 20	1415	*8,710 247	38.38 11.698				

a Water-quality sample obtained for this flood event.

Minimum daily discharge, 62 ft³/s (1.76 m³/s) May 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	91	122	123	156	76	77	441	67	80	82	96
2	73	77	129	423	119	77	81	409	66	74	81	94
3	69	75	96	301	163	151	91	343	66	70	82	92
4	68	70	84	210	137	131	487	106	67	70	83	91
5	174	69	169	178	108	83	95	77	64	78	89	91
6	75	68	1700	298	94	78	78	69	67	84	149	223
7	67	66	694	197	89	78	76	66	68	82	96	520
8	132	67	286	123	85	76	75	66	65	229	89	1420
9	76	67	181	114	84	80	73	1400	65	128	94	538
10	67	68	151	91	1650	79	71	320	66	85	94	263
11	66	136	567	79	970	142	76	121	129	83	106	131
12	66	287	1770	71	359	86	77	83	81	82	90	124
13	65	216	559	95	192	79	74	72	72	79	164	757
14	64	160	945	87	131	80	73	67	772	156	134	868
15	144	113	428	79	109	76	73	67	751	90	155	186
16	544	83	257	75	94	75	251	67	101	86	122	127
17	141	76	186	74	90	74	115	64	75	94	104	105
18	87	132	154	71	91	77	82	64	70	84	97	99
19	103	985	771	73	88	76	75	64	67	242	105	267
20	99	461	1280	74	87	73	2310	64	68	115	94	340
21	71	213	381	76	86	75	634	229	105	83	100	154
22	68	140	269	105	85	77	191	89	97	82	101	112
23	68	105	238	98	83	75	98	78	70	125	100	101
24	522	90	191	85	79	134	74	70	70	84	249	100
25	256	108	333	72	80	128	72	72	67	85	179	96
26	131	188	295	67	85	86	68	69	67	89	113	98
27	86	97	222	75	78	137	67	70	69	363	164	94
28	75	458	182	100	77	310	68	66	70	236	121	91
29	703	223	157	90	---	90	69	62	71	154	102	92
30	230	143	147	278	---	81	88	64	78	101	97	92
31	124	---	132	459	---	78	---	66	---	84	95	---
TOTAL	4589	5132	13076	4341	5549	3018	5839	4965	3611	3577	3531	7462
MEAN	148	171	422	140	198	97.4	195	160	120	115	114	249
MAX	703	985	1770	459	1650	310	2310	1400	772	363	249	1420
MIN	64	66	84	67	77	73	67	62	64	70	81	91
AC-FT	9100	10180	25940	8610	11010	5990	11580	9850	7160	7090	7000	14800
(††)	4.06	3.57	6.00	1.99	1.85	1.42	4.14	2.47	2.76	3.07	2.62	6.02

CAL YR 1976 TOTAL 72811 MEAN 199 MAX 7180 MIN 50 AC-FT 144400 †† 45.60
WTR YR 1977 TOTAL 64690 MEAN 177 MAX 2310 MIN 62 AC-FT 128300 †† 39.97

†† Weighted-mean rainfall, in inches, based on eight rain gages.

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

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS-CHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIO-CHEMICAL OXYGEN DEMAND 5 DAY (MG/L)
OCT 20...	1300	107	706	6.7	21.0	40	20	9.5	109	4.8
NOV 01...	1100	98	722	6.7	20.5	40	20	9.0	102	5.5
DEC 06...	1410	5500	127	8.4	16.5	120	150	9.1	96	13
JAN 19...	1305	80	870	7.7	16.0	40	10	11.2	117	6.2
FEB 02...	1255	120	716	6.9	14.0	50	40	9.6	96	6.8
MAR 11...	1000	120	601	7.5	21.0	50	100	7.0	80	36
11...	1100	142	561	7.6	21.0	50	120	7.2	83	38
11...	1130	185	508	7.6	21.0	50	100	7.4	85	35
11...	1300	285	449	7.7	19.5	50	90	7.2	81	17
11...	1510	245	533	7.1	20.0	50	100	6.6	75	17
JUN 01...	0945	78	895	7.9	28.5	20	5	11.2	145	11
16...	1050	110	638	7.5	28.0	40	20	4.3	55	--
SEP 08...	1045	390	200	7.5	28.5	60	200	6.2	81	2.9
08...	1430	570	347	7.9	27.0	40	150	7.3	92	7.5
08...	1510	2300	256	8.2	27.0	40	120	7.2	91	6.3
08...	1540	4300	154	8.3	26.5	40	120	7.2	91	6.4
09...	1035	265	417	7.5	28.0	60	100	6.3	81	5.8

DATE	IMMEDIATE COLIFORM PER 100 ML	FECAL COLIFORM 7MM-MF (COL./100 ML)	FECAL STRPTOCOCCT KF AGAR (COL. PER 100 ML)	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM AND SULFATE RATIO
OCT 20...	120000	880	230	--	--	--	--	--	--
NOV 01...	190	1	42	170	0	50	12	140	4.6
DEC 06...	230000	13000	23000	--	--	--	--	--	--
JAN 19...	2900	14	2200	--	--	--	--	--	--
FEB 02...	58	1	40	--	--	--	--	--	--
MAR 11...	420000	40000	18000	--	--	--	--	--	--
11...	640000	50000	17000	--	--	--	--	--	--
11...	740000	48000	17000	--	--	--	--	--	--
11...	140000	6700	4600	--	--	--	--	--	--
11...	61000	11000	4400	--	--	--	--	--	--
JUN 01...	2200	18	24	160	0	47	11	120	4.1
16...	130	18	16	--	--	--	--	--	--
SEP 08...	1200	140	950	58	0	20	2.0	14	.8
08...	1000	150	150	--	--	--	--	--	--
08...	400000	31000	2900	63	0	21	2.6	17	.9
08...	480000	100000	12000	--	--	--	--	--	--
09...	30000	2900	80	110	0	33	6.1	37	1.6

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NON- FILT- RABLE RESIDUE (MG/L)
OCT 21...	--	--	--	--	--	--	--	--	28
NOV 01...	8.5	265	0	56	160	1.0	16	574	26
DEC 06...	--	--	--	--	--	--	--	--	746
JAN 19...	--	--	--	--	--	--	--	--	16
FEB 02...	--	--	--	--	--	--	--	--	44
MAR 11...	--	--	--	--	--	--	--	--	434
11...	--	--	--	--	--	--	--	--	398
11...	--	--	--	--	--	--	--	--	393
11...	--	--	--	--	--	--	--	--	344
11...	--	--	--	--	--	--	--	--	261
JUN 01...	7.8	330	0	43	82	.7	22	496	14
16...	--	--	--	--	--	--	--	--	30
SEP 08...	3.5	74	0	9.5	12	.2	5.2	103	608
08...	--	--	--	--	--	--	--	--	382
08...	2.2	90	0	13	10	.2	6.5	117	404
08...	--	--	--	--	--	--	--	--	532
09...	4.2	140	0	29	29	.4	13	221	178

DATE	VOL. NON- FILT- RABLE RESIDUE (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	PHENOLS (UG/L)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
OCT 20...	10	1.7	.23	3.8	1.1	1.8	6.2	--	.40
NOV 01...	2	2.1	.24	3.2	1.1	2.3	3.2	0	.40
DEC 06...	128	.29	.02	.18	2.3	.60	7.9	--	.10
JAN 19...	14	1.4	.17	6.4	3.6	1.4	5.8	--	.20
FEB 02...	12	1.3	.13	3.1	1.0	2.1	10	--	.30
MAR 11...	110	1.7	.24	2.4	5.9	2.9	7.2	--	.40
11...	102	1.6	.20	1.9	4.1	2.6	6.3	--	.50
11...	94	1.5	.17	1.6	2.6	2.4	6.9	--	.40
11...	77	1.5	.14	1.6	2.1	1.9	8.3	--	.40
11...	66	1.4	.17	2.6	.00	2.1	6.9	--	.70
JUN 01...	4	.85	.25	6.6	5.4	5.3	11	3	.50
16...	13	.39	.10	3.4	1.4	1.7	9.6	--	.30
SEP 08...	520	1.1	.09	.95	1.6	.91	11	4	.20
08...	80	.82	.06	1.0	1.3	.57	8.8	6	.10
08...	92	.70	.04	.41	1.2	.49	8.8	--	.10
08...	110	.64	.03	.23	.97	.50	14	--	.20
09...	20	.87	.09	1.1	.60	.90	11	--	.20

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)
JUN 01...	0945	4	100	1	0	4	20
SEP 09...	1035	38	100	0	0	3	40

DATE	DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	DIS- SOLVED SILVER (AG) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
JUN 01...	2	50	.0	1	0	20
SEP 09...	0	0	.0	0	0	60

DATE	TIME	TOTAL PCB (UG/L)	POLY- CHLO- RINATED NAPH- THA- LENES (UG/L)	TOTAL ALORIN (UG/L)	TOTAL CHLOR- DANE (UG/L)	TOTAL DDD (UG/L)	TOTAL DDE (UG/L)	TOTAL DDT (UG/L)	TOTAL DI- AZINON (UG/L)	TOTAL DI- ELDRIN (UG/L)	TOTAL ENDRIN (UG/L)	TOTAL ETHION (UG/L)
NOV 01...	1100	.0	.00	.00	.0	.00	.00	.00	.20	.02	.00	.00
DEC 06...	1410	.0	.00	.10	.6	.01	.02	.04	.17	.06	.00	.00
JUN 01...	0945	.0	.00	.00	.1	.00	.00	.00	.18	.02	.00	.00
SEP 08...	1045	.0	.00	.00	.1	.00	.00	.04	.40	.04	.00	.00
08...	1510	.0	.00	.00	.3	.00	.01	.03	1.1	.04	.00	.00

DATE	TOTAL HEPTA- CHLOR (UG/L)	TOTAL HEPTA- CHLOR FOXIDE (UG/L)	TOTAL LINDANE (UG/L)	TOTAL MALA- THION (UG/L)	TOTAL METHYL PARA- THION (UG/L)	TOTAL METHYL TRI- THION (UG/L)	TOTAL PARA- THION (UG/L)	TOTAL TOX- APHENE (UG/L)	TOTAL TRI- THION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)
NOV 01...	.00	.01	.00	.05	.00	.00	.00	0	.00	.00	.02	.00
DEC 06...	.00	.05	.04	.00	.00	.00	.00	0	.00	.00	.06	.00
JUN 01...	.00	.02	.00	.01	.00	.00	.00	0	.00	.18	1.9	.09
SEP 08...	.00	.01	.13	.06	.00	.00	.01	0	.00	.01	.03	.00
08...	.00	.02	.00	.00	.00	.00	.00	0	.00	.00	.02	.11

SAN JACINTO RIVER BASIN

08075100 BRAYS BAYOU AT SCOTT STREET, HOUSTON, TX
(Low-flow partial-record station)

LOCATION.--Lat 29°42'35", long 95°21'23", Harris County, Hydrologic Unit 12040104, at bridge on Scott Street in Houston.

DRAINAGE AREA.--106 mi² (275 km²).

PERIOD OF RECORD.--Occasional discharge measurements and water-quality data: May 1971 to current year.

DISCHARGE AND WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIO-CHEMICAL OXYGEN DEMAND 5 DAY (MG/L)
NOV 03...	0955	86	782	6.8	22.0	20	20	10.3	121	17
DEC 20...	0915	1700	265	7.0	14.5	240	120	8.5	86	8.7
JAN 19...	0905	79	1150	7.9	11.0	40	20	9.2	86	12
FEB 14...	0910	143	655	6.7	15.0	100	40	9.2	94	9.0
APR 20...	0550	1130	269	6.6	20.5	200	110	7.3	83	25
20...	0940	260	282	7.0	20.5	200	200	7.2	82	25
JUN 16...	0955	133	713	7.7	28.0	50	20	8.0	103	5.4
AUG 17...	1215	125	709	7.7	32.0	40	60	5.7	78	54

DATE	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	FECAL STREPTOCOCCI (COL. PER 100 ML)	HARDNESS (CA+MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO
NOV 03...	240000	2300	4300	160	0	47	11	95	3.2
DEC 20...	830000	130000	72000	--	--	--	--	--	--
JAN 19...	550	14	10	--	--	--	--	--	--
FEB 14...	300000	32000	3800	--	--	--	--	--	--
APR 20...	1100000	140000	220000	71	0	23	3.2	25	1.3
20...	1100000	180000	230000	--	--	--	--	--	--
JUN 16...	9300	750	12	140	0	43	8.9	88	3.2
AUG 17...	2800000	200000	56000	120	0	37	7.2	100	3.9

DATE	DISSOLVED PHOSPHATE (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SiO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NON-FILTERABLE RESIDUE (MG/L)
NOV 03...	5.5	259	0	47	90	1.1	21	445	34
DEC 20...	--	--	--	--	--	--	--	--	380
JAN 19...	--	--	--	--	--	--	--	--	40
FEB 14...	--	--	--	--	--	--	--	--	70
APR 20...	2.9	94	0	14	28	.2	6.4	149	324
20...	--	--	--	--	--	--	--	--	720
JUN 16...	5.3	190	0	36	90	.5	17	382	35
AUG 17...	5.7	270	0	32	67	.8	22	405	70

SAN JACINTO RIVER BASIN

08075100 BRAYS BAYOU AT SCOTT STREET, HOUSTON, TX.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

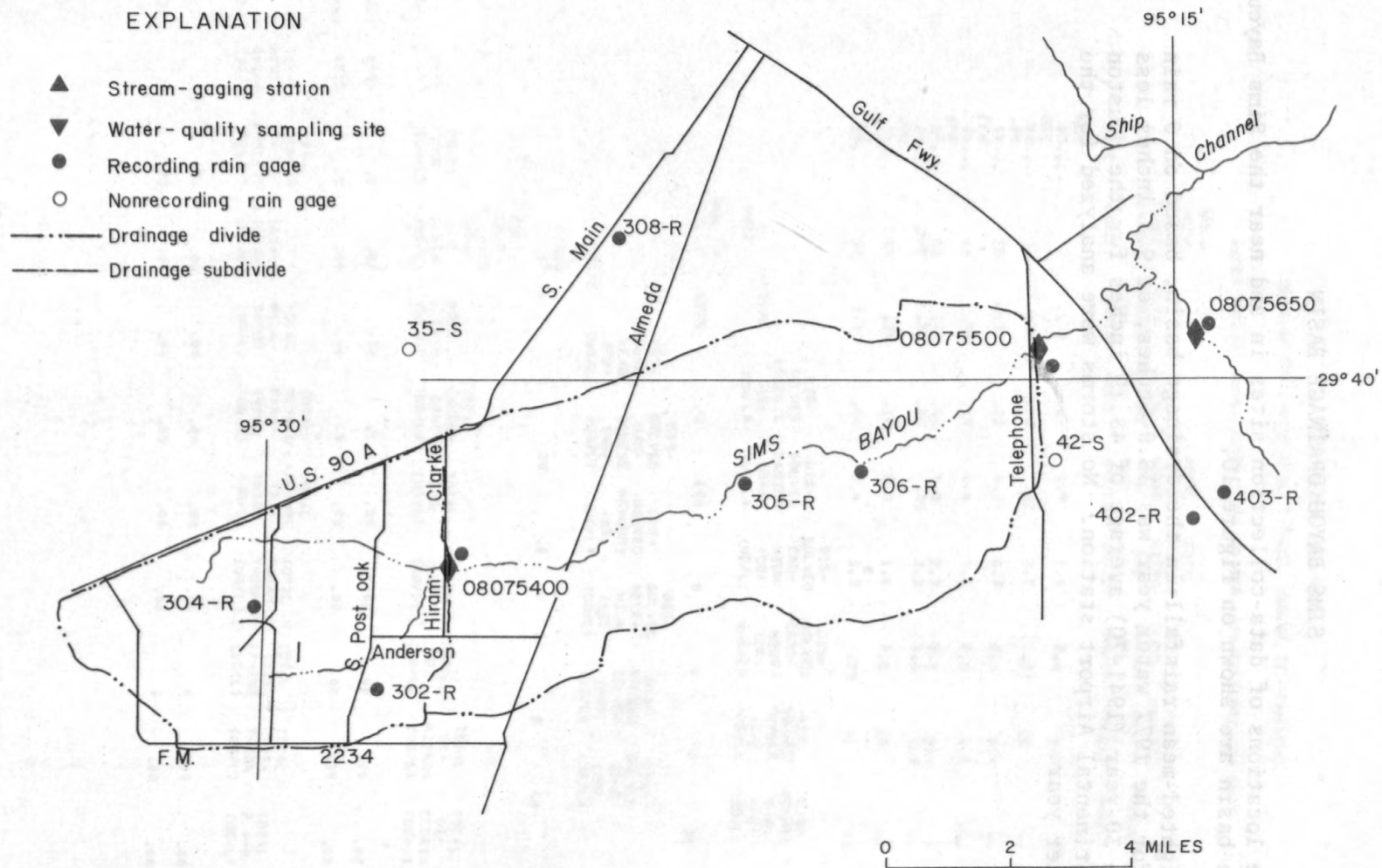
		VOL. NON-FILT-RABLE RESIDUE	TOTAL NITRATE (N)	TOTAL NITRITE (N)	TOTAL AMMONIA NITRO-GEN (N)	TOTAL ORGANIC NITRO-GEN (N)	TOTAL PHOS-PHORUS (P)	TOTAL ORGANIC CARBON (C)	PHENOLS	METHY-LENE BLUE ACTIVE SUB-STANCE			
	DATE	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(UG/L)	(MG/L)			
	NOV 03...	5	.71	.27	1.9	1.5	2.4	1.2	4	.10			
	DEC 20...	72	.36	.02	.28	2.1	.71	15	--	.10			
	JAN 19...	18	1.1	.21	4.7	6.3	2.9	6.4	--	.30			
	FEB 14...	10	.51	.19	1.8	1.1	2.0	4.5	--	.30			
	APR 26...	62	.46	.08	1.0	2.3	1.1	8.9	7	.20			
	MAY 20...	108	.54	.06	.95	2.2	1.0	9.8	--	.20			
	JUN 16...	13	.25	.15	2.3	1.6	2.1	12	--	.30			
	AUG 17...	37	1.2	.54	3.4	1.3	.03	11	16	.50			
				DIS-SOLVED ARSENIC (AS)	DIS-SOLVED BARIUM (BA)	DIS-SOLVED CAD-MIUM (CD)	DIS-SOLVED CHRO-MIUM (CR)	DIS-SOLVED COPPER (CU)	DIS-SOLVED IRON (FE)				
	DATE	TIME	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)				
	AUG 17...	1215	3	400	0	0	2	30					
			DIS-SOLVED LEAD (PB)	DIS-SOLVED MAN-GANESE (MN)	DIS-SOLVED MERCURY (HG)	DIS-SOLVED SELE-NIUM (SE)	DIS-SOLVED SILVER (AG)	DIS-SOLVED ZINC (ZN)					
	DATE	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)					
	AUG 17...		1	30	.0	1	0	40					
			POLY-CHLO-RINATED NAPH-THA-LENES	TOTAL ALDRIN	TOTAL CHLOR-DANE	TOTAL DDD	TOTAL DDE	TOTAL DDT	TOTAL DI-AZINON	TOTAL DI-ELDRIN	TOTAL ENDRIN	TOTAL ETHION	
	DATE	TIME	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	
	NOV 03...	0955	.0	.00	.00	.1	.00	.00	.00	.10	.02	.00	
	AUG 17...	1215	.0	.00	.00	.0	.00	.00	.00	.39	.02	.00	
			TOTAL HEPTA-CHLOR EPOXIDE	TOTAL LINDANE	TOTAL MALA-THION	TOTAL METHYL PARA-THION	TOTAL METHYL TRI-THION	TOTAL PARA-THION	TOTAL TOX-APHENE	TOTAL TRI-THION	TOTAL 2,4-D	TOTAL 2,4,5-T	TOTAL SILVEX
	DATE	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)
	NOV 03...	.00	.01	.02	.00	.00	.00	.00	0	.00	.00	.01	.00
	AUG 17...	.01	.00	.07	.00	.00	.00	.00	0	.00	.08	.07	.04

SIMS BAYOU DRAINAGE BASIN

The locations of data-collection sites in and near the Sims Bayou drainage basin are shown on figure 10.

Weighted-mean rainfall in the drainage basin, based on 6 rain gages, for the 1977 water year was 38.9 inches, or 9.3 inches less than the 30-year (1941-70) average of 48.19 inches for the Houston Intercontinental Airport station. No storms were analyzed for the 1977 water year.





Base from Texas General Highway map

FIGURE 10.- Locations of data-collection sites in and near the Sims Bayou drainage basin

SAN JACINTO RIVER BASIN

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 (20.4 km) upstream from gage Sims Bayou at Houston, and 19.7 mi (31.7 km) upstream from mouth.

DRAINAGE AREA.--20.2 mi² (52.3 km²).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is at mean sea level; unadjusted for land-surface subsidence.

REMARKS.--Water-discharge records poor. 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, 503 acre-ft (0.620 hm³) of ground water was used for cooling purposes and released to bayou about 300 ft (91 m) above gage. Recording rain gage located at station. Harris County Flood Control rain gage and gage-height telemeters at station.

AVERAGE DISCHARGE.--13 years, 27.0 ft³/s (0.765 m³/s), 19,560 acre-ft/yr (24.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 4,500 ft³/s (127 m³/s) June 15, 1976, elevation, 57.12 ft (17.410 m); minimum daily, 1.5 ft³/s (0.042 m³/s) July 26, 1965.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14.2 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Elevation (ft)	Elevation (m)	Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Elevation (ft)	Elevation (m)
Nov. 19	0900	554	15.7	47.38	14.441	Feb. 10	1730	905	25.6	49.18	14.990
aDec. 6	1700	338	9.57	45.90	13.990	Apr. 20	1515	*1,440	40.8	51.15	15.591
Dec. 12	unknown	550	15.6	unknown	--	June 15	unknown	655	18.5	47.97	14.621
Jan. 30	2345	510	14.4	47.11	14.359	aSept. 8	2400	108	3.06	44.29	13.500

a Water-quality samples were obtained for this flood event.

Minimum daily discharge, 5.7 ft³/s (0.16 m³/s) Oct. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.8	10	15	12	61	11	9.1	18	7.5	7.7	12	12
2	7.2	8.8	16	47	33	9.7	9.3	41	8.0	7.6	12	10
3	9.1	8.8	12	41	37	13	9.8	44	8.0	7.4	12	9.5
4	7.7	9.1	11	22	29	16	26	13	8.2	7.2	12	9.0
5	13	8.8	16	17	22	13	13	11	8.5	7.4	12	8.5
6	7.6	9.1	157	37	17	12	8.6	10	9.0	7.0	15	20
7	6.6	8.8	101	27	15	12	8.3	9.7	8.5	7.5	16	45
8	9.6	8.8	31	19	15	13	11	9.1	8.2	8.5	12	50
9	7.3	8.6	18	20	15	9.6	12	11	8.0	9.0	12	45
10	6.8	8.8	14	17	320	9.3	10	12	12	8.0	19	25
11	6.4	8.8	99	16	280	13	9.8	11	30	8.5	13	12
12	5.7	9.1	404	14	95	9.6	9.6	8.8	15	10	12	10
13	6.2	17	175	18	42	8.9	12	9.1	11	9.5	12	50
14	6.0	12	251	18	23	8.4	10	8.9	80	11	12	150
15	7.9	10	150	14	17	8.2	12	7.9	100	11	11	50
16	31	9.8	66	12	15	8.9	20	7.4	28	11	12	25
17	9.1	12	35	13	15	8.5	16	8.2	15	10	12	12
18	6.9	22	23	13	14	8.6	13	8.0	11	10	12	9.0
19	7.6	288	112	13	16	8.8	11	7.9	8.8	18	12	10
20	8.3	114	298	12	14	8.4	551	8.6	8.8	17	17	11
21	6.5	27	90	10	14	9.1	391	20	13	22	15	8.8
22	6.5	14	40	12	11	7.9	75	13	22	15	15	8.5
23	6.5	11	29	13	12	7.9	25	10	10	12	10	8.0
24	44	10	21	12	11	11	13	9.0	9.4	10	13	8.0
25	24	11	29	10	11	12	11	8.5	8.7	9.0	14	8.0
26	11	16	31	10	14	9.4	10	8.2	8.4	9.0	20	8.0
27	9.1	10	21	9.7	12	13	10	8.0	8.4	18	17	8.0
28	8.8	47	18	10	11	36	9.0	7.8	8.3	40	18	9.0
29	88	34	15	9.9	---	14	8.4	8.0	8.1	21	25	10
30	32	17	14	67	---	10	11	8.2	7.7	15	25	9.0
31	14	---	12	258	---	9.3	---	8.0	---	13	15	---
TOTAL	428.2	789.3	2324	823.6	1191	349.5	1344.9	373.3	497.5	377.3	446	658.3
MEAN	13.8	26.3	75.0	26.6	42.5	11.3	44.8	12.0	16.6	12.2	14.4	21.9
MAX	88	288	404	258	320	36	551	44	100	40	25	150
MIN	5.7	8.6	11	9.7	11	7.9	8.3	7.4	7.5	7.0	10	8.0
AC-FT	849	1570	4610	1630	2360	693	2670	740	987	748	885	1310
(††)	3.27	3.74	5.92	2.85	1.91	1.32	3.88	1.51	3.07	2.50	2.22	4.52

CAL YR 1976 TOTAL 12808.5 MEAN 35.0 MAX 1900 MIN 4.9 AC-FT 25410 †† 47.26
WTR YR 1977 TOTAL 9602.9 MEAN 26.3 MAX 551 MIN 5.7 AC-FT 19050 †† 37.71

†† Weighted-mean rainfall, in inches, based on two rain gages.

