TEXAS
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Report 149

SELECTED WATER-QUALITY RECORDS FOR TEXAS SURFACE WATERS, 1970 WATER YEAR

June 1972

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Biochemical-Oxygen-Demand, Dissolved-Oxygen, Nutrients, Pesticides, Minor-Elements, and Other Related Chemical Analyses

By

Alton J. Dupuy and Jean A. Schulze
United States Geological Survey

This report was prepared by the U.S. Geological Survey under cooperative agreement with the Texas Water Development Board.

June 1972

TEXAS WATER DEVELOPMENT BOARD

Published and distributed
by the
Texas Water Development Board
Post Office Box 13087
Austin, Texas 78711

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Biochemical-Oxygen-Demand, Dissolved-Oxygen, Nutrients, Pesticides, Minor-Elements, and Other Related Chemical Analyses

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INTRODUCTION

A network of daily and periodic chemical-quality stations on streams in Texas has been operated for many years by the U.S. Geological Survey in cooperation with the Texas Water Development Board and other State, Federal, and local agencies. Before 1968, analyses of water from this network usually included only the principal inorganic constituents and related properties.

To supplement the information being obtained on the inorganic quality of the surface-water resources of Texas, the Geological Survey, in cooperation with the Texas Water Development Board, began in January 1968 the periodic determination of BOD (biochemical-oxygen-demand), dissolved-oxygen, selected nutrients, and pesticides at selected sites on streams throughout the State (Dupuy, Manigold, and Schulze, 1970; and Schulze, Dupuy, and Manigold, 1970).

These and other parameters or constituents may profoundly influence the quality of the water resources and the ecological balance in streams and reservoirs. Consequently, the data-collection program periodically has been expanded to obtain information on additional chemical and physical parameters needed for comprehensive water-quality evaluation.

The data collection for the special periodic network during the 1970 water year are selected chemical and biochemical records of surface waters (Table 1), records of minor elements in surface waters (Table 2), records of pesticides in surface waters (Table 3), and records of pesticides in bottom deposits in streams (Table 4).

The locations of the data-collection sites are shown on Figure 1. Most of the sites are at stream-gaging stations; at other sites, the water discharge was usually measured when the samples were collected so that the water quality could be considered in relation to the discharge.

Many of the water-quality parameters or properties are affected by water discharge, depth, and velocity; stream-channel characteristics; biological activity; sunlight intensity; and air and water temperatures. Therefore, the water-quality data in this report are representative of conditions only at the sampling sites and only during the periods of sampling. However, data accumulated through repetitive sampling at selected sites on a stream should be sufficiently representative to permit evaluation of the quality of water in the stream.

DEFINITIONS OF TERMS AND ABBREVIATIONS

Most of the terms and abbreviations for water-quality and hydrologic data used in this report have been defined by Hem (1959), Langbein and Iseri (1960), and Rainwater and Thatcher (1960). Definitions and abbreviations of some of these terms are as follows:

Biochemical-oxygen-demand (BOD) is the amount of oxygen required by bacteria while stabilizing decomposable organic matter under aerobic conditions. Thus, the determination of BOD provides an indication of the quantity of organic material in the water at the sampling point. Because complete stabilization may require a period too long for practical purposes, the

5-day BOD test has been accepted as standard. The BOD data presented in this report are based on the standard 5-day BOD test.

Chemical-oxygen-demand (COD) is a measure of the readily oxidizable material in the water and furnishes an approximation of the minimum amount of organic and reducing material present.

Cubic feet per second (cfs) is a unit expressing rates of discharge. One cubic foot per second is equal to the discharge of a stream of rectangular cross section, 1 foot wide and 1 foot deep, flowing water at an average velocity of 1 foot per second.

Discharge, in its simplest concept, means outflow; therefore, the use of this term is not restricted as to course or location. In this report it represents the total fluids measured in the stream.

Dissolved oxygen (DO) in surface water is necessary for the support of aquatic life and the aerobic decomposition of organic material, and thus is one of the most important indicators of the biological, chemical, or sanitary quality of the water. The concentration of dissolved oxygen is reported in milligrams per liter and in percent saturation. The percent saturation of dissolved oxygen is the ratio of the quantity of oxygen dissolved in a water at a given temperature and salinity to the maximum equilibrium quantity of oxygen dissolved in the water when exposed to water-saturated air.

Dissolved solids, as used in this report, is the sum of all determined dissolved constituents converted mathematically into the forms in which they would normally exist in an anhydrous residue.

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

Micrograms per kilogram (µg/kg) is a unit for expressing the weight of a solute (in micrograms) per unit weight (kilogram) of solid. One µg/kg is equal to 0.001 mg/kg.

Micrograms per liter (µg/l) is a unit for expressing the weight of solute (in micrograms) per unit volume (liter) of solution. One µg/l is equal to 0.001 mg/l.

Milligrams per liter (mg/l) is a unit for expressing the weight of solute (in milligrams) per unit volume (liter) of solution.

Minor elements include those constituents, mostly cations, whose concentrations usually do not exceed 1 mg/l, although in exceptional waters one or more of them may be present in comparatively large amounts and may for that particular water be a major component.

Nutrients are substances required to promote and sustain life. Excessive nutrients tend to enrich water and may cause undesirable weed and algal growths and associated nuisances. In this report, consideration has been limited to the most significant nutrients, nitrogen and phosphorous. Before October 1969, results of analyses for nitrogen species were reported as ammonia, nitrite, or nitrate; those for phosphorus were reported as phosphate. In this report, each of the nitrogen species are reported as nitrogen, and phosphorus is reported as phosphorus. Data reported before October 1969 may be converted to nitrogen or phosphorus by multiplying the concentrations by the following factors:

TO CONVERT	TO	MULTIPLY BY
Ammonia (NH_4)	Nitrogen (N)	0.777
Nitrite (NO_2)	Nitrogen (N)	.305
Nitrate (NO_3)	Nitrogen (N)	.226
Phosphate (PO_4)	Phosphorus (P)	.326

Specific conductance is a measure of the ability of a water to conduct an electrical current and is expressed in micromhos per centimeter at 25°C. Because the specific conductance is related to the number and types of ions in solution, it can be used for approximating the dissolved-solids content of the water. Commonly, the amount of dissolved solids (in mg/l) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream, and it may even vary in the same source with changes in the composition of the water.

Suspended solids are those that are retained on a 0.45-µm (micrometer) membrane filter and may consist of sediment, organic detritus, or plankton.

Turbidity of a sample is the reduction of transparency due to the presence of suspended particulate matter and is reported in Jackson turbidity units (JTU). Such material may consist of clay or silt, finely divided organic matter, plankton, or other microscopic organisms which cause light to be scattered and absorbed rather than transmitted in straight lines through the sample.

Pesticides include insecticides and herbicides.

Insecticides are substances or a mixture of substances intended to prevent, destroy, or repel insects. Technical names for insecticides analyzed for are:

Aldrin should contain not less than 95 percent of 1,2,3,4,10,10-hexachloro-1,4,4a,5,8, 8a-hexahydro-1,4-*endo-exo*-5,8-dimethanonaphthalene

Chlordane 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-4,7-methanoindane

DDD 1,1-dichloro-2,2-bis (*p*-chlorophenyl) ethane

DDE 1,1-dichloro-2,2-bis (*p*-chlorophenyl) ethylene

DDT 1,1,1-trichloro-2,2-bis (*p*-chlorophenyl) ethane

Diazinon 0,0-diethyl *0*- (2-isopropyl-6-methyl-4-pyramidyl) phosphorothioate

Dieldrin should contain not less than 85 percent of 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4, 4a,5,6,7,8,8a-octahydro-1,4-*endo-exo*-5,8-dimethanonaphthalene

Endrin 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4-*endo-endo*-5, 8-dimethanonaphthalene

Heptachlor 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-4,7-methanoindene

Heptachlor epoxide 1,4,5,6,7,8,8-heptachloro-2,3-epoxy-3a,4,7,7a-tetrahydro-4,7-methanoindan

Lindane 1,2,3,4,5,6-hexachlorocyclohexane, 99 percent or more of gamma isomer

α-BHC Alpha-1,2,3,4,5,6-hexachlorocyclohexane

Methyl parathion 0,0-dimethyl *0-p*-nitrophenyl phosphorothioate

Malathion S-[1,2-bis (ethoxycarbonyl) ethyl] *0, 0*-dimethyl phosphorodithioate

Parathion 0,0-diethyl *0-p*-nitrophenyl phosphorothioate

PCB Polychlorinated biphenyl compounds

Strobane Chlorinated terpene containing 65-66 percent chlorine

Toxaphene Chlorinated camphene containing 67 to 69 percent chlorine

Herbicides are substances or a mixture of substances intended to control or destroy any vegetation. Technical names for herbicides analyzed for are:

2,4-D 2,4-dichlorophenoxyacetic acid

2,4,5-T 2,4,5-trichlorophenoxyacetic acid

Silvex 2-(2,4,5-trichlorophenoxy) propionic acid

SAMPLE COLLECTION AND TREATMENT METHODS

Depth-integrating samplers were used to collect water samples for chemical, biochemical, pesticide, and minor-element analyses (Brown, Skougstad, and Fishman, 1970, p. 9). Samples for BOD and COD determination were refrigerated and stored in darkness until analyses were begun (within 4 days after collection).

Samples for nutrient analyses were collected in 1-liter polyethylene bottles, treated with mercuric chloride (40 mg of mercury per liter of sample), and

refrigerated in darkness until analyses were begun.

Depth-integrated samples for streamside measurement of dissolved oxygen and water temperature were collected with a BOD sampler that provides for a threefold displacement of water in a BOD bottle without aeration.

Samples for the determination of minor elements were collected in polyethylene bottles (specially pretreated to remove contaminants) immediately filtered through 0.45-μm membrane filters, and acidified with double-distilled nitric acid to a pH of 3.0 or less.

Water samples for pesticide analyses were collected in 1-quart glass bottles with teflon-lined screw caps (specially pretreated to remove contaminants). Bottom-deposits samples were collected with a bed-material sampler where possible or by scooping the desposits directly into the wide-mouth bottles. Samples for pesticide determinations normally were received in the laboratory within 3 days after collection and were refrigerated at about 1°C until analyses were begun. Analyses of the water samples for pesticides usually were begun within 4 to 7 days after receipt at the laboratory.

ANALYTICAL PROCEDURES

The BOD was determined by incubating the samples or suitable dilutions of the samples at a temperature of 20°C for 5 days and measuring the decrease in dissolved oxygen (American Public Health Association and others, 1965, p. 415-421).

Streamside measurements of dissolved oxygen were made with a temperature-compensated portable instrument. Calibration of the instrument was checked frequently by the Alsterberg azide modification of the Winkler method (Brown, Skougstad, and Fishman, 1970, p. 126-128) using air-saturated distilled water as the standard.

Sodium, potassium, and many of the minor elements, including cadmium, chromium, cobalt, copper, lead, lithium, manganese, nickel, strontium, and zinc were determined by atomic absorption methods—either directly or after chelation extraction (Brown, Skougstad, and Fishman, 1970).

Methods for pesticide analyses were those developed in the U.S. Geological Survey laboratories. Suspended solids were not removed prior to extraction. Insecticides were extracted from the samples with hexane and analyzed by electron-capture chromatography (Lamar and others, 1966, p. 187-199). Analyses for insecticides after August 1970 have included the determination of phosphorothioate insecticides with a flame-photometric detector.

Samples for herbicide analyses were acidified and extracted with ether. The herbicides were converted to their methyl esters to facilitate analysis and were analyzed by electron-capture gas chromatography. The methyl esters were converted to the equivalent acid values for reporting (Goerlitz and Lamar, 1967, p. 1-21).

Methods for analyses of bottom desposits for pesticides were those developed in U.S. Geological Survey laboratories. Insecticides from approximately 50 grams of a sample were extracted with acetone and hexane. Phosphorothioate insecticides were analyzed by flame-photometric gas chromatography; chlorinated hydrocarbon insecticides were analyzed by electron-capture gas chromatography. Results were calculated on a dry-weight basis in micrograms per kilogram.

The lower detectable limit for insecticides is 0.2 μg/kg, except for chlordane and toxaphene, which have detectable limits of 1.0 and 10 μg/kg, respectively. Where no insecticide was detected, values of less than 1.0 and 10 μg/kg were reported for chlordane and toxaphene, respectively, and a value of less than 0.1 μg/kg was reported for other insecticides (Table 4).

Bottom deposits for herbicide analyses were acidified and extracted with acetone and ether; the herbicides were converted to their methyl esters to facilitate analysis and were analyzed by electron-capture gas chromatography. The methyl ester values were converted to the equivalent acid values for reporting. Results were calculated on a dry-weight basis in micrograms per kilogram. Lower detectable limits for the herbicides were calculated for each sample because they vary from sample to sample depending on interfering compounds.

Methods used for the determination of other properties or constituents are those described by Brown, Skougstad, and Fishman (1970).

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Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970

7-2274.7. CANADIAN RIVER AT TASCOSA, TEX. (35°31'10", 102°15'30")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 22, 1969	Dec. 16, 1969	Feb. 18, 1970	Apr. 13, 1970	June 1, 1970	Aug. 12, 1970
Time (24 hour)	0900	1530	1505	1430	1615	1330
Discharge (cfs)	280	50	4.4	4.1	26	79
Silica (SiO_2)	--	--	--	11	11	9.6
Calcium (Ca)	--	--	--	87	98	39
Magnesium (Mg)	--	--	--	58	54	14
Sodium plus potassium (Na+K)	--	--	--	741	667	237
Bicarbonate (HCO_3)	--	--	--	268	197	189
Carbonate (CO_3)	--	--	--	0	0	9
Sulfate (SO_4)	--	--	--	514	520	183
Chloride (Cl)	--	--	--	930	860	218
Fluoride (F)	--	--	--	--	--	.5
Dissolved solids	--	--	--	2470	2310	805
Hardness as $CaCO_3$	--	--	--	456	466	155
Non-carbonate hardness	--	--	--	236	305	0
Sodium adsorption ratio (SAR)	--	--	--	15	13	8.3
Specific conductance (micromhos at 25°C)	2840	3200	3580	4100	3780	1330
pH:						
(field)	7.9	8.5	8.7	8.4	8.5	8.4
(laboratory)	--	--	--	7.8	7.7	7.6
Temperature (°C)	10.5	12.0	12.0	23.0	19.0	33.0
Ammonia nitrogen (N)	--	.00	.00	.00	.00	.00
Nitrate nitrogen (N)	.1	.5	.0	.1	.3	.5
Nitrite nitrogen (N)	--	.00	.00	.00	.00	.01
Total phosphorus (P)	.10	.03	.02	.03	.18	1.3
Detergents (MBAS)	--	--	--	--	--	.02
Dissolved oxygen (DO):						
(milligrams per liter)	9.6	9.6	8.6	7.9	8.1	7.0
(percent saturation)	86	89	80	92	87	96
Biochemical oxygen demand (BOD)	2.2	.5	.2	1.4	3.7	2.3

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

7-2275. CANADIAN RIVER NEAR AMARILLO, TEX. (35°28'13", 101°52'45")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 21, 1969	Dec. 16, 1969	Feb. 18, 1970	Apr. 13, 1970	June 1, 1970	July 14, 1970
Time (24 hour)	1800	1230	1300	1230	1400	1545
Discharge (cfs)	114	62	23	156	29	132
Silica (SiO_2)	--	--	--	15	14	17
Calcium (Ca)	--	--	--	130	122	37
Magnesium (Mg)	--	--	--	56	52	14
Sodium plus potassium (Na+K)	--	--	--	647	613	182
Bicarbonate (HCO_3)	--	--	--	224	182	174
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	550	552	131
Chloride (Cl)	--	--	--	860	800	183
Fluoride (F)	--	--	--	--	--	.7
Dissolved solids	--	--	--	2380	2250	659
Hardness as $CaCO_3$	--	--	--	555	518	150
Non-carbonate hardness	--	--	--	372	370	8
Sodium adsorption ratio (SAR)	--	--	--	12	12	6.5
Specific conductance (micromhos at 25°C)	2230	3050	3290	3910	3600	1150
pH:						
(field)	8.2	8.5	8.5	8.3	8.3	8.1
(laboratory)	--	--	--	7.1	7.3	7.4
Temperature (°C)	14.0	8.0	11.5	19.0	16.0	32.0
Ammonia nitrogen (N)	--	3.9	8.5	2.7	.66	.02
Nitrate nitrogen (N)	1.4	.6	.6	.9	.7	1.8
Nitrite nitrogen (N)	--	.07	.13	.14	.14	.08
Total phosphorus (P)	.56	2.2	8.5	1.2	.87	6.1
Detergents (MBAS)	--	--	--	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	9.5	10.8	10.3	9.4	8.3	6.2
(percent saturation)	91	91	94	100	84	84
Biochemical oxygen demand (BOD)	5.5	6.2	12	4.8	5.8	5.9

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

7-2275. CANADIAN RIVER NEAR AMARILLO, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	Aug. 12, 1970					
Time (24 hour)	1000					
Discharge (cfs)	395					
Silica (SiO_2)	11					
Calcium (Ca)	40					
Magnesium (Mg)	15					
Sodium plus potassium (Na+K)	159					
Bicarbonate (HCO_3)	176					
Carbonate (CO_3)	0					
Sulfate (SO_4)	164					
Chloride (Cl)	135					
Fluoride (F)	.6					
Dissolved solids	612					
Hardness as $CaCO_3$	162					
Non-carbonate hardness	18					
Sodium adsorption ratio (SAR)	5.4					
Specific conductance (micromhos at 25°C)	1040					
pH:						
(field)	8.3					
(laboratory)	7.4					
Temperature (°C)	24.5					
Ammonia nitrogen (N)	.00					
Nitrate nitrogen (N)	.2					
Nitrite nitrogen (N)	.00					
Total phosphorus (P)	2.0					
Detergents (MBAS)	.00					
Dissolved oxygen (DO):						
(milligrams per liter)	7.6					
(percent saturation)	90					
Biochemical oxygen demand (BOD)	2.1					

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

7-2280. CANADIAN RIVER NEAR CANADIAN, TEX. (35°56'01", 100°22'06")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 21, 1969	Dec. 16, 1969	Feb. 18, 1970	Apr. 13, 1970	June 1, 1970
Time (24 hour)	1445	1000	1015	0845	0800
Discharge (cfs)	14	72	56	23	60
Silica (SiO_2)	--	--	--	15	13
Calcium (Ca)	--	--	--	102	63
Magnesium (Mg)	--	--	--	53	23
Sodium plus potassium (Na+K)	--	--	--	399	172
Bicarbonate (HCO_3)	--	--	--	244	177
Carbonate (CO_3)	--	--	--	0	0
Sulfate (SO_4)	--	--	--	242	130
Chloride (Cl)	--	--	--	625	240
Fluoride (F)	--	--	--	1.9	1.4
Dissolved solids	--	--	--	1560	733
Hardness as $CaCO_3$	--	--	--	472	252
Non-carbonate hardness	--	--	--	272	106
Sodium adsorption ratio (SAR)	--	--	--	8.0	4.7
Specific conductance (micromhos at 25°C)	2630	2580	2580	2680	1290
pH:					
(field)	8.2	8.4	8.4	8.4	8.0
(laboratory)	--	--	--	7.6	7.4
Temperature (°C)	13.5	2.0	6.5	9.0	14.0
Ammonia nitrogen (N)	--	1.3	.56	.00	.15
Nitrate nitrogen (N)	.5	.3	.3	.4	.8
Nitrite nitrogen (N)	--	.03	.04	.06	.10
Total phosphorus (P)	.02	.04	1.0	.04	.44
Detergents (MBAS)	--	--	--	--	--
Dissolved oxygen (DO):					
(milligrams per liter)	11.0	10.6	9.8	9.7	8.6
(percent saturation)	105	77	79	84	83
Biochemical oxygen demand (BOD)	3.2	2.2	4.0	1.9	15

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

7-3127. WICHITA RIVER NEAR CHARLIE, TEX. (34°03'11", 98°17'47")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 20, 1969	Dec. 15, 1969	Feb. 17, 1970	Apr. 12, 1970	May 31, 1970	July 13, 1970
Time (24 hour)	1825	1330	1230	1250	1145	1550
Discharge (cfs)	128	86	66	245	248	176
Silica (SiO_2)	--	--	--	5.7	7.2	6.7
Calcium (Ca)	--	--	--	175	200	216
Magnesium (Mg)	--	--	--	48	62	66
Sodium plus potassium (Na+K)	--	--	--	497	611	660
Bicarbonate (HCO_3)	--	--	--	136	140	137
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	468	452	584
Chloride (Cl)	--	--	--	790	1060	1080
Fluoride (F)	--	--	--	--	--	--
Dissolved solids	--	--	--	2050	2470	2680
Hardness as $CaCO_3$	--	--	--	634	754	810
Non-carbonate hardness	--	--	--	522	640	698
Sodium adsorption ratio (SAR)	--	--	--	8.6	9.7	10
Specific conductance (micromhos at 25°C)	2890	4080	4700	3420	4120	4370
pH:						
(field)	7.6	8.2	8.3	7.4	7.7	8.6
(laboratory)	--	--	--	7.1	7.2	7.1
Temperature (°C)	20.0	10.0	13.0	22.0	25.5	31.0
Ammonia nitrogen (N)	--	1.0	1.8	.38	.36	.00
Nitrate nitrogen (N)	1.5	1.1	.7	.7	.8	.3
Nitrite nitrogen (N)	--	.22	.20	.05	.10	.07
Total phosphorus (P)	1.1	2.0	4.5	.52	1.1	1.0
Detergents (MBAS)	--	--	--	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	8.3	12.7	11.2	6.1	5.1	11.3
(percent saturation)	90	112	106	70	62	153
Biochemical oxygen demand (BOD)	3.4	3.2	6.0	2.9	6.4	6.1

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

7-3355. RED RIVER AT ARTHUR CITY, TEX. (33°52'32", 95°30'08")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 6, 1969	Dec. 3, 1969	Feb. 10, 1970	Apr. 8, 1970	June 4, 1970	Aug. 3. 1970
Time (24 hour)	0815	1705	0900	1600	1200	1720
Discharge (cfs)	3060	3350	2670	4090	2930	5880
Silica (SiO_2)	--	--	--	6.8	6.6	5.1
Calcium (Ca)	--	--	--	84	54	95
Magnesium (Mg)	--	--	--	22	10	22
Sodium plus potassium (Na+K)	--	--	--	85	69	194
Bicarbonate (HCO_3)	--	--	--	266	152	168
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	103	73	178
Chloride (Cl)	--	--	--	112	88	302
Fluoride (F)	--	--	--	.3	.2	.4
Dissolved solids	--	--	--	546	378	880
Hardness as $CaCO_3$	--	--	--	300	176	328
Non-carbonate hardness	--	--	--	82	52	190
Sodium adsorption ratio (SAR)	--	--	--	2.1	2.3	4.7
Specific conductance (micromhos at 25°C)	1340	1300	775	958	631	1520
pH:						
(field)	8.2	7.9	7.2	8.0	7.7	8.0
(laboratory)	--	--	--	7.6	7.6	7.7
Temperature (°C)	26.0	11.0	8.0	19.5	20.5	32.0
Ammonia nitrogen (N)	--	.29	.00	.02	.15	.00
Nitrate nitrogen (N)	.1	.2	1.1	.4	.5	.1
Nitrite nitrogen (N)	--	.00	.00	.00	.03	.00
Total phosphorus (P)	.10	.08	.08	.13	.15	.08
Detergents (MBAS)	--	--	--	--	--	.04
Dissolved oxygen (DO):						
(milligrams per liter)	7.9	10.6	10.6	10	8.4	7.8
(percent saturation)	96	95	89	112	92	105
Biochemical oxygen demand (BOD)	1.9	1.1	1.6	4.3	1.5	2.2

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

7-3368.2. RED RIVER NEAR DeKALB, TEX. (33°41'15", 94°41'39")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 6, 1969	Dec. 4, 1969	Feb. 10, 1970	Apr. 8, 1970	June 4, 1970	Aug. 4, 1970
Time (24 hour)	1120	0920	1115	1110	0905	1130
Discharge (cfs)	3000	3160	7100	3500	5600	5100
Silica (SiO_2)	--	--	--	6.9	5.9	2.1
Calcium (Ca)	--	--	--	52	38	85
Magnesium (Mg)	--	--	--	11	10	27
Sodium plus potassium (Na+K)	--	--	--	51	50	196
Bicarbonate (HCO_3)	--	--	--	168	108	170
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	48	49	176
Chloride (Cl)	--	--	--	68	74	302
Fluoride (F)	--	--	--	.1	.0	.2
Dissolved solids	--	--	--	322	281	873
Hardness as $CaCO_3$	--	--	--	176	136	324
Non-carbonate hardness	--	--	--	38	48	184
Sodium adsorption ratio (SAR)	--	--	--	1.7	1.9	4.7
Specific conductance (micromhos at 25°C)	1180	2180	686	553	518	1520
pH:						
(field)	8.0	8.1	7.3	8.1	7.4	8.2
(laboratory)	--	--	--	7.6	7.5	7.5
Temperature (°C)	25.0	9.0	9.0	18.5	20.0	31.5
Ammonia nitrogen (N)	--	.25	.00	.02	.10	.02
Nitrate nitrogen (N)	.1	1.3	.3	.4	.2	.1
Nitrite nitrogen (N)	--	.01	.00	.00	.01	.00
Total phosphorus (P)	.09	.08	.11	.06	.12	.11
Detergents (MBAS)	--	--	--	--	--	.19
Dissolved oxygen (DO):						
(milligrams per liter)	8.0	10.8	10.8	9.0	8.4	7.3
(percent saturation)	94	93	93	99	91	99
Biochemical oxygen demand (BOD)	3.0	1.2	1.9	2.0	1.9	2.8

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

7-3370. RED RIVER AT INDEX, ARK. (33°33'05", 94°02'25")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 6, 1969	Dec. 4, 1969	Feb. 10, 1970	Apr. 8, 1970	June 3, 1970	Aug. 4, 1970
Time (24 hour)	1240	1040	1235	0940	1600	1250
Discharge (cfs) a	2760	4340	10700	5460	3700	5060
Silica (SiO_2)	--	--	--	6.5	5.2	8.6
Calcium (Ca)	--	--	--	63	73	80
Magnesium (Mg)	--	--	--	14	21	26
Sodium plus potassium (Na+K)	--	--	--	91	114	183
Bicarbonate (HCO_3)	--	--	--	162	206	182
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	85	103	160
Chloride (Cl)	--	--	--	134	169	275
Fluoride (F)	--	--	--	.2	.2	.5
Dissolved solids	--	--	--	474	587	823
Hardness as $CaCO_3$	--	--	--	216	268	306
Non-carbonate hardness	--	--	--	83	99	157
Sodium adsorption ratio (SAR)	--	--	--	2.7	3.0	4.6
Specific conductance (micromhos at 25°C)	1220	1240	724	838	1000	1430
pH:						
(field)	7.7	--	7.5	7.9	7.8	7.9
(laboratory)	--	--	--	7.6	7.7	7.6
Temperature (°C)	25.5	9.5	10.0	18.0	23.5	32.0
Ammonia nitrogen (N)	--	.20	.07	.01	.07	.14
Nitrate nitrogen (N)	.3	.4	.9	.2	.2	.1
Nitrite nitrogen (N)	--	.01	.00	.00	.01	.00
Total phosphorus (P)	.08	.09	.18	.06	.17	.10
Detergents (MBAS)	--	--	--	--	--	.04
Dissolved oxygen (DO):						
(milligrams per liter)	7.8	11.3	10.8	8.6	8.7	8.0
(percent saturation)	94	99	96	94	101	108.
Biochemical oxygen demand (BOD)	3.9	2.7	.9	2.5	2.2	4.8

a Daily mean discharge.

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

7-3432. SULPHUR RIVER NEAR TALCO, TEX. (33°23'11", 95°07'57")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 6, 1969	Dec. 3, 1969	Feb. 10, 1970	Apr. 8, 1970	June 4, 1970	Aug. 4, 1970
Time (24 hour)	1000	1520	1005	1255	1050	1005
Discharge (cfs)	0.55	14	285	70	140	0.2
Silica (SiO_2)	--	--	--	6.3	6.2	1.3
Calcium (Ca)	--	--	--	88	36	85
Magnesium (Mg)	--	--	--	6.9	4.4	5.8
Sodium plus potassium (Na+K)	--	--	--	52	20	64
Bicarbonate (HCO_3)	--	--	--	232	116	284
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	111	37	82
Chloride (Cl)	--	--	--	38	9.9	40
Fluoride (F)	--	--	--	.2	.3	.2
Dissolved solids	--	--	--	418	177	419
Hardness as $CaCO_3$	--	--	--	248	108	236
Non-carbonate hardness	--	--	--	58	13	4
Sodium adsorption ratio (SAR)	--	--	--	1.4	.8	1.8
Specific conductance (micromhos at 25°C)	1030	705	421	679	277	686
pH:						
(field)	7.3	7.4	7.4	7.6	7.5	7.5
(laboratory)	--	--	--	7.8	7.5	7.6
Temperature (°C)	22.0	9.5	9.0	20.0	20.0	28.5
Ammonia nitrogen (N)	--	.27	.18	.01	.20	.00
Nitrate nitrogen (N)	.1	.2	.8	.4	1.2	.1
Nitrite nitrogen (N)	--	.01	.00	.00	.05	.00
Total phosphorus (P)	.06	.08	.20	.09	.15	.04
Detergents (MBAS)	--	--	--	--	--	.04
Dissolved oxygen (DO):						
(milligrams per liter)	3.4	9.2	10.2	7.1	7.3	4.0
(percent saturation)	39	80	88	80	79	51
Biochemical oxygen demand (BOD)	1.6	2.8	2.1	1.9	1.9	2.6

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

7-3460.7. LITTLE CYPRESS CREEK NEAR JEFFERSON, TEX. (32°42'46", 94°20'44")

(Results in milligrams per liter except as indicated)

Date of collection	Dec. 4, 1969	Feb. 10, 1970	Apr. 7, 1970	June 3, 1970	Aug. 4, 1970
Time (24 hour)	1525	1420	1750	1400	1515
Discharge (cfs)	120	544	480	215	15
Silica (SiO_2)	--	--	18	18	19
Calcium (Ca)	--	--	8.0	6.0	7.0
Magnesium (Mg)	--	--	2.7	2.4	2.6
Sodium plus potassium (Na+K)	--	--	27	20	21
Bicarbonate (HCO_3)	--	--	12	12	23
Carbonate (CO_3)	--	--	0	0	0
Sulfate (SO_4)	--	--	39	16	9.6
Chloride (Cl)	--	--	28	29	30
Fluoride (F)	--	--	.1	.1	.3
Dissolved solids	--	--	129	100	102
Hardness as $CaCO_3$	--	--	31	25	28
Non-carbonate hardness	--	--	21	15	9
Sodium adsorption ratio (SAR)	--	--	2.1	1.7	1.7
Specific conductance (micromhos at 25°C)	350	185	172	146	154
pH:					
(field)	--	6.7	6.2	6.5	6.4
(laboratory)	--	--	6.3	6.4	6.5
Temperature (°C)	8.5	9.5	16.5	22.5	30.5
Ammonia nitrogen (N)	.20	.00	.02	.10	.00
Nitrate nitrogen (N)	.5	.0	.1	.5	.3
Nitrite nitrogen (N)	.00	.00	.00	.02	.00
Total phosphorus (P)	.05	.04	.05	.13	.06
Detergents (MBAS)	--	--	--	--	--
Dissolved oxygen (DO):					
(milligrams per liter)	10.3	10.0	8.8	6.6	5.9
(percent saturation)	87	87	93	75	78
Biochemical oxygen demand (BOD)	.7	1.2	.6	1.2	1.0

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0175. SABINE RIVER NEAR EMORY, TEX. (32°46'23", 95°47'56")

(Results in milligrams per liter except as indicated)

Date of collection	Dec. 3, 1969	Feb. 10, 1970	Apr. 8, 1970	June 3, 1970	Aug. 5, 1970
Time (24 hour)	1300	1730	1840	0940	1230
Discharge (cfs)	0.70	170	400	1000	0.20
Silica (SiO_2)	--	--	0.0	1.6	5.8
Calcium (Ca)	--	--	28	25	34
Magnesium (Mg)	--	--	2.5	4.3	4.2
Sodium plus potassium (Na+K)	--	--	12	8.8	18
Bicarbonate (HCO_3)	--	--	100	88	130
Carbonate (CO_3)	--	--	0	0	0
Sulfate (SO_4)	--	--	14	15	19
Chloride (Cl)	--	--	5.7	6.7	9.2
Fluoride (F)	--	--	.2	.2	.5
Dissolved solids	--	--	112	107	156
Hardness as $CaCO_3$	--	--	80	80	102
Non-carbonate hardness	--	--	0	8	0
Sodium adsorption ratio (SAR)	--	--	.6	.4	.8
Specific conductance (micromhos at 25°C)	229	211	205	196	269
pH:					
(field)	7.6	7.2	7.4	7.5	7.3
(laboratory)	--	--	7.2	7.4	7.2
Temperature (°C)	10.5	9.0	15.0	22.5	31.0
Ammonia nitrogen (N)	.32	.00	.04	.11	.00
Nitrate nitrogen (N)	1.2	.4	.2	.5	.3
Nitrite nitrogen (N)	.00	.00	.00	.01	.00
Total phosphorus (P)	.06	.04	.07	.09	.13
Detergents (MBAS)	--	--	--	--	.10
Dissolved oxygen (DO):					
(milligrams per liter)	8.1	11.2	9.4	8.0	7.1
(percent saturation)	72	97	96	91	95
Biochemical oxygen demand (BOD)	1.5	1.4	1.3	1.3	2.9

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0200. SABINE RIVER NEAR GLADEWATER, TEX. (32°31'37", 94°57'36")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 6, 1969	Dec. 4, 1969	Feb. 10, 1970	Apr. 7, 1970	June 3, 1970	Aug. 4, 1970
Time (24 hour)	1635	2030	1610	1510	1050	1745
Discharge (cfs)	30	250	2750	a2360	1680	50
Silica (SiO_2)	--	--	--	4.9	8.0	14
Calcium (Ca)	--	--	--	24	14	15
Magnesium (Mg)	--	--	--	3.7	4.1	4.5
Sodium plus potassium (Na+K)	--	--	--	21	26	36
Bicarbonate (HCO_3)	--	--	--	73	32	42
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	25	29	20
Chloride (Cl)	--	--	--	24	35	56
Fluoride (F)	--	--	--	.2	.2	.1
Dissolved solids	--	--	--	140	135	167
Hardness as $CaCO_3$	--	--	--	75	52	56
Non-carbonate hardness	--	--	--	15	26	22
Sodium adsorption ratio (SAR)	--	--	--	1.1	1.6	2.1
Specific conductance (micromhos at 25°C)	244	251	210	255	221	283
pH:						
(field)	6.6	--	6.7	7.0	6.9	6.8
(laboratory)	--	--	--	7.0	6.6	7.1
Temperature (°C)	25.0	9.0	10.0	17.0	22.0	31.0
Ammonia nitrogen (N)	--	.02	.27	.07	.19	.02
Nitrate nitrogen (N)	.0	.3	.4	.2	.5	.1
Nitrite nitrogen (N)	--	.01	.00	.00	.02	.00
Total phosphorus (P)	.07	.07	.14	.08	.19	.05
Detergents (MBAS)	--	--	--	--	--	.04
Dissolved oxygen (DO):						
(milligrams per liter)	7.3	10.4	5.9	9.2	7.5	7.3
(percent saturation)	87	90	52	98	85	97
Biochemical oxygen demand (BOD)	1.7	.8	2.2	1.4	2.0	1.2

a Daily mean discharge.

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0220. SABINE RIVER NEAR TATUM, TEX. (32°22'11", 94°27'28")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 6, 1969	Dec. 4, 1969	Feb. 10, 1970	Apr. 7, 1970	June 3, 1970	Aug. 4, 1970
Time (24 hour)	1535	1815	1515	1635	1215	1630
Discharge (cfs)	47	373	3100	5940	1800	83
Silica (SiO_2)	--	--	--	5.7	9.1	11
Calcium (Ca)	--	--	--	21	16	20
Magnesium (Mg)	--	--	--	4.0	3.9	5.8
Sodium plus potassium (Na+K)	--	--	--	27	47	108
Bicarbonate (HCO_3)	--	--	--	65	38	53
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	24	27	33
Chloride (Cl)	--	--	--	34	68	162
Fluoride (F)	--	--	--	.2	.2	.3
Dissolved solids	--	--	--	149	193	367
Hardness as $CaCO_3$	--	--	--	69	56	74
Non-carbonate hardness	--	--	--	16	25	30
Sodium adsorption ratio (SAR)	--	--	--	1.4	2.7	5.5
Specific conductance (micromhos at 25°C)	602	665	253	275	326	691
pH:						
(field)	7.2	--	6.8	6.9	6.9	8.4
(laboratory)	--	--	--	6.9	6.6	7.0
Temperature (°C)	26.0	10.0	9.0	17.0	24.5	33.5
Ammonia nitrogen (N)	--	.50	.16	.01	.16	.06
Nitrate nitrogen (N)	1.0	2.0	2.0	.3	.6	.2
Nitrite nitrogen (N)	--	.01	.00	.00	.05	.00
Total phosphorus (P)	.10	.15	.21	.13	.22	.10
Detergents (MBAS)	--	--	--	--	--	.14
Dissolved oxygen (DO):						
(milligrams per liter)	10.3	4.8	9.0	8.1	5.8	12.9
(percent saturation)	126	42	78	86	69	179
Biochemical oxygen demand (BOD)	4.8	3.2	3.1	1.7	2.5	4.2

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0253.6. SABINE RIVER AT TOLEDO BEND DAM NEAR BURKEVILLE, TEX. (31°11'22", 93°34'23")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 8, 1969	Dec. 10, 1969	Feb. 11, 1970	Apr. 7, 1970	June 9, 1970	Aug. 4, 1970
Time (24 hour)	1100	1045	1400	1530	1640	1130
Discharge (cfs)	--	--	--	--	--	--
Silica (SiO_2)	--	--	--	0.0	1.8	4.8
Calcium (Ca)	--	--	--	9.5	9.8	10
Magnesium (Mg)	--	--	--	3.1	3.2	3.4
Sodium plus potassium (Na+K)	--	--	--	16	18	19
Bicarbonate (HCO_3)	--	--	--	35	40	46
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	11	9.8	10
Chloride (Cl)	--	--	--	22	23	23
Fluoride (F)	--	--	--	.0	.1	.0
Dissolved solids	--	--	--	80	86	94
Hardness as $CaCO_3$	--	--	--	36	38	39
Non-carbonate hardness	--	--	--	8	5	1
Sodium adsorption ratio (SAR)	--	--	--	1.2	1.3	1.3
Specific conductance (micromhos at 25°C)	311	179	166	160	162	172
pH:						
(field)	6.9	6.8	6.8	6.8	6.5	6.4
(laboratory)	--	--	--	6.6	6.4	6.4
Temperature (°C)	21.0	13.0	10.5	16.0	20.0	14.5
Ammonia nitrogen (N)	--	.17	.00	.00	.00	.00
Nitrate nitrogen (N)	.0	.6	.3	.2	.1	.1
Nitrite nitrogen (N)	--	.00	.00	.00	.00	.00
Total phosphorus (P)	.31	.07	.13	.02	.04	.07
Detergents (MBAS)	--	--	--	--	--	.03
Dissolved oxygen (DO):						
(milligrams per liter)	2.6	7.4	10.5	9.8	4.6	4.0
(percent saturation)	29	70	94	98	50	39
Biochemical oxygen demand (BOD)	.9	.8	.7	.7	4.2	1.0

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0260. SABINE RIVER BELOW TOLEDO BEND, NEAR BURKEVILLE, TEX. (31°03'50", 93°31'10")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 8, 1969	Dec. 10, 1969	Feb. 11, 1970	Apr. 7, 1970	June 9, 1970	Aug. 4, 1970
Time (24 hour)	1145	0945	1430	1605	1800	1215
Discharge (cfs)	67	345	2330	6080	164	482
Silica (SiO_2)	--	--	--	0.0	10	4.6
Calcium (Ca)	--	--	--	9.5	9.2	10
Magnesium (Mg)	--	--	--	3.2	2.8	3.3
Sodium plus potassium (Na+K)	--	--	--	16	18	16
Bicarbonate (HCO_3)	--	--	--	34	42	41
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	11	10	10
Chloride (Cl)	--	--	--	22	20	21
Fluoride (F)	--	--	--	.0	.0	.1
Dissolved solids	--	--	--	80	91	85
Hardness as $CaCO_3$	--	--	--	37	34	38
Non-carbonate hardness	--	--	--	9	0	5
Sodium adsorption ratio (SAR)	--	--	--	1.1	1.3	1.1
Specific conductance (micromhos at 25°C)	161	100	161	159	157	159
pH:						
(field)	6.7	6.8	7.0	6.8	6.7	6.6
(laboratory)	--	--	--	6.6	6.6	6.7
Temperature (°C)	23.5	11.5	12.0	16.0	16.5	24.5
Ammonia nitrogen (N)	--	.00	.00	.00	.00	.00
Nitrate nitrogen (N)	.0	.4	.3	.2	.1	.1
Nitrite nitrogen (N)	--	.00	.00	.00	.00	.00
Total phosphorus (P)	.06	.11	.18	.01	.06	.04
Detergents (MBAS)	--	--	--	--	--	.02
Dissolved oxygen (DO):						
(milligrams per liter)	7.0	9.3	11.0	9.8	9.4	5.4
(percent saturation)	81	85	102	98	96	64
Biochemical oxygen demand (BOD)	2.2	1.8	.9	.7	3.0	1.1

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0305. SABINE RIVER NEAR RULIFF, TEX. (30°18'13", 93°44'37")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 7, 1969	Dec. 17, 1969	Feb. 18, 1970	Apr. 29, 1970	June 24, 1970	Aug. 13, 1970
Time (24 hour)	1605	1050	1010	1800	1905	1200
Discharge (cfs)	1640	1220	1850	2200	1050	2500
Silica (SiO_2)	--	--	--	7.8	8.8	6.8
Calcium (Ca)	--	--	--	11	10	11
Magnesium (Mg)	--	--	--	2.1	3.7	3.1
Sodium plus potassium (Na+K)	--	--	--	14	20	20
Bicarbonate (HCO_3)	--	--	--	34	48	44
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	11	12	16
Chloride (Cl)	--	--	--	20	22	22
Fluoride (F)	--	--	--	.0	0.0	.0
Dissolved solids	--	--	--	83	101	101
Hardness as $CaCO_3$	--	--	--	36	40	40
Non-carbonate hardness	--	--	--	8	1	4
Sodium adsorption ratio (SAR)	--	--	--	1.0	1.4	1.4
Specific conductance (micromhos at 25°C)	154	95	142	147	187	188
pH:						
(field)	7.1	6.7	6.7	6.4	--	6.7
(laboratory)	--	--	--	6.6	7.1	6.8
Temperature (°C)	26.5	14.0	14.0	26.0	31.0	31.0
Ammonia nitrogen (N)	--	.00	.13	.11	.00	.07
Nitrate nitrogen (N)	.0	.1	.0	.1	.1	.0
Nitrite nitrogen (N)	--	.00	.00	.01	.02	.00
Total phosphorus (P)	.05	.07	.05	.02	.04	.04
Detergents (MBAS)	--	--	--	--	--	.00
Dissolved oxygen (DO):						
(milligrams per liter)	7.5	9.7	9.4	6.8	--	5.8
(percent saturation)	91	93	90	83	--	77
Biochemical oxygen demand (BOD)	1.1	.0	1.7	2.0	2.0	1.7

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0325. NECHES RIVER NEAR ALTO, TEX. (31°34'45", 95°09'55")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 6, 1969	Dec. 6, 1969	Feb. 10, 1970	Apr. 6, 1970	June 8, 1970	Aug. 3, 1970
Time (24 hour)	1325	1330	1300	1340	1400	1230
Discharge (cfs)	40	1420	1270	1510	161	37
Silica (SiO_2)	--	--	--	7.9	18	13
Calcium (Ca)	--	--	--	12	12	14
Magnesium (Mg)	--	--	--	4.4	5.2	5.7
Sodium plus potassium (Na+K)	--	--	--	24	39	41
Bicarbonate (HCO_3)	--	--	--	21	36	57
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	33	19	23
Chloride (Cl)	--	--	--	34	60	53
Fluoride (F)	--	--	--	.0	.2	.2
Dissolved solids	--	--	--	126	174	179
Hardness as $CaCO_3$	--	--	--	48	51	58
Non-carbonate hardness	--	--	--	31	22	12
Sodium adsorption ratio (SAR)	--	--	--	1.5	2.4	2.3
Specific conductance (micromhos at 25°C)	301	226	251	230	290	318
pH:						
(field)	--	6.8	6.8	7.1	6.9	7.1
(laboratory)	--	--	--	6.4	6.6	6.6
Temperature (°C)	25.0	9.5	10.5	16.0	24.0	32.0
Ammonia nitrogen (N)	--	.00	.00	.00	.00	.00
Nitrate nitrogen (N)	.2	.4	.3	.2	.5	.2
Nitrite nitrogen (N)	--	.00	.00	.00	.00	.00
Total phosphorus (P)	.07	.14	.13	.02	.08	.11
Detergents (MBAS)	--	--	--	--	--	.01
Dissolved oxygen (DO):						
(milligrams per liter)	6.9	9.3	10.0	9.4	7.0	6.6
(percent saturation)	82	82	89	94	82	89
Biochemical oxygen demand (BOD)	1.2	1.9	.6	.8	.7	1.3

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0330. NECHES RIVER NEAR DIBOLL, TEX. (31°07'55", 94°48'30")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 6, 1969	Dec. 9, 1969	Feb. 11, 1970	Apr. 7, 1970	June 9, 1970	Aug. 3, 1970
Time (24 hour)	1830	1345	0730	0900	0910	1500
Discharge (cfs)	59	860	a1310	a1940	a201	47
Silica (SiO_2)	--	--	--	7.8	17	13
Calcium (Ca)	--	--	--	10	12	13
Magnesium (Mg)	--	--	--	4.4	5.4	5.6
Sodium plus potassium (Na+K)	--	--	--	23	33	42
Bicarbonate (HCO_3)	--	--	--	18	42	58
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	32	23	23
Chloride (Cl)	--	--	--	32	45	53
Fluoride (F)	--	--	--	.0	.1	.1
Dissolved solids	--	--	--	119	158	180
Hardness as $CaCO_3$	--	--	--	43	52	56
Non-carbonate hardness	--	--	--	28	18	8
Sodium adsorption ratio (SAR)	--	--	--	1.5	2.0	2.4
Specific conductance (micromhos at 25°C)	284	267	246	219	266	312
pH:						
(field)	7.3	6.7	6.6	6.6	6.8	7.0
(laboratory)	--	--	--	6.3	6.6	6.6
Temperature (°C)	25.0	10.5	9.0	16.5	24.0	31.5
Ammonia nitrogen (N)	--	.14	.00	.00	.00	.00
Nitrate nitrogen (N)	.2	.4	.2	.2	.4	.2
Nitrite nitrogen (N)	--	.00	.00	.00	.00	.00
Total phosphorus (P)	.15	.14	.17	.04	.05	.10
Detergents (MBAS)	--	--	--	--	--	.02
Dissolved oxygen (DO):						
(milligrams per liter)	6.8	9.5	10.6	8.3	5.5	6.4
(percent saturation)	81	85	91	85	65	86
Biochemical oxygen demand (BOD)	1.6	2.7	.8	.4	2.1	1.3

a Daily mean discharge.

