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Lincoln Properties

100 CONGRESS AVENUE PHASE II SITE

GROUND WATER ASSESSMENT

SUPERFUND
FILE

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Prepared for:

Mr. Kevin Fleming
Lincoln Property Company
Austin, Texas

Prepared by:

Radian Corporation
Austin, Texas

9417783

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8501 Mo-Pac Blvd./P.O. Box 201088/Austin, TX 78720-1088/(512) 454-4797

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1.0 INTRODUCTION

Lincoln Property Company asked Radian Corporation to characterize and evaluate the ground water flowing beneath their Phase II site at 100 Congress Avenue, Austin, Texas. This effort is to gather data on the ground water to evaluate potential exposure routes of site contaminants. These data will be included in an independent evaluation of the potential human health and environmental risks associated with the contaminated materials. Ground-water flow from the site into Town Lake, an urban lake formed by an impoundment of the Colorado River in Downtown Austin has been identified as the only exposure route by which contaminants from the site may potentially reach surrounding populations.

1.1 Background

Lincoln Property Company has recently completed construction of a 22-story office building with five floors of below-ground parking on the east side of its property. During construction of the building, a coal tar body and subsurface hydrocarbon contamination were discovered on the adjacent site (the Phase II site). A coal gasification plant that operated on the Phase II site from 1877 until 1928 was the source of the contamination. During construction of the Phase I building, Lincoln began a program to collect and treat contaminated ground waters that entered the Phase I building from the Phase II site.

To prevent flooding of the lower parking levels, the Phase I building was originally designed to collect inflowing ground waters in two sumps from drains located around the building perimeter and beneath the building slab. When it became apparent that these ground waters were possibly contaminated, Lincoln constructed a temporary treatment system that used granular activated carbon filtration to remove the coal tar constituents from the ground water before it was discharged under a permit to the sanitary sewer. After construction and testing of a permanent treatment system within the Phase I building, Lincoln obtained a permit from the City of Austin/Travis

County Health Department to discharge the treated ground waters to the storm sewer system. Since these permits required monitoring of inflowing ground waters and treated effluent from the Phase I building, a record exists of the ground water quality from July 1986, to the present.

To prepare for construction of the building on the Phase II site, an existing warehouse slab was removed from the site in November, 1986. As part of a Closure Plan approved by the Texas Department of Health, the coal tar body and the most contaminated surrounding soils were removed from the Phase II site in December, 1986. In addition, to gather information on the quality of water on the Phase II site, a ground-water monitoring well was installed on the Phase II property in February, 1987.

Subsequent to removal activities, ground water collected in the Phase I building sumps increased in quantity and decreased in quality (i.e., the level of coal tar constituents found in the water entering the building increased). Part of the increased quantity was traced to a potable water line leak outside the building; this was repaired in early April, 1987. Also, a diesel fuel spill, which might have occurred either inside or outside the building, but which nevertheless appeared in the building ground water collection sumps, further complicated interpretation of the existing data. The diesel, first noted in a March 13, 1987 routine laboratory analysis report was reported to the Texas Water Commission on March 27, and investigated by the City of Austin on March 31. Approximately 10 gallons of diesel fuel were skimmed from the collection sumps. The diesel has not since re-appeared, and diesel fuel was not detected in the Phase II ground-water monitoring well.

1.2 Scope of the Ground-Water Assessment

The data collection program designed to provide the information required by Lincoln included several avenues of inquiry. First, bedrock elevations beneath the Phase I and Phase II sites, and from adjacent sites where information was available, were analyzed to improve interpretation of ground-water flow paths across the Phase II site and around the existing

building. From this analysis, the directions from which spills would be likely to enter the existing building via the subsurface drainage collection system were inferred.

Second, an intensive sampling and analysis program was designed to characterize the quality of ground water at the Phase II site and treatment system performance. Three weekly samples were obtained from the ground-water monitoring well on the Phase II property, from the ground-water collection sump in the Phase I building, and from the discharge of the Phase I permanent treatment system (activated carbon filtration). These samples were analyzed for organic constituents, metals, and several other water quality parameters.

Third, to determine the general direction and rate of ground-water flow on the Phase II property, ground-water surface elevation data were collected from the monitoring well and from the nine piezometer wells previously installed around the Phase II property.

1.3 Organization of Report

Section 2.0 describes the site in terms of climate, geology, and hydrogeologic setting. Section 3.0 details the methodology employed in the various data collection and interpretation efforts, presents the data, and discusses their significance. Finally, Section 4.0 presents conclusions.

Appendix A contains copies of the ground-water analysis laboratory reports. Appendix B contains additional data on the water quality of Town Lake, the annual fish harvest estimates for Town Lake, and the location of municipal water supply intakes within 50 miles downstream of Austin. Appendix C contains flow records and routine water monitoring reports for the ground water collected and treated in the Phase I building.

2.0 SITE DESCRIPTION

The following subsections describe the climate, geology, and hydrogeology of the 100 Congress Avenue site, with emphasis placed on subsurface conditions and ground-water occurrence.

2.1 Climate

Austin's climate is humid and subtropical, characterized by hot summers. Winters are mild, with below-freezing temperatures occurring on the average of less than 25 days each year. Precipitation is fairly evenly distributed throughout the year, with the heaviest rains occurring in late spring. A secondary rainfall peak occurs in September. Table 2-1 summarizes the meteorological conditions (temperature and precipitation) of the Austin metropolitan area.

Precipitation from April through September usually consists of thunderstorms, with fairly large amounts of rain falling in short periods of time. While thunderstorms and heavy rains can occur throughout the year, most of the winter precipitation occurs as light rain.

2.2 Geologic Setting

The 100 Congress Avenue property is located on a terrace of the Colorado River referred to as the First Street Terrace (Garner and Young, 1976). The terrace deposits consist of unconsolidated lenses of sand, sandy clay, and gravel. These deposits represent previous positions of the Colorado River during the last 15,000 years. A sandy loam soil that developed on top of the terrace consists of brown to red-brown calcareous sandy loam, silty clay loam, and gravelly sand. The sandy loam is generally one to five feet thick.

Below the terrace deposits, the bedrock is composed of Cretaceous Age limestone and shale. The sand and gravel terrace deposits rest directly

TABLE 2-1. MONTHLY AVERAGE CLIMATOLOGICAL DATA FOR AUSTIN, TEXAS*

Month	Temperature (°F)			Mean Precipitation (in.)
	Mean	Maximum	Minimum	
Jan.	50.0	60.3	39.7	2.04
Feb.	53.4	64.2	42.6	2.41
Mar.	60.6	71.6	49.5	2.22
Apr.	67.9	78.4	57.4	3.50
May	74.7	94.7	64.7	4.32
Jun.	81.5	91.6	71.4	2.89
Jul.	84.2	95.0	74.4	2.18
Aug.	84.2	95.0	74.4	2.18
Sept.	79.1	89.4	68.7	3.62
Oct.	69.8	80.9	58.7	3.11
Nov.	59.2	69.8	48.5	2.38
Dec.	51.8	62.0	4.5	2.46
Annual	68.1	78.6	57.5	33.37

*Data compiled from 1942 - 1981, National Oceanic and Atmospheric Administration (NOAA).

on the Austin Chalk. This rock is a light gray chalk, limestone, and clayey limestone. Directly below the Austin Chalk is the Eagle Ford Shale, a gray to dark gray shale that can range in hardness from soft to very hard. The Eagle Ford Shale rests directly on the Buda limestone, which is the rock into which the building piers are completed.

2.3 Site Hydrogeology

Interpretation of the hydrogeology at the 100 Congress Avenue site is based on the results of geotechnical test drilling performed by Maxim Engineers, Inc., on data collected by Radian during observation well and test hole drilling, and on visual examination of the site as excavation for the Phase I building progressed.

The site hydrogeology is representative of Colorado River terrace deposits laid down on Cretaceous Age limestone and shale formations. Water occurs in the terrace deposits primarily in the void spaces between particles of sand and gravel. It occurs under water table conditions and the sediments are not completely saturated. Recharge to the terrace deposits is mainly from rainfall on the outcrop area. Some recharge may originate as underflow from Town Lake. Since the area is highly urbanized, there are many utility lines (e.g., water, wastewater) that may also contribute (by leakage) to the ground-water system. In the vicinity of the 100 Congress Avenue site, water within the terrace deposit water table aquifer is confined below by bedrock. Water within the aquifer moves to the east and south, parallel to the Colorado River.

The bedrock geology at the site differs from the regional geology in that the Austin Chalk appears to be eroded away in the northern half of the site (at Well TW-1), leaving the Eagle Ford Shale in contact with the overlying terrace deposits. The surface of the bedrock rises from north to south across the southern part of the site. It is inferred that the bedrock surface at the 100 Congress Avenue site represents an erosional surface carved by lateral movement of the Colorado River in the past. Based on borehole data

obtained during geotechnical drilling, there appears to be a shallow channel in the bedrock that parallels Second Street. This channel may represent a former riverbed of the Colorado River. Channel deposits, consisting primarily of gravel and cobble-size material, were encountered during borehole and monitor well drilling near Second Street. Scattered bone fragments and tusk material of an elephant, excavated in 1985 south of the site, suggest that the channel deposits are 10,000 to 12,000 years old.

Ground water occurs beneath the site at the contact between the alluvial terrace deposits and the underlying Cretaceous bedrock. Water from rainfall and other sources infiltrate through the unconsolidated sand and gravel deposits until it reaches the bedrock. The water then flows along the bedrock contact, predominantly to the south and east within the coarsely grained sediments. The depth to water is seasonally variable and based on rainfall amounts. Water level measurements in 10 wells installed at the site indicate that water presently occurs from approximately 32 to 37 feet below land surface. Construction site excavation and test drilling consistently encountered ground water below the site at these depths. The exact nature of the ground-water system during periods of increased rainfall is not known because of the limited number of sampling episodes and the short duration of this investigation. Visual examination of the walls of the pit during excavation for the Phase I building suggested that ground water has occurred at shallower levels in the past, perhaps between 25 and 30 feet below land surface.

3.0 ASSESSMENT METHODOLOGY AND DATA ANALYSIS

This section presents the data collected, describes the analytical methodology employed, and discusses its significance.

3.1 Bedrock Topography Analysis

3.1.1 Bedrock Geology Map

Ground water at the 100 Congress Avenue site occurs in the shallow alluvial sands and gravel deposited by the Colorado River as it flowed across the underlying bedrock. The ground water is found in the bottom two to five feet of the Colorado River sediments at the contact between the alluvial deposits and the underlying bedrock. The ground-water flow directions may be influenced by the slope and inclination of the bedrock surface. To determine the influence of the shape of the bedrock on ground-water flow directions, Radian compiled a database of geotechnical data generated during the past 25 years in the area surrounding the 100 Congress Avenue site. Data were collected by various geotechnical firms to support foundation design for downtown construction activities.

Methodology

The data compiled from the geotechnical logs consisted of information on the depth to bedrock at various construction sites in the vicinity of the 100 Congress Avenue site. These depths were converted to elevations using either the survey information collected by geotechnical firms at the time of construction activities or calculated elevations determined for the City of Austin topographic maps of the downtown area. The elevations were then entered onto a base map as data points to construct the shape of the bedrock surface for the area surrounding the 100 Congress Avenue building. The data points were contoured by the computer-driven CPS-1 plotting system developed by Radian Corporation. The resulting contour plot presents a

two-dimensional representation of the surface of the underlying bedrock with the sands and gravel stripped away.

Since this study focused on the 100 Congress site, data control is much better in the vicinity of the site. Away from the area of major interest, control is much more sparse and the contours are less reliable. This does not harm the findings of this study.

Results of Bedrock Topography Analysis

Phase I Site--Figure 3-1 shows the topography of the bedrock surface as drawn by CPS-1. From the contours shown on the figure, certain characteristics of the bedrock surface can be determined. The southeast corner of the Phase I site was a topographic high before the foundation of the building was excavated. The original slope of the bedrock surface was toward West Second Street and toward the Phase II site. A topographic high is presented extending across the site from east to west. This ridge, which separates the site into a northern segment and a southern segment, is apparent on the bedrock surface map and was also observed in the field during excavation for the Phase I foundation. The bedrock was subsequently excavated approximately 15 feet below the elevation shown on this contour map within the boundaries of the Phase I site.

Phase II Site--The bedrock map shows a topographic high on the northwest quarter of the site and in the central portion of the site. The slope of the bedrock breaks on the north end of the site so that the surface there is inclined toward West Second Street. On the southern end of the site, the slope of the bedrock surface is to the south and southwest. The site is divided by a topographic high that passes through the middle of the site and results in the bedrock sloping to the north on the north end of the Phase II site and to the south on the southern end of the site.

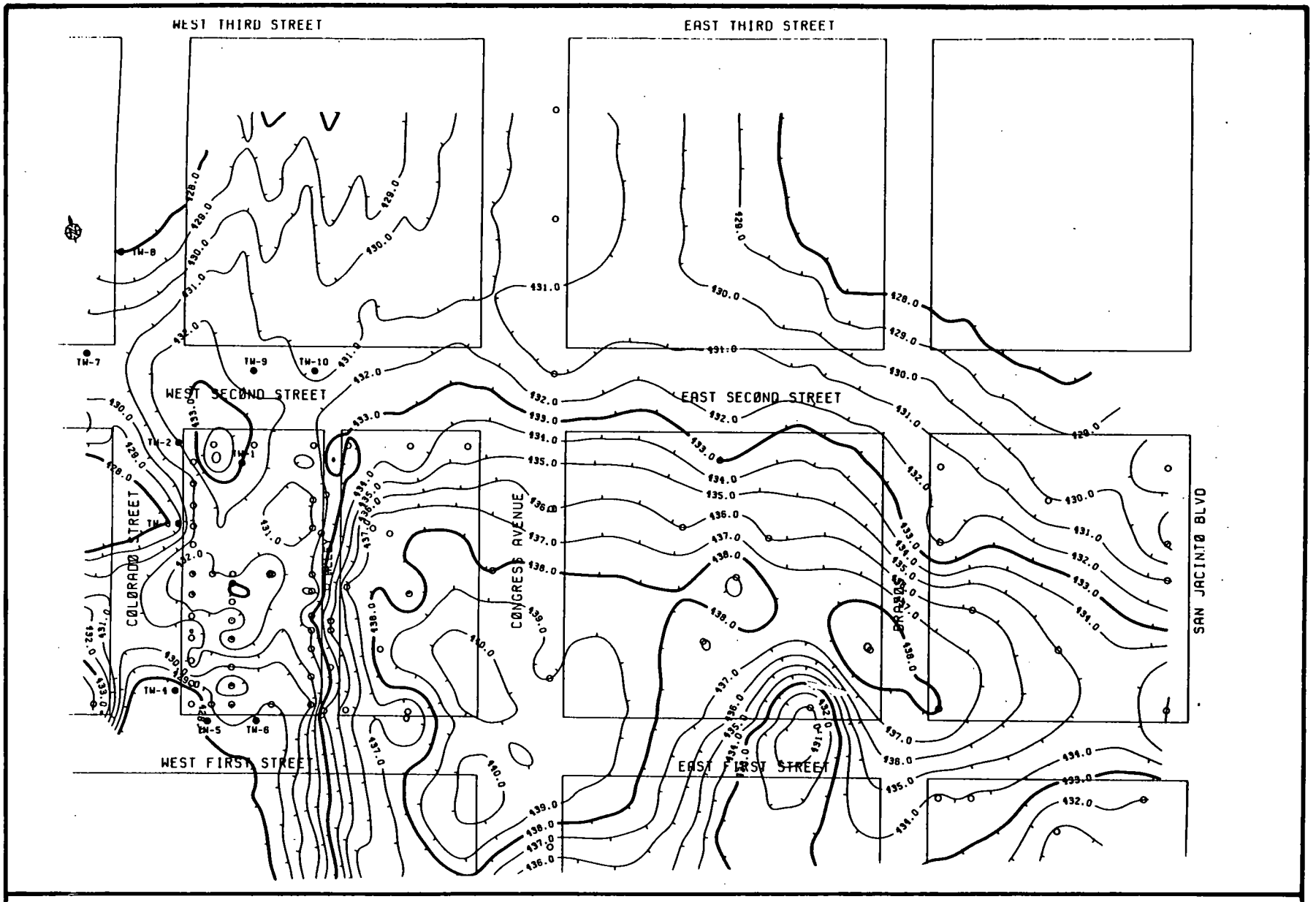

Figure 3-1. Bedrock Topography in Vicinity of 100 Congress Avenue

Summary Bedrock Topography

The bedrock surface map shows that the Phase I and II sites are located on a topographic high in the bedrock. The bedrock slopes in several directions but the dominant inclination of the bedrock surface is to the north and to the southwest on either side of the topographic ridge that runs east and west across the sites. The ridge may control the flow of ground water at the Phase I and II sites since water occurs in the bottom one to five feet of the Colorado River alluvium deposited on the bedrock. The alluvium will follow the contours of the bedrock, which acts as a confining layer for downward migration of the ground water. Ground-water flow is along the interface of the alluvium and bedrock.

Relationship Between the Bedrock Contours and Ground Water Flow Direction

An analysis of the relation of bedrock surface contours to observed water table elevations (shown in Figures 3-3, 3-4, and 3-5 and discussed below) shows that the bedrock surface does influence the flow direction of the ground water beneath the Phase I and II sites at the 100 Congress Avenue site. The flow directions shown on the water level maps agree with the bedrock map.

3.2 Ground-Water Surface Elevation Analysis

Beginning in 1985 and continuing through April, 1987, five rounds of water level measurements were conducted. Table 3-1 summarizes water level measurements obtained from 10 test wells (installed by Radian).

Each test well-head elevation was surveyed by Currington Associates of Austin, TX on 1 April, 1987. Well-head elevations were measured to an accuracy of 0.01 foot from an existing benchmark located near the 100 Congress Avenue site. Figure 3-2 shows the location of the monitoring well and piezometer wells at the site.

TABLE 3-1. 100 CONGRESS AVENUE SITE WATER LEVELS

		09/13/85		10/15/85		04/01/87		04/21/87		04/27/87	
Well No.	Well Head Elev. (ft)	Depth to Water (ft)	Water sfc. Elev. (ft)	Depth to Water (ft)	Water sfc. Elev. (ft)	Depth to Water (ft)	Water sfc. Elev. (ft)	Depth to Water (ft)	Water sfc. Elev. (ft)	Depth to Water (ft)	Water sfc. Elev. (ft)
TW-1	471.04	NA		NA		36.42	434.62	36.53	434.51	36.56	434.48
TW-2	470.80	36.00	434.80	37.60	433.20	36.18	434.62	36.20	434.60	36.26	434.54
TW-3	469.66	35.40	434.26	36.00	433.66	35.11	434.55	35.23	434.43	35.20	434.46
TW-4	467.32	33.10	434.22	33.70	433.62	32.72	434.60	32.79	434.53	32.89	434.43
TW-5	467.34	33.23	434.11	33.50	433.84	32.86	434.48	32.85	434.49	32.98	434.36
TW-6	467.61	33.64	433.97	34.00	433.61	33.18	434.43	33.33	434.28	33.19	434.42
TW-7	470.54	36.43	434.11	36.80	433.74	36.19	434.35	36.24	434.30	36.34	434.20
TW-8	471.19	37.02	434.17	37.30	433.89	36.66	434.53	36.78	434.41	36.81	434.38
TW-9	470.75	36.53	434.22	36.90	433.85	36.27	434.48	36.37	434.38	36.37	434.38
TW-10	470.64	36.55	434.09	36.90	433.74	36.17	434.47	36.13	434.51	36.24	434.40

NA: Not Analyzed

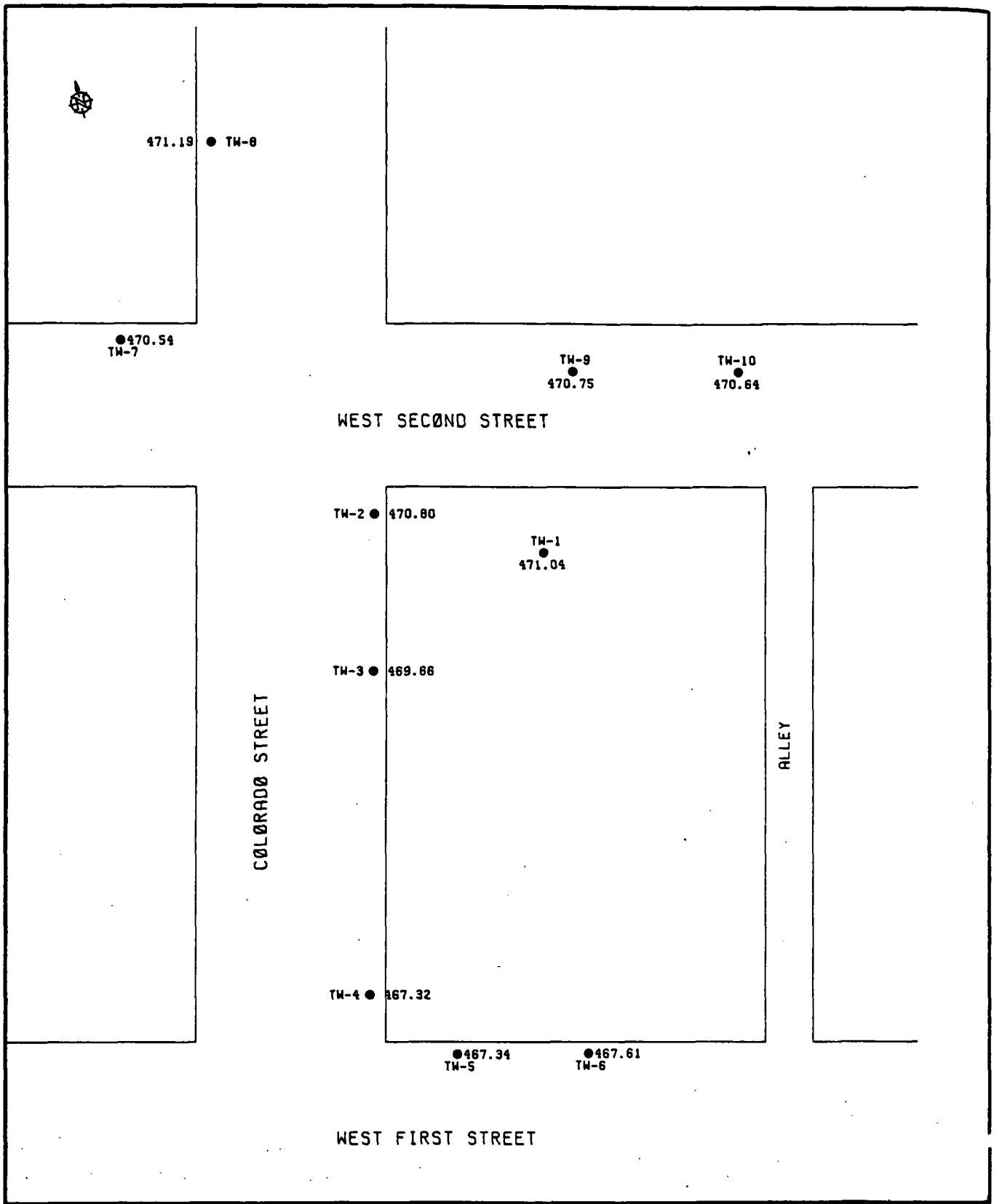

Figure 3-2. Location of Monitoring Well and Piezometer Wells, 100 Congress Avenue Site

Water table elevation maps were drawn from data collected during the three sampling rounds conducted in April, 1987. These maps are shown in Figures 3-3, 3-4, and 3-5. Since contours were produced by CPS-1 to avoid any bias in their interpretation, the contour lines are discontinuous in areas where few data points exist.

Generally, the water table fluctuated very little during the month of April. However, in all wells, the elevation of the water table dropped an average of 0.15 feet during April. The greatest decline in the water table elevation occurred in test well TW-7, where the water level dropped 0.5 feet between 1 April and 27 April (Table 3-1).

Based upon the water level contour maps presented here, the following conclusions may be made:

- Ground water below the site occurs at elevations ranging from approximately 434.2 ft (MSL) to 434.7 ft (MSL);
- The water table is usually higher in the northwestern portion of the site (near TW-2) than in the southeastern portion (near TW-6);
- A gradual decline in water levels averaging approximately 0.15 feet was observed throughout the site.

The thickness of the saturated alluvial material varies across the site, depending primarily on the topographic surface of the underlying bedrock. In general, it ranges between one and three feet as indicated by the information presented in Table 3-2.