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 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	BIO- CHEM- ICAL OXYGEN DEMAND 5 DAY (MG/L)
OCT 19...	1010	7.5	809	6.7	21.5	20	20	7.9	92	2.3
NOV 01...	1200	10	1420	6.8	20.5	30	20	8.9	101	2.5
DEC 06...	1440	250	304	7.7	16.5	120	150	7.6	80	9.3
JAN 11...	1045	15	891	7.0	10.0	40	20	10.2	94	4.0
FEB 07...	1310	14	886	6.9	15.5	30	40	9.1	94	3.4
JUN 01...	1335	8.2	1030	7.8	29.5	10	10	9.2	121	5.5
JUN 16...	1150	21	570	7.7	28.0	40	80	6.0	77	5.6
AUG 08...	1115	10	747	7.8	30.0	10	30	6.8	91	1.2
AUG 30...	0815	18	702	7.5	27.0	30	50	5.8	73	7.2
SEP 08...	1225	23	699	7.6	29.0	30	50	5.3	70	4.5

DATE	IMME- DIATE COLI- FORM (COL. PER 100 ML)	FECAL COLI- FORM (COL. 7UM-MF (COL./ 100 ML)	FECAL STREP- TOCOCCI KF AGAR (COL. PER 100 ML)	HARD- NESS (CA+MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO
OCT 19...	190	110	110	--	--	--	--	--	--
NOV 01...	190	40	46	160	0	47	10	230	8.0
DEC 06...	280000	50000	20000	86	0	27	4.5	28	1.3
JAN 11...	300	1	170	--	--	--	--	--	--
FEB 07...	24	6	1	--	--	--	--	--	--
JUN 01...	40000	5600	1300	150	0	44	9.9	170	6.0
JUN 16...	150000	8000	2000	--	--	--	--	--	--
AUG 08...	2800	270	190	130	0	38	7.5	110	4.3
AUG 30...	35000	2500	2700	--	--	--	--	--	--
SEP 08...	31000	11000	2700	110	0	33	5.6	100	4.2

DATE	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NON- FILT- RABLE RESIDUE (MG/L)
OCT 19...	--	--	--	--	--	--	--	--	34
NOV 01...	23	245	0	48	290	.7	21	790	40
DEC 06...	4.6	110	0	13	29	.3	8.9	170	388
JAN 11...	--	--	--	--	--	--	--	--	29
FEB 07...	--	--	--	--	--	--	--	--	71
JUN 01...	7.8	330	0	45	130	.6	24	594	23
JUN 16...	--	--	--	--	--	--	--	--	143
AUG 08...	5.3	270	0	32	70	.6	26	423	29
AUG 30...	--	--	--	--	--	--	--	--	80
SEP 08...	5.7	180	0	30	96	.4	17	376	79

SAN JACINTO RIVER BASIN

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

		VOL. NON-FILT-RABLE RESIDUE	TOTAL NITRATE (N)	TOTAL NITRITE (N)	TOTAL AMMONIA NITRO-GEN (N)	TOTAL ORGANIC NITRO-GEN (N)	TOTAL PHOS-PHORUS (P)	TOTAL ORGANIC CARBON (C)	PHENOLS	METHY-LENE BLUE ACTIVE SUB-STANCE		
		(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(UG/L)	(MG/L)		
OCT												
19...		12	11	.07	.38	.72	6.4	5.1	--	.30		
NOV												
01...		6	8.0	.08	.44	.96	4.7	7.3	2	.30		
DEC												
06...		70	1.3	.04	.19	1.5	1.2	7.2	--	.10		
JAN												
11...		5	5.5	.09	.63	1.5	2.9	7.5	--	.30		
FEB												
07...		16	4.0	.00	.11	1.2	3.2	8.4	--	.10		
JUN												
01...		5	2.5	.20	.41	1.3	6.2	7.0	1	.30		
16...		28	.44	.05	.43	.87	1.5	14	--	.20		
AUG												
08...		6	3.3	.15	.17	1.4	4.7	3.0	2	.20		
30...		23	2.1	.06	.30	.00	4.8	7.1	--	.03		
SEP												
08...		23	1.2	.05	.41	.99	5.8	9.2	6	.30		
				DIS-SOLVED ARSENIC (AS)	DIS-SOLVED BARIUM (BA)	DIS-SOLVED CAD-MIUM (CD)	DIS-SOLVED CHRO-MIUM (CR)	DIS-SOLVED COPPER (CU)	DIS-SOLVED IRON (FE)			
		DATE	TIME	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)			
		JUN										
		01...	1335	1	200	0	10	4	10			
		AUG										
		08...	1115	4	200	0	0	2	20			
				DIS-SOLVED LEAD (PB)	DIS-SOLVED MAN-GANESE (MN)	DIS-SOLVED MERCURY (HG)	DIS-SOLVED SELE-NIUM (SE)	DIS-SOLVED SILVER (AG)	DIS-SOLVED ZINC (ZN)			
		DATE		(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)			
		JUN										
		01...		1	30	.0	0	0	10			
		AUG										
		08...		0	0	.0	2	0	10			
		POLY-CHLO-RINATED NAPH-THA-LENES	TOTAL ALDRIN	TOTAL CHLOR-DANE	TOTAL DDD	TOTAL DDE	TOTAL DDT	TOTAL DI-AZINON	TOTAL DI-ELDRIN	TOTAL ENDRIN	TOTAL ETHION	
		(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	
DATE	TIME	TOTAL PCB										
		(UG/L)										
NOV												
01...	1200	.0	.00	.00	.0	.00	.00	.00	.06	.02	.00	
JUN												
01...	1335	.0	.00	.00	.1	.00	.00	.00	.43	.02	.00	
AUG												
30...	0815	.0	.00	.00	.0	.00	.00	.00	.16	.01	.00	
SEP												
08...	1225	.0	.00	.00	.0	.00	.00	.00	.60	.01	.00	
		TOTAL HEPTA-CHLOR EPOXIDE	TOTAL LINDANE	TOTAL MALA-THION	TOTAL METHYL PARA-THION	TOTAL METHYL TRI-THION	TOTAL PARA-THION	TOTAL TOX-APHENE	TOTAL TRI-THION	TOTAL 2,4-D	TOTAL 2,4,5-T	TOTAL SILVEX
		(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)
DATE												
NOV												
01...		.00	.01	.02	.00	.00	.00	0	.00	.00	.01	.00
JUN												
01...		.00	.01	.00	.00	.00	.00	0	.00	.00	.00	.00
AUG												
30...		.00	.01	.00	.00	.00	.00	0	.00	2.1	.11	.00
SEP												
08...		.00	.01	.00	.00	.00	.00	0	.00	.32	.04	.00

SAN JACINTO RIVER BASIN

08075500 SIMS BAYOU AT HOUSTON, TX

LOCATION.--Lat 29°40'27", long 95°17'21", Harris County, Hydrologic Unit 12040104, on left bank at downstream side of bridge on State Highway 35 in southeast Houston and 7.0 mi (11.3 km) upstream from mouth.

DRAINAGE AREA (revised).--63.0 mi² (163.2 km²). Prior to Oct. 1, 1976, 64.0 mi² (165.8 km²).

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. Datum of gage is 3.09 ft (0.942 m) below mean sea level; unadjusted for land-surface subsidence.

REMARKS.--Water-discharge records fair. Low flow is largely sustained by sewage effluent from Houston suburbs and industrial wastes.

AVERAGE DISCHARGE.--25 years, 74.0 ft³/s (2.096 m³/s), 53,610 acre-ft/yr (66.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,200 ft³/s (317 m³/s) June 9, 1975, and June 16, 1976; maximum gage height, 33.17 ft (10.110 m) June 9, 1975; minimum daily, 0.9 ft³/s (0.025 m³/s) Aug. 7, 1955.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,600 ft³/s (45.3 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Gage height (ft)	Gage height (m)
Nov. 19	1030	2,740	77.6	21.57	6.575	aMar. 11	1400	101	2.86	10.05	3.063
aDec. 6	2045	1,020	28.9	16.20	4.938	Apr. 20	1730	*4,250	120	24.67	7.519
Dec. 12	1200	2,000	56.6	19.71	6.008	aJune 15	1530	348	9.86	12.99	3.959
aDec. 20	0500	1,440	40.8	17.85	5.441	aSept. 8	0100	433	12.3	13.62	4.151
Feb. 10	2130	2,360	66.8	20.67	6.300						

a Water-quality samples were obtained for this flood event.

Minimum discharge, 23 ft³/s (0.65 m³/s) Nov. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	35	56	44	200	40	35	88	26	38	46	50
2	25	30	68	136	100	38	34	95	29	38	46	48
3	24	27	50	143	125	69	35	227	28	38	42	45
4	25	26	42	76	85	70	43	64	30	38	44	45
5	83	25	56	63	56	42	48	49	31	37	57	45
6	29	26	439	102	43	40	34	43	34	41	52	104
7	26	26	436	98	36	38	33	40	33	70	58	142
8	37	25	114	66	35	37	34	40	30	52	50	236
9	28	26	66	117	32	41	35	236	30	43	46	126
10	28	23	54	78	768	38	34	126	30	42	48	100
11	25	32	296	56	1090	59	32	46	93	40	163	68
12	25	47	1520	49	267	48	32	37	44	40	59	57
13	24	74	599	57	121	40	33	34	35	41	52	104
14	24	45	818	65	76	38	32	33	215	42	50	304
15	29	33	497	50	61	36	33	32	284	48	51	126
16	103	29	204	51	56	38	53	30	122	52	50	71
17	37	27	109	48	52	39	46	30	56	55	50	61
18	25	64	73	50	46	38	40	32	48	49	49	51
19	31	1780	261	44	49	36	33	31	43	47	128	62
20	38	688	1050	35	46	33	1860	30	42	77	61	60
21	27	157	261	38	43	33	1140	72	43	66	62	49
22	24	70	115	45	42	32	223	50	51	49	67	47
23	24	48	94	46	41	36	90	34	42	46	61	47
24	133	41	72	39	39	48	61	33	41	45	50	46
25	107	42	98	41	39	53	55	32	39	46	50	47
26	33	69	110	38	42	38	47	30	38	47	51	44
27	26	46	70	34	42	64	43	29	38	114	63	45
28	25	234	59	35	41	233	38	28	39	120	97	44
29	501	171	52	38	---	55	46	28	39	69	70	52
30	191	71	45	200	---	42	43	28	39	52	68	46
31	51	---	48	800	---	39	---	27	---	48	55	---
TOTAL	1835	4037	7832	2782	3673	1531	4345	1734	1692	1630	1896	2372
MEAN	59.2	135	253	89.7	131	49.4	145	55.9	56.4	52.6	61.2	79.1
MAX	501	1780	1520	800	1090	233	1860	236	284	120	163	304
MIN	24	23	42	34	32	32	27	26	37	42	44	44
AC-FT	3640	8010	15530	5520	7290	3040	8620	3440	3360	3230	3760	4700
(††)	3.57	4.49	5.81	2.62	1.91	1.71	4.21	2.26	2.98	2.39	2.91	4.03

CAL YR 1976 TOTAL 43994 MEAN 120 MAX 8290 MIN 19 AC-FT 87260 †† 51.10
WTR YR 1977 TOTAL 35359 MEAN 96.9 MAX 1860 MIN 23 AC-FT 70130 †† 38.89

†† Weighted-mean rainfall, in inches, based on six rain gages.

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 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIO-CHEMICAL OXYGEN DEMAND 5 DAY (MG/L)
NOV 02...	1300	29	1030	6.6	18.0	40	20	1.6	17	11
DEC 06...	1600	660	397	7.7	16.5	120	150	7.9	83	25
20...	1315	960	300	7.3	14.5	280	200	7.3	74	4.0
JAN 11...	1350	58	879	6.8	9.5	50	40	7.6	68	14
FEB 14...	1345	82	714	6.8	16.5	100	90	7.3	77	7.5
MAR 01...	0930	56	1230	7.0	16.0	50	40	6.9	72	7.2
11...	1005	48	1120	6.8	20.0	40	50	3.9	44	13
11...	1130	60	852	6.8	20.0	40	80	4.6	52	14
11...	1340	90	882	6.8	19.0	40	60	4.4	49	9.9
JUN 16...	1010	105	718	6.6	26.0	50	150	4.7	59	11
AUG 10...	1000	48	897	6.8	29.0	5	40	2.4	32	6.0
31...	1000	54	1040	7.6	27.5	20	20	2.6	33	5.3
SEP 08...	1120	210	823	7.3	27.5	30	300	2.6	33	9.9

DATE	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. / 100 ML)	FECAL STREPTOCOCCI (COL. PER 100 ML)	HARDNESS (CA+MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO
NOV 02...	140000	4000	850	150	0	46	9.4	84	2.9
DEC 06...	420000	44000	110000	95	0	28	6.0	40	1.8
20...	350000	40000	64000	--	--	--	--	--	--
JAN 11...	260000	38000	15000	--	--	--	--	--	--
FEB 14...	200000	100000	3800	--	--	--	--	--	--
MAR 01...	1100000	59000	7700	--	--	--	--	--	--
11...	810000	46000	12000	--	--	--	--	--	--
11...	310000	44000	14000	--	--	--	--	--	--
11...	300000	49000	11000	--	--	--	--	--	--
JUN 16...	3200000	180000	5100	130	0	39	8.1	95	3.6
AUG 10...	140000	7700	3000	190	11	55	13	99	3.1
31...	200000	26000	2000	--	--	--	--	--	--
SEP 08...	220000	40000	31000	--	--	--	--	--	--

SAN JACINTO RIVER BASIN

08075500 SIMS BAYOU AT HOUSTON, TX.--Continued

WATER QUALITY DATA: WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	TOTAL NON- FILT- RABLE RESIDUE (MG/L)
NOV 02...	6.0	252	0	40	65	.6	22	397	38
DEC 06...	4.5	116	0	18	51	.3	9.2	214	--
20...	--	--	--	--	--	--	--	--	564
JAN 11...	--	--	--	--	--	--	--	--	59
FEB 14...	--	--	--	--	--	--	--	--	121
MAR 01...	--	--	--	--	--	--	--	--	77
11...	--	--	--	--	--	--	--	--	94
11...	--	--	--	--	--	--	--	--	170
11...	--	--	--	--	--	--	--	--	133
JUN 16...	3.8	160	0	73	92	.4	11	401	320
AUG 16...	3.8	220	0	31	140	.5	16	467	37
31...	--	--	--	--	--	--	--	--	32
SEP 08...	--	--	--	--	--	--	--	--	648

DATE	VOL. NON- FILT- RABLE RESIDUE (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	PHENOLS (UG/L)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
NOV 02...	0	.94	.16	4.7	4.5	3.2	7.8	2	1.5
DEC 06...	--	.67	.08	.73	3.1	1.0	8.1	--	.20
20...	100	.25	.02	.23	1.7	.59	20	--	.10
JAN 11...	20	1.7	.13	3.0	1.9	2.0	7.0	--	1.2
FEB 14...	19	.90	.10	1.0	1.4	1.2	14	--	.40
MAR 01...	27	1.7	.26	1.5	1.2	1.5	12	--	.70
11...	37	2.3	.34	2.3	1.4	2.6	8.5	--	.90
11...	60	1.7	.23	1.7	1.7	2.4	9.3	--	.70
11...	36	2.4	.24	1.7	1.3	2.0	11	--	.60
JUN 16...	80	.10	.04	.34	1.7	1.0	13	--	.40
AUG 16...	26	.33	.24	2.4	.90	3.4	3.9	2	.20
31...	15	.74	.25	1.5	.30	2.2	5.5	--	.40
SEP 08...	128	1.1	.10	.56	1.5	.93	9.2	7	.20

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

		DIS-SOLVED ARSENIC (AS) (UG/L)		DIS-SOLVED BARIUM (BA) (UG/L)		DIS-SOLVED CADMIUM (CD) (UG/L)		DIS-SOLVED CHROMIUM (CR) (UG/L)		DIS-SOLVED COPPER (CU) (UG/L)		DIS-SOLVED IRON (FE) (UG/L)			
DATE		TIME		6		200		1		0		2		10	
AUG 10...		1000													
DATE		DIS-SOLVED LEAD (PB) (UG/L)		DIS-SOLVED MANGANESE (MN) (UG/L)		DIS-SOLVED MERCURY (HG) (UG/L)		DIS-SOLVED SELENIUM (SE) (UG/L)		DIS-SOLVED SILVER (AG) (UG/L)		DIS-SOLVED ZINC (ZN) (UG/L)			
AUG 10...		0		10		.0		4		0		10			
DATE	TIME	TOTAL PCB (UG/L)	POLY-CHLORINATED NAPHTHALENES (UG/L)	TOTAL ALDRIN (UG/L)	TOTAL CHLORDANE (UG/L)	TOTAL DDD (UG/L)	TOTAL DDE (UG/L)	TOTAL DDT (UG/L)	TOTAL DI-AZINON (UG/L)	TOTAL DI-ELDRIN (UG/L)	TOTAL ENDRIN (UG/L)	TOTAL ETHION (UG/L)			
NOV 02...	1300	.0	.00	.00	.1	.00	.00	.00	.81	.01	.00	.00			
DEC 06...	1600	.0	.00	.19	.5	.02	.04	.05	.20	.12	.00	.00			
AUG 10...	1000	.0	.00	.00	.1	.00	.00	.00	.43	.01	.00	.00			
SEP 08...	1120	.0	.00	.00	.4	.00	.00	.00	1.3	.01	.00	.00			
DATE	TIME	TOTAL HEPTA-CHLOR (UG/L)	TOTAL HEPTA-CHLOR EPOXIDE (UG/L)	TOTAL LINDANE (UG/L)	TOTAL MALATHION (UG/L)	TOTAL METHYL PARATHION (UG/L)	TOTAL METHYL TRITHION (UG/L)	TOTAL PARATHION (UG/L)	TOTAL TOXAPHENE (UG/L)	TOTAL TRITHION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)		
NOV 02...		.00	.00	.00	.00	.00	.00	.00	0	.00	.04	.04	.00		
DEC 06...		.00	.12	.00	.00	.00	.00	.00	0	.00	.00	.02	.00		
AUG 10...		.00	.00	.00	.01	.00	.00	.00	0	.00	2.4	.01	.00		
SEP 08...		.00	.00	.00	.54	.00	.00	.00	0	.00	.00	.00	.01		

BERRY BAYOU DRAINAGE BASIN

The locations of data-collection sites in and near the Berry Bayou drainage basin are shown on figure 11.

Weighted-mean rainfall over the drainage basin for the 1977 water year was not determined.

No storms were analyzed for the 1977 water year.

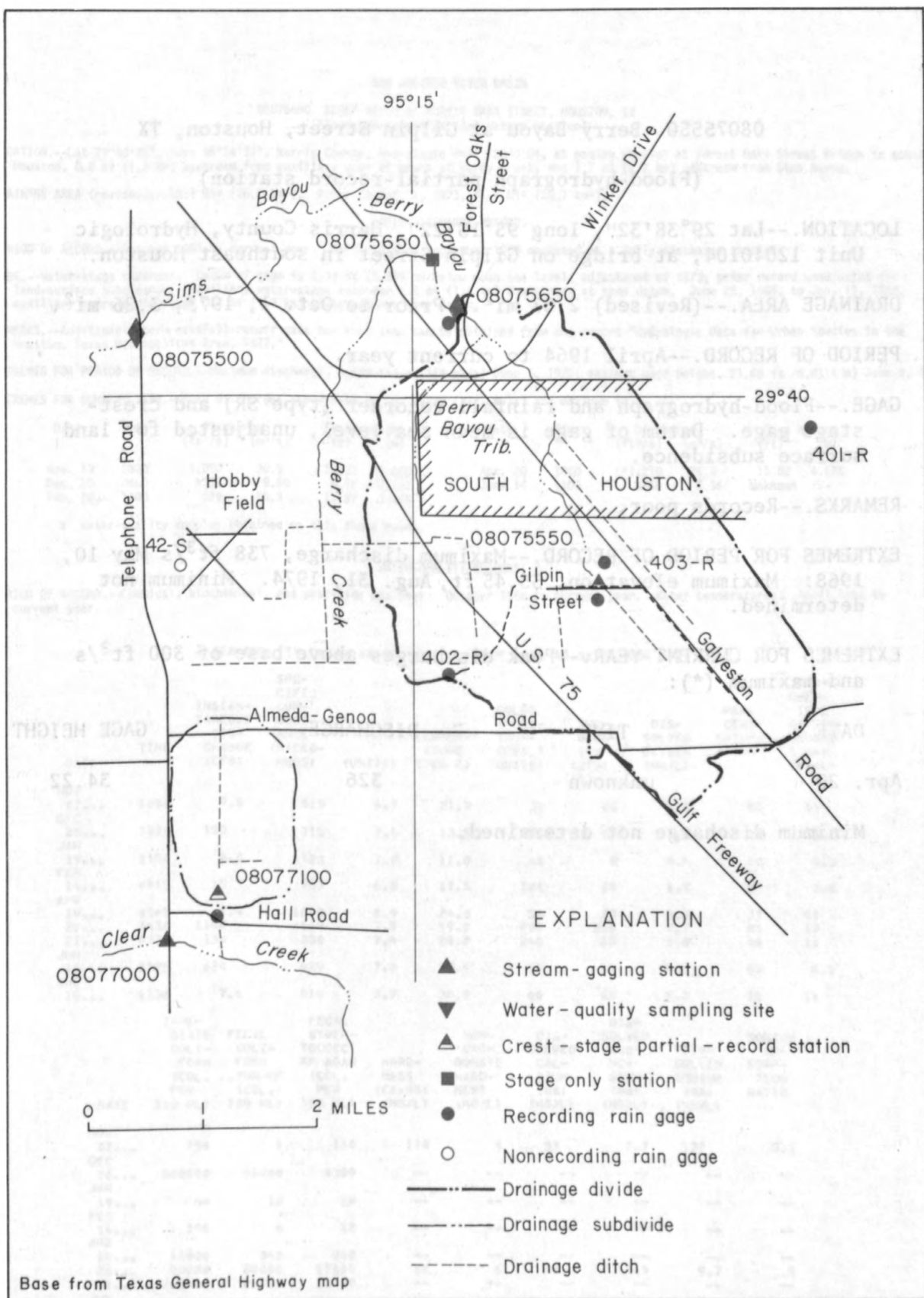


FIGURE 11.—Locations of data-collection sites in and near the Berry Bayou drainage basin

08075550 Berry Bayou at Gilpin Street, Houston, TX

(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°38'32", long 95°13'22", Harris County, Hydrologic Unit 12040104, at bridge on Gilpin Street in southeast Houston.

DRAINAGE AREA.--(Revised) 2.87 mi². Prior to Oct. 1, 1973, 3.26 mi².

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

GAGE.--Flood-hydrograph and rainfall recorder (type SR) and crest-stage gage. Datum of gage is mean sea level, unadjusted for land surface subsidence.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 738 ft³/s May 10, 1968: Maximum elevation, 35.45 ft, Aug. 31, 1974. Minimum not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 300 ft³/s and maximum (*):

DATE	TIME	DISCHARGE	GAGE HEIGHT
Apr. 20	unknown	326	34.22

Minimum discharge not determined.

SAN JACINTO RIVER BASIN

08075650 BERRY BAYOU AT FOREST OAKS STREET, HOUSTON, TX
(Flood-hydrograph partial-record station)

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 (1.3 km) upstream from auxiliary gage at mouth of Berry Creek, and 1.7 mi (2.7 km) upstream from Sims Bayou.

DRAINAGE AREA (revised).--10.1 mi² (26.2 km²). Prior to Oct. 1, 1973, 11.1 mi² (28.7 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1967 to current year. April 1964 to September 1966 operated as a daily discharge station.

GAGE.--Water-stage recorder. Datum of gage is 2.72 ft (0.829 m) below mean sea level, adjustment of 1973; prior record unadjusted for land-surface subsidence. Auxiliary water-stage recorder 0.8 mi (1.3 km) downstream at same datum. June 25, 1964, to Jan. 11, 1965, auxiliary nonrecording gage 0.8 mi (1.3 km) downstream at same datum.

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, 1977."

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,080 ft³/s (144 m³/s) June 9, 1975; maximum gage height, 21.69 ft (6.611 m) June 9, 1975.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 800 ft³/s (22.7 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Nov. 19	0800	1,090 30.9	13.32 4.060	Apr. 20	1400	*1,210 34.3	15.02 4.578
Dec. 20	0400	a339 9.60	8.14 2.481	June 14	1100	a260 7.36	unknown --
Feb. 10	1700	929 26.3	11.37 3.466				

a Water-quality samples obtained on this flood event.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1968 to current year. Water temperatures: April 1964 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)
NOV 02...	1200	9.8	815	6.7	21.5	30	20	7.3	85	11
DEC 20...	1100	150	315	7.0	13.5	240	40	7.2	71	5.0
JAN 19...	1150	8.0	1120	7.2	11.0	40	8	9.6	90	9.3
FEB 14...	0915	15	963	6.8	17.5	100	20	9.2	99	7.6
APR 19...	0945	7.4	1000	6.9	24.0	50	20	3.0	37	41
20...	1430	1160	169	7.9	19.0	200	200	7.7	86	13
21...	0935	130	330	7.4	20.0	240	60	5.8	66	11
JUN 15...	1025	120	429	7.0	25.0	50	60	4.3	53	6.0
AUG 15...	1130	7.6	810	7.7	30.0	40	20	5.3	71	11

DATE	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	FECAL STREPTOCOCCI (COL. PER 100 ML)	HARDNESS (CA+MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO
NOV 02...	750	1	110	110	0	33	7.7	130	5.3
DEC 20...	580000	51000	4300	--	--	--	--	--	--
JAN 19...	64	10	26	--	--	--	--	--	--
FEB 14...	190	6	12	--	--	--	--	--	--
APR 19...	11000	340	240	--	--	--	--	--	--
20...	90000	20000	17000	62	6	20	2.9	9.7	.5
21...	260000	20000	13000	--	--	--	--	--	--
JUN 15...	380000	150000	150000	100	0	33	4.6	43	1.9
AUG 15...	300000	34000	3500	93	0	29	5.1	120	5.4

SAN JACINTO RIVER BASIN

08075650 BERRY BAYOU AT FOREST OAKS STREET, HOUSTON, TX---Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS-SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NON- FILT- RABLE RESIDUE (MG/L)
NOV 02...	5.5	288	0	38	83	.5	15	455	38
DEC 20...	--	--	--	--	--	--	--	--	69
JAN 19...	--	--	--	--	--	--	--	--	11
FEB 14...	--	--	--	--	--	--	--	--	28
APR 19...	--	--	--	--	--	--	--	--	27
20...	2.4	68	0	9.3	15	.2	4.5	98	784
21...	--	--	--	--	--	--	--	--	113
JUN 15...	3.2	130	0	22	48	.4	7.3	226	111
AUG 15...	5.4	270	0	30	88	1.2	14	426	15

DATE	VOL. NON- FILT- RABLE RESIDUE (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	PHENOLS (UG/L)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
NOV 02...	4	2.6	.39	2.6	1.2	3.5	7.8	2	.50
DEC 20...	15	.22	.04	.18	1.4	.52	10	--	.10
JAN 19...	10	1.3	.23	1.7	2.4	2.6	8.8	--	.60
FEB 14...	3	2.2	.34	1.7	1.5	2.0	4.6	--	.50
APR 19...	1	.19	.38	5.6	2.0	4.1	10	--	.40
20...	144	.33	.02	.24	2.1	.55	8.7	--	.10
21...	21	.49	.10	.49	2.6	.77	7.9	--	.20
JUN 15...	18	.26	.05	1.0	1.3	.84	17	--	.40
AUG 15...	14	2.4	.37	2.6	1.2	5.4	7.1	2	.20

DATE	TIME	DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)
AUG 15...	1130	2	0	0	0	4	20

DATE	DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	DIS- SOLVED SILVER (AG) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
AUG 15...	0	0	.0	0	0	20

DATE	TIME	TOTAL PCB (UG/L)	POLY- CHLO- RINATED NAPH- THA- LENES (UG/L)	TOTAL ALDRIN (UG/L)	TOTAL CHLOR- DANE (UG/L)	TOTAL DDD (UG/L)	TOTAL DDE (UG/L)	TOTAL DDT (UG/L)	TOTAL DI- AZINON (UG/L)	TOTAL DI- ELDRIN (UG/L)	TOTAL ENDRIN (UG/L)	TOTAL ETHION (UG/L)
NOV 02...	1200	.0	.00	.00	.2	.00	.00	.00	.13	.01	.00	.00
DATE	TIME	TOTAL HEPTA- CHLOR EPOXIDE (UG/L)	TOTAL LINDANE (UG/L)	TOTAL MALA- THION (UG/L)	TOTAL METHYL PARA- THION (UG/L)	TOTAL METHYL TRI- THION (UG/L)	TOTAL PARA- THION (UG/L)	TOTAL TOX- APHENE (UG/L)	TOTAL TRI- THION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)
NOV 02...		.00	.00	.02	.00	.00	.00	0	.00	.00	.02	.00

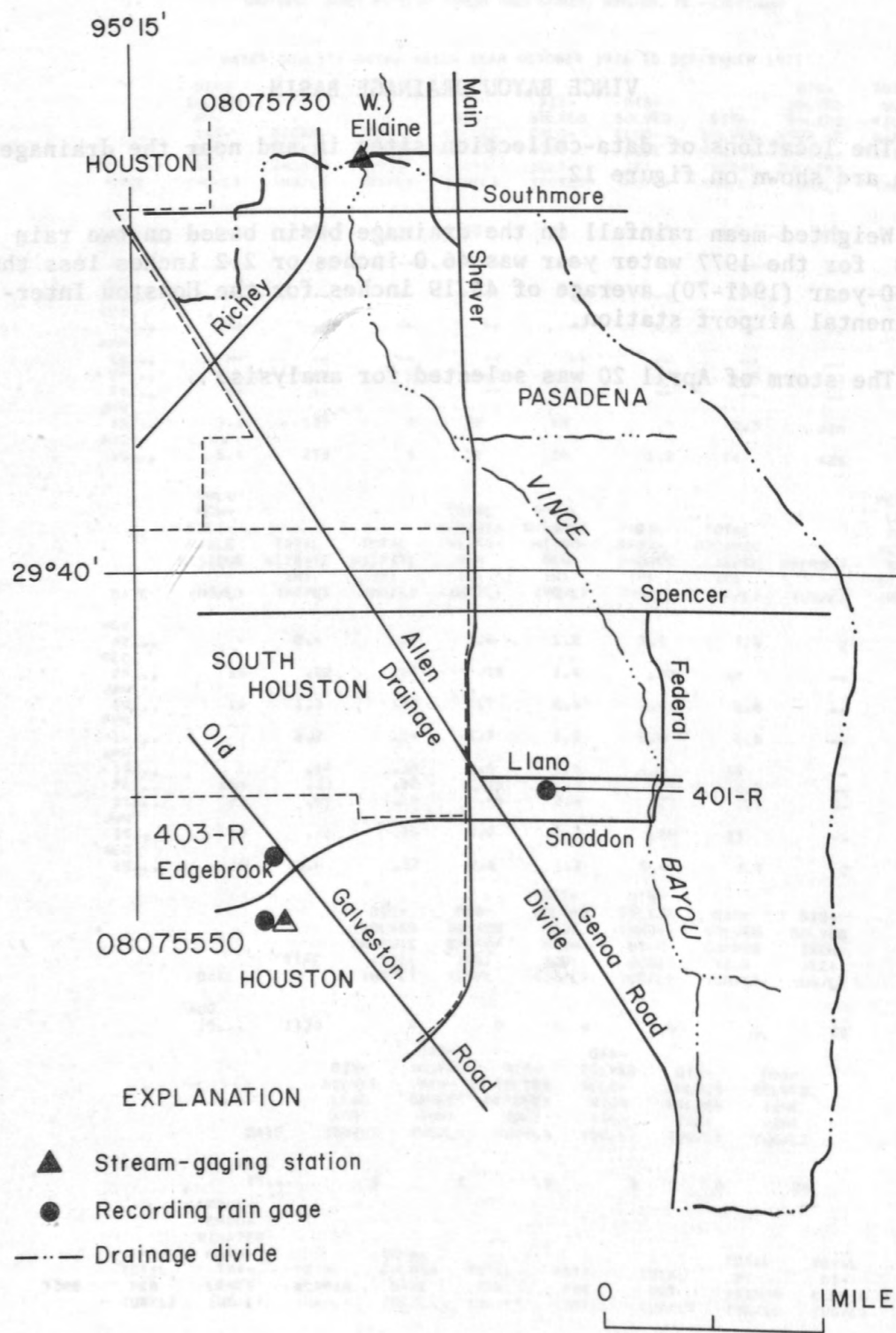
VINCE BAYOU DRAINAGE BASIN

The locations of data-collection sites in and near the drainage basin are shown on figure 12.