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0335. NECHES RIVER NEAR ROCKLAND, TEX. (31°01'45", 94°23'46")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 7, 1969	Dec. 9, 1969	Feb. 11, 1970	Apr. 7, 1970	June 9, 1970	Aug. 4, 1970
Time (24 hour)	1330	1500	1130	1330	1400	0900
Discharge (cfs)	71	910	a1340	a2480	a 245	58
Silica (SiO_2)	--	--	--	8.6	16	13
Calcium (Ca)	--	--	--	10	13	15
Magnesium (Mg)	--	--	--	4.0	5.3	5.8
Sodium plus potassium (Na+K)	--	--	--	22	35	52
Bicarbonate (HCO_3)	--	--	--	18	43	49
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	30	24	22
Chloride (Cl)	--	--	--	30	48	78
Fluoride (F)	--	--	--	.0	.2	.1
Dissolved solids	--	--	--	115	164	210
Hardness as $CaCO_3$	--	--	--	41	54	61
Non-carbonate hardness	--	--	--	27	19	21
Sodium adsorption ratio (SAR)	--	--	--	1.5	2.1	2.9
Specific conductance (micromhos at 25°C)	308	283	248	209	274	374
pH:						
(field)	7.1	6.7	6.6	6.6	6.7	6.9
(laboratory)	--	--	--	6.3	6.6	6.6
Temperature (°C)	24.5	10.5	11.0	17.0	26.0	29.0
Ammonia nitrogen (N)	--	.00	.00	.00	.00	.00
Nitrate nitrogen (N)	.0	.6	.2	.3	.4	.1
Nitrite nitrogen (N)	--	.00	.00	.00	.00	.00
Total phosphorus (P)	.08	.08	.17	.04	.02	.09
Detergents (MBAS)	--	--	--	--	--	.02
Dissolved oxygen (DO):						
(milligrams per liter)	7.1	9.6	10.6	8.8	7.0	5.2
(percent saturation)	85	86	95	91	85	67
Biochemical oxygen demand (BOD)	1.2	1.3	1.0	.4	1.2	1.3

a Daily mean discharge.

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0370. ANGELINA RIVER NEAR LUFKIN, TEX. (31°27'26", 94°43'34")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 6, 1969	Dec. 9, 1969	Feb. 10, 1970	Apr. 6, 1970	June 8, 1970	Aug. 3, 1970
Time (24 hour)	1910	0900	1800	1800	1550	1415
Discharge (cfs)	29	460	975	1020	161	92
Silica (SiO_2)	--	--	--	11	17	14
Calcium (Ca)	--	--	--	9.5	8.0	9.2
Magnesium (Mg)	--	--	--	4.8	4.3	4.5
Sodium plus potassium (Na+K)	--	--	--	25	22	49
Bicarbonate (HCO_3)	--	--	--	17	27	22
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	33	21	21
Chloride (Cl)	--	--	--	35	28	75
Fluoride (F)	--	--	--	.1	.1	.1
Dissolved solids	--	--	--	128	116	186
Hardness as $CaCO_3$	--	--	--	43	38	41
Non-carbonate hardness	--	--	--	30	16	23
Sodium adsorption ratio (SAR)	--	--	--	1.7	1.6	3.3
Specific conductance (micromhos at 25°C)	237	173	206	225	186	328
pH:						
(field)	6.8	6.7	6.7	6.8	6.8	6.8
(laboratory)	--	--	--	6.2	6.6	6.6
Temperature (°C)	25.0	8.5	11.0	18.0	15.0	29.0
Ammonia nitrogen (N)	--	.00	.02	.00	.00	.00
Nitrate nitrogen (N)	.2	.3	.1	.2	.4	.3
Nitrite nitrogen (N)	--	.00	.00	.00	.00	.00
Total phosphorus (P)	.06	.11	.09	.07	.06	.08
Detergents (MBAS)	--	--	--	--	--	.05
Dissolved oxygen (DO):						
(milligrams per liter)	7.8	9.6	10.8	10.2	6.4	6.4
(percent saturation)	93	81	97	107	63	82
Biochemical oxygen demand (BOD)	1.3	.9	1.0	.7	.8	.7

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0370.8. BAYOU LaNANA NEAR NACOGDOCHES, TEX. (31°31'10", 94°39'21")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 6, 1969	Dec. 9, 1969	Feb. 10, 1970	Apr. 6, 1970	June 8, 1970	Aug. 3, 1970
Time (24 hour)	1830	0815	1730	1730	1520	1345
Discharge (cfs)	--	--	--	--	--	--
Silica (SiO_2)	--	--	--	12	16	19
Calcium (Ca)	--	--	--	12	12	6.0
Magnesium (Mg)	--	--	--	5.9	5.6	2.8
Sodium (Na)	--	--	--	7.4	55	89
Potassium (K)	--	--	--	--	6.2	9.3
Bicarbonate (HCO_3)	--	--	--	14	182	293
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	48	52	26
Chloride (Cl)	--	--	--	18	23	37
Fluoride (F)	--	--	--	.2	.7	.4
Dissolved solids	--	--	--	123	281	367
Hardness as $CaCO_3$	--	--	--	54	53	26
Non-carbonate hardness	--	--	--	43	0	0
Sodium adsorption ratio (SAR)	--	--	--	.4	3.3	7.6
Specific conductance (micromhos at 25°C)	630	286	317	257	441	600
pH:						
(field)	6.8	6.7	6.8	6.8	7.1	7.4
(laboratory)	--	--	--	5.6	6.5	7.1
Temperature (°C)	24.0	8.5	11.0	16.5	22.0	28.0
Ammonia nitrogen (N)	--	6.3	5.1	5.9	16	25
Nitrate nitrogen (N)	.0	1.0	.5	1.0	.1	.1
Nitrite nitrogen (N)	--	.08	.05	.15	.01	.00
Total phosphorus (P)	7.4	1.7	2.3	.52	1.3	6.6
Detergents (MBAS)	--	--	--	--	--	1.8
Dissolved oxygen (DO):						
(milligrams per liter)	.2	8.4	7.2	7.0	1.0	.6
(percent saturation)	2	71	65	71	11	8
Biochemical oxygen demand (BOD)	36	9.6	9.6	8.1	19	18

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0372. PAPER MILL CREEK NEAR HERTY, TEX. (31°23'32", 94°39'46")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 7, 1969	Dec. 9, 1969	Feb. 11, 1970	Apr. 7, 1970	June 9, 1970	Aug. 3, 1970
Time (24 hour)	0945	1000	0830	0945	1015	1600
Discharge (cfs)	--	--	--	--	--	--
Silica (SiO_2)	--	--	--	14	13	15
Calcium (Ca)	--	--	--	48	31	21
Magnesium (Mg)	--	--	--	3.6	3.9	3.4
Sodium (Na)	--	--	--	323	263	294
Potassium (K)	--	--	--	--	6.3	--
Bicarbonate (HCO_3)	--	--	--	213	96	150
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	222	208	192
Chloride (Cl)	--	--	--	307	272	273
Fluoride (F)	--	--	--	.2	.3	.2
Dissolved solids	--	--	--	1030	848	876
Hardness as $CaCO_3$	--	--	--	135	94	66
Non-carbonate hardness	--	--	--	0	15	0
Sodium adsorption ratio (SAR)	--	--	--	12	12	16
Specific conductance (micromhos at 25°C)	1810	1450	1650	1740	1470	1470
pH:						
(field)	7.0	6.8	7.2	7.1	7.1	7.4
(laboratory)	--	--	--	6.6	6.4	7.2
Temperature (°C)	35.0	29.0	31.5	34.0	37.0	37.0
Ammonia nitrogen (N)	--	2.3	.27	.38	1.6	.63
Nitrate nitrogen (N)	.2	.0	.0	.2	.0	.1
Nitrite nitrogen (N)	--	.01	.00	.01	.00	.01
Total phosphorus (P)	.36	.61	1.2	.18	.31	.78
Detergents (MBAS)	--	--	--	--	--	.17
Dissolved oxygen (DO):						
(milligrams per liter)	3.8	5.1	5.0	3.2	3.4	4.9
(percent saturation)	54	65	68	44	49	71
Biochemical oxygen demand (BOD)	22	20	13	29	18	13

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0372.5. ANGELINA RIVER BELOW PAPER MILL CREEK NEAR HERTY, TEX. (31°26'22", 94°37'11")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 7, 1969	Apr. 7, 1970				
Time (24 hour)	1010	1030				
Discharge (cfs)	--	--				
Silica (SiO_2)	--	11				
Calcium (Ca)	--	12				
Magnesium (Mg)	--	4.4				
Sodium plus potassium (Na+K)	--	46				
Bicarbonate (HCO_3)	--	35				
Carbonate (CO_3)	--	0				
Sulfate (SO_4)	--	49				
Chloride (Cl)	--	48				
Fluoride (F)	--	.0				
Dissolved solids	--	189				
Hardness as $CaCO_3$	--	48				
Non-carbonate hardness	--	19				
Sodium adsorption ratio (SAR)	--	2.9				
Specific conductance (micromhos at 25°C)	925	339				
pH:						
(field)	7.1	6.7				
(laboratory)	--	6.5				
Temperature (°C)	25.0	17.0				
Ammonia nitrogen (N)	--	.14				
Nitrate nitrogen (N)	.8	.2				
Nitrite nitrogen (N)	--	.01				
Total phosphorus (P)	.26	.09				
Detergents (MBAS)	--	--				
Dissolved oxygen (DO):						
(milligrams per liter)	3.2	7.9				
(percent saturation)	38	81				
Biochemical oxygen demand (BOD)	5.6	1.6				

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0373.3. ANGELINA RIVER NEAR ETOILE, TEX. (31°22'24", 94°28'27")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 7, 1969	Dec. 9, 1969	Feb. 11, 1970	Apr. 7, 1970	June 9, 1970	Aug. 3, 1970
Time (24 hour)	1100	1100	0930	1115	1120	1815
Discharge (cfs)	--	--	--	--	--	--
Silica (SiO_2)	--	--	--	8.6	11	10
Calcium (Ca)	--	--	--	9.5	11	12
Magnesium (Mg)	--	--	--	4.6	5.2	5.2
Sodium plus potassium (Na+K)	--	--	--	27	28	55
Bicarbonate (HCO_3)	--	--	--	14	43	70
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	38	23	29
Chloride (Cl)	--	--	--	35	37	58
Fluoride (F)	--	--	--	.0	.3	.2
Dissolved solids	--	--	--	131	143	210
Hardness as $CaCO_3$	--	--	--	43	49	51
Non-carbonate hardness	--	--	--	31	14	0
Sodium adsorption ratio (SAR)	--	--	--	1.8	1.7	3.3
Specific conductance (micromhos at 25°C)	323	236	280	239	243	368
pH:						
(field)	7.1	6.7	6.7	6.6	6.3	6.7
(laboratory)	--	--	--	6.1	6.3	7.3
Temperature (°C)	25.0	10.0	11.0	16.5	25.0	28.5
Ammonia nitrogen (N)	--	.17	.16	.00	.60	.57
Nitrate nitrogen (N)	.7	.3	.0	.2	.2	.2
Nitrite nitrogen (N)	--	.01	.01	.00	.00	.00
Total phosphorus (P)	.08	.12	.14	.05	.16	.16
Detergents (MBAS)	--	--	--	--	--	.08
Dissolved oxygen (DO):						
(milligrams per liter)	3.9	6.4	7.7	5.4	5.0	3.0
(percent saturation)	46	57	69	55	60	38
Biochemical oxygen demand (BOD)	2.0	.9	1.8	.7	2.3	1.8

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0394. ANGELINA RIVER BELOW SAM RAYBURN DAM NEAR JASPER, TEX. (31°03'30", 94°06'20")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 7, 1969	Dec. 9, 1969	Feb. 11, 1970	Apr. 7, 1970	June 9, 1970	Aug. 4, 1970
Time (24 hour)	1440	1600	1230	1415	1500	1000
Discharge (cfs)	--	--	--	--	--	--
Silica (SiO_2)	--	--	--	5.0	5.4	10
Calcium (Ca)	--	--	--	8.5	8.2	10
Magnesium (Mg)	--	--	--	3.2	3.4	3.6
Sodium plus potassium (Na+K)	--	--	--	15	17	37
Bicarbonate (HCO_3)	--	--	--	30	29	54
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	16	18	18
Chloride (Cl)	--	--	--	17	20	41
Fluoride (F)	--	--	--	.0	.1	.1
Dissolved solids	--	--	--	81	87	148
Hardness as $CaCO_3$	--	--	--	34	34	40
Non-carbonate hardness	--	--	--	10	11	0
Sodium adsorption ratio (SAR)	--	--	--	1.1	1.3	2.5
Specific conductance (micromhos at 25°C)	226	187	197	150	156	268
pH:						
(field)	6.8	6.8	6.8	6.7	6.5	6.7
(laboratory)	--	--	--	6.5	6.5	6.7
Temperature (°C)	20.0	14.5	12.5	15.5	22.0	20.0
Ammonia nitrogen (N)	--	.00	.03	.00	.00	.43
Nitrate nitrogen (N)	.3	.1	.3	.3	.1	.0
Nitrite nitrogen (N)	--	.01	.00	.00	.00	.00
Total phosphorus (P)	.03	.03	.06	.02	.00	.04
Detergents (MBAS)	--	--	--	--	--	.04
Dissolved oxygen (DO):						
(milligrams per liter)	4.6	9.7	11.6	10.0	5.4	3.4
(percent saturation)	50	94	108	99	61	37
Biochemical oxygen demand (BOD)	1.5	.9	.6	.7	.5	1.4

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0410. NECHES RIVER AT EVADALE, TEX. (30°21'22", 94°05'36")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 7, 1969	Dec. 17, 1969	Feb. 18, 1970	Apr. 30, 1970	June 25, 1970	Aug. 13, 1970
Time (24 hour)	1415	1220	1400	1200	1020	1350
Discharge (cfs)	1340	1020	1900	2050	1950	870
Silica (SiO_2)	--	--	--	0.0	9.5	8.1
Calcium (Ca)	--	--	--	13	16	9.0
Magnesium (Mg)	--	--	--	3.1	3.4	3.8
Sodium plus potassium (Na+K)	--	--	--	17	17	18
Bicarbonate (HCO_3)	--	--	--	28	42	35
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	22	18	16
Chloride (Cl)	--	--	--	26	26	23
Fluoride (F)	--	--	--	.0	.0	.1
Dissolved solids	--	--	--	95	111	95
Hardness as $CaCO_3$	--	--	--	45	54	38
Non-carbonate hardness	--	--	--	22	20	9
Sodium adsorption ratio (SAR)	--	--	--	1.1	1.0	1.3
Specific conductance (micromhos at 25°C)	173	176	194	193	192	177
pH:						
(field)	7.4	6.7	7.1	7.0	7.2	6.6
(laboratory)	--	--	--	6.7	7.2	6.9
Temperature (°C)	26.0	15.0	16.0	25.5	29.5	32.0
Ammonia nitrogen (N)	--	.00	.13	.11	.00	.06
Nitrate nitrogen (N)	.0	.1	.0	.0	.1	.0
Nitrite nitrogen (N)	--	.00	.00	.01	.02	.00
Total phosphorus (P)	.06	.08	.03	.01	.06	.03
Detergents (MBAS)	--	--	--	--	--	.00
Dissolved oxygen (DO):						
(milligrams per liter)	6.8	9.5	10.4	7.8	7.0	6.7
(percent saturation)	83	93	104	94	90	91
Biochemical oxygen demand (BOD)	.7	.0	2.0	.1	2.2	2.2

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0480. WEST FORK TRINITY RIVER AT FORT WORTH, TEX. (32°45'39", 97°19'56")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 8, 1969	Dec. 5, 1969	Feb. 9, 1970	Apr. 10, 1970	May 13, 1970	June 5, 1970
Time (24 hour)	1630	0120	1420	0900	1400	0900
Discharge (cfs)	26	30	43	85	582	43
Silica (SiO_2)	--	--	--	2.7	2.2	4.7
Calcium (Ca)	--	--	--	74	52	58
Magnesium (Mg)	--	--	--	6.7	7.4	5.2
Sodium plus potassium (Na+K)	--	--	--	28	26	25
Bicarbonate (HCO_3)	--	--	--	22	174	176
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	48	26	38
Chloride (Cl)	--	--	--	28	32	24
Fluoride (F)	--	--	--	.2	.3	.3
Dissolved solids	--	--	--	299	232	245
Hardness as $CaCO_3$	--	--	--	212	160	166
Non-carbonate hardness	--	--	--	30	17	22
Sodium adsorption ratio (SAR)	--	--	--	.8	.9	.8
Specific conductance (micromhos at 25°C)	542	606	545	523	414	413
pH:						
(field)	7.4	--	7.8	7.4	8.0	7.3
(laboratory)	--	--	--	7.5	8.1	7.3
Temperature (°C)	22.0	11.0	14.5	17.0	25.0	20.0
Ammonia nitrogen (N)	--	.43	.32	.24	.00	.22
Nitrate nitrogen (N)	.3	1.6	.7	.4	.1	.5
Nitrite nitrogen (N)	--	.04	.05	.03	.01	.06
Total phosphorus (P)	.12	.21	.15	.10	.14	.13
Detergents (MBAS)	--	--	--	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	7.4	8.6	7.0	6.2	8.8	6.9
(percent saturation)	84	77	68	66	105	75
Biochemical oxygen demand (BOD)	4.6	3.0	2.1	2.6	1.6	3.6

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0480. WEST FORK TRINITY RIVER AT FORT WORTH, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	July 10, 1970	July 23, 1970	Aug. 5, 1970	Aug. 19, 1970	Sept. 2, 1970	Sept. 23, 1970
Time (24 hour)	1330	1510	1815	1030	1625	1900
Discharge (cfs)	37	14	8.0	26	156	149
Silica (SiO_2)	4.2	5.0	4.1	6.2	5.0	3.8
Calcium (Ca)	58	56	52	54	40	36
Magnesium (Mg)	8.6	7.9	9.4	8.1	3.0	3.5
Sodium plus potassium (Na+K)	36	37	48	43	23	22
Bicarbonate (HCO_3)	198	192	184	192	132	128
Carbonate (CO_3)	0	0	0	0	0	0
Sulfate (SO_4)	42	39	46	41	26	23
Chloride (Cl)	37	37	50	43	18	14
Fluoride (F)	.4	.4	.6	.4	0	.3
Dissolved solids	284	277	301	290	182	168
Hardness as $CaCO_3$	180	172	168	168	112	104
Non-carbonate hardness	44	14	17	10	4	0
Sodium adsorption ratio (SAR)	1.2	1.2	1.6	1.4	.9	.9
Specific conductance (micromhos at 25°C)	492	481	530	504	293	264
pH:						
(field)	7.4	7.4	7.4	7.3	7.5	7.4
(laboratory)	7.6	7.5	7.5	7.5	7.5	7.7
Temperature (°C)	30.5	27.0	36.5	32.0	27.0	23.5
Ammonia nitrogen (N)	.09	.03	.06	.18	.10	.00
Nitrate nitrogen (N)	.2	.1	.2	.1	.5	.6
Nitrite nitrogen (N)	.00	.00	.00	.00	.03	.02
Total phosphorus (P)	.13	.13	.23	.22	.06	.26
Detergents (MBAS)	--	--	.02	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	5.4	7.0	6.8	4.5	4.9	6.5
(percent saturation)	71	86	97	61	60	76
Biochemical oxygen demand (BOD)	3.9	3.4	4.5	4.5	3.9	3.4

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0495. WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TEX. (32°45'46", 96°59'42")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 8, 1969	Dec. 1, 1969	Feb. 9, 1970	Apr. 6, 1970	May 13, 1970	June 2, 1970
Time (24 hour)	1745	1605	1530	1650	1245	1100
Discharge (cfs)	140	132	224	316	792	620
Silica (SiO_2)	--	--	--	6.9	5.2	6.5
Calcium (Ca)	--	--	--	72	58	54
Magnesium (Mg)	--	--	--	11	8.6	8.1
Sodium plus potassium (Na+K)	--	--	--	103	47	61
Bicarbonate (HCO_3)	--	--	--	228	196	184
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	154	53	79
Chloride (Cl)	--	--	--	81	46	47
Fluoride (F)	--	--	--	--	--	--
Dissolved solids	--	--	--	557	321	359
Hardness as $CaCO_3$	--	--	--	224	180	168
Non-carbonate hardness	--	--	--	37	20	17
Sodium adsorption ratio (SAR)	--	--	--	3.0	1.5	2.0
Specific conductance (micromhos at 25°C)	1060	1170	990	958	565	597
pH:						
(field)	7.6	7.6	7.7	7.5	7.4	7.4
(laboratory)	--	--	--	7.3	7.3	7.2
Temperature (°C)	23.0	14.0	14.5	18.5	24.5	23.0
Ammonia nitrogen (N)	--	13	9.9	6.0	1.0	2.0
Nitrate nitrogen (N)	11	1.4	1.7	1.8	1.1	2.1
Nitrite nitrogen (N)	--	.36	.33	.38	.28	.36
Total phosphorus (P)	4.9	4.2	3.1	2.6	.74	.86
Detergents (MBAS)	--	--	--	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	2.1	3.1	4.7	6.1	4.8	4.4
(percent saturation)	24	30	46	67	57	51
Biochemical oxygen demand (BOD)	17	20	12	7.8	13	17

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0495. WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	July 10, 1970	July 23, 1970	Aug. 5, 1970	Aug. 19, 1970	Sept. 2, 1970	Sept. 23, 1970
Time (24 hour)	1115	1400	1620	1145	1530	1755
Discharge (cfs)	135	122	118	173	1260	1820
Silica (SiO_2)	12	11	15	10	7.0	9.9
Calcium (Ca)	57	55	50	49	40	46
Magnesium (Mg)	10	9.0	9.5	5.2	3.0	3.6
Sodium plus potassium (Na+K)	145	133	170	97	36	89
Bicarbonate (HCO_3)	296	266	338	196	138	188
Carbonate (CO_3)	0	0	0	0	0	0
Sulfate (SO_4)	115	113	112	104	42	79
Chloride (Cl)	116	110	131	65	24	64
Fluoride (F)	--	--	--	--	--	--
Dissolved solids	618	578	672	435	226	403
Hardness as $CaCO_3$	184	174	164	144	112	130
Non-carbonate hardness	0	0	0	0	0	0
Sodium adsorption ratio (SAR)	4.7	4.4	5.8	3.5	1.5	3.4
Specific conductance (micromhos at 25°C)	1040	1010	1170	713	352	659
pH:						
(field)	7.4	7.3	7.3	7.5	7.3	7.3
(laboratory)	7.4	7.1	7.4	7.2	7.1	7.2
Temperature (°C)	29.0	28.0	32.0	27.0	26.5	25.5
Ammonia nitrogen (N)	8.8	8.5	13	2.9	1.3	4.2
Nitrate nitrogen (N)	1.0	.7	.2	1.0	.9	2.6
Nitrite nitrogen (N)	.40	.45	.19	.28	.18	.54
Total phosphorus (P)	5.5	6.5	6.7	1.6	.74	7.5
Detergents (MBAS)	--	--	.58	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	.8	2.2	2.2	3.1	3.4	.9
(percent saturation)	10	28	30	38	41	11
Biochemical oxygen demand (BOD)	4.6	4.6	8.2	13	8.6	43

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0505. ELM FORK TRINITY RIVER NEAR SANGER, TEX. (33°23'11", 97°05'05")

(Results in milligrams per liter except as indicated)

Date of collection	Dec. 1, 1969	Feb. 10, 1970	Apr. 6, 1970	June 4, 1970	Aug 3, 1970
Time (24 hour)	1030	0610	1140	1545	1400
Discharge (cfs)	18	34	80	97	6.0
Silica (SiO_2)	--	--	1.6	9.6	12
Calcium (Ca)	--	--	104	72	100
Magnesium (Mg)	--	--	6.9	5.0	6.4
Sodium plus potassium (Na+K)	--	--	61	36	111
Bicarbonate (HCO_3)	--	--	296	234	464
Carbonate (CO_3)	--	--	0	0	0
Sulfate (SO_4)	--	--	56	31	66
Chloride (Cl)	--	--	82	35	48
Fluoride (F)	--	--	.3	.4	--
Dissolved solids	--	--	461	309	574
Hardness as $CaCO_3$	--	--	288	200	276
Non-carbonate hardness	--	--	46	8	0
Sodium adsorption ratio (SAR)	--	--	1.6	1.1	2.9
Specific conductance (micromhos at 25°C)	912	796	779	504	879
pH:					
(field)	--	7.8	7.7	7.7	8.0
(laboratory)	--	--	7.9	7.7	8.0
Temperature (°C)	9.5	7.5	16.5	21.0	30.0
Ammonia nitrogen (N)	43	.29	.03	.13	.04
Nitrate nitrogen (N)	1.9	1.4	.7	1.0	.5
Nitrite nitrogen (N)	.07	.08	.02	.06	.03
Total phosphorus (P)	1.0	.37	.12	.26	.77
Detergents (MBAS)	--	--	--	--	.06
Dissolved oxygen (DO):					
(milligrams per liter)	9.2	9.9	11.4	9.2	7.2
(percent saturation)	80	82	121	102	95
Biochemical oxygen demand (BOD)	1.8	2.3	.7	2.1	2.5

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0574.1. TRINITY RIVER BELOW DALLAS, TEX. (32°42'27", 96°44'08")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 7, 1969	Dec. 3, 1969	Feb. 11, 1970	Apr. 6, 1970	May 13, 1970	June 2, 1970
Time (24 hour)	1410	1025	1220	1545	1130	1315
Discharge (cfs)	480	500	666	3880	4980	6670
Silica (SiO_2)	--	--	--	6.3	6.4	5.4
Calcium (Ca)	--	--	--	56	50	58
Magnesium (Mg)	--	--	--	4.0	5.2	3.7
Sodium plus potassium (Na+K)	--	--	--	29	26	29
Bicarbonate (HCO_3)	--	--	--	154	148	160
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	49	39	55
Chloride (Cl)	--	--	--	31	28	25
Fluoride (F)	--	--	--	--	--	--
Dissolved solids	--	--	--	258	232	261
Hardness as $CaCO_3$	--	--	--	156	146	160
Non-carbonate hardness	--	--	--	30	25	29
Sodium adsorption ratio (SAR)	--	--	--	1.0	.9	1.0
Specific conductance (micromhos at 25°C)	912	905	771	455	407	438
pH:						
(field)	7.3	7.1	7.5	7.5	7.4	7.2
(laboratory)	--	--	--	7.4	7.3	7.2
Temperature (°C)	23.0	13.0	13.5	16.0	23.5	22.5
Ammonia nitrogen (N)	--	11	4.2	1.4	.50	1.0
Nitrate nitrogen (N)	9.5	1.3	.9	1.0	.8	.9
Nitrite nitrogen (N)	--	.12	.08	.05	.07	.10
Total phosphorus (P)	1.5	7.4	2.6	.65	.39	.18
Detergents (MBAS)	--	--	--	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	1.2	2.5	7.0	9.5	7.5	4.9
(percent saturation)	14	24	67	99	87	56
Biochemical oxygen demand (BOD)	21	21	8.7	4.5	5.2	14

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0574.1. TRINITY RIVER BELOW DALLAS, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	July 9, 1970	July 23, 1970	Aug. 5, 1970	Aug. 19, 1970	Sept. 2, 1970	Sept. 23, 1970
Time (24 hour)	1400	1245	1525	1330	1430	1705
Discharge (cfs)	406	370	597	1030	4750	2600
Silica (SiO_2)	14	11	13	18	5.8	7.0
Calcium (Ca)	50	49	46	45	43	39
Magnesium (Mg)	7.5	5.7	6.1	6.7	3.1	5.0
Sodium plus potassium (Na+K)	115	103	95	122	30	46
Bicarbonate (HCO_3)	260	226	220	304	124	148
Carbonate (CO_3)	0	0	0	0	0	0
Sulfate (SO_4)	98	88	87	74	57	60
Chloride (Cl)	83	78	70	78	20	30
Fluoride (F)	--	--	--	--	--	--
Dissolved solids	507	456	437	504	227	268
Hardness as $CaCO_3$	156	146	140	140	120	118
Non-carbonate hardness	0	0	0	0	18	0
Sodium adsorption ratio (SAR)	4.0	3.7	3.5	4.5	1.2	1.8
Specific conductance (micromhos at 25°C)	832	772	730	842	359	447
pH:						
(field)	6.9	7.1	7.2	7.1	7.2	7.3
(laboratory)	7.1	7.0	7.2	7.2	7.1	7.2
Temperature (°C)	30.0	27.5	30.5	28.0	25.5	24.5
Ammonia nitrogen (N)	7.6	5.3	7.1	8.8	2.0	3.0
Nitrate nitrogen (N)	.2	.5	.5	0	.8	.7
Nitrite nitrogen (N)	.22	.34	.22	.15	.16	.17
Total phosphorus (P)	5.5	5.6	5.0	7.9	1.2	2.5
Detergents (MBAS)	--	--	.79	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	.1	.4	.5	.1	2.9	3.6
(percent saturation)	1	5	7	1	35	43
Biochemical oxygen demand (BOD)	18	13	8.1	53	8.5	18

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0620. EAST FORK TRINITY RIVER NEAR CRANDALL, TEX. (32°38'18", 96°29'05")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 7, 1969	Dec. 3, 1969	Feb. 11, 1970	Apr. 6, 1970	May 13, 1970	June 2, 1970
Time (24 hour)	1330	1110	1110	1450	1000	1410
Discharge (cfs)	27	30	800	670	68	1450
Silica (SiO_2)	--	--	--	1.0	4.2	8.6
Calcium (Ca)	--	--	--	54	62	45
Magnesium (Mg)	--	--	--	6.1	4.3	1.9
Sodium plus potassium (Na+K)	--	--	--	8.7	45	13
Bicarbonate (HCO_3)	--	--	--	160	212	140
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	31	62	22
Chloride (Cl)	--	--	--	10	32	6.8
Fluoride (F)	--	--	--	--	--	--
Dissolved solids	--	--	--	194	320	171
Hardness as $CaCO_3$	--	--	--	160	172	120
Non-carbonate hardness	--	--	--	29	0	52
Sodium adsorption ratio (SAR)	--	--	--	.3	1.5	.5
Specific conductance (micromhos at 25°C)	696	681	365	353	560	285
pH:						
(field)	8.2	7.1	7.9	7.6	7.3	7.4
(laboratory)	--	--	--	7.6	7.3	7.4
Temperature (°C)	23.5	10.0	10.5	16.5	23.5	22.5
Ammonia nitrogen (N)	--	18	.77	.48	3.9	.64
Nitrate nitrogen (N)	12	.4	.2	.8	.2	.8
Nitrite nitrogen (N)	--	.03	.03	.03	.06	.06
Total phosphorus (P)	14	9.6	.33	.47	2.7	.32
Detergents (MBAS)	--	--	--	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	11.5	.9	9.8	9.4	2.9	5.6
(percent saturation)	134	8	88	99	34	64
Biochemical oxygen demand (BOD)	43	16	3.7	4.2	14	3.2

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0620. EAST FORK TRINITY RIVER NEAR CRANDALL, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	July 9, 1970	July 23, 1970	Aug. 5, 1970	Aug. 19, 1970	Sept. 2, 1970	Sept. 23, 1970
Time (24 hour)	1555	1130	1430	1415	1345	1545
Discharge (cfs)	28	27	25	40	400	40
Silica (SiO_2)	3.0	12	13	14	7.9	9.4
Calcium (Ca)	41	39	33	35	44	41
Magnesium (Mg)	5.2	5.0	8.1	4.5	3.5	5.3
Sodium plus potassium (Na+K)	75	80	75	86	21	39
Bicarbonate (HCO_3)	220	243	236	244	138	182
Carbonate (CO_3)	0	0	0	0	0	0
Sulfate (SO_4)	63	55	48	45	36	40
Chloride (Cl)	46	50	53	68	18	26
Fluoride (F)	--	--	--	--	--	--
Dissolved solids	353	373	361	391	205	259
Hardness as $CaCO_3$	124	118	116	106	124	124
Non-carbonate hardness	0	0	0	0	11	0
Sodium adsorption ratio (SAR)	2.9	3.2	3.0	3.6	.8	1.5
Specific conductance (micromhos at 25°C)	602	655	640	697	353	460
pH:						
(field)	8.1	7.3	7.6	7.3	7.3	7.4
(laboratory)	7.4	7.0	7.4	7.3	7.2	7.2
Temperature (°C)	30.0	26.5	31.0	29.0	26.5	26.0
Ammonia nitrogen (N)	7.2	10	11	14	2.3	5.7
Nitrate nitrogen (N)	.4	.0	.2	0	.8	.4
Nitrite nitrogen (N)	.12	.00	.04	.02	.09	.20
Total phosphorus (P)	5.8	11	10	5.7	1.3	4.2
Detergents (MBAS)	--	--	1.1	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	10.2	2.0	3.9	.2	1.6	5.1
(percent saturation)	134	24	52	3	20	62
Biochemical oxygen demand (BOD)	15	21	7.9	29	8.4	18

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0625. TRINITY RIVER NEAR ROSSER, TEX. (32°25'35", 96°27'45")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 7, 1969	Dec. 2, 1969	Feb. 11, 1970	Apr. 7, 1970	May 13, 1970	June 2, 1970
Time (24 hour)	1045	1730	1025	1015	0845	1505
Discharge (cfs)	442	510	1670	4850	6080	11300
Silica (SiO_2)	--	--	--	5.2	6.0	6.1
Calcium (Ca)	--	--	--	58	53	50
Magnesium (Mg)	--	--	--	3.2	4.8	3.7
Sodium plus potassium (Na+K)	--	--	--	27	27	20
Bicarbonate (HCO_3)	--	--	--	160	156	140
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	45	40	40
Chloride (Cl)	--	--	--	26	27	18
Fluoride (F)	--	--	--	--	--	--
Dissolved solids	--	--	--	249	240	212
Hardness as $CaCO_3$	--	--	--	158	152	140
Non-carbonate hardness	--	--	--	27	24	25
Sodium adsorption ratio (SAR)	--	--	--	.9	1.0	.7
Specific conductance (micromhos at 25°C)	816	914	538	431	420	369
pH:						
(field)	7.4	7.2	7.6	7.4	7.2	7.3
(laboratory)	--	--	--	7.6	7.2	7.4
Temperature (°C)	23.5	13.0	11.0	16.0	21.5	23.0
Ammonia nitrogen (N)	--	13	2.6	.81	.48	.64
Nitrate nitrogen (N)	7.9	.5	.8	1.0	1.0	1.0
Nitrite nitrogen (N)	--	.16	.06	.07	.10	.04
Total phosphorus (P)	4.2	8.2	1.1	.66	.26	.26
Detergents (MBAS)	--	--	--	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	2.2	2.0	7.8	8.1	5.0	5.2
(percent saturation)	26	19	70	85	56	60
Biochemical oxygen demand (BOD)	37	10	7.0	5.1	5.1	3.6

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0625. TRINITY RIVER NEAR ROSSER, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	July 9, 1970	July 23, 1970	Aug. 5, 1970	Aug. 19, 1970	Sept. 2, 1970	Sept. 23, 1970
Time (24 hour)	1645	1045	1115	1515	1245	1200
Discharge (cfs)	564	538	577	430	2680	590
Silica (SiO_2)	13	16	13	14	8.2	9.7
Calcium (Ca)	49	51	46	46	41	50
Magnesium (Mg)	7.2	4.6	5.6	5.1	4.3	5.6
Sodium plus potassium (Na+K)	118	117	75	89	56	71
Bicarbonate (HCO_3)	252	254	180	216	168	180
Carbonate (CO_3)	0	0	0	0	0	0
Sulfate (SO_4)	93	93	82	82	57	96
Chloride (Cl)	84	87	66	70	41	45
Fluoride (F)	--	--	--	--	--	--
Dissolved solids	494	504	389	426	297	386
Hardness as $CaCO_3$	152	146	138	136	120	148
Non-carbonate hardness	0	0	0	0	0	0
Sodium adsorption ratio (SAR)	4.2	4.2	2.8	3.3	2.2	2.5
Specific conductance (micromhos at 25°C)	824	871	711	725	497	631
pH:						
(field)	7.3	7.2	7.2	7.3	7.2	7.1
(laboratory)	7.3	7.0	7.3	7.3	7.2	7.1
Temperature (°C)	30.0	27.5	30.5	30.5	26.5	26.0
Ammonia nitrogen (N)	3.7	8.0	7.4	9.3	3.9	5.0
Nitrate nitrogen (N)	.1	.1	.4	.2	.3	2.7
Nitrite nitrogen (N)	.04	.00	.23	.17	.07	.32
Total phosphorus (P)	6.4	8.0	3.8	4.9	1.9	3.4
Detergents (MBAS)	--	--	.25	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	1.4	.3	1.8	3.8	.2	2.4
(percent saturation)	18	4	24	50	2	29
Biochemical oxygen demand (BOD)	8.4	16	8.0	20	8.4	16

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0627. TRINITY RIVER AT TRINIDAD, TEX. (32°08'05", 96°06'20")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 7, 1969	Dec. 4, 1969	Feb. 11, 1970	Apr. 7, 1970	May 13, 1970	June 2 1970
Time (24 hour)	0915	2255	0850	1210	0720	1620
Discharge (cfs)	440	488	2270	5170	7900	8440
Silica (SiO_2)	--	--	--	5.8	5.2	6.1
Calcium (Ca)	--	--	--	58	54	49
Magnesium (Mg)	--	--	--	3.7	5.2	3.3
Sodium plus potassium (Na+K)	--	--	--	26	26	26
Bicarbonate (HCO_3)	--	--	--	160	160	140
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	45	38	43
Chloride (Cl)	--	--	--	28	27	20
Fluoride (F)	--	--	--	--	--	--
Dissolved solids	--	--	--	249	239	224
Hardness as $CaCO_3$	--	--	--	160	156	136
Non-carbonate hardness	--	--	--	29	25	21
Sodium adsorption ratio (SAR)	--	--	--	.9	.9	1.0
Specific conductance (micromhos at 25°C)	771	907	481	442	418	374
pH:						
(field)	7.4	--	7.5	7.4	7.2	7.3
(laboratory)	--	--	--	7.5	7.3	7.5
Temperature (°C)	23.0	11.5	10.5	16.0	22.0	23.0
Ammonia nitrogen (N)	--	13	2.0	.74	.14	.52
Nitrate nitrogen (N)	11	2.3	1.4	.6	1.0	1.5
Nitrite nitrogen (N)	--	.21	.11	.10	.12	.22
Total phosphorus (P)	3.9	7.2	1.2	.28	.32	.54
Detergents (MBAS)	--	--	--	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	2.2	4.5	6.9	7.7	5.7	4.2
(percent saturation)	25	41	62	81	65	48
Biochemical oxygen demand (BOD)	34	15	21	2.8	2.7	2.4

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0627. TRINITY RIVER AT TRINIDAD, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	July 10, 1970	July 23, 1970	Aug. 5, 1970	Aug. 19, 1970	Sept. 2, 1970	Sept. 23, 1970
Time (24 hour)	0830	0745	0930	1645	1030	1330
Discharge (cfs)	534	518	606	496	800	615
Silica (SiO_2)	11	13	16	15	13	8.5
Calcium (Ca)	59	52	44	52	48	49
Magnesium (Mg)	8.0	6.7	9.2	6.9	4.9	4.3
Sodium plus potassium (Na+K)	114	90	91	124	77	38
Bicarbonate (HCO_3)	216	190	188	192	158	140
Carbonate (CO_3)	0	0	0	0	0	0
Sulfate (SO_4)	126	92	88	141	89	66
Chloride (Cl)	92	78	81	92	72	32
Fluoride (F)	--	--	--	--	--	--
Dissolved solids	531	440	436	536	394	309
Hardness as $CaCO_3$	180	157	146	158	140	140
Non-carbonate hardness	3	2	0	0	10	26
Sodium adsorption ratio (SAR)	3.7	3.1	3.2	4.3	2.8	1.4
Specific conductance (micromhos at 25°C)	910	776	776	902	695	525
pH:						
(field)	7.3	7.5	7.3	7.2	7.3	7.4
(laboratory)	7.1	6.9	7.2	7.2	7.1	7.1
Temperature (°C)	30.0	27.5	30.5	30.5	27.0	26.5
Ammonia nitrogen (N)	5.0	4.6	5.4	3.5	6.9	8.6
Nitrate nitrogen (N)	1.9	1.6	1.4	1.2	1.7	6.6
Nitrite nitrogen (N)	.05	.57	.37	.34	.54	.60
Total phosphorus (P)	5.6	5.5	5.6	5.0	5.6	1.2
Detergents (MBAS)	--	--	.35	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	2.1	3.0	2.4	4.4	1.9	2.9
(percent saturation)	28	38	32	58	23	35
Biochemical oxygen demand (BOD)	14	19	7.9	20	8.4	38