Flow patterns that can be inferred from the water level contour maps are consistent with the general indication of the leaching of constituents through the relatively permeable soils on the Phase II site to the ground water. This is discussed in the following section. Since the gradients across the site are relatively low, infiltrating water from the surface causes

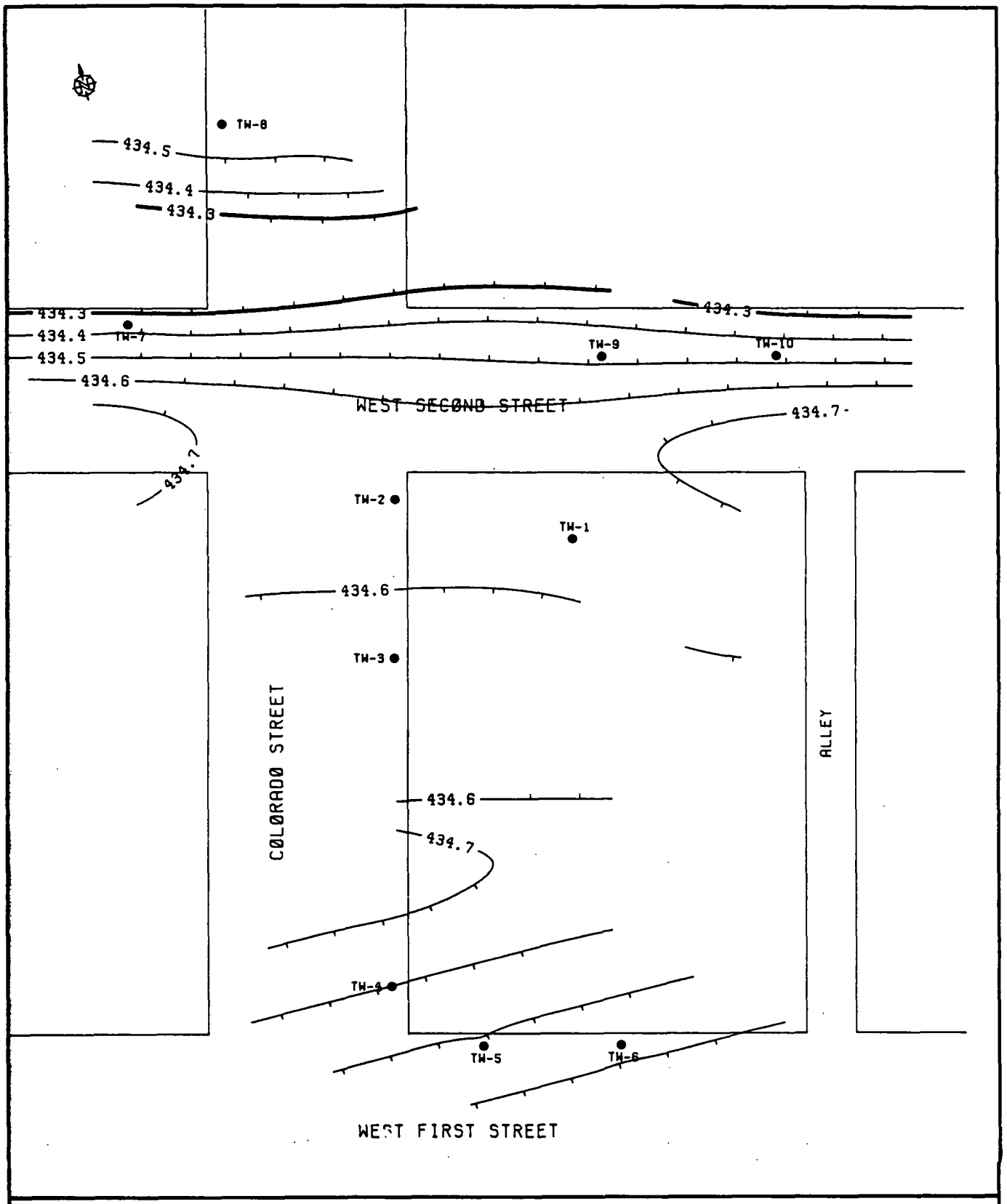

Figure 3-3. Water Table Elevation, 4/1/87, 100 Congress Avenue Site

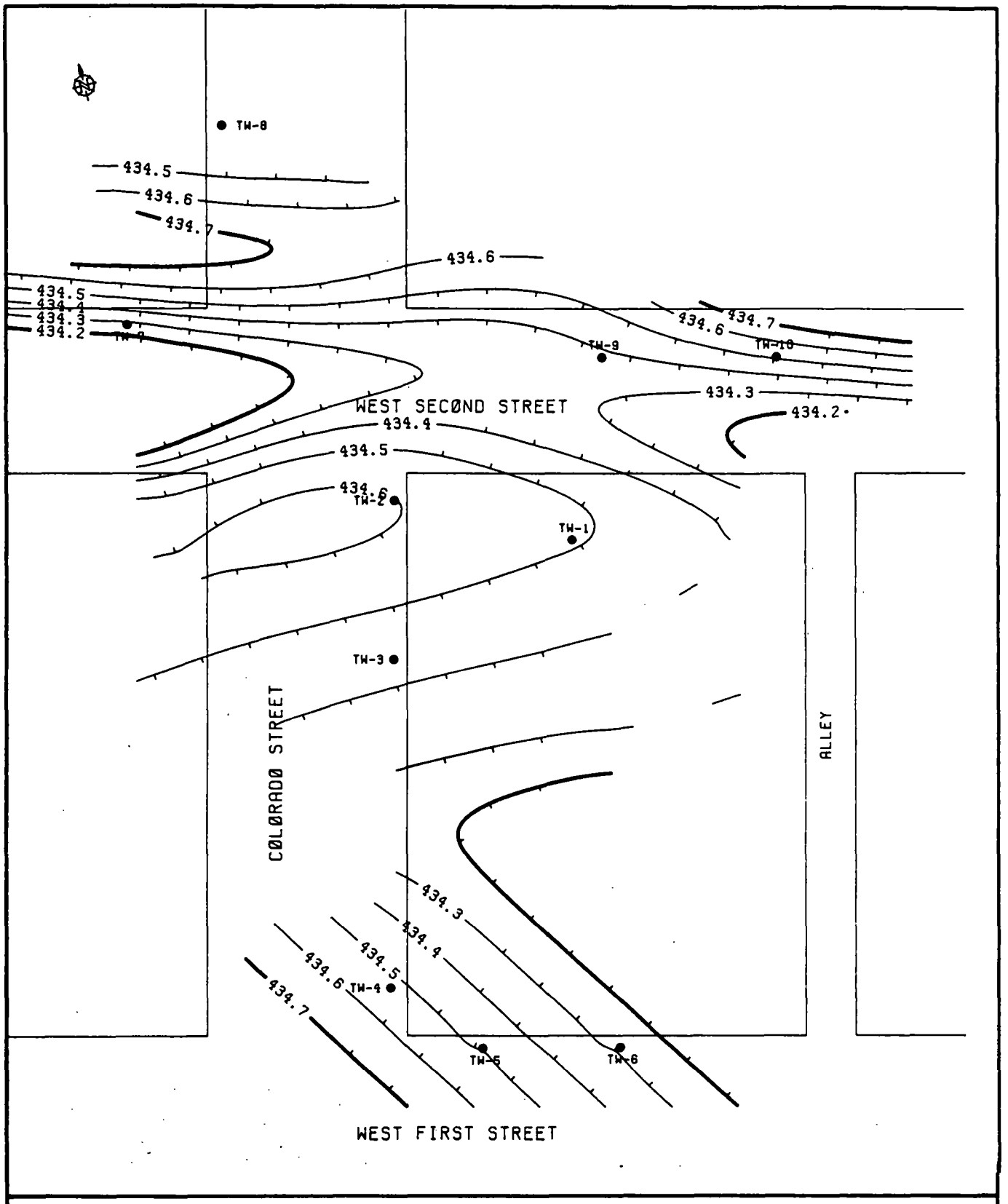

Figure 3-4. Water Table Elevation, 4/21/87, 100 Congress Avenue Site

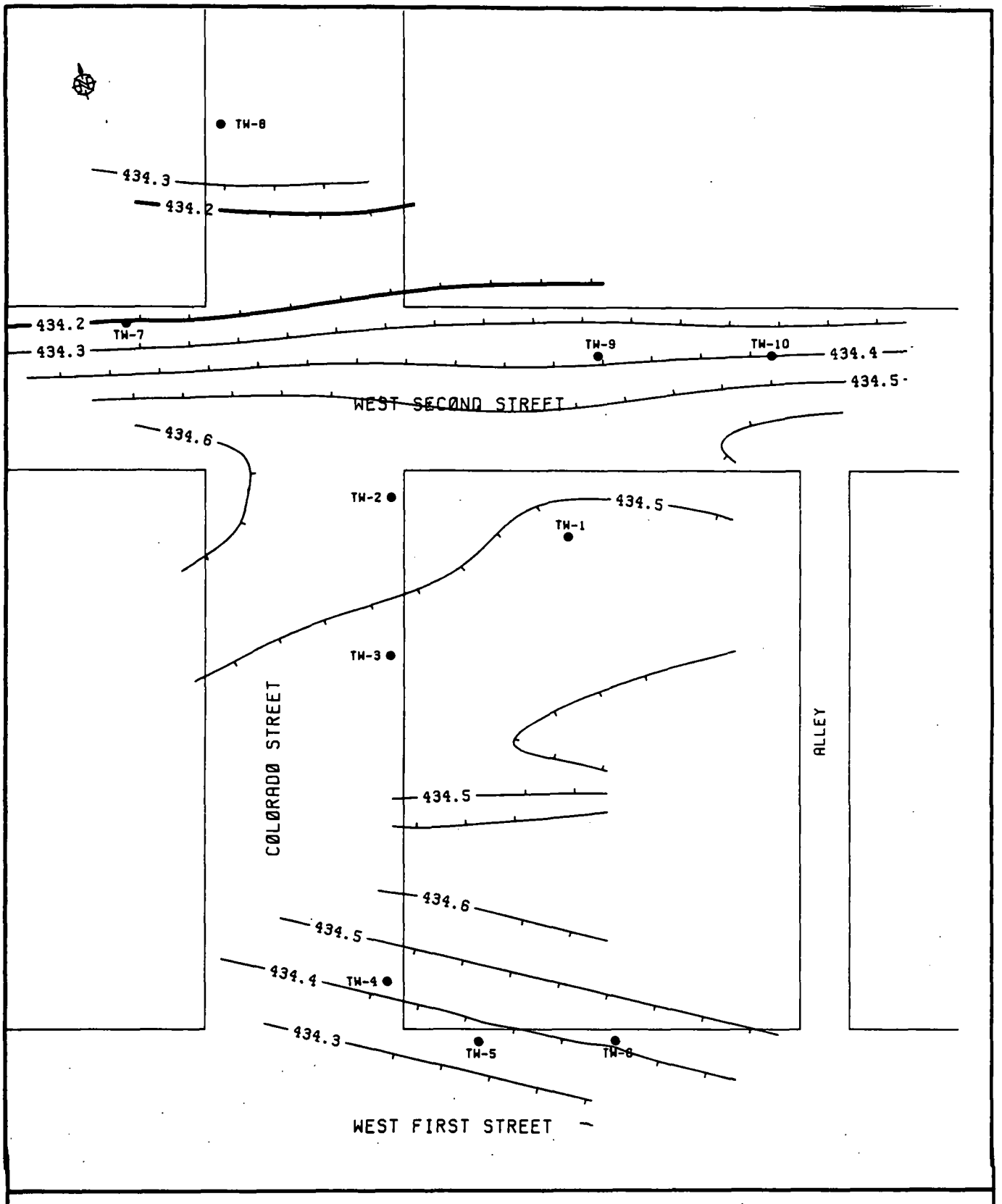

Figure 3-5. Water Table Elevation, 4/27/87, 100 Congress Avenue Site

TABLE 3-2. BEDROCK ELEVATION AND SATURATED THICKNESS DATA, 100 CONGRESS AVENUE SITE

Test Well No.	Well Elevation (MSL)	Bedrock Elevation (MSL)	Ground Water Elevation (MSL)	Saturated Thickness (ft.)
TW-1	471.04	434	434.48	0.5
TW-2	470.80	433	434.54	1.5
TW-3	469.66	429	434.46	5.5
TW-4	467.32	428	434.43	6.4*
TW-5	467.34	429	434.36	5.4
TW-6	467.61	428	434.42	6.4**
TW-7	470.54	431	434.20	3.2
TW-8	471.19	429	434.38	5.4
TW-9	470.75	432	434.38	2.4
TW-10	470.64	432	434.40	2.4

*Borehole contains approximately 0.4 ft. water at bottom, saturated thickness estimated.

**Estimated, no borehole data to determine bedrock elevation near well.

the ground water on the northern portion of the site to flow to the north and east toward Second Street and then to the Phase I building, while ground water on the far southern portion of the site flows generally to the south. The April 21 contour map is the only exception to this pattern since the ground water at the southwestern portion of the site apparently reversed flow and flowed north and east, generally toward the existing building. For all three maps, the ground water gradients in the central portion of the site, where little information exists on the water surface elevation, appears too flat for the computer program to indicate any clear flow direction. However, given the bedrock analysis discussed in Section 3.1, it is likely that water can flow along the northern portion of the site to the northwestern side of the Phase I building where the elevation of the rock ledge is below the ground water surface. On the southwestern side of the Phase I building, the rock ledge is generally above the level of the ground water surface, so inflow to building's south collection system and sumps is not expected to be as great as to the northern system.

Table 3-3 summarizes the treatment system flow record for a nine day period. The volume of ground water that would flow naturally across the site has been estimated at less than 1,000 gallons per day based on hydraulic conductivity and gradient, saturated thickness, and length of property. The fact that during dry weather conditions the Phase I building collects approximately 10,000 gallons per day, indicates that the collection system is receiving more water than would naturally flow across the site, thus controlling the level and direction of flow of ground water in the vicinity.

3.3 Ground-Water Quality Analysis

Ground-water quality directly beneath the former coal tar body was determined by analyzing samples from the Phase II site monitoring well (TW-1) located in the northern portion of the site. Weekly samples were collected for three weeks with a teflon bailer. Before sample collection, the well was purged (i.e., bailed dry and allowed to recover) to ensure that fresh

TABLE 3-3. TREATMENT SYSTEM FLOW RECORD

Date	Meter Reading (gal.)	Volume Treated (gal.)
April 27	54,120	15,730
28	69,850	10,300
29	80,150	9,600
30	89,750	11,080
May 1	100,830	7,250*
2	--	7,250*
3	--	7,250*
4	122,580	11,620
5	134,200	--

TOTAL VOLUME TREATED = 80,080 gallons

TREATMENT PERIOD = 8 days

AVERAGE = 10,010 gpd

*Indicates that data were not available for individual days but was averaged over the period.

formation water was being obtained. In addition, grab samples were taken from the Phase I building collection sump and from the effluent of the ground-water treatment system. Immediately following collection, samples were placed on ice and delivered to the laboratory. Standard chain-of-custody procedures were used.

Table 3-4 lists the analytical parameters, the containers used for sample collection, and the preservatives used. Water quality parameters and metal concentrations were determined as part of a concurrent investigation of the ground-water treatment system performance. Analytical results are presented in Tables 3-5 and 3-6. These results are interpreted below. Appendix A contains copies of laboratory reports.

Ground Water

In general, the analytical results from the monitoring well indicate that the sum of all coal tar constituent concentrations in the ground water on the Phase II site range between 3 and 4 parts per million (mg/L). Most of that total is accounted for by the concentrations of acenapthene, acenaphthylene, and naphthalene, the most soluble of the polyaromatic hydrocarbons (PAHs). The data are consistent with the most recent analysis of samples taken from the building sump as part of the routine water monitoring program (see 3rd quarter PAH results in Appendix C). In addition to PAHs, volatile organic compounds, including benzene, ethyl benzene, and toluene, are present in concentrations between 0.080 and 0.120 parts per million.

These results appear to indicate a trend of increased concentrations of coal tar constituents since the warehouse slab was removed from the Phase II site in November, 1986. This increase appears to be caused by the leaching of coal tar constituents from soil by percolating rainfall over the Phase II site.

TABLE 3-4. CONTAINERS, PRESERVATION AND ANALYTICAL PARAMETERS FOR WATER SAMPLES

Parameter	Container	Preservative
pH, Chlorides, TDS, TSS BOD, Sulfates	1-L plastic	4°C
Settleable Matter	1-L plastic	4°C
COD, Phosphates, Phenols	500-ml glass	H_2SO_4 (pH <2), 4°C
Cyanide	250-ml plastic	NaOH (pH >10), 4°C
Formaldehyde	500-ml glass	4°C
Metals	500-ml plastic	HNO_3 (pH <2), 4°C
Oil and Grease	1-L glass	H_2SO_4 (pH <2), 4°C
TOC	250-ml plastic	H_2SO_4 (pH <2), 4°C
EPA 610 (PAH)	1-L glass	4°C
EPA 601	40-ml glass (4)	HCl (ph <2), 4°C
EPA 602	40-ml glass (4)	4°C

TABLE 3-5. RESULTS OF ANALYSIS FOR METALS AND WATER QUALITY PARAMETERS

	Effluent Standard	4-13-87			4-21-87			4-27-87		
		TW-1	Sump	Effluent	TW-1	Sump	Effluent	TW-1	Sump	Effluent
Metals (Dissolved), mg/L										
Arsenic (As)	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01
Barium (Ba)	5.0	0.35	0.21	0.17	0.30	0.19	0.18	0.37	0.20	0.15
Boron (B)	1.0	0.40	0.36	0.11	0.39	0.28	0.18	0.36	0.23	0.18
Cadmium (Cd)	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium (Cr)	1.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Copper (Cu)	1.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02
Lead (Pb)	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Manganese (Mn)	1.0	0.41	0.41	0.48	0.05	0.46	0.53	1.11	0.92	0.53
Mercury (Hg)	0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	<0.002	<0.002
Nickel (Ni)	1.0	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Selenium (Se)	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Silver (Ag)	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc (Zn)	5.0	<0.01	0.15	0.15	<0.01	0.21	0.09	0.02	0.19	0.12
Water Quality Parameters, mg/L										
BOD5	20	25	7	3	2	2	<1	1	3	<1
Carbon, Total Organic	--	115	6	<1	42	7	<1	32	10	<1
COD	45	975	14	<5	150	21	5	180	40	5
Chloride	100	113	126	122	119	95	96	119	84	88
Cyanide	0.02	0.12	0.05	<0.02	0.03	0.03	<0.02	0.02	0.03	0.02
Oil and Grease	--	7	<5	<5	10	<5	<5	6.9	<5	<5
pH**	<6.0, >10.5	7.25	7.89	8.02	7.04	7.76	7.75	7.38	7.96	7.95
Phenols	Odor, Taste	0.131*	0.052*	<0.012*	0.061*	0.033*	<0.012*	0.023*	0.052*	<0.012*
Phosphorous, Dissolved Ortho	--	<0.01	1.38	0.95	<0.01	1.04	0.88	<0.01	0.67	0.70
Phosphorous, Total	--	5.0	1.55	0.98	1.25	1.24	0.96	1.95	1.18	0.78
Residue, Filterable (TDS)	400	712	754	770	760	754	748	772	722	744
Residue Non-Filterable (TSS)	--	1,072	7	1	2,852	8	3.	722	80	2
Solids, Settleable	5	24	<0.1	<0.1	7.5	<0.1	<0.1	5.0	0.2	<0.1
Sulfate	75	44	95	95	90	96	106	90	90	88
Formaldehyde	Detectable	<1	<1	<1	<1	<1	<1	<1	<1	<1

*Indicates insufficient sample volume for proper analysis.

**Results reported in pH units.

TABLE 3-6. RESULTS OF ANALYSIS FOR ORGANIC COMPOUNDS

	4-13-87			4-21-87			4-27-87		
	TW-1	Sump	Effluent	TW-1	Sump	Effluent	TW-1	Sump	Effluent
EPA 601 (Halogenated Organic Compounds)*	--	--	--	--	--	--	--	--	--
EPA 602, mg/L									
Benzene	0.093	0.009	--	0.118	--	--	0.078	0.004	--
Chlorobenzene	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	--	--	--	--	--	--	--	--	--
Ethyl Benzene	0.027	--	--	0.060	--	--	0.036	--	--
Toluene	0.010	--	<0.005	0.007	--	--	0.005	--	--
EPA 610 (PAH), mg/L									
Acenaphthene	0.79	0.13	<0.05	0.87	0.39	<0.05	2.49	<0.05	<0.05
Acenaphthlyene	0.88	<0.05	<0.05	1.11	<0.05	<0.05	0.90	<0.05	<0.05
Anthracene	0.04	<0.01	<0.01	0.03	<0.01	<0.01	0.05	<0.01	<0.01
Benzo(a)anthracene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo(a)pyrene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo(b)fluoranthene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo(ghi)perylene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo(k)fluoranthene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chrysene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dibenzo(a,h)anthacene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fluoranthene	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	<0.01	<0.01
Fluorene	0.20	<0.01	<0.01	0.21	0.01	<0.01	0.10	<0.01	<0.01
Indeno(a,2,3,c,d)pyrene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Naphthalene	0.95	<0.05	<0.01	0.65	<0.05	<0.05	0.33	<0.05	<0.05
Phenanthrene	0.15	<0.01	<0.01	0.14	<0.01	<0.01	0.15	<0.01	<0.01
Pyrene	0.02	<0.01	<0.01	0.02	<0.01	<0.01	0.03	<0.01	<0.01

*No compounds in this series were present above analytical detection limits. For a listing of compounds, see laboratory reports contained in Attachment A.

"--" = indicates not detected.

Metals observed in the ground water at concentrations above the detection limit include barium, boron, manganese, and zinc. Comparison of these values with results of samples taken from the influent to the treatment system in 1985 and 1986 indicate that these levels have also increased, further suggesting a leaching process. Also, zinc appears to be higher in the influent samples taken inside the building than in the ground water, suggesting that it may come from construction activities rather than from the coal tar.

Water quality parameters also show a similar pattern of increase when they are compared to results obtained earlier. An exception to this general trend is sulfate, which is present at roughly half the concentration previously reported. However, background sulfate concentrations may vary seasonally with the quality of stormwater runoff and not be related to the coal tar.

Building Collection Sump

Analysis of influent samples shows an increase in the concentration of coal tar constituents, metals and other parameters over previous analyses. As previously discussed, this is interpreted as being a direct result of the increased concentrations in the ground water.

Treatment System Effluent

Polyaromatic hydrocarbons (PAHs) were not detected in effluent samples, indicating that the treatment system is removing these contaminants. The following water quality parameters have been exceeded (i.e., reported concentrations were greater than effluent standards) at least once during this three week monitoring period:

- Chloride,
- Filterable residue (TDS), and
- Sulfate.

Although reported values for these parameters exceed the standards for discharge to storm sewers dictated by the City of Austin, it is not clear whether the high levels are a result of coal tar contamination or typical urban stormwater runoff. Effluent standards contained in the City of Austin Code are interpreted as allowable levels for discharge to storm sewers without a permit. However, since Lincoln Property Company holds a discharge permit, no additional treatment for these parameters is required.

4.0 CONCLUSIONS

Ground-water flow conditions at the Phase II site are influenced by the topographic features of the underlying bedrock in the vicinity of the site, an apparent recharge of infiltrating precipitation through the permeable soils of the Phase II property, and the gravity drainage of 10,000-15,000 gallons per day of ground water into the Phase I building. The flow of ground water in the northern portion of the site is generally to the north and east. The flow in the southern portion of the site is generally to the south (although on one day it also was toward the north and east). In the central portion of the site, insufficient data are available to determine a direction of flow, although, based on the water surface elevation surrounding the central portion of the site, it is reasonable to assume that no defined gradient exists. This pattern of flow suggests that water is infiltrating through the soils on the Phase II property more rapidly than through the surrounding paved surfaces (streets, buildings, and parking lots), creating a ground-water "high" on the Phase II property.

Based on the bedrock elevations and the ground-water surface elevations, ground water is entering the Phase I building along the northwestern portion where the bedrock elevation is below the elevation of the ground-water surface. The bedrock elevation along the southwestern portion of the Phase I building is higher than the ground-water surface, so that unless there are fractures in the bedrock, this would seem to preclude ground water inflow to the building from the southern portion of the Phase II site. (These data seem to confirm the pattern of inflows observed by building engineers; i.e., the northern sump must be pumped much more frequently than the southern sump.) Based on estimates of hydraulic gradient and permeability of the alluvial soils, approximately 1,000 gallons per day would flow across the site naturally. Flow metering records indicate that the building collect approximately 10,000 gallons per day, controlling the water surface elevations in this vicinity.

Ground-water quality data both from the Phase II monitoring well and from the building collection sumps indicate that a leaching process, transporting contaminants from the soils to the ground water by infiltrating water, has caused an increase in the level of coal tar-related compounds in the ground water. The sum of the concentrations of coal tar-related constituents (polyaromatic hydrocarbons) found in the ground water ranges between 3 and 4 mg/L. Although the quality of the ground water has decreased, the performance of the installed treatment system has not been affected because the system was designed to handle a wide range in concentration of coal tar constituents.