Weighted-mean rainfall in the drainage basin based on two rain gages for the 1977 water year was 46.0 inches or 2.2 inches less than the 30-year (1941-70) average of 48.19 inches for the Houston Intercontinental Airport station.

The storm of April 20 was selected for analysis.





Base from Texas General map

FIGURE 12.- Locations of data-collection sites in and near the Vince Bayou drainage basin

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY-TEXAS DISTRICT

ANNUAL STORM RAINFALL-RUNOFF SUMMARY DATA

Table 7.--Storm rainfall-runoff data, 1977 water year, Vince Bayou

[illegible]

SAN JACINTO RIVER BASIN

08075730 VINCE BAYOU AT PASADENA, TX

LOCATION.--Lat 29°41'40", Long 95°12'58", Harris County, Hydrologic Unit 12040104, on right bank of concrete lined channel at end of West Elaine Avenue in Pasadena and 2.4 mi (3.9 km) upstream from mouth.

DRAINAGE AREA.--8.21 mi² (21.26 km²).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 2.54 ft (0.774 m) below mean sea level (levels by Corps of Engineers).

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

AVERAGE DISCHARGE.--6 years, 17.8 ft³/s (0.504 m³/s), 12,900 acre-ft/yr (15.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,360 ft³/s (95.2 m³/s) June 11, 1973, gage height, 16.20 ft (4.938 m); no flow Aug. 5, 6, 18, 1972.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,200 ft³/s (34.0 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Nov. 11	1915	1,430 40.5	12.98 3.956	May 9	1430	1,280 36.2	12.68 3.865
Nov. 19	0615	1,400 39.6	12.92 3.938	aJune 15	0915	72 2.04	9.00 2.743
Apr. 20	1330	*1,910 54.1	13.86 4.225	July 6	1645	1,410 39.9	12.94 3.944

a Water-quality sample was obtained for this flood event.

Minimum daily discharge, 0.27 ft³/s (0.008 m³/s) July 3, 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	2.1	8.8	4.2	8.7	2.1	2.6	32	2.0	.46	1.3	3.0
2	2.7	1.4	7.8	43	6.1	2.3	1.2	33	2.0	.33	1.7	2.9
3	2.7	1.5	3.6	7.3	27	13	.90	7.1	1.9	.27	2.2	2.3
4	2.1	1.5	2.8	1.7	9.8	5.2	1.5	2.8	1.9	.27	2.2	2.6
5	14	1.9	21	1.4	4.1	1.5	1.1	3.1	1.0	.35	2.0	2.2
6	3.1	2.4	118	7.1	3.3	1.2	.96	3.8	1.1	187	2.3	8.9
7	3.0	1.7	20	1.9	3.2	1.7	1.6	4.5	1.1	26	2.1	35
8	8.4	1.5	5.6	3.0	3.3	2.4	2.2	4.0	2.2	36	2.8	23
9	3.5	2.4	3.5	160	3.0	2.4	2.5	150	2.1	19	4.3	65
10	4.0	2.1	3.1	6.6	218	2.4	2.5	7.6	2.1	2.8	2.1	160
11	2.9	145	56	4.8	42	9.0	1.4	2.1	6.6	1.6	28	17
12	2.6	20	309	4.4	10	3.4	2.2	2.7	1.1	2.3	5.7	6.4
13	3.5	48	31	6.6	4.8	2.1	4.3	2.4	1.6	2.5	22	68
14	3.8	7.7	144	5.6	2.8	2.4	2.8	1.9	42	19	3.7	76
15	15	2.8	29	2.7	2.9	3.5	1.5	1.5	17	14	37	8.1
16	23	2.1	14	2.4	2.7	6.0	24	1.5	1.7	4.3	5.4	5.2
17	4.4	2.4	8.1	2.1	2.4	6.5	2.0	1.9	.94	17	3.2	5.2
18	2.8	60	4.4	2.7	2.5	3.5	.58	2.4	1.5	5.2	4.5	8.6
19	11	428	89	2.1	2.0	3.7	1.1	2.1	1.1	11	151	17
20	5.1	47	91	1.9	2.6	4.3	381	2.4	1.2	15	13	9.0
21	3.9	8.5	11	1.7	2.0	4.4	28	21	1.3	4.5	5.8	7.0
22	3.7	3.6	7.0	5.6	4.4	6.2	5.6	1.4	1.4	2.7	8.8	7.9
23	2.4	2.8	14	5.2	2.8	6.0	2.2	1.1	1.6	3.4	6.8	7.9
24	65	4.0	4.6	2.4	2.3	19	3.6	.97	1.2	3.5	4.7	8.2
25	5.2	11	38	2.1	2.1	6.3	2.4	.99	1.2	2.3	4.4	9.7
26	1.9	14	11	2.1	2.4	2.3	2.0	1.1	.72	7.7	5.5	11
27	3.3	3.5	5.0	3.6	1.7	13	2.1	1.1	.55	14	26	8.1
28	2.7	39	4.9	4.8	1.7	33	2.1	1.5	.67	65	123	6.1
29	157	11	2.9	4.4	---	1.1	3.7	1.3	.62	2.5	11	5.6
30	11	5.6	2.3	90	---	1.0	7.4	.91	.78	1.3	4.9	5.2
31	4.4	---	4.0	56	---	8.5	---	2.3	---	1.4	3.1	---
TOTAL	381.1	884.5	1074.4	449.4	380.6	179.4	497.04	302.47	102.18	472.68	500.5	602.1
MEAN	12.3	29.5	34.7	14.5	13.6	5.79	16.6	9.76	3.41	15.2	16.1	20.1
MAX	157	428	309	160	218	33	381	150	42	187	151	160
MIN	1.9	1.4	2.3	1.4	1.7	1.0	.58	.91	.55	.27	1.3	2.2
AC-FT	756	1750	2130	891	755	356	986	600	203	938	993	1190
(††)	4.04	5.97	5.92	3.35	2.04	1.71	2.80	1.66	.98	7.39	5.67	4.51

CAL YR 1976 TOTAL 5783.09 MEAN 15.8 MAX 428 MIN .87 AC-FT 11470 †† 50.13
WTR YR 1977 TOTAL 5826.37 MEAN 16.0 MAX 428 MIN .27 AC-FT 11560 †† 46.04

†† Weighted-mean rainfall, in inches, based on two rain gages.

SAN JACINTO RIVER BASIN

08075730 VINCE BAYOU AT PASADENA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: May 1971 to September 1973, October 1976 to September 1977.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	BIO- CHEM- ICAL OXYGEN DEMAND 5 DAY (MG/L)
APR										
19...	1155	1.2	645	9.2	29.0	40	10	16.3	214	3.6
20...	1025	198	224	7.4	20.0	140	60	7.5	85	13
20...	1320	1880	112	7.9	18.5	120	90	9.0	99	11
21...	0855	18	275	7.6	20.5	240	60	7.5	85	5.8
JUN										
15...	1000	47	241	7.3	24.0	35	50	5.0	61	8.1
JUL										
11...	1800	1.5	814	9.8	17.5	20	20	17.5	236	7.1
AUG										
10...	1330	2.3	545	9.1	33.5	40	20	13.8	192	2.4
29...	1230	5.5	302	8.8	29.5	100	40	10.4	137	4.2
31...	1200	4.0	580	9.5	30.5	60	10	18.0	240	9.0

DATE	IMME- DIATE COLI- FORM (COL. PER 100 ML)	FECAL COLI- FORM (COL. PER 100 ML)	FECAL STREPT- TOCOCCT KF AGAR (COL. PER 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO
APR									
19...	40000	500	140	140	0	40	9.7	75	2.8
20...	980000	58000	26000	--	--	--	--	--	--
20...	380000	49000	25000	--	--	--	--	--	--
21...	620000	52000	14000	--	--	--	--	--	--
JUN									
15...	560000	120000	140000	74	0	25	2.8	18	.9
JUL									
11...	58000	980	330	56	0	13	5.8	150	8.7
AUG									
10...	170000	3000	680	98	0	26	8.0	81	3.6
29...	480000	44000	8700	88	0	27	4.9	25	1.2
31...	220000	28000	4400	--	--	--	--	--	--

DATE	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	RICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NON- FILTRABLE RESIDUE (MG/L)
APR									
19...	2.8	168	17	35	85	.5	6.1	354	15
20...	--	--	--	--	--	--	--	--	120
20...	--	--	--	--	--	--	--	--	300
21...	--	--	--	--	--	--	--	--	98
JUN									
15...	2.6	97	0	10	15	.2	4.9	126	102
JUL									
11...	3.2	98	89	20	100	1.3	9.6	440	15
AUG									
10...	4.2	180	11	20	65	.6	11	316	15
29...	3.3	120	0	9.6	25	.3	12	166	59
31...	--	--	--	--	--	--	--	--	16

DATE	VOL. NON- FILTRABLE RESIDUE (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	PHENOLS (UG/L)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
APR									
19...	0	1.1	.44	2.2	1.1	2.2	8.3	--	.30
20...	21	.89	.04	.58	2.0	.76	8.4	--	.30
20...	61	.32	.02	.22	2.1	.58	7.9	--	.10
21...	11	.17	.03	.23	1.2	.35	8.0	--	.00
JUN									
15...	25	.15	.40	.23	.50	.28	14	--	.20
JUL									
11...	13	.00	.01	.01	.49	.16	9.4	4	.20
AUG									
10...	13	.02	.00	.01	1.1	.14	8.2	3	.20
29...	24	.08	.03	.05	1.3	.54	12	--	.20
31...	11	.02	.04	.02	.94	.35	11	--	.20

SAN JACINTO RIVER BASIN

08075730 VINCE BAYOU AT PASADENA, TX.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

		DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)						
DATE	TIME												
JUL 11...	1800	5	0	0	0	3	40						
		DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	DIS- SOLVED SILVER (AG) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)						
DATE	TIME												
JUL 11...		2	4	.0	0	0	0						
DATE	TIME	TOTAL PCB (UG/L)	POLY- CHLO- RINATED NAPH- THA- LENES (UG/L)	TOTAL ALDRIN (UG/L)	TOTAL CHLOR- DANE (UG/L)	TOTAL DDD (UG/L)	TOTAL DDE (UG/L)	TOTAL DDT (UG/L)	TOTAL DI- AZINON (UG/L)	TOTAL DI- ELDRIN (UG/L)	TOTAL ENDRIN (UG/L)	TOTAL ETHION (UG/L)	
JUL 11...	1800	.0	.00	.00	.0	.00	.00	.00	.09	.00	.00	.00	
AUG 10...	1330	.0	.00	.00	.0	.00	.00	.00	.21	.01	.00	.00	
DATE	TIME	TOTAL HEPTA- CHLOR (UG/L)	TOTAL HEPTA- CHLOR EPOXIDE (UG/L)	TOTAL LINDANE (UG/L)	TOTAL MALA- THION (UG/L)	TOTAL METHYL PARA- THION (UG/L)	TOTAL METHYL TRI- THION (UG/L)	TOTAL PARA- THION (UG/L)	TOTAL TUX- APHENE (UG/L)	TOTAL TRI- THION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)
JUL 11...		.00	.00	.00	.00	.00	.00	.00	0	.00	.00	.07	.01
AUG 10...		.00	.00	.00	.00	.00	.00	.00	0	.00	.18	.07	.00

STA. NO. 08075730		STORM RAINFALL AND RUNOFF RECORD						1977 WATER YEAR		
VINCE BAYOU AT PASADENA, TX.		STORM OF APR. 20, 1977						ACCUM.	DISCHARGE	ACCUM.
DATE & TIME		G A G E N U M B E R						WEIGHTED	IN	RUNOFF
								PRECIP.		
								IN.	CFS	IN.
APR. 20										
0000	0.0							0.0	2.4	0.0001
0015	0.20							0.20	2.4	0.0002
0030	0.23							0.23	7.1	0.0005
0045	0.23							0.23	10.0	0.0010
0100	0.23							0.23	10.0	0.0014
0115	0.23							0.23	15.0	0.0022
0130	0.23							0.23	21.0	0.0031
0145	0.33							0.33	36.0	0.0048
0200	0.33							0.33	88.0	0.0090
0215	0.33							0.33	96.0	0.0135
0230	0.33							0.33	99.0	0.0182
0245	0.33							0.33	88.0	0.0224
0300	0.33							0.33	74.0	0.0258
0315	0.35							0.35	64.0	0.0289
0330	0.42							0.42	60.0	0.0317
0345	0.45							0.45	161.0	0.0393
0400	0.45							0.45	287.0	0.0528
0415	0.45							0.45	370.0	0.0703
0430	0.48							0.48	375.0	0.0880
0445	0.55							0.55	347.0	0.1044
0500	0.55							0.55	319.0	0.1194
0515	0.61							0.61	298.0	0.1335
0530	0.61							0.61	277.0	0.1465
0545	0.61							0.61	257.0	0.1587
0600	0.63							0.63	257.0	0.1708
0615	0.66							0.66	282.0	0.1841
0630	0.66							0.66	277.0	0.1972
0645	0.70							0.70	292.0	0.2110
0700	0.70							0.70	282.0	0.2243
0715	0.75							0.75	272.0	0.2371
0730	0.75							0.75	287.0	0.2506
0745	0.75							0.75	375.0	0.2683
0800	0.75							0.75	364.0	0.2855
0815	0.75							0.75	330.0	0.3011
0830	0.75							0.75	287.0	0.3146
0845	0.95							0.95	319.0	0.3297
0900	1.01							1.01	450.0	0.3509
0915	1.01							1.01	418.0	0.3706
0930	1.01							1.01	347.0	0.3870

STA. NO. 08075730		STORM RAINFALL AND RUNOFF RECORD						1977 WATER YEAR		
VINCE BAYOU AT PASADENA, TX.		STORM OF APR. 20, 1977						ACCUM.	DISCHARGE	ACCUM.
DATE & TIME		G A G E N U M B E R						WEIGHTED PRECIP.	IN	RUNOFF
		401R						IN.	CFS	IN.
APR. 20										
0945		1.03						1.03	287.0	0.4005
1000		1.07						1.07	243.0	0.4120
1015		1.11						1.11	215.0	0.4222
1030		1.13						1.13	190.0	0.4311
1045		1.13						1.13	186.0	0.4399
1100		1.13						1.13	178.0	0.4483
1115		1.20						1.20	186.0	0.4571
1130		1.20						1.20	238.0	0.4683
1145		1.20						1.20	257.0	0.4804
1200		1.20						1.20	247.0	0.4921
1215		1.25						1.25	247.0	0.5037
1230		1.25						1.25	252.0	0.5156
1245		1.27						1.27	277.0	0.5287
1300		1.70						1.70	1030.0	0.5773
1315		2.07						2.07	1720.0	0.6585
1330		2.28						2.28	1910.0	0.7486
1345		2.28						2.28	1790.0	0.8331
1400		2.28						2.28	1580.0	0.9076
1415		2.28						2.28	1490.0	0.9779
1430		2.28						2.28	1400.0	1.0440
1445		2.28						2.28	1330.0	1.1067
1500		2.28						2.28	1230.0	1.1938
1530		2.28						2.28	992.0	1.2874
1600		2.28						2.28	801.0	1.3630
1630		2.28						2.28	630.0	1.4225
1700		2.28						2.28	504.0	1.4700
1730		2.28						2.28	411.0	1.5088
1800		2.28						2.28	341.0	1.5410
1830		2.28						2.28	298.0	1.5691
1900		2.28						2.28	262.0	1.5938
1930		2.28						2.28	229.0	1.6154
2000		2.28						2.28	202.0	1.6345
2030		2.28						2.28	182.0	1.6517
2100		2.28						2.28	163.0	1.6671
2130		2.28						2.28	145.0	1.6807
2200		2.28						2.28	131.0	1.6931
2230		2.28						2.28	121.0	1.7045
2300		2.28						2.28	108.0	1.7147
2330		2.28						2.28	99.0	1.7241

STA. NO. 08075730		STORM RAINFALL AND RUNOFF RECORD						1977 WATER YEAR		
VINCE BAYOU AT PASADENA, TX.		STORM OF APR. 20, 1977						ACCUM. WEIGHTED PRECIP. IN.	DISCHARGE IN CFS	ACCUM. RUNOFF IN.
DATE & TIME		401R			G A G E	N U M B E R				
APR. 20										
2400		2.2P						2.28	90.0	1.7410
APR. 21										
0000		2.2P						2.28	90.0	1.7410
0300		2.2P						2.28	51.0	1.7827
0600		2.2P						2.28	33.0	1.8013
0900		2.2P						2.28	25.0	1.8155
1200		2.2P						2.28	20.0	1.8268
1500		2.2P						2.28	17.0	1.8364
1800		2.2P						2.28	14.0	1.8444
2100		2.2P						2.28	11.0	1.8506
2400		2.2P						2.28	8.7	1.8555
APR. 22										
0000		2.2P						2.28	8.7	1.8555
0600		2.2P						2.28	6.6	1.8655
1200		2.2P						2.28	5.6	1.8718
1800		2.2P						2.28	4.0	1.8763
2400		2.2P						2.28	3.3	1.8782

HUNTING BAYOU DRAINAGE BASIN

The locations of data-collection sites in and near the Hunting Bayou drainage basin are shown on figure 13.

Weighted-mean rainfall in the drainage basin based on three rain gages for the 1977 water year was 42.9 inches, or 5.3 inches less than the 30-year (1941-70) average of 48.19 inches for the Houston Intercontinental Airport station.

No storms were analyzed for the 1977 water year.

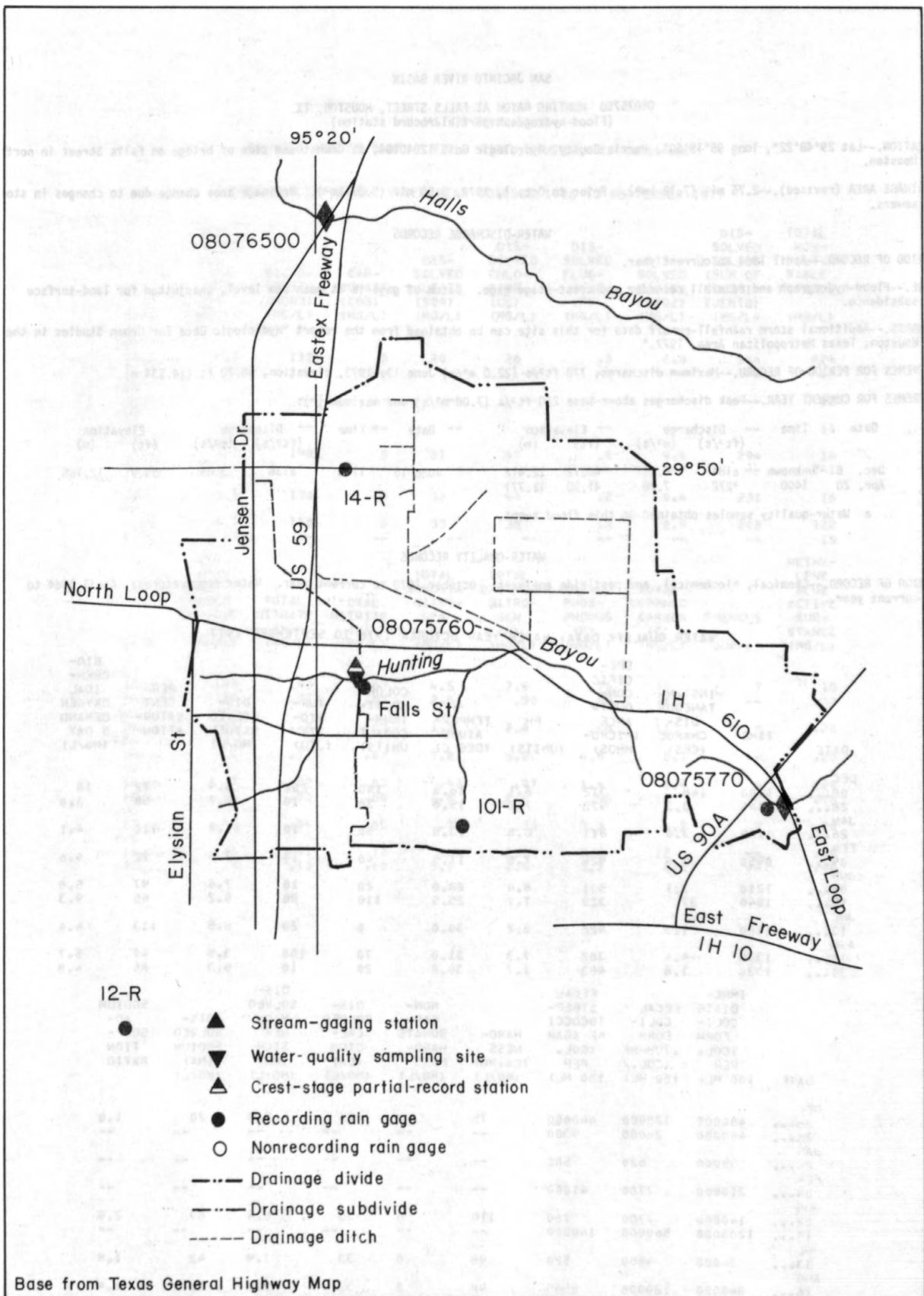


FIGURE 13.- Locations of data-collection sites in and near the Hunting Bayou drainage basin

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 (revised).--2.75 mi² (7.12 km²). Prior to Oct. 1, 1973, 3.50 mi² (9.07 km²). Drainage area change 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 at mean sea level, unadjusted for land-surface subsidence.

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, 1977."

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 778 ft³/s (22.0 m³/s) June 13, 1973, elevation, 46.70 ft (14.234 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base 250 ft³/s (7.08 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Elevation (ft)	Elevation (m)	Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Elevation (ft)	Elevation (m)
Dec. 6	unknown	a184	5.21	40.72	12.412	June 15	1130	a136	3.85	39.91	12.165
Apr. 20	1400	*272	7.70	41.90	12.771						

a Water-quality samples obtained on this flood event.

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 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)
DEC 06...	1603	148	312	8.1	16.0	140	200	6.9	72	18
28...	1045	3.3	922	7.2	15.0	30	10	5.7	58	3.0
JAN 26...	1145	3.0	811	6.8	13.5	50	10	11.2	111	4.1
FEB 09...	0950	2.6	924	7.6	11.5	40	10	7.6	72	9.6
JUN 08...	1210	1.1	531	8.4	28.0	20	10	7.6	97	5.8
15...	1040	37	323	7.1	25.5	110	80	5.2	65	9.3
JUL 13...	1100	1.3	426	8.2	30.0	0	20	8.5	113	4.4
AUG 16...	1335	4.4	382	7.3	31.0	70	100	3.5	47	5.7
31...	1330	1.8	483	7.7	30.0	20	10	6.3	84	4.8

DATE	IMMEDIATE COLIFORM PER 100 ML	FECAL COLIFORM (COL./100 ML)	FECAL STREPTOCOCCI (COL. PER 100 ML)	HARDNESS (CA+MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO
DEC 06...	480000	120000	440000	75	0	25	3.0	20	1.0
28...	480000	28000	9300	--	--	--	--	--	--
JAN 26...	35000	620	580	--	--	--	--	--	--
FEB 09...	210000	7700	41000	--	--	--	--	--	--
JUN 08...	140000	7700	780	110	0	35	5.4	67	2.8
15...	1200000	560000	140000	--	--	--	--	--	--
JUL 13...	94000	4500	520	98	0	33	3.9	42	1.8
AUG 16...	840000	120000	6500	98	8	33	3.9	32	1.4
31...	1200000	69000	2200	--	--	--	--	--	--

SAN JACINTO RIVER BASIN

08075760 HUNTING BAYOU AT FALLS STREET, HOUSTON, TX.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NON- FILT- RABLE RESIDUE (MG/L)
DEC 06...	8.1	112	0	20	26	.3	6.0	164	424
28...	--	--	--	--	--	--	--	--	15
JAN 26...	--	--	--	--	--	--	--	--	12
FEB 09...	--	--	--	--	--	--	--	--	11
JUN 08...	3.1	190	0	31	49	.4	9.4	294	18
15...	--	--	--	--	--	--	--	--	241
JUL 13...	3.1	130	0	32	44	.2	8.4	231	16
AUG 16...	4.7	110	0	33	38	.3	8.9	208	122
31...	--	--	--	--	--	--	--	--	15

DATE	VOL. NON- FILT- RABLE RESIDUE (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	PHENOLS (UG/L)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
DEC 06...	140	.45	.03	4.5	7.5	.76	10	7	.10
28...	12	.37	.05	2.5	.50	.43	11	--	.30
JAN 26...	11	.12	.03	1.2	2.8	.44	11	5	.20
FEB 09...	0	.11	.02	7.8	5.2	4.8	8.7	--	.20
JUN 08...	3	.02	.03	.93	.97	1.4	8.4	4	.20
15...	51	.53	.06	1.6	2.2	.96	15	--	.40
JUL 13...	12	.04	.05	.77	.33	3.8	6.2	2	.20
AUG 16...	36	.41	.12	.04	2.3	2.6	12	--	.30
31...	13	.13	.10	5.0	1.4	3.2	8.2	--	.40

SAN JACINTO RIVER BASIN

08075760 HUNTING BAYOU AT FALLS STREET, HOUSTON, TX.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	DIS-SOLVED CADMIUM (CD) (UG/L)	DIS-SOLVED CHROMIUM (CR) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
DEC 06...	1600	6	0	0	2	6	50
JUN 08...	1210	2	100	0	10	2	30
JUL 13...	1100	0	0	0	0	6	30

DATE	DIS-SOLVED LEAD (PB) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	DIS-SOLVED SELENIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
DEC 06...	8	20	.2	0	0	40
JUN 08...	1	0	.0	0	0	10
JUL 13...	0	50	.0	0	0	8

DATE	TIME	TOTAL PCB (UG/L)	POLY-CHLORINATED THALLENES (UG/L)	TOTAL ALDRIN (UG/L)	TOTAL CHLORDANE (UG/L)	TOTAL DDD (UG/L)	TOTAL DDE (UG/L)	TOTAL DDT (UG/L)	TOTAL DIAZINON (UG/L)	TOTAL DIELDRIN (UG/L)	TOTAL ENDRIN (UG/L)	TOTAL ETHION (UG/L)
DEC 06...	1600	.1	.00	.02	.1	.02	.01	.08	.11	.02	.00	.00
JUN 08...	1210	.0	.00	.00	.0	.00	.00	.00	.52	.00	.00	.00
JUL 13...	1100	.0	.00	.00	.0	.00	.00	.00	.04	.00	.00	.00

DATE	TOTAL HEPTACHLOR (UG/L)	TOTAL HEPTACHLOR EPOXIDE (UG/L)	TOTAL LINDANE (UG/L)	TOTAL MALATHION (UG/L)	TOTAL METHYL PARATHION (UG/L)	TOTAL METHYL TRITHION (UG/L)	TOTAL PARATHION (UG/L)	TOTAL TOXAPHENE (UG/L)	TOTAL TRITHION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)
DEC 06...	.00	.00	.01	.02	.00	.00	.00	0	.00	.00	.00	.00
JUN 08...	.00	.00	.00	.00	.00	.00	.00	0	.00	.00	.00	.00
JUL 13...	.00	.00	.00	.02	.00	.00	.00	0	.00	.00	.00	.00

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 (14.2 km) upstream from mouth.

DRAINAGE AREA (revised).--14.7 mi² (38.1 km²). Prior to Oct. 1, 1973, 16.8 mi² (43.5 km²).

WATER-DISCHARGE RECORDS

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

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

GAGE.--Water-stage recorder. Datum of gage is at mean sea level; unadjusted for land-surface subsidence. Prior to Oct. 1, 1972, water-stage recorder, 1,800 ft (549 m) upstream at same datum.

REMARKS.--Water-discharge records fair during period December to April and poor thereafter. Low flow is largely maintained by sewage and industrial effluent. Recording rain gage located at station.