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0653.5. TRINITY RIVER NEAR CROCKETT, TEX. (31°20'20", 95°39'25")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 6, 1969	Dec. 8, 1969	Feb. 10, 1970	Apr. 6, 1970	June 8, 1970	Aug. 3, 1970
Time (24 hour)	1220	1210	1200	1245	1300	1145
Discharge (cfs)	515	10200	6700	9710	9120	503
Silica (SiO_2)	--	--	--	5.8	6.8	12
Calcium (Ca)	--	--	--	47	54	50
Magnesium (Mg)	--	--	--	4.4	3.8	5.7
Sodium plus potassium (Na+K)	--	--	--	28	30	97
Bicarbonate (HCO_3)	--	--	--	129	145	195
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	41	52	74
Chloride (Cl)	--	--	--	31	25	76
Fluoride (F)	--	--	--	.2	.4	.7
Dissolved solids	--	--	--	225	250	427
Hardness as $CaCO_3$	--	--	--	135	150	148
Non-carbonate hardness	--	--	--	30	32	0
Sodium adsorption ratio (SAR)	--	--	--	1.0	1.1	3.5
Specific conductance (micromhos at 25°C)	597	368	396	408	424	739
pH:						
(field)	--	7.1	6.9	7.2	7.2	7.9
(laboratory)	--	--	--	7.1	7.2	7.3
Temperature (°C)	25.5	11.0	10.0	15.5	23.0	32.0
Ammonia nitrogen (N)	--	.00	.83	.24	.00	.00
Nitrate nitrogen (N)	5.4	1.4	1.1	.9	1.6	3.4
Nitrite nitrogen (N)	--	.00	.04	.05	.06	.09
Total phosphorus (P)	1.4	2.0	2.0	.40	.66	3.5
Detergents (MBAS)	--	--	--	--	--	.14
Dissolved oxygen (DO):						
(milligrams per liter)	6.7	7.6	9.0	8.1	5.6	8.4
(percent saturation)	81	68	80	80	64	114
Biochemical oxygen demand (BOD)	1.9	19	6.4	1.7	2.1	5.3

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0661.91 LIVINGSTON RESERVOIR OUTFLOW WEIR NEAR GOODRICH, TEX. (30°37'55", 95°01'11")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 14, 1969	Dec. 10, 1969	Feb. 11, 1970	Apr. 8, 1970	June 10, 1970	Aug. 4, 1970
Time (24 hour)	1430	1330	1700	1230	1000	1430
Discharge (cfs)	--	--	--	--	--	--
Silica (SiO_2)	--	--	--	5.0	2.7	2.5
Calcium (Ca)	--	--	--	48	48	52
Magnesium (Mg)	--	--	--	4.0	4.2	4.5
Sodium plus potassium (Na+K)	--	--	--	24	26	29
Bicarbonate (HCO_3)	--	--	--	135	136	162
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	40	40	37
Chloride (Cl)	--	--	--	22	27	28
Fluoride (F)	--	--	--	.2	.3	.3
Dissolved solids	--	--	--	214	217	233
Hardness as $CaCO_3$	--	--	--	136	137	148
Non-carbonate hardness	--	--	--	26	26	16
Sodium adsorption ratio (SAR)	--	--	--	.9	1.0	1.0
Specific conductance (micromhos at 25°C)	623	613	459	378	381	414
pH:						
(field)	8.1	7.0	7.0	7.3	8.0	7.1
(laboratory)	--	--	--	7.1	7.4	7.1
Temperature (°C)	22.0	13.0	12.5	17.0	14.5	29.0
Ammonia nitrogen (N)	--	.23	.43	.00	.00	.00
Nitrate nitrogen (N)	.7	1.6	1.7	1.0	.5	.0
Nitrite nitrogen (N)	--	.04	.03	.01	.00	.00
Total phosphorus (P)	.19	.65	1.2	.20	.21	.19
Detergents (MBAS)	--	--	--	--	--	.05
Dissolved oxygen (DO):						
(milligrams per liter)	8.6	10.1	11.2	10.0	8.0	6.0
(percent saturation)	98	95	105	103	78	77
Biochemical oxygen demand (BOD)	2.8	2.6	5.0	1.2	1.8	.6

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0665. TRINITY RIVER AT ROMAYOR, TEX. (30°25'30", 94°51'02")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 7, 1969	Dec. 17, 1969	Feb. 20, 1970	Apr. 30, 1970	June 25, 1970	Aug 13, 1970
Time (24 hour)	1150	1345	1005	1300	1240	1545
Discharge (cfs)	1560	4520	4430	3460	2760	1300
Silica (SiO_2)	--	--	--	6.6	1.0	2.1
Calcium (Ca)	--	--	--	23	52	52
Magnesium (Mg)	--	--	--	19	3.5	5.7
Sodium plus potassium (Na+K)	--	--	--	31	31	26
Bicarbonate (HCO_3)	--	--	--	125	149	163
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	42	48	35
Chloride (Cl)	--	--	--	38	27	29
Fluoride (F)	--	--	--	.2	.2	.2
Dissolved solids	--	--	--	223	236	230
Hardness as $CaCO_3$	--	--	--	134	144	153
Non-carbonate hardness	--	--	--	32	22	19
Sodium adsorption ratio (SAR)	--	--	--	1.2	1.1	.9
Specific conductance (micromhos at 25°C)	582	434	471	395	402	431
pH:						
(field)	7.8	7.3	7.5	7.5	8.1	7.2
(laboratory)	--	--	--	7.2	7.9	7.4
Temperature (°C)	25.0	13.5	13.0	25.0	28.0	31.5
Ammonia nitrogen (N)	--	.00	.38	.06	.05	.21
Nitrate nitrogen (N)	.0	.9	.2	.5	.1	.0
Nitrite nitrogen (N)	--	.02	.44	.02	.00	.00
Total phosphorus (P)	.12	.60	.60	.13	.10	.14
Detergents (MBAS)	--	--	--	--	--	.00
Dissolved oxygen (DO):						
(milligrams per liter)	7.8	9.6	9.8	7.1	8.6	7.6
(percent saturation)	93	91	92	85	109	103
Biochemical oxygen demand (BOD)	2.4	1.2	4.5	.0	2.6	2.5

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0680. WEST FORK SAN JACINTO RIVER NEAR CONROE, TEX. (30°14'41", 95°27'26")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 6, 1969	Dec. 17, 1969	Feb. 20, 1970	Apr. 30, 1970	June 25, 1970	Aug. 13, 1970
Time (24 hour)	1330	1515	0830	1110	1415	1730
Discharge (cfs)	9.7	24	43	69	26	10
Silica (SiO_2)	--	--	--	18	14	22
Calcium (Ca)	--	--	--	37	34	19
Magnesium (Mg)	--	--	--	1.1	3.7	2.8
Sodium plus potassium (Na+K)	--	--	--	23	24	25
Bicarbonate (HCO_3)	--	--	--	88	93	52
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	9.6	5.2	4.8
Chloride (Cl)	--	--	--	45	50	47
Fluoride (F)	--	--	--	.1	.0	.0
Dissolved solids	--	--	--	177	177	147
Hardness as $CaCO_3$	--	--	--	97	100	59
Non-carbonate hardness	--	--	--	25	24	16
Sodium adsorption ratio (SAR)	--	--	--	1.0	1.0	1.4
Specific conductance (micromhos at 25°C)	247	271	278	319	333	254
pH:						
(field)	7.4	6.8	7.2	6.7	7.5	7.1
(laboratory)	--	--	--	7.0	7.4	7.1
Temperature (°C)	28.0	17.0	11.0	25.0	32.0	32.5
Ammonia nitrogen (N)	--	.00	.00	.11	.00	.00
Nitrate nitrogen (N)	.0	.1	.1	.1	.0	.0
Nitrite nitrogen (N)	--	.00	.00	.01	.02	.00
Total phosphorus (P)	.07	.11	.10	.06	.07	.06
Detergents (MBAS)	--	--	--	--	--	.00
Dissolved oxygen (DO):						
(milligrams per liter)	7.6	7.4	10.0	7.1	--	8.6
(percent saturation)	95	76	90	85	--	116
Biochemical oxygen demand (BOD)	.8	1.0	2.2	.4	1.9	2.0

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0735. BUFFALO BAYOU NEAR ADDICKS, TEX. (29°45'42", 95°36'20")

(Results in milligrams per liter except as indicated)

Date of collection	Sept. 17, 1970					
Time (24 hour)	1130					
Discharge (cfs)	335					
Silica (SiO_2)	24					
Calcium (Ca)	24					
Magnesium (Mg)	3.9					
Sodium (Na)	23					
Potassium (K)	--					
Bicarbonate (HCO_3)	88					
Carbonate (CO_3)	0					
Sulfate (SO_4)	11					
Chloride (Cl)	30					
Fluoride (F)	.2					
Bromide (Br)	--					
Iodide (I)	--					
Dissolved solids	161					
Suspended solids	--					
Hardness as $CaCO_3$	76					
Noncarbonate hardness	4					
Sodium adsorption ratio (SAR)	1.1					
Specific conductance (micromhos at 25°C)	283					
pH: (field)	6.9					
(laboratory)	6.9					
Temperature (°C)	28.5					
Ammonia nitrogen (N)	.33					
Nitrate nitrogen (N)	.3					
Nitrite nitrogen (N)	.09					
Organic nitrogen (N)	--					
Total phosphorus (P)	.48					
Detergents (MBAS)	.00					
Dissolved oxygen (DO): (milligrams per liter)	7.4					
(percent saturation)	95					
Biochemical oxygen demand (BOD)	4.9					
Chemical oxygen demand (COD)	39					
Turbidity	--					

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0737. BUFFALO BAYOU AT PINEY POINT, TEX. (29°44'48", 95°31'24")

(Results in milligrams per liter except as indicated)

Date of collection	Sept. 17, 1970					
Time (24 hour)	1400					
Discharge (cfs)	417					
Silica (SiO_2)	21					
Calcium (Ca)	24					
Magnesium (Mg)	7.3					
Sodium (Na)	19					
Potassium (K)	--					
Bicarbonate (HCO_3)	98					
Carbonate (CO_3)	0					
Sulfate (SO_4)	10					
Chloride (Cl)	27					
Fluoride (F)	.2					
Bromide (Br)	--					
Iodide (I)	--					
Dissolved solids	160					
Suspended solids	--					
Hardness as $CaCO_3$	90					
Noncarbonate hardness	10					
Sodium adsorption ratio (SAR)	.9					
Specific conductance (micromhos at 25°C)	281					
pH: (field)	6.6					
(laboratory)	7.2					
Temperature (°C)	28.0					
Ammonia nitrogen (N)	.46					
Nitrate nitrogen (N)	.6					
Nitrite nitrogen (N)	.14					
Organic nitrogen (N)	--					
Total phosphorus (P)	.64					
Detergents (MBAS)	.00					
Dissolved oxygen (DO):						
(milligrams per liter)	6.5					
(percent saturation)	82					
Biochemical oxygen demand (BOD)	5.8					
Chemical oxygen demand (COD)	41					
Turbidity	--					

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0740. BUFFALO BAYOU AT HOUSTON, TEX. (29°45'36", 95°24'30")

(Results in milligrams per liter except as indicated)

Date of collection	Nov. 10, 1969	Mar. 11, 1970	May 1, 1970	July 16, 1970	Aug. 24, 1970	Sept. 18, 1970
Time (24 hour)	0930	0950	1630	1805	1315	1145
Discharge (cfs)	30	1580	2860	89	360	360
Silica (SiO_2)	24	6.9	5.5	16	7.5	21
Calcium (Ca)	42	20	23	41	26	28
Magnesium (Mg)	8.0	2.9	3.1	11	3.4	5.9
Sodium (Na)	92	10	12	55	24	30
Potassium (K)	--	--	--	--	--	--
Bicarbonate (HCO_3)	222	64	73	240	98	118
Carbonate (CO_3)	0	0	0	0	0	0
Sulfate (SO_4)	27	13	14	20	16	14
Chloride (Cl)	88	12	16	35	24	32
Fluoride (F)	.4	.2	.2	.2	.3	.3
Bromide (Br)	--	--	--	--	--	--
Iodide (I)	--	--	--	--	--	--
Dissolved solids	399	101	115	301	154	193
Suspended solids	--	--	--	--	--	--
Hardness as $CaCO_3$	138	62	70	149	79	94
Noncarbonate hardness	0	10	10	0	0	0
Sodium adsorption ratio (SAR)	3.4	.6	.6	2.0	1.2	1.3
Specific conductance (micromhos at 25°C)	678	189	205	564	276	331
pH: (field)	7.0	6.8	6.7	6.8	6.9	6.7
(laboratory)	7.1	6.7	6.7	7.2	6.9	7.6
Temperature (°C)	20.5	16.0	17.0	28.5	27.0	28.0
Ammonia nitrogen (N)	.61	.65	1.0	.81	.84	.34
Nitrate nitrogen (N)	1.7	.8	.8	.7	.7	.6
Nitrite nitrogen (N)	--	.06	.07	.20	.13	.16
Organic nitrogen (N)	--	--	--	--	--	--
Total phosphorus (P)	.60	1.2	.80	2.0	1.1	.78
Detergents (MBAS)	.01	.00	.00	.00	.00	.00
Dissolved oxygen (DO): (milligrams per liter)	4.4	8.0	7.0	2.6	2.2	4.8
(percent saturation)	48	80	72	33	27	61
Biochemical oxygen demand (BOD)	4.5	6.3	13	4.3	7.8	5.4
Chemical oxygen demand (COD)	--	--	--	21	--	35
Turbidity	--	--	--	--	--	--

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0742.5 BRICKHOUSE GULLY AT COSTA RICA STREET, HOUSTON, TEX. (29°49'40", 95°28'09")

(Results in milligrams per liter except as indicated)

Date of collection	Sept. 22, 1970					
Time (24 hour)	1430					
Discharge (cfs)	4.4					
Silica (SiO_2)	15					
Calcium (Ca)	37					
Magnesium (Mg)	7.2					
Sodium (Na)	43					
Potassium (K)	--					
Bicarbonate (HCO_3)	186					
Carbonate (CO_3)	0					
Sulfate (SO_4)	20					
Chloride (Cl)	29					
Fluoride (F)	.3					
Bromide (Br)	--					
Iodide (I)	--					
Dissolved solids	243					
Suspended solids	--					
Hardness as $CaCO_3$	122					
Noncarbonate hardness	0					
Sodium adsorption ratio (SAR)	1.7					
Specific conductance (micromhos at 25°C)	411					
pH: (field)	7.8					
(laboratory)	7.8					
Temperature (°C)	34.0					
Ammonia nitrogen (N)	.17					
Nitrate nitrogen (N)	.0					
Nitrite nitrogen (N)	.16					
Organic nitrogen (N)	--					
Total phosphorus (P)	.18					
Detergents (MBAS)	.00					
Dissolved oxygen (DO):						
(milligrams per liter)	15					
(percent saturation)	208					
Biochemical oxygen demand (BOD)	3.5					
Chemical oxygen demand (COD)	27					
Turbidity	--					

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0745. WHITEOAK BAYOU AT HOUSTON, TEX. (29°46'30", 95°23'49")

(Results in milligrams per liter except as indicated)

Date of collection	Nov. 10, 1969	Mar. 11, 1970	May 1, 1970	July 17, 1970	July 21, 1970	Aug. 24, 1970
Time (24 hour)	0955	1045	1550	0845	2000	1240
Discharge (cfs)	6.4	320	2250	16	1950	74
Silica (SiO_2)	20	10	5.0	18	5.9	14
Calcium (Ca)	74	30	22	60	26	34
Magnesium (Mg)	19	4.7	2.9	16	4.7	9.0
Sodium (Na)	144	22	7.8	74	7.6	85
Potassium (K)	--	--	--	--	--	--
Bicarbonate (HCO_3)	316	114	66	268	95	201
Carbonate (CO_3)	0	0	0	0	0	0
Sulfate (SO_4)	43	19	12	32	10	30
Chloride (Cl)	261	22	12	91	9	84
Fluoride (F)	.4	.2	.1	.2	0	.4
Bromide (Br)	--	--	--	--	--	--
Iodide (I)	--	--	--	--	--	--
Dissolved solids	757	170	98	429	114	359
Suspended solids	--	--	--	--	--	--
Hardness as $CaCO_3$	264	94	67	214	84	122
Noncarbonate hardness	5	1	13	0	6	0
Sodium adsorption ratio (SAR)	3.9	1.0	.4	2.2	.4	3.3
Specific conductance (micromhos at 25°C)	1350	303	171	770	195	614
pH: (field)	7.1	6.9	6.4	6.4	6.9	7.2
(laboratory)	6.9	6.6	6.8	7.2	7.1	6.9
Temperature (°C)	22.0	16.0	16.5	26.5	26.0	29.5
Ammonia nitrogen (N)	28	1.6	.66	2.3	.74	2.2
Nitrate nitrogen (N)	.9	.8	.6	.4	.6	.2
Nitrite nitrogen (N)	--	.05	.04	.14	.06	.02
Organic nitrogen (N)	--	--	--	--	--	--
Total phosphorus (P)	.52	1.7	.22	.90	.90	2.8
Detergents (MBAS)	.01	.00	.00	--	.00	.01
Dissolved oxygen (DO): (milligrams per liter)	8.7	8.2	8.3	3.7	6.8	3.7
(percent saturation)	99	82	85	45	83	48
Biochemical oxygen demand (BOD)	14	26	3.3	7.1	10	26
Chemical oxygen demand (COD)	--	--	26	23	--	--
Turbidity	--	--	--	--	--	--

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0745. WHITEOAK BAYOU AT HOUSTON, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	Sept. 22, 1970					
Time (24 hour)	1505					
Discharge (cfs)	40					
Silica (SiO_2)	19					
Calcium (Ca)	57					
Magnesium (Mg)	14					
Sodium (Na)	69					
Potassium (K)	--					
Bicarbonate (HCO_3)	232					
Carbonate (CO_3)	0					
Sulfate (SO_4)	36					
Chloride (Cl)	89					
Fluoride (F)	.1					
Bromide (Br)	--					
Iodide (I)	--					
Dissolved solids	404					
Suspended solids	--					
Hardness as $CaCO_3$	200					
Noncarbonate hardness	10					
Sodium adsorption ratio (SAR)	2.1					
Specific conductance (micromhos at 25°C)	750					
pH: (field)	7.3					
(laboratory)	7.8					
Temperature (°C)	32.0					
Ammonia nitrogen (N)	1.8					
Nitrate nitrogen (N)	.8					
Nitrite nitrogen (N)	.05					
Organic nitrogen (N)	--					
Total phosphorus (P)	1.2					
Detergents (MBAS)	.01					
Dissolved oxygen (DO): (milligrams per liter)	9.2					
(percent saturation)	124					
Biochemical oxygen demand (BOD)	16					
Chemical oxygen demand (COD)	46					
Turbidity	--					

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0747.8 KEEGANS BAYOU AT KEEGAN ROAD, HOUSTON, TEX. (29°39'55", 95°35'42")

(Results in milligrams per liter except as indicated)

Date of collection	May 15, 1970	May 15, 1970	May 16, 1970	May 18, 1970	July 16, 1970
Time (24 hour)	1125	1705	1135	1400	1615
Discharge (cfs)	.3	7.0	63	32	.34
Silica (SiO_2)	12	10	--	--	13
Calcium (Ca)	55	36	--	--	30
Magnesium (Mg)	15	9.3	--	--	8.5
Sodium (Na)	29	19	--	--	16
Potassium (K)	--	--	--	--	--
Bicarbonate (HCO_3)	232	150	--	--	136
Carbonate (CO_3)	0	0	--	--	0
Sulfate (SO_4)	28	14	--	--	10
Chloride (Cl)	30	21	--	--	16
Fluoride (F)	.2	.1	--	--	.1
Bromide (Br)	--	--	--	--	--
Iodide (I)	--	--	--	--	--
Dissolved solids	284	187	--	--	162
Suspended solids	--	--	--	--	--
Hardness as $CaCO_3$	198	128	--	--	110
Noncarbonate hardness	8	5	--	--	0
Sodium adsorption ratio (SAR)	.9	.7	--	--	.7
Specific conductance (micromhos at 25°C)	505	339	102	198	281
pH: (field)	8.0	--	6.7	6.5	6.4
(laboratory)	7.2	7.2	--	--	7.0
Temperature (°C)	21.5	20.5	19.0	21.5	28.0
Ammonia nitrogen (N)	.36	--	.10	.19	.19
Nitrate nitrogen (N)	.1	.7	.6	.2	.2
Nitrite nitrogen (N)	.02	--	.04	.03	.03
Organic nitrogen (N)	--	--	--	--	--
Total phosphorus (P)	.04	--	.08	.15	.17
Detergents (MBAS)	--	.00	--	--	--
Dissolved oxygen (DO):					
(milligrams per liter)	4.7	--	4.8	5.3	3.1
(percent saturation)	53	--	51	60	39
Biochemical oxygen demand (BOD)	7.2	--	5.0	4.5	2.3
Chemical oxygen demand (COD)	.4	--	23	39	29
Turbidity	--	--	--	--	--

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0748. KEEGANS BAYOU AT ROARK ROAD NEAR HOUSTON, TEX. (29°39'23", 95°33'43")

(Results in milligrams per liter except as indicated)

Date of collection	Nov. 10, 1969	Dec. 6, 1969	May 15, 1970	May 15, 1970	May 15, 1970	May 16, 1970
Time (24 hour)	1410	1045	1045	1620	2230	1100
Discharge (cfs)	0.12	42	78	82	110	113
Silica (SiO_2)	28	7.3	5.9	8.8	--	10
Calcium (Ca)	49	17	18	19	--	16
Magnesium (Mg)	17	5.7	1.7	4.3	--	2.0
Sodium (Na)	93	23	18	14	--	8.2
Potassium (K)	--	--	--	--	--	--
Bicarbonate (HCO_3)	230	74	90	85	--	50
Carbonate (CO_3)	0	0	0	0	--	0
Sulfate (SO_4)	46	22	7.8	12	--	6.2
Chloride (Cl)	88	19	5.8	8.2	--	6.7
Fluoride (F)	.4	.6	.2	.3	--	.0
Bromide (Br)	--	--	--	--	--	--
Iodide (I)	--	--	--	--	--	--
Dissolved solids	476	135	93	110	--	86
Suspended solids	--	--	--	--	--	--
Hardness as $CaCO_3$	194	66	52	65	--	48
Noncarbonate hardness	6	5	0	0	--	7
Sodium adsorption ratio (SAR)	2.9	1.2	1.1	.8	--	.5
Specific conductance (micromhos at 25°C)	764	252	203	183	214	130
pH: (field)	7.8	6.8	9.0	7.6	6.6	6.5
(laboratory)	7.5	7.2	7.5	7.3	--	6.8
Temperature (°C)	25.0	15.0	21.0	21.5	20.0	19.0
Ammonia nitrogen (N)	--	--	.29	.26	.16	.12
Nitrate nitrogen (N)	9.5	.9	.2	.3	4.7	2.6
Nitrite nitrogen (N)	--	.00	.04	.03	.01	.04
Organic nitrogen (N)	--	--	--	--	--	--
Total phosphorus (P)	1.6	.48	.07	.16	.07	.06
Detergents (MBAS)	.00	.00	--	--	--	.00
Dissolved oxygen (DO): (milligrams per liter)	9.2	9.7	7.6	7.7	8.3	6.9
(percent saturation)	110	95	84	87	90	73
Biochemical oxygen demand (BOD)	1.8	2.5	11	6.7	4.8	4.2
Chemical oxygen demand (COD)	--	42	.0	12	7.3	18
Turbidity	--	--	--	--	--	--

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0748. KEEGANS BAYOU AT ROARK ROAD NEAR HOUSTON, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	May 18, 1970	June 19, 1970	July 16, 1970	Aug. 18, 1970	Sept. 22, 1970
Time (24 hour)	1450	1355	1445	1220	1045
Discharge (cfs)	28	2.2	1.0	2.1	4.3
Silica (SiO_2)	12	14	16	15	18
Calcium (Ca)	19	63	52	57	32
Magnesium (Mg)	5.5	24	18	20	9.8
Sodium (Na)	12	49	28	60	16
Potassium (K)	--	--	--	--	--
Bicarbonate (HCO_3)	84	280	200	266	140
Carbonate (CO_3)	0	0	0	0	0
Sulfate (SO_4)	9.6	44	41	39	10
Chloride (Cl)	11	58	41	68	20
Fluoride (F)	.1	.3	.0	.3	.2
Bromide (Br)	--	--	--	--	--
Iodide (I)	--	--	--	--	--
Dissolved solids	112	395	300	392	179
Suspended solids	--	--	--	--	--
Hardness as $CaCO_3$	70	256	204	224	120
Noncarbonate hardness	1	26	40	6	5
Sodium adsorption ratio (SAR)	.6	1.3	.9	1.7	.6
Specific conductance (micromhos at 25°C)	183	667	541	695	321
pH: (field)	6.3	6.1	6.5	7.0	6.6
(laboratory)	6.9	7.7	7.6	7.6	7.6
Temperature (°C)	23.0	30.5	28.5	29.0	27.0
Ammonia nitrogen (N)	.15	.01	.94	.23	.21
Nitrate nitrogen (N)	.3	1.0	1.0	.3	.7
Nitrite nitrogen (N)	.04	.07	.04	.06	.04
Organic nitrogen (N)	--	--	--	--	--
Total phosphorus (P)	.08	1.2	1.2	.90	.82
Detergents (MBAS)	--	--	.00	.00	.00
Dissolved oxygen (DO):					
(milligrams per liter)	7.0	12.8	2.6	5.8	7.4
(percent saturation)	83	168	33	74	91
Biochemical oxygen demand (BOD)	4.8	2.1	1.3	2.9	3.4
Chemical oxygen demand (COD)	40	15	15	--	42
Turbidity	--	--	--	--	--

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0749. WILLOW WATERHOLE BAYOU AT LANDSDOWNE STREET, HOUSTON, TEX. (29°39'01", 95°29'11")

(Results in milligrams per liter except as indicated)

Date of collection	May 15, 1970	May 15, 1970	June 19, 1970	July 16, 1970		
Time (24 hour)	1200	1500	1510	1350		
Discharge (cfs)	18	165	0.8	1.5		
Silica (SiO_2)	13	4.1	20	14		
Calcium (Ca)	54	17	47	32		
Magnesium (Mg)	14	3.3	15	13		
Sodium (Na)	55	8.2	113	36		
Potassium (K)	--	--	--	--		
Bicarbonate (HCO_3)	252	54	308	168		
Carbonate (CO_3)	0	0	0	0		
Sulfate (SO_4)	30	14	30	38		
Chloride (Cl)	57	12	100	39		
Fluoride (F)	.3	.1	.4	.1		
Bromide (Br)	--	--	--	--		
Iodide (I)	--	--	--	--		
Dissolved solids	351	88	478	264		
Suspended solids	--	--	--	--		
Hardness as $CaCO_3$	192	56	180	132		
Noncarbonate hardness	0	12	0	0		
Sodium adsorption ratio (SAR)	1.7	.5	3.7	1.4		
Specific conductance (micromhos at 25°C)	650	178	801	500		
pH: (field)	7.6	8.4	7.3	6.7		
(laboratory)	7.3	6.8	8.1	6.9		
Temperature (°C)	22.5	23.0	34.0	30.5		
Ammonia nitrogen (N)	1.9	.95	.30	5.8		
Nitrate nitrogen (N)	.2	.3	.2	.1		
Nitrite nitrogen (N)	.07	.04	.06	.10		
Organic nitrogen (N)	--	--	--	--		
Total phosphorus (P)	1.7	.44	1.2	2.5		
Detergents (MBAS)	.02	.00	--	.00		
Dissolved oxygen (DO): (milligrams per liter)	3.4	6.1	20	2.9		
(percent saturation)	39	70	278	38		
Biochemical oxygen demand (BOD)	13	7.8	7.7	7.0		
Chemical oxygen demand (COD)	9.4	6.3	29	28		
Turbidity	--	--	--	--		

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0750. BRAYS BAYOU AT HOUSTON, TEX. (29°41'49", 95°24'43")

(Results in milligrams per liter except as indicated)

Date of collection	Nov. 10, 1969	Dec. 6, 1969	May 15, 1970	May 15, 1970	May 15, 1970	May 15, 1970
Time (24 hour)	1315	1220	0855	1025	1240	1410
Discharge (cfs)	41	1400	36	53	330	2400
Silica (SiO_2)	23	7.6	--	--	13	--
Calcium (Ca)	30	24	--	--	38	--
Magnesium (Mg)	12	4.9	--	--	11	--
Sodium (Na)	123	13	--	--	64	--
Potassium (K)	--	--	--	--	--	--
Bicarbonate (HCO_3)	338	82	--	--	196	--
Carbonate (CO_3)	0	0	--	--	0	--
Sulfate (SO_4)	40	22	--	--	53	--
Chloride (Cl)	71	12	--	--	45	--
Fluoride (F)	.7	.3	--	--	.5	--
Bromide (Br)	--	--	--	--	--	--
Iodide (I)	--	--	--	--	--	--
Dissolved solids	483	126	--	--	327	--
Suspended solids	--	--	--	--	--	--
Hardness as $CaCO_3$	126	80	--	--	140	--
Noncarbonate hardness	0	13	--	--	0	--
Sodium adsorption ratio (SAR)	4.8	.6	--	--	2.3	--
Specific conductance (micromhos at 25°C)	793	222	906	749	564	197
pH: (field)	7.5	6.9	6.6	6.6	6.7	6.7
(laboratory)	7.2	6.7	--	--	7.2	--
Temperature (°C)	28.0	15.0	24.5	25.0	24.0	22.0
Ammonia nitrogen (N)	9.3	--	4.4	3.6	1.4	.64
Nitrate nitrogen (N)	.4	.4	.5	.6	.7	.4
Nitrite nitrogen (N)	.85	.00	.60	.53	.31	.06
Organic nitrogen (N)	--	--	--	--	--	--
Total phosphorus (P)	.96	1.0	4.1	2.2	1.4	.33
Detergents (MBAS)	.01	.00	--	--	.02	--
Dissolved oxygen (DO): (milligrams per liter)	7.4	8.9	7.0	6.7	6.9	8.8
(percent saturation)	94	87	83	80	81	100
Biochemical oxygen demand (BOD)	22	4.8	7.4	19	23	11
Chemical oxygen demand (COD)	--	32	17	35	15	8.1
Turbidity	--	--	--	--	--	--

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0750. BRAYS BAYOU AT HOUSTON, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	May 15, 1970	May 15, 1970	May 16, 1970	May 16, 1970	May 17, 1970	May 18, 1970
Time (24 hour)	1545	1730	0035	1245	1445	1300
Discharge (cfs)	2900	3500	2360	1750	400	200
Silica (SiO_2)	5.5	--	--	9.8	--	15
Calcium (Ca)	26	--	--	19	--	28
Magnesium (Mg)	3.2	--	--	5.0	--	7.6
Sodium (Na)	11	--	--	10	--	33
Potassium (K)	--	--	--	--	--	--
Bicarbonate (HCO_3)	93	--	--	78	--	140
Carbonate (CO_3)	0	--	--	0	--	0
Sulfate (SO_4)	11	--	--	12	--	19
Chloride (Cl)	9.9	--	--	8.3	--	28
Fluoride (F)	.2	--	--	.2	--	.2
Bromide (Br)	--	--	--	--	--	--
Iodide (I)	--	--	--	--	--	--
Dissolved solids	117	--	--	106	--	202
Suspended solids	--	--	--	--	--	--
Hardness as $CaCO_3$	78	--	--	68	--	101
Noncarbonate hardness	2	--	--	4	--	0
Sodium adsorption ratio (SAR)	.5	--	--	.5	--	1.4
Specific conductance (micromhos at 25°C)	223	176	180	185	244	368
pH: (field)	6.7	6.7	6.6	6.5	6.3	6.7
(laboratory)	7.3	--	--	6.8	--	6.9
Temperature (°C)	22.0	22.0	20.5	19.0	23.5	26.0
Ammonia nitrogen (N)	.80	.70	.38	.34	.51	.88
Nitrate nitrogen (N)	.6	.8	1.1	.6	.8	.1
Nitrite nitrogen (N)	.02	.05	.06	.07	.17	.11
Organic nitrogen (N)	--	--	--	--	--	--
Total phosphorus (P)	.19	.30	.13	.34	.39	.39
Detergents (MBAS)	.02	--	--	.00	--	.01
Dissolved oxygen (DO): (milligrams per liter)	8.0	8.2	6.9	7.9	2.5	7.8
(percent saturation)	91	93	76	84	29	95
Biochemical oxygen demand (BOD)	14	13	8.1	8.4	12	9.0
Chemical oxygen demand (COD)	5.4	10	14	14	22	23
Turbidity	--	--	--	--	--	--

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0750. BRAYS BAYOU AT HOUSTON, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	July 16, 1970	Aug. 24, 1970	Sept. 22, 1970			
Time (24 hour)	1715	0915	1200			
Discharge (cfs)	63	105	115			
Silica (SiO_2)	18	14	19			
Calcium (Ca)	39	32	39			
Magnesium (Mg)	11	8.8	10			
Sodium (Na)	380	49	57			
Potassium (K)	--	--	--			
Bicarbonate (HCO_3)	230	154	200			
Carbonate (CO_3)	0	0	0			
Sulfate (SO_4)	38	37	34			
Chloride (Cl)	540	47	46			
Fluoride (F)	.3	.3	.5			
Bromide (Br)	--	--	--			
Iodide (I)	--	--	--			
Dissolved solids	1150	273	314			
Suspended solids	--	--	--			
Hardness as $CaCO_3$	144	116	140			
Noncarbonate hardness	0	0	0			
Sodium adsorption ratio (SAR)	14	2.0	2.1			
Specific conductance (micromhos at 25°C)	2160	524	580			
pH: (field)	6.5	6.9	6.8			
(laboratory)	6.8	6.8	7.3			
Temperature (°C)	31.5	28.0	29.5			
Ammonia nitrogen (N)	7.1	3.5	2.5			
Nitrate nitrogen (N)	1.1	.8	1.2			
Nitrite nitrogen (N)	.20	.10	.60			
Organic nitrogen (N)	--	--	--			
Total phosphorus (P)	1.4	1.8	1.2			
Detergents (MBAS)	.00	.00	.01			
Dissolved oxygen (DO):						
(milligrams per liter)	5.4	6.8	7.7			
(percent saturation)	73	86	100			
Biochemical oxygen demand (BOD)	14	6.0	4.0			
Chemical oxygen demand (COD)	23	--	28			
Turbidity	--	--	--			

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0754. SIMS BAYOU AT HIRAM CLARKE STREET, HOUSTON, TEX. (29°37'07", 95°26'45")

(Results in milligrams per liter except as indicated)

Date of collection	Sept. 15, 1970					
Time (24 hour)	1550					
Discharge (cfs)	8.0					
Silica (SiO_2)	25					
Calcium (Ca)	45					
Magnesium (Mg)	19					
Sodium (Na)	189					
Potassium (K)	--					
Bicarbonate (HCO_3)	276					
Carbonate (CO_3)	0					
Sulfate (SO_4)	43					
Chloride (Cl)	232					
Fluoride (F)	.6					
Bromide (Br)	--					
Iodide (I)	--					
Dissolved solids	721					
Suspended solids	--					
Hardness as $CaCO_3$	192					
Noncarbonate hardness	0					
Sodium adsorption ratio (SAR)	5.9					
Specific conductance (micromhos at 25°C)	1370					
pH: (field)	7.0					
(laboratory)	7.2					
Temperature (°C)	31.0					
Ammonia nitrogen (N)	4.9					
Nitrate nitrogen (N)	5.1					
Nitrite nitrogen (N)	.42					
Organic nitrogen (N)	--					
Total phosphorus (P)	7.8					
Detergents (MBAS)	.01					
Dissolved oxygen (DO): (milligrams per liter)	1.6					
(percent saturation)	21					
Biochemical oxygen demand (BOD)	7.2					
Chemical oxygen demand (COD)	26					
Turbidity	--					

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0755. SIMS BAYOU AT HOUSTON, TEX. (29°40'27", 95°17'21")

(Results in milligrams per liter except as indicated)

Date of collection	Nov. 10, 1969	Dec. 6, 1969	May 1, 1970	May 21, 1970	June 18, 1970	July 17, 1970
Time (24 hour)	1215	1320	1150	2245	1000	0950
Discharge (cfs)	14	1400	360	8800	18	23
Silica (SiO_2)	20	6.4	9.0	4.4	17	17
Calcium (Ca)	52	25	34	16	54	48
Magnesium (Mg)	15	6.5	20	2.7	21	20
Sodium (Na)	329	63	116	7.4	244	226
Potassium (K)	--	--	--	--	--	--
Bicarbonate (HCO_3)	288	62	154	51	356	280
Carbonate (CO_3)	0	0	0	0	0	0
Sulfate (SO_4)	111	16	30	8.0	103	202
Chloride (Cl)	430	114	192	12	285	200
Fluoride (F)	.5	.2	.2	.2	.4	.2
Bromide (Br)	--	--	--	--	--	--
Iodide (I)	--	--	--	--	--	--
Dissolved solids	1120	263	485	77	918	863
Suspended solids	--	--	--	--	--	--
Hardness as $CaCO_3$	190	89	168	51	220	204
Noncarbonate hardness	0	38	42	9	0	0
Sodium adsorption ratio (SAR)	10	2.9	3.9	.5	7.1	6.9
Specific conductance (micromhos at 25°C)	1830	449	923	136	1660	1400
pH: (field)	7.0	6.7	6.6	6.4	6.3	6.5
(laboratory)	6.9	6.4	7.0	7.2	7.3	7.1
Temperature (°C)	24.0	15.0	18.0	21.0	28.0	28.5
Ammonia nitrogen (N)	15	.9	3.4	.22	14	8.3
Nitrate nitrogen (N)	.2	.2	.7	.2	.0	.0
Nitrite nitrogen (N)	--	.00	.12	.03	.18	.01
Organic nitrogen (N)	--	--	--	--	--	--
Total phosphorus (P)	.48	2.4	2.0	.12	3.0	2.8
Detergents (MBAS)	.02	.01	.00	.03	.03	.03
Dissolved oxygen (DO): (milligrams per liter)	3.1	6.7	2.4	6.5	2.0	.9
(percent saturation)	36	66	25	72	25	12
Biochemical oxygen demand (BOD)	7.8	6.9	18	5.9	8.7	7.5
Chemical oxygen demand (COD)	--	62	35	17	--	22
Turbidity	--	--	--	--	--	--

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0755. SIMS BAYOU AT HOUSTON, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	Sept. 16, 1970					
Time (24 hour)	0840					
Discharge (cfs)	880					
Silica (SiO_2)	11					
Calcium (Ca)	34					
Magnesium (Mg)	8.5					
Sodium (Na)	125					
Potassium (K)	--					
Bicarbonate (HCO_3)	104					
Carbonate (CO_3)	0					
Sulfate (SO_4)	33					
Chloride (Cl)	193					
Fluoride (F)	.2					
Bromide (Br)	--					
Iodide (I)	--					
Dissolved solids	460					
Suspended solids	--					
Hardness as $CaCO_3$	120					
Noncarbonate hardness	35					
Sodium adsorption ratio (SAR)	5.0					
Specific conductance (micromhos at 25°C)	858					
pH: (field)	6.7					
(laboratory)	7.0					
Temperature (°C)	26.5					
Ammonia nitrogen (N)	.79					
Nitrate nitrogen (N)	.7					
Nitrite nitrogen (N)	.14					
Organic nitrogen (N)	--					
Total phosphorus (P)	1.2					
Detergents (MBAS)	.00					
Dissolved oxygen (DO):						
(milligrams per liter)	2.7					
(percent saturation)	33					
Biochemical oxygen demand (BOD)	13					
Chemical oxygen demand (COD)	42					
Turbidity	--					

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970 --Continued

8-0756.5 BERRY BAYOU AT FOREST OAKS STREET, HOUSTON, TEX. (29°40'35", 95°14'37")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 30, 1969	Dec. 6, 1969	May 1, 1970	June 18, 1970	Sept. 16, 1970
Time (24 hour)	1830	1350	1020	1040	1042
Discharge (cfs)	125	310	60	6.0	63
Silica (SiO_2)	7.1	7.3	7.3	17	10
Calcium (Ca)	27	22	34	55	30
Magnesium (Mg)	4.0	4.6	14	35	6.6
Sodium (Na)	57	20	83	517	65
Potassium (K)	--	--	--	--	--
Bicarbonate (HCO_3)	99	72	150	434	112
Carbonate (CO_3)	0	0	0	0	0
Sulfate (SO_4)	23	15	28	20	32
Chloride (Cl)	70	30	126	760	84
Fluoride (F)	.4	.2	.5	1.5	.3
Bromide (Br)	--	--	--	--	--
Iodide (I)	--	--	--	--	--
Dissolved solids	241	134	374	1640	286
Suspended solids	--	--	--	--	--
Hardness as $CaCO_3$	84	74	143	280	102
Noncarbonate hardness	3	15	20	0	10
Sodium adsorption ratio (SAR)	2.7	1.0	3.0	13	2.8
Specific conductance (micromhos at 25°C)	380	250	696	2940	517
pH: (field)	6.6	6.9	6.9	6.6	6.6
(laboratory)	7.0	6.1	6.9	7.5	7.0
Temperature (°C)	21.0	15.0	18.5	29.0	27.5
Ammonia nitrogen (N)	--	--	3.0	13	1.0
Nitrate nitrogen (N)	.8	.1	.7	.1	.3
Nitrite nitrogen (N)	--	.00	.10	.00	.12
Organic nitrogen (N)	--	--	--	--	--
Total phosphorus (P)	--	.72	2.4	8.2	.72
Detergents (MBAS)	.01	.00	.00	.27	.02
Dissolved oxygen (DO):					
(milligrams per liter)	5.8	7.8	4.8	.8	3.9
(percent saturation)	64	76	51	10	49
Biochemical oxygen demand (BOD)	19	7.6	12	41	8.4
Chemical oxygen demand (COD)	55	41	39	112	37
Turbidity	--	--	--	--	--

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0757.6 HUNTING BAYOU AT FALLS STREET, HOUSTON, TEX. (29°48'22", 95°19'50")

(Results in milligrams per liter except as indicated)

Date of collection	Sept. 16, 1970					
Time (24 hour)	1450					
Discharge (cfs)	9.0					
Silica (SiO_2)	15					
Calcium (Ca)	45					
Magnesium (Mg)	6.9					
Sodium (Na)	84					
Potassium (K)	--					
Bicarbonate (HCO_3)	200					
Carbonate (CO_3)	0					
Sulfate (SO_4)	42					
Chloride (Cl)	81					
Fluoride (F)	.5					
Bromide (Br)	--					
Iodide (I)	--					
Dissolved solids	374					
Suspended solids	--					
Hardness as $CaCO_3$	141					
Noncarbonate hardness	0					
Sodium adsorption ratio (SAR)	3.1					
Specific conductance (micromhos at 25°C)	658					
pH: (field)	7.0					
(laboratory)	7.5					
Temperature (°C)	29.0					
Ammonia nitrogen (N)	.34					
Nitrate nitrogen (N)	.1					
Nitrite nitrogen (N)	.06					
Organic nitrogen (N)	--					
Total phosphorus (P)	.72					
Detergents (MBAS)	.00					
Dissolved oxygen (DO):						
(milligrams per liter)	1.5					
(percent saturation)	19					
Biochemical oxygen demand (BOD)	13					
Chemical oxygen demand (COD)	47					
Turbidity	--					

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0757.7. HUNTING BAYOU AT U.S. HIGHWAY 90-A, HOUSTON, TEX. (29°47'43", 95°16'21")

(Results in milligrams per liter except as indicated)