APPENDIX A

Laboratory Reports

WQPL055A ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8223B SAMPLE TYPE: MISC DATE REPORTED: 04/29/87
ACILITY: LPC ACCT NO: DATE RECEIVED: 04/13/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/13/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8223B NAME: TW-1

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
--EPA 601---REPORTED 4-29-87	---	---	---	
ROMODICHLOROMETHANE	NONE DET.	UG/L	EPA601	
BROMOFORM	NONE DET.	UG/L	EPA601	
ROMOMETHANE	NONE DET.	UG/L	EPA601	
ARBON TETRACHLORIDE	NONE DET.	UG/L	EPA601	
HLOROBENZENE	NONE DET.	UG/L	EPA601	
CHLOROETHANE	NONE DET.	UG/L	EPA601	
-CHLOROETHYLVINYL ETHER	NONE DET.	UG/L	EPA601	
HLOROFORM	NONE DET.	UG/L	EPA601	
CHLOROMETHANE	NONE DET.	UG/L	EPA601	
IBROMOCHLOROMETHANE	NONE DET.	UG/L	EPA601	
2-DICHLOROBENZENE	NONE DET.	UG/L	EPA601	
1,3-DICHLOROBENZENE	NONE DET.	UG/L	EPA601	
4-DICHLOROBENZENE	NONE DET.	UG/L	EPA601	
ICHLORODIFLUOROMETHANE	NONE DET.	UG/L	EPA601	
1,1-DICHLOROETHANE	NONE DET.	UG/L	EPA601	
2-DICHLOROETHANE	NONE DET.	UG/L	EPA601	
1-DICHLOROETHENE	NONE DET.	UG/L	EPA601	
ANS-1,2-DICHLOROETHENE	NONE DET.	UG/L	EPA601	
1,2-DICHLOROPROPANE	NONE DET.	UG/L	EPA601	
IS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA601	
ANS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA601	
METHYLENE CHLORIDE	NONE DET.	UG/L	EPA601	
1,1,2,2-TETRACHLOROETHANE	NONE DET.	UG/L	EPA601	
TRACHLOROETHENE	NONE DET.	UG/L	EPA601	
1,1,1-TRICHLOROETHANE	NONE DET.	UG/L	EPA601	
1,1,2-TRICHLOROETHANE	NONE DET.	UG/L	EPA601	
RICHLOROETHENE	NONE DET.	UG/L	EPA601	
RICHLOROFLUOROMETHANE	NONE DET.	UG/L	EPA601	
VINYL CHLORIDE	NONE DET.	UG/L	EPA601	
--EPA 602---REPORTED 4-29-87	---	---	---	
ENZENE	93	UG/L	EPA602	
CHLOROBENZENE	NONE DET.	UG/L	EPA602	
2-DICHLOROBENZENE	NONE DET.	UG/L	EPA602	
3-DICHLOROBENZENE	NONE DET.	UG/L	EPA602	
1,4-DICHLOROBENZENE	NONE DET.	UG/L	EPA602	
ETHYL BENZENE	27	UG/L	EPA602	
OLUENE	10	UG/L	EPA602	
--METALS----REPORTED 4-30-87	---	---	---	
ARSENIC, DISS.	<0.01	MG/L	E206.2	
ARIUM, DISS.	0.35	MG/L	E200.7	

WQPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8223B SAMPLE TYPE: MISC DATE REPORTED: 04/29/87
FACILITY: LPC ACCT NO: DATE RECEIVED: 04/13/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/13/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8223B NAME: TW-1

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
BORON, DISS.	0.40	MG/L	E200.7	
CADMIUM, DISS.	<0.01	MG/L	E200.7	
CHROMIUM, DISS.	<0.01	MG/L	E200.7	
COPPER, DISS.	<0.01	MG/L	E200.7	
LEAD, DISS.	<0.01	MG/L	E239.2	
MANGANESE, DISS.	0.41	MG/L	E200.7	
MERCURY, DISS.	<0.002	MG/L	E245.1	
NICKEL, DISS.	<0.02	MG/L	E200.7	
SELENIUM, DISS.	<0.01	MG/L	E270.2	
SILVER, DISS.	<0.01	MG/L	E200.7	
ZINC, DISS.	<0.01	MG/L	E200.7	
----MISC. REPORTED 5-4-87-----	----------	----------	------	
BOD 5	25	MG/L	E405.1	
CARBON, TOTAL ORGANIC	115	MG/L	E415.1	
COD	975	MG/L	E410.4	
CHLORIDE	113	MG/L	E325.2	
CYANIDE	0.12	MG/L	E335.2	
OIL & GREASE	7	MG/L	E413.1	
pH	7.25	S.U.	150.1	
PHENOLS	0.131	MG/L	E420.1	INSUFFICIENT SAMPLE FOR PROPER ANALYSIS.
PHOSPHORUS, DISS. ORTHOPHOS.	<0.01	MG/L	E353.2	
PHOSPHORUS, TOTAL	5.0	MG/L	E365.4	
RESIDUE, FILTERABLE	712	MG/L	E160.1	
RESIDUE, NONFILTERABLE	1,072	MG/L	E160.2	
SOLIDS, SETTLEABLE	24	MG/L	E160.5	
SULFATE	44	MG/L	E375.2	
FORMALDEHYDE	<1	MG/L	HACH	
----EPA 610 REPORTED 5-4-87---	----------	----------	------	
ACENAPHTHENE	0.79	MG/L	EPA610	
ACENAPHTHYLENE	0.88	MG/L	EPA610	
ANTHRACENE	0.04	MG/L	EPA610	
BENZO(A)ANTHRACENE	<0.01	MG/L	EPA610	
BENZO(A)PYRENE	<0.01	MG/L	EPA610	
BENZO(B)FLUORANTHENE	<0.01	MG/L	EPA610	
BENZO(GHI)PERYLENE	<0.01	MG/L	EPA610	
BENZO(K)FLUORANTHENE	<0.01	MG/L	EPA610	
CHRYSENE	<0.01	MG/L	EPA610	
DIBENZO(A,H)ANTHRACENE	<0.01	MG/L	EPA610	
FLUORANTHENE	0.04	MG/L	EPA610	
FLUORENE	0.20	MG/L	EPA610	

WQPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8223B SAMPLE TYPE: MISC DATE REPORTED: 04/29/87
ACILITY: LPC ACCT NO: DATE RECEIVED: 04/13/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/13/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8223B NAME: TW-1

PARAMETER	RESULT	UNITS	METHOD	COMMENTS
NDENO(1,2,3-CD)PYRENE	<0.01	MG/L	EPA610	
APHTHALENE	0.95	MG/L	EPA610	
PHENANTHRENE	0.15	MG/L	EPA610	
YRENE	0.02	MG/L	EPA610	
==========REPORT COMPLETE======	==========	==========	======	

Buck Henderson

UCK HENDERSON
ABORATORY SUPERVISOR

WQPL055A ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8222B SAMPLE TYPE: MISC DATE REPORTED: 04/29/87
ACILITY: LPC ACCT NO: DATE RECEIVED: 04/13/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/13/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8222B NAME: INFLUENT

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
--EPA 601---REPORTED 4-29-87	---	---	---	
ROMODICHLOROMETHANE	NONE DET.	UG/L	EPA601	
BROMOFORM	NONE DET.	UG/L	EPA601	
ROMOMETHANE	NONE DET.	UG/L	EPA601	
ARBON TETRACHLORIDE	NONE DET.	UG/L	EPA601	
CHLOROBENZENE	NONE DET.	UG/L	EPA601	
CHLOROETHANE	NONE DET.	UG/L	EPA601	
-CHLOROETHYLVINYL ETHER	NONE DET.	UG/L	EPA601	
HLOROFORM	NONE DET.	UG/L	EPA601	
CHLOROMETHANE	NONE DET.	UG/L	EPA601	
IBROMOCHLOROMETHANE	NONE DET.	UG/L	EPA601	
,2-DICHLOROBENZENE	NONE DET.	UG/L	EPA601	
1,3-DICHLOROBENZENE	NONE DET.	UG/L	EPA601	
,4-DICHLOROBENZENE	NONE DET.	UG/L	EPA601	
ICHLORODIFLUOROMETHANE	NONE DET.	UG/L	EPA601	
1,1-DICHLOROETHANE	NONE DET.	UG/L	EPA601	
1,2-DICHLOROETHANE	NONE DET.	UG/L	EPA601	
,1-DICHLOROETHENE	NONE DET.	UG/L	EPA601	
RANS-1,2-DICHLOROETHENE	NONE DET.	UG/L	EPA601	
1,2-DICHLOROPROPANE	NONE DET.	UG/L	EPA601	
IS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA601	
RANS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA601	
METHYLENE CHLORIDE	NONE DET.	UG/L	EPA601	
,1,2,2-TETRACHLOROETHANE	NONE DET.	UG/L	EPA601	
ETRACHLOROETHENE	NONE DET.	UG/L	EPA601	
1,1,1-TRICHLOROETHANE	NONE DET.	UG/L	EPA601	
1,1,2-TRICHLOROETHANE	NONE DET.	UG/L	EPA601	
RICHLOROETHENE	NONE DET.	UG/L	EPA601	
RICHLOROFLUOROMETHANE	NONE DET.	UG/L	EPA601	
VINYL CHLORIDE	NONE DET.	UG/L	EPA601	
--EPA 602----REPORTED 4-29-87	---	---	---	
ENZENE	9	UG/L	EPA602	
CHLOROBENZENE	NONE DET.	UG/L	EPA602	
,2-DICHLOROBENZENE	NONE DET.	UG/L	EPA602	
,3-DICHLOROBENZENE	NONE DET.	UG/L	EPA602	
1,4-DICHLOROBENZENE	NONE DET.	UG/L	EPA602	
ETHYL BENZENE	NONE DET.	UG/L	EPA602	
OLUENE	NONE DET.	UG/L	EPA602	
--METALS---REPORTED 4-30-87	---	---	---	
ARSENIC, DISS.	<0.01	MG/L	E206.2	
ARIUM, DISS.	0.21	MG/L	E200.7	

WQPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8222B SAMPLE TYPE: MISC DATE REPORTED: 04/29/87
ACILITY: LPC ACCT NO: DATE RECEIVED: 04/13/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/13/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8222B NAME: INFLUENT

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
ORON, DISS.	0.36	MG/L	E200.7	
ADMIUM, DISS.	<0.01	MG/L	E200.7	
CHROMIUM, DISS.	<0.01	MG/L	E200.7	
OPPER, DISS.	<0.01	MG/L	E200.7	
EAD, DISS.	<0.01	MG/L	E239.2	
MANGANESE, DISS.	0.41	MG/L	E200.7	
MERCURY, DISS.	<0.002	MG/L	E245.1	
ICKEL, DISS.	<0.02	MG/L	E200.7	
ELENIUM, DISS.	<0.01	MG/L	E270.2	
SILVER, DISS.	<0.01	MG/L	E200.7	
INC, DISS.	0.15	MG/L	E200.7	
---MISC. REPORTED 5-4-87-----	----------	----------	------	
BOD 5	7	MG/L	E405.1	
ARBON, TOTAL ORGANIC	6	MG/L	E415.1	
OD	14	MG/L	E410.4	
CHLORIDE	126	MG/L	E325.2	
CYANIDE	0.05	MG/L	E335.2	
IL & GREASE	<5	MG/L	E413.1	
H	7.89	S.U.	150.1	
PHENOLS	0.052	MG/L	E420.1	INSUFFICIENT SAMPLE FOR PROPER ANALYSIS.
HOSPHORUS, DISS. ORTHOPHOS.	1.38	MG/L	E353.2	
PHOSPHORUS, TOTAL	1.55	MG/L	E365.4	
ESIDUE, FILTERABLE	754	MG/L	E160.1	
ESIDUE, NONFILTERABLE	7	MG/L	E160.2	
SOLIDS, SETTLEABLE	<0.1	MG/L	E160.5	
SULFATE	95	MG/L	E375.2	
ORMALDEHYDE	<1	MG/L	HACH	
--EPA 610 REPORTED 5-4-87----	----------	----------	------	
ACENAPHTHENE	0.13	MG/L	EPA610	
CENAPHTHYLENE	<0.05	MG/L	EPA610	
NTHRACENE	<0.01	MG/L	EPA610	
BENZO(A)ANTHRACENE	<0.01	MG/L	EPA610	
ENZO(A)PYRENE	<0.01	MG/L	EPA610	
ENZO(B)FLUORANTHENE	<0.01	MG/L	EPA610	
BENZO(GHI)PERYLENE	<0.01	MG/L	EPA610	
BENZO(K)FLUORANTHENE	<0.01	MG/L	EPA610	
HRYSENE	<0.01	MG/L	EPA610	
IBENZO(A,H)ANTHRACENE	<0.01	MG/L	EPA610	
FLUORANTHENE	<0.01	MG/L	EPA610	
LUORENE	<0.01	MG/L	EPA610	

WQPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8222B SAMPLE TYPE: MISC DATE REPORTED: 04/29/87
ACILITY: LPC ACCT NO: DATE RECEIVED: 04/13/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/13/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8222B NAME: INFLUENT

ARAMETER	RESULTS	UNITS	METHOD	COMMENTS
NDENO(1,2,3-CD)PYRENE	<0.01	MG/L	EPA610	
APHTHALENE	<0.05	MG/L	EPA610	
PHENANTHRENE	<0.01	MG/L	EPA610	
YRENE	<0.01	MG/L	EPA610	
==========REPORT COMPLETE====	==========	==========	======	

Buck Henderson

UCK HENDERSON
ABORATORY SUPERVISOR

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WQPL055A ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8221B SAMPLE TYPE: MISC DATE REPORTED: 04/29/87
FACILITY: LPC ACCT NO: DATE RECEIVED: 04/13/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/13/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8221B NAME: EFFLUENT

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
----EPA 601---REPORTED 4-29-87	----------	----------	------	
BROMODICHLOROMETHANE	NONE DET.	UG/L	EPA601	
BROMOFORM	NONE DET.	UG/L	EPA601	
BROMOMETHANE	NONE DET.	UG/L	EPA601	
CARBON TETRACHLORIDE	NONE DET.	UG/L	EPA601	
CHLOROBENZENE	NONE DET.	UG/L	EPA601	
CHLOROETHANE	NONE DET.	UG/L	EPA601	
2-CHLOROETHYLVINYL ETHER	NONE DET.	UG/L	EPA601	
CHLOROFORM	NONE DET.	UG/L	EPA601	
CHLOROMETHANE	NONE DET.	UG/L	EPA601	
DIBROMOCHLOROMETHANE	NONE DET.	UG/L	EPA601	
1,2-DICHLOROBENZENE	NONE DET.	UG/L	EPA601	
1,3-DICHLOROBENZENE	NONE DET.	UG/L	EPA601	
1,4-DICHLOROBENZENE	NONE DET.	UG/L	EPA601	
DICHLORODIFLUOROMETHANE	NONE DET.	UG/L	EPA601	
1,1-DICHLOROETHANE	NONE DET.	UG/L	EPA601	
1,2-DICHLOROETHANE	NONE DET.	UG/L	EPA601	
1,1-DICHLOROETHENE	NONE DET.	UG/L	EPA601	
TRANS-1,2-DICHLOROETHENE	NONE DET.	UG/L	EPA601	
1,2-DICHLOROPROPANE	NONE DET.	UG/L	EPA601	
CIS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA601	
TRANS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA601	
METHYLENE CHLORIDE	NONE DET.	UG/L	EPA601	
1,1,2,2-TETRACHLOROETHANE	NONE DET.	UG/L	EPA601	
TETRACHLOROETHENE	NONE DET.	UG/L	EPA601	
1,1,1-TRICHLOROETHANE	NONE DET.	UG/L	EPA601	
1,1,2-TRICHLOROETHANE	NONE DET.	UG/L	EPA601	
TRICHLOROETHENE	NONE DET.	UG/L	EPA601	
TRICHLOROFLUOROMETHANE	NONE DET.	UG/L	EPA601	
VINYL CHLORIDE	NONE DET.	UG/L	EPA601	
----EPA 602----REPORTED 4-29-87	----------	----------	------	
BENZENE	NONE DET.	UG/L	EPA602	
CHLOROBENZENE	NONE DET.	UG/L	EPA602	
1,2-DICHLOROBENZENE	NONE DET.	UG/L	EPA602	
1,3-DICHLOROBENZENE	NONE DET.	UG/L	EPA602	
1,4-DICHLOROBENZENE	NONE DET.	UG/L	EPA602	
ETHYL BENZENE	NONE DET.	UG/L	EPA602	
TOLUENE	<5	UG/L	EPA602	
----METALS----REPORTED 4-30-87	----------	----------	------	
ARSENIC, DISS.	<0.01	MG/L	E206.2	
BARIUM, DISS.	0.17	MG/L	E200.7	

WQPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8221B SAMPLE TYPE: MISC DATE REPORTED: 04/29/87
ACILITY: LFC ACCT NO: DATE RECEIVED: 04/13/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/13/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8221B NAME: EFFLUENT

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
BORON, DISS.	0.11	MG/L	E200.7	
ADMIUM, DISS.	<0.01	MG/L	E200.7	
CHROMIUM, DISS.	<0.01	MG/L	E200.7	
COPPER, DISS.	<0.01	MG/L	E200.7	
EAD, DISS.	<0.01	MG/L	E239.2	
ANGANESE, DISS.	0.48	MG/L	E200.7	
MERCURY, DISS.	<0.002	MG/L	E245.1	
ICKEL, DISS.	<0.02	MG/L	E200.7	
ELENIUM, DISS.	<0.01	MG/L	E270.2	
SILVER, DISS.	<0.01	MG/L	E200.7	
ZINC, DISS.	0.15	MG/L	E200.7	
--MISC. REPORTED 5-4-87------	----------	----------	------	
OD 5	3	MG/L	E405.1	
CARBON, TOTAL ORGANIC	<1	MG/L	E415.1	
OD	<5	MG/L	E410.4	
HLORIDE	122	MG/L	E325.2	
CYANIDE	<0.02	MG/L	E335.2	
IL & GREASE	<5	MG/L	E413.1	
H	8.02	S.U.	150.1	
PHENOLS	<0.012	MG/L	E420.1	INSUFFICIENT SAMPLE FOR PROPER ANALYSIS.
HOSPHORUS, DISS. ORTHOPHOS.	0.95	MG/L	E353.2	
HOSPHORUS, TOTAL	0.98	MG/L	E365.4	
RESIDUE, FILTERABLE	770	MG/L	E160.1	
ESIDUE, NONFILTERABLE	1	MG/L	E160.2	
OLIDS, SETTLEABLE	<0.1	MG/L	E160.5	
SULFATE	95	MG/L	E375.2	
ORMALDEHYDE	<1	MG/L	HACH10	
---EPA 610 REPORTED 5-4-87	----------	----------	------	
ACENAPHTHENE	<0.05	MG/L	EPA610	
ACENAPHTHYLENE	<0.05	MG/L	EPA610	
NTHRACENE	<0.01	MG/L	EPA610	
BENZO(A)ANTHRACENE	<0.01	MG/L	EPA610	
BENZO(A)PYRENE	<0.01	MG/L	EPA610	
ENZO(B)FLUORANTHENE	<0.01	MG/L	EPA610	
ENZO(GHI)PERYLENE	<0.01	MG/L	EPA610	
BENZO(K)FLUORANTHENE	<0.01	MG/L	EPA610	
HRYSENE	<0.01	MG/L	EPA610	
IBENZO(A,H)ANTHRACENE	<0.01	MG/L	EPA610	
FLUORANTHENE	<0.01	MG/L	EPA610	
FLUORENE	<0.01	MG/L	EPA610	

WQFL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8221B SAMPLE TYPE: MISC DATE REPORTED: 04/29/87
ACILITY: LPC ACCT NO: DATE RECEIVED: 04/13/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/13/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8221B NAME: EFFLUENT

PARAMETER	RESULT	UNIT	METHOD	COMMENT
NDENO(1,2,3-CD)PYRENE	<0.01	MG/L	EPA610	
APHTHALENE	<0.01	MG/L	EPA610	
PHENANTHRENE	<0.01	MG/L	EPA610	
YRENE	<0.01	MG/L	EPA610	

========REPORT COMPLETE====== ========== ========== ======

Buck Henderson

UCK HENDERSON
ABORATORY SUPERVISOR

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WQPL055A ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8389B SAMPLE TYPE: MISC DATE REPORTED: 04/30/87
FACILITY: LPC ACCT NO: DATE RECEIVED: 04/21/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/21/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8389B NAME: TW-1

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
---METALS---REPORTED 4-30-87	---	---	---	
ARSENIC, DISS.	<0.01	MG/L	E206.2	
BARIUM, DISS.	0.30	MG/L	E200.7	
BORON, DISS.	0.39	MG/L	E200.7	
CADMIUM, DISS.	<0.01	MG/L	E200.7	
CHROMIUM, DISS.	<0.01	MG/L	E200.7	
COPPER, DISS.	<0.01	MG/L	E200.7	
LEAD, DISS.	<0.01	MG/L	E239.2	
MANGANESE, DISS.	0.05	MG/L	E200.7	
MERCURY, DISS.	<0.002	MG/L	E245.1	
NICKEL, DISS.	<0.02	MG/L	E200.7	
SELENIUM, DISS.	<0.01	MG/L	E270.2	
SILVER, DISS.	<0.01	MG/L	E200.7	
ZINC, DISS.	<0.01	MG/L	E200.7	
---EPA 610 REPORTED 5-4-87---	---	---	---	
ACENAPHTHENE	0.87	MG/L	EPA610	
ACENAPHTHYLENE	1.11	MG/L	EPA610	
ANTHRACENE	0.03	MG/L	EPA610	
BENZO(A)ANTHRACENE	<0.01	MG/L	EPA610	
BENZO(A)PYRENE	<0.01	MG/L	EPA610	
BENZO(B)FLUORANTHENE	<0.01	MG/L	EPA610	
BENZO(GHI)PERYLENE	<0.01	MG/L	EPA610	
BENZO(K)FLUORANTHENE	<0.01	MG/L	EPA610	
CHRYSENE	<0.01	MG/L	EPA610	
DIBENZO(A,H)ANTHRACENE	<0.01	MG/L	EPA610	
FLUORANTHENE	<0.01	MG/L	EPA610	
FLUORENE	0.21	MG/L	EPA610	
INDENO(1,2,3-CD)PYRENE	<0.01	MG/L	EPA610	
NAPHTHALENE	0.65	MG/L	EPA610	
PHENANTHRENE	0.14	MG/L	EPA610	
PYRENE	0.02	MG/L	EPA610	
---EPA 601 REPORTED 5-4-87---	---	---	---	
BROMODICHLOROMETHANE	NONE DET.	UG/L	EPA624	
BROMOFORM	NONE DET.	UG/L	EPA624	
BROMOMETHANE	NONE DET.	UG/L	EPA624	
CARBON TETRACHLORIDE	NONE DET.	UG/L	EPA624	
CHLOROBENZENE	NONE DET.	UG/L	EPA624	
CHLOROETHANE	NONE DET.	UG/L	EPA624	
2-CHLOROETHYLVINYL ETHER	NONE DET.	UG/L	EPA624	
CHLOROFORM	NONE DET.	UG/L	EPA624	
CHLOROMETHANE	NONE DET.	UG/L	EPA624	

WQPL055A ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8389B SAMPLE TYPE: MISC DATE REPORTED: 04/30/87
ACILITY: LPC ACCT NO: DATE RECEIVED: 04/21/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/21/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8389B NAME: TW-1

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
IBROMOCHLOROMETHANE	NONE DET.	UG/L	EPA624	
2-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,3-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,4-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
ICHLORODIFLUOROMETHANE	NONE DET.	UG/L	EPA624	
1-DICHLOROETHANE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROETHANE	NONE DET.	UG/L	EPA624	
1-DICHLOROETHENE	NONE DET.	UG/L	EPA624	
RANS-1,2-DICHLOROETHENE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROPROPANE	NONE DET.	UG/L	EPA624	
IS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA624	
RANS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA624	
ETHYLENE CHLORIDE	NONE DET.	UG/L	EPA624	
1,1,2,2-TETRACHLOROETHANE	NONE DET.	UG/L	EPA624	
ETRACHLOROETHENE	NONE DET.	UG/L	EPA624	
1,1-TRICHLOROETHANE	NONE DET.	UG/L	EPA624	
1,1,2-TRICHLOROETHANE	NONE DET.	UG/L	EPA624	
RICHLOROETHENE	NONE DET.	UG/L	EPA624	
RICHLOROFLUOROMETHANE	NONE DET.	UG/L	EPA624	
VINYL CHLORIDE	NONE DET.	UG/L	EPA624	
---EPA 602 REPORTED 5-4-87---	---	---	---	
ENZENE	118	UG/L	EPA624	
CHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
3-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
4-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
ETHYLBENZENE	60	UG/L	EPA624	
OLUENE	7	UG/L	EPA624	
--MISC. REPORTED 5-4-87------	---	---	---	
BOD 5	2	MG/L	E405.1	
ARBON, TOTAL ORGANIC	42	MG/L	E415.1	
D	150	MG/L	E410.4	
CHLORIDE	119	MG/L	E325.2	
CYANIDE	0.03	MG/L	E335.2	
ORMALDEHYDE	<1	MG/L	HACH	
L & GREASE	10	MG/L	E413.1	
PH	7.04	S.U.	E150.1	
HENOLS	0.061	MG/L	E420.1	INSUFFICIENT SAMPLE FOR PROPER ANALYSIS.
PHOSPHORUS, DISS. ORTHOPHOS.	<0.01	MG/L	E353.2	
HOSPHORUS, TOTAL	1.25	MG/L	E365.4	

WQPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8389B SAMPLE TYPE: MISC DATE REPORTED: 04/30/87
ACILITY: LPC ACCT NO: DATE RECEIVED: 04/21/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/21/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8389B NAME: TW-1

EARAMEIER	RESULIS	UNIIS	MEIHOD	COMMENIS
ESIDUE, FILTERABLE	760	MG/L	E160.1	
ESIDUE, NONFILTERABLE	2,852	MG/L	E160.2	
OLIDS, SETTLEABLE	7.5	MG/L	E160.5	
ULFATE	90	MG/L	E375.2	
=========REPORT COMPLETE=====	==========	==========	======	

Buck Henderson

UCK HENDERSON
ABORATORY SUPERVISOR

WQPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8390B SAMPLE TYPE: MISC DATE REPORTED: 04/30/87
FACILITY: LPC ACCT NO: DATE RECEIVED: 04/21/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/21/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8390B NAME: INFLUENT

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
----METALS----REPORTED 4-30-87	----------	----------	------	
ARSENIC, DISS.	<0.01	MG/L	E206.2	
BARIUM, DISS.	0.19	MG/L	E200.7	
BORON, DISS.	0.28	MG/L	E200.7	
CADMIUM, DISS.	<0.01	MG/L	E200.7	
CHROMIUM, DISS.	<0.01	MG/L	E200.7	
COPPER, DISS.	<0.01	MG/L	E200.7	
LEAD, DISS.	<0.01	MG/L	E239.2	
MANGANESE, DISS.	0.46	MG/L	E200.7	
MERCURY, DISS.	<0.002	MG/L	E245.1	
NICKEL, DISS.	<0.02	MG/L	E200.7	
SELENIUM, DISS.	<0.01	MG/L	E270.2	
SILVER, DISS.	<0.01	MG/L	E200.7	
ZINC, DISS.	0.21	MG/L	E200.7	
----EPA 610 REPORTED 5-4-87---	----------	----------	------	
ACENAPHTHENE	0.39	MG/L	EPA610	
ACENAPHTHYLENE	<0.05	MG/L	EPA610	
ANTHRACENE	<0.01	MG/L	EPA610	
BENZO(A)ANTHRACENE	<0.01	MG/L	EPA610	
BENZO(A)PYRENE	<0.01	MG/L	EPA610	
BENZO(B)FLUORANTHENE	<0.01	MG/L	EPA610	
BENZO(GHI)PERYLENE	<0.01	MG/L	EPA610	
BENZO(K)FLUORANTHENE	<0.01	MG/L	EPA610	
CHRYSENE	<0.01	MG/L	EPA610	
DIBENZO(A,H)ANTHRACENE	<0.01	MG/L	EPA610	
FLUORANTHENE	<0.01	MG/L	EPA610	
FLUORENE	0.01	MG/L	EPA610	
INDENO(1,2,3-CD)PYRENE	<0.01	MG/L	EPA610	
NAPHTHALENE	<0.05	MG/L	EPA610	
PHENANTHRENE	<0.01	MG/L	EPA610	
PYRENE	<0.01	MG/L	EPA610	
----EPA 601 REPORTED 5-4-87---	----------	----------	------	
BROMODICHLOROMETHANE	NONE DET.	UG/L	EPA624	
BROMOFORM	NONE DET.	UG/L	EPA624	
BROMOMETHANE	NONE DET.	UG/L	EPA624	
CARBON TETRACHLORIDE	NONE DET.	UG/L	EPA624	
CHLOROBENZENE	NONE DET.	UG/L	EPA624	
CHLOROETHANE	NONE DET.	UG/L	EPA624	
2-CHLOROETHYLVINYL ETHER	NONE DET.	UG/L	EPA624	
CHLOROFORM	NONE DET.	UG/L	EPA624	
CHLOROMETHANE	NONE DET.	UG/L	EPA624	

WQFL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8390B SAMPLE TYPE: MISC DATE REPORTED: 04/30/87
FACILITY: LPC ACCT NO: DATE RECEIVED: 04/21/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/21/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8390B NAME: INFLUENT

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
DIBROMOCHLOROMETHANE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,3-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,4-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
DICHLORODIFLUOROMETHANE	NONE DET.	UG/L	EPA624	
1,1-DICHLOROETHANE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROETHANE	NONE DET.	UG/L	EPA624	
1,1-DICHLOROETHENE	NONE DET.	UG/L	EPA624	
TRANS-1,2-DICHLOROETHENE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROPROPANE	NONE DET.	UG/L	EPA624	
CIS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA624	
TRANS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA624	
METHYLENE CHLORIDE	NONE DET.	UG/L	EPA624	
1,1,2,2-TETRACHLOROETHANE	NONE DET.	UG/L	EPA624	
TETRACHLOROETHENE	NONE DET.	UG/L	EPA624	
1,1,1-TRICHLOROETHANE	NONE DET.	UG/L	EPA624	
1,1,2-TRICHLOROETHANE	NONE DET.	UG/L	EPA624	
TRICHLOROETHENE	NONE DET.	UG/L	EPA624	
TRICHLOROFLUOROMETHANE	NONE DET.	UG/L	EPA624	
VINYL CHLORIDE	NONE DET.	UG/L	EPA624	
----EPA 602 REPORTED 5-4-87---	----------	----------	------	
BENZENE	NONE DET.	UG/L	EPA624	
CHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,3-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,4-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
ETHYLBENZENE	NONE DET.	UG/	EPA624	
TOLUENE	NONE DET.	UG/L	EPA624	
----MISC. REPORTED 5-4-87-----	----------	----------	------	
BOD 5	2	MG/L	E405.1	
CARBON, TOTAL ORGANIC	7	MG/L	E415.1	
COD	21	MG/L	E410.4	
CHLORIDE	95	MG/L	E325.2	
CYANIDE	0.03	MG/L	E335.2	
FORMALDEHYDE	<1	MG/L	HACH	
OIL & GREASE	<5	MG/L	E413.1	
PH	7.76	S.U.	E150.1	
PHENOLS	0.033	MG/L	E420.1	INSUFFICIENT SAMPLE FOR PROPER ANALYSIS.
PHOSPHORUS, DISS. ORTHOPHOS.	1.04	MG/L	E353.2	
PHOSPHORUS, TOTAL	1.24	MG/L	E365.4	

WQPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8390B SAMPLE TYPE: MISC DATE REPORTED: 04/30/87
FACILITY: LPC ACCT NO: DATE RECEIVED: 04/21/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/21/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8390B NAME: INFLUENT

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
RESIDUE, FILTERABLE	754	MG/L	E160.1	
RESIDUE, NONFILTERABLE	8	MG/L	E160.2	
SOLIDS, SETTLEABLE	<0.1	MG/L	E160.5	
SULFATE	96	MG/L	E375.2	

==========REPORT COMPLETE========== ========== ========== ======

Buck Henderson

BUCK HENDERSON
LABORATORY SUPERVISOR

WQPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8391B SAMPLE TYPE: MISC DATE REPORTED: 04/30/87
FACILITY: LPC ACCT NO: DATE RECEIVED: 04/21/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/21/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8391B NAME: EFFLUENT.

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
---METALS---REPORTED 4-30-87	---	---	---	
ARSENIC, DISS.	<0.01	MG/L	E206.2	
BARIUM, DISS.	0.18	MG/L	E200.7	
BORON, DISS.	0.18	MG/L	E200.7	
CADMIUM, DISS.	<0.01	MG/L	E200.7	
CHROMIUM, DISS.	<0.01	MG/L	E200.7	
COPPERC, DISS.	<0.01	MG/L	E200.7	
LEAD, DISS.DISS.	<0.01	MG/L	E239.2	
MANGANESE, DISS.	0.53	MG/L	E200.7	
MERCURY, DISS.	<0.002	MG/L	E245.1	
NICKEL, DISS.S.	<0.02	MG/L	E200.7	
SELENIUM, DISS.	<0.01	MG/L	E270.2	
SILVER, DISS.	<0.01	MG/L	E200.7	
ZINC, DISS.	0.09	MG/L	E200.7	
---EPA 610 REPORTED 5-4-87---	---	---	---	
ACENAPHTHENE	<0.05	MG/L	EPA610	
ACENAPHTHYLENE	<0.05	MG/L	EPA610	
ANTHRACENE	<0.01	MG/L	EPA610	
BENZO(A)ANTHRACENE	<0.01	MG/L	EPA610	
BENZO(A)PYRENE	<0.01	MG/L	EPA610	
BENZO(B)FLUORANTHENE	<0.01	MG/L	EPA610	
BENZO(GHI)PERYLENE	<0.01	MG/L	EPA610	
BENZO(K)FLUORANTHENE	<0.01	MG/L	EPA610	
CHRYSENE	<0.01	MG/L	EPA610	
DIBENZO(A,H)ANTHRACENE	<0.01	MG/L	EPA610	
FLUORANTHENE	<0.01	MG/L	EPA610	
FLUORENE	<0.01	MG/L	EPA610	
INDENO(1,2,3-CD)PYRENE	<0.01	MG/L	EPA610	
NAPHTHALENE	<0.05	MG/L	EPA610	
PHENANTHRENE	<0.01	MG/L	EPA610	
PYRENE	<0.01	MG/L	EPA610	
---EPA 601 REPORTED 5-4-87---	---	---	---	
BROMODICHLOROMETHANE	NONE DET.	UG/L	EPA624	
BROMOFORM	NONE DET.	UG/L	EPA624	
BROMOMETHANE	NONE DET.	UG/L	EPA624	
CARBON TETRACHLORIDE	NONE DET.	UG/L	EPA624	
CHLOROBENZENE	NONE DET.	UG/L	EPA624	
CHLOROETHANE	NONE DET.	UG/L	EPA624	
2-CHLOROETHYLVINYL ETHER	NONE DET.	UG/L	EPA624	
CHLOROFORM	NONE DET.	UG/L	EPA624	
CHLOROMETHANE	NONE DET.	UG/L	EPA624	

WQPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8391B SAMPLE TYPE: MISC DATE REPORTED: 04/30/87
ACILITY: LPC ACCT NO: DATE RECEIVED: 04/21/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/21/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8391B NAME: EFFLUENT

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
IBROMOCHLOROMETHANE	NONE DET.	UG/L	EPA624	
2-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
,3-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
4-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
ICHLORODIFLUOROMETHANE	NONE DET.	UG/L	EPA624	
1-DICHLOROETHANE	NONE DET.	UG/L	EPA624	
2-DICHLOROETHANE	NONE DET.	UG/L	EPA624	
1-DICHLOROETHENE	NONE DET.	UG/L	EPA624	
RANS-1,2-DICHLOROETHENE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROPROPANE	NONE DET.	UG/L	EPA624	
IS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA624	
RANS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA624	
ETHYLENE CHLORIDE	NONE DET.	UG/L	EPA624	
1,2,2-TETRACHLOROETHANE	NONE DET.	UG/L	EPA624	
TRACHLOROETHENE	NONE DET.	UG/L	EPA624	
1,1-TRICHLOROETHANE	NONE DET.	UG/L	EPA624	
1,2-TRICHLOROETHANE	NONE DET.	UG/L	EPA624	
RICHLOROETHENE	NONE DET.	UG/L	EPA624	
RICHLOROFLUOROMETHANE	NONE DET.	UG/L	EPA624	
VINYL CHLORIDE	NONE DET.	UG/L	EPA624	
--EPA 602 REPORTED 5-4-87----	---	---	---	
NZENE	NONE DET.	UG/L	EPA624	
CHLOROBENZENE	NONE DET.	UG/L	EPA624	
2-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
3-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
4-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
ETHYLBENZENE	NONE DET.	UG/L	EPA624	
OLUENE	NONE DET.	UG/L	EPA624	
----MISC. REPORTED 5-4-87----	---	---	---	
BOD 5	<1	MG/L	E405.1	
ARBON, TOTAL ORGANIC	<1	MG/L	E415.1	
OD	5	MG/L	E410.4	
CHLORIDE	96	MG/L	E325.2	
YANIDE	<0.02	MG/L	E335.2	
ORMALDEHYDE	<1	MG/L	HACH	
IL & GREASE	<5	MG/L	E413.1	
PH	7.75	S.U.	E150.1	
HENOLS	<0.012	MG/L	E420.1	INSUFFICIENT SAMPLE FOR PROPER ANALYSIS.
PHOSPHORUS, DISS. ORTHOPHOS.	0.88	MG/L	E353.2	
HOSPHORUS, TOTAL	0.96	MG/L	E365.4	

WQPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8391B SAMPLE TYPE: MISC DATE REPORTED: 04/30/87
ACILITY: LPC ACCT NO: DATE RECEIVED: 04/21/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/21/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8391B NAME: EFFLUENT

PARAMETER	RESULT	UNIT	METHOD	COMMENT
ESIDUE, FILTERABLE	748	MG/L	E160.1	
ESIDUE, NONFILTERABLE	3	MG/L	E160.2	
OLIDS, SETTLEABLE	<0.1	MG/L	E160.5	
ULFATE	106	MG/L	E375.2	
======REPORT COMPLETE========	==========	==========	======	

Buck Henderson

ICK HENDERSON
ABORATORY SUPERVISOR

WQPL055A ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8492B SAMPLE TYPE: MISC DATE REPORTED: 05/04/87
ACILITY: LPC ACCT NO: DATE RECEIVED: 04/27/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/27/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8492B NAME: TW-1

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
---EPA 610 REPORTED 5-4-87---	---	---	---	
CENAPHTHENE	2.49	MG/L	EPA610	
ACENAPHTHYLENE	0.90	MG/L	EPA610	
NTHRACENE	0.05	MG/L	EPA610	
ENZO(A)ANTHRACENE	<0.01	MG/L	EPA610	
ENZO(A)PYRENE	<0.01	MG/L	EPA610	
ENZO(B)FLUORANTHENE	<0.01	MG/L	EPA610	
NZO(GHI)PERYLENE	<0.01	MG/L	EPA610	
ENZO(K)FLUORANTHENE	<0.01	MG/L	EPA610	
CHRYSENE	<0.01	MG/L	EPA610	
IBENZO(A,H)ANTHRACENE	<0.01	MG/L	EPA610	
LUORANTHENE	0.06	MG/L	EPA610	
FLUORENE	0.10	MG/L	EPA610	
NDENO(1,2,3-CD)PYRENE	<0.01	MG/L	EPA610	
PHTHALENE	0.33	MG/L	EPA610	
HENANTHRENE	0.15	MG/L	EPA610	
PYRENE	0.03	MG/L	EPA610	
---EPA 601 REPORTED 5-4-87	---	---	---	
ROMODICHLOROMETHANE	NONE DET.	UG/L	EPA624	
BROMOFORM	NONE DET.	UG/L	EPA624	
ROMOMETHANE	NONE DET.	UG/L	EPA624	
RBON TETRACHLORIDE	NONE DET.	UG/L	EPA624	
CHLOROBENZENE	NONE DET.	UG/L	EPA624	
HLOROETHANE	NONE DET.	UG/L	EPA624	
-CHLOROETHYLVINYL ETHER	NONE DET.	UG/L	EPA624	
HLOROFORM	NONE DET.	UG/L	EPA624	
CHLOROMETHANE	NONE DET.	UG/L	EPA624	
,BROMOCHLOROMETHANE	NONE DET.	UG/L	EPA624	
2-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,3-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
4-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
CHLORODIFLUOROMETHANE	NONE DET.	UG/L	EPA624	
1,1-DICHLOROETHANE	NONE DET.	UG/L	EPA624	
2-DICHLOROETHANE	NONE DET.	UG/L	EPA624	
1-DICHLOROETHENE	NONE DET.	UG/L	EPA624	
RANS-1,2-DICHLOROETHENE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROPROPANE	NONE DET.	UG/L	EPA624	
S-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA624	
ANS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA624	
METHYLENE CHLORIDE	NONE DET.	UG/L	EPA624	
1,2,2-TETRACHLOROETHANE	NONE DET.	UG/L	EPA624	

WQPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8492B SAMPLE TYPE: MISC DATE REPORTED: 05/04/87
ACILITY: LPC ACCT NO: DATE RECEIVED: 04/27/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/27/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8492B NAME: TW-1

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
ETRACHLOROETHENE	NONE DET.	UG/L	EPA624	
1,1-TRICHLOROETHANE	NONE DET.	UG/L	EPA624	
1,1,2-TRICHLOROETHANE	NONE DET.	UG/L	EPA624	
RICHLOROETHENE	NONE DET.	UG/L	EPA624	
RICHLOROFLUOROMETHANE	NONE DET.	UG/L	EPA624	
INYL CHLORIDE	NONE DET.	UG/L	EPA624	
----EPA 602 REPORTED 5-4-87---	----------	----------	------	
ENZENE	78	UG/L	EPA624	
HLOROBENZENE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
3-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
4-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
ETHYL BENZENE	36	UG/L	EPA624	
OLUENE	5	UG/L	EPA624	
---METALS REPORTED 5-4-87----	----------	----------	------	
RSENIC, DISS.	0.02	MG/L	E206.2	
ARIUM, DISS.	0.37	MG/L	E200.7	
ORON, DISS.	0.36	MG/L	E200.7	
ADMIUM, DISS.	<0.01	MG/L	E200.7	
CHROMIUM, DISS.	<0.01	MG/L	E200.7	
OPPER, DISS.	<0.02	MG/L	E200.7	
EAD, DISS.	<0.01	MG/L	E200.7	
MANGANESE, DISS.	1.11	MG/L	E200.7	
MERCURY, TOTAL	0.003	MG/L	E245.1	
ICKEL, DISS.	<0.02	MG/L	E200.7	
ELENIUM, DISS.	<0.01	MG/L	E270.2	
SILVER, DISS.	<0.01	MG/L	E200.7	
INC, DISS.	0.02	MG/L	E200.7	
---MISC. REPORTED 5-4-87-----	----------	----------	------	
BOD 5	1	MG/L	E405.1	
ARBON, TOTAL ORGANIC	32	MG/L	E415.1	
OD	180	MG/L	E410.4	
CHLORIDE	119	MG/L	E325.2	
YANIDE, TOTAL	0.02	MG/L	E335.2	
IL & GREASE	6.9	MG/L	E413.1	
H	7.38	S.U.	E150.1	
PHENOLS	0.023	MG/L	E420.1	INSUFFICIENT SAMPLE FOR PROPER ANALYSIS.
OSPHORUS, DISS. ORTHOPHOS.	<0.01	MG/L	E365.1	
PHOSPHORUS, TOTAL	1.95	MG/L	E365.4	
ESIDUE, FILTERABLE	772	MG/L	E160.1	

WQPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8492B SAMPLE TYPE: MISC DATE REPORTED: 05/04/87
ACILITY: LPC ACCT NO: DATE RECEIVED: 04/27/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/27/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8492B NAME: TW-1

PARAMETER	RESULT	UNITS	METHOD	COMMENTS
ESIDUE, NONFILTERABLE	722	MG/L	E160.2	
OLIDS, SETTLEABLE	5.0	MG/L	E160.5	
SULFATE	90	MG/L	E375.2	
FORMALDEHYDE	<1	MG/L	HACH	
==========REPORT COMPLETE===	==========	==========	======	

Buck Henderson

UCK HENDERSON
ABORATORY SUPERVISOR

WQPL055A ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8493B SAMPLE TYPE: MISC DATE REPORTED: 05/04/87
ACILITY: LPC ACCT NO: DATE RECEIVED: 04/27/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/27/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8493B NAME: INFLUENT

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
---EPA 610 REPORTED 5-4-87	----------	----------	------	
CENAPHTHENE	<0.05	MG/L	EPA610	
ACENAPHTHYLENE	<0.05	MG/L	EPA610	
NTHRACENE	<0.01	MG/L	EPA610	
ENZO(A)ANTHRACENE	<0.01	MG/L	EPA610	
ENZO(A)PYRENE	<0.01	MG/L	EPA610	
ENZO(B)FLUORANTHENE	<0.01	MG/L	EPA610	
ENZO(GHI)PERYLENE	<0.01	MG/L	EPA610	
ENZO(K)FLUORANTHENE	<0.01	MG/L	EPA610	
CHRYSENE	<0.01	MG/L	EPA610	
IBENZO(A,H)ANTHRACENE	<0.01	MG/L	EPA610	
LUORANTHENE	<0.01	MG/L	EPA610	
FLUORENE	<0.01	MG/L	EPA610	
NDENO(1,2,3-CD)PYRENE	<0.01	MG/L	EPA610	
APHTHALENE	<0.05	MG/L	EPA610	
PHENANTHRENE	<0.01	MG/L	EPA610	
PYRENE	<0.01	MG/L	EPA610	
---EPA 601 REPORTED 5-4-87---	NON-------	----------	------	
ROMODICHLOROMETHANE	NONE DET.	UG/L	EPA624	
BROMOFORM	NONE DET.	UG/L	EPA624	
ROMOMETHANE	NONE DET.	UG/L	EPA624	
ARBON TETRACHLORIDE	NONE DET.	UG/L	EPA624	
CHLOROBENZENE	NONE DET.	UG/L	EPA624	
HLOROETHANE	NONE DET.	UG/L	EPA624	
-CHLOROETHYLVINYL ETHR	NONE DET.	UG/L	EPA624	
HLOROFORM	NONE DET.	UG/L	EPA624	
CHLOROMETHANE	NONE DET.	UG/L	EPA624	
IBROMOCHLOROMETHANE	NONE DET.	UG/L	EPA624	
2-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,3-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
4-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
ICHLORODIFLUOROMETHANE	NONE DET.	UG/L	EPA624	
1,1-DICHLOROETHANE	NONE DET.	UG/L	EPA624	
2-DICHLOROETHANE	NONE DET.	UG/L	EPA624	
1-DICHLOROETHENE	NONE DET.	UG/L	EPA624	
TRANS-1,2-DICHLOROETHENE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROPROPANE	NONE DET.	UG/L	EPA624	
IS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA624	
RANS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA624	
METHYLENE CHLORIDE	NONE DET.	UG/L	EPA624	
1,2,2-TETRACHLOROETHANE	NONE DET.	UG/L	EPA624	

WQPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8493B SAMPLE TYPE: MISC DATE REPORTED: 05/04/87
ACILITY: LPC ACCT NO: DATE RECEIVED: 04/27/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/27/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8493B NAME: INFLUENT

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
ETRACHLOROETHENE	NONE DET.	UG/L	EPA624	
1,1-TRICHLOROETHANE	NONE DET.	UG/L	EPA624	
1,2-TRICHLOROETHANE	NONE DET.	UG/L	EPA624	
RICHLOROETHENE	NONE DET.	UG/L	EPA624	
RICHLOROFLUOROMETHANE	NONE DET	UG/L	EPA624	
INYL CHLORIDE	NONE DET.	UG/L	EPA624	
----EPA 602 REPORTED 5-4-87---	---	---	---	
ENZENE	4	UG/L	EPA624	
HLOROBENZENE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
3-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
4-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
HYL BENZENE	NONE DET.	UG/L	EPA624	
OLUENE	NONE DET.	UG/L	EPA624	
--METALS REPORTED 5-4-87-----	---	---	---	
RSENIC, DISS.	<0.01	MG/L	E206.2	
BARIUM, DISS.	0.20	MG/L	E200.7	
ORON, DISS.	0.23	MG/L	E200.7	
ADMIUM, DISS.	<0.01	MG/L	E200.7	
CHROMIUM, DISS.	<0.01	MG/L	E200.7	
COPPER, DISS.	<0.02	MG/L	E200.7	
EAD, DISS.	<0.01	MG/L	E239.2	
MANGANESE, DISS.	0.92	MG/L	E200.7	
MERCURY, TOTAL	<0.002	MG/L	E245.1	
ICKEL, DISS.	<0.02	MG/L	E200.7	
ELENIUM, DISS.	<0.01	MG/L	E200.7	
SILVER, DISS.	<0.01	MG/L	E200.7	
INC, DISS.	0.19	MG/L	E200.7	
---MISC. REPORTED 5-4-87-----	---	---	---	
BOD 5	3	MG/L	E405.1	
CARBON, TOTAL ORGANIC	10	MG/L	E415.1	
OD	40	MG/L	E410.4	
HLORIDE	84	MG/L	E325.2	
CYANIDE, TOTAL	0.03	MG/L	E335.2	
IL & GREASE	<5	MG/L	E413.1	
H	7.96	S.U.	E150.1	
PHENOLS	0.052	MG/L	E420.1	INSUFFICIENT SAMPLE FOR PROPER ANALYSIS.
HOSPHORUS, DISS. ORTHOPHOS.	0.67	MG/L	E365.1	
PHOSPHORUS, TOTAL	1.18	MG/L	E365.4	
RESIDUE, FILTERABLE	722	MG/L	E160.1	

WQPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8493B SAMPLE TYPE: MISC DATE REPORTED: 05/04/87
ACILITY: LPC ACCT NO: DATE RECEIVED: 04/27/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/27/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8493B NAME: INFLUENT

PARAMETER	RESULT	UNIT	METHOD	COMMENT
ESIDUE, NONFILTERABLE	80	MG/L	E160.2	
OLIDS, SETTLEABLE	0.2	MG/L	E160.5	
SULFATE	90	MG/L	E375.2	
FORMALDEHYDE	<1	MG/L	HACH	
=======REPORT COMPLETE========	==========	==========	======	

Buck Henderson

UCK HENDERSON
ABORATORY SUPERVISOR

WQPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8494B SAMPLE TYPE: MISC DATE REPORTED: 05/04/87
FACILITY: LPC ACCT NO: DATE RECEIVED: 04/27/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/27/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8494B NAME: EFFLUENT

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
----EPA 610 REPORTED 5-4-87----				
ACENAPHTHENE	<0.05	MG/L	EPA610	
ACENAPHTHYLENE	<0.05	MG/L	EPA610	
ANTHRACENE	<0.01	MG/L	EPA610	
BENZO(A)ANTHRACENE	<0.01	MG/L	EPA610	
BENZO(A)PYRENE	<0.01	MG/L	EPA610	
BENZO(B)FLUORANTHENE	<0.01	MG/L	EPA610	
BENZO(GHI)PERYLENE	<0.01	MG/L	EPA610	
BENZO(K)FLUORANTHENE	<0.01	MG/L	EPA610	
CHRYSENE	<0.01	MG/L	EPA610	
DIBENZO(A,H)ANTHRACENE	<0.01	MG/L	EPA610	
FLUORANTHENE	<0.01	MG/L	EPA610	
FLUORENE	<0.01	MG/L	EPA610	
INDENO(1,2,3-CD)PYRENE	<0.01	MG/L	EPA610	
NAPHTHALENE	<0.05	MG/L	EPA610	
PHENANTHRENE	<0.01	MG/L	EPA610	
PYRENE	<0.01	MG/L	EPA610	
----EPA 601 REPORTED 5-4-87----				
BROMODICHLOROMETHANE	NONE DET.	UG/L	EPA624	
BROMOFORM	NONE DET.	UG/L	EPA624	
BROMOMETHANE	NONE DET.	UG/L	EPA624	
CARBON TETRACHLORIDE	NONE DET.	UG/L	EPA624	
CHLOROBENZENE	NONE DET.	UG/L	EPA624	
CHLOROETHANE	NONE DET.	UG/L	EPA624	
2-CHLOROETHYLVINYL ETHER	NONE DET.	UG/L	EPA624	
CHLOROFORM	NONE DET.	UG/L	EPA624	
CHLOROMETHANE	NONE DET.	UG/L	EPA624	
DIBROMOCHLOROMETHANE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,3-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,4-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
DICHLORODIFLUOROMETHANE	NONE DET.	UG/L	EPA624	
1,1-DICHLOROETHANE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROETHANE	NONE DET.	UG/L	EPA624	
1,1-DICHLOROETHENE	NONE DET.	UG/L	EPA624	
TRANS-1,2-DICHLOROETHENE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROPROPANE	NONE DET.	UG/L	EPA624	
CIS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA624	
TRANS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA624	
METHYLENE CHLORIDE	NONE DET.	UG/L	EPA624	
1,1,2,2-TETRACHLOROETHANE	NONE DET.	UG/L	EPA624	

WQPL055A ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8494B SAMPLE TYPE: MISC DATE REPORTED: 05/04/87
ACILITY: LPC ACCT NO: DATE RECEIVED: 04/27/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/27/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8494B NAME: EFFLUENT

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
TETRACHLOROETHENE	NONE DET.	UG/L	EPA624	
1,1-TRICHLOROETHANE	NONE DET.	UG/L	EPA624	
1,1,2-TRICHLOROETHANE	NONE DET.	UG/L	EPA624	
TRICHLOROETHENE	NONE DET.	UG/L	EPA624	
DICHLOROFLUOROMETHANE	NONE DET.	UG/L	EPA624	
VINYL CHLORIDE	NONE DET.	UG/L	EPA624	
-----EPA 602 REPORTED 5-4-87---				
BENZENE	NONE DET.	UG/L	EPA624	
CHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,3-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,4-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
ETHYL BENZENE	NONE DET.	UG/L	EPA624	
TOLUENE	NONE DET.	UG/L	EPA624	
----METALS REPORTED 5-4-87-----				
ARSENIC, DISS.	<0.01	MG/L	E206.2	
BARIUM, DISS.	0.15	MG/L	E200.7	
IRON, DISS.	0.18	MG/L	E200.7	
CADMIUM, DISS.	<0.01	MG/L	E200.7	
CHROMIUM, DISS.	<0.01	MG/L	E200.7	
COPPER, DIESEL	<0.02	MG/L	E200.7	
LEAD, DISS.	<0.01	MG/L	E239.2	
MANGANESE, DISS.	0.53	MG/L	E200.7	
MERCURY, TOTAL	<0.002	MG/L	E245.1	
NICKEL, DISS.	<0.02	MG/L	E200.7	
SELENIUM, DISS.	<0.01	MG/L	E270.2	
SILVER, DISS.	<0.01	MG/L	E200.7	
ZINC, DISS.	0.12	MG/L	E200.7	
----MISC. REPORTED 5-4-87------				
BOD 5	<1	MG/L	E405.1	
CARBON, TOTAL ORGANIC	<1	MG/L	E415.1	
COD	5	MG/L	E410.4	
CHLORIDE	88	MG/L	E325.2	
CYANIDE, TOTAL	0.02	MG/L	E335.2	
OIL & GREASE	<5	MG/L	E413.1	
pH	7.95	S.U.	E150.1	
PHENOLS	<0.012	MG/L	E420.1	INSUFFICIENT SAMPLE FOR PROPER ANALYSIS.
PHOSPHORUS, DISS. ORTHOPHOS.	0.70	MG/L	E365.1	
PHOSPHORUS, TOTAL	0.78	MG/L	E365.4	
RESIDUE, FILTERABLE	744	MG/L	E160.1	

WQPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 8494B SAMPLE TYPE: MISC DATE REPORTED: 05/04/87
ACILITY: LPC ACCT NO: DATE RECEIVED: 04/27/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 04/27/87
AUSTIN TX 78701 SAMPLE TIME: 00:00
LOCATION ID: 8494B NAME: EFFLUENT

PARAMETER	RESULT	UNIT	METHOD	COMMENT
ESIDUE, NONFILTERABLE	2	MG/L	E160.2	
OLIDS, SETTLEABLE	<0.1	MG/L	E160.5	
ULFATE	88	MG/L	E375.2	
FORMALDEHYDE	<1	MG/L	HACH	

=========REPORT COMPLETE=====

Buck Henderson

UCK HENDERSON
ABORATORY SUPERVISOR

APPENDIX B

Town Lake Water Quality Data, Fish Harvest Estimate, and Downstream Water Intakes

RADIAN CORPORATION

TELEPHONE CALL RECORD

☐ Incoming Call
☒ Outgoing Call

Project No. 229-068	Distribution
Project Name 100 Congress Ave	
Date 27 Apr. 1987	Time 2:00 PM
Person Calling Robert Wallace	Activity RADIAN Corp
Person Called Bill HOFFMAN	Activity Texas Water Development Board (463-7955)
General Subject Location of Potable water intakes along Colorado River downstream from Austin	

TOPICS DISCUSSED AND ACTION TAKEN

1. Bill HOFFMAN said that the only municipal water supply systems downstream of Austin along the Colorado River are those run by Bastrop, Smithville, and Lagrange.

2. These cities have filing rights to the surface water flowing in the Colorado but have never used the water since they obtain their water from deep aquifers which are not hydraulically connected to the River's flow.

3. Downstream water diversion from the Colorado river are primarily for irrigation purposes by rice farmers.

Signature

RADIAN CORPORATION

TELEPHONE CALL RECORD

☐ Incoming Call
☒ Outgoing Call

Project No. 229-068	Distribution
Project Name 100 Congress Ave	
Date 24 March 1987	Time 2:30PM
Person Calling Robert Wallace	Activity RADIAN CORP
Person Called Steve Gutruter	Activity Texas Parks & Wildlife (389-4652) in Austin
General Subject Fish Harvest Data for Town Lake	

TOPICS DISCUSSED AND ACTION TAKEN

1. Steve maintains the data file of fish harvest information for lakes and streams in the State of Texas. Typically these data a generated by creel consus surveys that Parks & Wildlife initiate to keep track of recreational fishing in the state.

2. Although there is no consus data for Town Lake, Steve indicates that the average lake harvest for all lakes is approximately 18.75 lbs/acre/yr. This includes all species and is based on 1985 data. Town Lake is 525 acres and since no motorboats are allowed, the fishing pressure on the lake is probably less than average since boat fishing is more productive than bank fishing.

3 He also could tell me that there 3.7 million anglers in the State out of the 15.9 million population. If Austin has the same number of anglers as the State as a whole does then approximately 81,446 anglers live in Austin. If they consume all of the annual harvest of the 525 acres of Town Lake (based on state-wide averages) then each person consumes:

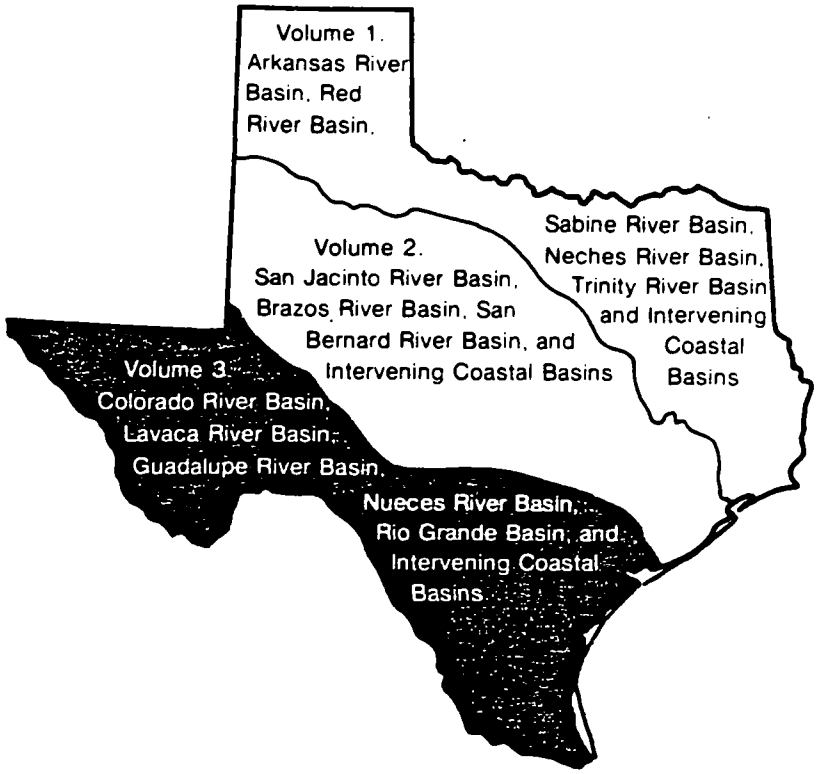
$$\frac{[18.75\ lb/ac][525]}{81,446} = 0.12\ lbs/yr = 0.15\ gm/day/person$$

Signature

US-01725
1984, V3

Water Resources Data
Texas
Water Year 1984

Volume 3. Colorado River Basin, Lavaca River Basin, Guadalupe River Basin, Nueces River Basin, Rio Grand Basin, and Intervening Coastal Basins



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TX-84-3
Prepared in cooperation with the State of Texas
and with other agencies

08157900 TOWN LAKE AT AUSTIN, TX

LOCATION.--Lat 30°14'56", long 97°43'03", Travis County, Hydrologic Unit 12090205, at Longhorn Dam on the Colorado River at Austin, 1.5 mi downstream from Interstate Highway 35, and 2.3 mi southeast of the State Capitol in Austin.

DRAINAGE AREA.--39,003 mi², approximately, of which 11,403 mi² probably is noncontributing.

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: February 1975 to current year.

301559097424801 TOWN LAKE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
07...	1020	1.00	610	8.2	16.5	9.0	92
07...	1022	10.0	610	8.2	16.5	9.1	93
07...	1024	20.0	610	8.1	16.5	9.1	93
07...	1026	30.0	610	7.9	15.0	6.2	62
AUG							
20...	0945	1.00	540	8.1	28.5	7.2	94
20...	0947	10.0	540	8.1	28.0	7.9	103
20...	0949	20.0	540	7.8	27.5	5.9	76
20...	0951	25.0	540	7.7	27.0	4.2	54

301500097424801 TOWN LAKE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR										
07...	0940	1.00	610	8.1	17.0	1.80	<1	1.4	9.0	93
07...	0942	10.0	610	8.1	17.0	--	--	--	9.2	95
07...	0944	20.0	610	8.1	16.0	--	--	--	8.5	86
07...	0946	30.0	610	7.9	15.5	--	<1	35	7.8	78
AUG										
20...	0900	1.00	539	8.0	29.0	2.70	3	1.3	6.9	91
20...	0902	10.0	540	7.9	28.0	--	--	--	6.5	85
20...	0904	20.0	540	7.8	27.5	--	--	--	6.0	77
20...	0906	25.0	540	7.7	27.5	--	4	11	5.0	64

DATE	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)
MAR										
07...	1.0	45	23	250	41	64	22	29	.8	2.7
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	.4	--	--	250	36	62	22	29	.8	2.7
AUG										
20...	1.4	K62	K5	200	51	44	22	32	1	3.6
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	1.2	--	--	200	51	44	22	32	1	3.8

DATE	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)
MAR										
07...	210	41	50	.30	6.8	340	6	<2	.39	.010
07...	--	--	--	--	--	--	--	--	.39	.010
07...	--	--	--	--	--	--	--	--	--	--
07...	210	39	49	.30	6.9	340	86	27	.38	.020
AUG										
20...	150	41	58	.30	5.7	300	4	1	--	<.010
20...	--	--	--	--	--	--	--	--	--	<.010
20...	--	--	--	--	--	--	--	--	--	--
20...	150	38	58	.30	6.1	290	16	1	--	<.010

301500097424801 TOWN LAKE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)
MAR										
07...	.40	.020	.18	.20	.60	.010	1.8	1	69	<1
07...	.40	.100	.20	.30	.70	.020	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	.40	.100	.20	.30	.70	.050	1.8	1	69	<1
AUG										
20...	<.10	.020	.18	.20	--	<.010	2.8	1	74	<1
20...	<.10	<.010	--	.20	--	<.010	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	<.10	.060	.14	.20	--	<.010	2.6	1	75	<1

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
MAR									
07...	30	4	7	<1	2	<.1	<1	<1	6
07...	--	--	50	--	<10	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
07...	30	2	6	<1	7	<.1	<1	<1	8
AUG									
20...	<10	3	<3	9	<1	<.1	<1	<1	8
20...	--	--	20	--	<10	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	<10	1	5	1	10	<.1	<1	<1	7

DATE	TIME	SAMPLING DEPTH (FEET)	AMETRYNE TOTAL	ATRAZINE, TOTAL (UG/L)	CYANAZINE TOTAL (UG/L)	METHOMYL TOTAL (UG/L)	PROMETONE TOTAL (UG/L)
MAR							
07...	0940	1.00	<.10	<.10	<.10	<2.0	<.1
07...	0946	30.0	<.10	<.10	<.10	<2.0	<.1
AUG							
20...	0900	1.00	<.10	<.10	<.10	<2.0	<.1
20...	0906	25.0	<.10	<.10	<.10	<2.0	<.1

DATE	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)
MAR						
07...	<.1	<.10	<2.0	<2.0	<.10	<.1
07...	<.1	<.10	<2.0	<2.0	<.10	<.1
AUG						
20...	<.1	<.10	<2.0	<2.0	<.10	<.1
20...	<.1	<.10	<2.0	<2.0	<.10	<.1

301503097424701 TOWN LAKE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	PECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
07...	1006	1.00	610	8.1	17.0	9.0	93
07...	1008	10.0	610	8.1	17.0	9.1	94
07...	1010	20.0	610	8.1	16.5	8.4	86
AUG							
20...	0935	1.00	540	7.9	28.5	6.9	91
20...	0937	10.0	540	7.9	28.0	6.5	85
20...	0939	18.0	540	7.9	28.0	6.2	81

TOWN LAKE AT AUSTIN, TX--Continued

301500097440801 TOWN LAKE BR

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
07...	1045	1.00	605	8.1	16.0	9.0	91
07...	1047	10.0	605	8.1	16.0	8.8	89
07...	1049	14.0	602	8.0	15.5	7.8	78
AUG							
20...	1015	1.00	544	7.9	28.0	6.5	85
20...	1017	13.0	544	7.9	27.5	6.2	80

301504097440901 TOWN LAKE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
07...	1035	1.00	606	8.1	16.5	9.1	93
07...	1037	10.0	604	8.1	16.0	8.9	90
07...	1039	20.0	602	8.1	16.0	8.8	89
07...	1041	30.0	616	7.7	15.0	4.1	41
AUG							
20...	1010	1.00	544	8.0	28.0	6.6	86
20...	1011	10.0	544	8.0	28.0	6.6	86
20...	1012	20.0	544	7.9	27.5	6.2	80
20...	1013	27.0	544	7.9	27.5	6.0	77

301544097445201 TOWN LAKE CR

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
07...	1106	1.00	605	7.8	15.5	8.2	82
07...	1108	10.0	605	7.8	15.5	8.1	81
AUG							
20...	1038	1.00	550	7.8	27.5	5.9	76
20...	1040	8.00	550	7.8	27.5	5.7	73

301546097445101 TOWN LAKE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
07...	1100	1.00	610	7.8	16.0	8.7	88
07...	1102	10.0	610	7.8	16.0	8.8	89
07...	1104	14.0	610	7.8	16.0	8.7	88
AUG							
20...	1030	1.00	546	7.9	29.0	6.5	86
20...	1032	10.0	546	7.8	27.5	5.9	76
20...	1034	17.0	546	7.8	27.5	5.7	73

TOWN LAKE AT AUSTIN, TX--Continued

301556097452301 TOWN LAKE DR

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
07...	1135	1.00	622	7.7	16.0	9.3	95
07...	1137	10.0	622	7.7	15.5	9.2	93
AUG							
20...	1100	1.00	540	7.9	27.5	5.8	75
20...	1102	10.0	540	7.9	27.5	5.8	75
20...	1104	15.0	540	7.9	27.5	5.8	75

301556097452301 TOWN LAKE DR

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR										
07...	1115	1.00	625	7.6	16.5	2.15	21	1.1	9.9	91
07...	1117	10.0	622	7.8	15.5	--	--	--	9.6	99
07...	1119	20.0	613	7.8	15.5	--	21	.90	8.8	86
AUG										
20...	1045	1.00	540	7.9	27.5	2.60	5	1.6	6.0	77
20...	1047	10.0	540	7.9	27.5	--	--	--	5.9	76
20...	1049	21.0	548	7.8	27.5	--	4	1.6	5.8	75

DATE	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L AS CACO3)	CALCIUM, DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)
MAR										
07...	1.0	260	74	280	52	75	23	24	.6	2.1
07...	--	--	--	--	--	--	--	--	--	--
07...	1.0	--	--	270	47	69	23	25	.7	2.2
AUG										
20...	1.5	80	K19	200	48	43	22	33	1	3.6
20...	--	--	--	--	--	--	--	--	--	--
20...	1.4	--	--	200	55	44	23	34	1	3.7

DATE	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)
MAR										
07...	230	35	42	.30	7.3	350	<2	<2	.78	.020
07...	--	--	--	--	--	--	--	--	.69	.010
07...	220	36	44	.30	7.8	340	5	<2	.49	.010
AUG										
20...	150	37	57	.30	5.8	290	6	3	--	<.010
20...	--	--	--	--	--	--	--	--	--	<.010
20...	150	41	59	.30	5.9	300	5	4	--	<.010

DATE	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR									
07...	.80	.050	--	<.20	--	.010	1.0	17	6
07...	.70	<.010	--	.20	.90	.010	--	80	10
07...	.50	.040	.26	.30	.80	.010	1.4	5	13
AUG									
20...	<.10	<.010	--	.20	--	<.010	2.7	4	5
20...	<.10	.020	.38	.40	--	<.010	--	10	<10
20...	<.10	.020	.18	.20	--	.010	2.4	7	7

TOWN LAKE AT AUSTIN, TX--Continued

301712097470701 TOWN LAKE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
MAR												
07...	1200	1.00	584	7.6	15.5	4.0	<1	.90	9.6	97	.1	K6
07...	1202	13.0	575	7.8	15.0	--	<1	1.1	10.1	100	.2	--
AUG												
20...	1130	1.00	539	7.9	27.0	2.30	4	2.0	5.8	74	1.5	39
20...	1132	10.0	539	7.8	27.0	--	--	--	5.9	75	--	--
20...	1134	16.0	539	7.8	27.0	--	20	1.8	5.8	74	1.5	--

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
MAR												
07...	62	240	47	57	23	26	.8	2.8	190	37	47	.20
07...	--	230	42	55	23	28	.8	3.1	190	39	51	.30
AUG												
20...	80	200	46	42	22	32	1	3.8	150	36	59	.30
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	200	51	44	22	32	1	3.6	150	37	57	.30

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
MAR												
07...	7.6	310	<2	<2	<.010	.40	.050	.15	.20	.60	.010	1.6
07...	7.0	320	3	<2	<.010	.30	.040	.16	.20	.50	.010	2.0
AUG												
20...	5.5	290	5	2	<.010	<.10	.010	.19	.20	--	<.010	2.8
20...	--	--	--	--	<.010	<.10	.020	.18	.20	--	<.010	--
20...	5.6	290	3	1	<.010	<.10	.030	.67	.70	--	<.010	2.8

DATE	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
MAR												
07...	<1	73	<1	40	<1	4	<1	6	<.1	<1	<1	9
07...	<1	73	<1	30	<1	10	<1	6	<.1	<1	<1	8
AUG												
20...	1	74	<1	<10	<1	3	5	2	<.1	<1	<1	5
20...	--	--	--	--	--	<10	--	<10	--	--	--	--
20...	1	74	<1	<10	<1	<3	2	1	<.1	<1	<1	6

TOWN LAKE AT AUSTIN, TX--Continued

301712097470701 TOWN LAKE SITE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	AMETRYNE TOTAL	ATRAZINE, TOTAL (UG/L)	CYANAZINE TOTAL (UG/L)	METHOMYL TOTAL (UG/L)	PROMETONE TOTAL (UG/L)
MAR							
07...	1200	1.00	<.10	<.10	<.10	<2.0	<.1
07...	1202	13.0	<.10	<.10	<.10	<2.0	<.1
AUG							
20...	1130	1.00	<.10	<.10	<.10	<2.0	<.1
20...	1134	16.0	<.10	<.10	<.10	<2.0	<.1

DATE	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)
MAR						
07...	<.1	<.10	<2.0	<2.0	<.10	<.1
07...	<.1	<.10	<2.0	<2.0	<.10	<.1
AUG						
20...	<.1	<.10	<2.0	<2.0	<.10	<.1
20...	<.1	<.10	<2.0	<2.0	<.10	<.1

301601097454001 TOWN LAKE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
07...	1145	1.00	644	7.6	19.0	15.0	162
AUG							
20...	1115	1.00	739	7.3	25.5	6.5	81

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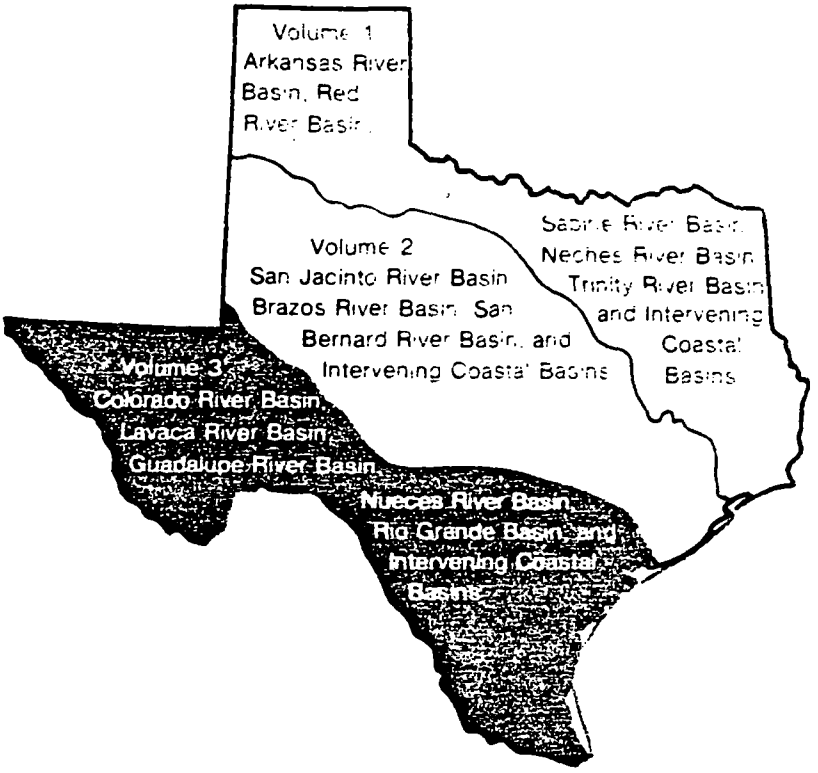

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TX-83-3
Prepared in cooperation with the State of Texas
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08157900 TOWN LAKE AT AUSTIN, TX

LOCATION.--Lat 30°14'56", long 97°43'03", Travis County, Hydrologic Unit 12090205, at Longhorn Dam on the Colorado River at Austin, 1.5 mi downstream from Interstate Highway 35, and 2.3 mi southeast of the State Capitol in Austin.