AVERAGE DISCHARGE.--13 years, 21.3 ft³/s (0.603 m³/s), 15,430 acre-ft/yr (19.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,380 ft³/s (95.7 m³/s) June 13, 1973, elevation, 38.11 ft (11.616 m); maximum gage height, 39.28 ft (11.973 m) June 15, 1976; minimum daily, 0.88 ft³/s (0.025 m³/s) Aug. 24, 1971.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 700 ft³/s (19.8 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Elevation (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Elevation (ft) (m)
aDec. 6	1800	579	16.4	29.59	9.019	Sept. 10	1600
Apr. 20	1700	781	22.1	31.27	9.531		
						*790	22.4
							31.34
							9.552

a Water-quality samples were obtained for this flood event.

Minimum daily discharge, about 2.0 ft³/s (0.057 m³/s) for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.2	13	16	12	16	6.7	8.9	22	3.0	14	9.0	7.6
2	7.4	12	18	55	13	6.9	8.5	39	2.8	14	8.0	6.0
3	7.2	9.8	14	38	43	18	9.7	47	2.7	14	7.0	5.0
4	7.0	5.6	13	21	20	13	61	11	2.6	14	6.0	4.5
5	12	3.5	21	18	14	8.2	14	8.8	2.5	13	5.5	4.0
6	9.3	10	231	31	11	7.3	8.6	7.6	2.5	31	5.0	3.5
7	12	9.1	128	23	10	6.9	7.2	7.6	3.0	17	5.0	40
8	18	8.2	24	16	9.7	6.8	7.2	7.3	5.0	15	8.0	313
9	9.1	2.0	15	25	9.4	6.7	8.7	7.1	5.9	14	10	129
10	7.4	3.0	13	15	133	6.8	9.2	6.6	6.2	15	8.6	327
11	4.2	2.5	83	12	142	14	7.3	6.0	21	17	17	115
12	3.0	2.0	287	12	32	8.6	6.7	6.2	12	14	14	25
13	2.5	35	88	16	18	6.8	6.9	6.1	9.1	13	11	60
14	2.0	11	130	15	15	6.7	7.0	5.5	152	24	13	151
15	3.8	8.4	80	12	12	6.8	6.8	4.9	162	18	41	27
16	54	8.0	38	11	11	6.5	42	4.9	24	16	29	29
17	9.8	7.6	23	10	9.9	5.9	15	4.7	16	17	10	18
18	6.2	9.8	19	9.7	9.5	5.2	8.7	4.8	14	16	6.0	13
19	3.3	124	92	9.2	9.2	6.2	7.9	4.2	13	22	73	34
20	21	63	295	9.1	8.6	5.8	364	4.5	13	17	35	34
21	5.0	22	47	9.0	8.3	5.4	144	25	14	16	14	14
22	3.0	15	25	14	8.4	5.3	23	8.9	15	16	19	11
23	2.0	11	24	13	8.4	5.1	12	5.8	13	16	129	9.1
24	125	11	19	11	7.5	8.9	9.1	5.0	13	16	148	8.5
25	84	13	33	10	7.4	8.5	8.0	4.5	15	15	21	7.5
26	16	23	27	9.2	7.4	6.2	7.3	4.2	14	22	15	7.4
27	11	13	19	9.1	7.1	14	6.8	4.0	14	19	25	7.9
28	9.3	70	17	9.0	6.9	68	6.7	3.8	14	12	70	6.8
29	191	35	15	8.3	---	13	6.4	3.6	14	17	34	6.3
30	54	18	14	24	---	10	7.2	3.4	14	14	11	6.1
31	18	---	13	42	---	8.8	---	3.2	---	9.8	10	---
TOTAL	724.7	578.5	1881	528.6	607.7	313.0	845.8	287.2	612.3	507.8	817.1	1430.2
MEAN	23.4	19.3	60.7	17.1	21.7	10.1	28.2	9.26	20.4	16.4	26.4	47.7
MAX	191	124	295	55	142	68	364	47	162	31	148	327
MIN	2.0	2.0	13	8.3	6.9	5.1	6.4	3.2	2.5	9.8	5.0	3.5
AC-FT	1440	1150	3730	1050	1210	621	1680	570	1210	1010	1620	2840
(††)	4.22	3.06	6.14	2.01	1.86	1.93	4.87	1.64	2.75	2.95	4.40	7.04

CAL YR 1976 TOTAL 10304.2 MEAN 28.2 MAX 966 MIN 1.0 AC-FT 20440 †† 53.96
WTR YR 1977 TOTAL 9133.9 MEAN 25.0 MAX 364 MIN 2.0 AC-FT 18120 †† 42.87

†† Weighted-mean rainfall, in inches, based on three rain gages.

SAN JACINTO RIVER BASIN

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

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	RIO- CHEM- ICAL OXYGEN DEMAND 5 DAY (MG/L)
NOV 08...	1000	7.0	932	6.6	16.5	30	10	6.6	69	17
DEC 06...	1400	265	379	8.4	16.5	120	350	7.7	81	55
JAN 12...	0920	11	970	6.8	9.0	40	20	7.6	68	14
FEB 08...	0805	9.2	965	6.8	11.5	30	20	6.0	57	13
MAR 01...	0825	6.4	965	6.8	14.0	40	15	5.8	58	10
APR 19...	1240	7.4	846	7.3	25.5	40	20	4.6	58	8.4
20...	1020	270	318	6.4	20.0	140	180	4.9	56	15
21...	0730	165	331	6.7	20.0	200	40	3.4	39	7.5
JUN 16...	1115	20	618	7.0	27.0	30	20	4.7	59	5.8
AUG 16...	1115	18	422	7.2	29.0	40	50	3.4	45	8.1
31...	1300	9.0	651	7.3	29.0	20	20	1.9	25	7.5

DATE	IMME- DIATE COLI- FORM (COL. PER 100 ML)	FECAL COLI- FORM (COL./ 100 ML)	FECAL STREP- TOCOCCI KF AGAR (COL. PER 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO
NOV 08...	2000	66	120	240	0	70	16	110	3.1
DEC 06...	140000	17000	15000	--	--	--	--	--	--
JAN 12...	520	2	12	--	--	--	--	--	--
FEB 08...	3900	120	2400	--	--	--	--	--	--
MAR 01...	8000	140	980	--	--	--	--	--	--
APR 19...	44000	1200	250	--	--	--	--	--	--
20...	600000	75000	74000	100	24	33	4.3	21	.9
21...	380000	300000	55000	--	--	--	--	--	--
JUN 16...	480000	4100	550	160	7	53	7.5	57	1.9
AUG 16...	260000	41000	3300	120	17	38	5.0	38	1.5
31...	1600000	420000	6700	170	0	52	8.7	63	2.1

SAN JACINTO RIVER BASIN

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NON- FILT- RABLE RESIDUE (MG/L)
NOV 08...	4.0	340	0	54	88	.7	17	527	26
DEC 06...	--	--	--	--	--	--	--	--	2040
JAN 12...	--	--	--	--	--	--	--	--	20
FEB 08...	--	--	--	--	--	--	--	--	21
MAR 01...	--	--	--	--	--	--	--	--	36
APR 19...	--	--	--	--	--	--	--	--	41
20...	3.8	93	0	34	18	.4	6.3	167	386
21...	--	--	--	--	--	--	--	--	93
JUN 16...	7.4	190	0	65	46	.6	12	342	45
AUG 16...	4.2	120	0	45	32	.4	8.5	230	47
31...	5.3	210	0	49	54	.5	13	349	14

DATE	VOL. NON- FILT- RABLE RESIDUE (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	PHENOLS (UG/L)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
NOV 08...	3	2.8	.65	1.6	1.3	2.2	8.0	4	1.1
DEC 06...	620	.64	.09	2.0	3.0	1.3	8.2	--	.20
JAN 12...	8	.64	.26	2.7	1.1	1.0	3.8	--	.50
FEB 08...	11	.37	.93	1.2	1.4	1.3	7.5	--	.50
MAR 01...	11	2.5	.48	1.4	1.1	2.0	10	--	.20
APR 19...	16	.02	.00	.03	1.4	.36	6.9	--	.40
20...	86	1.2	.09	2.2	4.4	1.2	7.6	--	.40
21...	18	.87	.09	.74	1.8	.82	8.0	--	.40
JUN 16...	10	.58	.08	1.2	1.5	.69	12	--	.50
AUG 16...	20	2.0	.15	.97	1.2	.96	9.5	5	.70
31...	6	.34	.19	2.2	.90	2.3	11	--	1.0

SAN JACINTO RIVER BASIN

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

		DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	DIS-SOLVED CADMIUM (CD) (UG/L)	DIS-SOLVED CHROMIUM (CR) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
DATE	TIME						
AUG 16...	1115	7	100	0	0	6	20
		DIS-SOLVED LEAD (PB) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	DIS-SOLVED SELENIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
DATE							
AUG 16...		0	0	.0	0	0	70

DATE	TIME	TOTAL PCB (UG/L)	POLY- CHLORINATED NAPHTHA- LENES (UG/L)	TOTAL ALDRIN (UG/L)	TOTAL CHLORDANE (UG/L)	TOTAL DDD (UG/L)	TOTAL DDE (UG/L)	TOTAL DDT (UG/L)	TOTAL DI- AZINON (UG/L)	TOTAL DI- ELDRIN (UG/L)	TOTAL ENDRIN (UG/L)	TOTAL ETHION (UG/L)
NOV 08...	1000	.0	.00	.00	.0	.00	.00	.00	.11	.00	.00	.00
AUG 16...	1115	.0	.00	.00	.0	.01	.00	.00	.26	.01	.00	.00

DATE	TOTAL HEPTA- CHLOR (UG/L)	TOTAL HEPTA- CHLOR EPOXIDE (UG/L)	TOTAL LINDANE (UG/L)	TOTAL MALA- THION (UG/L)	TOTAL METHYL PARA- THION (UG/L)	TOTAL METHYL TRI- THION (UG/L)	TOTAL PARA- THION (UG/L)	TOTAL TOX- APHENE (UG/L)	TOTAL TRI- THION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)
NOV 08...	.00	.00	.00	.00	.00	.00	.00	0	.00	.00	.00	.00
AUG 16...	.00	.00	.04	.00	.00	.00	.00	0	.00	.00	.01	.00

GREENS BAYOU DRAINAGE BASIN

The locations of data-collection sites in and near the Greens Bayou drainage basin are shown on figure 14. Data-collection sites in the lower portion of the drainage basin are shown on figure 1.

Halls Bayou, which is a part of the Greens Bayou drainage basin, is shown as a separate drainage basin in this report.

Weighted-mean rainfall for the drainage basin, based on four rain gages, above the U.S. Highway 75 station for the 1977 water year was 36.6 inches or 11.6 inches less than the 30-year (1941-70) average of 48.19 inches for the Houston Intercontinental Airport station.

The storms of April 20 and June 14-15 were analyzed for the drainage area above the Cutten Road station. The storm of June 15 was selected for analysis above the U.S. Highway 75 station. The storm of April 20 was selected for analysis at the U.S. Highway 59 station.



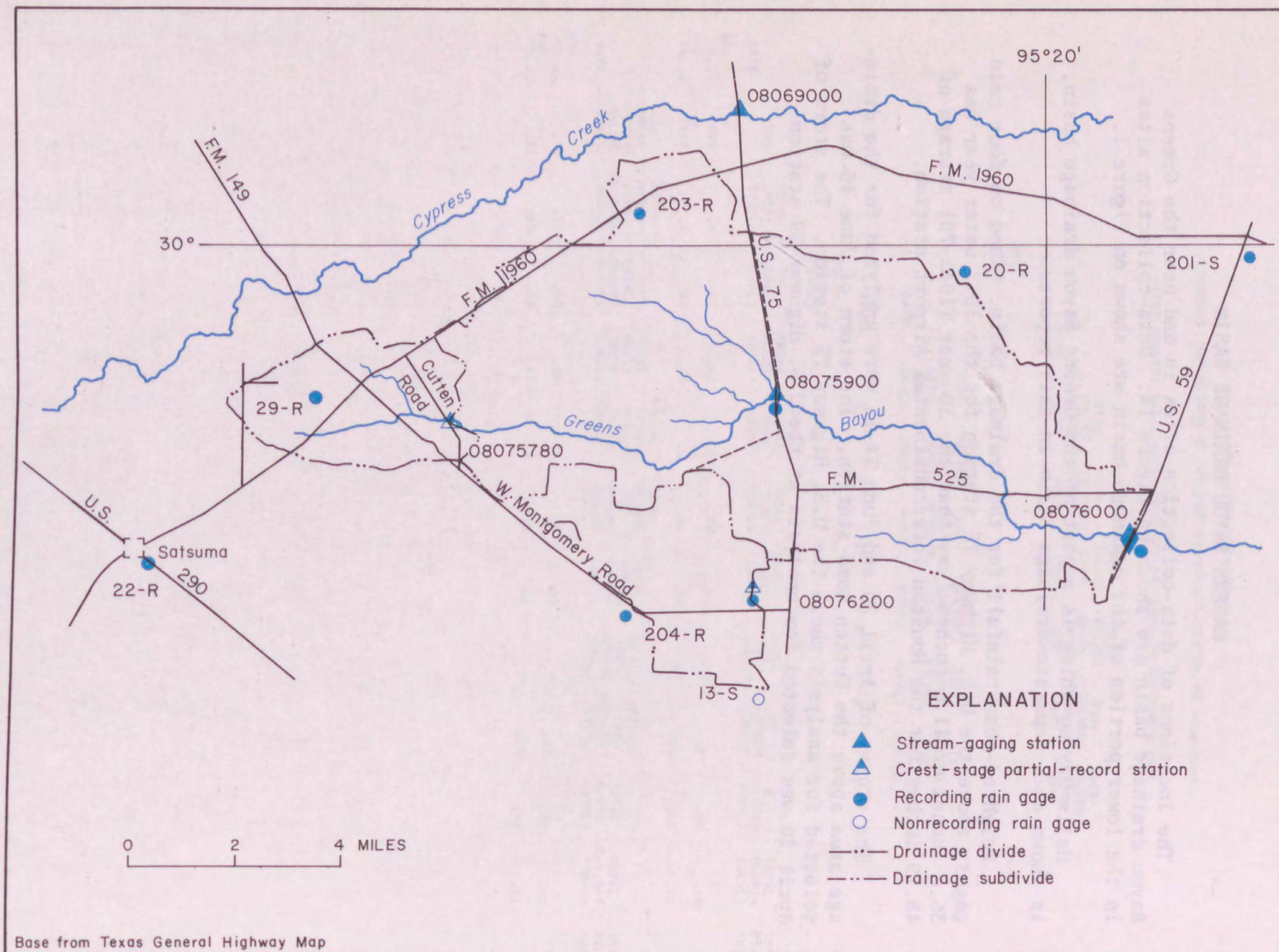


FIGURE 14. - Locations of data - collection sites in and near the Greens Bayou drainage basin

TX-35
6/69

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY-TEXAS DISTRICT

ANNUAL STORM RAINFALL-RUNOFF SUMMARY DATA

Table 8.--Storm rainfall-runoff data, 1977 water year, Greens Bayou

Date of Storm	85% Duration (hours)	Rainfall (inches)				Runoff (inches)	Ratio runoff to rainfall	Maximum discharge (ft ³ /s)
		Total	Maximum increment					
			15-minute	30-minute	60-minute			

Greens Bayou at Cutten Rd. nr Houston, Tex.
(Drainage area--8.06 mi²)

April 20, 1977	10	2.39	0.55	1.02	1.04	0.73	0.31	168
June 15, 1977	6.8	2.84	0.58	.88	1.38	.48	.17	148

Greens Bayou at U.S. Highway 75 nr Houston, Tex.
(Drainage area--36.14 mi²)

June 15, 1977	5	3.41	0.65	1.22	1.92	1.01	0.30	1240

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY-TEXAS DISTRICT

ANNUAL STORM RAINFALL-RUNOFF SUMMARY DATA

Table 8.--Storm rainfall-runoff data, 1977 water year, Greens Bayou--Continued

[illegible]

08075780 Greens Bayou at Cutten Road near Houston, TX

(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°56'56", long 95°31'10", Harris County, Hydrologic Unit 12040104, at downstream side of bridge on Cutten Road, 16.2 miles upstream from station 08076000, Greens Bayou near Houston, and 16.5 miles northwest of main post office in downtown Houston.

DRAINAGE AREA.--8.06 mi². Prior to Oct. 1, 1973, 8.73 mi².

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

GAGE.--Flood-hydrograph recorder (type SR) and crest-stage gage. Datum of gage is at mean sea level, unadjusted for land-surface subsidence.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 520 ft³/s, June 13, 1973 (elevation 118.27); minimum not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 150 ft³/s and maximum (*):

DATE	TIME	DISCHARGE	ELEVATION
Dec. 6	1700	198	116.62
Dec. 20	0400	164	115.86
Apr. 20	1600	168	115.90

Minimum discharge, not determined.

STATION NO. 08075780							STORM RAINFALL AND RUNOFF RECORD			1977 WATER YEAR		
GREENS BAYOU AT CUTTEN ROAD NEAR HOUSTON, TX.							STORM OF APR. 20, 1977			ACCUM.	DISCHARGE	ACCUM.
DATE & TIME							G A G E N U M B E R			WEIGHTED	IN	RUNOFF
										PRECIP.		
										IN.	CFS	IN.
APR. 20												
0000	0.0									0.0	4.0	0.0004
0100	0.02									0.02	4.0	0.0012
0200	0.10									0.10	5.0	0.0018
0215	0.10									0.10	5.0	0.0020
0230	0.65									0.65	5.0	0.0022
0245	1.12									1.12	6.0	0.0030
0345	1.17									1.17	37.0	0.0074
0400	1.18									1.18	41.0	0.0123
0500	1.25									1.25	74.0	0.0266
0600	1.25									1.25	87.0	0.0433
0700	1.25									1.25	89.0	0.0604
0800	1.26									1.26	89.0	0.0775
0900	1.40									1.40	81.0	0.0931
1000	1.42									1.42	75.0	0.1075
1100	1.52									1.52	72.0	0.1179
1130	1.60									1.60	71.0	0.1247
1200	2.06									2.06	70.0	0.1314
1230	2.27									2.27	77.0	0.1388
1300	2.38									2.38	93.0	0.1522
1400	2.39									2.39	140.0	0.1792
1500	2.39									2.39	166.0	0.2111
1600	2.39									2.39	168.0	0.2434
1700	2.39									2.39	160.0	0.2741
1800	2.39									2.39	147.0	0.3024
1900	2.39									2.39	134.0	0.3282
2000	2.39									2.39	121.0	0.3631
2200	2.39									2.39	106.0	0.4038
2400	2.39									2.39	93.0	0.4351
APR. 21												
0000	2.39									2.39	93.0	0.4351
0300	2.39									2.39	81.0	0.4952
0600	2.39									2.39	67.0	0.5532
1200	2.39									2.39	50.0	0.6109
1800	2.39									2.39	37.0	0.6536
2400	2.39									2.39	27.0	0.6769
APR. 22												
0000	2.39									2.39	27.0	0.6769
0600	2.39									2.39	19.0	0.7066
1200	2.39									2.39	12.0	0.7205
1800	2.39									2.39	8.0	0.7297
2400	2.39									2.39	5.0	0.7326

STA. NO. 08075780		STORM RAINFALL AND RUNOFF RECORD						1977 WATER YEAR		
GREENS BAYOU AT CUTTEN ROAD NEAR HOUSTON, TX.		STORM OF JUNE 15, 1977						ACCUM. WEIGHTED PRECIP.	DISCHARGE IN	ACCUM. RUNOFF
DATE & TIME	G A G E N U M B E R							IN.	CFS	IN.
JUNE 15										
0000	0.0							0.0	7.0	0.0022
0315	0.0							0.0	6.0	0.0042
0330	0.58							0.58	6.0	0.0045
0345	0.88							0.88	6.0	0.0048
0400	1.13							1.13	8.0	0.0052
0415	1.38							1.38	13.0	0.0058
0430	1.58							1.58	24.0	0.0075
0500	1.73							1.73	54.0	0.0127
0530	1.85							1.85	79.0	0.0203
0600	1.94							1.94	101.0	0.0300
0630	2.06							2.06	118.0	0.0414
0700	2.10							2.10	134.0	0.0542
0730	2.13							2.13	140.0	0.0677
0800	2.14							2.14	145.0	0.0816
0830	2.16							2.16	148.0	0.0959
0900	2.18							2.18	147.0	0.1100
0930	2.18							2.18	143.0	0.1237
1000	2.48							2.48	135.0	0.1367
1030	2.78							2.78	124.0	0.1486
1100	2.81							2.81	119.0	0.1658
1200	2.81							2.81	117.0	0.1883
1300	2.81							2.81	116.0	0.2106
1400	2.81							2.81	110.0	0.2317
1500	2.81							2.81	103.0	0.2515
1600	2.81							2.81	93.0	0.2694
1700	2.81							2.81	83.0	0.2854
1800	2.84							2.84	74.0	0.3138
2100	2.84							2.84	52.0	0.3438
2400	2.84							2.84	41.0	0.3616
JUNE 16										
0000	2.84							2.84	41.0	0.3616
0300	2.84							2.84	33.0	0.3865
0600	2.84							2.84	27.0	0.4099
1200	2.84							2.84	18.0	0.4306
1800	2.84							2.84	12.0	0.4445
2400	2.84							2.84	8.0	0.4514
JUNE 17										
0000	2.84							2.84	8.0	0.4514
0600	2.84							2.84	7.0	0.4618
1200	2.84							2.84	6.0	0.4722
2400	2.84							2.84	5.0	0.4779

SAN JACINTO RIVER BASIN

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 bridge, 9.0 mi (14.5 km) upstream from station 08076000, and 21 mi (34 km) upstream from Halls Bayou.

DRAINAGE AREA (revised).--36.1 mi² (93.5 km²). Prior to October 1973, 34.8 mi² (90.1 km²).

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

REVISED RECORDS.--MDR TX-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level; unadjusted for land-surface subsidence.

REMARKS.--Records fair. Records furnished by Houston Lighting and Power Co. show that 1,400 acre-ft (1.73 hm³) of ground water used for cooling purposes was released to bayou about 8 mi (13 km) upstream from gage during the current year. No known diversion above station. Recording rain gage located at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--12 years, 28.8 ft³/s (0.816 m³/s), 20,870 acre-ft/yr (25.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,940 ft³/s (83.3 m³/s) Mar. 20, 1972, elevation, 89.75 ft (27.356 m); maximum elevation, 91.09 ft (27.764 m) Feb. 21, 1969; minimum daily discharge, 0.16 ft³/s (0.004 m³/s) Oct. 21, 22, 1969.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14.2 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Elevation (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Elevation (ft) (m)
Oct. 24	1930	557 15.8	83.33 25.399	Apr. 20	1700	1,190 33.7	85.84 26.164
Dec. 6	1930	859 24.3	84.67 25.807	June 15	1030	*1,240 35.1	86.99 26.515
Dec. 20	0630	743 21.0	84.20 25.664				

Minimum daily discharge, 4.6 ft³/s (0.13 m³/s) May 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	38	30	15	34	6.2	11	13	5.9	12	6.0	8.1
2	14	24	28	51	25	6.6	10	9.7	7.4	10	9.0	9.0
3	11	19	22	81	102	9.9	10	9.0	10	13	9.0	8.8
4	9.2	16	19	48	67	13	12	9.1	7.8	10	8.7	7.4
5	12	13	32	35	37	7.4	12	8.6	7.3	9.6	7.7	6.7
6	8.4	11	413	33	25	6.0	9.7	8.1	6.7	10	12	8.0
7	7.8	10	390	30	19	8.7	8.4	7.5	6.9	13	14	13
8	9.4	9.6	124	27	16	11	8.0	7.2	6.3	55	7.4	15
9	7.9	8.6	66	39	14	8.5	7.9	6.5	6.0	18	6.9	18
10	7.7	10	44	28	115	7.4	7.9	7.1	6.9	10	7.4	26
11	8.4	9.9	207	22	276	10	6.9	7.0	11	10	6.2	13
12	6.9	7.5	321	19	104	11	6.6	6.5	52	13	5.7	10
13	7.4	11	187	24	52	8.9	7.9	7.2	36	10	6.8	24
14	7.2	16	186	36	33	7.1	8.2	7.4	26	10	12	108
15	25	13	164	28	23	6.7	8.9	7.1	681	7.8	9.1	26
16	246	13	88	24	18	8.1	94	6.5	218	9.2	8.3	12
17	89	12	56	20	16	6.9	60	7.2	56	14	7.5	7.2
18	34	12	41	18	15	7.0	21	7.6	27	19	8.3	8.9
19	22	76	84	15	15	7.0	14	7.1	18	12	21	22
20	23	96	533	14	13	7.3	725	6.8	17	22	28	18
21	15	53	163	14	13	6.0	427	27	15	20	19	12
22	10	31	71	13	13	6.5	109	22	14	12	9.9	10
23	9.3	20	49	15	13	7.8	46	12	11	12	8.8	10
24	250	16	34	14	11	9.8	25	10	13	11	8.8	11
25	314	15	113	11	10	13	16	11	11	9.8	9.4	7.8
26	109	22	117	12	7.6	9.2	12	8.8	10	11	9.2	5.8
27	50	20	59	13	7.0	12	11	9.2	11	11	10	5.3
28	28	83	40	14	6.4	56	10	9.5	12	10	17	5.4
29	179	87	28	14	---	23	9.0	8.2	12	9.7	16	6.9
30	169	44	22	23	---	14	8.1	5.3	14	7.9	11	6.7
31	70	---	18	66	---	11	---	4.6	---	6.8	9.2	---
TOTAL	1781.6	816.6	3749	816	1100.0	333.0	1722.5	283.8	1336.2	408.8	329.3	450.0
MEAN	57.5	27.2	121	26.3	39.3	10.7	57.4	9.15	44.5	13.2	10.6	15.0
MAX	314	96	533	81	276	56	725	27	681	55	28	108
MIN	6.9	7.5	18	11	6.4	6.0	6.6	4.6	5.9	6.8	5.7	5.3
AC-FT	3530	1620	7440	1620	2180	661	3420	563	2650	811	653	893
(††)	5.44	2.66	5.77	2.20	1.60	1.64	4.34	.88	5.32	1.60	2.27	2.87

CAL YR 1976 TOTAL 15665.2 MEAN 42.8 MAX 846 MIN 4.8 AC-FT 31070 †† 49.06
WTR YR 1977 TOTAL 13126.8 MEAN 36.0 MAX 725 MIN 4.6 AC-FT 26040 †† 36.59

†† Weighted-mean rainfall, in inches, based on four rain gages.

STA. NO. 08075900					STORM RAINFALL AND RUNOFF RECORD					1977 WATER YEAR		
GREENS BAYOU AT U.S. HIGHWAY 75 NEAR HOUSTON, TX.					STORM OF JUNE 15, 1977					ACCUM.	DISCHARGE	ACCUM.
DATE & TIME	G A G E N U M B E R									WEIGHTED	IN	RUNOFF
	5900	204R	203R	29R						PRECIP.	CFS	IN.
JUNE 15												
0000	0.0	0.0	0.0	0.0						0.0	36.0	0.0025
0315	0.0	0.0	0.0	0.0						0.0	30.0	0.0048
0330	0.0	0.0	0.0	0.54						0.14	30.0	0.0051
0345	0.40	0.17	0.04	0.88						0.35	30.0	0.0054
0400	0.90	0.43	0.69	1.13						0.85	42.0	0.0059
0415	1.60	0.73	1.69	1.38						1.49	90.0	0.0068
0430	2.35	1.50	2.33	1.58						2.06	159.0	0.0094
0500	2.54	2.77	2.72	1.73						2.43	304.0	0.0159
0530	2.65	2.86	2.84	1.85						2.55	419.0	0.0249
0600	2.77	2.94	2.96	1.94						2.66	533.0	0.0363
0630	2.83	2.97	3.08	2.06						2.75	673.0	0.0507
0700	2.90	3.01	3.20	2.10						2.83	799.0	0.0679
0730	2.97	3.08	3.26	2.13						2.89	912.0	0.0874
0800	3.02	3.13	3.27	2.14						2.91	1030.0	0.1095
0830	3.04	3.18	3.31	2.17						2.94	1120.0	0.1335
0900	3.10	3.25	3.35	2.18						2.98	1190.0	0.1590
0930	3.15	3.25	3.36	2.20						3.01	1220.0	0.1852
1000	3.17	3.25	3.43	2.42						3.11	1240.0	0.2118
1030	3.24	3.50	3.46	2.78						3.24	1240.0	0.2383
1100	3.24	3.54	3.66	2.81						3.33	1220.0	0.2776
1200	3.24	3.54	3.70	2.81						3.35	1140.0	0.3265
1300	3.24	3.54	3.70	2.81						3.35	1080.0	0.3728
1400	3.24	3.54	3.70	2.81						3.35	1000.0	0.4156
1500	3.24	3.54	3.70	2.81						3.35	925.0	0.4553
1600	3.24	3.54	3.70	2.81						3.35	869.0	0.4926
1700	3.24	3.54	3.70	2.81						3.35	818.0	0.5276
1800	3.24	3.54	3.70	2.84						3.35	762.0	0.5603
1900	3.24	3.54	3.70	2.84						3.35	697.0	0.5902
2000	3.24	3.54	3.70	2.84						3.35	651.0	0.6181
2100	3.24	3.54	3.70	2.84						3.35	604.0	0.6440
2200	3.24	3.54	3.70	2.84						3.35	561.0	0.6681
2300	3.24	3.54	3.73	2.84						3.37	520.0	0.6904
2400	3.24	3.54	3.73	2.84						3.37	485.0	0.7215
JUNE 16												
0000	3.24	3.54	3.73	2.84						3.37	485.0	0.7215
0400	3.24	3.54	3.73	2.84						3.37	332.0	0.8135
1000	3.24	3.54	3.73	2.84						3.37	207.0	0.8756
1800	3.24	3.54	3.73	2.84						3.37	125.0	0.9132
2400	3.24	3.54	3.73	2.84						3.37	90.0	0.9305
JUNE 17												
0000	3.24	3.54	3.73	2.84						3.37	90.0	0.9305

STA. NO. 08075900					STORM RAINFALL AND RUNOFF RECORD					1977 WATER YEAR		
GREENS BAYOU AT U.S. HIGHWAY 75 NEAR HOUSTON, TX.					STORM OF JUNE 15, 1977					ACCUM.	DISCHARGE	ACCUM.
DATE & TIME	G A G F				N U M B E R	WEIGHTED		PRECIP.	IN		RUNOFF	
	5900	204R	203R	24R		IN.	CFS		IN.			
JUNE 17												
0600	3.24	3.54	3.84	2.84				3.41	68.0	0.9538		
1200	3.24	3.54	3.84	2.84				3.41	52.0	0.9672		
1800	3.24	3.54	3.84	2.84				3.41	44.0	0.9785		
2400	3.24	3.54	3.84	2.84				3.41	37.0	0.9880		
JUNE 18												
0000	3.24	3.54	3.84	2.84				3.41	37.0	0.9880		
1200	3.24	3.54	3.84	2.84				3.41	26.0	1.0062		
2400	3.24	3.54	3.84	2.84				3.41	20.0	1.0113		

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, 10.5 mi (16.9 km) northeast of Houston, 12.0 mi (19.3 km) upstream from Halls Bayou, and 23.4 mi (37.7 km) upstream from mouth.