Date of collection	Nov. 10, 1969	Dec. 6, 1969	Mar. 11, 1970	May 1, 1970	June 18, 1970	July 17, 1970
Time (24 hour)	1130	1515	1125	2010	1525	1100
Discharge (cfs)	2.8	385	212	410	4.5	4.5
Silica (SiO_2)	20	5.4	10	6.9	18	17
Calcium (Ca)	42	27	35	30	59	60
Magnesium (Mg)	15	4.5	7.0	8.8	26	19
Sodium (Na)	151	6.3	33	24	142	110
Potassium (K)	--	--	--	--	--	--
Bicarbonate (HCO_3)	324	59	129	97	390	288
Carbonate (CO_3)	0	0	0	0	0	0
Sulfate (SO_4)	56	32	35	38	70	102
Chloride (Cl)	122	21	38	34	135	96
Fluoride (F)	.6	.3	.3	.3	.6	.6
Bromide (Br)	--	--	--	--	--	--
Iodide (I)	--	--	--	--	--	--
Dissolved solids	572	133	232	203	652	563
Suspended solids	--	--	--	--	--	--
Hardness as $CaCO_3$	166	86	116	111	252	228
Noncarbonate hardness	0	38	10	32	0	0
Sodium adsorption ratio (SAR)	5.1	.3	1.3	1.0	3.9	3.2
Specific conductance (micromhos at 25°C)	912	255	404	355	1110	921
pH: (field)	6.9	7.5	7.1	6.4	6.6	6.3
(laboratory)	7.2	6.2	6.9	6.7	7.5	7.0
Temperature (°C)	23.0	14.5	16.0	17.0	31.0	28.0
Ammonia nitrogen (N)	1.6	4.0	4.0	3.2	6.2	5.4
Nitrate nitrogen (N)	.9	.5	1.2	1.9	.1	1.9
Nitrite nitrogen (N)	--	.00	.09	.12	.16	.17
Organic nitrogen (N)	--	--	--	--	--	--
Total phosphorus (P)	.80	1.0	1.0	6.0	3.0	1.8
Detergents (MBAS)	.02	.01	.00	.00	--	.02
Dissolved oxygen (DO): (milligrams per liter)	7.7	7.4	5.7	5.4	20	1.0
(percent saturation)	89	72	57	56	267	13
Biochemical oxygen demand (BOD)	4.3	7.8	7.5	7.2	13	12
Chemical oxygen demand (COD)	--	39	--	29	45	35
Turbidity	--	--	--	--	--	--

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0757.7. HUNTING BAYOU AT U.S. HIGHWAY 90-A, HOUSTON, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	Aug. 24, 1970	Sept. 16, 1970				
Time (24 hour)	1030	1550				
Discharge (cfs)	8.3	60				
Silica (SiO_2)	--	11				
Calcium (Ca)	--	40				
Magnesium (Mg)	--	7.3				
Sodium (Na)	--	30				
Potassium (K)	--	--				
Bicarbonate (HCO_3)	--	112				
Carbonate (CO_3)	--	0				
Sulfate (SO_4)	--	56				
Chloride (Cl)	--	39				
Fluoride (F)	--	.5				
Bromide (Br)	--	--				
Iodide (I)	--	--				
Dissolved solids	--	251				
Suspended solids	--	--				
Hardness as $CaCO_3$	--	130				
Noncarbonate hardness	--	38				
Sodium adsorption ratio (SAR)	--	1.1				
Specific conductance (micromhos at 25°C)	771	513				
pH: (field)	6.8	6.7				
(laboratory)	--	7.1				
Temperature (°C)	27.0	27.0				
Ammonia nitrogen (N)	1.2	4.4				
Nitrate nitrogen (N)	.6	1.3				
Nitrite nitrogen (N)	.16	.17				
Organic nitrogen (N)	--	--				
Total phosphorus (P)	4.2	2.0				
Detergents (MBAS)	--	.00				
Dissolved oxygen (DO):						
(milligrams per liter)	.6	1.0				
(percent saturation)	7	12				
Biochemical oxygen demand (BOD)	19	11				
Chemical oxygen demand (COD)	--	48				
Turbidity	--	--				

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0760. GREENS BAYOU NEAR HOUSTON, TEX. (29°55'05", 95°18'24")

(Results in milligrams per liter except as indicated)

Date of collection	Nov. 10, 1969	Dec. 6, 1969	Mar. 11, 1970	July 17, 1970	Aug. 18, 1970	Aug. 24, 1970
Time (24 hour)	1035	1550	1300	1155	1420	1115
Discharge (cfs)	4.1	225	160	5.2	5.0	20
Silica (SiO_2)	44	7.3	13	30	40	39
Calcium (Ca)	89	17	30	63	84	80
Magnesium (Mg)	15	2.8	6.1	13	14	12
Sodium (Na)	87	11	28	106	112	145
Potassium (K)	--	--	--	--	--	--
Bicarbonate (HCO_3)	220	58	119	240	310	270
Carbonate (CO_3)	0	0	0	0	0	0
Sulfate (SO_4)	115	10	16	25	21	21
Chloride (Cl)	120	14	32	152	164	228
Fluoride (F)	.3	.2	.2	.3	.3	.3
Bromide (Br)	--	--	--	--	--	--
Iodide (I)	--	--	--	--	--	--
Dissolved solids	587	91	187	514	590	662
Suspended solids	--	--	--	--	--	--
Hardness as $CaCO_3$	284	54	100	210	268	250
Noncarbonate hardness	104	6	2	14	14	28
Sodium adsorption ratio (SAR)	2.2	.7	1.2	3.2	3.0	4.0
Specific conductance (micromhos at 25°C)	900	179	324	908	1020	1150
pH: (field)	6.9	7.0	6.8	6.3	8.0	7.4
(laboratory)	7.1	6.5	7.0	7.4	8.1	7.5
Temperature (°C)	20.0	13.0	16.0	29.0	33.0	27.0
Ammonia nitrogen (N)	1.0	--	.44	.55	.09	.86
Nitrate nitrogen (N)	1.7	.0	.4	1.0	.5	.4
Nitrite nitrogen (N)	--	.00	.06	.46	.10	.07
Organic nitrogen (N)	--	--	--	--	--	--
Total phosphorus (P)	.52	.88	.80	1.8	1.0	2.1
Detergents (MBAS)	.00	.00	.00	.00	.00	.00
Dissolved oxygen (DO): (milligrams per liter)	5.2	8.6	7.4	2.9	14.8	3.8
(percent saturation)	57	81	74	37	203	49
Biochemical oxygen demand (BOD)	9.6	4.8	6.5	5.1	6.6	11
Chemical oxygen demand (COD)	--	41	--	16	--	--
Turbidity	--	--	--	--	--	--

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0760. GREENS BAYOU NEAR HOUSTON, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	Sept. 23, 1970					
Time (24 hour)	1045					
Discharge (cfs)	13					
Silica (SiO_2)	26					
Calcium (Ca)	58					
Magnesium (Mg)	9.6					
Sodium (Na)	77					
Potassium (K)	--					
Bicarbonate (HCO_3)	208					
Carbonate (CO_3)	0					
Sulfate (SO_4)	16					
Chloride (Cl)	114					
Fluoride (F)	.3					
Bromide (Br)	--					
Iodide (I)	--					
Dissolved solids	407					
Suspended solids	--					
Hardness as $CaCO_3$	184					
Noncarbonate hardness	14					
Sodium adsorption ratio (SAR)	2.5					
Specific conductance (micromhos at 25°C)	735					
pH: (field)	7.5					
(laboratory)	7.8					
Temperature (°C)	28.5					
Ammonia nitrogen (N)	.27					
Nitrate nitrogen (N)	.5					
Nitrite nitrogen (N)	.24					
Organic nitrogen (N)	--					
Total phosphorus (P)	1.0					
Detergents (MBAS)	.00					
Dissolved oxygen (DO):						
(milligrams per liter)	6.7					
(percent saturation)	82					
Biochemical oxygen demand (BOD)	4.9					
Chemical oxygen demand (COD)	26					
Turbidity	--					

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0765. HALLS BAYOU AT HOUSTON, TEX. (29°51'42", 95°20'05")

(Results in milligrams per liter except as indicated)

Date of collection	Nov. 10, 1969	Dec. 6, 1969	Mar. 11, 1970	June 17, 1970	July 17, 1970	Aug. 18, 1970
Time (24 hour)	1100	1615	1330	1440	1220	1450
Discharge (cfs)	2.3	142	162	5.4	4.3	3.5
Silica (SiO_2)	28	6.8	12	28	19	40
Calcium (Ca)	64	21	34	67	34	42
Magnesium (Mg)	19	3.8	5.6	37	21	34
Sodium (Na)	777	21	37	498	277	608
Potassium (K)	--	--	--	--	--	--
Bicarbonate (HCO_3)	422	68	116	372	256	456
Carbonate (CO_3)	0	0	0	0	0	0
Sulfate (SO_4)	28	12	20	26	20	19
Chloride (Cl)	1140	32	53	770	430	920
Fluoride (F)	.3	.2	.2	.3	.1	.2
Bromide (Br)	--	--	--	--	--	--
Iodide (I)	--	--	--	--	--	--
Dissolved solids	2290	130	222	1620	951	1930
Suspended solids	--	--	--	--	--	--
Hardness as $CaCO_3$	236	68	108	320	172	245
Noncarbonate hardness	0	12	13	15	0	0
Sodium adsorption ratio (SAR)	22	1.1	1.5	12	9.2	17
Specific conductance (micromhos at 25°C)	3640	267	397	2940	1740	3500
pH: (field)	7.1	6.9	6.8	7.8	6.6	7.4
(laboratory)	7.0	6.5	6.7	7.4	7.0	7.2
Temperature (°C)	22.5	14.0	16.0	31.0	29.0	32.0
Ammonia nitrogen (N)	16	--	.98	5.0	18	35
Nitrate nitrogen (N)	.2	.1	.3	.0	.1	.1
Nitrite nitrogen (N)	--	.00	.08	.08	.02	.02
Organic nitrogen (N)	--	--	--	--	--	--
Total phosphorus (P)	2.4	1.2	.80	7.8	8.2	15
Detergents (MBAS)	.02	.00	.00	.12	.02	.00
Dissolved oxygen (DO): (milligrams per liter)	7.1	6.9	6.1	20	3.8	.4
(percent saturation)	81	66	61	267	49	5
Biochemical oxygen demand (BOD)	27	6.5	5.7	20	16	38
Chemical oxygen demand (COD)	--	43	--	--	50	--
Turbidity	--	--	--	--	--	--

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0765. HALLS BAYOU AT HOUSTON, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	Sept. 23, 1970					
Time (24 hour)	1110					
Discharge (cfs)	10					
Silica (SiO_2)	24					
Calcium (Ca)	43					
Magnesium (Mg)	20					
Sodium (Na)	309					
Potassium (K)	--					
Bicarbonate (HCO_3)	264					
Carbonate (CO_3)	0					
Sulfate (SO_4)	36					
Chloride (Cl)	461					
Fluoride (F)	.2					
Bromide (Br)	--					
Iodide (I)	--					
Dissolved solids	1040					
Suspended solids	--					
Hardness as $CaCO_3$	188					
Noncarbonate hardness	0					
Sodium adsorption ratio (SAR)	9.8					
Specific conductance (micromhos at 25°C)	1990					
pH: (field)	7.3					
(laboratory)	7.1					
Temperature (°C)	27.0					
Ammonia nitrogen (N)	12					
Nitrate nitrogen (N)	.0					
Nitrite nitrogen (N)	.04					
Organic nitrogen (N)	--					
Total phosphorus (P)	8.0					
Detergents (MBAS)	.02					
Dissolved oxygen (DO):						
(milligrams per liter)	2.1					
(percent saturation)	26					
Biochemical oxygen demand (BOD)	29					
Chemical oxygen demand (COD)	79					
Turbidity	--					

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0840. CLEAR FORK BRAZOS RIVER AT NUGENT, TEX. (32°41'24", 99°40'09")

(Results in milligrams per liter except as indicated)

Date of collection	Nov. 24, 1969	Jan. 20, 1970	Mar. 15, 1970	June 3, 1970	Aug. 11, 1970	Sept. 14, 1970
Time (24 hour)	1730	0915	1545	0850	0845	1825
Discharge (cfs)	35	32	32	730	2.6	39
Silica (SiO_2)	--	--	--	8.6	24	13
Calcium (Ca)	--	--	--	88	382	252
Magnesium (Mg)	--	--	--	25	180	108
Sodium plus potassium (Na+K)	--	--	--	114	615	374
Bicarbonate (HCO_3)	--	--	--	118	238	240
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	240	1450	886
Chloride (Cl)	--	--	--	155	940	542
Fluoride (F)	--	--	--	.3	--	.5
Dissolved solids	--	--	--	694	3710	2290
Hardness as $CaCO_3$	--	--	--	322	1690	1070
Non-carbonate hardness	--	--	--	226	1500	876
Sodium adsorption ratio (SAR)	--	--	--	2.8	6.5	5.0
Specific conductance (micromhos at 25°C)	5490	592	6230	1110	5310	3340
pH:						
(field)	7.9	8.0	8.0	7.6	7.5	7.9
(laboratory)	--	--	--	7.4	7.2	7.7
Temperature (°C)	11.5	3.0	15.0	18.0	27.0	27.0
Ammonia nitrogen (N)	--	.00	.00	.00	.00	.02
Nitrate nitrogen (N)	4.3	6.4	1.3	1.2	.0	.2
Nitrite nitrogen (N)	--	.02	.01	.03	.00	.00
Total phosphorus (P)	.04	.01	.09	.91	.13	.11
Detergents (MBAS)	--	--	--	--	.04	--
Dissolved oxygen (DO):						
(milligrams per liter)	10.4	10.7	11.1	7.2	5.6	7.0
(percent saturation)	95	79	110	76	69	86
Biochemical oxygen demand (BOD)	1.3	1.1	1.8	6.0	4.4	4.3

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0841. DEADMAN CREEK NEAR NUGENT, TEX. (32°40'36", 99°37'00")

(Results in milligrams per liter except as indicated)

Date of collection	Nov. 24, 1969	Jan. 20, 1970	Mar. 15, 1970	June 3, 1970	Aug. 11, 1970	Sept. 14, 1970
Time (24 hour)	1630	0830	1500	0800	0745	1740
Discharge (cfs)	--	15	25	35	4.5	16
Silica (SiO_2)	--	--	--	14	18	15
Calcium (Ca)	--	--	--	93	73	60
Magnesium (Mg)	--	--	--	36	32	29
Sodium plus potassium (Na+K)	--	--	--	196	213	179
Bicarbonate (HCO_3)	--	--	--	243	272	220
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	128	170	133
Chloride (Cl)	--	--	--	330	262	225
Fluoride (F)	--	--	--	.5	.8	.6
Dissolved solids	--	--	--	928	916	777
Hardness as $CaCO_3$	--	--	--	380	314	269
Non-carbonate hardness	--	--	--	181	90	88
Sodium adsorption ratio (SAR)	--	--	--	4.4	5.2	4.7
Specific conductance (micromhos at 25°C)	1770	2040	1680	1650	1570	1370
pH:						
(field)	7.7	7.8	8.1	7.6	7.8	7.9
(laboratory)	--	--	--	7.5	7.5	7.5
Temperature (°C)	13.0	2.0	15.0	18.0	25.0	29.0
Ammonia nitrogen (N)	--	6.6	2.2	.45	1.1	.62
Nitrate nitrogen (N)	12	3.5	2.6	2.3	2.7	5.6
Nitrite nitrogen (N)	--	.09	.16	.20	.05	.52
Total phosphorus (P)	6.2	6.6	6.5	3.1	9.3	10
Detergents (MBAS)	--	--	--	--	.14	--
Dissolved oxygen (DO):						
(milligrams per liter)	7.2	8.6	10.6	5.6	4.4	7.2
(percent saturation)	68	62	104	59	52	92
Biochemical oxygen demand (BOD)	8.7	5.8	18	12	4.0	10

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0920. NOLAN RIVER AT BLUM, TEX. (32°09'02", 97°24'10")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 8, 1969	Dec. 2, 1969	Feb. 12, 1970	Apr. 9, 1970	June 1, 1970	Aug. 6, 1970
Time (24 hour)	1520	1100	1010	1615	1545	0940
Discharge (cfs)	1.7	2.8	5.8	27	485	2.6
Silica (SiO_2)	--	--	--	1.1	6.1	11
Calcium (Ca)	--	--	--	74	47	53
Magnesium (Mg)	--	--	--	5.7	5.5	6.8
Sodium plus potassium (Na+K)	--	--	--	30	18	104
Bicarbonate (HCO_3)	--	--	--	236	168	280
Carbonate (CO_3)	--	--	--	0	0	16
Sulfate (SO_4)	--	--	--	38	20	48
Chloride (Cl)	--	--	--	25	12	54
Fluoride (F)	--	--	--	.9	.4	1.9
Dissolved solids	--	--	--	294	196	432
Hardness as $CaCO_3$	--	--	--	208	140	160
Non-carbonate hardness	--	--	--	14	2	0
Sodium adsorption ratio (SAR)	--	--	--	.9	.7	3.6
Specific conductance (micromhos at 25°C)	642	608	622	505	321	699
pH:						
(field)	8.9	7.9	7.9	8.6	7.6	8.0
(laboratory)	--	--	--	8.0	7.7	8.3
Temperature (°C)	27.0	11.0	9.0	20.5	23.5	28.5
Ammonia nitrogen (N)	--	.79	.00	.02	.09	.18
Nitrate nitrogen (N)	.7	2.1	2.1	.8	.8	.0
Nitrite nitrogen (N)	--	.20	.02	.02	.02	.00
Total phosphorus (P)	1.6	1.8	2.0	.50	.09	.22
Detergents (MBAS)	--	--	--	--	--	.06
Dissolved oxygen (DO):						
(milligrams per liter)	15.8	11.4	11.8	11.0	8.4	7.8
(percent saturation)	195	103	102	126	98	100
Biochemical oxygen demand (BOD)	1.7	3.9	4.9	2.5	1.4	1.6

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0935. AQUILLA CREEK NEAR AQUILLA, TEX. (31°50'40", 97°12'06")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 8, 1969	Dec. 2, 1969	Feb. 12, 1970	Apr. 9, 1970	June 1, 1970
Time (24 hour)	1305	1230	0915	1510	1415
Discharge (cfs)	0.27	2.0	3.5	21	80
Silica (SiO_2)	--	--	--	1.4	9.2
Calcium (Ca)	--	--	--	120	39
Magnesium (Mg)	--	--	--	6.9	28
Sodium plus potassium (Na+K)	--	--	--	69	49
Bicarbonate (HCO_3)	--	--	--	232	140
Carbonate (CO_3)	--	--	--	0	0
Sulfate (SO_4)	--	--	--	210	151
Chloride (Cl)	--	--	--	44	26
Fluoride (F)	--	--	--	.6	.6
Dissolved solids	--	--	--	574	385
Hardness as $CaCO_3$	--	--	--	328	212
Non-carbonate hardness	--	--	--	138	98
Sodium adsorption ratio (SAR)	--	--	--	1.7	1.5
Specific conductance (micromhos at 25°C)	929	1400	923	892	608
pH:					
(field)	7.4	7.5	7.8	7.8	7.2
(laboratory)	--	--	--	7.9	7.4
Temperature (°C)	20.0	10.5	9.0	19.0	23.0
Ammonia nitrogen (N)	--	.38	.00	.00	.17
Nitrate nitrogen (N)	.0	.5	2.7	1.9	2.9
Nitrite nitrogen (N)	--	.01	.05	.01	.09
Total phosphorus (P)	.09	.77	.57	.04	.46
Detergents (MBAS)	--	--	--	--	--
Dissolved oxygen (DO):					
(milligrams per liter)	6.4	7.4	10.2	9.7	7.9
(percent saturation)	70	66	88	108	91
Biochemical oxygen demand (BOD)	3.2	3.1	6.3	2.2	4.2

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0965. BRAZOS RIVER AT WACO, TEX. (31°32'06", 97°04'22")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 8, 1969	Dec. 2, 1969	Feb. 12, 1970	Apr. 9, 1970	June 1, 1970	Aug. 6, 1970
Time (24 hour)	1350	1330	0815	1410	1230	1140
Discharge (cfs)	279	243	1420	1210	830	2590
Silica (SiO_2)	--	--	--	5.7	5.5	5.0
Calcium (Ca)	--	--	--	76	66	80
Magnesium (Mg)	--	--	--	8.4	9.6	6.9
Sodium plus potassium (Na+K)	--	--	--	50	56	108
Bicarbonate (HCO_3)	--	--	--	204	190	166
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	58	64	96
Chloride (Cl)	--	--	--	70	71	160
Fluoride (F)	--	--	--	.3	.5	.3
Dissolved solids	--	--	--	377	369	539
Hardness as $CaCO_3$	--	--	--	224	204	228
Non-carbonate hardness	--	--	--	57	48	92
Sodium adsorption ratio (SAR)	--	--	--	1.4	1.7	3.1
Specific conductance (micromhos at 25°C)	1530	1490	1620	641	605	935
pH:						
(field)	7.6	7.8	7.5	7.9	7.6	7.7
(laboratory)	--	--	--	7.8	7.7	7.8
Temperature (°C)	23.0	13.0	9.0	17.0	25.5	29.0
Ammonia nitrogen (N)	--	.11	.00	.09	.09	.00
Nitrate nitrogen (N)	.1	.00	.1	2.0	.7	.1
Nitrite nitrogen (N)	--	.00	.00	.01	.01	.00
Total phosphorus (P)	.01	.02	.01	.08	.05	.36
Detergents (MBAS)	--	--	--	--	--	.04
Dissolved oxygen (DO):						
(milligrams per liter)	8.4	9.8	10.2	9.6	8.4	7.3
(percent saturation)	97	92	88	102	101	94
Biochemical oxygen demand (BOD)	1.2	1.0	1.1	2.0	.9	1.1

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-0982.9. BRAZOS RIVER AT HIGHBANK, TEX. (31°08'02", 96°49'29")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 6, 1969	Dec. 8, 1969	Feb. 10, 1970	Apr. 6, 1970	June 8, 1970	Aug. 3, 1970
Time (24 hour)	1045	1025	1030	1120	1130	1015
Discharge (cfs)	225	5870	1480	3060	2250	2460
Silica (SiO_2)	--	--	--	2.0	4.9	5.7
Calcium (Ca)	--	--	--	84	71	69
Magnesium (Mg)	--	--	--	15	11	13
Sodium plus potassium (Na+K)	--	--	--	157	85	106
Bicarbonate (HCO_3)	--	--	--	154	174	158
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	141	84	97
Chloride (Cl)	--	--	--	240	124	160
Fluoride (F)	--	--	--	.2	.3	.3
Dissolved solids	--	--	--	717	467	529
Hardness as $CaCO_3$	--	--	--	271	222	226
Non-carbonate hardness	--	--	--	145	80	96
Sodium adsorption ratio (SAR)	--	--	--	4.1	2.5	3.1
Specific conductance (micromhos at 25°C)	1550	341	1460	1240	827	951
pH:						
(field)	--	7.5	7.4	7.8	8.2	7.2
(laboratory)	--	--	--	7.5	7.8	7.5
Temperature (°C)	25.0	9.5	10.5	16.0	26.0	31.0
Ammonia nitrogen (N)	--	.00	.00	.00	.00	.00
Nitrate nitrogen (N)	.0	1.4	.4	.4	.2	.0
Nitrite nitrogen (N)	--	.00	.01	.00	.00	.00
Total phosphorus (P)	.11	.61	.61	.09	.08	.22
Detergents (MBAS)	--	--	--	--	--	.02
Dissolved oxygen (DO):						
(milligrams per liter)	9.2	9.2	10.5	9.7	8.4	6.6
(percent saturation)	110	81	94	97	102	88
Biochemical oxygen demand (BOD)	3.8	3.6	1.3	.9	1.3	1.9

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1039. SOUTH FORK ROCKY CREEK NEAR BRIGGS, TEX. (30°54'41", 98°02'12")
(HYDROLOGIC BENCH-MARK STATION)

(Results in milligrams per liter except as indicated)

Date of collection	Dec. 19, 1969	Jan. 26, 1970	Feb. 27, 1970	Mar. 31, 1970	Apr. 29, 1970	May 26, 1970
Time (24 hour)	1020	0930	0845	0915	0930	0945
Discharge (cfs)	7.5	5.3	41	29	7.9	7.9
Silica (SiO_2)	--	--	--	6.5	6.5	7.9
Calcium (Ca)	--	--	--	66	61	58
Magnesium (Mg)	--	--	--	23	24	23
Sodium plus potassium (Na+K)	--	--	--	7.3	8.6	8.2
Potassium (K)				.9	1.4	1.5
Bicarbonate (HCO_3)	--	--	--	288	284	268
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	22	22	17
Chloride (Cl)	--	--	--	12	11	11
Fluoride (F)	--	--	--	.4	.3	.4
Dissolved solids	--	--	--	283	278	260
Hardness as $CaCO_3$	--	--	--	259	252	239
Non-carbonate hardness	--	--	--	23	20	20
Sodium adsorption ratio (SAR)	--	--	--	.2	.2	.2
Specific conductance (micromhos at 25°C)	485	501	496	497	498	472
pH:						
(field)	7.9	7.9	8.1	8.0	7.8	7.8
(laboratory)	--	--	--	7.9	7.8	7.7
Temperature (°C)	14.0	10.0	12.0	16.5	22.5	23.0
Ammonia nitrogen (N)	.07	.00	.04	.03	.00	.00
Nitrate nitrogen (N)	.4	.3	.4	.6	.4	.2
Nitrite nitrogen (N)	.00	.00	.00	.00	.00	.00
Total phosphorus (P)	.01	.00	.18	.02	.00	.00
Detergents (MBAS)	--	--	--	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	9.0	9.7	9.7	9.9	8.0	7.8
(percent saturation)	87	86	90	101	91	90
Biochemical oxygen demand (BOD)	.0	.5	.9	.7	.5	.3

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1039. SOUTH FORK ROCKY CREEK NEAR BRIGGS, TEX.--Continued
(HYDROLOGIC BENCH-MARK STATION)

(Results in milligrams per liter except as indicated)

Date of collection	June 24, 1970					
Time (24 hour)	0930					
Discharge (cfs)	8.1					
Silica (SiO_2)	10					
Calcium (Ca)	62					
Magnesium (Mg)	25					
Sodium (Na)	7.2					
Potassium (K)	1.2					
Bicarbonate (HCO_3)	294					
Carbonate (CO_3)	0					
Sulfate (SO_4)	19					
Chloride (Cl)	10					
Fluoride (F)	0.5					
Dissolved solids	282					
Hardness as $CaCO_3$	258					
Non-carbonate hardness	16					
Sodium adsorption ratio (SAR)	0.2					
Specific conductance (micromhos at 25°C)	490					
pH:						
(field)	7.7					
(laboratory)	8.0					
Temperature (°C)	24.0					
Ammonia nitrogen (N)	.00					
Nitrate nitrogen (N)	.3					
Nitrite nitrogen (N)	.00					
Total phosphorus (P)	.14					
Detergents (MBAS)	--					
Dissolved oxygen (DO):						
(milligrams per liter)	8.0					
(percent saturation)	94					
Biochemical oxygen demand (BOD)	.6					

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1065. LITTLE RIVER AT CAMERON, TEX. (30°49'53", 96°57'01")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 6, 1969	Dec. 8, 1969	Feb. 10, 1970	Apr. 6, 1970	June 8, 1970	Aug. 3, 1970
Time (24 hour)	0945	0850	0930	1000	1030	0915
Discharge (cfs)	129	4600	1540	4550	4500	176
Silica (SiO_2)	--	--	--	5.0	8.0	9.8
Calcium (Ca)	--	--	--	59	64	58
Magnesium (Mg)	--	--	--	13	15	17
Sodium plus potassium (Na+K)	--	--	--	28	29	45
Bicarbonate (HCO_3)	--	--	--	202	228	232
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	32	31	48
Chloride (Cl)	--	--	--	41	43	47
Fluoride (F)	--	--	--	.2	.3	.3
Dissolved solids	--	--	--	281	306	346
Hardness as $CaCO_3$	--	--	--	200	221	214
Non-carbonate hardness	--	--	--	35	34	24
Sodium adsorption ratio (SAR)	--	--	--	.9	.8	1.3
Specific conductance (micromhos at 25°C)	580	369	522	509	550	597
pH:						
(field)	--	7.7	7.3	8.0	7.7	7.4
(laboratory)	--	--	--	7.6	7.5	7.7
Temperature (°C)	25.0	9.0	12.0	14.0	21.5	30.0
Ammonia nitrogen (N)	--	.00	.00	.00	.00	.00
Nitrate nitrogen (N)	.8	3.6	.2	.9	.8	1.6
Nitrite nitrogen (N)	--	.00	.03	.00	.00	.01
Total phosphorus (P)	.19	1.1	.49	.17	.08	.22
Detergents (MBAS)	--	--	--	--	--	.03
Dissolved oxygen (DO):						
(milligrams per liter)	7.9	9.5	10.6	9.4	7.8	6.4
(percent saturation)	94	82	98	90	88	84
Biochemical oxygen demand (BOD)	2.9	4.0	1.3	.0	.7	.6

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1140. BRAZOS RIVER AT RICHMOND, TEX. (29°34'56", 95°45'27")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 9, 1969	Nov. 3, 1969	Dec. 18, 1969	Feb. 19, 1970	Apr. 29, 1970	June 23, 1970
Time (24 hour)	1400	1300	0800	1230	1640	1415
Discharge (cfs)	940	5760	4790	4500	11000	3980
Silica (SiO_2)	--	--	--	--	9.0	7.0
Calcium (Ca)	--	--	--	--	53	51
Magnesium (Mg)	--	--	--	--	10	20
Sodium plus potassium (Na+K)	--	--	--	--	38	61
Bicarbonate (HCO_3)	--	--	--	--	152	172
Carbonate (CO_3)	--	--	--	--	0	0
Sulfate (SO_4)	--	--	--	--	44	62
Chloride (Cl)	--	--	--	--	59	96
Fluoride (F)	--	--	--	--	.2	.0
Dissolved solids	--	--	--	--	290	383
Hardness as $CaCO_3$	--	--	--	--	173	210
Non-carbonate hardness	--	--	--	--	48	69
Sodium adsorption ratio (SAR)	--	--	--	--	1.3	1.8
Specific conductance (micromhos at 25°C)	1260	720	353	760	515	684
pH:						
(field)	8.0	7.4	7.3	7.7	7.7	7.5
(laboratory)	--	--	--	--	7.5	8.0
Temperature (°C)	26.0	17.0	15.0	15.0	27.0	29.5
Ammonia nitrogen (N)	--	--	.00	.19	.09	.00
Nitrate nitrogen (N)	.0	.4	.8	.6	.4	.2
Nitrite nitrogen (N)	--	--	.00	.14	.01	.04
Total phosphorus (P)	.11	.31	.35	.20	.03	.11
Detergents (MBAS)	--	--	--	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	9.4	7.4	9.8	9.6	7.7	7.8
(percent saturation)	115	76	96	94	95	101
Biochemical oxygen demand (BOD)	2.8	3.1	.1	1.8	1.6	2.0

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1140. BRAZOS RIVER AT RICHMOND, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	Aug. 18, 1970					
Time (24 hour)	1130					
Discharge (cfs)	1180					
Silica (SiO_2)	6.6					
Calcium (Ca)	62					
Magnesium (Mg)	18					
Sodium plus potassium (Na+K)	97					
Bicarbonate (HCO_3)	163					
Carbonate (CO_3)	0					
Sulfate (SO_4)	92					
Chloride (Cl)	148					
Fluoride (F)	.2					
Dissolved solids	504					
Hardness as $CaCO_3$	228					
Non-carbonate hardness	94					
Sodium adsorption ratio (SAR)	2.8					
Specific conductance (micromhos at 25°C)	921					
pH:						
(field)	6.8					
(laboratory)	7.7					
Temperature (°C)	30.5					
Ammonia nitrogen (N)	.08					
Nitrate nitrogen (N)	.0					
Nitrite nitrogen (N)	.00					
Total phosphorus (P)	.07					
Detergents (MBAS)	.00					
Dissolved oxygen (DO):						
(milligrams per liter)	6.8					
(percent saturation)	89					
Biochemical oxygen demand (BOD)	2.9					

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1166.5. BRAZOS RIVER NEAR ROSHARON, TEX. (29°20'58", 95°34'56")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 9, 1969	Dec. 16, 1969	Feb. 13, 1970	Apr. 9, 1970	June 11, 1970	Aug. 5, 1970
Time (24 hour)	0920	1015	1030	1315	1200	1200
Discharge (cfs)	952	5510	7030	10400	7240	1320
Silica (SiO_2)	--	--	--	6.0	8.1	11
Calcium (Ca)	--	--	--	72	59	54
Magnesium (Mg)	--	--	--	13	10	14
Sodium plus potassium (Na+K)	--	--	--	86	34	73
Bicarbonate (HCO_3)	--	--	--	168	181	171
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	85	42	62
Chloride (Cl)	--	--	--	136	47	103
Fluoride (F)	--	--	--	.2	.3	.2
Dissolved solids	--	--	--	484	292	402
Hardness as $CaCO_3$	--	--	--	233	188	192
Non-carbonate hardness	--	--	--	96	40	52
Sodium adsorption ratio (SAR)	--	--	--	2.5	1.1	2.3
Specific conductance (micromhos at 25°C)	1410	419	375	855	506	716
pH:						
(field)	7.9	7.3	7.2	7.4	7.8	7.7
(laboratory)	--	--	--	7.5	7.5	7.4
Temperature (°C)	25.0	11.0	14.0	18.0	16.0	30.0
Ammonia nitrogen (N)	--	.00	.08	.00	.00	.00
Nitrate nitrogen (N)	.0	2.9	.4	.6	.7	.1
Nitrite nitrogen (N)	--	.00	.01	.00	.00	.00
Total phosphorus (P)	.09	2.1	.69	.32	.20	.15
Detergents (MBAS)	--	--	--	--	--	.06
Dissolved oxygen (DO):						
(milligrams per liter)	7.8	8.1	10.0	8.5	7.2	7.3
(percent saturation)	93	73	96	89	72	96
Biochemical oxygen demand (BOD)	2.7	3.8	2.6	.9	.9	3.4

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1179. BIG BOGGY CREEK NEAR WADSWORTH, TEX. (28°48'26", 95°57'02")

(Results in milligrams per liter except as indicated)

Date of collection	June 2, 1970	July 20, 1970	Aug. 4, 1970	Aug. 24, 1970	Sept. 29, 1970
Time (24 hour)	0930	1400	1200	1345	0845
Discharge (cfs)	441	3.3	13	3.2	9.8
Silica (SiO_2)	7.3	15	11	39	27
Calcium (Ca)	7.5	44	17	56	25
Magnesium (Mg)	1.8	14	7.0	21	6.8
Sodium (Na)	3.2	32	15	60	18
Potassium (K)	2.5	2.2	--	15	3.9
Bicarbonate (HCO_3)	31	162	60	234	94
Carbonate (CO_3)	0	0	0	0	0
Sulfate (SO_4)	.4	27	22	28	5.4
Chloride (Cl)	3.0	57	23	110	29
Fluoride (F)	.0	.3	.0	.4	.2
Bromide (Br)	--	.14	--	--	--
Iodide (I)	--	.03	--	--	--
Dissolved solids	41	272	126	445	161
Suspended solids	--	71	--	160	55
Hardness as $CaCO_3$	26	167	71	226	90
Noncarbonate hardness	1	35	22	34	13
Sodium adsorption ratio (SAR)	.3	1.1	.8	1.7	.8
Specific conductance (micromhos at 25°C)	70	495	231	759	262
pH: (field)	7.0	7.5	6.2	7.6	6.9
(laboratory)	6.4	7.4	6.8	7.5	6.6
Temperature (°C)	21.5	33.0	29.5	33.0	21.0
Ammonia nitrogen (N)	.00	.00	.16	.00	.00
Nitrate nitrogen (N)	.1	.0	.1	.1	.0
Nitrite nitrogen (N)	.00	.00	.04	.00	.00
Organic nitrogen (N)	.42	.51	1.4	1.4	.82
Total phosphorus (P)	.09	.11	.15	.12	.10
Detergents (MBAS)	--	--	--	--	--
Dissolved oxygen (DO):					
(milligrams per liter)	4.1	12.0	8.9	7.5	6.1
(percent saturation)	46	164	116	103	68
Biochemical oxygen demand (BOD)	2.6	1.6	4.1	3.5	1.2
Chemical oxygen demand (COD)	28	21	35	37	35
Turbidity	8.0	19	19	46	25

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1361.5. CONCHO RIVER NEAR VERIBEST, TEX. (31°32'07", 100°13'05")

(Results in milligrams per liter except as indicated)

Date of collection	Nov. 24, 1969	Jan. 19, 1970	Mar. 15, 1970	June 3, 1970	Aug. 10, 1970	Sept. 14, 1970
Time (24 hour)	1400	1640	1210	1415	1515	1415
Discharge (cfs)	--	--	--	--	--	--
Silica (SiO_2)	--	--	--	15	36	41
Calcium (Ca)	--	--	--	106	112	103
Magnesium (Mg)	--	--	--	49	114	116
Sodium plus potassium (Na+K)	--	--	--	214	329	313
Bicarbonate (HCO_3)	--	--	--	226	172	192
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	180	348	312
Chloride (Cl)	--	--	--	392	680	660
Fluoride (F)	--	--	--	.5	.6	.5
Dissolved solids	--	--	--	1070	1710	1640
Hardness as $CaCO_3$	--	--	--	466	748	734
Non-carbonate hardness	--	--	--	281	608	576
Sodium adsorption ratio (SAR)	--	--	--	4.3	5.2	5.0
Specific conductance (micromhos at 25°C)	2270	2450	2330	1890	2920	2810
pH:						
(field)	8.1	8.2	8.3	8.4	8.5	8.2
(laboratory)	--	--	--	7.5	6.8	7.8
Temperature (°C)	13.0	8.0	14.0	23.5	32.0	28.5
Ammonia nitrogen (N)	--	.13	.00	.05	.47	.20
Nitrate nitrogen (N)	6.1	8.6	3.6	1.4	.2	.1
Nitrite nitrogen (N)	--	.02	.10	.09	.02	.00
Total phosphorus (P)	.06	.12	.22	.13	.70	.12
Detergents (MBAS)	--	--	--	--	.08	--
Dissolved oxygen (DO):						
(milligrams per liter)	10.0	11.7	15.6	11.0	13.6	7.4
(percent saturation)	94	98	150	128	184	95
Biochemical oxygen demand (BOD)	2.4	3.6	8.2	10	30	12

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1365. CONCHO RIVER NEAR PAINT ROCK, TEX. (31°30'57", 99°55'08")

(Results in milligrams per liter except as indicated)

Date of collection	Nov. 24, 1969	Jan. 19, 1970	Mar. 15, 1970	June 3, 1970	Aug. 10, 1970	Sept. 14, 1970
Time (24 hour)	1200	1520	1030	1530	1315	1245
Discharge (cfs)	33	41	52	33	2.4	9.2
Silica (SiO_2)	--	--	--	17	28	26
Calcium (Ca)	--	--	--	142	166	184
Magnesium (Mg)	--	--	--	67	108	110
Sodium plus potassium (Na+K)	--	--	--	183	248	242
Bicarbonate (HCO_3)	--	--	--	209	118	132
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	257	434	476
Chloride (Cl)	--	--	--	405	600	590
Fluoride (F)	--	--	--	.6	.5	.5
Dissolved solids	--	--	--	1200	1640	1700
Hardness as $CaCO_3$	--	--	--	630	858	912
Non-carbonate hardness	--	--	--	458	762	804
Sodium adsorption ratio (SAR)	--	--	--	3.2	3.7	3.5
Specific conductance (micromhos at 25°C)	2140	2190	2350	2020	2720	2720
pH:						
(field)	8.1	7.7	8.3	8.2	8.3	8.2
(laboratory)	--	--	--	7.6	7.0	7.1
Temperature (°C)	12.0	9.5	16.0	23.5	32.0	29.0
Ammonia nitrogen (N)	--	.04	.00	.07	.00	.10
Nitrate nitrogen (N)	7.4	7.7	11	4.6	.0	.3
Nitrite nitrogen (N)	--	.06	.06	.16	.00	.02
Total phosphorus (P)	.07	.02	.10	.10	.12	.11
Detergents (MBAS)	--	--	--	--	.04	--
Dissolved oxygen (DO):						
(milligrams per liter)	8.8	9.4	11.8	8.8	14.6	6.8
(percent saturation)	81	82	118	102	197	87
Biochemical oxygen demand (BOD)	2.7	1.7	4.0	5.4	4.3	4.5

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1470. COLORADO RIVER NEAR SAN SABA, TEX. (31°13'04", 98°33'51")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 30, 1969	Dec. 19, 1969	Feb. 27, 1970	Apr. 29, 1970	June 24, 1970	Sept. 14, 1970
Time (24 hour)	1000	1130	1200	1200	1100	0900
Discharge (cfs)	3520	661	1600	682	850	92
Silica (SiO_2)	--	--	--	8.1	9.5	15
Calcium (Ca)	--	--	--	84	52	47
Magnesium (Mg)	--	--	--	33	19	33
Sodium plus potassium (Na+K)	--	--	--	66	43	41
Bicarbonate (HCO_3)	--	--	--	274	189	288
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	86	43	47
Chloride (Cl)	--	--	--	128	70	39
Fluoride (F)	--	--	--	.3	.3	.1
Dissolved solids	--	--	--	549	332	367
Hardness as $CaCO_3$	--	--	--	345	208	253
Non-carbonate hardness	--	--	--	120	52	17
Sodium adsorption ratio (SAR)	--	--	--	1.5	1.3	1.1
Specific conductance (micromhos at 25°C)	521	1110	910	966	596	583
pH:						
(field)	7.6	7.8	7.1	7.8	7.6	8.0
(laboratory)	--	--	--	7.9	7.7	7.8
Temperature (°C)	14.0	13.5	13.5	24.5	26.5	27.0
Ammonia nitrogen (N)	--	.09	.07	.00	.00	.00
Nitrate nitrogen (N)	.7	1.9	1.7	1.1	.6	.6
Nitrite nitrogen (N)	--	.01	.01	.01	.00	.00
Total phosphorus (P)	.77	.08	.29	.08	.76	.06
Detergents (MBAS)	--	--	--	--	--	.04
Dissolved oxygen (DO):						
(milligrams per liter)	8.6	8.6	9.7	7.8	5.7	6.0
(percent saturation)	83	82	92	93	70	74
Biochemical oxygen demand (BOD)	3.0	1.0	2.0	1.8	1.6	1.2

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1586.5. COLORADO RIVER AT FARM ROAD 973, BELOW AUSTIN, TEX. (30°12'28", 97°38'15")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 21, 1969	Dec. 9, 1969	Feb. 12, 1970	Apr. 13, 1970	June 10, 1970	Aug. 6, 1970
Time (24 hour)	0830	0900	1530	0830	0800	1330
Discharge (cfs) b	3200	2900	800	4800	5200	1000
Silica (SiO_2)	--	--	--	7.5	7.4	9.1
Calcium (Ca)	--	--	--	46	48	53
Magnesium (Mg)	--	--	--	17	18	17
Sodium plus potassium (Na+K)	--	--	--	30	34	34
Bicarbonate (HCO_3)	--	--	--	178	190	200
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	30	32	33
Chloride (Cl)	--	--	--	52	55	52
Fluoride (F)	--	--	--	.2	.2	.3
Dissolved solids	--	--	--	272	290	299
Hardness as $CaCO_3$	--	--	--	185	194	202
Non-carbonate hardness	--	--	--	39	38	38
Sodium adsorption ratio (SAR)	--	--	--	1.0	1.1	1.0
Specific conductance (micromhos at 25°C)	490	491	513	502	524	541
pH:						
(field)	7.6	7.4	7.8	7.7	7.8	7.8
(laboratory)	--	--	--	7.4	7.5	7.3
Temperature (°C)	22.0	15.0	15.0	16.0	19.0	30.5
Ammonia nitrogen (N)	--	.00	.27	.00	.00	.00
Nitrate nitrogen (N)	.4	.4	.6	.3	.5	.6
Nitrite nitrogen (N)	--	.00	.01	.00	.00	.03
Total phosphorus (P)	.22	.07	.36	.09	.11	.16
Detergents (MBAS)	--	--	--	--	--	.08
Dissolved oxygen (DO):						
(milligrams per liter)	7.6	9.4	8.0	9.8	8.9	7.5
(percent saturation)	86	92	78	98	95	99
Biochemical oxygen demand (BOD)	1.6	.7	1.6	.5	.6	.8

b Estimated from records at gaging station 8-1580.