DRAINAGE AREA.--38,390 mi², approximately, of which 12,880 mi² probably is noncontributing.

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: February 1975 to current year.

301559097424801 TOWN LAKE SITE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN							
06...	1105	1.00	548	7.9	12.5	9.3	88
06...	1107	10.0	548	7.9	12.5	9.3	88
06...	1109	20.0	534	7.8	11.5	8.2	75
06...	1111	25.0	534	7.8	11.5	7.9	72
AUG							
30...	1020	1.00	575	7.5	27.5	5.7	73
30...	1022	10.0	575	7.4	26.5	4.6	58
30...	1024	20.0	575	7.4	26.0	4.9	61
30...	1026	27.0	575	7.4	25.5	4.5	56

301500097424801 TOWN LAKE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
JAN												
06...	1015	1.00	543	7.8	13.0	2.00	<1	1.8	8.7	83	.6	K14
06...	1017	10.0	543	7.8	13.0	--	--	--	9.0	86	--	--
06...	1019	20.0	539	7.7	11.0	--	--	--	8.5	77	--	--
06...	1021	26.0	539	7.7	11.0	--	<1	2.1	8.3	75	.5	--
AUG												
30...	1000	1.00	575	7.5	27.5	2.10	<1	2.0	6.0	77	.6	210
30...	1002	10.0	575	7.5	27.0	--	--	--	6.3	80	--	--
30...	1004	20.0	575	7.4	26.0	--	--	--	5.4	67	--	--
30...	1006	27.0	579	7.4	26.0	--	<1	4.0	4.9	61	.6	--

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
JAN												
06...	20	220	38	54	20	27	.8	2.9	180	33	45	.30
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	210	43	54	19	27	.8	2.8	170	32	43	.30
AUG												
30...	30	210	53	49	22	34	1.0	4.1	160	43	62	.20
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	210	53	49	22	35	1.1	3.6	160	44	63	.20

TOWN LAKE AT AUSTIN,TX--Continued

301500097424801 TOWN LAKE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L S N)	PHOS-PHORUS, TOTAL (MG/L AS P)
JAN												
06...	9.4	300	3	<1	--	<.020	.50	.090	.61	.70	1.2	.020
06...	--	--	--	--	.38	.020	.40	.080	.52	.60	1.0	.020
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	9.1	289	2	<1	--	<.020	.50	.090	.51	.60	1.1	.020
AUG												
30...	8.6	319	7	<1	--	<.020	.10	.080	.22	.30	.40	.010
30...	--	--	--	--	--	<.020	<.10	.060	.44	.50	--	.010
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	8.7	322	8	<1	--	<.020	.10	.100	.30	.40	.50	.010

DATE	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN												
06...	1	69	<1	<10	7	30	<1	5	<.1	<1	1	17
06...	--	--	--	--	--	20	--	<10	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	1	65	<1	<10	4	5	<1	9	<.1	<1	<1	6
AUG												
30...	1	78	<1	<10	5	<3	2	2	<.1	<1	<1	9
30...	--	--	--	--	--	10	--	10	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	1	79	<1	<10	3	45	2	24	<.1	<1	<1	20

301503097424701 TOWN LAKE SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
JAN							
06...	1050	1.00	538	7.8	13.5	8.9	86
06...	1052	12.0	542	7.8	12.5	8.1	76
AUG							
30...	0939	1.00	575	7.3	28.0	5.4	70
30...	0941	10.0	578	7.3	27.5	5.4	69
30...	0943	18.0	578	7.4	26.0	5.2	65

301500097440801 TOWN LAKE SITE BR

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
JAN							
06...	1130	1.00	549	7.9	13.0	9.3	89
06...	1132	10.0	558	7.9	12.0	9.3	86
06...	1134	14.0	544	7.8	11.0	8.4	76
AUG							
30...	1050	1.00	578	7.6	27.0	6.5	83
30...	1052	10.0	580	7.6	26.0	6.2	77
30...	1054	20.0	580	7.6	25.5	5.8	72
30...	1056	25.0	580	7.6	25.5	5.6	69

TOWN LAKE AT AUSTIN, TX--Continued

301504097440901 TOWN LAKE SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN							
06...	1120	1.00	550	7.9	13.0	9.2	88
06...	1122	10.0	550	7.9	12.5	9.2	87
06...	1124	20.0	550	7.8	11.5	9.1	83
06...	1126	27.0	541	7.8	11.0	8.2	75
AUG							
30...	1040	1.00	575	7.7	27.0	6.7	85
30...	1042	10.0	579	7.6	26.0	6.2	77
30...	1044	21.0	579	7.6	25.5	5.4	67

301544097445201 TOWN LAKE SITE CR

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN							
06...	1148	1.00	558	7.8	12.0	9.6	89
06...	1150	9.00	565	7.8	12.0	9.5	88
AUG							
30...	1020	1.00	591	7.5	24.5	6.1	74
30...	1022	10.0	591	7.5	24.0	5.9	71

301546097445101 TOWN LAKE SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN							
06...	1140	1.00	558	7.8	12.0	9.6	89
06...	1142	14.0	558	7.6	11.0	8.2	75
AUG							
30...	1110	1.00	589	7.6	24.5	5.9	72
30...	1112	10.0	589	7.6	24.5	5.7	69
30...	1114	18.0	589	7.6	24.5	5.4	66

301556097452301 TOWN LAKE SITE DR

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN							
06...	1216	1.00	575	7.8	12.5	10.4	98
06...	1218	10.0	565	7.8	11.5	9.9	91
06...	1220	15.0	565	7.7	11.5	9.2	84

TOWN LAKE AT AUSTIN, TX--Continued

301558097452201 TOWN LAKE SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN										
06	1200	1.00	583	7.7	12.5	2.70	<1	1.2	10.1	95
06...	1202	10.0	565	7.8	11.5	--	--	--	9.8	90
06...	1204	20.0	565	7.7	11.0	--	<1	1.0	9.0	82
AUG										
30...	1130	1.00	582	7.7	24.5	1.70	<1	3.2	5.9	72
30...	1132	10.0	582	7.7	24.0	--	--	--	5.9	71
30...	1134	18.0	582	7.7	24.0	--	<1	3.0	5.7	69

DATE	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
JAN									
06...	.7	110	37	240	39	61	21	26	.8
06...	--	--	--	--	--	--	--	--	--
06...	.5	--	--	230	39	57	21	27	.8
AUG									
30...	.4	240	70	200	54	47	21	36	1.1
30...	--	--	--	--	--	--	--	--	--
30...	.5	--	--	210	63	49	22	36	1.1

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)
JAN									
06...	2.5	200	34	43	.30	9.0	317	2	<1
06...	--	--	--	--	--	--	--	--	--
06...	2.7	190	34	45	.30	9.6	311	<1	<1
AUG									
30...	3.7	150	42	64	.20	8.1	312	10	<1
30...	--	--	--	--	--	--	--	--	--
30...	3.7	150	44	65	.20	8.4	318	12	<1

DATE	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JAN									
06...	<.020	.70	<.060	--	.50	1.2	.020	3	8
06...	<.020	.50	.060	.64	.70	1.2	<.010	20	10
06...	<.020	.60	.070	.73	.80	1.4	.020	<3	14
AUG									
30...	<.020	<.10	.080	.22	.30	--	.010	7	8
30...	<.020	<.10	.090	.31	.40	--	.010	20	20
30...	<.020	.10	.070	.13	.20	.30	.010	46	9

301712097470701 TOWN LAKE SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
JAN												
06...	1330	1.00	556	7.6	13.5	--	<1	.80	9.6	92	.2	K12
06...	1332	10.0	543	7.8	13.5	--	--	--	9.7	93	--	--
06...	1334	14.0	538	7.9	12.0	--	<1	1.0	10.3	95	.5	--
AUG												
30...	1200	1.00	582	7.9	22.5	1.40	<1	3.5	6.3	74	.4	K14
30...	1202	10.0	582	7.9	22.5	--	--	--	6.3	74	--	--
30...	1204	18.0	582	7.9	23.0	--	<1	3.0	5.9	70	.3	--

301712097470701 TOWN LAKE SITE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
JAN												
06...	K13	220	39	53	21	27	.8	2.9	180	35	47	.30
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	210	52	50	21	30	.9	3.2	160	36	51	.30
AUG												
30...	240	210	58	47	22	36	1.1	3.7	150	36	66	.20
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	210	58	47	22	36	1.1	4.4	150	44	66	.20

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC DISSOLVED (UG/L AS AS)
JAN												
06...	9.0	303	4	<1	<.020	.40	<.060	--	.60	1.0	<.010	1
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	8.9	296	<1	<1	<.020	.20	.060	.54	.60	.80	.010	1
AUG												
30...	7.9	309	15	8	<.020	<.10	.050	.35	.40	--	.010	<1
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	7.8	317	14	<1	<.020	<.10	.030	.37	.40	--	010	1

DATE	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
JAN											
06...	70	<1	<10	2	8	<1	3	<.1	<1	<1	7
06...	--	--	--	--	--	--	--	--	--	--	--
06...	73	<1	<10	1	4	<1	3	<.1	<1	1	4
AUG											
30...	80	<1	<10	2	14	2	3	<.1	<1	<1	6
30...	--	--	--	--	--	--	--	--	--	--	--
30...	82	<1	10	2	12	3	7	<.1	<1	<1	13

301601097454001 TOWN LAKE SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
AUG							
30...	1145	1.00	630	7.2	23.5	8.2	98
30...	1147	8.00	633	7.2	23.0	6.4	76

TOWN LAKE AT AUSTIN, TX--Continued

301500097424801 TOWN LAKE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAMPLING DEPTH (FEET)	AMETRYNE TOTAL	ATRATONE TOTAL (UG/L)	ATRAZINE, TOTAL (UG/L)	CYANAZINE TOTAL (UG/L)	CYPRAZINE TOTAL (UG/L)	METHOMYL TOTAL (UG/L)
JAN								
06...	1015	1.00	<.10	<.10	<.10	<.10	<.10	<2.0
06...	1021	26.0	<.10	<.10	<.10	<.10	<.10	<2.0
AUG								
30...	1000	1.00	<.10	<.10	<.10	<.10	<.10	<2.0
30...	1006	27.0	<.10	<.10	<.10	<.10	<.10	<2.0

DATE	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETONE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)
JAN								
06...	.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
06...	.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
AUG								
30...	<.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
30...	<.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

301712097470701 TOWN LAKE SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

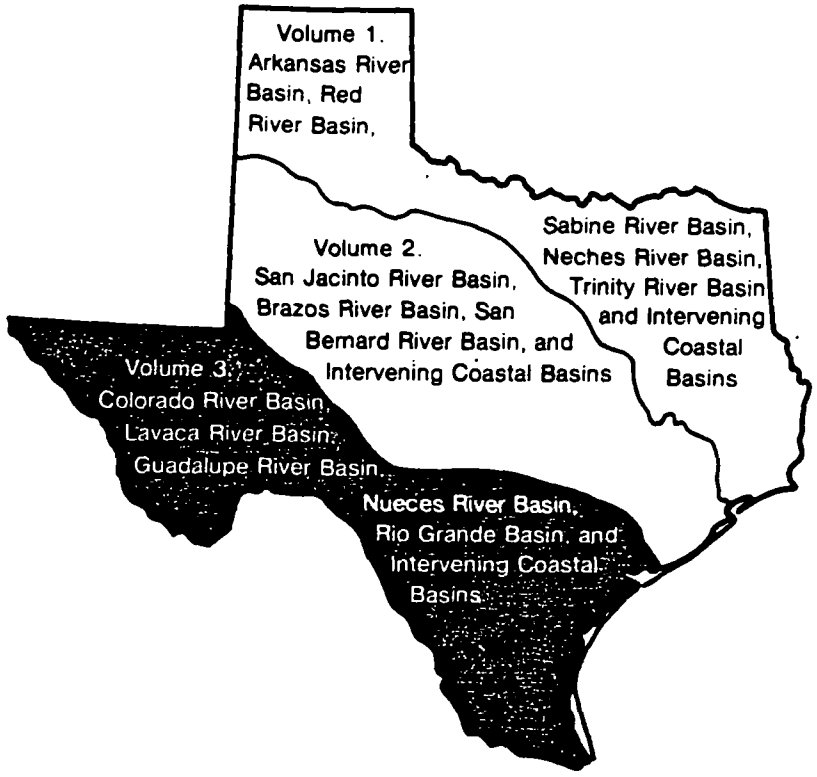
DATE	TIME	SAMPLING DEPTH (FEET)	AMETRYNE TOTAL	ATRATONE TOTAL (UG/L)	ATRAZINE, TOTAL (UG/L)	CYANAZINE TOTAL (UG/L)	CYPRAZINE TOTAL (UG/L)	METHOMYL TOTAL (UG/L)
JAN								
06...	1330	1.00	<.10	<.10	<.10	<.10	<.10	<2.0
06...	1334	14.0	<.10	<.10	<.10	<.10	<.10	<2.0
AUG								
30...	1200	1.00	<.10	<.10	<.10	<.10	<.10	<2.0
30...	1204	18.0	<.10	<.10	<.10	<.10	<.10	<2.0

DATE	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETONE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)
JAN								
06...	.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
06...	.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
AUG								
30...	<.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
30...	<.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

US-01725
1982 v3

Water Resources Data
Texas
Water Year 1982

Volume 3. Colorado River Basin, Lavaca River Basin, Guadalupe River Basin, Nueces River Basin, Rio Grande Basin, and Intervening Coastal Basins



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TX-82-3
Prepared in cooperation with the State of Texas
and with other agencies

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08157900 TOWN LAKE AT AUSTIN, TX

LOCATION.--Lat 30°14'56", long 97°43'03", Travis County, Hydrologic Unit 12090205, at Longhorn Dam on the Colorado River at Austin, 1.5 mi (2.4 km) downstream from Interstate Highway 35, and 2.3 mi (3.7 km) southeast of the State Capitol in Austin.

DRAINAGE AREA.--38,390 mi² (99,430 km²), approximately, of which 12,880 mi² (33,360 km²) probably is noncontributing.

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: February 1975 to current year.

301559097424801 TOWN LAKE SITE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
17...	0946	1.00	466	8.2	12.5	10.4	100
17...	0948	14.0	466	8.2	11.5	10.2	95
AUG							
20...	0945	1.00	480	7.7	27.0	5.4	68
20...	0947	10.0	480	7.6	25.0	5.2	63
20...	0949	20.0	480	7.6	24.5	4.9	59
20...	0951	24.0	480	7.6	24.5	4.2	51

301500097424801 TOWN LAKE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (FTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
FEB												
17...	0921	1.00	466	8.2	13.0	2.60	5	1.3	10.3	100	.6	88
17...	0923	10.0	466	8.2	12.0	--	--	--	10.2	97	--	--
17...	0925	20.0	466	8.3	11.0	--	--	--	9.9	92	--	--
17...	0927	25.0	466	8.3	10.5	--	5	1.3	9.7	89	.6	--
AUG												
20...	0920	1.00	481	7.7	26.5	1.70	5	3.0	5.3	66	.3	160
20...	0922	10.0	480	7.7	25.5	--	--	--	5.3	65	--	--
20...	0924	20.0	480	7.6	25.0	--	--	--	5.0	61	--	--
20...	0926	28.0	478	7.6	25.0	--	15	13	5.0	61	.3	--

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
FEB												
17...	K6	190	32	47	18	22	.8	3.3	160	32	38	.2
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	190	29	46	18	22	.8	3.3	160	29	38	.3
AUG												
20...	42	190	37	45	18	24	.8	3.3	150	30	43	.2
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	180	34	44	18	23	.8	3.4	150	29	43	.2

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC DISSOLVED (UG/L AS AS)
FEB												
17...	9.1	266	0	0	<.020	.33	<.060	--	.66	.99	.010	1
17...	--	--	--	--	<.020	.34	<.060	--	.62	.96	.010	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	9.2	262	0	0	<.020	.31	.080	.51	.59	.90	.010	1
AUG												
20...	8.9	263	5	3	<.020	.15	<.060	--	.50	.65	.030	1
20...	--	--	--	--	<.020	.14	<.060	--	.50	.64	.020	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	8.9	260	23	12	<.020	.15	<.060	--	.50	.65	.030	1

301500097424801 TOWN LAKE SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
FEB											
17...	65	<1	<10	4	<10	1	4	<.1	<1	<1	<3
17...	--	--	--	--	30	--	20	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	65	<1	<10	3	<10	4	5	<.1	<1	<1	<3
AUG											
20...	68	<1	<10	1	9	<1	4	<.1	<1	<1	6
20...	--	--	--	--	80	--	20	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	66	<1	<10	<1	3	<1	18	<.1	<1	<1	<3

DATE	TIME	SAM-PLING DEPTH (FEET)	AME-TRYNE TOTAL	ATRA-TONE TOTAL (UG/L)	ATRA-ZINE, TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	CYPRA-ZINE TOTAL (UG/L)	METHO-MYL TOTAL (UG/L)
FEB								
17...	0921	1.00	.00	.00	.00	.00	.00	.0
17...	0927	25.0	.00	.00	.00	.00	.00	.0
AUG								
20...	0920	1.00	<.10	<.10	<.10	<.10	<.10	<2.0
20...	0926	28.0	<.10	<.10	<.10	<.10	<.10	<2.0

DATE	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TONE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)
FEB								
17...	.0	.0	.00	.0	.00	.00	.00	.0
17...	.0	.0	.00	.0	.00	.00	.00	.0
AUG								
20...	<.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
20...	<.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

301503097424701 TOWN LAKE SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
FEB							
17...	0910	1.00	466	8.3	13.0	10.0	97
17...	0912	10.0	466	8.3	12.5	10.0	96
17...	0914	15.0	466	8.3	12.0	10.0	95
AUG							
20...	0940	1.00	480	7.7	26.0	5.6	69
20...	0942	10.0	480	7.7	25.0	5.3	65
20...	0944	14.0	480	7.6	25.0	5.2	63

301500097440801 TOWN LAKE SITE BK

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
FEB							
17...	1015	1.00	466	8.0	12.5	10.0	96
17...	1017	13.0	466	8.0	12.0	10.0	95
AUG							
20...	1008	1.00	482	7.7	25.0	5.3	65
20...	1010	10.0	482	7.7	24.5	5.2	63
20...	1012	14.0	482	7.6	25.0	5.1	62

TOWN LAKE AT AUSTIN, TX--Continued

301504097440901 TOWN LAKE SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
17...	1000	1.00	466	8.0	12.0	9.9	94
17...	1002	10.0	466	8.1	12.0	9.9	94
17...	1004	20.0	466	8.1	11.5	9.9	93
17...	1006	27.0	466	8.1	11.5	9.8	92
AUG							
20...	1000	1.00	482	7.7	25.0	5.2	63
20...	1002	10.0	482	7.7	24.5	5.2	63
20...	1004	20.0	482	7.7	24.5	5.2	63
20...	1005	23.0	482	7.7	24.5	5.2	63

301544097445201 TOWN LAKE SITE CR

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
17...	1033	1.00	460	8.1	13.0	9.9	96
17...	1035	10.0	460	8.1	12.5	10.0	96
AUG							
20...	1026	1.00	480	7.6	24.0	5.0	60
20...	1028	8.00	480	7.6	24.0	5.0	60

301546097445101 TOWN LAKE SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
17...	1025	1.00	460	8.3	12.0	9.9	94
17...	1027	10.0	460	8.3	12.0	9.9	94
17...	1029	17.0	460	8.2	12.5	9.8	94
AUG							
20...	1020	1.00	482	7.6	24.0	5.2	62
20...	1022	10.0	480	7.6	24.0	4.9	58
20...	1024	15.0	480	7.6	24.0	4.9	58

301556097452301 TOWN LAKE SITE DR

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
17...	1041	1.00	460	8.2	12.0	10.0	95
17...	1043	13.0	460	8.1	12.0	10.1	96
AUG							
20...	1045	1.00	482	7.6	24.0	5.0	60
20...	1047	11.0	482	7.6	24.0	4.9	58

TOWN LAKE AT AUSTIN, TX--Continued

301556097452301 TOWN LAKE SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (FTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
FEB												
17...	1049	1.00	460	8.5	12.5	2.40	0	2.0	9.8	94	.4	96
17...	1051	10.0	460	8.5	12.0	--	--	--	9.9	94	--	--
17...	1053	17.0	460	8.5	12.0	--	5	2.0-	10.0	95	.5	--
AUG												
20...	1034	1.00	482	7.6	24.0	1.00	3	7.5	5.0	60	.1	80
20...	1036	10.0	481	7.6	24.0	--	--	--	4.8	57	--	--
20...	1038	20.0	481	7.6	24.0	--	3	11	4.8	57	.1	--

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
FEB												
17...	22	190	27	45	18	22	.8	3.6	160	30	40	.3
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	190	37	45	18	22	.8	3.2	150	31	38	.2
AUG												
20...	190	190	42	44	20	24	.8	3.3	150	32	43	.2
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	190	38	44	19	23	.8	3.3	150	33	45	.2

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
FEB												
17...	9.2	264	0	0	<.020	.30	<.060	.61	.91	.010	<10	<1
17...	--	--	--	--	<.020	.27	<.060	.81	1.1	.010	30	10
17...	9.2	257	6	4	<.020	.26	<.060	.66	.92	.010	12	7
AUG												
20...	9.1	266	14	8	<.020	.14	<.060	.40	.54	.040	<3	8
20...	--	--	--	--	<.020	.15	<.060	.50	.65	.030	140	40
20...	9.1	267	21	13	<.020	.19	<.060	.40	.59	.040	<3	7

301712097470701 TOWN LAKE SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (FTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
FEB												
17...	1120	1.00	452	8.4	13.0	1.50	0	2.7	10.4	101	.9	K6
17...	1122	10.0	452	8.5	12.5	--	--	--	10.3	99	--	--
17...	1124	19.0	452	8.3	13.0	--	5	2.3	10.1	98	.8	--
AUG												
20...	1105	1.00	478	7.7	23.5	.90	5	2.8	4.9	58	.3	K[illegible]
20...	1107	10.0	478	7.7	23.5	--	--	--	4.8	56	--	--
20...	1109	20.0	479	7.7	23.5	--	5	12	4.8	56	--	--

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
FEB												
17...	K15	190	37	45	18	23	.8	3.8	150	28	38	.3
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	180	34	44	18	22	.8	3.8	150	30	39	.3
AUG												
20...	120	180	34	44	18	24	.8	3.4	150	30	43	.2
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	180	34	44	18	23	.8	3.4	150	29	43	.2

TOWN LAKE AT AUSTIN, TX--Continued

301712097470701 TOWN LAKE SITE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	ARSENIC DIS-SOLVED (UG/L AS AS)
FEB												
17...	9.2	256	16	0	<.020	.26	<.060	--	.74	1.0	.010	1
17...	--	--	--	--	<.020	.26	<.060	--	.73	.99	.020	--
17...	9.0	256	8	5	<.020	.23	.060	.80	.86	1.1	.010	1
AUG												
20...	8.7	262	17	<2	<.020	.12	<.060	--	.60	.72	.030	1
20...	--	--	--	--	<.020	.12	<.060	--	.50	.62	.030	--
20...	8.7	260	26	8	<.020	.12	<.060	--	.70	.82	.030	1

DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
FEB											
17...	65	<1	<10	3	<10	3	2	<.1	<1	<1	<3
17...	--	--	--	--	<10	--	10	--	--	--	--
17...	64	<1	<10	4	<10	<1	2	<.1	<1	<1	<3
AUG											
20...	66	<1	<10	<1	<3	<1	2	<.1	<1	<1	<3
20...	--	--	--	--	10	--	10	--	--	--	--
20...	65	<1	<10	<1	<3	<1	2	<.1	<1	<1	<3

DATE	TIME	SAM-PLING DEPTH (FEET)	AME-TRYNE TOTAL	ATRA-TONE TOTAL (UG/L)	ATRA-ZINE, TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	CYPRA-ZINE TOTAL (UG/L)	METHO-MYL TOTAL (UG/L)
FEB								
17...	1120	1.00	.00	.00	.00	.00	.00	.0
17...	1124	19.0	.00	.00	.00	.00	.00	.0
AUG								
20...	1105	1.00	<.10	<.10	<.10	<.10	<.10	<2.0
20...	1109	20.0	<.10	<.10	<.10	<.10	<.10	<2.0

DATE	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TONE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)
FEB								
17...	.0	.0	.00	.0	.00	.00	.00	.0
17...	.0	.0	.00	.0	.00	.00	.00	.0
AUG								
20...	<.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
20...	<.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

301601097454001 TOWN LAKE SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
FEB							
17...	1110	1.00	562	7.6	19.0	7.2	79
AUG							
20...	1050	1.00	650	7.2	22.5	6.9	80
20...	1052	3.00	650	7.3	22.5	7.0	81

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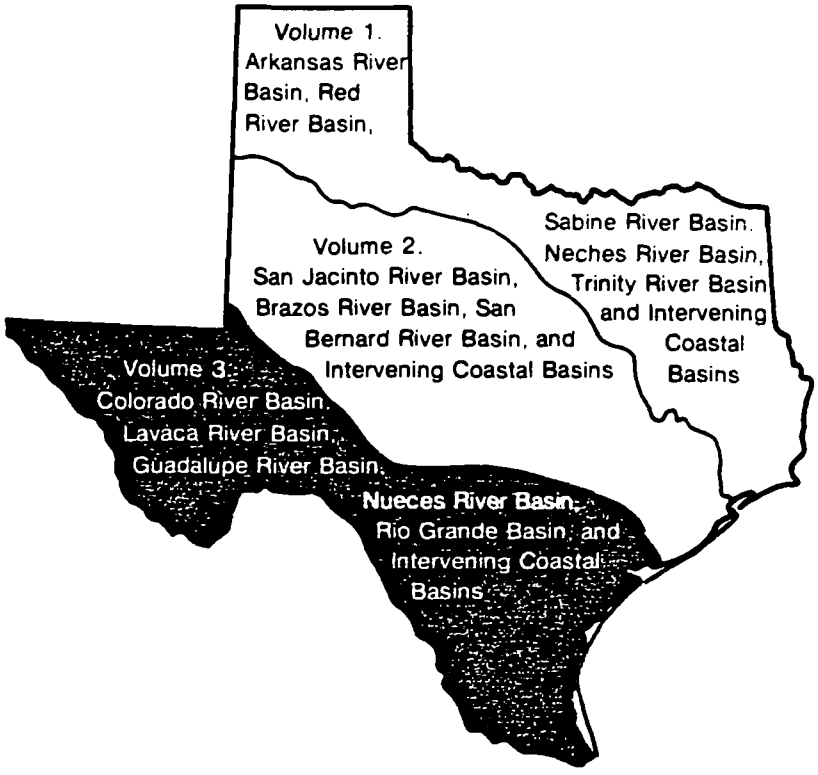
1981 v.3

Water Resources Data
Texas
Water Year 1981

Volume 3. Colorado River Basin, Lavaca River Basin, Guadalupe River Basin, Nueces River Basin, Rio Grande Basin, and Intervening Coastal Basins



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TX-81-3
Prepared in cooperation with the State of Texas
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08157900 TOWN LAKE AT AUSTIN, TX

LOCATION.--Lat 30°14'56", long 97°43'03", Travis County, Hydrologic Unit 12090205, at Longhorn Dam on the Colorado River at Austin, 1.5 mi (2.4 km) downstream from Interstate Highway 35, and 2.3 mi (3.7 km) southeast of the State Capitol in Austin.

DRAINAGE AREA.--38,390 mi² (99,430 km²), approximately, of which 12,880 mi² (33,360 km²) probably is noncontributing.

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: February 1975 to current year.

301559097424801 TOWN LAKE SITE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
04...	1130	1.00	454	7.9	16.5	8.3	86
04...	1132	10.0	456	7.9	16.5	8.3	86
04...	1135	20.0	458	7.9	16.5	8.3	86
APR							
27...	1050	1.00	509	8.0	18.5	8.9	96
27...	1053	10.0	509	8.0	18.0	8.9	95
27...	1056	23.0	509	8.0	18.0	8.7	93
MAY							
26...	1120	1.00	353	7.7	22.0	7.8	90
26...	1122	10.0	358	7.8	20.5	8.2	91
26...	1125	24.0	381	7.8	20.0	8.2	91

301500097424801 TOWN LAKE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR										
04...	1100	1.00	447	7.9	16.5	.20	10	57	8.0	83
04...	1102	10.0	447	7.9	16.5	--	--	--	8.1	84
04...	1104	20.0	447	7.9	16.5	--	--	--	8.0	83
04...	1106	28.0	447	7.9	16.5	--	10	66	9.2	96
APR										
27...	1015	1.00	508	8.2	18.0	3.1	5	1.2	9.2	98
27...	1020	10.0	508	8.2	18.0	--	--	--	9.1	97
27...	1030	22.0	508	8.3	18.0	--	5	2.8	9.2	98
MAY										
26...	1054	1.00	331	7.7	22.5	.20	35	56	7.5	87
26...	1056	10.0	350	7.7	20.5	--	--	--	8.1	90
26...	1058	20.0	372	7.8	20.0	--	--	--	8.2	91
26...	1100	25.0	372	7.6	20.5	--	35	72	7.9	88

DATE	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
MAR										
04...	1.0	18000	3700	12000	180	37	43	17	24	.8
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	1.1	--	--	--	190	47	47	17	25	.8
APR										
27...	.9	170	96	19	190	45	45	20	29	.9
27...	--	--	--	--	--	--	--	--	--	--
27...	.4	--	--	--	190	35	45	20	29	.9
MAY										
26...	1.5	60000	14000	8300	150	26	43	9.4	12	.4
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	1.0	--	--	--	140	34	36	13	19	.7

301500097424801 TOWN LAKE SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)
MAR										
04...	3.0	140	37	45	.2	5.5	259	60	5	.25
04...	--	--	--	--	--	--	--	--	--	.03
04...	--	--	--	--	--	--	--	--	--	--
04...	3.0	140	36	44	.2	5.8	262	52	5	.02
APR										
27...	3.6	150	37	50	.3	7.3	282	1	0	--
27...	--	--	--	--	--	--	--	--	--	--
27...	3.5	160	37	46	.3	7.5	285	--	--	.27
MAY										
26...	1.7	120	3.4	18	.1	7.0	167	50	30	.59
26...	--	--	--	--	--	--	--	--	--	.41
26...	--	--	--	--	--	--	--	--	--	--
26...	3.4	110	12	33	.2	6.3	189	53	14	.31

DATE	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR									
04...	.020	.27	.040	.66	.70	.97	.100	20	2
04...	.240	.27	.030	1.1	1.10	1.4	.120	30	10
04...	--	--	--	--	--	--	--	--	--
04...	.240	.26	.050	.67	.72	.98	.100	130	40
APR									
27...	--	.32	.040	1.6	1.60	1.9	.030	50	7
27...	--	--	--	--	--	--	--	--	--
27...	.010	.28	.070	.42	.49	.77	.040	40	10
MAY									
26...	.020	.61	.120	.83	.95	1.6	.060	120	3
26...	.010	.42	.140	.74	.88	1.3	.060	20	10
26...	--	--	--	--	--	--	--	--	--
26...	.010	.32	.160	.94	1.10	1.4	.080	40	4

301503097424701 TOWN LAKE SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
04...	1042	1.00	435	8.1	16.5	9.1	95
04...	1045	10.0	440	8.1	16.0	9.1	94
04...	1050	22.0	447	8.1	16.0	9.0	93
APR							
27...	1100	1.00	509	8.0	18.5	9.1	98
27...	1105	10.0	509	8.0	18.0	9.0	96
27...	1110	16.0	509	8.0	18.0	9.0	96

TOWN LAKE AT AUSTIN, TX--Continued

301500097440801 TOWN LAKE SITE BR

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
04...	1155	1.00	429	8.0	16.5	8.3	86
04...	1157	10.0	429	8.0	16.5	8.3	86
04...	1158	20.0	429	8.0	16.0	8.2	85
04...	1200	25.0	429	8.0	16.5	8.0	83
APR							
27...	1126	1.00	507	8.2	17.5	9.0	95
27...	1130	13.0	507	8.2	17.5	8.9	94
MAY							
26...	1210	1.00	362	7.6	21.5	7.1	81
26...	1212	10.0	360	7.6	21.5	7.0	80
26...	1214	16.0	360	7.6	21.5	7.0	80

301504097440901 TOWN LAKE SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
04...	1205	1.00	426	8.0	16.5	8.7	91
04...	1207	10.0	426	8.0	16.5	9.0	94
04...	1209	20.0	426	8.0	16.5	9.0	94
04...	1210	28.0	426	8.0	16.5	8.9	93
APR							
27...	1115	1.00	507	8.2	18.0	9.0	96
27...	1118	10.0	507	8.2	17.5	9.0	95
27...	1120	20.0	507	8.2	17.5	8.9	94
27...	1122	30.0	507	8.2	17.5	8.8	93
MAY							
26...	1200	1.00	362	7.5	22.0	7.0	80
26...	1202	10.0	368	7.5	21.5	7.0	80
26...	1204	20.0	368	7.5	21.5	7.0	80
26...	1206	25.0	368	7.5	21.5	6.8	77

301544097445201 TOWN LAKE SITE CR

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
04...	1220	1.00	401	8.0	17.0	8.4	88
04...	1222	11.0	407	8.0	17.0	8.2	86
APR							
27...	1150	1.00	509	8.1	17.0	8.6	90
27...	1155	8.00	509	8.1	17.0	8.6	90
MAY							
26...	1235	1.00	397	7.6	21.0	7.6	85
26...	1238	7.00	397	7.6	21.0	7.5	84

301546097445101 TOWN LAKE SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
04...	1230	1.00	465	8.1	16.5	8.4	88
04...	1232	10.0	452	8.1	16.5	8.4	88
04...	1235	18.0	445	8.1	16.5	8.4	88
APR							
27...	1140	1.00	508	8.2	17.0	8.6	90
27...	1145	13.0	507	8.2	17.0	8.7	91
MAY							
26...	1229	1.00	402	7.5	21.5	7.2	82
26...	1231	11.0	402	7.5	21.5	7.1	81

301556097452301 TOWN LAKE SITE DR

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
04...	1240	1.00	322	7.9	17.5	8.3	88
04...	1242	10.0	322	7.9	17.5	8.3	88
04...	1245	14.0	322	7.9	17.5	8.2	87
APR							
27...	1216	1.00	510	8.0	17.5	8.8	93
27...	1218	13.0	510	8.0	17.0	8.9	93
MAY							
26...	1314	1.00	406	7.5	21.5	7.2	82
26...	1316	10.0	406	7.5	21.5	6.9	78

301558097452201 TOWN LAKE SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR										
04...	1250	1.00	479	8.2	16.5	.20	5	44	8.7	91
04...	1252	10.0	479	8.1	16.5	--	--	--	8.6	90
04...	1254	18.0	398	8.0	17.0	--	10	92	8.8	93
APR										
27...	1200	1.00	508	8.0	17.5	2.70	5	1.2	8.7	92
27...	1205	10.0	508	8.1	17.0	--	--	--	8.7	91
27...	1210	21.0	508	8.1	17.0	--	5	1.7	8.6	90
MAY										
26...	1245	1.00	385	7.7	21.0	.20	30	69	8.2	92
26...	1247	10.0	382	7.7	21.0	--	--	--	8.2	92
26...	1249	20.0	382	7.6	21.0	--	30	66	8.2	92

DATE	OXYGEN DEMAND BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
MAR										
04...	.9	3800	K2400	K5000	180	43	42	19	28	.9
04...	--	--	--	--	--	--	--	--	--	--
04...	1.7	--	--	--	170	35	42	17	24	.8
APR										
27...	1.0	62	57	18	190	42	44	20	28	.9
27...	--	--	--	--	--	--	--	--	--	--
27...	.6	--	--	--	190	45	45	20	28	.9
MAY										
26...	1.0	29000	7800	5600	160	21	43	13	18	.6
26...	--	--	--	--	--	--	--	--	--	--
26...	1.2	--	--	--	160	28	42	13	18	.6

TOWN LAKE AT AUSTIN, TX--Continued

301558097452201 TOWN LAKE SITE DC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)
MAR										
04...	3.2	140	38	49	.2	6.0	270	65	8	.14
04...	--	--	--	--	--	--	--	--	--	.12
04...	2.9	140	32	36	.2	6.4	245	121	14	.15
APR										
27...	3.5	150	37	49	.3	7.3	279	0	0	.00
27...	--	--	--	--	--	--	--	--	--	--
27...	3.4	150	36	47	.3	7.3	277	6	4	--
MAY										
26...	3.4	140	19	32	.2	.4	213	35	12	.39
26...	--	--	--	--	--	--	--	--	--	.38
26...	3.8	130	22	32	.2	6.8	216	52	14	.37

DATE	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR									
04...	.010	.15	.000	.71	.71	.86	.070	30	3
04...	.010	.13	.000	.86	.86	.99	.040	40	10
04...	.020	.17	.000	1.0	1.00	1.2	.080	40	4
APR									
27...	--	.29	.060	.43	.49	.78	.050	10	6
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	1.10	--	.020	10	6
MAY									
26...	.010	.40	.150	.77	.92	1.3	.050	30	4
26...	.010	.39	.150	.81	.96	1.4	.050	120	10
26...	.010	.38	.110	.75	.86	1.2	.050	50	5

301712097470701 TOWN LAKE SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR										
04...	1325	1.00	492	8.3	16.0	1.80	5	2.0	8.7	90
04...	1327	14.0	492	8.2	16.0	--	5	2.0	8.4	87
APR										
27...	1220	1.00	496	8.4	17.0	2.30	5	1.5	9.1	95
27...	1223	10.0	496	8.4	17.0	--	--	--	9.1	95
27...	1226	17.0	504	8.4	17.0	--	5	1.5	8.8	92
MAY										
26...	1345	1.00	375	7.8	20.0	.20	30	66	6.9	77
26...	1347	10.0	374	7.8	20.0	--	--	--	7.0	78
26...	1349	18.0	374	7.8	21.0	--	30	62	6.8	76

DATE	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
MAR										
04...	.7	820	290	640	190	47	42	20	30	1.0
04...	.7	--	--	--	--	--	--	--	--	--
APR										
27...	1.4	36	K14	K14	190	52	44	20	29	.9
27...	--	--	--	--	--	--	--	--	--	--
27...	1.0	--	--	--	190	52	44	20	29	.9
MAY										
26...	.8	3300	1600	8100	150	36	37	13	19	.7
26...	--	--	--	--	--	--	--	--	--	--
26...	.8	--	--	--	150	26	37	13	19	.7

TOWN LAKE AT AUSTIN, TX--Continued

301712097470701 TOWN LAKE SITE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)
MAR										
04...	3.4	140	39	55	.2	5.8	280	1	0	.13
04...	--	--	--	--	--	--	--	19	3	.10
APR										
27...	3.6	140	40	47	.3	7.4	276	3	2	--
27...	--	--	--	--	--	--	--	--	--	--
27...	3.7	140	37	50	.3	7.4	276	2	2	--
MAY										
26...	3.2	110	31	34	.2	6.3	210	133	13	.34
26...	--	--	--	--	--	--	--	--	--	--
26...	1.5	120	18	34	.2	6.4	201	32	14	.34

DATE	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR									
04...	.010	.14	.000	.69	.69	.83	.050	10	1
04...	.020	.12	.000	.59	.59	.71	.030	--	--
APR									
27...	--	--	--	--	.45	--	.030	20	4
27...	--	--	--	--	--	--	--	--	--
27...	--	.19	.040	.71	.75	.94	.030	20	3
MAY									
26...	.010	.35	.140	.75	.89	1.2	.050	50	2
26...	--	--	--	--	--	--	--	--	--
26...	.010	.35	.150	.75	.90	1.3	.050	40	1

301601097454001 TOWN LAKE SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
04...	1310	1.00	276	7.8	18.0	8.5	91
04...	1315	5.00	280	7.8	18.0	8.3	89
APR							
27...	1236	1.00	554	7.2	21.5	11.7	133
MAY							
26...	1322	1.00	447	7.5	24.5	8.4	101

TOWN LAKE AT AUSTIN, TX--Continued

301500097424801 TOWN LAKE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)
MAR							
04...	1100	1.00	2	60	<1	10	<10
04...	1102	10.0	--	--	--	--	--
04...	1106	28.0	2	60	<1	0	<10
APR							
27...	1015	1.00	--	--	--	--	--
27...	1030	22.0	--	--	--	--	--
MAY							
26...	1054	1.00	2	200	<1	0	<10
26...	1056	10.0	--	--	--	--	--
26...	1100	25.0	2	200	<1	0	<10

DATE	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
MAR							
04...	20	<10	2	.0	0	0	5
04...	30	--	10	--	--	--	--
04...	130	31	40	.0	0	0	20
APR							
27...	50	--	7	--	--	--	--
27...	40	--	10	--	--	--	--
MAY							
26...	120	<10	3	.0	0	0	4
26...	20	--	10	--	--	--	--
26...	40	<10	4	.0	0	0	<3

301712097470701 TOWN LAKE SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)
MAR							
04...	1325	1.00	2	70	1	10	10
APR							
27...	1220	1.00	--	--	--	--	--
27...	1226	17.0	--	--	--	--	--
MAY							
26...	1345	1.00	1	200	<1	0	<10
26...	1349	18.0	1	200	<1	0	<10

DATE	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
MAR							
04...	10	10	1	.0	0	0	3
APR							
27...	20	--	4	--	--	--	--
27...	20	--	3	--	--	--	--
MAY							
26...	50	<10	2	.0	0	0	<3
26...	40	<10	1	.4	0	0	<3

301500097424801 TOWN LAKE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT)	PCB, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)
MAR									
04...	1100	1.00	.00	.00	.00	.00	.00	.00	.00
04...	1106	28.0	.00	.00	.00	.00	.01	.01	.00
MAY									
26...	1054	1.00	.00	.00	.00	.00	.00	.00	.00
26...	1100	25.0	.00	.00	.00	.00	.00	.00	.00

DATE	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)
MAR									
04...	.04	.00	.00	.00	.01	.00	.00	.01	.00
04...	.03	.00	.00	.00	.01	.00	.00	.00	.00
MAY									
26...	.07	.00	.00	.00	.00	.00	.00	.01	.00
26...	.07	.00	.00	.00	.00	.00	.00	.02	.00

DATE	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
MAR								
04...	.00	.00	.00	.00	.00	.22	.00	.00
04...	.00	.00	.00	.00	.00	.16	.00	.00
MAY								
26...	.00	.00	.00	.00	.00	.05	.01	.00
26...	.00	.00	.00	.00	.00	.14	.01	.00

301712097470701 TOWN LAKE SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT)	PCB, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)
MAR									
04...	1325	1.00	.00	.00	.00	.00	.00	.00	.00
04...	1327	14.0	.00	.00	.00	.00	.00	.00	.00
MAY									
26...	1345	1.00	.00	.00	.00	.00	.00	.00	.00
26...	1349	18.0	.00	.00	.00	.00	.00	.00	.00

DATE	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)
MAR									
04...	.00	.00	.00	.00	.00	.00	.00	.00	.00
04...	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAY									
26...	.07	.00	.00	.00	.00	.00	.00	.00	.00
26...	.06	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
MAR								
04...	.00	.00	.00	.00	.00	.62	.00	.00
04...	.00	.00	.00	.00	.00	.71	.00	.00
MAY								
26...	.00	.00	.00	.00	.00	.12	.01	.00
26...	.00	.00	.00	.00	.00	.12	.01	.00

US-01725
1980 v.3

Water Resources Data for Texas

Volume 3. Colorado River Basin, Lavaca River Basin, Guadalupe River Basin, Neces River Basin, Rio Grande Basin, and Intervening Coastal Basins

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TX-80-3

WATER YEAR 1980

Prepared in cooperation with the State of Texas and with other agencies

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08157900 TOWN LAKE AT AUSTIN, TX

LOCATION.--Lat 30°14'56", long 97°43'03", Travis County, Hydrologic Unit 12090205, at Longhorn Dam on the Colorado River at Austin, 1.5 mi (2.4 km) downstream from Interstate Highway 35, and 2.3 mi (3.7 km) southeast of the State Capitol in Austin.

DRAINAGE AREA.--38,390 mi² (99,430 km²), approximately, of which 12,860 mi² (33,360 km²) probably is noncontributing.

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: February 1975 to current year.