DRAINAGE AREA (revised).--69.6 mi² (180.3 km²). Prior to Oct. 1, 1973, 72.7 mi² (188.3 km²).

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 (0.201 m) below mean sea level; unadjusted for land-surface subsidence.

REMARKS.--Water-discharge records fair. Channel was rectified during the 1974-75 water years. 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 located at station.

AVERAGE DISCHARGE.--25 years, 52.7 ft³/s (1.492 m³/s), 38,180 acre-ft/yr (47.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,730 ft³/s (219 m³/s) Apr. 18, 1976, gage height, 61.92 ft (18.873 m); maximum gage height, 65.75 ft (20.041 m) Sept. 12, 1961 (prior to channel rectification); no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,200 ft³/s (34.0 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 6	1730	1,590 45.0	53.37 16.267	June 15	1300	1,870 53.0	54.30 16.551
Dec. 20	0800	1,360 38.5	52.57 16.023	aSept. 8	1600	356 10.1	48.18 14.685
Apr. 20	1700	*2,460 69.7	56.00 17.069	aSept. 14	0230	783 22.1	50.25 15.316

a Water-quality samples were obtained for this flood event.

Minimum daily discharge, 5.4 ft³/s (0.15 m³/s) June 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	70	58	35	120	15	18	36	5.4	13	8.6	13
2	26	46	53	131	64	15	16	21	9.0	11	8.7	12
3	20	35	41	239	178	52	16	18	9.5	12	11	11
4	17	28	34	123	158	55	77	16	11	11	11	11
5	25	23	41	88	82	23	27	17	8.0	10	11	9.4
6	17	19	780	93	54	18	18	15	7.5	17	17	9.4
7	14	17	797	86	41	17	15	14	8.5	13	19	52
8	15	16	265	67	33	18	13	14	8.2	37	15	136
9	14	15	127	97	29	20	13	14	7.6	34	11	138
10	13	222	80	73	309	16	13	14	7.4	13	11	269
11	12	176	415	54	726	26	12	13	11	11	10	43
12	13	43	888	45	280	26	11	12	37	13	12	16
13	12	55	469	50	138	20	11	12	92	12	9.9	164
14	14	55	395	83	85	16	12	12	116	11	54	476
15	28	32	410	66	59	15	14	13	1140	11	28	73
16	353	26	242	53	45	17	151	12	462	9.5	18	23
17	147	26	140	44	39	17	167	12	93	15	13	14
18	68	24	93	38	35	16	44	13	39	23	12	11
19	42	359	225	33	34	16	24	13	20	15	37	38
20	45	295	1090	30	29	15	1350	13	17	32	75	76
21	29	129	423	29	28	14	924	35	17	44	24	28
22	21	66	193	28	27	13	285	41	15	16	13	24
23	18	41	128	38	27	14	110	18	13	14	52	20
24	418	31	95	38	23	17	58	12	13	13	21	21
25	521	26	209	29	22	27	39	12	12	11	15	20
26	182	51	295	26	19	20	29	11	11	14	17	17
27	80	40	148	26	17	28	23	11	11	37	26	15
28	50	194	98	28	16	167	20	11	11	24	123	14
29	306	206	59	27	---	46	17	9.8	12	14	70	14
30	311	90	59	46	---	25	18	8.7	12	11	17	16
31	126	---	43	179	---	18	---	6.0	---	9.4	14	---
TOTAL	2994	2456	8393	2022	2717	822	3545	479.5	2236.1	530.9	784.2	1783.8
MEAN	96.6	81.9	271	65.2	97.0	26.5	118	15.5	74.5	17.1	25.3	59.5
MAX	521	359	1090	239	726	167	1350	41	1140	44	123	476
MIN	12	15	34	26	16	13	11	6.0	5.4	9.4	8.6	9.4
AC-FT	5940	4870	16650	4010	5390	1630	7030	951	4440	1050	1560	3540
(††)	5.41	3.01	5.78	2.18	1.56	1.64	4.37	.76	4.81	1.77	2.74	3.62

CAL YR 1976	TOTAL	36255.8	MEAN	99.1	MAX	2520	MIN	8.4	AC-FT	71910	††	49.94
WTR YR 1977	TOTAL	28763.5	MEAN	78.8	MAX	1350	MIN	5.4	AC-FT	57050	††	37.65

†† Weighted-mean rainfall, in inches, based on four rain gages.

SAN JACINTO RIVER BASIN

08076000 GREENS BAYOU NEAR HOUSTON, TX--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTFMER 1977

DATE	TIME	INSTAN- TANEDUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- CORALT UNITS)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	BIO- CHEM- ICAL OXYGEN DEMAND 5 DAY (MG/L)
NOV										
08...	1045	16	937	6.8	16.0	40	20	9.3	97	6.6
16...	0830	38	--	--	11.0	--	--	--	--	--
DEC										
28...	0820	105	396	7.0	12.0	200	60	9.5	91	5.0
JAN										
04...	1000	116	--	--	8.0	--	--	--	--	--
25...	0945	33	800	6.8	9.5	60	10	7.9	71	9.9
FEB										
02...	0905	64	580	6.9	7.0	100	50	10.3	87	8.7
09...	1430	26	--	--	16.0	--	--	--	--	--
MAR										
31...	0800	21	--	--	--	--	--	--	--	--
JUN										
16...	1230	382	217	6.7	27.0	80	250	6.0	76	6.1
JUL										
11...	1100	14	795	8.1	31.0	5	100	8.1	109	6.0
AUG										
09...	1215	10	910	7.4	33.0	20	60	10.5	146	6.1
30...	1150	18	820	7.8	30.0	40	6	6.7	89	5.3
SEP										
08...	1600	306	205	7.4	26.0	90	300	7.2	90	7.5
09...	1100	37	340	7.5	24.5	40	120	5.9	72	7.6
14...	1245	433	239	7.4	26.0	110	400	5.2	65	10

DATE	IMME- DIATE COLI- FORM (COL. PER 100 ML)	FECAL COLI- FORM (COL. PER 100 ML)	FECAL STREP- TOCOCCEI KF AGAR (COL. PER 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
NOV										
08...	84000	4600	130	220	13	72	10	110	3.2	4.2
16...	--	--	--	--	--	--	--	--	--	--
DEC										
28...	49000	14000	1300	--	--	--	--	--	--	--
JAN										
04...	--	--	--	--	--	--	--	--	--	--
25...	29000	3400	13000	--	--	--	--	--	--	--
FEB										
02...	6700	1200	1700	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
MAR										
31...	--	--	--	--	--	--	--	--	--	--
JUN										
16...	150000	11000	6700	81	0	28	2.6	11	.5	2.8
JUL										
11...	11000	190	1200	190	0	64	8.3	84	2.6	6.0
AUG										
09...	26000	200	550	210	5	71	8.3	96	2.9	8.2
30...	250000	28000	880	--	--	--	--	--	--	--
SEP										
08...	500000	100000	55000	--	--	--	--	--	--	--
09...	100000	12000	2800	91	9	30	3.9	24	1.1	3.0
14...	890000	45000	35000	--	--	--	--	--	--	--

SAN JACINTO RIVER BASIN
08076000 GREENS BAYOU NEAR HOUSTON, TX.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SiO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NON-FILTERABLE RESIDUE (MG/L)	VOL. NON-FILTERABLE RESIDUE (MG/L)	TOTAL NITRATE (N) (MG/L)
NOV 08...	253	0	130	80	.5	26	557	41	14	1.8
16...	--	--	--	--	--	--	--	--	--	--
DEC 28...	--	--	--	--	--	--	--	96	23	.33
JAN 04...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	15	10	.18
FEB 02...	--	--	--	--	--	--	--	109	17	.64
09...	--	--	--	--	--	--	--	--	--	--
MAR 31...	--	--	--	--	--	--	--	--	--	--
JUN 16...	98	0	8.2	12	.2	7.3	120	916	180	.09
JUL 11...	260	0	41	91	.4	31	454	132	35	1.5
AUG 09...	250	0	74	110	.5	39	530	121	19	1.6
30...	--	--	--	--	--	--	--	13	10	1.3
SEP 08...	--	--	--	--	--	--	--	1790	1050	1.1
09...	100	0	18	30	.2	9.0	168	298	30	1.1
14...	--	--	--	--	--	--	--	1460	188	.45

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	PHENOLS (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
NOV 08...	.22	.64	1.1	2.2	5.0	0	.30	--	--
16...	--	--	--	--	--	--	--	62	6.4
DEC 28...	.05	.47	1.1	.70	17	--	.10	--	--
JAN 04...	--	--	--	--	--	--	--	55	17
25...	.03	.63	2.4	1.6	7.7	--	.20	--	--
FEB 02...	.05	.48	1.2	.79	8.1	--	.10	--	--
09...	--	--	--	--	--	--	--	150	11
MAR 31...	--	--	--	--	--	--	--	208	12
JUN 16...	.04	.20	.80	.50	14	--	.10	--	--
JUL 11...	.44	.95	.75	3.4	5.5	2	.10	--	--
AUG 09...	.34	1.2	1.7	4.4	7.5	--	.30	--	--
30...	.26	1.2	.90	4.3	6.2	2	.40	--	--
SEP 08...	.08	.27	1.2	.86	9.3	--	.20	--	--
09...	.19	.86	.84	2.5	9.9	--	.30	--	--
14...	.07	.29	1.3	.79	11	0	.10	--	--

SAN JACINTO RIVER BASIN
08076000 GREENS BAYOU NEAR HOUSTON, TX.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

		DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)
DATE	TIME						
JUL 11...	1100	10	300	0	0	5	10
SEP 09...	1100	11	100	0	40	2	50

		DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	DIS- SOLVED SILVER (AG) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
DATE							
JUL 11...		0	4	.0	0	0	2
SEP 09...		0	0	.0	0	0	20

DATE	TIME	TOTAL PCH (UG/L)	POLY- CHLO- RINATED NAPH- THA- LENES (UG/L)	TOTAL ALDRIN (UG/L)	TOTAL CHLOR- DANE (UG/L)	TOTAL DDD (UG/L)	TOTAL DDE (UG/L)	TOTAL DDT (UG/L)	TOTAL DI- AZINON (UG/L)	TOTAL DI- ELDRIN (UG/L)	TOTAL ENDRIN (UG/L)	TOTAL ETHION (UG/L)
NOV 08...	1045	.0	.00	.00	.0	.00	.00	.00	.10	.00	.00	.00
JUL 11...	1100	.0	.00	.00	.0	.00	.00	.00	.29	.00	.00	.00
AUG 30...	1150	.0	.00	.00	.1	.00	.00	.00	.57	.01	.00	.00
SEP 14...	1245	.1	.00	.00	.0	.00	.00	.00	.28	.00	.00	.00

DATE	TIME	TOTAL HEPTA- CHLOR (UG/L)	TOTAL HEPTA- CHLOR EPOXIDE (UG/L)	TOTAL LINDANE (UG/L)	TOTAL MALA- THION (UG/L)	TOTAL METHYL PARA- THION (UG/L)	TOTAL METHYL TRI- THION (UG/L)	TOTAL PARA- THION (UG/L)	TOTAL TOX- APHENE (UG/L)	TOTAL TRI- THION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)
NOV 08...		.00	.00	.05	.00	.00	.00	.00	0	.00	.45	.70	.18
JUL 11...		.00	.00	.00	.00	.00	.00	.00	0	.00	.09	.02	.02
AUG 30...		.00	.00	.07	.02	.00	.00	.00	0	.00	.13	.05	.01
SEP 14...		.00	.00	.00	.00	.00	.00	.00	0	.00	.00	.03	.00

STA. NO. 08076000						STORM RAINFALL AND RUNOFF RECORD			1977 WATER YEAR		
GREENS BAYOU NEAR HOUSTON, TX.						STORM OF APRIL 20, 1977			ACCUM. WEIGHTED PRECIP.	DISCHARGE IN	ACCUM. RUNOFF
DATE & TIME	G A G E N U M B E R								IN.	CFS	IN.
	6000	5900	203R	29R							
APR. 19											
0000	0.0	0.0	0.0	0.0					0.0	29.0	0.0039
1200	0.0	0.0	0.0	0.0					0.0	23.0	0.0098
2300	0.0	0.0	0.0	0.0					0.0	21.0	0.0125
2330	0.40	0.0	0.0	0.03					0.07	34.0	0.0128
2400	0.46	0.0	0.0	0.07					0.08	46.0	0.0133
APR. 20											
0000	0.46	0.0	0.0	0.07					0.08	46.0	0.0133
0100	0.52	0.0	0.07	0.09					0.11	45.0	0.0146
0200	0.70	0.0	0.10	0.17					0.16	50.0	0.0153
0215	0.70	0.10	0.13	0.17					0.21	52.0	0.0156
0230	0.70	0.50	0.13	0.72					0.50	54.0	0.0159
0245	0.70	0.70	0.98	1.19					0.85	61.0	0.0162
0300	0.74	1.00	1.30	1.22					1.09	89.0	0.0172
0345	1.28	1.30	1.44	1.24					1.31	198.0	0.0194
0400	1.32	1.35	1.44	1.25					1.34	240.0	0.0228
0500	1.32	1.35	1.48	1.32					1.37	415.0	0.0320
0600	1.38	1.35	1.48	1.32					1.37	616.0	0.0457
0700	1.39	1.40	1.50	1.32					1.40	816.0	0.0639
0800	1.42	1.40	1.50	1.33					1.41	957.0	0.0852
0900	1.48	1.45	1.58	1.47					1.48	1030.0	0.1081
1000	1.50	1.45	1.62	1.49					1.50	1090.0	0.1324
1100	1.50	1.50	1.72	1.59					1.56	1160.0	0.1518
1130	1.55	1.55	1.74	1.67					1.61	1190.0	0.1617
1145	1.80	1.80	1.80	1.87					1.81	1210.0	0.1684
1200	2.25	2.05	1.92	2.13					2.07	1230.0	0.1787
1230	2.60	2.30	2.29	2.34					2.35	1420.0	0.1945
1300	2.75	2.46	2.48	2.45					2.51	1630.0	0.2127
1330	2.77	2.46	2.48	2.46					2.51	1780.0	0.2325
1400	2.77	2.46	2.48	2.46					2.51	1940.0	0.2649
1500	2.77	2.46	2.48	2.46					2.51	2220.0	0.3143
1600	2.77	2.46	2.48	2.46					2.51	2400.0	0.3677
1700	2.77	2.46	2.48	2.46					2.51	2460.0	0.4225
1800	2.77	2.46	2.48	2.46					2.51	2420.0	0.5033
2000	2.77	2.46	2.48	2.46					2.51	2220.0	0.6022
2200	2.77	2.46	2.48	2.46					2.51	2030.0	0.6926
2400	2.77	2.46	2.48	2.46					2.51	1800.0	0.7527
APR. 21											
0000	2.77	2.46	2.48	2.46					2.51	1800.0	0.7527
0200	2.77	2.46	2.48	2.46					2.51	1570.0	0.8426
0400	2.77	2.46	2.48	2.46					2.51	1370.0	0.9036
0600	2.77	2.46	2.48	2.46					2.51	1200.0	0.9571

STA. NO. 08076000						STORM RAINFALL AND RUNOFF RECORD				1977 WATER YEAR		
GREENS BAYOU NEAR HOUSTON, TX.						STORM OF APRIL 20, 1977				ACCUM.	DISCHARGE	ACCUM.
DATE & TIME						G A G E N U M B E R				WEIGHTED PRECIP.	IN	RUNOFF
						6000	5900	203R	29R	IN.	CFS	IN.
APR. 21												
0800	2.77	2.46	2.48	2.46						2.51	1050.0	1.0038
1000	2.77	2.46	2.48	2.46						2.51	917.0	1.0446
1200	2.77	2.46	2.48	2.46						2.51	821.0	1.0812
1400	2.77	2.46	2.48	2.46						2.51	720.0	1.1133
1600	2.77	2.46	2.48	2.46						2.51	657.0	1.1498
1900	2.77	2.46	2.48	2.46						2.51	569.0	1.1878
2200	2.77	2.46	2.48	2.46						2.51	500.0	1.2157
2400	2.77	2.46	2.48	2.46						2.51	458.0	1.2335
APR. 22												
0000	2.77	2.46	2.48	2.46						2.51	458.0	1.2335
0300	2.77	2.46	2.48	2.46						2.51	400.0	1.2679
0600	2.77	2.46	2.48	2.46						2.51	351.0	1.2913
0900	2.77	2.46	2.48	2.46						2.51	309.0	1.3119
1200	2.77	2.46	2.48	2.46						2.51	272.0	1.3331
1600	2.77	2.46	2.48	2.46						2.51	229.0	1.3535
2000	2.77	2.46	2.48	2.46						2.51	192.0	1.3706
2400	2.77	2.46	2.48	2.46						2.51	168.0	1.3819
APR. 23												
0000	2.77	2.46	2.48	2.46						2.51	168.0	1.3819
0400	2.77	2.46	2.48	2.46						2.51	136.0	1.3977
0800	2.77	2.46	2.48	2.46						2.51	119.0	1.4083
1200	2.77	2.46	2.48	2.46						2.51	105.0	1.4200
1900	2.77	2.46	2.48	2.46						2.51	89.0	1.4319
2400	2.77	2.46	2.48	2.46						2.51	78.0	1.4371

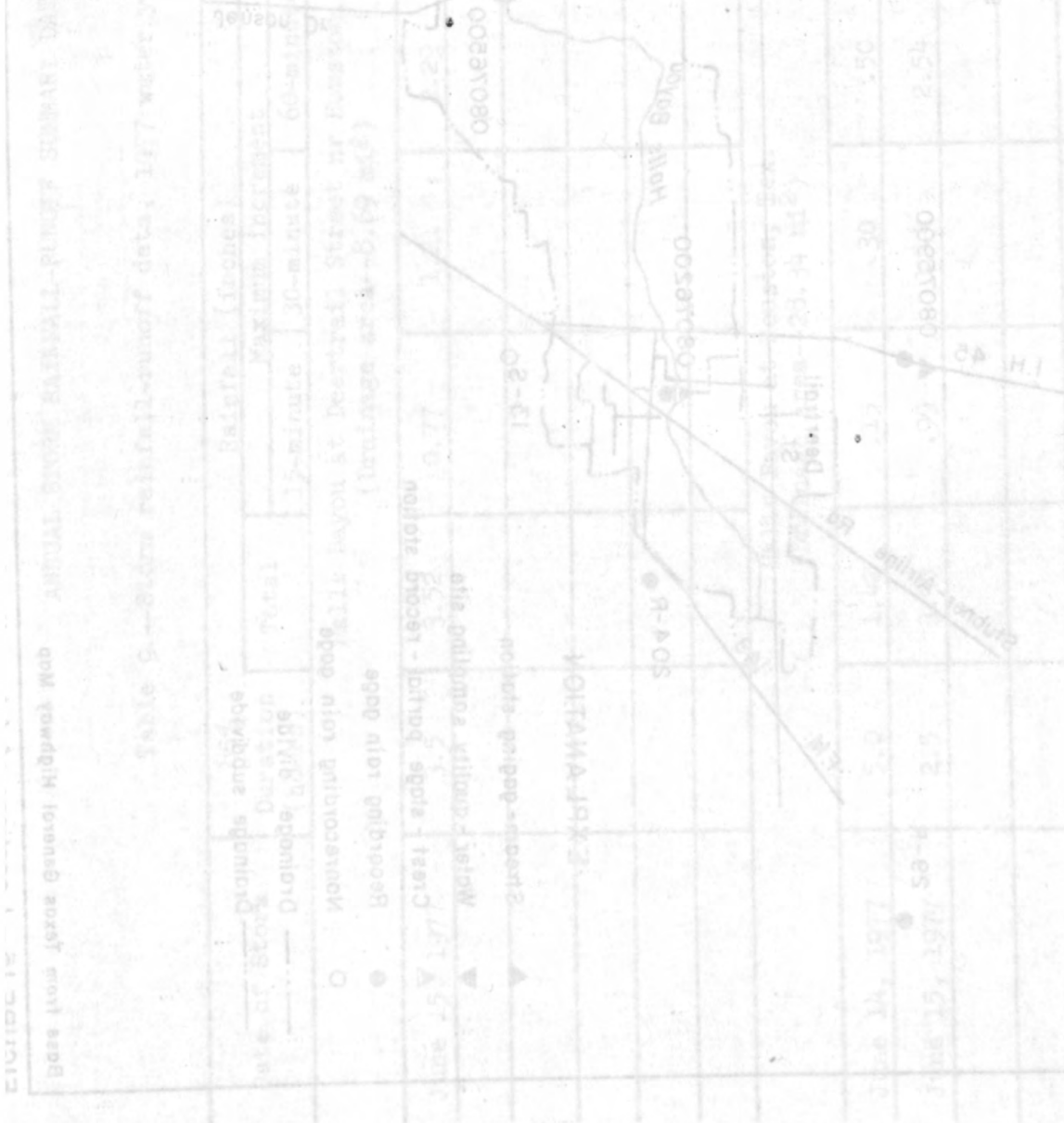
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HALLS BAYOU DRAINAGE BASIN

The locations of data-collection sites in the Halls Bayou drainage basin are shown on figure 15.

Weighted-mean rainfall for the drainage basin, based on four rain gages above the Jensen Drive station for the 1977 water year was 44.4 inches, or 3.8 inches less than the 30-year (1941-70) average of 48.19 inches for the Houston Intercontinental Airport station.

The storm of June 15 was selected for analysis for the drainage basin above the Deertrail Street station. The storm of June 14-15 was selected for analysis for the drainage basin above the Jensen Drive station.



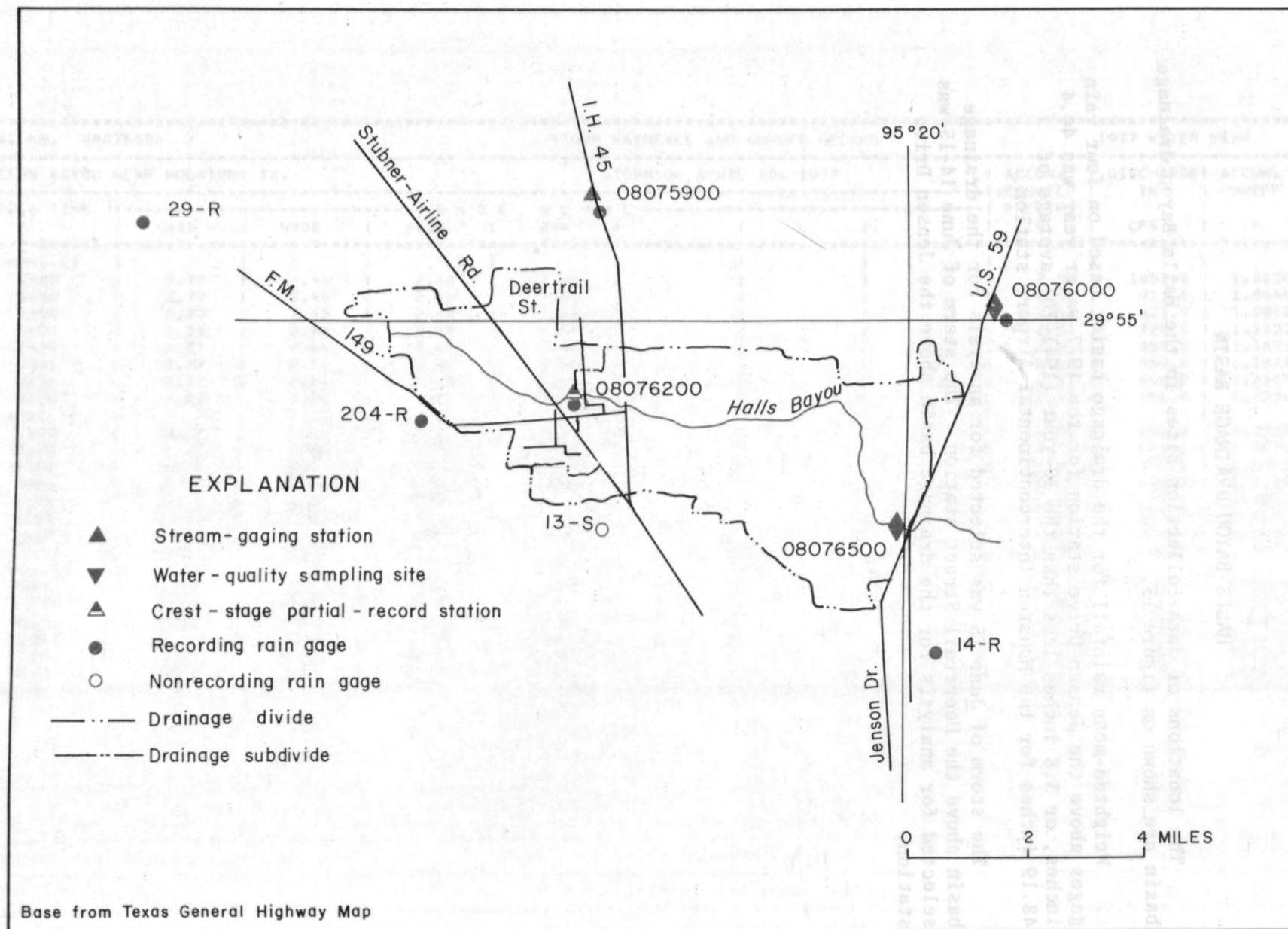


FIGURE 15.— Locations of data-collection sites in the Halls Bayou drainage basin

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UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY-TEXAS DISTRICT

ANNUAL STORM RAINFALL-RUNOFF SUMMARY DATA

Table 9.--Storm rainfall-runoff data, 1977 water year, Halls Bayou

Date of Storm	85% Duration (hours)	Rainfall (inches)				Runoff (inches)	Ratio runoff to rainfall	Maximum discharge (ft ³ /s)
		Total	Maximum increment					
			15-minute	30-minute	60-minute			
Halls Bayou at Deertrail Street nr Houston, Tex. (Drainage area--8.69 mi ²)								
June 15, 1977	3.5	3.52	0.77	1.21	2.29	1.12	0.32	687
Halls Bayou at Houston, Tex. (Drainage area--28.34 mi ²)								
June 14, 1977	5.0	1.42	.15	.30	.50	0.89	0.17	278
June 15, 1977	2.5	3.95	.99	1.44	2.54			1050

08076200 Halls Bayou at Deertrail Street near Houston, TX

(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°54'07", long 95°25'21", Harris County, Hydrologic Unit 12040104, at downstream side of bridge on Deertrail Street, 0.6 mile west of U.S. Highway 75, 3.0 miles north of city limits of Houston, and 7.7 miles upstream from station 08076500, Halls Bayou at Houston.