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1592. COLORADO RIVER AT BASTROP, TEX. (30°06'20", 97°19'08")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 21, 1969	Dec. 9, 1969	Feb. 10, 1970	Apr. 13, 1970	June 10, 1970	Aug. 6, 1970
Time (24 hour)	0915	0945	0730	0930	0845	1430
Discharge (cfs)	3480	1780	3400	5520	5940	2530
Silica (SiO_2)	--	--	--	6.8	7.3	8.8
Calcium (Ca)	--	--	--	46	50	52
Magnesium (Mg)	--	--	--	17	18	18
Sodium plus potassium (Na+K)	--	--	--	32	33	34
Bicarbonate (HCO_3)	--	--	--	178	193	202
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	32	33	34
Chloride (Cl)	--	--	--	52	53	52
Fluoride (F)	--	--	--	.2	.2	.3
Dissolved solids	--	--	--	276	292	301
Hardness as $CaCO_3$	--	--	--	185	199	204
Non-carbonate hardness	--	--	--	39	41	38
Sodium adsorption ratio (SAR)	--	--	--	1.0	1.0	1.0
Specific conductance (micromhos at 25°C)	489	456	488	518	524	540
pH:						
(field)	7.8	7.4	7.4	7.6	8.8	8.1
(laboratory)	--	--	--	7.4	7.7	7.7
Temperature (°C)	22.5	13.0	11.0	18.0	21.0	30.0
Ammonia nitrogen (N)	--	.00	.00	.00	.00	.00
Nitrate nitrogen (N)	.7	1.0	.8	.4	.5	.6
Nitrite nitrogen (N)	--	.02	.01	.00	.00	.00
Total phosphorus (P)	.24	.21	.68	.13	.09	.14
Detergents (MBAS)	--	--	--	--	--	.06
Dissolved oxygen (DO):						
(milligrams per liter)	7.2	8.6	8.4	9.0	8.4	7.2
(percent saturation)	82	81	76	95	93	95
Biochemical oxygen demand (BOD)	.9	1.5	.8	.4	.7	1.0

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1610. COLORADO RIVER AT COLUMBUS, TEX. (29°42'20", 96°32'05")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 10, 1969	Dec. 18, 1969	Feb. 19, 1970	Apr. 29, 1970	June 23, 1970	Aug. 26, 1970
Time (24 hour)	1010	1145	0900	1100	1100	1045
Discharge (cfs)	900	1640	1270	4720	2830	1960
Silica (SiO_2)	--	--	--	8.4	9.3	7.8
Calcium (Ca)	--	--	--	50	59	46
Magnesium (Mg)	--	--	--	17	21	19
Sodium plus potassium (Na+K)	--	--	--	30	36	34
Bicarbonate (HCO_3)	--	--	--	180	224	188
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	33	46	34
Chloride (Cl)	--	--	--	54	56	54
Fluoride (F)	--	--	--	.2	.2	.2
Dissolved solids	--	--	--	283	339	287
Hardness as $CaCO_3$	--	--	--	195	232	195
Non-carbonate hardness	--	--	--	48	48	41
Sodium adsorption ratio (SAR)	--	--	--	.9	1.0	1.1
Specific conductance (micromhos at 25°C)	554	521	562	507	563	521
pH:						
(field)	8.1	7.6	7.7	8.0	7.8	--
(laboratory)	--	--	--	7.6	8.0	7.5
Temperature (°C)	24.5	17.0	15.0	23.5	28.5	28.0
Ammonia nitrogen (N)	--	.00	.00	.05	.00	.08
Nitrate nitrogen (N)	.0	.4	.4	.4	.4	.0
Nitrite nitrogen (N)	--	.00	.03	.00	.01	.09
Total phosphorus (P)	.23	.22	.14	.03	.09	.10
Detergents (MBAS)	--	--	--	--	--	.00
Dissolved oxygen (DO):						
(milligrams per liter)	7.9	10.0	9.8	8.9	8.0	8.8
(percent saturation)	94	103	96	103	103	111
Biochemical oxygen demand (BOD)	2.7	.5	1.2	1.5	2.5	4.6

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1620. COLORADO RIVER AT WHARTON, TEX. (29°18'32", 96°06'13")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 9, 1969	Nov. 3, 1969	Dec. 18, 1969	Feb. 19, 1970	Apr. 29, 1970	June 23, 1970
Time (24 hour)	1200	1015	1000	1045	1335	1250
Discharge (cfs)	395	4180	4710	2010	4610	2240
Silica (SiO_2)	--	--	--	--	8.6	6.2
Calcium (Ca)	--	--	--	--	55	22
Magnesium (Mg)	--	--	--	--	18	34
Sodium plus potassium (Na+K)	--	--	--	--	21	23
Bicarbonate (HCO_3)	--	--	--	--	179	170
Carbonate (CO_3)	--	--	--	--	0	0
Sulfate (SO_4)	--	--	--	--	32	32
Chloride (Cl)	--	--	--	--	54	51
Fluoride (F)	--	--	--	--	.2	.2
Dissolved solids	--	--	--	--	278	253
Hardness as $CaCO_3$	--	--	--	--	212	196
Non-carbonate hardness	--	--	--	--	66	57
Sodium adsorption ratio (SAR)	--	--	--	--	.6	.7
Specific conductance (micromhos at 25°C)	581	459	498	534	505	516
pH:						
(field)	7.9	7.8	7.5	7.9	7.9	7.4
(laboratory)	--	--	--	--	7.6	7.7
Temperature (°C)	26.5	16.5	17.0	15.0	25.5	29.0
Ammonia nitrogen (N)	--	--	--	.11	.06	.02
Nitrate nitrogen (N)	.0	.7	.4	.2	.3	.2
Nitrite nitrogen (N)	--	--	.01	.06	.00	.03
Total phosphorus (P)	.14	.30	.23	.17	.16	.11
Detergents (MBAS)	--	--	--	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	9.8	7.4	10.0	9.6	8.9	8.4
(percent saturation)	120	76	103	94	107	108
Biochemical oxygen demand (BOD)	3.6	1.8	.6	1.5	1.4	3.1

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1620. COLORADO RIVER AT WHARTON, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	Aug. 18, 1970					
Time (24 hour)	1000					
Discharge (cfs)	935					
Silica (SiO_2)	8.0					
Calcium (Ca)	42					
Magnesium (Mg)	20					
Sodium plus potassium (Na+K)	32					
Bicarbonate (HCO_3)	178					
Carbonate (CO_3)	0					
Sulfate (SO_4)	33					
Chloride (Cl)	54					
Fluoride (F)	.2					
Dissolved solids	277					
Hardness as $CaCO_3$	189					
Non-carbonate hardness	43					
Sodium adsorption ratio (SAR)	1.0					
Specific conductance (micromhos at 25°C)	520					
pH:						
(field)	6.9					
(laboratory)	7.4					
Temperature (°C)	29.5					
Ammonia nitrogen (N)	.07					
Nitrate nitrogen (N)	.0					
Nitrite nitrogen (N)	.02					
Total phosphorus (P)	.06					
Detergents (MBAS)	.00					
Dissolved oxygen (DO):						
(milligrams per liter)	6.0					
(percent saturation)	78					
Biochemical oxygen demand (BOD)	3.0					

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1626. TRES PALACIOS CREEK NEAR MIDFIELD, TEX. (28°55'40", 96°10'15")

(Results in milligrams per liter except as indicated)

Date of collection	June 2, 1970	July 21, 1970	Aug. 4, 1970	Aug. 24, 1970	Sept. 29, 1970
Time (24 hour)	1200	0900	1630	1650	1630
Discharge (cfs)	3040	80	181	59	37
Silica (SiO_2)	11	19	13	31	33
Calcium (Ca)	12	52	29	58	57
Magnesium (Mg)	2.8	16	12	18	18
Sodium (Na)	5.7	50	33	60	64
Potassium (K)	3.3	2.7	--	9.4	7.0
Bicarbonate (HCO_3)	54	214	134	249	246
Carbonate (CO_3)	0	0	0	0	0
Sulfate (SO_4)	2.4	18	16	30	20
Chloride (Cl)	3.9	79	47	94	98
Fluoride (F)	.1	.3	.2	.3	.3
Bromide (Br)	--	.30	--	--	--
Iodide (I)	--	.05	--	--	--
Dissolved solids	73	343	216	423	419
Suspended solids	--	91	--	94	64
Hardness as $CaCO_3$	41	196	121	218	216
Noncarbonate hardness	0	20	11	14	14
Sodium adsorption ratio (SAR)	.4	1.6	1.3	1.8	1.9
Specific conductance (micromhos at 25°C)	111	618	415	730	698
pH: (field)	6.7	7.5	6.5	7.7	7.6
(laboratory)	6.7	7.4	7.4	7.5	7.8
Temperature (°C)	23.5	28.0	29.0	30.0	24.0
Ammonia nitrogen (N)	.19	.00	.14	.00	.00
Nitrate nitrogen (N)	1.0	.0	.0	.0	.1
Nitrite nitrogen (N)	.00	.00	.03	.00	.00
Organic nitrogen (N)	.59	.46	.79	.62	.44
Total phosphorus (P)	.17	.15	.20	.19	.17
Detergents (MBAS)	--	--	--	--	--
Dissolved oxygen (DO):					
(milligrams per liter)	4.8	6.4	9.3	6.6	7.8
(percent saturation)	56	81	119	87	92
Biochemical oxygen demand (BOD)	2.6	.8	3.7	3.0	1.1
Chemical oxygen demand (COD)	28	16	37	23	18
Turbidity	40	18	18	26	15

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1626.5. CASHS CREEK NEAR BLESSING, TEX. (28°48'38", 96°11'51")

(Results in milligrams per liter except as indicated)

Date of collection	June 1, 1970	July 20, 1970	Aug. 24, 1970	Sept. 29, 1970		
Time (24 hour)	1810	1630	1545	1510		
Discharge (cfs)	399	7.6	9.4	5.0		
Silica (SiO_2)	13	27	40	27		
Calcium (Ca)	12	46	57	48		
Magnesium (Mg)	3.4	15	18	16		
Sodium (Na)	8.1	50	62	54		
Potassium (K)	2.9	2.7	11	4.7		
Bicarbonate (HCO_3)	61	215	252	218		
Carbonate (CO_3)	0	0	0	0		
Sulfate (SO_4)	.4	8.4	23	8.6		
Chloride (Cl)	4.4	72	100	83		
Fluoride (F)	.1	.4	.3	.3		
Bromide (Br)	--	.26	--	--		
Iodide (I)	--	.05	--	--		
Dissolved solids	76	328	435	349		
Suspended solids	--	67	36	60		
Hardness as $CaCO_3$	44	176	216	186		
Noncarbonate hardness	0	0	10	8		
Sodium adsorption ratio (SAR)	.5	1.6	1.8	1.7		
Specific conductance (micromhos at 25°C)	125	570	748	605		
pH: (field)	7.0	7.4	7.1	7.4		
(laboratory)	6.9	7.7	7.4	7.5		
Temperature (°C)	24.5	30.5	29.0	21.0		
Ammonia nitrogen (N)	.00	.00	.00	.00		
Nitrate nitrogen (N)	.3	.0	.0	.1		
Nitrite nitrogen (N)	.00	.00	.00	.00		
Organic nitrogen (N)	.69	.61	.90	.64		
Total phosphorus (P)	.10	.10	.18	.08		
Detergents (MBAS)	--	--	--	--		
Dissolved oxygen (DO):						
(milligrams per liter)	4.2	6.9	4.8	7.8		
(percent saturation)	50	91	62	87		
Biochemical oxygen demand (BOD)	2.9	1.1	6.0	1.7		
Chemical oxygen demand (COD)	32	25	29	22		
Turbidity	13	18	12	13		

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1627. EAST CARANCAHUA CREEK NEAR BLESSING, TEX. (28°51'48", 96°17'05")

(Results in milligrams per liter except as indicated)

Date of collection	June 1, 1970	July 21, 1970	Aug. 25, 1970	Sept. 29, 1970		
Time (24 hour)	1615	1100	0740	1920		
Discharge (cfs)	3780	27	19	10		
Silica (SiO_2)	10	26	30	37		
Calcium (Ca)	9.5	44	51	52		
Magnesium (Mg)	2.6	18	21	20		
Sodium (Na)	5.0	71	85	68		
Potassium (K)	2.2	2.7	4.6	5.6		
Bicarbonate (HCO_3)	44	226	260	246		
Carbonate (CO_3)	0	0	0	0		
Sulfate (SO_4)	.4	12	18	16		
Chloride (Cl)	3.6	103	128	106		
Fluoride (F)	.0	.4	.4	.4		
Bromide (Br)	--	.37	--	--		
Iodide (I)	--	.07	--	--		
Dissolved solids	57	389	466	426		
Suspended solids	--	52	56	46		
Hardness as $CaCO_3$	34	184	214	212		
Noncarbonate hardness	0	0	0	10		
Sodium adsorption ratio (SAR)	.4	2.3	2.5	2.0		
Specific conductance (micromhos at 25°C)	92	683	827	726		
pH: (field)	7.0	7.9	7.8	7.7		
(laboratory)	6.7	7.8	7.7	7.5		
Temperature (°C)	25.0	29.0	28.0	24.0		
Ammonia nitrogen (N)	.00	.00	.00	.00		
Nitrate nitrogen (N)	.3	.0	.0	.1		
Nitrite nitrogen (N)	.00	.00	.00	.00		
Organic nitrogen (N)	.54	.43	.53	.28		
Total phosphorus (P)	.09	.08	.05	.07		
Detergents (MBAS)	--	--	--	--		
Dissolved oxygen (DO):						
(milligrams per liter)	4.8	6.9	6.0	8.4		
(percent saturation)	57	88	76	99		
Biochemical oxygen demand (BOD)	2.2	1.0	1.6	1.4		
Chemical oxygen demand (COD)	25	18	12	22		
Turbidity	33	14	19	14		

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1628. WEST CARANCAHUA CREEK NEAR LaWARD, TEX. (28°53'19", 96°27'03")

(Results in milligrams per liter except as indicated)

Date of collection	June 1, 1970	July 21, 1970	Aug. 25, 1970	Sept. 28, 1970		
Time (24 hour)	1330	1330	0830	1715		
Discharge (cfs)	1420	6.2	20	7.9		
Silica (SiO_2)	13	28	42	22		
Calcium (Ca)	12	61	76	67		
Magnesium (Mg)	2.8	18	20	17		
Sodium (Na)	5.8	74	76	82		
Potassium (K)	3.8	4.1	13	9.6		
Bicarbonate (HCO_3)	48	220	290	302		
Carbonate (CO_3)	0	0	0	0		
Sulfate (SO_4)	3.2	32	18	11		
Chloride (Cl)	5.5	128	145	114		
Fluoride (F)	.1	.4	.4	.4		
Bromide (Br)	--	.40	--	--		
Iodide (I)	--	.04	--	--		
Dissolved solids	72	455	534	572		
Suspended solids	--	63	81	70		
Hardness as $CaCO_3$	41	226	272	237		
Noncarbonate hardness	2	46	34	0		
Sodium adsorption ratio (SAR)	.4	2.1	2.0	2.3		
Specific conductance (micromhos at 25°C)	111	797	927	830		
pH: (field)	6.7	8.1	7.7	8.1		
(laboratory)	6.4	7.6	7.5	7.8		
Temperature (°C)	25.0	30.5	27.5	24.5		
Ammonia nitrogen (N)	.07	.00	.00	.00		
Nitrate nitrogen (N)	.3	.0	.1	.1		
Nitrite nitrogen (N)	.00	.00	.00	.00		
Organic nitrogen (N)	.62	.42	.61	.36		
Total phosphorus (P)	.17	.10	.16	.18		
Detergents (MBAS)	--	--	--	--		
Dissolved oxygen (DO):						
(milligrams per liter)	4.2	7.1	5.5	8.5		
(percent saturation)	50	93	69	101		
Biochemical oxygen demand (BOD)	2.3	1.1	2.8	1.8		
Chemical oxygen demand (COD)	27	17	23	19		
Turbidity	42	26	19	13		

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1645. NAVIDAD RIVER NEAR GANADO, TEX. (29°01'32", 96°33'08")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 21, 1969	Dec. 9, 1969	Feb. 10, 1970	Apr. 13, 1970	June 2, 1970	June 10, 1970
Time (24 hour)	1200	1200	1100	1130	1800	1045
Discharge (cfs)	80	935	114	307	2140	110
Silica (SiO_2)	--	--	--	9.6	15	22
Calcium (Ca)	--	--	--	31	19	78
Magnesium (Mg)	--	--	--	3.0	3.1	5.2
Sodium plus potassium (Na+K)	--	--	--	24	8.5	43
Bicarbonate (HCO_3)	--	--	--	98	72	262
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	15	4.4	15
Chloride (Cl)	--	--	--	32	9.6	55
Fluoride (F)	--	--	--	.2	.1	.3
Dissolved solids	--	--	--	165	97	348
Hardness as $CaCO_3$	--	--	--	90	60	216
Non-carbonate hardness	--	--	--	9	1	2
Sodium adsorption ratio (SAR)	--	--	--	1.1	.5	1.3
Specific conductance (micromhos at 25°C)	673	190	442	302	169	592
pH:						
(field)	8.1	7.0	7.5	7.3	--	8.0
(laboratory)	--	--	--	7.0	6.7	7.8
Temperature (°C)	24.5	13.0	12.0	12.5	25.0	24.5
Ammonia nitrogen (N)	--	.04	.00	.13	.09	.00
Nitrate nitrogen (N)	.1	.6	.6	.4	.4	.1
Nitrite nitrogen (N)	--	.00	.01	.01	.00	.00
Total phosphorus (P)	.14	.17	.27	.18	.14	.11
Detergents (MBAS)	--	--	--	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	7.2	9.8	8.4	7.8	--	7.6
(percent saturation)	86	92	78	73	--	90
Biochemical oxygen demand (BOD)	1.9	3.5	1.7	2.6	2.7	2.8

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1645. NAVIDAD RIVER NEAR GANADO, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	Aug 5, 1970					
Time (24 hour)	1100					
Discharge (cfs)	136					
Silica (SiO_2)	18					
Calcium (Ca)	42					
Magnesium (Mg)	7.2					
Sodium plus potassium (Na+K)	52					
Bicarbonate (HCO_3)	178					
Carbonate (CO_3)	0					
Sulfate (SO_4)	13					
Chloride (Cl)	62					
Fluoride (F)	.3					
Dissolved solids	283					
Hardness as $CaCO_3$	134					
Non-carbonate hardness	0					
Sodium adsorption ratio (SAR)	2.0					
Specific conductance (micromhos at 25°C)	506					
pH:						
(field)	8.1					
(laboratory)	7.1					
Temperature (°C)	28.0					
Ammonia nitrogen (N)	.00					
Nitrate nitrogen (N)	.2					
Nitrite nitrogen (N)	.00					
Total phosphorus (P)	.10					
Detergents (MBAS)	.05					
Dissolved oxygen (DO):						
(milligrams per liter)	6.6					
(percent saturation)	84					
Biochemical oxygen demand (BOD)	1.4					

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1646. GARCITAS CREEK NEAR INEZ, TEX. (28°53'28", 96°49'08")

(Results in milligrams per liter except as indicated)

Date of collection	June 2, 1970	July 21, 1970	Aug. 25, 1970	Sept. 28, 1970		
Time (24 hour)	1700	1520	1000	1235		
Discharge (cfs)	117	0.26	0.26	4.9		
Silica (SiO_2)	20	26	29	22		
Calcium (Ca)	18	87	71	36		
Magnesium (Mg)	3.4	8.8	7.6	4.2		
Sodium (Na)	8.3	35	65	19		
Potassium (K)	2.5	2.2	2.2	2.5		
Bicarbonate (HCO_3)	67	252	254	114		
Carbonate (CO_3)	0	0	0	0		
Sulfate (SO_4)	.4	61	20	8.2		
Chloride (Cl)	8.0	47	89	24		
Fluoride (F)	.1	.3	.3	.2		
Bromide (Br)	--	.44	--	--		
Iodide (I)	--	.10	--	--		
Dissolved solids	96	393	410	172		
Suspended solids	--	7	5.0	128		
Hardness as $CaCO_3$	59	253	208	107		
Noncarbonate hardness	4	46	0	14		
Sodium adsorption ratio (SAR)	.5	1.0	2.0	.8		
Specific conductance (micromhos at 25°C)	148	639	700	276		
pH: (field)	7.7	7.5	7.3	7.2		
(laboratory)	6.8	7.4	7.6	7.1		
Temperature (°C)	27.0	30.0	26.0	24.0		
Ammonia nitrogen (N)	.08	.00	.00	.00		
Nitrate nitrogen (N)	.5	.0	.1	.1		
Nitrite nitrogen (N)	.00	.00	.00	.00		
Organic nitrogen (N)	.82	.43	.40	.40		
Total phosphorus (P)	.06	.02	.00	.07		
Detergents (MBAS)	--	--	--	--		
Dissolved oxygen (DO):						
(milligrams per liter)	7.2	8.0	5.8	7.7		
(percent saturation)	89	105	71	91		
Biochemical oxygen demand (BOD)	2.4	.3	.6	1.3		
Chemical oxygen demand (COD)	58	13	7.6	28		
Turbidity	17	1.0	1.4	44		

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1648. PLACEDO CREEK NEAR PLACEDO, TEX. (28°43'30", 96°46'07")

(Results in milligrams per liter except as indicated)

Date of collection	June 2, 1970	July 22, 1970	Aug. 25, 1970	Sept. 30, 1970		
Time (24 hour)	1545	0915	1305	1115		
Discharge (cfs)	91	109	0.62	3.8		
Silica (SiO_2)	20	12	15	28		
Calcium (Ca)	20	28	257	95		
Magnesium (Mg)	3.3	3.6	38	14		
Sodium (Na)	16	26	2680	146		
Potassium (K)	3.6	4.7	22	4.4		
Bicarbonate (HCO_3)	70	99	314	162		
Carbonate (CO_3)	0	0	0	0		
Sulfate (SO_4)	.4	13	26	15		
Chloride (Cl)	25	35	4600	332		
Fluoride (F)	.1	.2	.6	.2		
Bromide (Br)	--	.20	--	--		
Iodide (I)	--	.02	--	--		
Dissolved solids	123	174	7800	715		
Suspended solids	--	732	23	86		
Hardness as $CaCO_3$	63	85	798	294		
Noncarbonate hardness	6	4	540	162		
Sodium adsorption ratio (SAR)	.9	1.2	--	3.7		
Specific conductance (micromhos at 25°C)	213	305	13800	1410		
pH: (field)	7.7	7.5	7.5	7.1		
(laboratory)	6.8	7.0	7.4	7.1		
Temperature (°C)	24.0	25.0	27.0	22.0		
Ammonia nitrogen (N)	.00	.00	.50	.00		
Nitrate nitrogen (N)	.2	.4	.2	.1		
Nitrite nitrogen (N)	.00	.00	.51	.00		
Organic nitrogen (N)	.80	1.3	.48	.58		
Total phosphorus (P)	.18	.40	.07	.13		
Detergents (MBAS)	--	--	--	--		
Dissolved oxygen (DO):						
(milligrams per liter)	6.7	6.0	4.5	6.3		
(percent saturation)	79	71	58	72		
Biochemical oxygen demand (BOD)	2.5	4.3	2.5	1.1		
Chemical oxygen demand (COD)	43	29	20	31		
Turbidity	20	260	2.3	27		

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1648.5. CHOCOLATE BAYOU AT PORT LAVACA, TEX. (28°35'40", 96°41'48")

(Results in milligrams per liter except as indicated)

Date of collection	June 2, 1970	July 22, 1970	Aug. 25, 1970	Sept. 30, 1970		
Time (24 hour)	2000	1135	1530	1535		
Discharge (cfs)	130	42	7.0	12		
Silica (SiO_2)	22	17	24	27		
Calcium (Ca)	15	18	40	28		
Magnesium (Mg)	2.8	3.8	11	4.1		
Sodium (Na)	11	44	262	27		
Potassium (K)	4.3	3.6	3.4	5.3		
Bicarbonate (HCO_3)	63	88	296	110		
Carbonate (CO_3)	0	0	0	0		
Sulfate (SO_4)	.8	7.2	7.8	7.2		
Chloride (Cl)	9.2	55	340	34		
Fluoride (F)	.1	.3	.6	.2		
Bromide (Br)	--	.26	--	--		
Iodide (I)	--	.03	--	--		
Dissolved solids	99	197	835	188		
Suspended solids	--	732	34	156		
Hardness as $CaCO_3$	49	61	145	87		
Noncarbonate hardness	0	0	0	0		
Sodium adsorption ratio (SAR)	.7	2.5	9.5	1.3		
Specific conductance (micromhos at 25°C)	148	341	1540	304		
pH: (field)	7.6	7.3	7.7	7.0		
(laboratory)	6.7	6.9	7.7	7.0		
Temperature (°C)	24.0	29.5	27.0	22.0		
Ammonia nitrogen (N)	.16	.00	.00	.00		
Nitrate nitrogen (N)	.5	.8	.1	.2		
Nitrite nitrogen (N)	.00	.00	.00	.00		
Organic nitrogen (N)	.64	1.1	.67	.90		
Total phosphorus (P)	.21	.30	.13	.26		
Detergents (MBAS)	--	--	--	--		
Dissolved oxygen (DO):						
(milligrams per liter)	5.9	5.8	3.8	6.5		
(percent saturation)	69	75	47	74		
Biochemical oxygen demand (BOD)	2.6	2.4	1.8	1.4		
Chemical oxygen demand (COD)	41	44	19	27		
Turbidity	128	380	12	51		

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1695.8. GUADALUPE RIVER AT LAKE DUNLAP BELOW NEW BRAUNFELS, TEX. (29°40'00", 98°04'14")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 22, 1969	Dec. 11, 1969	Feb. 12, 1970	Apr. 15, 1970	June 11, 1970	Aug. 6, 1970
Time (24 hour)	1600	1030	1400	0830	1445	1215
Discharge (cfs)	--	--	--	--	--	--
Silica (SiO_2)	--	--	--	8.5	9.5	11
Calcium (Ca)	--	--	--	64	62	64
Magnesium (Mg)	--	--	--	16	16	15
Sodium plus potassium (Na+K)	--	--	--	12	13	11
Bicarbonate (HCO_3)	--	--	--	242	242	242
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	22	20	20
Chloride (Cl)	--	--	--	19	18	16
Fluoride (F)	--	--	--	.1	.2	.2
Dissolved solids	--	--	--	264	261	259
Hardness as $CaCO_3$	--	--	--	226	220	221
Non-carbonate hardness	--	--	--	27	22	23
Sodium adsorption ratio (SAR)	--	--	--	.3	.4	.3
Specific conductance (micromhos at 25°C)	449	484	470	473	466	465
pH:						
(field)	7.9	7.7	7.7	7.6	8.0	8.2
(laboratory)	--	--	--	7.6	7.7	7.3
Temperature (°C)	21.0	17.0	15.5	19.5	23.5	28.5
Ammonia nitrogen (N)	--	.00	.00	.00	.00	.00
Nitrate nitrogen (N)	.5	1.0	.9	.7	.8	.6
Nitrite nitrogen (N)	--	.01	.00	.00	.00	.00
Total phosphorus (P)	.04	.21	.12	.06	.15	.14
Detergents (MBAS)	--	--	--	--	--	.29
Dissolved oxygen (DO):						
(milligrams per liter)	9.8	7.9	13.0	10.0	13.8	10.6
(percent saturation)	109	81	129	108	160	136
Biochemical oxygen demand (BOD)	.5	.5	1.3	.4	1.2	7.5

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1765.2. GUADALUPE RIVER BELOW VICTORIA, TEX. (28°45'10", 97°00'30")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 21, 1969	Dec. 9, 1969	Feb. 10, 1970	Apr. 13, 1970	June 10, 1970	Aug 4, 1970
Time (24 hour)	1315	1330	1245	1320	1130	1430
Discharge (cfs) c	1550	3980	4100	2040	2780	1020
Silica (SiO_2)	--	--	--	9.1	12	12
Calcium (Ca)	--	--	--	68	71	67
Magnesium (Mg)	--	--	--	16	14	16
Sodium plus potassium (Na+K)	--	--	--	21	22	29
Bicarbonate (HCO_3)	--	--	--	248	252	252
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	28	26	29
Chloride (Cl)	--	--	--	32	31	40
Fluoride (F)	--	--	--	.2	.2	.2
Dissolved solids	--	--	--	301	305	322
Hardness as $CaCO_3$	--	--	--	236	234	233
Non-carbonate hardness	--	--	--	32	28	26
Sodium adsorption ratio (SAR)	--	--	--	.6	.6	.8
Specific conductance (micromhos at 25°C)	494	521	551	538	532	568
pH:						
(field)	8.1	7.9	7.8	7.9	7.9	8.1
(laboratory)	--	--	--	7.5	7.8	7.5
Temperature (°C)	24.0	14.0	14.0	22.0	25.5	29.5
Ammonia nitrogen (N)	--	.00	.00	.00	.00	.00
Nitrate nitrogen (N)	1.0	1.2	.29	1.1	1.1	1.0
Nitrite nitrogen (N)	--	.00	.00	.00	.00	.00
Total phosphorus (P)	.20	.30	.43	.12	.09	.10
Detergents (MBAS)	--	--	--	--	--	.02
Dissolved oxygen (DO):						
(milligrams per liter)	7.7	9.4	8.2	8.5	7.5	6.6
(percent saturation)	91	90	79	97	90	86
Biochemical oxygen demand (BOD)	.8	1.2	1.1	.7	1.1	.7

c Daily mean discharge for gaging station 8-1765.

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1776. OLMOS CREEK TRIBUTARY AT FARM ROAD 1535, SHAVANO PARK, TEX. (29°34'35", 98°32'45")

(Results in milligrams per liter except as indicated)

Date of collection	May 26, 1970					
Time (24 hour)	1900					
Discharge (cfs)	7.0					
Silica (SiO_2)	16					
Calcium (Ca)	26					
Magnesium (Mg)	1.6					
Sodium (Na)	2.4					
Potassium (K)	5.3					
Bicarbonate (HCO_3)	78					
Carbonate (CO_3)	0					
Sulfate (SO_4)	.4					
Chloride (Cl)	3.1					
Fluoride (F)	.0					
Bromide (Br)	--					
Iodide (I)	--					
Dissolved solids	94					
Suspended solids	--					
Hardness as $CaCO_3$	71					
Noncarbonate hardness	8					
Sodium adsorption ratio (SAR)	.1					
Specific conductance (micromhos at 25°C)	155					
pH: (field)	--					
(laboratory)	6.9					
Temperature (°C)	20.5					
Ammonia nitrogen (N)	.00					
Nitrate nitrogen (N)	.2					
Nitrite nitrogen (N)	.00					
Organic nitrogen (N)	.00					
Total phosphorus (P)	.27					
Detergents (MBAS)	.08					
Dissolved oxygen (DO):						
(milligrams per liter)	--					
(percent saturation)	--					
Biochemical oxygen demand (BOD)	4.1					
Chemical oxygen demand (COD)	--					
Turbidity	--					

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1777. OLMOS CREEK AT DRESDEN DRIVE, SAN ANTONIO, TEX. (29°29'56", 98°30'36")

(Results in milligrams per liter except as indicated)

Date of collection	Dec. 5, 1969	Feb. 24, 1970	Mar. 17, 1970	May 15, 1970	Sept. 25, 1970	Sept. 26, 1970
Time (24 hour)	1730	1115	0825	1445	1115	1220
Discharge (cfs)	5.7	12	14	6.8	36	22
Silica (SiO_2)	8.6	8.2	8.7	9.4	6.9	9.8
Calcium (Ca)	36	42	42	43	31	34
Magnesium (Mg)	1.8	2.1	1.8	1.9	1.5	1.6
Sodium (Na)	9.6	9.9	6.8	8.2	6.4	4.6
Potassium (K)	--	--	5.2	--	--	--
Bicarbonate (HCO_3)	107	118	104	118	92	100
Carbonate (CO_3)	0	0	0	0	0	0
Sulfate (SO_4)	16	21	26	20	14	12
Chloride (Cl)	7.9	9.2	9.8	9.2	4.8	4.6
Fluoride (F)	.2	.2	.2	.1	.0	.0
Bromide (Br)	--	--	--	--	--	--
Iodide (I)	--	--	--	--	--	--
Dissolved solids	136	155	157	153	110	116
Suspended solids	--	--	--	--	--	--
Hardness as $CaCO_3$	97	113	112	115	84	91
Noncarbonate hardness	10	17	27	18	8	10
Sodium adsorption ratio (SAR)	.4	.4	.3	.3	.3	.2
Specific conductance (micromhos at 25°C)	239	263	268	277	194	202
pH: (field)	--	--	--	--	--	--
(laboratory)	7.2	7.4	7.2	7.0	7.2	7.2
Temperature (°C)	14.5	13.5	12.0	21.5	24.5	21.0
Ammonia nitrogen (N)	.05	.14	.46	.00	.00	.00
Nitrate nitrogen (N)	.6	.9	1.0	.6	.2	.1
Nitrite nitrogen (N)	.03	.04	.04	.00	.00	.01
Organic nitrogen (N)	--	--	--	--	--	--
Total phosphorus (P)	.48	.57	1.7	.28	.35	.34
Detergents (MBAS)	.10	.01	.01	.03	.00	.00
Dissolved oxygen (DO):						
(milligrams per liter)	--	--	8.5	--	6.8	--
(percent saturation)	--	--	79	--	81	--
Biochemical oxygen demand (BOD)	5.5	2.5	5.6	3.8	5.5	3.2
Chemical oxygen demand (COD)	--	--	--	--	--	--
Turbidity	--	--	--	--	--	--

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1780. SAN ANTONIO RIVER AT SAN ANTONIO, TEX. (29°24'34", 98°29'41")

(Results in milligrams per liter except as indicated)

Date of collection	Feb. 24, 1970	Mar. 17, 1970	May 15, 1970	May 27, 1970	Sept. 25, 1970
Time (24 hour)	1515	1245	1055	1400	1210
Discharge (cfs)	186	46	72	120	240
Silica (SiO_2)	8.1	11	8.0	12	6.2
Calcium (Ca)	41	60	46	41	32
Magnesium (Mg)	4.6	13	9.2	4.1	5.0
Sodium (Na)	12	12	11	7.0	8.1
Potassium (K)	--	2.4	--	5.6	--
Bicarbonate (HCO_3)	118	212	156	120	106
Carbonate (CO_3)	0	0	0	0	0
Sulfate (SO_4)	27	24	24	25	16
Chloride (Cl)	12	17	14	7.5	9.2
Fluoride (F)	.2	.2	.2	.2	.0
Bromide (Br)	--	--	--	--	--
Iodide (I)	--	--	--	--	--
Dissolved solids	169	249	194	166	130
Suspended solids	--	--	--	--	--
Hardness as $CaCO_3$	121	203	153	119	100
Noncarbonate hardness	24	29	25	21	14
Sodium adsorption ratio (SAR)	.5	.4	.4	.3	.4
Specific conductance (micromhos at 25°C)	284	436	357	280	238
pH: (field)	--	--	--	--	--
(laboratory)	7.2	7.2	7.0	7.0	7.1
Temperature (°C)	16.0	20.5	23.0	22.5	24.5
Ammonia nitrogen (N)	.09	.00	.00	.00	.00
Nitrate nitrogen (N)	1.3	1.3	1.0	1.1	.4
Nitrite nitrogen (N)	.00	.01	.00	.00	.01
Organic nitrogen (N)	--	--	--	--	--
Total phosphorus (P)	.60	.21	.38	.08	.36
Detergents (MBAS)	.01	.01	.03	.00	.01
Dissolved oxygen (DO):					
(milligrams per liter)	--	8.2	--	7.7	7.1
(percent saturation)	--	90	--	88	85
Biochemical oxygen demand (BOD)	4.0	2.8	6.1	4.4	7.2
Chemical oxygen demand (COD)	--	--	--	--	--
Turbidity	--	--	--	--	--

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1783. ALAZAN CREEK AT ST. CLOUD STREET, SAN ANTONIO, TEX. (29°27'29", 98°32'59")

(Results in milligrams per liter except as indicated)

Date of collection	Feb. 24, 1970	Sept. 25, 1970	Sept. 26, 1970			
Time (24 hour)	1200	1615	1130			
Discharge (cfs)	11	100	36			
Silica (SiO_2)	10	5.5	5.1			
Calcium (Ca)	53	24	22			
Magnesium (Mg)	4.2	1.5	1.5			
Sodium (Na)	20	1.7	2.2			
Potassium (K)	--	--	--			
Bicarbonate (HCO_3)	138	73	68			
Carbonate (CO_3)	0	0	0			
Sulfate (SO_4)	50	5.6	5.6			
Chloride (Cl)	17	2.4	2.8			
Fluoride (F)	.2	.1	.0			
Bromide (Br)	--	--	--			
Iodide (I)	--	--	--			
Dissolved solids	227	77	73			
Suspended solids	--	--	--			
Hardness as $CaCO_3$	150	66	61			
Noncarbonate hardness	36	6	5			
Sodium adsorption ratio (SAR)	.7	.1	.1			
Specific conductance (micromhos at 25°C)	376	128	133			
pH: (field)	--	--	--			
(laboratory)	7.4	7.5	7.2			
Temperature (°C)	15.0	25.0	19.5			
Ammonia nitrogen (N)	.08	.00	.00			
Nitrate nitrogen (N)	1.0	.1	.1			
Nitrite nitrogen (N)	.02	.00	.00			
Organic nitrogen (N)	--	--	--			
Total phosphorus (P)	.44	1.2	.19			
Detergents (MBAS)	.01	.00	.00			
Dissolved oxygen (DO):						
(milligrams per liter)	--	--	--			
(percent saturation)	--	--	--			
Biochemical oxygen demand (BOD)	3.1	6.6	3.4			
Chemical oxygen demand (COD)	--	--	--			
Turbidity	--	--	--			

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1786. PANTHER SPRINGS CREEK AT FARM ROAD 2696, NEAR SAN ANTONIO, TEX. (29°37'31", 98°31'06")

(Results in milligrams per liter except as indicated)

Date of collection	May 26, 1970					
Time (24 hour)	2000					
Discharge (cfs)	99					
Silica (SiO_2)	14					
Calcium (Ca)	18					
Magnesium (Mg)	1.0					
Sodium (Na)	.9					
Potassium (K)	--					
Bicarbonate (HCO_3)	57					
Carbonate (CO_3)	0					
Sulfate (SO_4)	.2					
Chloride (Cl)	1.6					
Fluoride (F)	.0					
Bromide (Br)	--					
Iodide (I)	--					
Dissolved solids	67					
Suspended solids	--					
Hardness as $CaCO_3$	49					
Noncarbonate hardness	2					
Sodium adsorption ratio (SAR)	.1					
Specific conductance (micromhos at 25°C)	104					
pH: (field)	--					
(laboratory)	6.2					
Temperature (°C)	21.0					
Ammonia nitrogen (N)	.00					
Nitrate nitrogen (N)	.1					
Nitrite nitrogen (N)	.00					
Organic nitrogen (N)	--					
Total phosphorus (P)	.08					
Detergents (MBAS)	.02					
Dissolved oxygen (DO):						
(milligrams per liter)	--					
(percent saturation)	--					
Biochemical oxygen demand (BOD)	3.4					
Chemical oxygen demand (COD)	--					
Turbidity	--					

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1786.9. SALADO CREEK TRIBUTARY AT BITTERS ROAD, SAN ANTONIO, TEX. (29°31'36", 98°26'25")

(Results in milligrams per liter except as indicated)

Date of collection	Sept. 25, 1970					
Time (24 hour)	1525					
Discharge (cfs)	70					
Silica (SiO_2)	4.8					
Calcium (Ca)	12					
Magnesium (Mg)	.8					
Sodium (Na)	2.2					
Potassium (K)	--					
Bicarbonate (HCO_3)	39					
Carbonate (CO_3)	0					
Sulfate (SO_4)	2.4					
Chloride (Cl)	2.0					
Fluoride (F)	.0					
Bromide (Br)	--					
Iodide (I)	--					
Dissolved solids	44					
Suspended solids	--					
Hardness as $CaCO_3$	33					
Noncarbonate hardness	1					
Sodium adsorption ratio (SAR)	.2					
Specific conductance (micromhos at 25°C)	83					
pH: (field)	--					
(laboratory)	7.1					
Temperature (°C)	24.0					
Ammonia nitrogen (N)	.00					
Nitrate nitrogen (N)	.2					
Nitrite nitrogen (N)	.00					
Organic nitrogen (N)	--					
Total phosphorus (P)	.89					
Detergents (MBAS)	.00					
Dissolved oxygen (DO):						
(milligrams per liter)	7.4					
(percent saturation)	87					
Biochemical oxygen demand (BOD)	3.6					
Chemical oxygen demand (COD)	--					
Turbidity	--					

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1787. SALADO CREEK (UPPER STATION) AT SAN ANTONIO, TEX. (29°30'57", 98°25'51")

(Results in milligrams per liter except as indicated)

Date of collection	Feb. 24, 1970	Mar. 17, 1970	May 27, 1970			
Time (24 hour)	1600	1030	0830			
Discharge (cfs)	8.0	4.6	565			
Silica (SiO_2)	20	30	12			
Calcium (Ca)	126	225	32			
Magnesium (Mg)	21	46	1.9			
Sodium (Na)	35	33	2.0			
Potassium (K)	--	11	5.8			
Bicarbonate (HCO_3)	112	90	95			
Carbonate (CO_3)	0	0	0			
Sulfate (SO_4)	296	648	10			
Chloride (Cl)	51	59	2.8			
Fluoride (F)	1.0	.7	.1			
Bromide (Br)	--	--	--			
Iodide (I)	--	--	--			
Dissolved solids	609	1110	115			
Suspended solids	--	--	--			
Hardness as $CaCO_3$	401	750	88			
Noncarbonate hardness	309	676	10			
Sodium adsorption ratio (SAR)	.8	.5	.1			
Specific conductance (micromhos at 25°C)	922	1420	188			
pH: (field)	--	--	--			
(laboratory)	7.5	7.3	7.3			
Temperature (°C)	17.0	15.0	19.5			
Ammonia nitrogen (N)	.09	.00	.00			
Nitrate nitrogen (N)	.9	2.6	.4			
Nitrite nitrogen (N)	.01	.02	.00			
Organic nitrogen (N)	--	--	--			
Total phosphorus (P)	2.4	2.7	.02			
Detergents (MBAS)	.01	.01	.00			
Dissolved oxygen (DO):						
(milligrams per liter)	--	--	--			
(percent saturation)	--	--	--			
Biochemical oxygen demand (BOD)	2.4	3.6	3.3			
Chemical oxygen demand (COD)	--	--	--			
Turbidity	--	--	--			

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1787.36. SALADO CREEK TRIBUTARY AT BEE STREET, SAN ANTONIO, TEX. (29°26'38", 98°27'12")

(Results in milligrams per liter except as indicated)

Date of collection	Sept. 25, 1970					
Time (24 hour)	1112					
Discharge (cfs)	94					
Silica (SiO_2)	4.5					
Calcium (Ca)	20					
Magnesium (Mg)	1.6					
Sodium (Na)	4.4					
Potassium (K)	--					
Bicarbonate (HCO_3)	54					
Carbonate (CO_3)	0					
Sulfate (SO_4)	8.6					
Chloride (Cl)	7.3					
Fluoride (F)	.0					
Bromide (Br)	--					
Iodide (I)	--					
Dissolved solids	77					
Suspended solids	--					
Hardness as $CaCO_3$	56					
Noncarbonate hardness	12					
Sodium adsorption ratio (SAR)	.3					
Specific conductance (micromhos at 25°C)	139					
pH: (field)	--					
(laboratory)	7.1					
Temperature (°C)	25.0					
Ammonia nitrogen (N)	.00					
Nitrate nitrogen (N)	.7					
Nitrite nitrogen (N)	.03					
Organic nitrogen (N)	--					
Total phosphorus (P)	.36					
Detergents (MBAS)	.00					
Dissolved oxygen (DO):						
(milligrams per liter)	--					
(percent saturation)	--					
Biochemical oxygen demand (BOD)	5.5					
Chemical oxygen demand (COD)	--					
Turbidity	--					

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1788. SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TEX. (29°21'25", 98°24'45")

(Results in milligrams per liter except as indicated)

Date of collection	Mar. 17, 1970	May 15, 1970	May 27, 1970	Sept. 25, 1970		
Time (24 hour)	1415	1200	1230	1350		
Discharge (cfs)	46	200	1530	36		
Silica (SiO_2)	12	10	11	--		
Calcium (Ca)	91	55	32	--		
Magnesium (Mg)	17	9.8	2.9	--		
Sodium (Na)	40	25	4.6	--		
Potassium (K)	3.6	--	6.5	--		
Bicarbonate (HCO_3)	276	168	94	--		
Carbonate (CO_3)	0	0	0	--		
Sulfate (SO_4)	80	45	17	--		
Chloride (Cl)	56	31	5.4	--		
Fluoride (F)	.3	.2	.2	--		
Bromide (Br)	--	--	--	--		
Iodide (I)	--	--	--	--		
Dissolved solids	442	263	129	--		
Suspended solids	--	--	--	--		
Hardness as $CaCO_3$	297	178	92	--		
Noncarbonate hardness	71	40	15	--		
Sodium adsorption ratio (SAR)	1.0	.8	.2	--		
Specific conductance (micromhos at 25°C)	741	469	215	--		
pH: (field)	--	--	--	--		
(laboratory)	7.5	7.0	7.2	--		
Temperature (°C)	16.5	22.5	21.0	25.0		
Ammonia nitrogen (N)	.00	.00	.00	.00		
Nitrate nitrogen (N)	1.4	.9	.7	1.0		
Nitrite nitrogen (N)	.02	.00	.00	.00		
Organic nitrogen (N)	--	--	--	--		
Total phosphorus (P)	.24	.06	.04	.18		
Detergents (MBAS)	.01	.03	.00	.00		
Dissolved oxygen (DO): (milligrams per liter)	8.8	--	7.1	6.6		
(percent saturation)	90	--	79	79		
Biochemical oxygen demand (BOD)	1.7	5.5	5.3	2.0		
Chemical oxygen demand (COD)	--	--	--	--		
Turbidity	--	--	--	--		

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1805. MEDINA RIVER NEAR RIOMEDINA, TEX. (29°29'53", 98°54'16")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 22, 1969	Dec. 10, 1969	Feb. 11, 1970	Apr. 14, 1970	May 12, 1970	June 11, 1970
Time (24 hour)	1500	1200	1100	0930	0915	0845
Discharge (cfs)	19	26	24	26	26	31
Silica (SiO_2)	--	--	--	6.6	8.2	8.0
Calcium (Ca)	--	--	--	66	66	63
Magnesium (Mg)	--	--	--	16	15	16
Sodium plus potassium (Na+K)	--	--	--	6.9	11	9.7
Bicarbonate (HCO_3)	--	--	--	209	212	206
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	50	52	51
Chloride (Cl)	--	--	--	14	14	14
Fluoride (F)	--	--	--	.1	.2	.2
Dissolved solids	--	--	--	265	273	265
Hardness as $CaCO_3$	--	--	--	230	226	223
Non-carbonate hardness	--	--	--	59	52	54
Sodium adsorption ratio (SAR)	--	--	--	.2	.3	.3
Specific conductance (micromhos at 25°C)	454	558	454	464	465	464
pH:						
(field)	7.9	7.7	7.4	7.5	7.3	7.4
(laboratory)	--	--	--	7.5	7.2	7.6
Temperature (°C)	23.0	15.0	14.0	18.0	20.5	21.5
Ammonia nitrogen (N)	--	.04	.00	.00	.00	.00
Nitrate nitrogen (N)	.2	.4	.4	.6	.5	.5
Nitrite nitrogen (N)	--	.00	.00	.00	.00	.00
Total phosphorus (P)	.01	.03	.03	.03	.02	.03
Detergents (MBAS)	--	--	--	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	8.1	8.6	8.7	7.5	6.5	6.3
(percent saturation)	93	84	84	79	71	71
Biochemical oxygen demand (BOD)	.6	.2	.1	.0	.3	.6

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1805. MEDINA RIVER NEAR RIOMEDINA, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	July 9, 1970	July 23, 1970	Aug. 6, 1970	Aug 26, 1970	Sept. 9, 1970	Sept. 22, 1970
Time (24 hour)	0745	1430	1045	1500	1000	0940
Discharge (cfs)	24	27	29	24	29	29
Silica (SiO_2)	9.0	8.7	9.1	9.3	9.2	9.9
Calcium (Ca)	66	62	64	62	64	64
Magnesium (Mg)	16	16	16	16	16	16
Sodium plus potassium (Na+K)	8.9	8.0	9.7	14	11	9.6
Bicarbonate (HCO_3)	216	200	206	210	208	208
Carbonate (CO_3)	0	0	0	0	0	0
Sulfate (SO_4)	49	52	53	54	54	53
Chloride (Cl)	14	13	15	15	14	14
Fluoride (F)	.2	.2	.2	.2	.9	.1
Dissolved solids	271	259	270	274	272	270
Hardness as $CaCO_3$	230	220	226	220	226	226
Non-carbonate hardness	53	57	57	48	55	55
Sodium adsorption ratio (SAR)	.3	.2	.3	.4	.3	.3
Specific conductance (micromhos at 25°C)	462	452	474	465	469	457
pH:						
(field)	7.2	7.7	7.5	7.7	7.7	7.6
(laboratory)	7.7	7.7	7.1	8.1	7.7	7.4
Temperature (°C)	23.5	26.0	23.0	26.0	23.0	23.5
Ammonia nitrogen (N)	.00	.00	.00	.00	.00	.00
Nitrate nitrogen (N)	.4	.3	.3	.2	.3	.2
Nitrite nitrogen (N)	.00	.00	.00	.00	.00	.00
Total phosphorus (P)	.04	.02	.00	.00	.01	.01
Detergents (MBAS)	--	--	.48	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	6.0	7.7	6.1	7.1	5.9	5.7
(percent saturation)	70	94	70	87	68	66
Biochemical oxygen demand (BOD)	.2	.2	.1	.2	.5	.5

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1810. LEON CREEK TRIBUTARY AT FARM ROAD 1604, SAN ANTONIO, TEX. (29°35'14", 98°37'40")

(Results in milligrams per liter except as indicated)

Date of collection	May 26, 1970	May 27, 1970				
Time (24 hour)	1925	1620				
Discharge (cfs)	58	4.7				
Silica (SiO_2)	9.4	13				
Calcium (Ca)	38	82				
Magnesium (Mg)	3.2	11				
Sodium (Na)	1.7	5.3				
Potassium (K)	3.4	2.2				
Bicarbonate (HCO_3)	127	286				
Carbonate (CO_3)	0	0				
Sulfate (SO_4)	.4	10				
Chloride (Cl)	2.6	8.9				
Fluoride (F)	.0	.1				
Bromide (Br)	--	--				
Iodide (I)	--	--				
Dissolved solids	123	277				
Suspended solids	--	--				
Hardness as $CaCO_3$	108	250				
Noncarbonate hardness	4	15				
Sodium adsorption ratio (SAR)	.1	.1				
Specific conductance (micromhos at 25°C)	218	474				
pH: (field)	--	--				
(laboratory)	7.2	7.7				
Temperature (°C)	20.5	28.0				
Ammonia nitrogen (N)	.00	.00				
Nitrate nitrogen (N)	.4	.8				
Nitrite nitrogen (N)	.00	.00				
Organic nitrogen (N)	--	--				
Total phosphorus (P)	.20	.00				
Detergents (MBAS)	.03	.01				
Dissolved oxygen (DO):						
(milligrams per liter)	--	--				
(percent saturation)	--	--				
Biochemical oxygen demand (BOD)	2.3	.4				
Chemical oxygen demand (COD)	--	--				
Turbidity	--	--				

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1814. HELOTES CREEK AT HELOTES, TEX. (29°34'42", 98°41'29")

(Results in milligrams per liter except as indicated)

Date of collection	Dec. 5, 1969	Mar. 17, 1970	May 27, 1970			
Time (24 hour)	1700	0930	1510			
Discharge (cfs)	13	3.5	64			
Silica (SiO_2)	8.2	7.3	11			
Calcium (Ca)	68	68	78			
Magnesium (Mg)	14	14	10			
Sodium (Na)	6.9	8.1	5.6			
Potassium (K)	--	.8	1.3			
Bicarbonate (HCO_3)	244	250	268			
Carbonate (CO_3)	0	0	0			
Sulfate (SO_4)	18	16	12			
Chloride (Cl)	16	14	8.6			
Fluoride (F)	.1	.1	.1			
Bromide (Br)	--	--	--			
Iodide (I)	--	--	--			
Dissolved solids	252	256	262			
Suspended solids	--	--	--			
Hardness as $CaCO_3$	227	227	236			
Noncarbonate hardness	27	22	16			
Sodium adsorption ratio (SAR)	.2	.2	.2			
Specific conductance (micromhos at 25°C)	451	453	458			
pH: (field)	--	--	--			
(laboratory)	7.8	7.6	7.6			
Temperature (°C)	13.5	12.0	23.0			
Ammonia nitrogen (N)	.00	.00	.00			
Nitrate nitrogen (N)	.2	1.0	.7			
Nitrite nitrogen (N)	--	.00	.00			
Organic nitrogen (N)	--	--	--			
Total phosphorus (P)	.06	.06	.05			
Detergents (MBAS)	.02	.00	.01			
Dissolved oxygen (DO):						
(milligrams per liter)	--	9.3	8.2			
(percent saturation)	--	86	94			
Biochemical oxygen demand (BOD)	.8	.6	.5			
Chemical oxygen demand (COD)	--	--	--			
Turbidity	--	--	--			

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1814.5. LEON CREEK TRIBUTARY AT KELLY AFB, SAN ANTONIO, TEX. (29°23'12", 98°36'00")

(Results in milligrams per liter except as indicated)

Date of collection	Dec. 5, 1969	Feb. 24, 1970	May 15, 1970	May 26, 1970		
Time (24 hour)	1625	1345	0850	1720		
Discharge (cfs)	2.8	3.6	3.5	99		
Silica (SiO_2)	5.7	4.5	5.4	2.5		
Calcium (Ca)	24	26	23	16		
Magnesium (Mg)	1.4	1.2	1.3	.9		
Sodium (Na)	.9	26	2.8	.9		
Potassium (K)	--	--	--	2.4		
Bicarbonate (HCO_3)	72	82	74	48		
Carbonate (CO_3)	0	0	0	0		
Sulfate (SO_4)	5.2	5.4	3.6	3.2		
Chloride (Cl)	1.4	1.6	2.4	.9		
Fluoride (F)	.1	.1	.0	.0		
Bromide (Br)	--	--	--	--		
Iodide (I)	--	--	--	--		
Dissolved solids	75	106	76	53		
Suspended solids	--	--	--	--		
Hardness as $CaCO_3$	66	70	63	44		
Noncarbonate hardness	7	3	2	4		
Sodium adsorption ratio (SAR)	.0	1.4	.0	.1		
Specific conductance (micromhos at 25°C)	136	150	148	92		
pH: (field)	--	--	--	--		
(laboratory)	7.1	7.3	6.5	7.0		
Temperature (°C)	15.5	15.5	20.5	21.0		
Ammonia nitrogen (N)	.06	.06	.00	.00		
Nitrate nitrogen (N)	.3	.3	.3	.4		
Nitrite nitrogen (N)	.01	.01	.00	.00		
Organic nitrogen (N)	--	--	--	--		
Total phosphorus (P)	.40	.21	.32	.27		
Detergents (MBAS)	.34	.01	.03	.02		
Dissolved oxygen (DO):						
(milligrams per liter)	--	--	--	--		
(percent saturation)	--	--	--	--		
Biochemical oxygen demand (BOD)	4.7	2.6	7.8	5.4		
Chemical oxygen demand (COD)	--	--	--	--		
Turbidity	--	--	--	--		

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1818. SAN ANTONIO RIVER NEAR ELMENDORF, TEX. (29°14'15", 98°21"43")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 22, 1969	Dec. 10, 1969	Feb. 11, 1970	Apr. 14, 1970	May 12, 1970	June 11, 1970
Time (24 hour)	1300	1300	1230	1200	1040	1100
Discharge (cfs) a	155	230	323	256	302	302
Silica (SiO_2)	--	--	--	14	16	16
Calcium (Ca)	--	--	--	88	92	91
Magnesium (Mg)	--	--	--	19	19	19
Sodium (Na)	--	--	--	60	56	63
Potassium (K)						4.9
Bicarbonate (HCO_3)	--	--	--	294	304	292
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	86	83	85
Chloride (Cl)	--	--	--	74	74	76
Fluoride (F)	--	--	--	.2	.3	.3
Dissolved solids	--	--	--	503	509	514
Hardness as $CaCO_3$	--	--	--	298	308	305
Non-carbonate hardness	--	--	--	56	58	66
Sodium adsorption ratio (SAR)	--	--	--	1.5	1.4	1.6
Specific conductance (micromhos at 25°C)	869	828	920	872	894	869
pH:						
(field)	7.6	7.8	7.5	7.4	7.2	7.5
(laboratory)	--	--	--	7.1	7.0	7.3
Temperature (°C)	25.0	17.0	17.5	22.0	25.0	25.5
Ammonia nitrogen (N)	--	1.2	3.7	4.6	6.0	1.7
Nitrate nitrogen (N)	4.4	2.4	2.1	2.0	2.2	2.3
Nitrite nitrogen (N)	--	.40	.96	.60	.64	.87
Total phosphorus (P)	2.0	1.8	5.6	2.4	2.2	1.2
Detergents (MBAS)	--	--	--	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	6.3	7.8	5.6	4.0	3.9	4.6
(percent saturation)	75	80	58	45	46	55
Biochemical oxygen demand (BOD)	6.0	11	18	11	18	13

a Daily mean discharge.

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1818. SAN ANTONIO RIVER NEAR ELMENDORF, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	July 9, 1970	July 23, 1970	Aug. 5, 1970	Aug. 26, 1970	Sept. 9, 1970	Sept. 22, 1970
Time (24 hour)	1015	1315	1730	1330	1100	1100
Discharge (cfs) a	93	130	343	136	109	204
Silica (SiO_2)	20	17	19	18	17	18
Calcium (Ca)	88	86	82	84	84	83
Magnesium (Mg)	21	19	19	19	19	18
Sodium (Na)	82	73	74	72	63	57
Potassium (K)	7.5	6.0	6.9	6.4	5.0	5.7
Bicarbonate (HCO_3)	331	308	292	280	290	268
Carbonate (CO_3)	0	0	0	0	0	0
Sulfate (SO_4)	89	80	82	82	78	75
Chloride (Cl)	94	85	88	91	78	74
Fluoride (F)	.6	.5	.5	.4	.3	.3
Dissolved solids	584	534	534	530	508	481
Hardness as $CaCO_3$	306	292	282	288	288	281
Non-carbonate hardness	34	40	43	58	50	62
Sodium adsorption ratio (SAR)	2.0	1.9	1.9	1.8	1.6	1.5
Specific conductance (micromhos at 25°C)	966	894	891	909	861	830
pH:						
(field)	7.4	7.6	7.6	7.7	7.5	7.5
(laboratory)	7.5	7.3	7.2	7.4	7.3	7.2
Temperature (°C)	29.0	28.5	29.0	29.0	29.0	22.5
Ammonia nitrogen (N)	4.2	2.6	3.0	5.2	5.5	2.4
Nitrate nitrogen (N)	2.4	2.4	2.8	2.3	2.5	2.6
Nitrite nitrogen (N)	.69	.68	.81	.60	.74	.90
Total phosphorus (P)	6.2	3.3	3.2	4.7	1.6	2.2
Detergents (MBAS)	--	--	.25	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	3.9	4.2	3.8	4.4	3.2	3.4
(percent saturation)	50	54	49	56	41	39
Biochemical oxygen demand (BOD)	11	11	11	10	12	16

a Daily mean discharge.

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1835. SAN ANTONIO RIVER NEAR FALLS CITY, TEX. (28°57'05", 98°03'50")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 22, 1969	Dec. 10, 1969	Feb. 11, 1970	Apr. 14, 1970	May 12, 1970	June 11, 1970
Time (24 hour)	1200	1500	1400	1350	1150	1300
Discharge (cfs)	165	310	318	282	201	294
Silica (SiO_2)	--	--	--	14	17	16
Calcium (Ca)	--	--	--	89	100	97
Magnesium (Mg)	--	--	--	19	21	19
Sodium plus potassium (Na+K)	--	--	--	78	81	74
Bicarbonate (HCO_3)	--	--	--	274	304	304
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	101	106	98
Chloride (Cl)	--	--	--	90	96	82
Fluoride (F)	--	--	--	.3	.4	.3
Dissolved solids	--	--	--	545	591	553
Hardness as $CaCO_3$	--	--	--	300	336	320
Non-carbonate hardness	--	--	--	76	87	71
Sodium adsorption ratio (SAR)	--	--	--	2.0	1.9	1.8
Specific conductance (micromhos at 25°C)	971	605	867	910	996	907
pH:						
(field)	7.8	7.7	7.3	7.3	7.3	7.8
(laboratory)	--	--	--	7.2	7.5	7.8
Temperature (°C)	24.0	15.0	18.0	22.0	25.0	26.0
Ammonia nitrogen (N)	--	.18	1.2	.77	.00	.06
Nitrate nitrogen (N)	4.2	2.2	3.7	3.6	4.6	4.0
Nitrite nitrogen (N)	--	.06	.37	.46	.21	.03
Total phosphorus (P)	1.0	.97	2.8	1.7	3.1	.60
Detergents (MBAS)	--	--	--	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	5.8	7.6	4.8	3.7	5.0	6.0
(percent saturation)	68	75	51	42	60	73
Biochemical oxygen demand (BOD)	1.5	4.4	11	11	3.0	1.3

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1835. SAN ANTONIO RIVER NEAR FALLS CITY, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	July 9, 1970	July 23, 1970	Aug 5, 1970	Aug 26, 1970	Sept. 9, 1970	Sept. 22, 1970
Time (24 hour)	1130	1200	1630	1235	1210	1200
Discharge (cfs)	132	138	194	147	108	184
Silica (SiO_2)	19	19	19	17	19	19
Calcium (Ca)	106	91	94	97	96	85
Magnesium (Mg)	24	22	22	21	22	19
Sodium plus potassium (Na+K)	105	98	97	99	103	78
Bicarbonate (HCO_3)	326	292	296	304	304	280
Carbonate (CO_3)	0	0	0	0	0	0
Sulfate (SO_4)	128	114	110	117	114	86
Chloride (Cl)	124	112	114	111	118	89
Fluoride (F)	.5	.4	.4	.4	.5	.3
Dissolved solids	685	617	622	629	643	533
Hardness as $CaCO_3$	363	318	325	328	330	290
Non-carbonate hardness	96	78	82	80	81	60
Sodium adsorption ratio (SAR)	2.4	2.4	2.3	2.4	2.5	2.0
Specific conductance (micromhos at 25°C)	1130	1030	1050	1040	1060	896
pH:						
(field)	7.5	7.7	7.8	7.9	7.8	7.7
(laboratory)	7.8	7.5	7.5	7.6	7.7	7.7
Temperature (°C)	30.0	28.0	29.0	28.5	29.0	23.0
Ammonia nitrogen (N)	.00	.00	.00	.00	.00	.00
Nitrate nitrogen (N)	4.0	3.7	4.4	4.0	4.7	4.1
Nitrite nitrogen (N)	.14	.24	.08	.02	.20	.18
Total phosphorus (P)	3.0	4.5	3.4	2.6	4.4	2.6
Detergents (MBAS)	--	--	.10	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	4.6	5.0	6.5	6.0	3.8	4.1
(percent saturation)	61	63	83	77	49	47
Biochemical oxygen demand (BOD)	2.2	1.5	1.6	2.6	2.3	1.9

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1860. CIBOLO CREEK NEAR FALLS CITY, TEX. (29°00'50", 97°55'48")

(Results in milligrams per liter except as indicated)

Date of collection	Dec. 10, 1969	Feb. 11, 1970	Apr. 14, 1970	May 12, 1970	June 11, 1970	July 9, 1970
Time (24 hour)	1600	1600	1500	1230	1330	1315
Discharge (cfs)	47	30	31	17	48	22
Silica (SiO_2)	--	--	12	16	17	17
Calcium (Ca)	--	--	125	119	104	113
Magnesium (Mg)	--	--	23	22	16	23
Sodium plus potassium (Na+K)	--	--	139	141	101	136
Bicarbonate (HCO_3)	--	--	296	282	250	280
Carbonate (CO_3)	--	--	0	0	0	0
Sulfate (SO_4)	--	--	251	250	187	229
Chloride (Cl)	--	--	142	142	100	142
Fluoride (F)	--	--	.3	.3	.3	.3
Dissolved solids	--	--	842	831	652	801
Hardness as $CaCO_3$	--	--	406	388	326	376
Non-carbonate hardness	--	--	164	156	120	147
Sodium adsorption ratio (SAR)	--	--	3.0	3.1	2.4	3.0
Specific conductance (micromhos at 25°C)	740	1260	1320	1310	1040	1280
pH:						
(field)	8.2	8.1	7.8	7.7	8.0	7.9
(laboratory)	--	--	7.7	7.6	7.6	7.7
Temperature (°C)	15.0	18.0	21.5	25.0	25.5	30.5
Ammonia nitrogen (N)	.00	.00	.00	.00	.00	.00
Nitrate nitrogen (N)	2.5	.8	.8	.4	.9	.7
Nitrite nitrogen (N)	.03	.01	.01	.00	.00	.00
Total phosphorus (P)	.44	.20	.07	.05	.09	.04
Detergents (MBAS)	--	--	--	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	9.7	14.4	8.9	7.7	7.8	9.0
(percent saturation)	95	152	100	92	94	118
Biochemical oxygen demand (BOD)	1.9	5.6	.7	1.0	1.1	1.0

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1860. CIBOLO CREEK NEAR FALLS CITY, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	July 23, 1970	Aug 5, 1970	Aug 26, 1970	Sept. 9, 1970	Sept. 22, 1970
Time (24 hour)	1130	1535	1200	1245	1230
Discharge (cfs)	21	21	28	10	15
Silica (SiO_2)	17	17	16	18	19
Calcium (Ca)	101	104	110	106	102
Magnesium (Mg)	21	20	22	21	22
Sodium plus potassium (Na+K)	137	129	148	144	134
Bicarbonate (HCO_3)	272	270	276	280	262
Carbonate (CO_3)	0	0	0	0	0
Sulfate (SO_4)	213	208	247	227	222
Chloride (Cl)	134	128	144	140	134
Fluoride (F)	.3	.3	.3	.3	.3
Dissolved solids	759	742	824	795	763
Hardness as $CaCO_3$	338	342	365	351	345
Non-carbonate hardness	116	120	139	122	130
Sodium adsorption ratio (SAR)	3.2	3.0	3.4	3.3	3.1
Specific conductance (micromhos at 25°C)	1190	1190	1280	1260	1210
pH:					
(field)	7.8	8.1	8.0	8.0	7.9
(laboratory)	7.6	7.5	8.1	7.8	7.7
Temperature (°C)	27.0	29.5	27.0	28.0	27.0
Ammonia nitrogen (N)	.00	.00	.00	.00	.00
Nitrate nitrogen (N)	.4	.6	.2	.2	.2
Nitrite nitrogen (N)	.00	.00	.00	.00	.00
Total phosphorus (P)	.04	.10	.04	.07	.07
Detergents (MBAS)	--	.16	--	--	--
Dissolved oxygen (DO):					
(milligrams per liter)	7.4	7.4	6.5	6.4	6.4
(percent saturation)	91	96	80	81	79
Biochemical oxygen demand (BOD)	.8	1.3	1.0	2.0	1.3

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1885. SAN ANTONIO RIVER AT GOLIAD, TEX. (28°38'58", 97°23'04")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 22, 1969	Dec. 9, 1969	Feb. 10, 1970	Apr. 13, 1970	May 12, 1970	June 2, 1970
Time (24 hour)	0900	1615	1600	1600	1340	1215
Discharge (cfs)	239	1260	556	437	239	6080
Silica (SiO_2)	--	--	--	16	17	13
Calcium (Ca)	--	--	--	107	112	34
Magnesium (Mg)	--	--	--	23	22	3.0
Sodium plus potassium (Na+K)	--	--	--	108	108	12
Bicarbonate (HCO_3)	--	--	--	312	324	105
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	139	127	17
Chloride (Cl)	--	--	--	134	138	11
Fluoride (F)	--	--	--	.3	.4	.1
Dissolved solids	--	--	--	689	697	146
Hardness as $CaCO_3$	--	--	--	362	370	97
Non-carbonate hardness	--	--	--	106	104	11
Sodium adsorption ratio (SAR)	--	--	--	2.5	2.4	.5
Specific conductance (micromhos at 25°C)	885	905	941	1150	1140	256
pH:						
(field)	7.9	7.7	7.8	7.8	8.2	--
(laboratory)	--	--	--	7.7	8.2	7.2
Temperature (°C)	23.0	15.0	15.0	23.0	25.5	23.0
Ammonia nitrogen (N)	--	.00	.00	.00	.00	.01
Nitrate nitrogen (N)	2.1	2.9	4.0	1.9	3.1	.8
Nitrite nitrogen (N)	--	.02	.01	.02	.00	.00
Total phosphorus (P)	.65	3.0	4.8	2.1	1.7	.60
Detergents (MBAS)	--	--	--	--	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	7.3	8.4	8.2	7.9	10.6	--
(percent saturation)	84	82	80	91	128	--
Biochemical oxygen demand (BOD)	.8	3.5	2.2	2.1	6.9	5.5

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1885. SAN ANTONIO RIVER AT GOLIAD, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	June 10, 1970	July 9, 1970	July 23, 1970	Aug 5, 1970	Aug. 26, 1970	Sept. 9, 1970
Time (24 hour)	1430	1030	1030	1245	0830	1400
Discharge (cfs)	572	259	203	283	192	160
Silica (SiO_2)	19	21	22	14	20	23
Calcium (Ca)	88	113	107	74	112	112
Magnesium (Mg)	15	23	22	14	23	23
Sodium plus potassium (Na+K)	81	110	126	70	125	131
Bicarbonate (HCO_3)	272	332	310	212	312	330
Carbonate (CO_3)	0	0	0	0	0	0
Sulfate (SO_4)	90	128	152	86	131	137
Chloride (Cl)	90	142	148	88	174	166
Fluoride (F)	.4	.4	.4	.4	.4	.4
Dissolved solids	532	712	742	459	747	766
Hardness as $CaCO_3$	281	376	358	242	374	374
Non-carbonate hardness	58	104	104	68	118	104
Sodium adsorption ratio (SAR)	2.1	2.5	2.9	2.0	2.8	2.9
Specific conductance (micromhos at 25°C)	886	1170	1170	825	1240	1260
pH:						
(field)	7.9	7.8	7.9	8.0	8.0	8.2
(laboratory)	7.8	7.9	7.6	7.2	8.0	8.0
Temperature (°C)	25.0	30.5	27.5	28.0	27.5	29.0
Ammonia nitrogen (N)	.00	.00	.00	.09	.00	.00
Nitrate nitrogen (N)	3.4	2.6	3.0	1.8	2.0	2.8
Nitrite nitrogen (N)	.02	.00	.02	.07	.01	.01
Total phosphorus (P)	.52	1.4	2.0	1.4	1.2	2.6
Detergents (MBAS)	--	--	--	.08	--	--
Dissolved oxygen (DO):						
(milligrams per liter)	7.0	7.0	6.9	5.6	6.4	7.3
(percent saturation)	83	92	86	71	80	94
Biochemical oxygen demand (BOD)	1.8	1.7	1.1	3.5	2.6	2.4

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1885. SAN ANTONIO RIVER AT GOLIAD, TEX.--Continued

(Results in milligrams per liter except as indicated)

Date of collection	Sept. 22, 1970					
Time (24 hour)	1400					
Discharge (cfs)	234					
Silica (SiO_2)	20					
Calcium (Ca)	92					
Magnesium (Mg)	20					
Sodium plus potassium (Na+K)	86					
Bicarbonate (HCO_3)	268					
Carbonate (CO_3)	0					
Sulfate (SO_4)	107					
Chloride (Cl)	112					
Fluoride (F)	.3					
Dissolved solids	581					
Hardness as $CaCO_3$	312					
Non-carbonate hardness	92					
Sodium adsorption ratio (SAR)	2.1					
Specific conductance (micromhos at 25°C)	964					
pH:						
(field)	8.0					
(laboratory)	7.8					
Temperature (°C)	27.5					
Ammonia nitrogen (N)	.00					
Nitrate nitrogen (N)	2.6					
Nitrite nitrogen (N)	.00					
Total phosphorus (P)	1.5					
Detergents (MBAS)	--					
Dissolved oxygen (DO):						
(milligrams per liter)	6.1					
(percent saturation)	76					
Biochemical oxygen demand (BOD)	2.0					

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1888. GUADALUPE RIVER NEAR TIVOLI, TEX. (28°30'20", 96°53'04")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 21, 1969	Dec. 9, 1969	Feb. 10, 1970	Apr. 13, 1970	June 10, 1970	Aug 4, 1970
Time (24 hour)	1430	1430	1345	1400	1300	1330
Discharge (cfs)	--	--	--	--	--	--
Silica (SiO_2)	--	--	--	12	16	15
Calcium (Ca)	--	--	--	64	65	74
Magnesium (Mg)	--	--	--	13	10	17
Sodium plus potassium (Na+K)	--	--	--	39	33	51
Bicarbonate (HCO_3)	--	--	--	208	212	256
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	39	36	45
Chloride (Cl)	--	--	--	59	43	73
Fluoride (F)	--	--	--	.2	.2	.3
Dissolved solids	--	--	--	334	312	407
Hardness as $CaCO_3$	--	--	--	213	203	254
Non-carbonate hardness	--	--	--	42	30	44
Sodium adsorption ratio (SAR)	--	--	--	1.2	1.0	1.4
Specific conductance (micromhos at 25°C)	551	563	717	593	540	718
pH:						
(field)	8.0	7.7	7.7	7.5	7.7	8.0
(laboratory)	--	--	--	7.4	7.5	7.4
Temperature (°C)	23.5	14.0	14.5	22.0	26.0	29.0
Ammonia nitrogen (N)	--	.00	.00	.16	.00	.00
Nitrate nitrogen (N)	1.4	1.2	2.2	1.2	1.0	1.2
Nitrite nitrogen (N)	--	.01	.02	.01	.00	.02
Total phosphorus (P)	.21	.67	1.4	.56	.42	.48
Detergents (MBAS)	--	--	--	--	--	.01
Dissolved oxygen (DO):						
(milligrams per liter)	6.5	8.3	8.4	6.5	5.9	5.4
(percent saturation)	76	80	82	74	72	69
Biochemical oxygen demand (BOD)	.8	1.4	1.6	1.6	2.7	.8

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1891. SALT CREEK NEAR REFUGIO, TEX. (28°19'00", 97°00'24")

(Results in milligrams per liter except as indicated)

Date of collection	June 3, 1970					
Time (24 hour)	1000					
Discharge (cfs)	50					
Silica (SiO_2)	29					
Calcium (Ca)	20					
Magnesium (Mg)	3.3					
Sodium (Na)	10					
Potassium (K)	4.7					
Bicarbonate (HCO_3)	35					
Carbonate (CO_3)	0					
Sulfate (SO_4)	.4					
Chloride (Cl)	6.4					
Fluoride (F)	.0					
Bromide (Br)	--					
Iodide (I)	--					
Dissolved solids	117					
Suspended solids	--					
Hardness as $CaCO_3$	63					
Noncarbonate hardness	0					
Sodium adsorption ratio (SAR)	.5					
Specific conductance (micromhos at 25°C)	168					
pH: (field)	6.9					
(laboratory)	7.0					
Temperature (°C)	22.5					
Ammonia nitrogen (N)	.00					
Nitrate nitrogen (N)	.3					
Nitrite nitrogen (N)	.00					
Organic nitrogen (N)	.59					
Total phosphorus (P)	.05					
Detergents (MBAS)	--					
Dissolved oxygen (DO):						
(milligrams per liter)	5.4					
(percent saturation)	61					
Biochemical oxygen demand (BOD)	1.8					
Chemical oxygen demand (COD)	53					
Turbidity	20					

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1892. COPANO CREEK NEAR REFUGIO, TEX. (28°18'12", 97°06'44")

(Results in milligrams per liter except as indicated)

Date of collection	June 3, 1970	July 22, 1970	Sept. 30, 1970			
Time (24 hour)	1200	1600	1800			
Discharge (cfs)	252	1.2	0.20			
Silica (SiO_2)	24	17	19			
Calcium (Ca)	14	19	34			
Magnesium (Mg)	3.0	4.3	5.4			
Sodium (Na)	33	53	88			
Potassium (K)	5.3	7.4	7.5			
Bicarbonate (HCO_3)	61	87	150			
Carbonate (CO_3)	0	0	0			
Sulfate (SO_4)	0.0	29	26			
Chloride (Cl)	43	60	108			
Fluoride (F)	.0	.1	.3			
Bromide (Br)	--	.30	--			
Iodide (I)	--	.03	--			
Dissolved solids	153	235	363			
Suspended solids	--	192	182			
Hardness as $CaCO_3$	47	65	107			
Noncarbonate hardness	0	0	0			
Sodium adsorption ratio (SAR)	2.1	2.9	3.7			
Specific conductance (micromhos at 25°C)	262	399	636			
pH: (field)	8.0	7.3	7.6			
(laboratory)	6.7	6.7	7.6			
Temperature (°C)	25.0	29.0	26.0			
Ammonia nitrogen (N)	.13	.00	.00			
Nitrate nitrogen (N)	.2	.2	.1			
Nitrite nitrogen (N)	.00	.00	.00			
Organic nitrogen (N)	.80	1.1	.06			
Total phosphorus (P)	.09	.26	.17			
Detergents (MBAS)	--	--	--			
Dissolved oxygen (DO): (milligrams per liter)	3.7	5.6	7.8			
(percent saturation)	44	72	95			
Biochemical oxygen demand (BOD)	2.0	2.7	4.5			
Chemical oxygen demand (COD)	59	61	43			
Turbidity	22	44	60			

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1895. MISSION RIVER AT REFUGIO, TEX. (28°17'30", 97°16'44")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 21, 1969	Dec. 9, 1969	Feb. 10, 1970	Apr. 13, 1970	June 10, 1970	Aug 4, 1970
Time (24 hour)	1600	1530	1445	1500	1400	1300
Discharge (cfs)	5.2	56	10	58	43	81
Silica (SiO_2)	--	--	--	15	28	24
Calcium (Ca)	--	--	--	66	94	98
Magnesium (Mg)	--	--	--	10	13	15
Sodium plus potassium (Na+K)	--	--	--	316	287	532
Bicarbonate (HCO_3)	--	--	--	144	236	224
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	12	13	24
Chloride (Cl)	--	--	--	540	500	890
Fluoride (F)	--	--	--	.1	.2	--
Dissolved solids	--	--	--	1030	1050	1690
Hardness as $CaCO_3$	--	--	--	206	288	306
Non-carbonate hardness	--	--	--	88	94	122
Sodium adsorption ratio (SAR)	--	--	--	9.6	7.3	13
Specific conductance (micromhos at 25°C)	10700	1030	8820	1940	1940	3130
pH:						
(field)	7.8	7.5	7.6	7.4	7.7	7.8
(laboratory)	--	--	--	7.0	7.4	7.2
Temperature (°C)	26.5	15.0	14.5	26.0	27.0	27.0
Ammonia nitrogen (N)	--	.11	.46	.19	.00	.25
Nitrate nitrogen (N)	.6	.4	.1	.3	.1	.1
Nitrite nitrogen (N)	--	.00	.01	.01	.00	.00
Total phosphorus (P)	.02	.13	.12	.09	.04	.22
Detergents (MBAS)	--	--	--	--	--	.18
Dissolved oxygen (DO):						
(milligrams per liter)	8.5	9.0	9.6	6.8	7.7	4.5
(percent saturation)	104	87	93	83	95	56
Biochemical oxygen demand (BOD)	3.1	2.0	1.0	2.3	2.8	4.0

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-1898. CHILTIPIN CREEK AT SINTON, TEX. (28°02'47", 97°30'13")

(Results in milligrams per liter except as indicated)

Date of collection	June 3, 1970	July 23, 1970	Aug. 26, 1970			
Time (24 hour)	1500	0900	1000			
Discharge (cfs)	335	1.8	1.0			
Silica (SiO_2)	14	22	20			
Calcium (Ca)	22	2400	1810			
Magnesium (Mg)	4.0	388	304			
Sodium (Na)	102	20900	15600			
Potassium (K)	5.2	68	56			
Bicarbonate (HCO_3)	60	115	114			
Carbonate (CO_3)	0	0	0			
Sulfate (SO_4)	2.0	12	15			
Chloride (Cl)	172	38000	28800			
Fluoride (F)	.1	.3	.3			
Bromide (Br)	--	171	--			
Iodide (I)	--	18	--			
Dissolved solids	353	62200	46700			
Suspended solids	--	13	24			
Hardness as $CaCO_3$	72	7580	5770			
Noncarbonate hardness	22	7490	5670			
Sodium adsorption ratio (SAR)	5.2	--	--			
Specific conductance (micromhos at 25°C)	683	90900	70600			
pH: (field)	7.8	7.4	7.7			
(laboratory)	6.8	6.5	7.0			
Temperature (°C)	25.5	28.0	29.5			
Ammonia nitrogen (N)	.08	.00	.02			
Nitrate nitrogen (N)	.4	.7	.1			
Nitrite nitrogen (N)	.00	.00	.00			
Organic nitrogen (N)	.66	2.8	1.8			
Total phosphorus (P)	.28	.04	.10			
Detergents (MBAS)	--	--	--			
Dissolved oxygen (DO): (milligrams per liter)	6.2	3.7	8.5			
(percent saturation)	75	76	157			
Biochemical oxygen demand (BOD)	2.1	2.7	4.2			
Chemical oxygen demand (COD)	29	42	26			
Turbidity	114	9.0	4.4			

Table 1.--Selected chemical and biochemical records of Texas surface waters, 1970--Continued

8-2100. NUECES RIVER NEAR THREE RIVERS, TEX. (28°26'10", 98°11'06")

(Results in milligrams per liter except as indicated)

Date of collection	Oct. 22, 1969	Dec. 9, 1969	Feb. 10, 1970	Apr. 13, 1970	June 10, 1970	Aug 5, 1970
Time (24 hour)	1045	1730	1730	1800	1545	1415
Discharge (cfs)	3220	988	164	82	3040	21
Silica (SiO_2)	--	--	--	8.8	21	24
Calcium (Ca)	--	--	--	72	50	72
Magnesium (Mg)	--	--	--	16	4.4	9.8
Sodium plus potassium (Na+K)	--	--	--	122	40	131
Bicarbonate (HCO_3)	--	--	--	187	175	264
Carbonate (CO_3)	--	--	--	0	0	0
Sulfate (SO_4)	--	--	--	123	26	99
Chloride (Cl)	--	--	--	162	41	130
Fluoride (F)	--	--	--	.2	.2	.3
Dissolved solids	--	--	--	597	270	597
Hardness as $CaCO_3$	--	--	--	246	143	220
Non-carbonate hardness	--	--	--	92	0	4
Sodium adsorption ratio (SAR)	--	--	--	3.4	1.5	3.8
Specific conductance (micromhos at 25°C)	379	401	857	1030	463	1030
pH:						
(field)	7.6	7.5	6.9	7.9	7.7	7.8
(laboratory)	--	--	--	7.3	7.4	7.3
Temperature (°C)	24.0	14.0	16.0	25.0	27.0	30.5
Ammonia nitrogen (N)	--	.00	.00	.00	.00	.00
Nitrate nitrogen (N)	.8	.9	.8	.3	.2	.2
Nitrite nitrogen (N)	--	.00	.01	.00	.00	.00
Total phosphorus (P)	.09	.33	.38	.14	.04	.21
Detergents (MBAS)	--	--	--	--	--	.25
Dissolved oxygen (DO):						
(milligrams per liter)	6.4	9.6	9.2	11.8	5.5	6.0
(percent saturation)	75	92	92	140	68	79
Biochemical oxygen demand (BOD)	1.7	1.7	1.6	7.6	1.6	3.4

Table 2.--Minor elements in Texas surface waters, 1970

(Results in micrograms per liter except as indicated)

Station name.....	8-1179. BIG BOGGY CREEK NEAR WADSWORTH, TEX. (28°48'26", 95°57'02")	8-1626. TRES PALACIOS CREEK NEAR MIDFIELD, TEX. (28°55'40", 96°10'15")	8-1626.5. CASHS CREEK NEAR BLESSING, TEX. (28°48'38", 96°11'51")	8-1627. EAST CARANCAHUA CREEK NEAR BLESSING, TEX. (28°51'48", 96°17'05")
Date of collection..	July 20, 1970	July 21, 1970	July 20, 1970	July 21, 1970
Time (24 hour).....	1400	0900	1630	1100
Discharge (cfs).....	3.3	80	7.6	27
Aluminum (Al).....	50	60	40	40
Arsenic (As).....	0	0	0	0
Boron (B).....	210	150	170	180
Cadmium (Cd).....	0	0	0	0
Chromium (Cr):				
hexavalent.....	0	0	0	0
total.....	0	0	0	0
Cobalt (Co).....	1	1	0	0
Copper (Cu).....	2	1	2	2
Iron (Fe).....	0	0	0	0
Lead (Pb).....	0	0	0	0
Lithium (Li).....	10	10	10	10
Manganese (Mn).....	40	10	40	0
Mercury (Hg):				
dissolved.....	--	--	--	--
total.....	--	--	--	--
Nickel (Ni).....	0	0	0	0
Selenium (Se).....	--	--	--	--
Silver (Ag).....	--	--	--	--
Strontium (Sr).....	320	360	290	510
Zinc (Zn).....	0	0	0	0

Table 2.--Minor elements in Texas surface waters, 1970--Continued

(Results in micrograms per liter except as indicated)

Station name	8-1628. WEST CARANCAHUA CREEK NEAR LaWARD, TEX. (28°53'19", 96°27'03")	8-1646. GARCITAS CREEK NEAR INEZ, TEX. (28°53'28", 96°49'08")	8-1648. PLACEDO CREEK NEAR PLACEDO, TEX. (28°43'30", 96°46'07")	8-1648.5. CHOCOLATE BAYOU AT PORT LAVACA, TEX. (28°35'40", 96°41'48")
Date of collection	July 21, 1970	July 21, 1970	July 22, 1970	July 22, 1970
Time (24 hour)	1330	1520	0915	1135
Discharge (cfs)	6.2	0.26	109	42
Aluminum (Al)	70	10	50	830
Arsenic (As)	0	0	0	0
Boron (B)	160	110	110	160
Cadmium (Cd)	0	0	0	0
Chromium (Cr):				
hexavalent	0	0	0	0
total	0	1	7	2
Cobalt (Co)	0	2	0	0
Copper (Cu)	2	0	4	4
Iron (Fe)	0	0	0	310
Lead (Pb)	0	0	0	0
Lithium (Li)	20	0	0	0
Manganese (Mn)	10	480	0	0
Mercury (Hg):				
dissolved	--	--	--	--
total	--	--	--	--
Nickel (Ni)	0	1	0	1
Selenium (Se)	--	--	--	--
Silver (Ag)	--	--	--	--
Strontium (Sr)	460	230	110	80
Zinc (Zn)	0	0	0	0