DRAINAGE AREA (Revised).--8.69 mi². Prior to Oct. 1, 1973, 6.31 mi².

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

GAGE.--Flood-hydrograph and rainfall recorder (type SR) and crest-stage gage. Datum of gage is mean sea level, unadjusted for land-surface subsidence.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,180 ft³/s, Mar. 20, 1972; maximum gage height, 86.07 ft, Apr. 18, 1976. Minimum not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 300 ft³/s and maximum (*):

DATE	TIME	DISCHARGE	ELEVATION
Nov. 10	2200	387	82.14
Dec. 6	1300	324	81.58
Apr. 20	1430	418	82.50
Jun. 15	0630	*687	*84.56

Minimum discharge, not determined.

STA. NO. 08076200				STORM RAINFALL AND RUNOFF RECORD				1977 WATER YEAR		
HALLS BAYOU AT DEERTRAIL STREET NEAR HOUSTON, TX.				STORM OF JUNE 15, 1977				ACCUM. WEIGHTED PRECIP.	DISCHARGE IN	ACCUM. RUNOFF
DATE & TIME	G A G E N U M B E R							IN.	CFS	IN.
	5900	204R								
JUNE 15										
0000	0.0	0.0						0.0	11.0	0.0029
0300	0.0	0.0						0.0	10.0	0.0058
0315	0.0	0.0						0.0	10.0	0.0063
0330	0.0	0.0						0.0	10.0	0.0067
0345	0.40	0.17						0.18	26.0	0.0079
0400	0.90	0.43						0.46	59.0	0.0105
0415	1.60	0.73						0.78	141.0	0.0168
0430	2.35	1.50						1.55	255.0	0.0339
0500	2.54	2.77						2.76	455.0	0.0744
0530	2.65	2.86						2.85	592.0	0.1272
0600	2.77	2.94						2.93	665.0	0.1865
0630	2.83	2.97						2.96	687.0	0.2478
0700	2.90	3.01						3.00	680.0	0.3084
0730	2.97	3.08						3.07	668.0	0.3679
0800	3.02	3.13						3.12	642.0	0.4538
0900	3.10	3.25						3.24	573.0	0.5560
1000	3.17	3.25						3.25	493.0	0.6219
1030	3.24	3.50						3.48	455.0	0.6625
1100	3.24	3.54						3.52	421.0	0.7188
1200	3.24	3.54						3.52	360.0	0.7830
1300	3.24	3.54						3.52	313.0	0.8388
1400	3.24	3.54						3.52	252.0	0.8837
1500	3.24	3.54						3.52	209.0	0.9210
1600	3.24	3.54						3.52	175.0	0.9522
1700	3.24	3.54						3.52	135.0	0.9763
1800	3.24	3.54						3.52	104.0	0.9948
1900	3.24	3.54						3.52	83.0	1.0096
2000	3.24	3.54						3.52	63.0	1.0208
2100	3.24	3.54						3.52	51.0	1.0299
2200	3.24	3.54						3.52	44.0	1.0378
2300	3.24	3.54						3.52	39.0	1.0447
2400	3.24	3.54						3.52	34.0	1.0569
JUNE 16										
0000	3.24	3.54						3.52	34.0	1.0569
0600	3.24	3.54						3.52	22.0	1.0895
1200	3.24	3.54						3.52	15.0	1.1055
1800	3.24	3.54						3.52	10.0	1.1162
2400	3.24	3.54						3.52	10.0	1.1216

SAN JACINTO RIVER BASIN

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 (17.7 km) upstream from mouth.

DRAINAGE AREA (revised).--28.3 mi² (73.3 km²). Prior to Oct. 1, 1973, 24.7 mi² (64.0 km²).

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 (0.201 m) below mean sea level; unadjusted for land-surface subsidence.

REMARKS.--Water-discharge records fair. No known diversion above station. Low flow is sustained by sewage effluent from Houston suburbs.

AVERAGE DISCHARGE.--25 years, 26.1 ft³/s (0.739 m³/s), 18,910 acre-ft/yr (23.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,780 ft³/s (107 m³/s) Mar. 21, 1972, gage height, 60.70 ft (18.501 m); maximum gage height, 60.75 ft (18.517 m) June 13, 1973; no flow at times prior to 1956.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 950 ft³/s (26.9 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 6	1800	994 28.2	54.43 16.590	aSept. 7	2200	98 2.78	47.30 14.417
Apr. 20	1800	*1,450 41.1	56.17 17.121	aSept. 9	2030	164 4.64	48.41 14.755
June 15	1030	1,050 29.7	55.68 16.971	aSept. 14	0400	364 10.3	51.18 15.600

a Water-quality samples were obtained for this flood event.

Minimum daily discharge, 5.8 ft³/s (0.16 m³/s) May 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	25	29	19	33	13	12	18	6.4	8.3	7.0	7.0
2	11	18	33	77	26	12	11	11	6.2	8.1	7.4	6.8
3	9.6	15	26	82	67	39	13	9.1	6.2	7.4	6.5	6.3
4	9.7	13	20	42	44	40	129	9.0	6.5	7.3	6.8	6.3
5	18	12	31	34	29	17	21	8.1	6.1	8.1	6.8	6.5
6	9.2	10	411	49	22	14	12	8.6	8.5	12	14	7.5
7	8.8	10	233	43	18	13	12	8.2	6.3	10	8.6	26
8	11	9.2	69	31	16	13	11	7.6	5.9	18	7.4	35
9	9.1	9.6	42	51	16	13	10	13	5.9	22	8.0	57
10	7.9	130	33	35	234	13	9.9	9.1	5.9	9.0	7.0	64
11	8.7	245	246	29	278	21	9.6	8.5	7.5	7.5	7.4	17
12	8.1	54	434	25	78	17	9.8	8.2	9.8	7.4	7.0	9.4
13	7.0	83	144	31	44	13	10	7.8	7.7	7.4	6.2	45
14	6.9	65	168	43	31	13	9.7	7.1	111	7.7	60	176
15	11	34	127	29	24	12	10	7.2	484	7.4	38	17
16	189	23	75	24	21	12	112	7.3	64	7.7	16	9.3
17	33	18	48	22	19	12	46	7.0	20	7.7	8.6	7.7
18	16	18	37	20	17	11	15	7.1	14	7.4	11	8.2
19	15	282	155	19	17	11	12	6.6	11	8.0	48	13
20	23	171	426	18	16	10	705	6.6	10	16	34	17
21	12	69	87	18	15	10	284	22	10	21	9.3	9.4
22	10	37	51	19	15	10	59	14	9.5	8.3	7.1	8.4
23	9.5	25	42	26	14	11	27	7.9	9.4	6.5	15	7.7
24	332	20	35	25	13	11	18	7.8	9.6	7.4	18	7.2
25	204	20	72	19	13	15	14	6.9	9.1	6.8	12	7.3
26	50	48	69	18	12	12	12	6.7	8.9	7.7	10	7.8
27	28	30	41	17	12	15	10	6.6	8.7	19	17	7.3
28	18	129	34	17	12	105	11	6.3	8.7	29	51	7.3
29	226	86	27	14	---	19	10	6.4	8.2	11	20	7.0
30	103	41	23	32	---	14	11	5.8	8.5	8.9	9.2	6.7
31	39	---	21	90	---	12	---	7.0	---	6.8	7.3	---
TOTAL	1455.5	1749.8	3289	1018	1156	553	1636.0	272.5	893.5	326.8	491.6	618.1
MEAN	47.0	58.3	106	32.8	41.3	17.8	54.5	8.79	29.8	10.5	15.9	20.6
MAX	332	282	434	90	278	105	705	22	484	29	60	176
MIN	6.9	9.2	20	14	12	10	9.6	5.8	5.9	6.5	6.2	6.3
AC-FT	2890	3470	6520	2020	2290	1100	3250	541	1770	648	975	1230
(††)	5.24	4.41	5.81	2.28	1.79	1.88	4.53	1.04	5.09	3.70	3.59	5.02

CAL YR 1976 TOTAL 18857.3 MEAN 51.5 MAX 1670 MIN 6.9 AC-FT 37400 †† 54.47
WTR YR 1977 TOTAL 13459.8 MEAN 36.9 MAX 705 MIN 5.8 AC-FT 26700 †† 44.38

†† Weighted-mean rainfall, in inches, based on four rain gages.

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 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	BIO- CHEM- ICAL OXYGEN DEMAND 5 DAY (MG/L)
NOV 08...	1145	12	975	6.8	16.5	30	20	2.9	31	10
DEC 28...	0900	33	776	6.9	13.5	80	20	7.0	69	14
JAN 25...	0900	20	1060	6.8	10.5	50	8	5.5	51	23
FEB 02...	0820	27	865	6.8	8.5	50	20	8.1	72	16
JUN 16...	1200	48	366	6.6	27.0	80	50	3.0	38	14
JUL 11...	1140	7.2	676	7.6	30.5	30	20	5.2	69	15
AUG 09...	1045	6.6	935	7.6	30.0	40	20	2.6	35	18
30...	1235	10	735	7.3	29.0	20	70	1.5	20	11
SEP 08...	1530	28	510	7.2	26.5	40	30	1.5	19	10
09...	1015	14	578	7.3	24.0	40	10	1.3	16	9.9
14...	1210	147	264	7.1	25.0	90	100	3.7	46	8.1

DATE	IMME- DIATE COLI- FORM (COL. PER 100 ML)	FECAL COLI- FORM (COL./ 100 ML)	FECAL STREP- TOCOCCI KF AGAR (COL. PER 100 ML)	HARD- NESS (CA+MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO
NOV 08...	12000	700	180	250	0	75	14	100	2.8
DEC 28...	55000	780	1600	--	--	--	--	--	--
JAN 25...	14000	800	280	--	--	--	--	--	--
FEB 02...	5500	190	3600	--	--	--	--	--	--
JUN 16...	1000000	66000	36000	95	5	31	4.3	31	1.4
JUL 11...	960000	100000	1200	130	0	41	7.3	70	2.6
AUG 09...	1600000	46000	12000	180	0	58	8.9	100	3.2
30...	3400000	540000	35000	--	--	--	--	--	--
SEP 08...	2400000	520000	160000	--	--	--	--	--	--
09...	2200000	400000	10000	--	--	--	--	--	--
14...	2400000	160000	42000	73	0	24	3.1	19	1.0

SAN JACINTO RIVER BASIN
08076500 HALLS BAYOU AT HOUSTON, TX.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	TOTAL NON- FILT- RABLE RESIDUE (MG/L)
NOV 08...	6.8	365	0	33	110	.6	24	543	31
DEC 28...	--	--	--	--	--	--	--	--	54
JAN 25...	--	--	--	--	--	--	--	--	12
FEB 02...	--	--	--	--	--	--	--	--	33
JUN 16...	4.5	110	0	15	38	.2	9.6	188	100
JUL 11...	7.7	250	0	25	61	.3	22	358	41
AUG 09...	9.4	330	0	29	96	.2	30	494	16
SEP 30...	--	--	--	--	--	--	--	--	144
SEP 08...	--	--	--	--	--	--	--	--	50
SEP 09...	--	--	--	--	--	--	--	--	31
SEP 14...	3.5	98	0	9.7	20	.2	9.4	137	236

DATE	VOL- NON- FILT- RABLE RESIDUE (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	PHENOLS (UG/L)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
NOV 08...	5	.78	.42	6.1	2.5	4.4	9.4	2	.10
DEC 28...	21	.78	.20	2.0	1.7	2.0	20	--	.60
JAN 25...	11	.21	.07	1.5	5.6	3.8	8.8	--	.90
FEB 02...	7	.90	.20	2.3	1.0	2.0	7.4	--	.60
JUN 16...	34	.15	.04	1.4	2.7	1.4	15	--	.30
JUL 11...	24	.03	.02	8.4	.00	6.0	15	6	.70
AUG 09...	9	.01	.01	13	31	11	19	--	1.3
SEP 30...	32	.03	.04	8.9	1.1	5.9	16	8	1.3
SEP 08...	15	.52	.12	3.7	3.2	25	12	--	.40
SEP 09...	1	.11	.05	.00	5.5	7.0	15	--	.60
SEP 14...	30	.82	.07	.74	.96	4.0	11	1	.10

SAN JACINTO RIVER BASIN
08076500 HALLS BAYOU AT HOUSTON, TX.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)
JUL 11...	1140	5	100	0	0	3	50
SEP 14...	1210	15	0	0	10	2	40

DATE	DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	DIS- SOLVED SILVER (AG) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
JUL 11...	0	130	.0	0	0	6
SEP 14...	0	0	.0	0	0	20

DATE	TIME	TOTAL PCH (UG/L)	POLY- CHLOR- VINATED NAPHE- THAL- LENES (UG/L)	TOTAL ALDRIN (UG/L)	TOTAL CHLOR- DANE (UG/L)	TOTAL DDO (UG/L)	TOTAL DDE (UG/L)	TOTAL DGT (UG/L)	TOTAL DI- AZINON (UG/L)	TOTAL DI- ELDRIN (UG/L)	TOTAL ENDRIN (UG/L)	TOTAL ETHION (UG/L)
NOV 02...	1145	.0	.00	.00	.1	.00	.00	.00	.24	.01	.00	.00
JUL 11...	1140	.0	.00	.00	.0	.00	.00	.00	.80	.00	.00	.00
AUG 3...	1235	.0	.00	.00	.0	.00	.00	.00	.07	.00	.00	.00
SEP 14...	1210	.0	.00	.00	.0	.00	.00	.00	1.0	.01	.00	.00

DATE	TOTAL HEPTA- CHLOR (UG/L)	TOTAL HEPTA- CHLOR EPOXIDE (UG/L)	TOTAL LINDANE (UG/L)	TOTAL MALA- THION (UG/L)	TOTAL METHYL PARA- THION (UG/L)	TOTAL METHYL TRI- THION (UG/L)	TOTAL PARA- THION (UG/L)	TOTAL TOX- APHENE (UG/L)	TOTAL TRI- THION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)
NOV 02...	.00	.00	.02	.00	.00	.00	.00	0	.00	.00	.00	.00
JUL 11...	.00	.01	.01	.03	.00	.00	.00	0	.00	.12	.12	.02
AUG 3...	.00	.00	.02	.00	.00	.00	.00	0	.00	.03	.05	.01
SEP 14...	.00	.01	.00	.05	.00	.00	.00	0	.00	.01	.03	.00

STA. NO. 08076500				STORM RAINFALL AND RUNOFF RECORD				1977 WATER YEAR		
HALLS BAYOU AT HOUSTON, TX.				STORM OF JUNE 14-15, 1977				ACCUM.	DISCHARGE	ACCUM.
DATE & TIME	G A G F N U M B E R			WEIGHTED	PRECIP.	IN.	CFS	IN.	RUNOFF	IN.
	6000	5900	204R							
JUNE 14										
0000	0.0	0.0	0.0			0.0	7.0	0.0011		
0600	0.0	0.02	0.0			0.00	8.0	0.0027		
0700	0.04	0.04	0.0			0.04	10.0	0.0032		
0800	0.15	0.56	0.0			0.18	12.0	0.0039		
0900	0.29	0.92	0.11			0.39	37.0	0.0059		
1000	0.39	0.94	0.78			0.89	106.0	0.0117		
1100	0.42	0.98	1.18			1.17	100.0	0.0172		
1200	0.42	1.00	1.24			1.21	100.0	0.0226		
1300	0.42	1.02	1.24			1.22	157.0	0.0312		
1400	0.42	1.02	1.24			1.22	234.0	0.0440		
1500	0.42	1.02	1.24			1.22	261.0	0.0619		
1630	0.42	1.02	1.24			1.22	278.0	0.0771		
1700	0.59	1.02	1.30			1.37	274.0	0.0883		
1800	0.66	1.02	1.30			1.41	254.0	0.1022		
1900	0.68	1.02	1.30			1.42	217.0	0.1140		
2000	0.68	1.02	1.30			1.42	182.0	0.1389		
2400	0.68	1.02	1.30			1.42	87.0	0.1526		
JUNE 15										
0000	0.68	1.02	1.30			1.42	87.0	0.1526		
0330	0.68	1.02	1.30			1.42	55.0	0.1624		
0345	0.77	1.42	1.47			1.65	62.0	0.1632		
0400	0.92	2.00	1.73			2.00	71.0	0.1642		
0415	1.18	2.62	2.03			2.45	89.0	0.1654		
0430	1.78	3.37	2.80			3.44	114.0	0.1678		
0500	2.18	3.56	4.07			4.54	152.0	0.1719		
0530	2.26	3.67	4.16			4.67	184.0	0.1770		
0600	2.33	3.79	4.24			4.78	239.0	0.1835		
0630	2.36	3.85	4.27			4.83	299.0	0.1917		
0700	2.37	3.92	4.31			4.87	391.0	0.2024		
0730	2.37	3.99	4.38			4.93	524.0	0.2167		
0800	2.37	4.04	4.43			4.96	702.0	0.2359		
0830	2.37	4.07	4.48			5.00	848.0	0.2591		
0900	2.37	4.12	4.55			5.05	945.0	0.2849		
0930	2.53	4.17	4.55			5.16	1010.0	0.3125		
1000	2.53	4.19	4.55			5.17	1040.0	0.3409		
1030	2.53	4.26	4.80			5.34	1050.0	0.3696		
1100	2.53	4.26	4.84			5.36	1050.0	0.4127		
1200	2.54	4.26	4.84			5.37	994.0	0.4671		
1300	2.54	4.26	4.84			5.37	914.0	0.5170		
1400	2.54	4.26	4.84			5.37	827.0	0.5623		

STA. NO. 08076500							STORM RAINFALL AND RUNOFF RECORD			1977 WATER YEAR		
HALLS BAYOU AT HOUSTON, TX.							STORM OF JUNE 14-15, 1977			ACCUM. WEIGHTED PRECIP.	DISCHARGE IN	ACCUM. RUNOFF
DATE & TIME	6000	5900	204R							IN.	CFS	IN.
JUNE 15												
1500	2.54	4.26	4.84							5.37	732.0	0.6023
1600	2.54	4.26	4.84							5.37	635.0	0.6370
1700	2.54	4.26	4.84							5.37	545.0	0.6668
1800	2.54	4.26	4.84							5.37	477.0	0.6929
1900	2.54	4.26	4.84							5.37	418.0	0.7157
2000	2.54	4.26	4.84							5.37	358.0	0.7353
2100	2.54	4.26	4.84							5.37	306.0	0.7520
2200	2.54	4.26	4.84							5.37	255.0	0.7660
2300	2.54	4.26	4.84							5.37	210.0	0.7775
2400	2.54	4.26	4.84							5.37	176.0	0.7919
JUNE 16												
0000	2.54	4.26	4.84							5.37	176.0	0.7919
0400	2.54	4.26	4.84							5.37	94.0	0.8272
1000	2.54	4.26	4.84							5.37	55.0	0.8483
1800	2.54	4.26	4.84							5.37	37.0	0.8624
2400	2.54	4.26	4.84							5.37	28.0	0.8716
JUNE 17												
0000	2.54	4.26	4.84							5.37	28.0	0.8716
1200	2.54	4.26	4.84							5.37	18.0	0.8880
2400	2.54	4.26	4.84							5.37	16.0	0.8933

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, 300 ft (91 m) downstream from mouth of Halls Bayou, and in northeast Houston.

DRAINAGE AREA.--182 mi² (471 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1962 to December 1964, May to September 1971 (discharge measurements only), October 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2.13 ft (0.649 m) below mean sea level.

REMARKS.--Water-discharge records good except those below 700 ft³/s (19.8 m³/s), which are poor. Discharge is computed for all storms which produce peak discharges over 700 ft³/s (19.8 m³/s). Tidal influences on the stage-discharge relationship affect discharge below about 500 ft³/s (14.2 m³/s). Discharge below 500 ft³/s (14.2 m³/s) is estimated following designated storm period only.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,700 ft³/s (473 m³/s) June 13, 1973, gage height, 34.27 ft (10.445 m); minimum not determined (affected by tides).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,200 ft³/s (62.3 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Gage height (ft)	Gage height (m)
Oct. 25	0200	2,460	69.7	14.18	4.322	aApr. 16	2300	791	22.4	7.61	2.320
Dec. 7	0200	4,010	114	17.35	5.288	Apr. 21	0100	*5,280	150	21.14	6.443
Dec. 12	1500	3,460	98.0	15.95	4.862	June 15	1900	2,900	82.1	15.55	4.740
Dec. 20	1100	3,700	105	16.56	5.047	aSept. 8	1700	2,030	57.5	12.77	3.892
Feb. 11	0500	3,580	101	16.27	4.959						

a Water-quality samples obtained on this flood event.

Minimum not determined (affected by tides).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	120	---	---	---	---	---	---	---	---	---	---
2	---	---	---	200	---	---	---	---	---	---	---	---
3	---	---	---	600	---	---	---	---	---	---	---	---
4	---	---	---	200	---	---	---	687	---	---	---	---
5	---	---	60	---	---	---	150	---	---	---	---	---
6	---	---	1490	---	---	---	---	---	---	---	---	---
7	---	---	2670	---	---	---	---	---	---	---	---	---
8	---	---	596	---	---	---	---	---	---	---	---	---
9	---	---	200	---	---	---	---	---	---	---	---	752
10	---	144	---	---	834	---	---	---	---	---	---	360
												754
11	---	898	787	---	2620	---	---	---	---	---	---	280
12	---	300	2940	---	723	---	---	---	---	---	---	80
13	---	---	1590	---	250	---	---	---	---	---	---	200
14	---	---	1120	---	120	---	---	---	909	---	---	1150
15	---	---	1050	---	---	---	---	---	1830	---	---	100
16	614	---	542	---	---	---	207	---	---	---	---	---
17	222	---	250	---	---	---	396	---	981	---	---	---
18	100	---	120	---	---	---	100	---	154	---	---	---
19	---	1040	479	---	---	---	---	---	---	---	---	---
20	---	1030	2990	---	---	---	2310	---	---	---	---	---
21	---	356	1200	---	---	---	3350	---	---	---	---	---
22	---	120	330	---	---	---	678	---	---	---	---	---
23	---	---	150	---	---	---	200	---	---	---	---	---
24	741	---	---	---	---	---	100	---	---	---	---	---
25	1490	---	---	---	---	---	---	---	---	---	---	---
26	400	---	---	---	---	---	---	---	---	---	---	---
27	120	---	---	---	---	---	---	---	---	---	---	---
28	---	390	---	---	---	514	---	---	---	---	---	---
29	988	549	---	---	---	120	---	---	---	---	---	---
30	877	140	---	---	---	---	---	---	---	---	---	---
31	300	---	---	---	---	---	---	---	---	---	---	---
TOTAL	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---
AC-FT	---	---	---	---	---	---	---	---	---	---	---	---

CAL YR 1976 TOTAL - MEAN - MAX - MIN - AC-FT -
WTR YR 1977 TOTAL - MEAN - MAX - MIN - AC-FT -

SAN JACINTO RIVER BASIN
08076700 GREENS BAYOU AT LEY ROAD, 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 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	RIO-CHEMICAL OXYGEN DEMAND 5 DAY (MG/L)
DEC 06...	1445	1470	339	7.7	16.0	120	300	8.3	86	13
JAN 12...	1430	108	891	6.9	8.5	80	60	9.7	86	12
FEB 08...	1410	77	938	6.9	13.5	60	40	8.9	88	11
APR 16...	1255	50	1100	6.8	22.0	50	20	4.5	53	12
17...	1030	430	379	6.6	21.0	240	400	5.6	64	14
20...	1155	2150	342	6.4	19.5	480	400	5.4	61	30
21...	0810	4750	223	7.2	20.5	550	200	5.6	64	5.7
JUN 14...	1055	1800	257	7.0	24.5	70	320	6.4	78	30
14...	1400	1750	255	6.8	25.5	80	300	5.8	72	11
JUL 12...	1210	33	751	7.6	29.0	10	50	3.6	47	8.4
AUG 30...	0800	51	436	7.5	28.0	40	90	4.1	53	10
SEP 08...	1650	2100	246	7.3	24.5	60	500	6.4	78	14
09...	1130	260	525	7.3	25.5	40	150	5.1	64	13

DATE	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. / 100 ML)	FECAL STREPTOCOCCI (COL. PER 100 ML)	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO
DEC 06...	1100000	74000	120000	97	17	31	4.8	28	1.2
JAN 12...	14000	2200	620	--	--	--	--	--	--
FEB 08...	24000	600	520	--	--	--	--	--	--
APR 16...	840000	25000	11000	250	21	78	14	110	3.0
17...	500000	46000	100000	--	--	--	--	--	--
20...	940000	160000	400000	--	--	--	--	--	--
21...	440000	42000	69000	--	--	--	--	--	--
JUN 14...	840000	180000	210000	88	21	31	2.6	13	.6
14...	920000	230000	210000	--	--	--	--	--	--
JUL 12...	140000	550	2100	170	0	53	8.2	78	2.6
AUG 30...	140000	26000	550	--	--	--	--	--	--
SEP 08...	2000000	640000	240000	--	--	--	--	--	--
09...	790000	120000	11000	130	26	44	5.6	44	1.7

SAN JACINTO RIVER BASIN

08076700 GREENS BAYOU AT LEY ROAD, HOUSTON, TX.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED (SUM OF CONSTI- TUENTS) (MG/L)	TOTAL NON- FILT- RABLE RESIDUE (MG/L)
DEC 06...	3.5	98	0	15	39	.3	7.5	177	1310
JAN 12...	--	--	--	--	--	--	--	--	126
FEB 08...	--	--	--	--	--	--	--	--	56
APR 16...	5.7	282	0	35	160	.4	20	562	39
17...	--	--	--	--	--	--	--	--	1290
20...	--	--	--	--	--	--	--	--	1910
21...	--	--	--	--	--	--	--	--	492
JUN 14...	2.6	82	0	27	14	.2	3.9	135	1160
14...	--	--	--	--	--	--	--	--	896
JUL 12...	6.0	220	0	40	88	.3	21	403	55
AUG 30...	--	--	--	--	--	--	--	--	169
SEP 08...	--	--	--	--	--	--	--	--	1670
09...	5.0	130	0	59	43	.3	21	286	344

DATE	VOL. NON- FILT- RABLE RESIDUE (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	PHENOLS (UG/L)	MFTHY- LENE BLUE ACTIVE SUR- STANCE (MG/L)
DEC 06...	280	.36	.05	.45	2.6	.87	9.1	--	.20
JAN 12...	27	1.1	.12	1.4	1.3	1.2	3.2	4	.30
FEB 08...	12	.28	.04	.59	2.2	1.9	9.2	--	.30
APR 16...	11	1.3	.30	4.7	2.9	3.9	8.2	--	.20
17...	180	.65	.13	.96	2.3	1.2	8.1	--	.20
20...	240	.45	.06	.78	4.1	1.6	7.9	--	.10
21...	40	.12	.02	.12	1.8	.36	7.7	--	.20
JUN 14...	320	.29	.05	.64	1.6	.90	19	--	.20
14...	116	.25	.04	.48	1.1	.73	21	--	.20
JUL 12...	22	1.3	.44	2.2	1.0	6.0	7.0	3	.20
AUG 30...	42	.95	.25	1.2	.70	2.0	9.7	3	.40
SEP 08...	240	1.2	.05	.54	1.9	.74	12	--	.10
09...	24	.77	.09	.54	.76	.89	16	--	.30

SAN JACINTO RIVER BASIN

08076700 GREENS BAYOU AT LEY ROAD, HOUSTON, TX.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	DIS-SOLVED CADMIUM (CD) (UG/L)	DIS-SOLVED CHROMIUM (CR) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
JUL 12...	1210	21	200	0	0	7	40
SEP 09...	1130	7	100	0	0	2	40

DATE	TIME	DIS-SOLVED LEAD (PB) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	DIS-SOLVED SELENIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
JUL 12...		0	90	.0	0	0	8
SEP 09...		0	0	.0	1	0	60

DATE	TIME	TOTAL PCB (UG/L)	POLY-CHLORINATED BIPHENYLS (UG/L)	TOTAL ALDRIN (UG/L)	TOTAL CHLORDANE (UG/L)	TOTAL DDD (UG/L)	TOTAL DDE (UG/L)	TOTAL DDT (UG/L)	TOTAL DIBENZYL (UG/L)	TOTAL DIELDRIN (UG/L)	TOTAL ENDRIN (UG/L)	TOTAL ETHION (UG/L)
JAN 12...	1430	.0	.00	.00	.0	.00	.00	.00	.18	.00	.00	.00
JUL 12...	1210	.0	.00	.00	.0	.00	.00	.00	.57	.00	.00	.00
AUG 30...	0800	.0	.00	.00	.0	.00	.00	.00	.24	.01	.00	.00

DATE	TOTAL HEPTACHLOR EPOXIDE (UG/L)	TOTAL LINDANE (UG/L)	TOTAL MALATHION (UG/L)	TOTAL METHYL PARATHION (UG/L)	TOTAL METHYL TRIETHION (UG/L)	TOTAL PARATHION (UG/L)	TOTAL TOXAPHENE (UG/L)	TOTAL TRIETHION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)
JAN 12...	.00	.00	.01	.00	.00	.00	0	.00	--	--	--
JUL 12...	.00	.00	.04	.00	.00	.00	0	.00	.13	.04	.02
AUG 30...	.00	.01	.03	.00	.00	.00	0	.00	.03	.04	.05

FIGURE 16.-Locations of data collection sites in the Clear Creek tributary drainage

CLEAR CREEK TRIBUTARY DRAINAGE BASIN

The locations of data-collection sites in and near Clear Creek tributary drainage basin are shown on figure 16.