Table 2.--Minor elements in Texas surface waters, 1970--Continued

(Results in micrograms per liter except as indicated)

Station name.....	8-1892. COPANO CREEK NEAR REFUGIO, TEX. (28°18'12", 97°06'44")	8-1898. CHILTIPIN CREEK AT SINTON, TEX. (28°02'47", 97°30'13")		
Date of collection..	July 22, 1970	July 23, 1970		
Time (24 hour).....	1600	0900		
Discharge (cfs).....	1.2	1.8		
Aluminum (Al).....	50	180		
Arsenic (As).....	0	0		
Boron (B).....	230	34000		
Cadmium (Cd).....	0	1		
Chromium (Cr):	0			
hexavalent.....	0	0		
total.....	1	2		
Cobalt (Co).....	0	3		
Copper (Cu).....	8	2		
Iron (Fe).....	30	330		
Lead (Pb).....	0	0		
Lithium (Li).....	10	2680		
Manganese (Mn).....	20	1000		
Mercury (Hg):				
dissolved.....	--	--		
total.....	--	--		
Nickel (Ni).....	0	0		
Selenium (Se).....	--	--		
Silver (Ag).....	--	--		
Strontium (Sr).....	300	146000		
Zinc (Zn).....	0	0		

Table 3.--Pesticides in Texas surface waters, 1970

7-2274.7. CANADIAN RIVER AT TASCOSA, TEX. (35°31'10", 102°15'30")

(Results in micrograms per liter)

Date of collection	Oct. 22, 1969	Dec. 2, 1969	Apr. 1, 1970	June 9, 1970	July 6, 1970
Time (24 hour)	0900	1830	1015	1335	1715
Discharge (cfs)	280	32	59	28	21
INSECTICIDES					
Chlorinated hydrocarbons:					
Aldrin	0.00	0.00	0.00	0.00	0.00
DDD	.00	.00	.00	.00	.00
DDE	.00	.00	.00	.00	.00
DDT	.00	.00	.00	.00	.00
Endrin	.00	.00	.00	.00	.00
Dieldrin	.00	.00	.00	.00	.00
Heptachlor	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00
Lindane	.00	.00	.00	.01	.00
Chlordane	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0
Alpha-BHC	.00	.00	.00	.02	.00
Phosphorothioates:					
Parathion	--	--	.00	.00	.00
Methyl parathion	--	--	.00	.00	.00
Malathion	--	--	--	--	--
Diazinon	--	--	.00	.00	.00
HERBICIDES					
Chlorinated hydrocarbons:					
2,4-D	.00	.00	.00	.00	.04
Silvex	.00	.00	.00	.03	.00
2,4,5-T	.00	.00	.00	.01	.05

Table 3.--Pesticides in Texas surface waters, 1970--Continued

7-2275. CANADIAN RIVER NEAR AMARILLO, TEX. (35°28'13", 101°52'45")

(Results in micrograms per liter)

Date of collection	Nov. 5, 1969	Mar. 31, 1970	June 9, 1970	July 6, 1970	Sept. 10, 1970
Time (24 hour)	1730	1850	1015	1955	1330
Discharge (cfs)	117	270	79	10	7.9
INSECTICIDES					
Chlorinated hydrocarbons:					
Aldrin	0.00	0.00	0.00	0.00	0.00
DDD	.01	.00	.00	.01	.00
DDE	.00	.00	.00	.00	.00
DDT	.00	.02	.00	.01	.00
Endrin	.00	.00	.00	.00	.00
Dieldrin	.01	.01	.02	.01	.00
Heptachlor	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00
Lindane	.02	.01	.00	.02	.06
Chlordane	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0
Alpha-BHC	.02	.00	.00	.01	.01
Phosphorothioates:					
Parathion	--	.00	.00	.00	.00
Methyl parathion	--	.00	.00	.00	.00
Malathion	--	--	--	--	.00
Diazinon	--	.00	.00	.00	.16
HERBICIDES					
Chlorinated hydrocarbons:					
2,4-D	.04	.00	.11	.00	.66
Silvex	.00	.00	.01	.08	.00
2,4,5-T	.00	.00	.01	.00	.00

Table 3.--Pesticides in Texas surface waters, 1970--Continued

7-2995.7. RED RIVER NEAR QUANAH, TEX. (34°24'47", 99°44'03")

(Results in micrograms per liter)

Date of collection	Nov. 10, 1969	June 8, 1970				
Time (24 hour)	1400	1220				
Discharge (cfs)	26	1.3				
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00				
DDD	.00	.00				
DDE	.00	.00				
DDT	.00	.00				
Endrin	.00	.00				
Dieldrin	.00	.00				
Heptachlor	.00	.00				
Heptachlor epoxide	.00	.00				
Lindane	.00	.00				
Chlordane	.0	.0				
Toxaphene	0	0				
Phosphorothioates:						
Parathion	--	.00				
Methyl parathion	--	.00				
Malathion	--	--				
Diazinon	--	.00				
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00	.00				
Silvex	.00	.00				
2,4,5-T	.00	.02				

Table 3.--Pesticides in Texas surface waters, 1970--Continued

7-3160. RED RIVER NEAR GAINESVILLE, TEX. (33°43'40", 97°09'35")

(Results in micrograms per liter)

Date of collection	Nov. 5, 1969	Mar. 26, 1970	June 10, 1970	July 15, 1970	Aug. 20, 1970
Time (24 hour)	1615	0805	1000	1030	0950
Discharge (cfs)	1200	1160	695	238	156
INSECTICIDES					
Chlorinated hydrocarbons:					
Aldrin	0.00	0.00	0.00	0.00	0.00
DDD	.01	.00	.00	.00	.00
DDE	.00	.00	.00	.00	.00
DDT	.01	.02	.00	.00	.00
Endrin	.00	.00	.00	.00	.00
Dieldrin	.01	.00	.00	.00	.00
Heptachlor	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00
Lindane	.02	.00	.00	.00	.00
Chlordane	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0
Alpha-BHC	.03	.00	.00	.00	.00
Phosphorothioates:					
Parathion	--	.00	.00	.00	.00
Methyl parathion	--	.00	.00	.00	.00
Malathion	--	--	--	--	.00
Diazinon	--	.00	.00	.00	.00
HERBICIDES					
Chlorinated hydrocarbons:					
2,4-D	.00	.00	.04	.17	.00
Silvex	.00	.00	.00	.00	.00
2,4,5-T	.00	.02	.04	.23	.01

Table 3.--Pesticides in Texas surface waters, 1970--Continued

7-3432. SULPHUR RIVER NEAR TALCO, TEX. (33°23'11", 95°07'57")

(Results in micrograms per liter)

Date of collection	Dec. 3, 1969	Apr. 8, 1970	June 4, 1970	July 24, 1970	Aug. 4, 1970
Time (24 hour)	1520	1255	1050	1320	1005
Discharge (cfs)	14	70	140	2.0	0.2
INSECTICIDES					
Chlorinated hydrocarbons:					
Aldrin	0.00	0.00	0.00	0.00	0.00
DDD	.00	.00	.02	.01	.01
DDE	.00	.01	.03	.01	.01
DDT	.00	.01	.06	.01	.00
Endrin	.00	.00	.00	.00	.00
Dieldrin	.00	.00	.00	.00	.00
Heptachlor	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00
Lindane	.00	.00	.01	.00	.00
Chlordane	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0
Alpha-BHC	.00	.00	.02	.00	.00
Phosphorothioates:					
Parathion	--	.00	.00	.00	.00
Methyl parathion	--	.00	.00	.00	.00
Malathion	--	--	--	--	--
Diazinon	--	.00	.00	.00	.00
HERBICIDES					
Chlorinated hydrocarbons:					
2,4-D	.00	.00	.00	.05	.00
Silvex	.00	.00	.00	.00	.00
2,4,5-T	.00	.00	.01	.02	.00

Table 3.--Pesticides in Texas surface waters, 1970--Continued

7-3460.7. LITTLE CYPRESS CREEK NEAR JEFFERSON, TEX. (32°42'46", 94°20'44")

(Results in micrograms per liter)

Date of collection	Dec. 4, 1969	Apr. 7, 1970	June 3, 1970	July 16, 1970	Aug. 4, 1970
Time (24 hour)	1525	1750	1400	1715	1515
Discharge (cfs)	120	480	215	70	15
INSECTICIDES					
Chlorinated hydrocarbons:					
Aldrin	0.00	0.00	0.00	0.00	0.00
DDD	.00	.00	.00	.00	.00
DDE	.00	.00	.00	.00	.00
DDT	.00	.00	.00	.00	.00
Endrin	.00	.00	.00	.00	.00
Dieldrin	.00	.00	.00	..00	.00
Heptachlor	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00
Lindane	.00	.00	.00	.00	.00
Chlordane	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0
Phosphorothioates:					
Parathion	--	.00	.00	.00	.00
Methyl parathion	--	.00	.00	.00	.00
Malathion	--	--	--	--	--
Diazinon	--	.00	.00	.00	.00
HERBICIDES					
Chlorinated hydrocarbons:					
2,4-D	.00	.00	.00	.00	.00
Silvex	.00	.00	.00	.00	.00
2,4,5-T	.00	.04	.00	.00	.00

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-0220. SABINE RIVER NEAR TATUM, TEX. (32°22'11", 94°27'28")

(Results in micrograms per liter)

Date of collection	Dec. 4, 1969	Apr. 7, 1970	June 3, 1970	July 17, 1970	Aug. 4, 1970
Time (24 hour)	1815	1635	1215	1500	1630
Discharge (cfs)	373	5940	1800	138	83
INSECTICIDES					
Chlorinated hydrocarbons:					
Aldrin	0.00	0.00	0.00	0.00	0.00
DDD	.00	.00	.00	.00	.00
DDE	.00	.00	.00	.00	.00
DDT	.00	.00	.00	.00	.00
Endrin	.00	.00	.00	.00	.00
Dieldrin	.00	.00	.00	.00	.00
Heptachlor	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00
Lindane	.00	.00	.00	.00	.00
Chlordane	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0
Phosphorothioates:					
Parathion	--	.00	.00	.00	.00
Methyl parathion	--	.00	.00	.00	.00
Malathion	--	--	--	--	--
Diazinon	--	.00	.00	.00	.00
HERBICIDES					
Chlorinated hydrocarbons:					
2,4-D	.00	.00	.05	.06	.00
Silvex	.00	.00	.00	.00	.00
2,4,5-T	.00	.01	.04	.09	.05

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-0305. SABINE RIVER NEAR RULIFF, TEX. (30°18'13", 93°44'37")

(Results in micrograms per liter)

Date of collection	Oct. 7, 1969	Feb. 18, 1970	June 24, 1970	Aug. 13, 1970		
Time (24 hour)	1605	1010	1905	1200		
Discharge (cfs)	1640	1850	1050	2500		
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00	0.00	0.00		
DDD	.00	.00	.00	.00		
DDE	.00	.00	.00	.00		
DDT	.00	.00	.00	.00		
Endrin	.00	.00	.00	.00		
Dieldrin	.00	.00	.00	.00		
Heptachlor	.00	.00	.00	.00		
Heptachlor epoxide	.00	.00	.00	.00		
Lindane	.00	.00	.00	.00		
Chlordane	.0	.0	.0	.0		
Toxaphene	0	0	0	0		
Phosphorothioates:						
Parathion	--	--	.00	.00		
Methyl parathion	--	--	.00	.00		
Malathion	--	--	--	.00		
Diazinon	--	--	.00	.00		
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	--	.00	.00	.00		
Silvex	--	.00	.00	.00		
2,4,5-T	--	.02	.00	.00		

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-0410. NECHES RIVER AT EVADALE, TEX. (30°21'22", 94°05'36")

(Results in micrograms per liter)

Date of collection	Oct. 7, 1969	Feb. 18, 1970	Apr. 30, 1970	June 25, 1970	Aug. 13, 1970	Aug. 25, 1970
Time (24 hour)	1415	1400	1200	1020	1350	1315
Discharge (cfs)	1340	1900	2050	1950	870	700
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00	0.00	0.00	0.00	0.00
DDD	.00	.00	.00	.00	.00	.00
DDE	.00	.00	.00	.00	.00	.00
DDT	.00	.00	.00	.00	.00	.00
Endrin	.00	.00	.00	.00	.00	.00
Dieldrin	.00	.00	.00	.00	.00	.00
Heptachlor	.00	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00	.00
Lindane	.00	.00	.00	.00	.00	.00
Chlordane	.0	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0	0
Phosphorothioates:						
Parathion	--	--	.00	.00	.00	.00
Methyl parathion	--	--	.00	.00	.00	.00
Malathion	--	--	--	--	.00	.00
Diazinon	--	--	.00	.00	.00	.00
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00	.00	.00	.00	.00	.00
Silvex	.00	.05	.01	.00	.00	.00
2,4,5-T	.01	.00	.01	.00	.00	.00

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-0625. TRINITY RIVER NEAR ROSSER, TEX. (32°25'35", 96°27'45")

(Results in micrograms per liter)

Date of collection	Dec. 2, 1969	Apr. 7, 1970	June 2, 1970	July 9, 1970	Aug. 5, 1970
Time (24 hour)	1730	1015	1505	1645	1115
Discharge (cfs)	510	4850	11300	564	577
INSECTICIDES					
Chlorinated hydrocarbons:					
Aldrin	0.00	0.00	0.00	0.00	0.00
DDD	.04	.01	.01	.02	.02
DDE	.00	.00	.00	.00	.00
DDT	.14	.02	.01	.01	.00
Endrin	.00	.00	.00	.00	.00
Dieldrin	.09	.02	.02	.25	.00
Heptachlor	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00
Lindane	.00	.00	.03	.05	.00
Chlordane	.41	.20	.06	.37	.13
Toxaphene	0	0	0	0	0
Alpha-BHC	.00	.00	.01	.00	.00
Phosphorothioates:					
Parathion	.00	.00	.00	.00	.00
Methyl parathion	.00	.00	.00	.00	.00
Malathion	--	--	--	--	--
Diazinon	.00	.00	.00	.00	.00
HERBICIDES					
Chlorinated hydrocarbons:					
2,4-D	.45	.12	.14	1.2	1.6
Silvex	.00	.00	.01	.00	.00
2,4,5-T	.06	.02	.10	.06	.02

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-0665. TRINITY RIVER AT ROMAYOR, TEX. (30°25'30", 94°51'02")

(Results in micrograms per liter)

Date of collection	Oct. 7, 1969	Feb. 20, 1970	Apr. 30, 1970	June 25, 1970	Aug. 13, 1970
Time (24 hour)	1150	1005	1300	1240	1545
Discharge (cfs)	1560	4430	3460	2760	1300
INSECTICIDES					
Chlorinated hydrocarbons:					
Aldrin	0.00	0.00	0.00	0.00	0.00
DDD	.00	.12	.00	.00	.00
DDE	.00	.05	.00	.00	.00
DDT	.00	.22	.00	.00	.00
Endrin	.00	.00	.00	.00	.00
Dieldrin	.00	.00	.01	.00	.00
Heptachlor	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00
Lindane	.00	.01	.00	.00	.00
Chlordane	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0
Phosphorothioates:					
Parathion	--	.00	.00	.00	.00
Methyl parathion	--	.00	.00	.00	.00
Malathion	--	--	--	--	.00
Diazinon	--	.00	.00	.00	.00
HERBICIDES					
Chlorinated hydrocarbons:					
2,4-D	.05	.05	.07	.09	.05
Silvex	.00	.00	.00	.00	.00
2,4,5-T	.02	.03	.02	.03	.02

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-0720. LAKE HOUSTON NEAR SHELDON, TEX. (29°54'58", 95°08'28")

(Results in micrograms per liter)

Date of collection	Oct. 3, 1969	Feb. 27, 1970	May 8, 1970	June 12, 1970	July 27, 1970	Aug 21, 1970
Time (24 hour)	1540	--	1700	1245	1440	1445
Discharge (cfs)	--	--	--	--	--	--
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00	0.00	0.00	0.00	0.00
DDD	.00	.00	.00	.00	.00	.00
DDE	.00	.00	.00	.00	.00	.00
DDT	.00	.00	.00	.00	.00	.00
Endrin	.00	.00	.00	.00	.00	.00
Dieldrin	.00	.00	.01	.01	.00	.00
Heptachlor	.00	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00	.00
Lindane	.00	.00	.00	.00	.00	.00
Chlordane	.0	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0	0
Phosphorothioates:						
Parathion	--	.00	.00	.00	.00	.00
Methyl parathion	--	.00	.00	.00	.00	.00
Malathion	--	--	--	--	--	.00
Diazinon	--	.00	.00	.00	.00	.00
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00	.00	.00	.04	.03	.00
Silvex	.00	.00	.00	.00	.00	.00
2,4,5-T	.00	.00	.05	.03	.01	.00

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-0720. LAKE HOUSTON NEAR SHELDON, TEX.--Continued

(Results in micrograms per liter)

Date of collection	Sept. 29, 1970					
Time (24 hour)	1340					
Discharge (cfs)	--					
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00					
DDD	.00					
DDE	.00					
DDT	.00					
Endrin	.00					
Dieldrin	.00					
Heptachlor	.00					
Heptachlor epoxide	.00					
Lindane	.00					
Chlordane	.0					
Toxaphene	0					
Phosphorothioates:						
Parathion	.00					
Methyl parathion	.00					
Malathion	.00					
Diazinon	.00					
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00					
Silvex	.00					
2,4,5-T	.00					

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-0740. BUFFALO BAYOU AT HOUSTON, TEX. (29°45'36", 95°24'30")

(Results in micrograms per liter)

Date of collection	Mar. 11, 1970	May 1, 1970	Aug. 24, 1970			
Time (24 hour)	0950	1630	1315			
Discharge (cfs)	1580	2860	360			
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00	0.00			
DDD	.20	.15	.10			
DDE	.06	.00	.01			
DDT	.31	.26	.17			
Endrin	.00	.00	.00			
Dieldrin	.05	.10	.00			
Heptachlor	.00	.00	.00			
Heptachlor epoxide	.00	.00	.00			
Lindane	.24	.24	.25			
Chlordane	.0	.61	.20			
Toxaphene	0	0	0			
Phosphorothioates:						
Parathion	.00	.00	.17			
Methyl parathion	.17	.05	.17			
Malathion	--	--	.21			
Diazinon	.00	.00	1.7			
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.37	.35	--			
Silvex	.03	.05	--			
2,4,5-T	.39	.49	--			

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-0745. WHITEOAK BAYOU AT HOUSTON, TEX. (29°46'30", 95°23'49")

(Results in micrograms per liter)

Date of collection	Mar. 11, 1970	July 21, 1970	Aug. 24, 1970			
Time (24 hour)	1045	2000	1240			
Discharge (cfs)	320	1950	74			
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00	0.00			
DDD	.18	.07	.08			
DDE	.00	.00	.02			
DDT	.10	.22	.07			
Endrin	.00	.00	.00			
Dieldrin	.07	.08	.00			
Heptachlor	.00	.00	.00			
Heptachlor epoxide	.00	.00	.00			
Lindane	.10	.00	.09			
Chlordane	.39	.20	.18			
Toxaphene	0	0	0			
Phosphorothioates:						
Parathion	.00	.00	.00			
Methyl parathion	.00	.00	.00			
Malathion	--	--	.44			
Diazinon	.00	1.1	.95			
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	1.5	.13	.52			
Silvex	.00	.02	.00			
2,4,5-T	.91	.21	.24			

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-0747.8. KEEGANS BAYOU AT KEEGAN ROAD, HOUSTON, TEX. (29°39'55", 95°35'42")
(Results in micrograms per liter)

Date of collection	May 15, 1970					
Time (24 hour)	1125					
Discharge (cfs)	0.3					
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00					
DDD	.00					
DDE	.00					
DDT	.00					
Endrin	.00					
Dieldrin	.00					
Heptachlor	.00					
Heptachlor epoxide	.00					
Lindane	.00					
Chlordane	.0					
Toxaphene	0					
Phosphorothioates:						
Parathion	.00					
Methyl parathion	.00					
Malathion	--					
Diazinon	.13					
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00					
Silvex	.00					
2,4,5-T	.00					

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-0748. KEEGANS BAYOU AT ROARK ROAD NEAR HOUSTON, TEX. (29°39'23", 95°33'43")

(Results in micrograms per liter)

Date of collection	Dec. 6, 1969	May 15, 1970	May 15, 1970	May 15, 1970		
Time (24 hour)	1045	1045	1620	2230		
Discharge (cfs)	42	78	82	110		
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00	0.00	0.00		
DDD	.04	.00	.00	.01		
DDE	.01	.00	.02	.01		
DDT	.03	.36	.06	.01		
Endrin	.00	.00	.00	.00		
Dieldrin	.01	.12	.06	.01		
Heptachlor	.00	.00	.00	.00		
Heptachlor epoxide	.00	.00	.00	.00		
Lindane	.02	.00	.00	.00		
Chlordane	.09	.53	.10	.03		
Toxaphene	0	0	0	0		
Alpha-BHC	.01	.00	.00	.00		
Phosphorothioates:						
Parathion	.00	.00	.00	.00		
Methyl parathion	.00	.00	.00	.00		
Malathion	--	--	--	--		
Diazinon	.00	.22	.15	.00		
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00	.12	.14	.06		
Silvex	.00	.03	.03	.00		
2,4,5-T	.03	.02	.06	.02		

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-0749. WILLOW WATERHOLE BAYOU AT LANDSDOWNE STREET, HOUSTON, TEX. (29°39'01", 95°29'11")

(Results in micrograms per liter)

Date of collection	May 15, 1970	May 15, 1970				
Time (24 hour)	1200	1500				
Discharge (cfs)	18	165				
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00				
DDD	.09	.05				
DDE	.08	.12				
DDT	.14	.21				
Endrin	.00	.00				
Dieldrin	.07	.11				
Heptachlor	.00	.00				
Heptachlor epoxide	.00	.00				
Lindane	.06	.20				
Chlordane	.14	.17				
Toxaphene	.4	.2				
Alpha-BHC	.01	.04				
Phosphorothioates:						
Parathion	.00	.06				
Methyl parathion	.00	.00				
Malathion	--	--				
Diazinon	.89	1.7				
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.07	.22				
Silvex	.04	.11				
2,4,5-T	.79	2.1				

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-0750. BRAYS BAYOU AT HOUSTON, TEX. (29°41'49", 95°24'43")

(Results in micrograms per liter)

Date of collection	Dec. 6, 1969	May 15, 1970	May 15, 1970	May 16, 1970	May 17, 1970	Aug. 24, 1970
Time (24 hour)	1220	1310	1545	0035	1445	0915
Discharge (cfs)	1400	470	2900	2360	400	105
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00	0.57	0.00	0.02	0.00
DDD	.04	.11	.04	.01	.01	.03
DDE	.02	.08	.05	.03	.01	.00
DDT	.12	.34	.25	.07	.01	.05
Endrin	.00	.00	.00	.00	.00	.00
Dieldrin	.06	.08	.12	.05	.04	.00
Heptachlor	.00	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00	.00
Lindane	.21	.00	.00	.08	.00	.20
Chlordane	.17	.55	.39	.12	.05	.04
Toxaphene	0	0	0	0	0	0
Alpha-BHC	.00	.00	.00	.02	.00	.00
Phosphorothioates:						
Parathion	.00	.00	.00	.00	.00	.00
Methyl parathion	.00	.00	.00	.00	.00	.19
Malathion	--	--	--	--	--	.25
Diazinon	.00	.00	.00	.00	.00	2.2
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.19	.22	.16	.17	.08	.44
Silvex	.00	.02	.03	.03	.00	.00
2,4,5-T	.13	.51	.44	.53	.08	.46

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-0755. SIMS BAYOU AT HOUSTON, TEX. (29°40'27", 95°17'21")

(Results in micrograms per liter)

Date of collection	May 1, 1970	May 21, 1970				
Time (24 hour)	1150	2245				
Discharge (cfs)	360	8800				
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00				
DDD	.14	.01				
DDE	.00	.03				
DDT	.07	.02				
Endrin	.00	.00				
Dieldrin	.17	.02				
Heptachlor	.00	.00				
Heptachlor epoxide	.00	.00				
Lindane	.00	.03				
Chlordane	.89	.07				
Toxaphene	0	0				
Alpha-BHC	.00	.02				
Phosphorothioates:						
Parathion	.00	.00				
Methyl parathion	.00	.00				
Malathion	--	--				
Diazinon	.00	.00				
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.11	.04				
Silvex	.01	.00				
2,4,5-T	.13	.14				

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-0756.5. BERRY BAYOU AT FOREST OAKS STREET, HOUSTON, TEX. (29°40'35", 95°14'37")

(Results in micrograms per liter)

Date of collection	Oct. 30, 1969					
Time (24 hour)	1830					
Discharge (cfs)	125					
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00					
DDD	.00					
DDE	.00					
DDT	.00					
Endrin	.00					
Dieldrin	.04					
Heptachlor	.00					
Heptachlor epoxide	.00					
Lindane	.02					
Chlordane	.02					
Toxaphene	0					
Phosphorothioates:						
Parathion	--					
Methyl parathion	--					
Malathion	--					
Diazinon	--					
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00					
Silvex	.00					
2,4,5-T	.17					

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-0757.7. HUNTING BAYOU AT U.S. HIGHWAY 90-A, HOUSTON, TEX. (29°47'43", 95°16'21")

(Results in micrograms per liter)

Date of collection	Mar. 11, 1970	Aug. 24, 1970				
Time (24 hour)	1125	1030				
Discharge (cfs)	212	8.3				
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00				
DDD	.06	.03				
DDE	.00	.00				
DDT	.08	.00				
Endrin	.00	.00				
Dieldrin	.02	.00				
Heptachlor	.00	.00				
Heptachlor epoxide	.00	.00				
Lindane	.04	.01				
Chlordane	.12	.03				
Toxaphene	0	0				
Phosphorothioates:						
Parathion	.00	.00				
Methyl parathion	.00	.04				
Malathion	--	.24				
Diazinon	.00	.14				
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	26	2.1				
Silvex	.00	.00				
2,4,5-T	.55	.16				

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-0760. GREENS BAYOU NEAR HOUSTON, TEX. (29°55'05", 95°18'24")

(Results in micrograms per liter)

Date of collection	Aug. 18, 1970	Aug. 24, 1970				
Time (24 hour)	1420	1115				
Discharge (cfs)	5.0	20				
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00				
DDD	.01	.00				
DDE	.00	.00				
DDT	.00	.00				
Endrin	.00	.00				
Dieldrin	.00	.00				
Heptachlor	.00	.00				
Heptachlor epoxide	.00	.00				
Lindane	.01	.02				
Chlordane	.0	.0				
Toxaphene	0	0				
Phosphorothioates:						
Parathion	.00	.00				
Methyl parathion	.24	.09				
Malathion	.00	.10				
Diazinon	.11	.31				
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00	.00				
Silvex	.00	.00				
2,4,5-T	.00	.07				

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-0873. CLEAR FORK BRAZOS RIVER AT ELIASVILLE, TEX. (32°57'36", 98°45'59")

(Results in micrograms per liter)

Date of collection	Nov. 4, 1969	Mar. 24, 1970	June 2, 1970	July 7, 1970	Aug. 12, 1970
Time (24 hour)	0810	1205	1100	1200	1040
Discharge (cfs)	126	223	205	2.0	0.04
INSECTICIDES					
Chlorinated hydrocarbons:					
Aldrin	0.00	0.00	0.00	0.00	0.00
DDD	.00	.00	.00	.00	.00
DDE	.00	.00	.00	.00	.00
DDT	.00	.00	.00	.00	.00
Endrin	.00	.00	.00	.00	.00
Dieldrin	.00	.00	.00	.00	.00
Heptachlor	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00
Lindane	.00	.00	.00	.00	.00
Chlordane	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0
Phosphorothioates:					
Parathion	--	.00	.00	.00	.00
Methyl parathion	--	.00	.00	.00	.00
Malathion	--	--	--	--	.00
Diazinon	--	.00	.00	.00	.00
HERBICIDES					
Chlorinated hydrocarbons:					
2,4-D	.00	.00	.00	.10	.00
Silvex	.00	.00	.00	.00	.00
2,4,5-T	.01	.01	.01	.19	.13

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-0880. BRAZOS RIVER NEAR SOUTH BEND, TEX. (33°01'30", 98°38'50")

(Results in micrograms per liter)

Date of collection	Nov. 3, 1969	Mar. 24, 1970	June 2, 1970	July 7, 1970	Aug. 12, 1970
Time (24 hour)	1520	0920	0910	0915	0925
Discharge (cfs)	1120	546	304	15	0.17
INSECTICIDES					
Chlorinated hydrocarbons:					
Aldrin	0.00	0.00	0.00	0.00	0.00
DDD	.01	.00	.00	.00	.00
DDE	.01	.00	.00	.00	.00
DDT	.01	.00	.00	.00	.00
Endrin	.00	.00	.00	.00	.00
Dieldrin	.00	.00	.00	.00	.00
Heptachlor	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00
Lindane	.01	.00	.00	.00	.00
Chlordane	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0
Alpha-BHC	.02	.00	.00	.00	.00
Phosphorothioates:					
Parathion	--	.00	.00	.00	.00
Methyl parathion	--	.00	.00	.00	.00
Malathion	--	--	--	--	.00
Diazinon	--	.00	.00	.00	.00
HERBICIDES					
Chlorinated hydrocarbons:					
2,4-D	.00	.00	.00	.00	.00
Silvex	.00	.00	.00	.00	.00
2,4,5-T	.01	.01	.03	.05	.03

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-0965. BRAZOS RIVER AT WACO, TEX. (31°32'06", 97°04'22")

(Results in micrograms per liter)

Date of collection	Oct. 31, 1969	Apr. 9, 1970	Apr. 23, 1970	June 1, 1970	Aug. 6, 1970
Time (24 hour)	1500	1410	1030	1230	1140
Discharge (cfs)	892	1210	2500	830	2590
INSECTICIDES					
Chlorinated hydrocarbons:					
Aldrin	0.00	0.00	0.00	0.00	0.00
DDD	.00	.01	.00	.00	.00
DDE	.00	.00	.00	.00	.00
DDT	.00	.07	.00	.01	.00
Endrin	.00	.00	.00	.00	.00
Dieldrin	.00	.01	.00	.00	.00
Heptachlor	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00
Lindane	.00	.00	.00	.00	.00
Chlordane	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0
Phosphorothioates:					
Parathion	--	.00	.00	.00	.00
Methyl parathion	--	.00	.00	.00	.00
Malathion	--	--	--	--	.00
Diazinon	--	.00	.00	.00	.00
HERBICIDES					
Chlorinated hydrocarbons:					
2,4-D	.04	.69	.00	.03	--
Silvex	.00	.00	.00	.00	--
2,4,5-T	.02	.00	.01	.01	--

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1140. BRAZOS RIVER AT RICHMOND, TEX. (29°34'56", 95°45'27")

(Results in micrograms per liter)

Date of collection	Oct. 9, 1969	Oct. 20, 1969	Oct. 27, 1969	Dec. 4, 1969	Feb. 19, 1970	Mar. 19, 1970
Time (24 hour)	1400	1115	1110	1110	1230	1605
Discharge (cfs)	946	1370	1310	1510	4500	21600
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00	0.00	0.00	0.00	0.00
DDD	.00	.00	.00	.00	.00	.03
DDE	.00	.00	.00	.00	.00	04
DDT	.00	.00	.00	.00	.00	.08
Endrin	.00	.00	.00	.00	.00	.00
Dieldrin	.00	.00	.00	.00	.00	.00
Heptachlor	.00	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00	.00
Lindane	.00	.00	.00	.00	.00	.00
Chlordane	.0	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0	0
PCB	.0	.0	.0	.0	.0	.0
Phosphorothioates:						
Parathion	--	--	--	--	--	.00
Methyl parathion	--	--	--	--	--	.00
Malathion	--	--	--	--	--	--
Diazinon	--	--	--	--	--	.00
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00	.00	.00	.00	.00	.04
Silvex	.00	.00	.00	.00	.00	.00
2,4,5-T	.00	.00	.01	.00	.01	.02

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1140. BRAZOS RIVER AT RICHMOND, TEX.--Continued

(Results in micrograms per liter)

Date of collection	Apr. 29, 1970	May 18, 1970	June 1, 1970	June 23, 1970	July 16, 1970	Aug. 18, 1970
Time (24 hour)	1640	0950	1200	1415	1425	1130
Discharge (cfs)	11000	7070	16400	3980	1370	1180
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00	0.00	0.00	0.00	0.00
DDD	.01	.00	.03	.00	.00	.00
DDE	.01	.00	.04	.00	.00	.00
DDT	.01	.00	.06	.00	.00	.00
Endrin	.00	.00	.00	.00	.00	.00
Dieldrin	.00	.00	.00	.00	.00	.00
Heptachlor	.00	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00	.00
Lindane	.00	.00	.01	.00	.00	.00
Chlordane	.0	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0	0
PCB	.0	.0	.0	.0	.0	.2
Phosphorothioates:						
Parathion	.00	.00	--	--	.00	.00
Methyl parathion	.00	.00	--	--	.00	.00
Malathion	--	--	--	--	--	.00
Diazinon	.00	.00	--	--	.00	.00
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00	.06	.07	.00	.00	.00
Silvex	.00	.00	.00	.00	.00	.00
2,4,5-T	.01	.01	.01	.00	.00	.00

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1140. BRAZOS RIVER AT RICHMOND, TEX.--Continued

(Results in micrograms per liter)

Date of collection	Aug. 19, 1970					
Time (24 hour)	1330					
Discharge (cfs)	988					
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00					
DDD	.00					
DDE	.00					
DDT	.00					
Endrin	.00					
Dieldrin	.00					
Heptachlor	.00					
Heptachlor epoxide	.00					
Lindane	.00					
Chlordane	.0					
Toxaphene	0					
Phosphorothioates:						
Parathion	.00					
Methyl parathion	.00					
Malathion	--					
Diazinon	.00					
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	--					
Silvex	--					
2,4,5-T	--					

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1166.5. BRAZOS RIVER NEAR ROSHARON, TEX. (29°20'58", 95°34'56")

(Results in micrograms per liter)

Date of collection	Oct. 31, 1969	Dec. 3, 1969	Apr. 22, 1970	Aug. 13, 1970		
Time (24 hour)	1040	1355	0805	1120		
Discharge (cfs)	1850	1840	15500	1240		
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00	0.00	0.00		
DDD	.00	.00	.01	.00		
DDE	.00	.00	.02	.00		
DDT	.00	.00	.02	.00		
Endrin	.00	.00	.00	.00		
Dieldrin	.00	.00	.00	.00		
Heptachlor	.00	.00	.00	.00		
Heptachlor epoxide	.00	.00	.00	.00		
Lindane	.00	.00	.00	.00		
Chlordane	.0	.0	.0	.0		
Toxaphene	0	0	0	0		
Phosphorothioates:						
Parathion	--	--	.00	.00		
Methyl parathion	--	--	.00	.00		
Malathion	--	--	--	.00		
Diazinon	--	--	.00	.00		
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.05	.00	.08	.00		
Silvex	.00	.00	.00	.00		
2,4,5-T	.01	.01	.01	.00		

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1179. BIG BOGGY CREEK NEAR WADSWORTH, TEX. (28°48'26", 95°57'02")

(Results in micrograms per liter)

Date of collection	July 20, 1970	Aug. 4, 1970				
Time (24 hour)	1400	1200				
Discharge (cfs)	3.3	13				
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00				
DDD	<.1	<.1				
DDE	<.1	<.1				
DDT	<.1	<.1				
Endrin	.00	.00				
Dieldrin	<.1	<.1				
Heptachlor	.00	.00				
Heptachlor epoxide	.00	.00				
Lindane	.00	.00				
Chlordane	.0	.0				
Toxaphene	0	0				
Strobane	1.5	.8				
Phosphorothioates:						
Parathion	.00	.00				
Methyl parathion	.00	.00				
Malathion	--	--				
Diazinon	.00	.00				
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00	.00				
Silvex	.00	.00				
2,4,5-T	.00	.00				

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1238.5. COLORADO RIVER ABOVE SILVER, TEX. (32°03'13", 100°45'42")

(Results in micrograms per liter)

Date of collection	Oct. 16, 1969	Apr. 9, 1970				
Time (24 hour)	1430	1520				
Discharge (cfs)	1.0	2.5				
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00				
DDD	.00	.00				
DDE	.00	.00				
DDT	.00	.00				
Endrin	.00	.00				
Dieldrin	.00	.00				
Heptachlor	.00	.00				
Heptachlor epoxide	.00	.00				
Lindane	.00	.00				
Chlordane	.0	.0				
Toxaphene	0	0				
Phosphorothioates:						
Parathion	--	.00				
Methyl parathion	--	.00				
Malathion	--	--				
Diazinon	--	.00				
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00	.00				
Silvex	.00	.00				
2,4,5-T	.05	.02				

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1365. CONCHO RIVER NEAR PAINT ROCK, TEX. (31°30'57", 99°55'08")

(Results in micrograms per liter)

Date of collection	Oct. 1, 1969	Dec. 9, 1969	Feb. 25, 1970	Aug. 25, 1970	Sept. 14, 1970
Time (24 hour)	1250	1155	1205	1005	1245
Discharge (cfs)	22	81	60	7.5	9.2
INSECTICIDES					
Chlorinated hydrocarbons:					
Aldrin	0.00	0.00	0.00	0.00	0.00
DDD	.00	.00	.00	.00	.00
DDE	.00	.00	.00	.00	.00
DDT	.00	.00	.00	.00	.00
Endrin	.00	.00	.00	.00	.00
Dieldrin	.00	.00	.00	.00	.00
Heptachlor	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00
Lindane	.00	.00	.00	.00	.00
Chlordane	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0
Phosphorothioates:					
Parathion	--	--	.00	.00	.00
Methyl parathion	--	--	.00	.00	.00
Malathion	--	--	--	.00	.00
Diazinon	--	--	.00	.00	.00
HERBICIDES					
Chlorinated hydrocarbons:					
2,4-D	.00	.00	.00	.00	.00
Silvex	.00	.00	.00	.00	.00
2,4,5-T	.01	.00	.00	.00	.01

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1470. COLORADO RIVER NEAR SAN SABA, TEX. (31°13'04", 98°33'51")

(Results in micrograms per liter)

Date of collection	Oct. 5, 1969	Dec. 4, 1969	Apr. 22, 1970	June 3, 1970	July 8, 1970	Aug. 11, 1970
Time (24 hour)	1345	1300	1120	1530	0915	0900
Discharge (cfs)	44000	595	678	3200	136	74
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00	0.00	0.00	0.00	0.00
DDD	.00	.00	.00	.00	.00	.00
DDE	.02	.00	.00	.00	.00	.00
DDT	.02	.00	.00	.01	.00	.00
Endrin	.00	.00	.00	.00	.00	.00
Dieldrin	.00	.00	.00	.00	.00	.00
Heptachlor	.00	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00	.00
Lindane	.00	.00	.00	.00	.00	.00
Chlordane	.0	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0	0
Phosphorothioates:						
Parathion	--	--	.00	.00	.00	.00
Methyl parathion	--	--	.00	.00	.00	.00
Malathion	--	--	--	--	--	--
Diazinon	--	--	.00	.00	.00	.00
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00	.00	.00	.06	.00	.00
Silvex	.00	.00	.00	.00	.00	.00
2,4,5-T	.06	.00	.00	.04	.01	.00

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1470. COLORADO RIVER NEAR SAN SABA, TEX.--Continued

(Results in micrograms per liter)

Date of collection	Sept. 17, 1970					
Time (24 hour)	1105					
Discharge (cfs)	83					
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00					
DDD	.00					
DDE	.00					
DDT	.00					
Endrin	.00					
Dieldrin	.00					
Heptachlor	.00					
Heptachlor epoxide	.00					
Lindane	.00					
Chlordane	.0					
Toxaphene	0					
Phosphorothioates:						
Parathion	.00					
Methyl parathion	.00					
Malathion	.00					
Diazinon	.00					
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00					
Silvex	.00					
2,4,5-T	.00					

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1620. COLORADO RIVER AT WHARTON, TEX. (29°18'32", 96°06'13")

(Results in micrograms per liter)

Date of collection	Oct. 9, 1969	Oct. 20, 1969	Oct. 29, 1969	Dec. 2, 1969	Jan. 14, 1970	Feb. 19, 1970
Time (24 hour)	1200	0930	1610	1520	1630	1045
Discharge (cfs)	395	2980	2520	2670	3280	2020
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00	0.00	0.00	0.00	0.00
DDD	.00	.00	.01	.00	.00	.00
DDE	.00	.00	.00	.00	.00	.00
DDT	.00	.00	.00	.00	.00	.00
Endrin	.00	.00	.00	.00	.00	.00
Dieldrin	.00	.00	.00	.00	.00	.00
Heptachlor	.00	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00	.00
Lindane	.00	.00	.00	.00	.00	.00
Chlordane	.0	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0	0
Phosphorothioates:						
Parathion	--	--	--	--	--	--
Methyl parathion	--	--	--	--	--	--
Malathion	--	--	--	--	--	--
Diazinon	--	--	--	--	--	--
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00	.00	.00	.00	.00	.00
Silvex	.00	.00	.00	.00	.00	.00
2,4,5-T	.00	.00	.00	.00	.00	.00

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1620. COLORADO RIVER AT WHARTON, TEX.--Continued

(Results in micrograms per liter)

Date of collection	Mar. 19, 1970	Apr. 29, 1970	May 18, 1970	June 23, 1970	July 16, 1970	Aug. 18, 1970
Time (24 hour)	1400	1335	1650	1250	1114	1000
Discharge (cfs)	9160	4610	24200	2240	3360	935
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00	0.00	0.00	0.00	0.00
DDD	.01	.00	.02	.00	.00	.00
DDE	.01	.00	.02	.00	.00	.00
DDT	.03	.01	.03	.00	.00	.00
Endrin	.00	.00	.00	.00	.00	.00
Dieldrin	.00	.00	.00	.00	.00	.00
Heptachlor	.00	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00	.00
Lindane	.00	.00	.00	.00	.00	.00
Chlordane	.0	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0	0
Phosphorothioates:						
Parathion	.00	.00	.00	--	.00	.00
Methyl parathion	.00	.00	.00	--	.00	.00
Malathion	--	--	--	--	--	.00
Diazinon	.00	.00	.00	--	.00	.00
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.05	.00	.40	.00	.00	.00
Silvex	.00	.00	.00	.00	.00	.00
2,4,5-T	.00	.00	.06	.00	.00	.00

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1620. COLORADO RIVER AT WHARTON, TEX.--Continued

(Results in micrograms per liter)

Date of collection	Aug. 19, 1970	Sept. 11, 1970				
Time (24 hour)	1125	1100				
Discharge (cfs)	990	1190				
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00				
DDD	.00	.00				
DDE	.00	.00				
DDT	.00	.00				
Endrin	.00	.00				
Dieldrin	.00	.00				
Heptachlor	.00	.00				
Heptachlor epoxide	.00	.00				
Lindane	.00	.00				
Chlordane	.0	.0				
Toxaphene	0	0				
Phosphorothioates:						
Parathion	.00	.00				
Methyl parathion	.00	.00				
Malathion	--	.00				
Diazinon	.00	.00				
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	--	.00				
Silvex	--	.00				
2,4,5-T	--	.00				

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1626. TRES PALACIOS CREEK NEAR MIDFIELD, TEX. (28°55'40", 96°10'15")

(Results in micrograms per liter)

Date of collection	July 21, 1970	Aug. 4, 1970				
Time (24 hour)	0900	1630				
Discharge (cfs)	80	181				
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00				
DDD	<.1	<.1				
DDE	<.1	<.1				
DDT	<.1	<.1				
Endrin	.00	.00				
Dieldrin	<.1	<.1				
Heptachlor	.00	.00				
Heptachlor epoxide	.00	.00				
Lindane	.00	.00				
Chlordane	.0	.0				
Toxaphene	0	0				
Strobane	.8	.4				
Phosphorothioates:						
Parathion	.00	.00				
Methyl parathion	.00	.00				
Malathion	--	--				
Diazinon	.00	.00				
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00	.00				
Silvex	.00	.00				
2,4,5-T	.00	.00				

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1626.5. CASHS CREEK NEAR BLESSING, TEX. (28°48'38", 96°11'51")

(Results in micrograms per liter)

Date of collection	July 20, 1970					
Time (24 hour)	1630					
Discharge (cfs)	7.6					
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00					
DDD	.00					
DDE	.02					
DDT	.00					
Endrin	.00					
Dieldrin	.00					
Heptachlor	.00					
Heptachlor epoxide	.00					
Lindane	.00					
Chlordane	.0					
Toxaphene	0					
Phosphorothioates:						
Parathion	.00					
Methyl parathion	.00					
Malathion	--					
Diazinon	.00					
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00					
Silvex	.00					
2,4,5-T	.00					

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1627. EAST CARANCAHUA CREEK NEAR BLESSING, TEX. (28°51'48", 96°17'05")

(Results in micrograms per liter)

Date of collection	July 21, 1970					
Time (24 hour)	1100					
Discharge (cfs)	27					
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00					
DDD	<.1					
DDE	<.1					
DDT	<.1					
Endrin	.00					
Dieldrin	<.1					
Heptachlor	.00					
Heptachlor epoxide	.00					
Lindane	.00					
Chlordane	.0					
Toxaphene	0					
Strobane	.8					
Phosphorothioates:						
Parathion	.00					
Methyl parathion	.00					
Malathion	--					
Diazinon	.00					
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00					
Silvex	.00					
2,4,5-T	.00					

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1628. WEST CARANCAHUA CREEK NEAR LaWARD, TEX. (28°53'19", 96°27'03")

(Results in micrograms per liter)

Date of collection	July 21, 1970					
Time (24 hour)	1330					
Discharge (cfs)	6.2					
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00					
DDD	<.1					
DDE	<.1					
DDT	<.1					
Endrin	.00					
Dieldrin	<.1					
Heptachlor	.00					
Heptachlor epoxide	.00					
Lindane	.00					
Chlordane	.0					
Toxaphene	0					
Strobane	.3					
Phosphorothioates:						
Parathion	.03					
Methyl parathion	.22					
Malathion	--					
Diazinon	.00					
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00					
Silvex	.00					
2,4,5-T	.00					

Table 3:--Pesticides in Texas surface waters, 1970--Continued

8-1640. LAVACA RIVER NEAR EDNA, TEX. (28°57'34", 96°41'10")

(Results in micrograms per liter)

Date of collection	Oct. 21, 1969	Feb. 10, 1970	Apr. 13, 1970	June 2, 1970	Aug. 5, 1970
Time (24 hour)	1235	1130	1200	1600	1030
Discharge (cfs)	25	100	98	1180	37
INSECTICIDES					
Chlorinated hydrocarbons:					
Aldrin	0.00	0.00	0.00	0.00	0.00
DDD	.00	.00	.00	.00	.00
DDE	.00	.00	.00	.00	.00
DDT	.00	.00	.00	.00	.00
Endrin	.00	.00	.00	.00	.00
Dieldrin	.00	.00	.00	.00	.00
Heptachlor	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00
Lindane	.00	.00	.00	.00	.00
Chlordane	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0
Phosphorothioates:					
Parathion	--	--	.00	.00	.00
Methyl parathion	--	--	.00	.00	.00
Malathion	--	--	--	--	.00
Diazinon	--	--	.00	.00	.00
HERBICIDES					
Chlorinated hydrocarbons:					
2,4-D	.00	.03	1.7	--	.00
Silvex	.00	.00	.00	--	.00
2,4,5-T	.02	.01	.00	--	.01

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1645. NAVIDAD RIVER NEAR GANADO, TEX. (29°01'32", 96°33'08")

(Results in micrograms per liter)

Date of collection	Oct. 21, 1969	Apr. 13, 1970	June 2, 1970	June 10, 1970	Aug. 5, 1970
Time (24 hour)	1200	1130	1800	1045	1100
Discharge (cfs)	80	307	2140	110	136
INSECTICIDES					
Chlorinated hydrocarbons:					
Aldrin	0.00	0.00	0.00	0.00	0.00
DDD	.00	.00	.00	.00	.00
DDE	.00	.00	.00	.00	.00
DDT	.00	.00	.00	.00	.00
Endrin	.00	.00	.00	.00	.00
Dieldrin	.00	.00	.00	.00	.00
Heptachlor	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00
Lindane	.00	.00	.00	.00	.00
Chlordane	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0
Phosphorothioates:					
Parathion	--	.00	.00	.00	.00
Methyl parathion	--	.00	.00	.00	.00
Malathion	--	--	--	--	.00
Diazinon	--	.00	.00	.00	.00
HERBICIDES					
Chlorinated hydrocarbons:					
2,4-D	.00	.61	.00	.00	.00
Silvex	.00	.00	.00	.00	.00
2,4,5-T	.01	.00	.00	.00	.00

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1646. GARCITAS CREEK NEAR INEZ, TEX. (28°53'28", 96°49'08")

(Results in micrograms per liter)

Date of collection	July 21, 1970					
Time (24 hour)	1520					
Discharge (cfs)	0.26					
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00					
DDD	.00					
DDE	.00					
DDT	.00					
Endrin	.00					
Dieldrin	.00					
Heptachlor	.00					
Heptachlor epoxide	.00					
Lindane	.00					
Chlordane	.0					
Toxaphene	0					
Phosphorothioates:						
Parathion	.00					
Methyl parathion	.00					
Malathion	--					
Diazinon	.00					
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00					
Silvex	.00					
2,4,5-T	.00					

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1648. PLACEDO CREEK NEAR PLACEDO, TEX. (28°43'30", 96°46'07")

(Results in micrograms per liter)

Date of collection	July 22, 1970					
Time (24 hour)	0915					
Discharge (cfs)	109					
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00					
DDD	<.1					
DDE	<.1					
DDT	<.1					
Endrin	.0					
Dieldrin	<.1					
Heptachlor	.00					
Heptachlor epoxide	.00					
Lindane	.00					
Chlordane	.0					
Toxaphene	0					
Strobane	.1					
Phosphorothioates:						
Parathion	.00					
Methyl parathion	.00					
Malathion	--					
Diazinon	.00					
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.04					
Silvex	.00					
2,4,5-T	.42					

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1648.5. CHOCOLATE BAYOU AT PORT LAVACA, TEX. (28°35'40", 96°41'48")

(Results in micrograms per liter)

Date of collection	July 22, 1970					
Time (24 hour)	1135					
Discharge (cfs)	42					
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00					
DDD	<.1					
DDE	<.1					
DDT	<.1					
Endrin	.00					
Dieldrin	<.1					
Heptachlor	.00					
Heptachlor epoxide	.00					
Lindane	.00					
Chlordane	.0					
Toxaphene	0					
Strobane	1.5					
Phosphorothioates:						
Parathion	.36					
Methyl parathion	1.5					
Malathion	--					
Diazinon	.00					
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00					
Silvex	.00					
2,4,5-T	.00					

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1765.2. GUADALUPE RIVER BELOW VICTORIA, TEX. (28°45'10", 97°00'30")

(Results in micrograms per liter)

Date of collection	Oct. 21, 1969	Feb. 10, 1970	Apr. 13, 1970	June 10, 1970	Aug. 4, 1970
Time (24 hour)	1315	1245	1320	1130	1430
Discharge (cfs) a	1550	4100	2040	2780	1020
INSECTICIDES					
Chlorinated hydrocarbons:					
Aldrin	0.00	0.00	0.00	0.00	0.00
DDD	.00	.01	.00	.00	.00
DDE	.00	.00	.00	.00	.00
DDT	.00	.01	.01	.00	.00
Endrin	.00	.00	.00	.00	.00
Dieldrin	.00	.00	.00	.00	.00
Heptachlor	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00
Lindane	.00	.00	.00	.00	.00
Chlordane	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0
Phosphorothioates:					
Parathion	--	--	.00	.00	.00
Methyl parathion	--	--	.00	.00	.00
Malathion	--	--	--	--	.00
Diazinon	--	--	.00	.00	.00
HERBICIDES					
Chlorinated hydrocarbons:					
2,4-D	.05	.00	.00	.00	.00
Silvex	.00	.00	.00	.00	.00
2,4,5-T	.02	.02	.00	.01	.00

a Daily mean discharge.

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1776. OLMOS CREEK TRIBUTARY AT FARM ROAD 1535, AT SHAVANO PARK, TEX. (29°34'35", 98°32'45")

(Results in micrograms per liter)

Date of collection	May 26, 1970					
Time (24 hour)	1900					
Discharge (cfs)	7.0					
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00					
DDD	.00					
DDE	.00					
DDT	.00					
Endrin	.00					
Dieldrin	.02					
Heptachlor	.00					
Heptachlor epoxide	.00					
Lindane	.02					
Chlordane	.0					
Toxaphene	0					
Alpha-BHC	.01					
Phosphorothioates:						
Parathion	.00					
Methyl parathion	.00					
Malathion	--					
Diazinon	.00					
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00					
Silvex	.00					
2,4,5-T	.26					

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1777. OLMOS CREEK AT DRESDEN DRIVE, SAN ANTONIO, TEX. (29°29'56", 98°30'36")

(Results in micrograms per liter)

Date of collection	Dec. 5, 1969	Feb. 24, 1970	Mar. 17, 1970	May 15, 1970	Sept. 25, 1970	Sept. 26, 1970
Time (24 hour)	1730	1115	0825	1445	1115	1220
Discharge (cfs)	5.7	12	14	6.8	36	22
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00	0.00	0.00	0.00	0.00
DDD	.01	.00	.00	.02	.00	.00
DDE	.01	.00	.00	.01	.01	.01
DDT	.03	.00	.06	.03	.10	.07
Endrin	.00	.00	.00	.00	.00	.00
Dieldrin	.01	.00	.02	.02	.02	.01
Heptachlor	.00	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.01	.00
Lindane	.01	.00	.02	.04	.01	.05
Chlordane	.08	.0	.17	.02	.06	.07
Toxaphene	0	0	0	0	0	0
Alpha-BHC	.00	.00	.01	.01	.00	.00
Phosphorothioates:						
Parathion	.00	.00	.00	.00	.00	.00
Methyl parathion	.00	.00	.00	.00	.00	.00
Malathion	--	--	--	--	.06	.06
Diazinon	.00	.00	.00	.00	.00	.00
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.18	.00	.17	--	.00	.00
Silvex	.00	.01	.01	--	.00	.00
2,4,5-T	.08	.10	.16	--	1.4	.42

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1780. SAN ANTONIO RIVER AT SAN ANTONIO, TEX. (29°24'34", 98°29'41")

(Results in micrograms per liter)

Date of collection	Feb. 24, 1970	Mar. 17, 1970	May 15, 1970	May 27, 1970	Sept. 25, 1970
Time (24 hour)	1515	1245	1055	1400	1210
Discharge (cfs)	186	46	72	120	240
INSECTICIDES					
Chlorinated hydrocarbons:					
Aldrin	0.00	0.00	0.00	0.00	0.00
DDD	.04	.05	.05	.04	.11
DDE	.03	.02	.03	.03	.07
DDT	.06	.09	.10	.06	.36
Endrin	.00	.00	.00	.00	.00
Dieldrin	.03	.01	.02	.02	.11
Heptachlor	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00
Lindane	.02	.01	.00	.05	.05
Chlordane	.09	.11	.09	.06	.41
Toxaphene	0	0	0	0	0
Alpha-BHC	.01	.00	.00	.00	.00
Phosphorothioates:					
Parathion	.00	.00	.00	.00	.00
Methyl parathion	.00	.00	.00	.00	.00
Malathion	--	--	--	--	.04
Diazinon	.00	.00	.00	.00	.13
HERBICIDES					
Chlorinated hydrocarbons:					
2,4-D	.00	.02	--	.18	.00
Silvex	.00	.00	--	.00	.45
2,4,5-T	.13	.03	--	.20	.09

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1783. ALAZAN CREEK AT ST. CLOUD STREET, SAN ANTONIO, TEX. (29°27'29", 98°32'59")

(Results in micrograms per liter)

Date of collection	Feb. 24, 1970	Sept. 25, 1970	Sept. 26, 1970			
Time (24 hour)	1200	1615	1130			
Discharge (cfs)	11	100	36			
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00	0.00			
DDD	.00	.14	.03			
DDE	.00	.07	.02			
DDT	.00	.34	.10			
Endrin	.00	.00	.00			
Dieldrin	.00	.00	.03			
Heptachlor	.00	.00	.00			
Heptachlor epoxide	.00	.00	.01			
Lindane	.00	.00	.01			
Chlordane	.0	.09	.07			
Toxaphene	0	0	0			
Phosphorothioates:						
Parathion	.00	.00	.00			
Methyl parathion	.00	.03	.00			
Malathion	.--	.00	.08			
Diazinon	.00	.00	.00			
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00	.00	.00			
Silvex	.00	.00	.00			
2,4,5-T	.04	.74	.67			

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1786. PANTHER SPRINGS CREEK AT FARM ROAD 2696, NEAR SAN ANTONIO, TEX. (29°37'31", 98°31'06")

(Results in micrograms per liter)

Date of collection	May 26, 1970					
Time (24 hour)	2000					
Discharge (cfs)	99					
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00					
DDD	.00					
DDE	.00					
DDT	.00					
Endrin	.00					
Dieldrin	.00					
Heptachlor	.00					
Heptachlor epoxide	.00					
Lindane	.00					
Chlordane	.0					
Toxaphene	0					
Phosphorothioates:						
Parathion	.00					
Methyl parathion	.00					
Malathion	--					
Diazinon	.00					
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	--					
Silvex	--					
2,4,5-T	--					

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1786.9. SALADO CREEK TRIBUTARY AT BITTERS ROAD, SAN ANTONIO, TEX. (29°31'36", 98°26'25")

(Results in micrograms per liter)

Date of collection	Sept. 25, 1970					
Time (24 hour)	1525					
Discharge (cfs)	70					
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00					
DDD	.05					
DDE	.04					
DDT	.22					
Endrin	.00					
Dieldrin	.11					
Heptachlor	.00					
Heptachlor epoxide	.00					
Lindane	.06					
Chlordane	.55					
Toxaphene	0					
Phosphorothioates:						
Parathion	.00					
Methyl parathion	.00					
Malathion	.00					
Diazinon	.05					
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00					
Silvex	.00					
2,4,5-T	.16					

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1787. SALADO CREEK (UPPER STATION) AT SAN ANTONIO, TEX. (29°30'57", 98°25'51")

(Results in micrograms per liter)

Date of collection	Feb. 24, 1970	Mar. 17, 1970	May 27, 1970			
Time (24 hour)	1600	1030	0830			
Discharge (cfs)	8.0	4.6	565			
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00	0.00			
DDD	.00	.00	.00			
DDE	.00	.00	.01			
DDT	.01	.00	.01			
Endrin	.00	.00	.00			
Dieldrin	.01	.00	.01			
Heptachlor	.00	.00	.00			
Heptachlor epoxide	.00	.00	.00			
Lindane	.01	.00	.01			
Chlordane	.06	.00	.0			
Toxaphene	0	0	0			
Alpha-BHC	.01	.00	.00			
Phosphorothioates:						
Parathion	.00	.00	.00			
Methyl parathion	.00	.00	.00			
Malathion	--	--	--			
Diazinon	.00	.00	.00			
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	8.1	.11	1.1			
Silvex	.06	.04	.00			
2,4,5-T	13	.55	.25			

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1787.36. SALADO CREEK TRIBUTARY AT BEE STREET, SAN ANTONIO, TEX. (29°26'38", 98°27'12")

(Results in micrograms per liter)

Date of collection	Sept. 25, 1970					
Time (24 hour)	1112					
Discharge (cfs)	94					
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00					
DDD	.02					
DDE	.03					
DDT	.08					
Endrin	.00					
Dieldrin	.00					
Heptachlor	.00					
Heptachlor epoxide	.00					
Lindane	.00					
Chlordane	.15					
Toxaphene	0					
Phosphorothioates:						
Parathion	.00					
Methyl parathion	.00					
Malathion	.00					
Diazinon	.00					
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00					
Silvex	.00					
2,4,5-T	.10					

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1788. SALADO CREEK (LOWER STATION) AT SAN ANTONIO, TEX. (29°21'25", 98°24'45")

(Results in micrograms per liter)

Date of collection	Mar. 17, 1970	May 15, 1970	May 27, 1970	Sept. 25, 1970		
Time (24 hour)	1415	1200	1230	1350		
Discharge (cfs)	46	200	1530	36		
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00	0.00	0.00		
DDD	.00	.02	.03	.01		
DDE	.00	.02	.02	.01		
DDT	.00	.02	.03	.01		
Endrin	.00	.00	.00	.00		
Dieldrin	.00	.01	.02	.01		
Heptachlor	.00	.00	.00	.00		
Heptachlor epoxide	.00	.00	.00	.00		
Lindane	.00	.01	.00	.02		
Chlordane	.0	.04	.04	.02		
Toxaphene	0	0	0	0		
Alpha-BHC	.00	.01	.00	.00		
Phosphorothioates:						
Parathion	.00	.00	.00	.00		
Methyl parathion	.00	.00	.00	.00		
Malathion	--	--	--	.00		
Diazinon	.00	.00	.00	.00		
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00	--	1.4	.00		
Silvex	.00	--	.00	.00		
2,4,5-T	.05	--	.62	.02		

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1810. LEON CREEK TRIBUTARY AT FARM ROAD 1604, SAN ANTONIO, TEX. (29°35'14", 98°37'40")

(Results in micrograms per liter)

Date of collection	May 26, 1970	May 27, 1970				
Time (24 hour)	1925	1620				
Discharge (cfs)	58	4.7				
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00				
DDD	.00	.00				
DDE	.01	.00				
DDT	.01	.00				
Endrin	.00	.00				
Dieldrin	.00	.00				
Heptachlor	.00	.00				
Heptachlor epoxide	.00	.00				
Lindane	.00	.00				
Chlordane	.01	.0				
Toxaphene	0	0				
Phosphorothioates:						
Parathion	.00	.00				
Methyl parathion	.00	.00				
Malathion	--	--				
Diazinon	.00	.00				
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00	.00				
Silvex	.00	.00				
2,4,5-T	.00	.00				

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1814. HELOTES CREEK AT HELOTES, TEX. (29°34'42", 98°41'29")

(Results in micrograms per liter)

Date of collection	Dec. 5, 1969	Mar. 17, 1970	May 27, 1970			
Time (24 hour)	1700	0930	1510			
Discharge (cfs)	13	3.5	64			
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00	0.00			
DDD	.00	.00	.00			
DDE	.00	.00	.00			
DDT	.00	.00	.00			
Endrin	.00	.00	.00			
Dieldrin	.00	.00	.00			
Heptachlor	.00	.00	.00			
Heptachlor epoxide	.00	.00	.00			
Lindane	.00	.00	.00			
Chlordane	.0	.0	.0			
Toxaphene	0	0	0			
Phosphorothioates:						
Parathion	.00	.00	.00			
Methyl parathion	.00	.00	.00			
Malathion	--	--	--			
Diazinon	.00	.00	.00			
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00	.00	.00			
Silvex	.00	.00	.00			
2,4,5-T	.01	.00	.00			

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1814.5. LEON CREEK TRIBUTARY AT KELLY AFB, SAN ANTONIO, TEX. (29°23'12", 98°36'00")

(Results in micrograms per liter)

Date of collection	Dec. 5, 1969	Feb. 24, 1970	May 15, 1970	May 26, 1970		
Time (24 hour)	1625	1345	0850	1720		
Discharge (cfs)	2.8	3.6	3.5	99		
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00	0.00	0.00		
DDD	.26	.03	.10	.29		
DDE	.15	.02	.03	.15		
DDT	1.4	.04	.18	.48		
Endrin	.00	.00	.00	.00		
Dieldrin	.01	.01	.00	.00		
Heptachlor	.00	.00	.00	.00		
Heptachlor epoxide	.00	.00	.00	.00		
Lindane	.00	.01	.02	.01		
Chlordane	.0	.07	.0	.49		
Toxaphene	0	0	0	0		
Alpha-BHC	.00	.01	.01	.01		
Phosphorothioates:						
Parathion	.00	.00	.00	.00		
Methyl parathion	.00	.00	.00	.00		
Malathion	--	--	--	--		
Diazinon	.00	.00	.00	.00		
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.03	.04	--	.00		
Silvex	.01	.00	--	.00		
2,4,5-T	.07	.03	--	.01		

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1818. SAN ANTONIO RIVER NEAR ELMENDORF, TEX. (29°14'15", 98°21'43")

(Results in micrograms per liter)

Date of collection	Oct. 22, 1969	Feb. 11, 1970	Apr. 14, 1970	June 11, 1970	Aug. 5, 1970	Aug. 24, 1970
Time (24 hour)	1300	1230	1200	1100	1730	1030
Discharge (cfs)a	155	323	256	302	343	304
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00	0.00	0.00	--	0.00
DDD	.02	.01	.01	.01	--	.00
DDE	.00	.00	.00	.00	--	.00
DDT	.01	.01	.01	.01	--	.00
Endrin	.00	.00	.00	.00	--	.00
Dieldrin	.03	.02	.03	.03	--	.03
Heptachlor	.00	.00	.00	.00	--	.00
Heptachlor epoxide	.00	.00	.00	.00	--	.00
Lindane	.02	.00	.04	.00	--	.00
Chlordane	.0	.0	.0	.0	--	.0
Toxaphene	0	0	0	0	--	0
Phosphorothioates:						
Parathion	--	--	.00	.00	--	.00
Methyl parathion	--	--	.00	.00	--	.00
Malathion	--	--	--	--	--	--
Diazinon	--	--	.00	.00	--	.45
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00	.00	.00	.00	.00	--
Silvex	.00	.00	.00	.00	.00	--
2,4,5-T	.02	.02	.03	.05	.05	--

a Daily mean discharge.

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1885. SAN ANTONIO RIVER AT GOLIAD, TEX. (28°38'58", 97°23'04")

(Results in micrograms per liter)

Date of collection	Oct. 22, 1969	Feb. 10, 1970	Apr. 13, 1970	June 2, 1970	Aug. 5, 1970	Aug. 24, 1970
Time (24 hour)	0900	1600	1600	1215	1245	1430
Discharge (cfs)	239	556	437	6080	283	191
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00	0.00	0.00	0.00	0.00
DDD	.01	.01	.01	.01	.00	.00
DDE	.00	.00	.00	.00	.00	.00
DDT	.02	.01	.00	.01	.00	.00
Endrin	.00	.00	.00	.00	.00	.00
Dieldrin	.01	.01	.01	.01	.00	.00
Heptachlor	.00	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00	.00
Lindane	.00	.03	.02	.02	.00	.00
Chlordane	.0	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0	0
Alpha-BHC	.00	.00	.00	.01	.00	.00
Phosphorothioates:						
Parathion	--	--	.00	.00	.00	.00
Methyl parathion	--	--	.00	.00	.00	.00
Malathion	--	--	--	--	--	--
Diazinon	--	--	.00	.00	.00	.14
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.02	.00	.00	.00	.00	--
Silvex	.00	.00	.00	.00	.00	--
2,4,5-T	.04	.03	.03	.05	.08	--

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1892. COPANO CREEK NEAR REFUGIO, TEX. (28°18'12", 97°06'44")

(Results in micrograms per liter)

Date of collection	July 22, 1970					
Time (24 hour)	1600					
Discharge (cfs)	1.2					
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00					
DDD	.00					
DDE	.00					
DDT	.00					
Endrin	.00					
Dieldrin	.00					
Heptachlor	.00					
Heptachlor epoxide	.00					
Lindane	.00					
Chlordane	.0					
Toxaphene	0					
Phosphorothioates:						
Parathion	.00					
Methyl parathion	.00					
Malathion	--					
Diazinon	.00					
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00					
Silvex	.00					
2,4,5-T	.00					

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-1898. CHILTIPIN CREEK AT SINTON, TEX. (28°02'47", 97°30'13")

(Results in micrograms per liter)

Date of collection	July 23, 1970					
Time (24 hour)	0900					
Discharge (cfs)	1.8					
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00					
DDD	.00					
DDE	.00					
DDT	.00					
Endrin	.00					
Dieldrin	.00					
Heptachlor	.00					
Heptachlor epoxide	.00					
Lindane	.00					
Chlordane	.0					
Toxaphene	0					
Phosphorothioates:						
Parathion	.00					
Methyl parathion	.00					
Malathion	--					
Diazinon	.00					
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00					
Silvex	.00					
2,4,5-T	.00					

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-2100. NUECES RIVER NEAR THREE RIVERS, TEX. (28°26'10", 98°11'06")

(Results in micrograms per liter)

Date of collection	Oct. 22, 1969	Feb. 10, 1970	Apr. 13, 1970	June 10, 1970	Aug. 5, 1970
Time (24 hour)	1045	1730	1800	1545	1415
Discharge (cfs)	3220	164	82	3040	21
INSECTICIDES					
Chlorinated hydrocarbons:					
Aldrin	0.00	0.00	0.00	0.00	0.00
DDD	.00	.00	.00	.00	.00
DDE	.00	.00	.00	.00	.00
DDT	.00	.00	.00	.00	.00
Endrin	.00	.00	.00	.00	.00
Dieldrin	.00	.00	.00	.00	.00
Heptachlor	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00
Lindane	.01	.00	.00	.00	.00
Chlordane	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0
Phosphorothioates:					
Parathion	--	--	.00	.00	.00
Methyl parathion	--	--	.00	.00	.00
Malathion	--	--	--	--	--
Diazinon	--	--	.00	.00	.00
HERBICIDES					
Chlorinated hydrocarbons:					
2,4-D	.00	.05	.00	.00	.00
Silvex	.00	.00	.00	.00	.00
2,4,5-T	.03	.04	.00	.38	.01

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-4465. PECOS RIVER NEAR GIRVIN, TEX. (31°06'35", 102°25'00")

(Results in micrograms per liter)

Date of collection	Nov. 18, 1969	Apr. 22, 1970	May 27, 1970	July 8, 1970	Aug. 12, 1970
Time (24 hour)	1240	1230	1200	1400	1145
Discharge (cfs)	33	35	4.9	7.7	14
INSECTICIDES					
Chlorinated hydrocarbons:					
Aldrin	0.00	0.00	0.00	0.00	0.00
DDD	.00	.00	.00	.00	.00
DDE	.00	.00	.00	.00	.00
DDT	.00	.00	.00	.00	.00
Endrin	.00	.00	.00	.00	.00
Dieldrin	.00	.00	.00	.00	.00
Heptachlor	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00
Lindane	.00	.00	.00	.00	.00
Chlordane	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0
Phosphorothioates:					
Parathion	--	.00	.00	.00	.00
Methyl parathion	--	.00	.00	.00	.00
Malathion	--	--	--	--	.00
Diazinon	--	.00	.00	.00	.00
HERBICIDES					
Chlorinated hydrocarbons:					
2,4-D	.00	.00	.00	.00	.00
Silvex	.00	.00	.00	.00	.00
2,4,5-T	.00	.00	.01	.02	.00

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-4692. RIO GRANDE AT ANZALDUAS DAM, TEX. (26°08'00", 98°20'05")

(Results in micrograms per liter)

Date of collection	Oct. 13, 1969	Nov. 18, 1969	Dec. 17, 1969	Jan. 19, 1970	Feb. 24, 1970	Mar. 16, 1970
Time (24 hour)	1210	1310	0900	1200	1100	0900
Discharge (cfs)	800	1000	1240	300	330	1020
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00	0.00	0.00	0.00	0.00
DDD	.00	.00	.00	.00	.00	.00
DDE	.00	.00	.00	.00	.00	.00
DDT	.00	.00	.00	.02	.00	.00
Endrin	.00	.00	.00	.00	.00	.00
Dieldrin	.00	.00	.00	.00	.00	.00
Heptachlor	.00	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00	.00
Lindane	.00	.00	.00	.00	.00	.00
Chlordane	.0	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0	0
Phosphorothioates:						
Parathion	--	--	--	--	.00	.00
Methyl parathion	--	--	--	--	.00	.00
Malathion	--	--	--	--	--	--
Diazinon	--	--	--	--	.00	.00
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00	.00	.00	.00	.00	.00
Silvex	.00	.00	.00	.00	.00	.00
2,4,5-T	.00	.00	.00	.00	.00	.00

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-4692. RIO GRANDE AT ANZALDUAS DAM, TEX.--Continued

(Results in micrograms per liter)

Date of collection	Apr. 7, 1970	May 11, 1970	June 18, 1970	July 16, 1970	Aug. 19, 1970
Time (24 hour)	0830	0745	0830	1135	0900
Discharge (cfs)	1770	2610	1590	100	1260
INSECTICIDES					
Chlorinated hydrocarbons:					
Aldrin	0.00	0.00	0.00	0.00	0.00
DDD	.00	.00	.00	.01	.00
DDE	.00	.01	.00	.01	.00
DDT	.00	.00	.00	.01	.00
Endrin	.00	.00	.00	.00	.00
Dieldrin	.00	.00	.00	.00	.00
Heptachlor	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00
Lindane	.00	.00	.00	.00	.00
Chlordane	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0
Phosphorothioates:					
Parathion	--	.00	--	1.0	.00
Methyl parathion	--	.00	--	.23	.00
Malathion	--	--	--	.00	.00
Diazinon	--	.00	--	.00	.00
HERBICIDES					
Chlorinated hydrocarbons:					
2,4-D	.00	.00	.00	.00	.00
Silvex	.00	.00	.00	.00	.00
2,4,5-T	.00	.01	.00	.00	.00

Table 3.--Pesticides in Texas surface waters, 1970--Continued

8-4703. ARROYO COLORADO FLOODWAY AT EL FUESTE SIPHON, SOUTH OF MERCEDES, TEX. (26°07'45", 97°54'45")

(Results in micrograms per liter)

Date of collection	Oct. 13, 1969	Nov. 19, 1969	Mar. 16, 1970	Aug. 19, 1970	Sept. 2, 1970	Sept. 23, 1970
Time (24 hour)	1315	1315	1100	0900	1540	1135
Discharge (cfs)	73	60	54	39	35	163
INSECTICIDES						
Chlorinated hydrocarbons:						
Aldrin	0.00	0.00	0.00	0.00	0.00	0.00
DDD	.01	.01	.02	.02	.01	.00
DDE	.01	.02	.03	.02	.01	.02
DDT	.00	.00	.00	.00	.00	.00
Endrin	.00	.00	.00	.00	.00	.00
Dieldrin	.01	.00	.01	.00	.00	.00
Heptachlor	.00	.00	.00	.00	.00	.00
Heptachlor epoxide	.00	.00	.00	.00	.00	.00
Lindane	.01	.01	.00	.01	.01	.02
Chlordane	.0	.0	.0	.0	.0	.0
Toxaphene	0	0	0	0	0	0
Phosphorothioates:						
Parathion	--	.00	.00	.04	.00	.72
Methyl parathion	--	.04	.00	.24	.04	.07
Malathion	--	--	--	.00	.00	.00
Diazinon	--	.00	.00	.00	.00	.00
HERBICIDES						
Chlorinated hydrocarbons:						
2,4-D	.00	.00	--	.00	.00	.00
Silvex	.00	.00	--	.00	.00	.00
2,4,5-T	.02	.00	--	.03	.02	.03

Table 4.--Pesticides in bottom deposits in Texas streams, 1970

(Bottom deposits analyses in micrograms per kilogram)

Station name	8-0748. KEEGANS BAYOU AT ROARK ROAD, NEAR HOUSTON, TEX. (29°39'23", 95°33'43")	8-0765. HALLS BAYOU AT HOUSTON, TEX. (29°51'42", 95°20'05")	8-1140. BRAZOS RIVER AT RICHMOND, TEX. (29°34'56", 95°45'27")
Date of collection	Aug. 18, 1970	Aug. 18, 1970	Aug. 19, 1970
Time (24 hour)	1220	1450	1330
Discharge (cfs)	2.1	3.5	988
INSECTICIDES			
Chlorinated hydrocarbons:			
Aldrin	<0.2	--	<0.2
DDD	1.1	9.7	2.4
DDE	1.0	10	4.8
DDT	<.2	<.2	1.3
Endrin	<.2	<.2	<.2
Dieldrin	.7	12	<.2
Heptachlor	<.2	<.2	<.2
Heptachlor epoxide	<.2	<.2	<.2
Lindane	<.2	--	<.2
Chlordane	4.0	76	<1.0
Toxaphene	<10	<10	<10
Phosphorothioates:			
Parathion	<.2	<.2	--
Methyl parathion	<.2	<.2	--
Malathion	<.2	<.2	--
Diazinon	--	--	--
HERBICIDES			
Chlorinated hydrocarbons:			
2,4-D	<5.0	<11	--
Silvex	<.5	<1.9	--
2,4,5-T	<.6	<1.7	--

Table 4.--Pesticides in bottom deposits in Texas streams, 1970--Continued

(Bottom deposits analyses in micrograms per kilogram)

Station name	8-1179. BIG BOGGY CREEK NEAR WADSWORTH, TEX. (28°48'26", 95°57'02")	8-1620. COLORADO RIVER AT WHARTON, TEX. (29°18'32", 96°06'13")	8-1626. TRES PALACIOS CREEK NEAR MIDFIELD, TEX. (28°55'40", 96°10'15")
Date of collection	July 20, 1970	Aug. 19, 1970	July 21, 1970
Time (24 hour)	1400	1125	0900
Discharge (cfs)	3.3	990	80
INSECTICIDES			
Chlorinated hydrocarbons:			
Aldrin	<0.2	<0.2	<0.2
DDD	<.2	<.2	<.2
DDE	.8	<.2	.5
DDT	.6	<.2	.5
Endrin	<.2	<.2	<.2
Dieldrin	<.2	<.2	<.2
Heptachlor	<.2	<.2	<.2
Heptachlor epoxide	<.2	<.2	<.2
Lindane	<.2	<.2	<.2
Chlordane	<1.0	<1.0	<1.0
Toxaphene	<10	<10	<10
Phosphorothioates:			
Parathion	<.2	--	<.2
Methyl parathion	<.2	--	<.2
Malathion	--	--	--
Diazinon	--	--	--
HERBICIDES			
Chlorinated hydrocarbons:			
2,4-D	<5.9	--	<3.7
Silvex	<.6	--	<.5
2,4,5-T	<.8	--	<.6

Table 4.--Pesticides in bottom deposits in Texas streams, 1970--Continued

(Bottom deposits analyses in micrograms per kilogram)

Station name	8-1626.5. CASHS CREEK NEAR BLESSING, TEX. (28°48'38", 96°11'51")	8-1627. EAST CARANCAHUA CREEK NEAR BLESSING, TEX. (28°51'48", 96°17'05")	8-1628. WEST CARANCAHUA CREEK NEAR LaWARD, TEX. (28°53'19", 96°27'03")
Date of collection	July 20, 1970	July 21, 1970	July 21, 1970
Time (24 hour)	1630	1100	1330
Discharge (cfs)	7.6	27	6.2
INSECTICIDES			
Chlorinated hydrocarbons:			
Aldrin	<0.2	<0.2	<0.2
DDD	.3	.3	.7
DDE	.6	<.2	1.8
DDT	<.2	<.2	<.2
Endrin	<.2	<.2	<.2
Dieldrin	.5	<.2	.5
Heptachlor	<.2	<.2	<.2
Heptachlor epoxide	<.2	<.2	<.2
Lindane	<.2	<.2	<.2
Chlordane	<1.0	<1.0	<1.0
Toxaphene	<10	<10	<10
Phosphorothioates:			
Parathion	<.2	<.2	<.2
Methyl parathion	<.2	<.2	<.2
Malathion	<.2	<.2	<.2
Diazinon	--	--	--
HERBICIDES			
Chlorinated hydrocarbons:			
2,4-D	<3.9	<1.1	<2.9
Silvex	<.4	<.1	<.3
2,4,5-T	<.6	<.1	<.4

Table 4.--Pesticides in bottom deposits in Texas streams, 1970--Continued

(Bottom deposits analyses in micrograms per kilogram)

Station name	8-1646. GARCITAS CREEK NEAR INEZ, TEX. (28°53'28", 96°49'08")	8-1648. PLACEDO CREEK NEAR PLACEDO, TEX. (28°43'30", 96°46'07")	8-1648.5. CHOCOLATE BAYOU AT PORT LAVACA, TEX. (28°35'40", 96°41'48")
Date of collection	July 21, 1970	July 22, 1970	July 22, 1970
Time (24 hour)	1520	0915	1135
Discharge (cfs)	0.26	109	42
INSECTICIDES			
Chlorinated hydrocarbons:			
Aldrin	<0.2	<0.2	<0.2
DDD	<.2	.6	6.2
DDE	<.2	1.3	25
DDT	<.2	<.2	3.7
Endrin	<.2	<.2	<.2
Dieldrin	<.2	.3	<.2
Heptachlor	<.2	<.2	<.2
Heptachlor epoxide	<.2	<.2	<.2
Lindane	<.2	<.2	<.2
Chlordane	<1.0	<1.0	<1.0
Toxaphene	<10	<10	<10
Phosphorothioates:			
Parathion	<.2	<.2	<.2
Methyl parathion	<.2	<.2	<.2
Malathion	<.2	<.2	<.2
Diazinon	--	--	--
HERBICIDES			
Chlorinated hydrocarbons:			
2,4-D	<7.3	<3.1	<1.5
Silvex	<.9	<.4	<.2
2,4,5-T	<1.0	<.5	<.2

Table 4.--Pesticides in bottom deposits in Texas streams, 1970--Continued

(Bottom deposits analyses in micrograms per kilogram)

Station name	8-1818. SAN ANTONIO RIVER AT ELMENDORF, TEX. (29°14'15", 98°21'43")	8-1885. SAN ANTONIO RIVER AT GOLIAD, TEX. (28°38'58", 97°23'04")	8-1892. COPANO CREEK NEAR REFUGIO, TEX. (28°18'12", 97°06'44")
Date of collection	Aug. 24, 1970	Aug. 24, 1970	July 22, 1970
Time (24 hour)	1030	1430	1600
Discharge (cfs)	a158	191	1.2
INSECTICIDES			
Chlorinated hydrocarbons:			
Aldrin	--	<0.2	<0.2
DDD	23	1.3	<.2
DDE	6.0	.6	.4
DDT	--	--	.3
Endrin	<.2	<.2	<.2
Dieldrin	5.4	<.2	<.2
Heptachlor	--	<.2	<.2
Heptachlor epoxide	--	<.2	<.2
Lindane	--	<.2	<.2
Chlordane	<1.0	<1.0	<1.0
Toxaphene	<10	<10	<10
Phosphorothioates:			
Parathion	<.2	<.2	<.2
Methyl parathion	<.2	<.2	<.2
Malathion	--	--	--
Diazinon	--	--	--
HERBICIDES			
Chlorinated hydrocarbons:			
2,4-D	--	--	<6.2
Silvex	--	--	<.7
2,4,5-T	--	--	<.8

a Daily mean discharge.

Table 4.--Pesticides in bottom deposits in Texas streams, 1970--Continued

(Bottom deposits analyses in micrograms per kilogram)

Station name	8-1898. CHILTIPIN CREEK AT SINTON, TEX. (28°02'47", 97°30'13")	8-4703. ARROYO COLORADO FLOODWAY AT EL FUESTE SIPHON, SOUTH OF MERCEDES, TEX. (26°07'45", 97°54'45")	
Date of collection	July 23, 1970	Sept. 2, 1970	
Time (24 hour)	0900	1540	
Discharge (cfs)	1.8	35	
INSECTICIDES			
Chlorinated hydrocarbons:			
Aldrin	<0.2	<0.2	
DDD	<.2	1.5	
DDE	<.2	9.6	
DDT	<.2	<.2	
Endrin	<.2	<.2	
Dieldrin	<.2	<.2	
Heptachlor	<.2	<.2	
Heptachlor epoxide	<.2	<.2	
Lindane	<.2	<.2	
Chlordane	<1.0	<1.0	
Toxaphene	<10	<10	
Phosphorothioates:			
Parathion	<.2	<.2	
Methyl parathion	<.2	<.2	
Malathion	--	<.2	
Diazinon	--	--	
HERBICIDES			
Chlorinated hydrocarbons:			
2,4-D	<7.4	<2.6	
Silvex	<.8	<.4	
2,4,5-T	<.9	<.4	

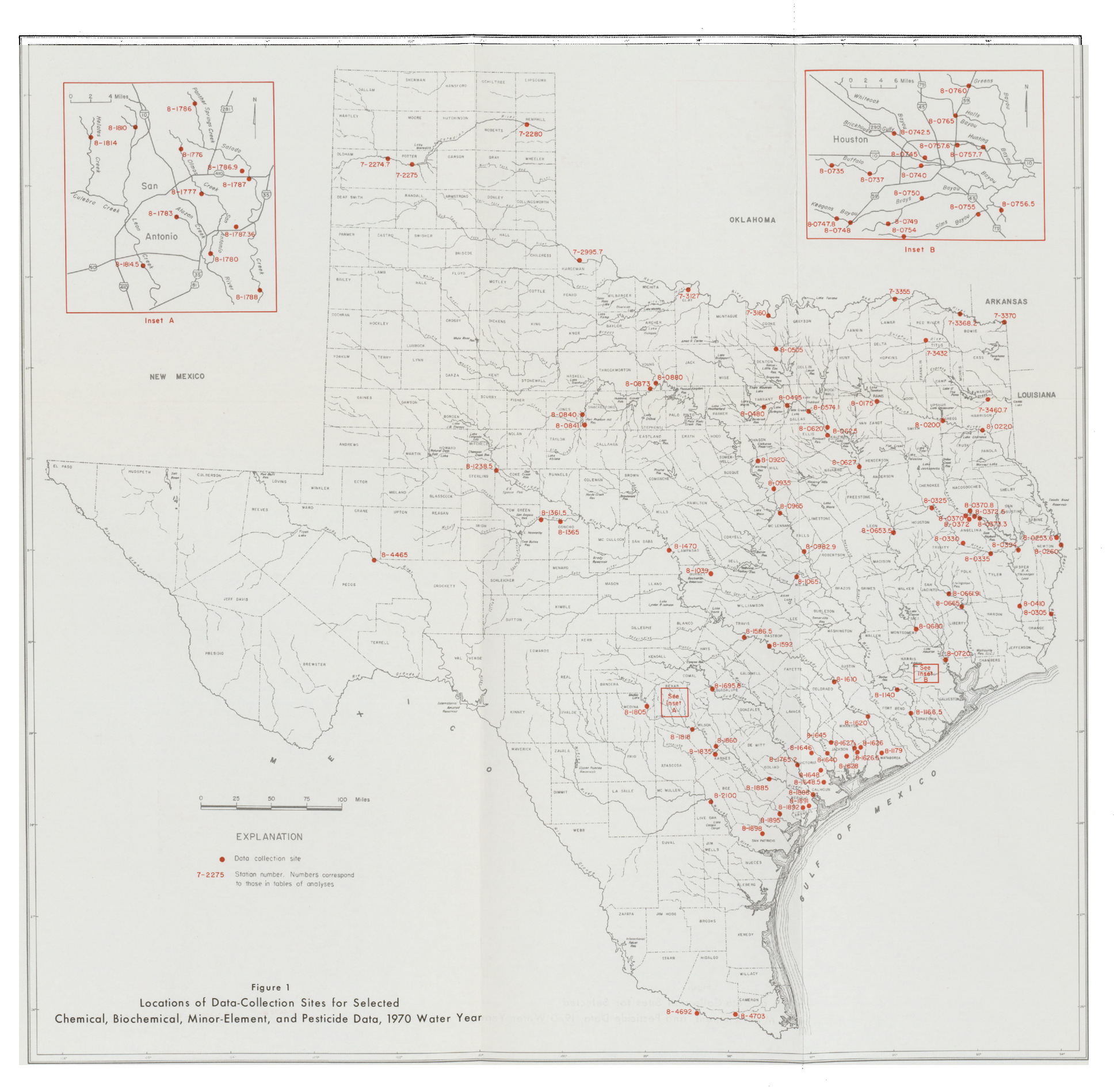

Figure 1

Locations of Data-Collection Sites for Selected Chemical, Biochemical, Minor-Element, and Pesticide Data, 1970 Water Year