Weighted-mean rainfall for the 1977 water year was not determined. No storms were analyzed for the 1977 water year.

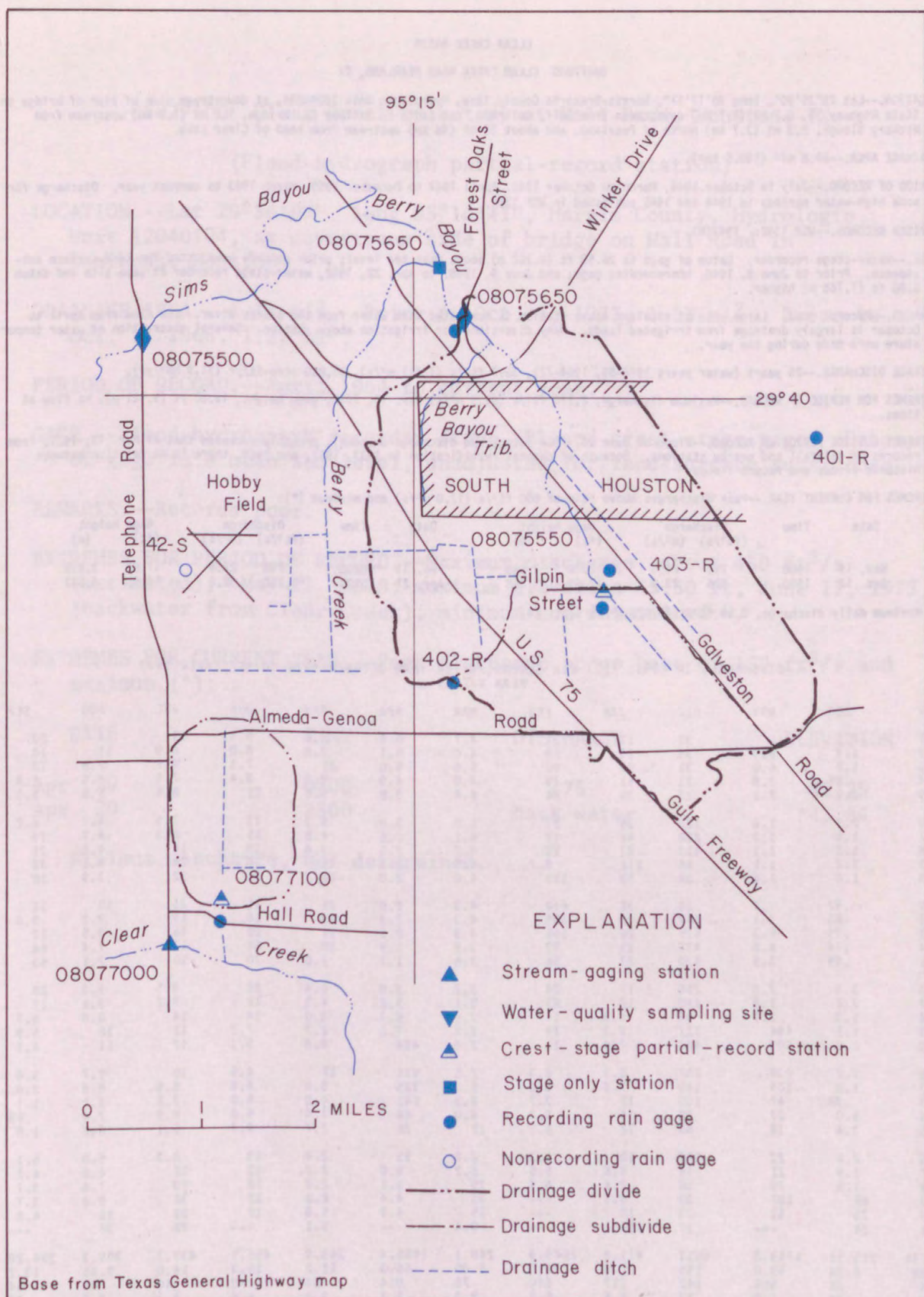


FIGURE 16.-Locations of data-collection sites in the Clear Creek tributary drainage basin

CLEAR CREEK BASIN

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 pier of bridge on State Highway 35, 0.7 mi (1.1 km) downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 1.2 mi (1.9 km) upstream from Hickory Slough, 2.3 mi (3.7 km) north of Pearland, and about 30 mi (48 km) upstream from head of Clear Lake.

DRAINAGE AREA.--38.8 mi² (100.5 km²).

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 (8.102 m) above mean sea level; 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 (1.768 m) 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 observation of water temperature were made during the year.

AVERAGE DISCHARGE.--26 years (water years 1948-59, 1964-77), 35.7 ft³/s (1.011 m³/s), 25,860 acre-ft/yr (31.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,170 ft³/s (61.5 m³/s) Mar. 18, 1957, gage height, 16.80 ft (5.121 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 26, 1960 (stage and discharge unknown), probably exceeded that of Mar. 18, 1957, from records of rainfall and nearby stations. Because of channel rectification in 1933, 1952, and 1968, there is no relation between historic floods and recent floods.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 600 ft³/s (17.0 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Nov. 19	1900	752 21.3	12.10 3.688	Feb. 11	0200	798 22.6	11.87 3.618
Dec. 12	1600	826 23.4	12.69 3.868	Apr. 21	0100	*1,150 32.6	14.95 4.557

Minimum daily discharge, 0.69 ft³/s (0.020 m³/s) Sept. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	11	31	13	121	4.7	6.6	8.6	9.5	13	14	23
2	1.7	6.9	38	25	68	4.0	5.1	7.6	8.0	6.9	11	13
3	1.2	4.0	31	66	96	5.6	5.0	21	7.3	4.7	7.8	10
4	.85	2.8	21	51	79	7.0	4.9	9.9	8.4	7.5	6.6	6.8
5	2.9	2.1	17	39	44	6.4	3.8	5.6	11	8.5	5.6	5.5
6	2.3	1.6	120	36	27	5.0	3.0	5.2	12	7.5	4.7	6.2
7	1.4	1.3	233	42	17	4.1	2.6	4.8	15	8.3	4.7	16
8	1.8	1.1	113	33	12	4.2	2.5	3.6	19	16	4.5	21
9	1.2	1.1	56	111	9.7	4.5	2.3	45	16	20	4.1	32
10	1.0	1.0	34	58	196	4.0	2.0	84	11	22	3.9	18
11	.92	1.1	68	32	640	4.3	2.0	28	11	21	10	11
12	.85	1.1	642	22	305	4.3	2.3	13	16	19	9.2	.90
13	.75	6.3	525	20	165	3.9	2.1	11	20	15	8.5	12
14	.74	6.8	439	25	92	3.5	1.9	10	61	13	7.4	64
15	.99	3.9	420	23	56	3.6	1.7	7.0	70	10	7.1	53
16	3.5	2.6	258	17	34	3.2	2.9	6.4	26	9.5	8.3	28
17	2.2	1.9	160	12	23	3.1	3.2	4.3	12	9.2	9.5	17
18	1.3	2.7	98	9.9	16	2.9	6.7	3.0	14	14	8.0	9.7
19	1.5	494	111	8.3	14	2.7	7.2	2.7	7.2	12	10	5.9
20	2.0	509	423	7.4	11	2.6	404	4.8	5.1	12	11	4.5
21	1.2	239	257	6.9	8.3	2.5	914	17	4.5	10	9.7	3.6
22	1.0	105	140	7.6	8.2	2.5	335	8.8	4.6	10	9.7	3.6
23	.96	47	100	13	7.7	2.3	141	4.9	5.0	8.5	8.8	2.0
24	3.0	27	78	14	6.7	4.0	60	3.4	5.8	7.8	8.1	1.1
25	3.4	18	83	12	6.1	12	28	2.7	9.7	6.9	7.6	.69
26	2.6	22	118	10	5.3	6.6	15	2.4	13	6.1	6.2	1.8
27	1.9	21	74	8.6	5.5	6.2	9.0	2.2	13	8.3	5.0	5.1
28	1.5	70	50	7.6	6.4	75	6.1	2.2	12	12	4.6	4.2
29	69	107	33	6.5	---	30	4.4	2.2	12	40	7.4	3.7
30	75	51	23	18	---	15	4.1	2.2	12	36	9.0	3.7
31	24	---	17	217	---	8.4	---	5.5	19	29	45	4.8
								9.1	---	20	38	---
TOTAL	215.16	1769.3	4811	971.8	2079.9	248.1	1988.4	345.9	458.1	433.7	305.3	396.29
MEAN	6.94	59.0	155	31.3	74.3	8.00	66.3	11.2	15.3	14.0	9.85	13.2
MAX	75	509	642	217	640	75	914	84	70	40	45	64
MIN	.74	1.0	17	6.5	5.3	2.3	1.7	2.2	4.5	4.7	3.9	.69
AC-FT	427	3510	9540	1930	4130	492	3940	686	909	860	606	786
CAL YR 1976	TOTAL	18700.62	MEAN	51.1	MAX	1250	MIN	.74	AC-FT	37090		
WTR YR 1977	TOTAL	14022.95	MEAN	38.4	MAX	914	MIN	.69	AC-FT	27810		

08077100 Clear Creek tributary at Hall Road, Houston, TX

(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°36'09", long 95°16'41", Harris County, Hydrologic Unit 12040104, at downstream side of bridge on Hall Road in southeast Houston.

DRAINAGE AREA.--1.31 mi². Prior to Oct. 1, 1973, 1.33 mi². Prior to Oct. 1, 1966, 1.27 mi².

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

GAGE.--Flood-hydrograph recorder (type SR) and crest-stage gage. Datum of gage is a mean sea level, unadjusted for land-surface subsidence.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 450 ft³/s (estimated), May 21, 1970: maximum elevation 45.50 ft, June 11, 1973, (backwater from Clear Creek); minimum not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 150 ft³/s and maximum (*):

DATE	TIME	DISCHARGE	ELEVATION
Apr. 20	0700	175	42.25
Apr. 20	2300	back water	*42.84

Minimum discharge, not determined.

Table 10.--Recording and nonrecording rain gages in the Houston area at sites other than stream-gaging stations

Station no. <u>1</u> /	Station name	Location	Period of record <u>2</u> /
10-S	Houston Heights	Lat 29°47', long 95°26', near Houston.	--
12-R	Houston-WB, City	Lat 29°, long 95°22' at old Federal Building in downtown Houston.	--
13-S	Houston-Independent Heights	Lat 29°52', long 95°25' in northern section of Houston.	--
14-R	Sayers Street	Lat 29°49'54", long 95°19'47", at 7835 Sayers Street, Houston.	Aug. 5, 1969 to date
20-R	Houston WSO Airport	Lat 29°59', long 95°22', at Houston Intercontinental Airport in north Houston.	--
21-R	Brittmore (relocated)	Lat 29°51'02", long 95°33'46", behind home of Mrs. Annie A. Joseph, 10610 Tanner Road, in northwest Houston.	May 6, 1964 to date
22-R	Houston-Satsuma	Lat 29°54', long 95°37' at Satsuma community northwest of Houston.	--
23-S	Houston-North Houston	Lat 29°53', long 95°31' near Fairbanks-North Houston Road, Houston.	--
24-S	Houston-Spring Branch	Lat 29°48', long 95°30' on Ridgcrest Street, Houston.	--

See footnotes at end of table.

Table 10.--Recording and nonrecording rain gages in the Houston area at sites other than stream-gaging stations--Continued

Station no. 1/	Station name	Location	Period of record 2/
29-R	Mills Road (relocated)	Lat 29°57'29", long 95°33'40", at home of Frances L. Farquhar, 9502 Mills Road, northwest Harris County, Houston.	July 30, 1970 to date
31-R	Strafford	Lat 29°36'43", long 95°32'58", at Ft. Bend County WC&ID No. 2, Stafford.	May 9, 1964 to date
32-R	Houston-Alief	Lat 29°43', long 95°36', at Alief.	--
33-R	Houston-Addicks	Lat 29°46', long 95°39', at U.S. Army Corps of Engineers Office, Addicks.	--
34-S	Clodine	Lat 29°43', long 95°41', at Clodine.	--
35-S	Houston-Westbury	Lat 29°40', long 95°28', in Westbury Subdivision, Houston.	--
36-S	Sugar Land	Lat 29°37', long 95°38', at Sugar Land.	--
39-R	KHTV	Lat 29°43'25", long 95°30'06", at station KHTV-TV at Hillcroft and West Park Drive, Houston.	Aug. 22, 1967 to Sept. 30, 1970 Oct. 1, 1971 to date
42-S	Houston FAA Airport	Lat 29°39', long 95°17', at old Terminal Building, William P. Hobby Airport, Houston.	--

See footnotes at end of table.

Table 10.--Recording and nonrecording rain gages in the Houston area at sites other than stream-gaging stations--Continued

Station no. <u>1</u> /	Station name	Location	Period of record <u>2</u> /
101-R	Liberty Road	Lat 29°47'19", long 95°18'50", near intersection of Liberty Road and Sakowitz Street, Houston.	Aug. 23, 1972 to date
201-S	Humble	Lat 30°00', long 95°15', at Humble.	--
202-S	Houston-San Jacinto Dam	Lat 29°55', long 95°09', on west bank of Lake Houston at San Jacinto River Dam, Houston.	--
203-R	Mintz Lane	Lat 29°59'53", long 95°28'39", at home of Mr. Draper D. Mintz, in northwest Harris County, Houston.	Aug. 23, 1972 to date
204-R	Breen Street	Lat 29°53'57", long 95°27'38", at home of Mr. Joseph O. Eiland, 4909 Breen, in northwest Harris County, Houston.	Aug. 23, 1972 to date
205-R	Frontier Street	Lat 29°50'08", long 95°31'22", at home of Mrs. Eva S. Murphree near intersection of Frontier Street and Outpost Street in northwest Harris County, Houston.	Nov. 9, 1972 to date

See footnotes at end of table.

Table 10.--Recording and nonrecording rain gages in the Houston area at sites other than stream-gaging stations--Continued

Station no. <u>1/</u>	Station name	Location	Period of record <u>2/</u>
303-R	Four Corners	Lat 29°40'07", long 95°39'36", Fort Bend County behind home of Richard Wright, 900 ft west of intersection of Gaston Road and Gains Road at Four Corners community.	Sept. 24, 1975 to date
304-R	Chasewood	Lat 29°36'32", long 95°29'57", Fort Bend County inside water treatment plant at 1770 Chasewood Street.	Oct. 29, 1975 to date
305-R	Furman	Lat 29°37'45", long 95°22'45", Harris County on extreme right side of floodway for Sims Bayou at 14201 Furman Street.	Sept. 24, 1975 to date
306-R	South Park	Lat 29°38'42", long 95°20'13", Harris County on downstream side of upstream bridge where South Park crosses over Sims Bayou in southern Harris County.	Sept. 10, 1975 to date
308-R	Public Health	115 N. MacGregor, Houston.	--
401-R	Llano Street	Lat 29°39'11", long 95°12'07", behind home of Mrs. Lana H. Sims, 702 Llano, Pasadena, in southeast Harris County.	Nov. 9, 1972 to date

See footnotes at end of table.

Table 10.--Recording and nonrecording rain gages in the Houston area at sites other than stream-gaging stations--Continued

Station no. <u>1/</u>	Station name	Location	Period of record <u>2/</u>
402-R	Klondike	Lat 29°38'06", long 95°15'04", behind home of H. F. Reams, 9302 Klondike, 10.9 miles southeast of Harris County Courthouse, Houston.	No. 11, 1973 to date
403-R	Edgebrook	Lat 29°38'55", long 95°12'23", southeast Harris County, in sewage treatment plant near the intersection of Old Galveston Road and Edgebrook Street.	Sept. 19, 1975 to date
404-S	Deer Park	Lat 29°43', long 95°08', Harris County near Houston.	--

1/ Station numbers are arbitrarily assigned for use in this project as follows: R-recording rain gage; S-nonrecording rain gage.

2/ Period of record is given only for those stations operated and maintained by the U.S. Geological Survey for this project.

HOUSTON URBAN HYDROLOGY STUDY														
DAILY AND MONTHLY RAINFALL SUMMARY FOR GAGES NORTH OF BUFFALO BAYOU											PERIOD :1977 WATER YEAR			
G A G E N U M B E R														
DATE	4250	4150	205R	21R	6000	5900	204R	203R	29R	5770	101R	12R	14R	
OCT														
5	0.00	0.27	0.00	0.00	0.27	0.25	0.16	0.18	0.34	0.36	0.55	0.27	0.00	
6	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.09	0.00	
8	0.20	0.12	0.20	0.20	0.21	0.10	0.00	0.10	0.19	0.22	0.23	0.15	0.00	
15	1.30	1.13	2.12	1.98	1.45	1.80	1.78	1.97	2.41	0.56	0.52	0.56	0.82	
16	0.15	0.14	0.09	0.11	0.20	0.10	0.12	0.00	0.12	0.18	0.15	0.09	0.10	
19	0.20	0.20	0.28	0.29	0.36	0.30	0.32	0.25	0.34	0.27	0.27	0.20	0.25	
24	1.54	1.43	1.95	1.60	1.77	1.50	1.81	1.28	1.72	1.43	1.40	1.27	1.40	
28	0.05	0.00	0.13	0.07	0.08	0.10	0.00	0.14	0.09	0.07	0.23	0.20	0.20	
29	0.78	0.82	0.88	0.84	0.96	1.00	0.92	1.24	1.09	1.37	1.15	1.08	1.10	
MTOT	4.22	4.11	5.67	5.09	5.32	5.15	5.11	5.16	6.30	4.46	4.53	3.91	3.87	
NOV														
10	1.29	1.85	1.39	0.18	1.56	0.05	0.78	0.00	0.00	0.09	0.05	0.03	0.30	
11	0.15	0.22	0.00	0.00	0.50	0.05	0.00	0.00	0.00	0.00	0.00	0.09	0.18	
12	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.03	0.03	0.03	
13	0.52	0.48	0.54	0.50	0.50	0.55	0.48	0.37	0.21	0.12	0.30	0.31	0.40	
18	0.33	0.30	0.36	0.30	0.30	0.40	0.37	0.40	0.31	0.45	0.44	0.45	0.34	
19	0.97	0.97	1.06	0.85	1.10	0.80	0.94	0.70	0.91	1.25	1.08	1.10	1.00	
20	0.04	0.12	0.05	0.00	0.02	0.08	0.08	0.10	0.05	0.11	0.02	0.04	0.00	
25	0.14	0.17	0.21	0.18	0.15	0.16	0.20	0.21	0.23	0.20	0.25	0.17	0.21	
26	0.10	0.13	0.11	0.04	0.18	0.05	0.00	0.00	0.00	0.12	0.11	0.09	0.10	
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.00	
28	0.46	0.57	0.63	0.60	0.60	0.65	0.62	0.42	0.41	0.68	0.60	0.47	0.64	
29	0.08	0.16	0.18	0.20	0.07	0.10	0.13	0.27	0.18	0.00	0.00	0.00	0.00	
MTOT	4.08	4.97	4.55	2.85	4.98	2.89	3.60	2.47	2.37	3.02	2.91	2.81	3.20	
MTOT=MONTHLY TOTALS														

HOUSTON URBAN HYDROLOGY STUDY

DAILY AND MONTHLY RAINFALL SUMMARY FOR GAGES NORTH OF BUFFALO BAYOU

PERIOD :1977 WATER YEAR

G A G E N U M B E R

DATE	4250	4150	205R	21R	6000	5900	204R	203R	29R	5770	101R	12R	14R
DEC													
1	0.06	0.04	0.03	0.05	0.12	0.11	0.18	0.08	0.00	0.11	0.16	0.15	0.16
2	0.02	0.00	0.06	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
5	0.50	0.50	0.65	0.55	0.30	0.55	0.58	0.70	0.95	0.38	0.38	0.41	0.37
6	0.82	0.97	1.10	1.37	1.26	1.05	1.19	1.11	1.05	1.08	1.42	1.37	1.45
10	0.13	0.16	0.23	0.17	0.08	0.15	0.20	0.19	0.10	0.05	0.07	0.10	0.09
11	0.77	0.80	0.98	0.62	0.80	0.82	0.87	0.72	0.72	0.93	0.82	0.67	1.02
12	0.68	0.60	0.59	0.55	0.76	0.59	0.60	0.42	0.00	1.11	0.93	0.88	0.61
13	0.02	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.26	0.40	0.53	0.56	0.43	0.55	0.48	0.60	0.19	1.25	0.04	0.66	0.09
15	0.00	0.00	0.00	0.00	0.20	0.10	0.00	0.06	0.10	0.20	0.22	0.02	0.48
16	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13
19	1.18	1.20	1.27	1.27	1.04	1.20	1.08	1.48	0.50	1.12	1.10	0.94	1.00
20	0.25	0.20	0.15	0.00	0.22	0.35	0.22	0.18	0.00	0.43	0.30	0.39	0.40
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.00
23	0.04	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.06	0.06	0.00
24	0.00	0.00	0.03	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.05	0.00
25	0.36	0.50	0.60	0.47	0.26	0.73	0.62	0.84	0.64	0.25	0.23	0.24	0.25
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
MTOT	5.09	5.37	6.22	5.76	5.61	6.25	6.02	6.38	4.25	6.92	5.83	5.99	6.05
CTOT	47.06	46.64	53.94	48.21	51.32	51.06	48.26	50.40	47.00	59.03	54.03	50.40	51.83
JAN													
1	0.02	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.00
2	0.60	0.60	0.66	0.61	0.66	0.75	0.70	0.73	0.58	0.64	0.62	0.61	0.60
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
6	0.22	0.20	0.25	0.20	0.22	0.13	0.13	0.20	0.10	0.20	0.24	0.28	0.25
7	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.09	0.07	0.08	0.05	0.10	0.02	0.12	0.06	0.11	0.10	0.16	0.16	0.15
9	0.06	0.08	0.18	0.06	0.08	0.15	0.12	0.04	0.14	0.02	0.00	0.04	0.00
10	0.03	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.02	0.03	0.05	0.00	0.05	0.08	0.07	0.10	0.00	0.00	0.02	0.00
13	0.16	0.15	0.18	0.17	0.16	0.25	0.20	0.20	0.23	0.12	0.12	0.17	0.00
16	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.17	0.08	0.13	0.12	0.12	0.05	0.14	0.13	0.10	0.17	0.25	0.23	0.25
23	0.07	0.10	0.13	0.11	0.02	0.08	0.11	0.05	0.10	0.02	0.00	0.03	0.00
30	0.55	0.50	0.68	0.60	0.66	0.68	0.70	0.72	0.70	0.61	0.64	0.68	0.72
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.01	0.00	0.00
MTOT	1.97	1.80	2.35	1.97	2.11	2.20	2.30	2.20	2.16	1.96	2.09	2.29	1.97

MTOT=MONTHLY TOTALS

CTOT=CALENDAR YEAR TOTALS

HOUSTON URBAN HYDROLOGY STUDY

DAILY AND MONTHLY RAINFALL SUMMARY FOR GAGES NORTH OF BUFFALO BAYOU

PERIOD :1977 WATER YEAR

G A G E N U M B E R

DATE	4250	4150	205R	21R	6000	5900	204R	203R	29R	5770	101R	12R	14R
FEB													
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
2	0.02	0.02	0.05	0.08	0.00	0.05	0.00	0.06	0.00	0.00	0.05	0.09	0.08
3	0.29	0.33	0.51	0.46	0.15	0.44	0.47	0.23	0.00	0.40	0.30	0.17	0.30
10	1.42	1.34	1.48	1.36	1.12	1.25	1.40	1.22	1.32	1.45	1.41	1.44	1.51
11	0.05	0.06	0.00	0.03	0.00	0.02	0.00	0.06	0.04	0.02	0.05	0.01	0.03
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00
MTOT	1.78	1.75	2.04	1.93	1.27	1.76	1.87	1.57	1.36	1.87	1.81	1.76	1.92
MAR													
2	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00
3	0.27	0.19	0.36	0.00	0.48	0.17	0.13	0.56	0.29	0.19	0.52	0.31	0.25
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00
6	0.02	0.00	0.00	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00
7	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.09	0.09	0.15	0.15	0.28	0.08	0.18	0.00	0.23	0.11	0.29	0.25	0.25
16	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
24	0.26	0.14	0.28	0.23	0.08	0.22	0.25	0.48	0.65	0.26	0.35	0.41	0.25
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
26	0.00	0.00	0.05	0.00	0.06	0.12	0.08	0.11	0.10	0.00	0.00	0.00	0.04
27	0.00	0.49	0.64	0.50	1.00	0.58	0.57	0.50	0.42	0.84	0.63	0.64	0.92
28	0.78	0.35	0.14	0.14	0.14	0.20	0.22	0.10	0.10	0.42	0.18	0.15	0.17
30	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MTOT	1.49	1.26	1.62	1.95	2.04	1.37	1.53	1.75	1.79	1.86	2.04	1.78	1.88

MTOT=MONTHLY TOTALS

HOUSTON URBAN HYDROLOGY STUDY														
DAILY AND MONTHLY RAINFALL SUMMARY FOR GAGES NORTH OF BUFFALO BAYOU											PERIOD :1977 WATER YEAR			
G A G E N U M B E R														
DATE	4250	4150	205R	21R	6000	5900	204R	203R	29R	5770	101R	12R	14R	
APR														
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	
2	0.00	0.00	0.06	0.00	0.00	0.05	0.00	0.10	0.13	0.00	0.00	0.03	0.00	
3	0.02	0.03	0.00	0.00	0.09	0.07	0.00	0.00	0.00	0.00	0.10	0.10	0.12	
4	0.49	0.38	0.21	0.05	1.00	0.13	0.28	0.23	0.00	0.29	0.52	0.76	1.25	
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	
11	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	
16	1.13	0.96	0.38	0.17	0.50	1.32	1.20	1.42	1.57	0.43	1.00	0.59	0.85	
17	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
19	0.00	0.00	0.08	0.00	0.46	0.00	0.00	0.00	0.07	0.10	0.31	0.15	0.00	
20	1.78	2.05	2.26	1.34	2.31	2.49	2.44	2.48	2.39	2.98	2.47	2.28	2.90	
21	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
26	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	
29	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
30	0.00	0.06	0.18	0.00	0.28	0.10	0.00	0.15	0.09	0.38	0.28	0.47	0.20	
MTOT	3.46	3.50	3.43	1.56	4.64	4.16	4.02	4.38	4.61	4.18	4.68	4.38	5.32	
MAY														
1	0.46	0.30	0.00	0.10	0.07	0.25	0.35	0.25	0.14	0.23	0.12	0.06	0.10	
2	0.01	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.10	0.90	1.46	0.39	0.40	
3	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	
21	0.70	0.72	0.75	0.00	0.53	0.42	0.84	0.61	0.77	0.73	0.63	0.68	0.60	
22	0.05	0.10	0.13	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
MTOT	1.23	1.12	0.93	0.24	0.60	0.67	1.19	0.86	1.01	1.86	2.21	1.26	1.10	

MTOT=MONTHLY TOTALS

HOUSTON URBAN HYDROLOGY STUDY														
DAILY AND MONTHLY RAINFALL SUMMARY FOR GAGES NORTH OF BUFFALO BAYOU											PERIOD :1977 WATER YEAR			
G A G E N U M B E R														
DATE	4250	4150	205R	21R	6000	5900	204R	203R	29R	5770	101R	12R	14R	
JUN														
11	0.17	0.09	0.43	0.71	0.25	0.11	0.10	0.62	0.08	0.06	0.67	0.21	0.25	
12	0.00	0.00	0.00	0.00	0.85	0.00	0.00	1.72	0.20	0.11	0.00	0.04	0.10	
13	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
14	1.20	1.42	0.29	1.06	0.68	1.02	1.30	0.10	1.12	0.90	1.99	0.64	0.60	
15	2.87	2.48	1.96	1.41	1.86	3.24	3.54	3.70	2.84	1.10	1.14	0.53	1.25	
17	0.00	0.15	0.00	0.16	0.00	0.21	0.16	0.11	0.00	0.00	0.00	0.00	0.00	
21	0.20	0.04	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
24	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.07	0.00	
28	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00	
29	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
MTOT	4.44	4.21	2.89	3.34	3.74	4.59	5.10	6.25	4.63	2.17	3.80	1.49	2.20	
JUL														
5	0.08	0.46	0.05	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6	0.54	0.16	0.92	0.15	0.80	0.00	0.70	0.00	0.00	1.50	1.10	1.97	1.00	
7	0.18	0.09	0.16	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	
8	0.03	0.60	0.61	0.30	0.00	0.00	0.80	0.00	1.36	0.00	0.00	0.00	0.00	
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.03	0.00	
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.00	0.55	0.42	0.38	0.00	
15	0.00	0.00	0.05	0.00	0.05	0.05	0.00	0.00	0.06	0.14	0.12	0.12	0.10	
16	0.00	0.00	0.00	0.00	0.11	0.11	0.00	0.00	0.00	0.00	0.00	0.01	0.00	
17	0.42	0.34	0.41	0.60	0.00	0.22	0.00	0.00	0.00	0.02	0.12	0.01	0.00	
18	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.05	0.05	0.00	0.01	0.00	
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.18	0.00	0.00	0.00	0.00	
20	0.82	0.19	0.10	0.19	0.08	1.05	0.25	0.23	0.00	0.06	0.09	0.20	0.10	
22	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	
26	0.29	0.21	0.05	0.00	0.63	0.00	0.10	0.19	0.16	0.00	0.70	0.22	0.58	
27	0.21	0.12	0.25	0.00	1.42	0.00	0.04	0.12	0.00	0.00	0.00	0.05	0.77	
28	0.02	0.09	0.00	0.00	0.05	0.00	0.04	0.00	0.00	0.00	0.15	0.26	0.18	
29	0.10	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.30	
MTOT	3.15	2.26	2.60	1.52	3.16	1.43	1.93	1.51	1.81	2.32	3.24	3.66	3.03	
MTOT=MONTHLY TOTALS														

MTOT=MONTHLY TOTALS

HOUSTON URBAN HYDROLOGY STUDY

DAILY AND MONTHLY RAINFALL SUMMARY FOR GAGES NORTH OF BUFFALO BAYOU

PERIOD :1977 WATER YEAR

DATE		G A G E N U M B E R												
		4250	4150	205R	21R	6000	5900	204R	203R	29R	5770	101R	12R	14R
AUG														
2		0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00
6		0.42	0.11	0.59	0.04	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00
9		0.16	0.18	0.10	0.15	0.00	0.00	0.15	0.22	0.09	0.02	0.18	0.00	0.20
11		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00
12		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
13		0.36	0.60	1.15	1.39	0.00	0.62	0.57	0.00	0.10	0.17	0.00	0.20	0.00
14		0.96	0.11	0.29	0.06	0.80	0.08	0.07	0.00	0.08	0.02	0.00	0.00	0.00
15		1.82	1.43	1.82	0.23	0.43	0.00	0.19	0.00	0.00	0.10	0.40	0.23	0.40
17		0.00	0.00	0.00	0.00	0.08	0.00	0.04	0.10	0.04	0.00	0.05	0.00	0.05
18		0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.03	0.00	0.01	0.00
19		0.00	0.00	0.05	0.00	0.10	1.03	0.76	1.70	0.23	1.92	1.19	1.27	1.00
20		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.02	0.00
21		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.03	0.00	0.00
22		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.33	0.29	0.20
23		0.00	0.00	0.00	0.00	1.56	0.00	0.00	0.00	0.22	4.29	0.70	0.00	0.70
24		0.00	0.00	0.26	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
25		0.00	0.00	0.00	0.00	0.19	0.00	0.09	0.00	0.00	0.00	0.00	0.66	0.00
26		0.07	0.00	0.00	0.00	0.67	0.00	0.00	0.00	0.00	0.00	0.07	0.01	0.00
27		0.18	0.20	0.25	0.12	0.22	0.13	0.35	0.00	0.38	0.56	0.43	0.20	0.30
28		0.24	0.20	0.13	0.00	0.33	1.12	0.05	0.34	0.00	0.59	0.36	0.66	0.35
29		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.02	0.00	0.02	0.00
31		0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00
MTOT		4.21	2.83	4.64	2.28	4.44	2.98	2.44	2.52	1.14	8.13	3.79	4.17	3.20
SEPT														
1		0.06	0.00	0.08	0.00	0.00	0.00	0.05	0.00	0.00	0.02	0.03	0.21	0.00
6		0.13	0.10	0.14	0.00	0.00	0.11	0.78	0.00	0.04	0.00	0.10	0.45	0.00
7		1.56	1.00	1.13	0.57	0.59	0.00	0.40	0.00	0.87	1.98	1.62	1.00	1.50
8		0.35	0.30	0.40	0.32	1.82	0.54	0.26	0.07	0.23	1.73	1.92	1.95	1.50
9		0.39	0.50	0.50	0.53	1.12	0.30	0.58	0.40	0.53	0.22	0.18	0.21	0.25
10		0.00	0.00	0.00	0.00	1.36	0.04	0.02	0.00	0.00	2.60	1.54	0.49	1.50
11		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00
12		0.10	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13		1.19	1.50	1.77	1.30	1.70	1.18	1.55	1.18	1.43	1.64	0.85	1.29	0.90
14		0.08	0.00	0.05	0.00	0.02	0.00	0.10	0.00	0.00	0.10	0.04	0.02	0.00
16		0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.00	0.00
17		0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.10	0.00	0.00	0.02	0.00
19		0.57	0.45	0.57	0.82	0.24	1.12	0.20	0.33	0.23	0.31	0.60	0.48	0.55
23		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00
26		0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00
MTOT		4.44	3.85	4.64	3.54	6.99	3.29	4.04	1.98	3.43	8.63	7.19	6.16	6.20
WTOT		39.56	37.03	41.58	32.03	44.90	36.74	39.15	37.03	34.86	47.38	44.12	39.66	39.94

MTOT=MONTHLY TOTALS
WTOT=WATER YEAR TOTAL

HOUSTON URBAN HYDROLOGY STUDY

DAILY AND MONTHLY RAINFALL SUMMARY FOR GAGES SOUTH OF BUFFALO BAYOU PERIOD : 1977 WATER YEAR

G A G E N U M B E R

DATE	4800	4750	308R	303R	5500	5400	306R	305R	304R	31R	5650	403R	402R	401R
OCT														
1	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.22	0.00	0.34	0.22	0.20	0.31	0.40	0.70	0.20	0.19	0.30	0.30	0.00	0.25
7	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.05	0.00	0.22	0.15	0.20	0.30	0.20	0.20	0.30	0.21	0.20	0.20	0.38	0.22
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00
15	0.46	0.98	0.68	1.35	0.40	0.61	0.50	0.40	0.60	0.60	0.30	0.70	0.49	0.79
16	0.07	0.12	0.16	0.20	0.20	0.20	0.20	0.10	0.20	0.20	0.30	0.10	0.11	0.11
19	0.17	0.11	0.19	0.15	0.20	0.20	0.30	0.10	0.30	0.25	0.20	0.20	0.29	0.28
24	1.07	1.19	1.37	1.40	0.70	0.91	0.70	0.60	0.60	0.60	0.70	0.80	0.72	0.91
25	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00
27	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.18	0.12	1.06	0.20	0.20	0.10	0.20	0.10	0.14	0.10	0.20	0.16	0.15
29	0.55	0.42	1.18	0.00	1.40	0.80	1.50	1.10	0.80	0.92	0.60	1.30	1.30	1.52
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00
MTOT	2.60	3.02	4.30	4.57	3.90	3.53	3.90	3.40	3.10	3.11	3.30	3.80	3.45	4.23
NOV														
3	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.46	0.03	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.18	0.05	0.20	0.40	0.00	0.40	0.40	0.10	0.00	0.10	1.00	0.22	1.32
12	0.00	0.03	0.04	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00
13	0.09	0.30	0.28	0.50	0.40	0.50	0.50	0.40	0.40	0.39	0.40	0.60	0.78	0.82
14	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.30	0.21	0.49	0.50	0.80	0.10	0.90	0.60	0.50	0.52	0.60	0.70	0.68	0.70
19	1.20	0.48	1.28	2.00	2.80	2.00	2.30	2.10	1.60	1.38	2.10	2.10	2.15	2.00
20	0.10	0.06	0.04	0.10	0.10	0.30	0.10	0.10	0.10	0.05	0.10	0.10	0.08	0.10
25	0.20	0.08	0.23	0.20	0.20	0.20	0.20	0.20	0.20	0.21	0.20	0.30	0.26	0.40
26	0.10	0.02	0.06	0.10	0.20	0.10	0.10	0.10	0.10	0.10	0.10	0.20	0.10	0.10
27	0.00	0.00	0.04	0.05	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.07	0.00
28	0.40	0.08	0.50	0.60	0.50	0.60	0.70	0.60	0.60	0.62	0.60	0.70	0.76	0.90
29	0.20	0.20	0.00	0.10	0.00	0.00	0.00	0.10	0.10	0.00	0.00	0.00	0.00	0.00
MTOT	2.64	2.10	3.04	4.50	5.40	3.80	5.20	4.60	3.70	3.32	4.50	5.70	5.10	6.34

MTOT=MONTHLY TOTALS

HOUSTON URBAN HYDROLOGY STUDY

DAILY AND MONTHLY RAINFALL SUMMARY FOR GAGES SOUTH OF BUFFALO BAYOU PERIOD : 1977 WATER YEAR

G A G E N U M B E R

DATE	4800	4750	308R	303R	5500	5400	306R	305R	304R	31R	5650	403R	402R	401R
DEC														
1	0.10	0.08	0.16	0.10	0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.10	0.18	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.15	0.10	0.10	0.00	0.00
5	0.50	0.51	0.43	0.50	0.40	0.40	0.30	0.30	0.50	0.50	0.30	0.30	0.35	0.35
6	1.80	1.61	1.14	1.50	0.70	0.70	0.70	0.80	0.50	0.50	0.60	0.80	0.73	0.81
10	0.00	0.10	0.08	0.00	0.00	0.10	0.00	0.10	0.10	0.06	0.00	0.10	0.04	0.10
11	0.70	0.27	0.76	0.50	0.90	0.90	0.90	0.90	0.90	0.55	0.80	0.80	0.90	0.80
12	1.00	0.26	0.94	1.00	1.10	1.00	1.10	1.10	0.90	1.27	1.20	1.20	1.32	1.20
14	0.10	0.22	0.77	0.50	0.90	0.90	0.80	0.80	0.90	0.72	0.80	0.90	0.95	0.98
15	0.00	0.00	0.03	0.00	0.10	0.10	0.00	0.00	0.10	0.00	0.00	0.10	0.09	0.12
19	0.78	0.39	0.94	1.20	1.10	1.00	1.10	0.90	1.20	1.02	0.90	1.10	1.00	0.92
20	0.07	0.08	0.19	0.30	0.20	0.20	0.10	0.10	0.20	0.15	0.20	0.20	0.17	0.15
22	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
23	0.00	0.02	0.05	0.00	0.10	0.00	0.00	0.10	0.10	0.00	0.10	0.10	0.04	0.11
24	0.00	0.02	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00
25	0.00	0.40	0.25	0.45	0.40	0.30	0.10	0.30	0.30	0.38	0.30	0.40	0.10	0.46
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.00
29	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MTOT	5.12	3.96	5.83	6.05	6.10	5.80	5.30	5.60	6.00	5.50	5.40	6.20	6.30	6.05
CTOT	36.87	37.09	52.89	49.25	50.60	49.41	53.40	51.20	45.85	42.11	46.48	51.30	55.45	51.06
JAN														
1	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.10	0.05	0.00	0.00	0.00	0.00
2	0.03	0.50	0.62	0.50	0.60	0.50	0.40	0.50	0.50	0.52	0.60	0.60	0.62	0.67
4	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00
6	0.00	0.22	0.26	0.33	0.20	0.30	0.20	0.30	0.20	0.26	0.10	0.20	0.16	0.30
8	0.00	0.09	0.12	0.07	0.20	0.10	0.10	0.10	0.10	0.00	0.10	0.10	0.13	0.20
9	0.00	0.05	0.05	0.10	0.10	0.00	0.30	0.10	0.00	0.00	0.40	0.80	0.74	0.85
10	0.03	0.04	0.00	0.00	0.10	0.10	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00
13	0.16	0.07	0.19	0.10	0.00	0.20	0.10	0.00	0.20	0.12	0.10	0.10	0.10	0.10
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00
22	0.16	0.18	0.25	0.20	0.20	0.10	0.20	0.00	0.20	0.20	0.10	0.20	0.18	0.20
23	0.02	0.10	0.04	0.00	0.00	0.10	0.00	0.00	0.10	0.00	0.10	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00
30	1.00	0.62	0.74	0.75	0.80	1.12	0.90	1.00	1.20	1.20	0.91	1.10	1.30	1.27
31	0.00	0.00	0.01	0.00	0.00	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.05	0.00
MTOT	1.40	1.89	2.35	2.05	2.30	2.62	2.30	2.40	3.00	2.46	2.41	3.10	3.28	3.59
MTOT=MONTHLY TOTALS														
CTOT=CALENDAR YEAR TOTALS														

HOUSTON URBAN HYDROLOGY STUDY															
DAILY AND MONTHLY RAINFALL SUMMARY FOR GAGES SOUTH OF BUFFALO BAYOU PERIOD : 1977 WATER YEAR															
DATE	G A G E N U M B E R														
	4800	4750	308R	303R	5500	5400	306R	305R	304R	31R	5650	403R	402R	401R	
FER															
1	0.00	0.05	0.04	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
2	0.08	0.00	0.11	0.10	0.10	0.00	0.00	0.00	0.10	0.08	0.10	0.10	0.10	0.10	0.12
3	0.00	0.21	0.20	0.10	0.20	0.10	0.10	0.00	0.10	0.08	0.10	0.20	0.18	0.25	
9	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	1.40	1.08	1.43	1.65	1.80	1.72	1.80	1.70	1.70	1.50	1.61	1.70	1.66	1.71	
11	0.00	0.05	0.02	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MTOT	1.48	1.46	1.80	1.85	2.20	1.92	1.90	1.70	1.90	1.66	1.81	2.00	1.94	2.10	
MAR															
1	0.00	*****	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	*****	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	*****	0.00	1.11	0.70	0.30	0.70	0.30	0.20	0.69	0.30	0.40	0.43	0.10	
11	0.05	*****	0.26	0.10	0.20	0.20	0.30	0.10	0.20	0.27	0.10	0.10	0.18	0.10	
24	0.15	*****	0.39	0.57	0.40	0.30	0.40	0.30	0.20	0.00	0.00	0.60	0.68	0.61	
25	0.00	*****	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.41	0.20	0.00	0.00	0.00	
26	0.00	*****	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	
27	0.14	*****	0.56	0.27	0.80	0.51	0.90	0.30	0.30	0.52	0.00	0.30	0.55	0.58	
28	0.39	*****	0.17	0.10	0.20	0.20	0.20	0.30	0.10	0.13	0.30	0.20	0.16	0.15	
30	0.00	*****	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	
31	0.00	*****	0.02	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.30	0.35	
MTOT	0.73	*****	1.71	2.15	2.40	1.51	2.50	1.30	1.20	2.02	1.00	1.80	2.30	1.89	
MTOT=MONTHLY TOTALS															

HOUSTON URBAN HYDROLOGY STUDY

DAILY AND MONTHLY RAINFALL SUMMARY FOR GAGES SOUTH OF BUFFALO BAYOU PERIOD : 1977 WATER YEAR

G A G E N U M B E R

DATE : 4800 : 4750 : 308R : 303R : 5500 : 5400 : 306R : 305R : 304R : 31R : 5650 : 403R : 402R : 401R :

DATE	4800	4750	308R	303R	5500	5400	306R	305R	304R	31R	5650	403R	402R	401R
APR														
2	0.00	*****	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00
3	0.00	*****	0.08	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.65	*****	0.75	0.26	0.00	0.10	0.00	0.00	0.60	0.82	0.00	0.00	0.00	0.00
5	0.00	*****	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	*****	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	*****	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00
15	0.00	*****	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.40	*****	0.29	0.73	0.50	0.30	0.40	0.10	0.60	0.66	0.60	0.80	0.52	0.69
17	0.00	*****	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	*****	0.07	0.18	0.10	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.06	0.05
20	2.69	*****	1.96	2.67	4.00	2.63	3.90	3.70	2.40	2.95	2.50	3.00	3.24	2.28
29	0.00	*****	0.00	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.82	*****	0.28	0.17	0.50	0.41	0.40	0.40	0.40	0.75	0.40	0.50	0.51	0.31
MTOT	4.56	*****	3.82	4.46	5.40	3.54	4.70	4.20	4.10	5.23	3.50	4.40	4.33	3.33

DATE	4800	4750	308R	303R	5500	5400	306R	305R	304R	31R	5650	403R	402R	401R
MAY														
1	0.36	*****	0.36	0.00	0.10	0.10	0.10	0.20	0.20	0.00	0.40	0.30	0.18	0.45
2	0.68	*****	0.72	0.48	0.80	0.82	0.50	0.80	0.50	0.50	0.10	0.30	0.17	0.19
3	0.00	*****	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5	0.00	*****	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.10	0.00	0.00	0.00
9	0.10	*****	0.00	1.28	0.60	0.20	1.80	1.60	0.00	0.59	0.00	0.80	0.26	0.71
10	0.00	*****	0.00	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
21	0.58	*****	0.80	0.52	0.40	0.41	0.40	0.60	0.70	0.57	0.30	0.40	0.42	0.35
23	0.00	*****	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	*****	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00
MTOT	1.72	*****	1.96	2.95	1.90	1.53	2.80	3.30	1.50	1.66	0.90	1.80	1.03	1.85

MTOT=MONTHLY TOTALS

HOUSTON URBAN HYDROLOGY STUDY															
DAILY AND MONTHLY RAINFALL SUMMARY FOR GAGES SOUTH OF BUFFALO BAYOU PERIOD : 1977 WATER YEAR															
G A G E N U M B E R															
DATE	4800	4750	308R	303R	5500	5400	306R	305R	304R	31R	5650	403R	402R	401R	
JUN															
3	0.00	*****	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.13	0.00	0.00	0.02	0.00	
6	0.00	*****	0.00	0.00	0.10	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
11	0.20	*****	0.44	0.70	1.20	0.30	1.00	0.40	0.20	0.00	0.40	1.10	1.02	0.19	
12	0.00	*****	0.02	0.00	0.10	0.00	0.00	0.10	0.00	0.00	0.10	0.20	0.08	0.12	
13	0.00	*****	0.00	0.03	0.00	0.00	0.10	0.00	0.00	0.00	0.20	0.50	0.00	0.00	
14	1.00	*****	1.23	0.92	1.20	2.56	0.60	0.90	1.80	0.92	1.00	0.90	0.82	0.02	
15	0.20	*****	0.69	0.12	1.00	1.22	0.60	0.90	0.30	0.19	0.70	0.60	0.77	0.30	
17	0.00	*****	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	
24	0.00	*****	0.02	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
29	0.00	*****	0.00	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
MTOT	1.40	*****	2.40	2.20	3.60	4.08	2.60	2.30	2.40	1.29	2.40	3.30	2.71	0.63	
JUL															
2	0.00	*****	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.18	0.00	0.00	0.00	0.00	
6	0.00	*****	0.00	0.00	1.70	0.00	0.00	0.10	0.00	0.00	1.00	2.80	0.56	5.28	
7	0.00	*****	0.79	0.10	0.20	0.00	0.00	0.00	0.00	0.00	0.70	5.60	0.00	0.63	
8	0.00	*****	0.18	0.00	0.00	0.00	1.00	0.00	0.00	0.15	0.20	0.80	0.95	0.34	
9	0.00	*****	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	
10	0.00	*****	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
11	0.00	*****	0.40	0.00	0.30	0.10	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	
13	0.00	*****	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
14	0.00	*****	0.12	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.09	
15	0.00	*****	0.07	0.00	0.00	0.10	0.00	0.40	0.30	0.48	0.30	0.40	0.32	0.39	
16	0.00	*****	0.00	0.00	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
17	0.00	*****	0.42	0.00	0.40	0.00	0.00	0.10	0.00	0.00	0.31	0.60	0.19	0.45	
18	0.00	*****	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	
19	0.00	*****	0.01	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	
20	0.00	*****	0.54	0.06	0.00	0.00	0.10	0.30	0.20	0.10	0.20	0.20	0.00	0.18	
22	0.15	*****	0.00	0.64	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	
26	0.00	*****	0.84	0.00	0.00	0.00	0.00	0.00	0.30	0.26	0.20	0.10	0.00	0.00	
27	0.61	*****	0.37	0.78	0.10	0.92	0.40	0.60	1.20	1.74	0.10	0.20	0.12	0.23	
28	0.62	*****	0.01	0.00	1.00	0.00	0.60	0.10	0.20	0.05	0.91	0.80	0.60	0.39	
29	0.00	*****	0.03	0.16	0.00	0.00	0.00	0.00	0.20	0.05	0.00	0.00	0.00	0.00	
MTOT	1.38	*****	3.78	1.74	5.80	2.05	2.20	1.60	2.80	3.05	3.92	11.50	2.74	8.26	
MTOT=MONTHLY TOTALS															

HOUSTON URBAN HYDROLOGY STUDY														
DAILY AND MONTHLY RAINFALL SUMMARY FOR GAGES SOUTH OF BUFFALO BAYOU PERIOD : 1977 WATER YEAR														
DATE	G A G E N U M B E R													
	4800	4750	308R	303R	5500	5400	306R	305R	304R	31R	5650	403R	402R	401R
AUG														
1	0.57	*****	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.09	*****	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	*****	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	*****	0.99	0.10	0.10	0.21	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.00
9	0.00	*****	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.06
10	0.00	*****	0.00	0.00	0.00	0.72	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00
11	0.00	*****	1.24	0.46	2.10	0.00	0.80	0.00	0.10	0.11	0.80	2.50	2.10	0.94
13	0.00	*****	0.40	0.00	0.10	0.00	0.00	0.00	0.10	0.00	0.00	0.40	0.00	1.21
14	0.00	*****	0.00	0.43	0.00	0.00	0.00	0.00	0.10	0.00	0.10	0.00	0.00	0.00
15	0.00	*****	0.00	0.00	0.20	0.00	0.00	0.10	0.10	0.07	0.20	0.20	0.00	0.33
16	0.00	*****	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	*****	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	*****	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00
19	0.00	*****	1.01	0.00	2.20	0.00	0.70	0.30	0.00	0.00	1.20	1.30	0.65	2.31
20	0.27	*****	0.00	0.00	0.00	0.62	0.00	0.00	0.30	0.13	0.40	0.00	0.00	0.00
21	0.00	*****	0.04	0.05	0.20	0.20	0.00	0.20	0.80	0.09	0.10	0.00	0.00	0.00
22	0.26	*****	0.00	0.00	0.10	0.00	0.10	0.00	0.00	0.00	0.20	0.00	0.04	0.04
23	0.00	*****	0.00	0.00	0.10	0.00	0.20	0.00	0.10	0.17	0.00	0.00	0.00	0.00
24	0.03	*****	0.06	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	*****	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.00	0.00	0.00	0.00	0.00
26	0.00	*****	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00
27	0.17	*****	0.14	0.00	0.30	0.31	0.20	0.50	0.50	0.30	0.50	0.80	0.38	0.50
28	0.00	*****	0.50	0.00	0.00	0.10	0.50	0.20	0.10	0.00	0.40	0.50	1.00	0.60
29	0.00	*****	0.00	0.00	0.00	0.40	0.10	0.50	0.40	0.91	0.00	0.10	0.00	0.00
30	0.00	*****	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	*****	0.00	0.30	0.00	0.10	0.00	0.00	0.10	0.00	0.00	0.10	0.00	0.02
MTOT	1.39	*****	4.42	1.70	5.70	2.66	2.90	2.00	3.60	1.78	4.30	6.00	4.29	6.01
MTOT=MONTHLY TOTALS														

HOUSTON URBAN HYDROLOGY STUDY															
DAILY AND MONTHLY RAINFALL SUMMARY FOR GAGES SOUTH OF BUFFALO BAYOU PERIOD : 1977 WATER YEAR															
G A G E N U M B E R															
DATE :	4800 :	4750 :	308R :	303R :	5500 :	5400 :	306R :	305R :	304R :	31R :	5650 :	403R :	402R :	401R :	
SEPT :															
1	0.00	*****	0.00	0.00	0.00	0.10	0.10	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00
3	0.00	*****	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	*****	0.00	0.00	1.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	*****	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	1.45	*****	0.48	0.20	0.70	1.40	0.80	0.70	1.60	2.61	0.10	0.30	0.03	0.42	0.00
7	0.32	*****	0.52	1.50	0.00	0.40	1.40	0.40	0.40	0.22	0.50	0.50	0.86	0.78	0.00
8	0.61	*****	0.87	1.20	0.40	0.70	0.10	0.60	0.80	0.61	0.40	0.20	0.05	0.05	0.00
9	0.78	*****	0.18	2.05	0.80	0.10	0.10	0.00	0.20	0.27	0.40	0.80	0.80	0.82	0.00
10	0.00	*****	0.03	0.00	0.70	0.00	0.00	0.10	0.00	0.00	0.80	1.00	0.75	0.94	0.00
12	0.20	*****	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00
13	1.20	*****	1.63	1.80	0.70	0.60	0.90	0.30	1.50	1.45	0.50	0.90	0.40	0.40	0.00
14	0.12	*****	0.07	0.10	0.40	0.30	0.40	0.60	0.20	0.14	0.60	0.30	0.75	0.90	0.00
15	0.00	*****	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00
17	0.00	*****	0.00	0.00	0.10	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	*****	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00
19	0.00	*****	0.58	0.73	0.30	0.20	0.30	0.00	0.20	0.14	0.20	0.20	0.00	0.28	0.00
20	0.00	*****	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00
22	0.00	*****	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	*****	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	*****	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00
MTOT :	4.68	*****	4.39	7.58	5.60	4.20	4.20	2.80	5.00	5.52	3.80	4.30	3.76	4.59	0.00
WTOT :	29.10	*****	39.80	41.80	50.30	37.24	40.50	35.20	38.30	36.60	37.24	53.90	41.23	48.87	0.00
MTOT=MONTHLY TOTALS															
WTOT=WATER YEAR TOTAL															

MONTHLY RAINFALL DATA SUMMARY IN THE HOUSTON METROPOLITAN AREA,
NATIONAL WEATHER SERVICE STATIONS, 1977 WATER YEAR

Month	Nonrecording rain-gage numbers													
	10-S	13-S	20-R	23-S	24-S	32-R	33-R	34-S	35-S	36-S	42-S	201-S	202-S	404-S
Oct. 1976	<u>e/4.18</u>	5.97	5.83	6.89	5.28	<u>e/5.24</u>	5.62	4.52	4.15	4.29	4.81	5.56	5.87	5.75
Nov.	3.53	5.12	3.05	3.29	4.01	4.09	3.43	3.86	3.87	3.70	6.81	4.99	3.77	8.60
Dec.	6.32	5.69	6.22	6.51	6.74	5.46	5.77	6.92	<u>e/7.29</u>	6.74	7.68	6.73	6.16	5.25
Annual	57.53	60.49	54.62	51.64	52.42	43.32	43.89	51.62	55.66	50.41	69.66	59.21	57.85	51.58
Jan. 1977	2.04	2.52	2.67	2.28	2.42	1.88	1.52	2.45	<u>e/2.30</u>	2.79	3.60	2.77	2.51	3.00
Feb.	1.72	1.98	1.70	2.15	1.91	2.00	2.18	2.48	1.88	2.17	2.75	1.87	2.25	1.93
Mar.	1.41	1.95	1.95	1.86	1.67	1.36	1.24	1.33	1.68	1.44	3.01	2.54	2.22	1.37
Apr.	3.35	4.34	4.34	3.54	3.21	<u>e/4.58</u>	4.85	3.08	4.29	4.09	4.97	5.35	4.97	2.58
May	1.71	1.15	.79	1.21	2.11	<u>e/3.26</u>	<u>e/1.67</u>	3.47	2.77	2.81	1.98	.94	1.48	4.62
June	5.42	7.21	3.55	6.82	4.29	1.44	2.81	1.76	5.90	1.06	3.99	3.31	5.82	1.36
July	2.26	5.18	2.69	1.87	2.68	3.61	5.80	3.04	3.32	2.21	3.74	1.06	1.76	6.41
Aug.	5.66	3.92	4.45	2.73	6.26	2.78	5.13	3.48	2.42	1.82	3.34	4.03	4.69	4.99
Sept.	6.66	3.92	3.92	4.61	6.18	7.91	8.06	4.58	5.47	4.24	4.89	6.01	7.13	6.35
Totals	44.26	48.95	41.16	43.76	46.76	43.61	48.08	40.97	45.34	37.36	51.57	45.16	48.63	52.21

e/ Incomplete, total estimated.