301559097424801 TOWN LAKE (AUSTIN) SITE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
03...	1115	1.0	500	7.8	14.0	8.7	84
03...	1117	10	500	7.8	14.0	8.7	84
03...	1119	25	500	7.8	14.0	8.7	84
28...	1115	1.0	510	7.9	18.0	7.9	85
28...	1117	10	515	7.9	17.0	7.9	83
28...	1119	24	515	7.9	17.0	7.8	82
MAY							
19...	1159	1.0	470	7.7	24.0	7.8	93
19...	1201	10	449	7.6	22.5	6.4	74
19...	1203	23	449	7.4	20.5	4.8	53
JUL							
31...	1120	1.0	492	7.8	26.0	7.0	86
31...	1123	10	492	7.8	24.5	7.3	87
31...	1125	15	492	7.8	24.0	7.2	86
31...	1128	24	492	7.8	24.0	7.0	83

301500097424801 TOWN LAKE (AUSTIN) SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR										
03...	1037	1.0	515	7.8	14.0	2.30	0	1.9	8.8	85
03...	1039	10	515	7.8	14.0	--	--	--	8.8	85
03...	1041	22	515	7.8	14.0	--	2	2.0	8.8	85
28...	1042	1.0	477	7.8	18.0	.90	10	7.2	7.6	82
28...	1044	10	491	7.8	17.0	--	--	--	7.6	80
28...	1046	20	491	7.8	17.0	--	--	--	7.5	79
28...	1048	23	491	7.7	17.0	--	5	3.6	7.5	79
MAY										
19...	1131	1.0	470	7.7	23.5	1.37	5	2.6	7.8	92
19...	1133	10	466	7.5	21.5	--	--	--	6.0	68
19...	1135	20	463	7.4	20.5	--	--	--	4.9	54
19...	1137	30	463	7.5	20.0	--	5	15	3.9	43
JUL										
31...	1040	1.0	492	7.8	26.0	2.29	0	1.2	7.0	86
31...	1045	10	492	7.8	24.0	--	--	--	7.3	87
31...	1050	15	492	7.8	24.0	--	--	--	7.0	83
31...	1055	23	492	7.8	24.0	--	0	.90	7.0	83

DATE	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
MAR										
03...	.1	780	8	2	210	38	51	20	26	.8
03...	--	--	--	--	--	--	--	--	--	--
03...	.3	--	--	--	210	38	51	20	27	.8
28...	1.3	>2000	2000	780	190	35	45	19	23	.7
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	1.2	--	--	--	200	33	46	20	24	.7
MAY										
19...	1.0	3100	200	43	210	32	57	17	15	.4
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	.5	--	--	--	180	27	45	17	18	.6
JUL										
31...	.6	620	440	K3	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
31...	.3	--	--	--	200	32	44	21	24	.7

TOWN LAKE AT AUSTIN, TX--Continued

301500097424801 TOWN LAKE (AUSTIN) SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)
MAR										
03...	2.8	210	0	36	40	.2	7.3	286	0	0
03...	--	--	--	--	--	--	--	--	--	--
03...	2.8	210	0	34	41	.2	7.2	266	2	2
26...	3.2	190	0	32	39	.3	7.2	262	0	0
26...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	3.2	200	0	33	39	.3	7.3	271	5	6
MAY										
19...	2.4	220	0	25	22	.2	8.5	256	13	13
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	2.8	190	0	27	31	.2	8.3	243	24	15
JUL										
31...	3.0	200	0	--	--	--	--	--	0	0
31...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
31...	3.0	200	0	30	44	.3	8.8	274	1	1

DATE	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR										
03...	.19	.010	.20	.070	.33	.40	.60	.020	<10	3
03...	.15	.010	.16	.070	.33	.40	.56	.030	10	10
03...	.27	.010	.28	.100	.53	.63	.91	.030	<10	3
26...	.12	.010	.13	.080	.66	.66	.81	.070	<10	3
28...	.04	.000	.04	.040	.79	.83	.87	.050	30	0
28...	--	--	--	--	--	--	--	--	--	--
28...	.14	.010	.15	.100	.48	.58	.73	.040	<10	4
MAY										
19...	.32	.010	.33	.030	.45	.48	.81	.010	<10	<3
19...	.22	.010	.23	.100	.90	1.0	1.2	.010	20	0
19...	--	--	--	--	--	--	--	--	--	--
19...	.17	.010	.18	.150	.73	.88	1.1	.050	<10	20
JUL										
31...	.12	.010	.13	.030	.59	.62	.75	.010	--	--
31...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
31...	.11	.010	.12	.030	.64	.67	.79	.010	<10	5

301503097424701 TOWN LAKE (AUSTIN) SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
03...	1125	1.0	520	7.8	14.0	8.7	84
03...	1127	10	520	7.8	14.0	8.7	84
03...	1129	15	520	7.8	14.0	8.8	85
28...	1105	1.0	477	7.8	18.5	7.5	82
28...	1107	12	491	7.8	17.0	7.3	77
MAY							
19...	1116	1.0	479	7.7	24.0	8.0	95
19...	1118	10	466	7.5	21.5	6.5	74
19...	1120	17	463	7.4	20.5	5.1	57
JUL							
31...	1130	1.0	492	7.8	26.0	7.3	90
31...	1132	10	492	7.8	24.0	7.3	87
31...	1135	17	492	7.8	24.0	7.3	87

301500097440801 TOWN LAKE (AUSTIN) SITE BK

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
03...	1145	1.0	555	7.7	14.0	8.7	84
03...	1147	13	555	7.7	14.0	8.4	82
28...	1130	1.0	301	7.6	17.0	7.1	75
28...	1132	10	290	7.6	16.5	7.0	73
28...	1134	13	290	7.6	16.5	7.0	73
MAY							
19...	1228	1.0	500	7.5	24.0	7.3	87
19...	1230	12	496	7.4	22.5	5.9	68
JUL							
31...	1150	1.0	492	7.8	24.5	7.1	85
31...	1152	10	492	7.8	24.0	7.1	85
31...	1155	21	492	7.8	24.0	7.1	85

301504097440901 TOWN LAKE (AUSTIN) SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
03...	1135	1.0	555	7.7	14.0	8.5	83
03...	1137	10	555	7.7	14.0	8.5	83
03...	1139	20	555	7.7	14.0	8.4	82
03...	1141	25	555	7.7	14.0	8.4	82
28...	1125	1.0	280	7.7	17.0	7.2	76
28...	1127	10	301	7.7	16.5	7.2	75
28...	1129	20	301	7.7	16.5	7.1	74
MAY							
19...	1215	1.0	500	7.5	23.5	7.4	87
19...	1217	10	498	7.4	22.5	6.6	77
19...	1219	20	496	7.4	22.0	5.8	67
19...	1221	25	496	7.4	22.0	5.9	68
JUL							
31...	1140	1.0	492	7.8	25.0	7.2	87
31...	1143	10	492	7.8	24.0	7.1	85
31...	1145	20	492	7.8	24.0	7.0	83
31...	1148	28	492	7.8	24.0	6.9	82

301544097445201 TOWN LAKE (AUSTIN) SITE CK

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
03...	1208	1.0	586	7.6	14.0	10.7	104
03...	1210	8.0	586	7.6	14.0	10.7	104
28...	1155	1.0	489	7.4	20.0	6.7	74
28...	1157	6.0	421	7.6	17.0	6.5	68
MAY							
19...	1255	1.0	496	7.5	22.0	7.6	87
19...	1257	9.0	496	7.5	21.5	7.6	86
JUL							
31...	1217	1.0	496	7.7	23.0	6.8	79
31...	1220	8.0	496	7.7	23.0	6.8	79

TOWN LAKE AT AUSTIN, TX--Continued

301546097452101 TOWN LAKE (AUSTIN) SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
03...	1157	1.0	566	7.6	14.0	10.5	102
03...	1159	10	566	7.6	14.0	10.5	102
03...	1201	15	566	7.6	14.0	10.5	102
28...	1145	1.0	454	7.5	19.5	7.1	78
28...	1147	10	356	7.6	17.0	6.8	72
28...	1149	15	328	7.6	17.0	6.7	71
MAY							
19...	1242	1.0	496	7.5	21.5	7.7	88
19...	1244	10	496	7.5	21.5	7.7	88
19...	1246	15	496	7.4	21.5	7.6	84
JUL							
31...	1210	1.0	496	7.7	24.0	6.9	82
31...	1213	10	492	7.8	23.5	6.9	80
31...	1215	14	492	7.8	23.5	6.7	79

301556097452001 TOWN LAKE (AUSTIN) SITE DB

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
03...	1246	1.0	569	7.7	14.0	11.8	119
03...	1242	10	569	7.7	14.0	11.8	119
03...	1244	15	569	7.7	14.0	10.9	110
28...	1[illegible]	[illegible]	5[illegible]	7.2	20.5	6.1	7[illegible]
28...	1222	11	480	7.6	17.0	6.1	--
MAY							
19...	1325	1.0	496	7.5	23.0	7.8	91
19...	1327	13	496	7.5	21.5	7.5	85
JUL							
31...	1255	1.0	500	7.6	23.5	7.3	88
31...	1258	12	500	7.7	23.0	6.8	79

301558097452201 TOWN LAKE (AUSTIN) SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR										
03...	1220	1.0	569	7.8	14.0	5.5	2	1.5	11.7	114
03...	1222	10	569	7.8	14.0	--	--	--	11.7	114
03...	1224	18	569	7.8	14.0	--	5	.8	11.6	112
28...	1205	1.0	507	7.2	19.5	--	20	15	6.1	66
28...	1207	10	460	7.7	17.0	--	--	--	6.6	72
28...	1209	21	463	7.7	17.0	--	20	7.6	6.2	67
MAY										
19...	1306	1.0	492	7.5	22.0	2.19	5	1.8	8.[illegible]	92
19...	1308	10	490	7.6	21.5	--	--	--	7.7	88
19...	1310	19	490	7.6	21.5	--	0	6.7	7.7	88
JUL										
31...	1230	1.0	492	7.8	22.5	2.29	0	.66	6.7	77
31...	1235	10	492	7.8	22.5	--	--	--	6.7	77
31...	1240	22	492	7.8	22.5	--	0	1.1	6.6	76

TOWN LAKE AT AUSTIN, TX--Continued

301558097452201 TOWN LAKE (AUSTIN) SITE DC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	OXYGEN, DISSOLVED (MG/L)	COLI-FORM, TOTAL, MEMBR. FILTER (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 M-FC AGAR (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	NON-CARB-ONATE (MG/L AS CACO3)	CALCIUM, DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO
MAR										
03...	.6	440	82	.49	260	44	65	23	23	.6
03...	--	--	--	--	--	--	--	--	--	--
03...	.1	--	--	--	250	39	63	22	22	.6
26...	1.2	>4600	>4600	7200	230	42	61	19	18	.5
26...	--	--	--	--	--	--	--	--	--	--
26...	.9	--	--	--	190	38	43	19	22	.7
MAY										
19...	.4	460	140	36	210	32	52	20	18	.5
19...	--	--	--	--	--	--	--	--	--	--
19...	.5	--	--	--	200	32	49	20	19	.6
JUL										
31...	.4	460	100	K14	190	25	41	21	25	.8
31...	--	--	--	--	--	--	--	--	--	--
31...	.4	--	--	--	190	25	41	21	25	.8

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 180 DEG. C, SUS-PENDED (MG/L)	SOLIDS, VOLA-TILE, SUS-PENDED (MG/L)
MAR										
03...	2.2	260	0	34	37	.2	5.4	318	0	0
03...	--	--	--	--	--	--	--	--	--	--
03...	2.2	260	0	46	36	.2	5.1	326	0	0
26...	2.4	230	0	31	30	.3	5.1	284	14	5
26...	--	--	--	--	--	--	--	--	--	--
26...	3.2	180	0	32	37	.3	7.5	254	10	8
MAY										
19...	2.6	220	0	28	30	.2	8.2	267	14	11
19...	--	--	--	--	--	--	--	--	--	--
19...	2.7	210	0	29	35	.3	8.1	267	16	9
JUL										
31...	3.3	200	0	29	45	.3	6.2	271	6	0
31...	--	--	--	--	--	--	--	--	--	--
31...	3.3	200	0	29	44	.3	8.3	271	0	0

DATE	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
MAR										
03...	.50	.010	.51	.030	.26	.29	.80	.000	<10	4
03...	.53	.010	.54	.010	.85	.86	1.4	.000	10	10
03...	.28	.010	.29	.010	.36	.37	.66	.020	<10	4
26...	.46	.010	.47	.060	.77	.83	1.3	.000	<10	8
26...	.11	.000	.11	.060	.72	.78	.89	.020	40	10
26...	.10	.010	.11	.100	.77	.87	.98	.030	30	1
MAY										
19...	.21	.010	.22	.030	.34	.37	.59	.010	<10	10
19...	.13	.010	.14	.010	.44	.45	.59	.020	20	20
19...	.18	.010	.19	.030	.37	.40	.59	.010	<10	10
JUL										
31...	.09	.000	.09	.010	.58	.59	.68	.010	<10	8
31...	.09	.010	.10	.010	.99	1.0	1.1	.010	10	10
31...	.09	.010	.10	.010	.95	.96	1.1	.010	<10	6

TOWN LAKE AT AUSTIN, TX--Continued

301712097470701 TOWN LAKE (AUSTIN) SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR										
03...	1311	1.0	527	7.9	12.5	1.40	2	2.6	9.8	92
03...	1313	12	527	7.8	12.5	--	5	3.3	9.9	93
28...	1245	1.0	505	7.3	19.0	--	10	3.0	7.5	82
28...	1247	12	488	7.6	17.5	--	10	2.9	6.4	68
MAY										
19...	1342	1.0	483	7.8	21.5	1.52	5	2.9	8.3	94
19...	1344	10	483	7.8	21.5	--	--	--	8.2	93
19...	1346	19	483	7.8	21.5	--	5	2.1	8.2	93
JUL										
31...	1320	1.0	492	7.9	23.0	1.43	0	1.3	7.4	86
31...	1325	10	492	7.8	22.5	--	--	--	6.9	79
31...	1330	15	492	7.8	22.5	--	0	3.3	6.9	80

DATE	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
MAR										
03...	.6	820	6	12	210	42	48	23	27	.8
03...	.2	--	--	--	220	47	50	23	25	.7
28...	.8	220	220	230	220	37	54	20	20	.6
28...	1.0	--	--	--	200	36	47	20	22	.7
MAY										
19...	.8	10000	44	10	200	33	46	20	20	.6
19...	--	--	--	--	--	--	--	--	--	--
19...	.8	--	--	--	200	33	46	20	20	.6
JUL										
31...	.5	100	28	K4	190	30	43	21	24	.6
31...	--	--	--	--	--	--	--	--	--	--
31...	.5	--	--	--	190	23	42	20	23	.7

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)
MAR										
03...	3.3	210	0	42	43	.2	8.1	298	6	5
03...	3.2	210	0	35	43	.2	7.8	290	0	0
28...	2.6	220	0	32	35	.3	8.2	281	0	0
28...	3.1	200	0	32	40	.3	8.2	271	0	0
MAY										
19...	2.9	200	0	28	33	.2	8.1	257	20	16
19...	--	--	--	--	--	--	--	--	--	--
19...	2.9	200	0	29	33	.2	8.1	258	126	4
JUL										
31...	3.2	200	0	29	45	.3	8.7	273	1	0
31...	--	--	--	--	--	--	--	--	--	--
31...	3.2	200	0	30	45	.3	8.7	271	3	1

DATE	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR										
03...	.10	.000	.10	.030	.38	.41	.51	.010	<10	<1
03...	.09	.010	.10	.030	.40	.43	.53	.010	<10	2
28...	.43	.000	.43	.040	.77	.81	1.2	.030	<10	3
28...	.13	.000	.13	.080	2.7	2.8	2.9	.030	<10	20
MAY										
19...	.18	.010	.19	.010	.43	.44	.63	.010	<10	<3
19...	.17	.010	.18	.010	.40	.41	.59	.020	10	0
19...	.17	.010	.18	.030	.26	.29	.47	.010	<10	4
JUL										
31...	.08	.010	.09	.000	.51	.51	.60	.010	<10	1
31...	--	--	--	--	--	--	--	--	--	--
31...	.08	.010	.09	.000	.64	.64	.73	.010	<10	<1

TOWN LAKE AT AUSTIN, TX--Continued

301601097454001 TOWN LAKE (AUSTIN) SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
03...	1255	1.0	647	7.3	19.0	11.8	127
28...	1228	1.0	607	7.2	22.5	11.7	136
MAY							
19...	1416	1.0	496	7.6	23.5	9.5	112
19...	1418	8.0	496	7.6	23.5	9.5	112
JUL							
31...	1305	1.0	631	7.2	23.5	10.7	126
31...	1310	6.0	631	7.2	23.0	10.4	121

301500097424801 TOWN LAKE (AUSTIN) SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	GROSS ALPHA, DISSOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L)	URANIUM DISSOLVED, EXTRACTION (UG/L)
JUL												
31...	1040	1.0	<3.1	<.3	<4.6	<.4	3.0	.4	2.9	.4	.15	1.2
31...	1055	23	<3.3	<.3	<4.8	<.4	4.9	<.4	4.6	<.4	.14	1.3

301712097470701 TOWN LAKE (AUSTIN) SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	GROSS ALPHA, DISSOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L)	URANIUM DISSOLVED, EXTRACTION (UG/L)
JUL												
31...	1320	1.0	<3.5	<.3	<5.2	<.4	4.3	.7	4.1	.7	.08	1.1
31...	1330	15	<2.9	<.3	<4.3	<.4	4.0	.6	3.8	.6	.56	1.1

TOWN LAKE AT AUSTIN--Continued

301500097424801 TOWN LAKE (AUSTIN) SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT)	PCB, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)
MAR									
03...	1037	1.0	.0	.00	.00	.0	.00	.00	.00
03...	1041	22	.0	.00	.00	.0	.00	.00	.00
JUL									
31...	1040	1.0	.0	.00	.00	.0	.00	.00	.00
31...	1055	23	.0	.00	.00	.0	.00	.00	.00

DATE	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)
MAR									
03...	.01	.00	.00	.00	.00	.00	.00	.00	.00
03...	.01	.00	.00	.00	.00	.00	.00	.00	.00
JUL									
31...	.00	.00	.00	.00	.00	.00	.00	.00	.00
31...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL THITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVER, TOTAL (UG/L)
MAR								
03...	.00	.00	.00	0	.00	.02	.00	.00
03...	.00	.00	.00	0	.00	.02	.00	.00
JUL								
31...	.00	.00	.00	0	.00	.15	.00	.00
31...	.00	.00	.00	0	.00	.20	.00	.00

APPENDIX C

Routine Water Monitoring Data

RESULTS OF FIRST QUARTER MONITORING

JULY - SEPTEMBER, 1986

100 CONGRESS AVENUE

WATER TREATMENT SYSTEM

8 October 1986

City of Austin
Wastewater Treatment Division
P.O. Box 1088
Austin, Texas 78767

Attn: Mr. Jack Gatlin, Industrial Waste Control Section

Dear Mr. Gatlin:

This letter is submitted in compliance with the reporting requirements of Part I, Section E of the Industrial Waste Discharge Permit (No. 141861) issued to Lincoln Property Company. The following tables summarize the results of first quarter monitoring for groundwater discharged from the 100 Congress Avenue construction site. Tables 1A, 2A, and 3A present analytical results of sampling for July, August, and September, respectively. Tables 1B, 2B, and 3B present flow records for the same months. All groundwaters discharged to the sanitary sewer system have received activated carbon pretreatment.

Attachment 1 contains all sample analytical results for this monitoring period.

The table below presents effluent parameters specified in the Permit, the maximum values allowed, and the maximum values observed during the monitoring period. All parameters observed were within permit guidelines.

Parameters	Maximum Value Allowed (mg/L)	Maximum Value Observed (mg/L)
pH	6.0 to 11.0 (pH units)	7.0 to 8.5 (pH units)
Total Organic Carbon (TOC)	20.00	3.0
Polyaromatic Hydrocarbons (PAH)	2.0	Not detected
Total Toxic Organics (TTO)	2.0	0.0
Flow	20 gpm	18 gpm
Volume	28,800 gpd	24,100 gpd

If you have any questions regarding this matter, please do not hesitate to contact me.

Sincerely,

Kevin A. Fleming
Construction Manager
Lincoln Property Company

TABLE 1A. MONTHLY DATA FOR JULY 1986 - 100 CONGRESS AVENUE WATER TREATMENT

Day	Amount Treated (gal)	pH	Effluent TOC (mg/L)[1]	Additional Sampling Location[2]	Results (TOC in mg/L unless otherwise indicated)
1	0**				
2	2,320*				
3	2,320*				
4	2,320*				
5	2,320*				
6	2,320*				
7	2,320*				
8	13,100				
9	11,600	7	<1		
				Effluent	TTO[3] = 0 mg/L
10	10,200*	7	<1		
				Between Columns	5
11	10,200*				
12	10,200*				
13	10,200*				
14	0**				
15	0**				
16	1,100				
17	12,800	7			
18	5,990*	7	1		
				Between Columns	2
19	5,990*				
20	5,990*				
21	4,080	7	1		
22	8,250	7	<1		
23	2,060*	7	1		
24	2,060*				
25	2,060*				
26	0**				
27	0**				
28	0**				
29	0**				
30	0**				
31	0**				

[1]Composite samples are drawn off from the system effluent line.
[2]Effluent samples are composite; grab samples are taken from between the carbon columns.
[3]Total Toxic Organics; analysis performed within 30 days of the start of monitoring.
*Indicates that data was not available for individual days but was averaged over the period.
**Indicates that no water was treated due to dry weather conditions or system malfunctions.

TABLE 1B. SUMMARY OF FLOW RECORD FOR JULY 1986

Initial meter reading - 37,500 gallons (2 July)
Final meter reading - 167,300 gallons (31 July)

Total volume of water treated = 129,800 gallons
Period of treatment = 30 days

1. Monthly average of daily flows = $\frac{\text{Total vol. treated}}{\text{No. of days}}$

$= \frac{129{,}800 \text{ gal}}{30 \text{ days}} = 4{,}327$ gpd

2. Monthly peak daily flow (largest vol. treated in a single day) = 13,100 gpd

3. Monthly peak daily flow rate = 18 gpm

Note - the treatment system pumps at a constant rate of 18 gpm when operating

TABLE 2A. MONTHLY DATA FOR AUGUST 1986 - 100 CONGRESS AVENUE WATER TREATMENT

Day	Amount Treated (gal)	pH	Effluent TOC (mg/L)[1]	Additional Sampling Location[2]	Additional Sampling Results (TOC in mg/L unless otherwise indicated)
1	0**				
2	15,570*				
3	15,570*				
4	15,570*				
5	20,800	7	<1		
6	16,500	7	<1		
7	3,415*				
8	3,415*				
9	3,415*				
10	3,415*				
11	3,415*				
12	3,415*				
13	18,100	7	1		
14	1,900	8	2		
15	3,400*				
16	3,400*				
17	3,400*				
18	16,100				
19	6,000				
20	4,600	7	1		
21	5,300	7	2		
				Between Columns	4
22	3,900*				
23	3,900*				
24	3,900*				
25	3,900*				
26	0**	7	1		
27	11,400				
28	3,300	8	<1		
29	6,280*	8	1		
				Between Columns	9
30	6,280*				
31	6,280*				

[1]Composite samples are drawn off from the system effluent line.
[2]Grab samples are taken from between the carbon columns.
*Indicates that data was not available for individual days but was averaged over the period.
**Indicates that no water was treated due to dry weather conditions or system malfunctions.

TABLE 2B. SUMMARY OF FLOW RECORD FOR AUGUST 1986

Initial meter reading - 167,300 gallons (1 August)
Final meter reading - 383,140 gallons (31 August)

Total volume of water treated = 215,840 gallons
Period of treatment = 31 days

1. Monthly average of daily flows = $\frac{\text{Total vol. treated}}{\text{No. of days}}$

$$= \frac{215{,}840 \text{ gal}}{31 \text{ days}} = 6{,}963 \text{ gpd}$$

2. Monthly peak daily flow (largest vol. treated in a single day) = 20,800 gpd

3. Monthly peak daily flow rate = 18 gpm

Note - the treatment system pumps at a constant rate of 18 gpm when operating

TABLE 3A. MONTHLY DATA FOR SEPTEMBER 1986 - 100 CONGRESS AVENUE WATER TREATMENT

Day	Amount Treated (gal)	pH	Effluent TOC (mg/L)[1]	Additional Sampling Location[2]	Additional Sampling Results (TOC in mg/L unless otherwise indicated)
1	6,285*				
2	6,285*				
3	6,285*				
4	5,000	8.5	<1		
5	11,835*	7.5	1		
6	11,835*				
7	11,835*				
8	3,300	7.5	2		
9	14,300	7.0	2		
				Between Columns	6
10	17,400	7.5	2		
11	300	7.5			
12	130*	7.5			
13	130*				
14	130*				
15	24,100	7.0	2		
				Sump	16
				Frac Tank	12
16	4,100	7.5	1		
				Between Columns	4
17	12,400	8.0	2		
18	4,300	7.0	2		
19	9,900*	7.5	2		
				Sump	23
				Frac Tank	8
20	9,900*				
21	9,900*				
22	0**	7.5	<1		
23	20,500				
24	9,500	8.0	2		
25	2,700	8.0	<1	Effluent	PAH not detected[3]
				Sump	8, PAH not detected
				Frac Tank	10, PAH not detected
				Between Columns	6, PAH not detected
26	1,100*				
27	1,100*				
28	1,100*				
29	600	8.0	3		
30	0**				

[1]Composite samples are drawn off from the system effluent line.
[2]Effluent samples are composite; grab samples are taken from all other additional sampling locations.
[3]Polyaromatic Hydrocarbons not detected by gas chromatography (GC); analysis performed every 3 months and when effluent TOC limit of 20 mg/L is exceeded.
*Indicates that data was not available for individual days but was averaged over the period.
**Indicates that no water was treated due to dry weather conditions or system malfunctions.

TABLE 3B. SUMMARY OF FLOW RECORD FOR SEPTEMBER 1986

Initial meter reading - 383,140 gallons (1 September)
Final meter reading - 589,400 gallons (30 September)

Total volume of water treated = 206,260 gallons
Period of treatment = 30 days

1. Monthly average of daily flows = $\frac{\text{Total vol. treated}}{\text{No. of days}}$

$= \frac{206{,}260 \text{ gal}}{30 \text{ days}} = 6{,}875$ gpd

2. Monthly peak daily flow (largest vol. treated in a single day) = 24,100 gpd

3. Monthly peak daily flow rate = 18 gpm

Note - the treatment system pumps at a constant rate of 18 gpm when operating

RADIAN CORPORATION

ATTACHMENT 1

Analytical Results

W .055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 4065B SAMPLE TYPE: MISC DATE REPORTED: 07/18/86
CILITY: LPC ACCT NO: DATE RECEIVED: 07/09/86
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 07/09/86
AUSTIN TX 78701 SAMPLE TIME: 14:00
LOCATION ID: 4065B NAME: EFFLUENT

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
CARBON, TOTAL ORGANIC	<1	MG/L	E415.1	
---TOTAL TOXIC ORGANICS-----	----------	----------	------	
EPA METHOD 601:	----------	----------	------	
BROMODICHLOROMETHANE	NONE DET.	UG/L	EPA601	
OMOFORM	NONE DET.	UG/L	EPA601	
OMOMETHANE	NONE DET.	UG/L	EPA601	
CARBON TETRACHLORIDE	NONE DET.	UG/L	EPA601	
LOROBENZENE	NONE DET.	UG/L	EPA601	
LOROETHANE	NONE DET.	UG/L	EPA601	
2-CHLOROETHYLVINYL ETHER	NONE DET.	UG/L	EPA601	
LOROFORM	NONE DET.	UG/L	EPA601	
LOROMETHANE	NONE DET.	UG/L	EPA601	
BROMOCHLOROMETHANE	NONE DET.	UG/L	EPA601	
1,2-DICHLOROBENZENE	NONE DET.	UG/L	EPA601	
-DICHLOROBENZENE	NONE DET.	UG/L	EPA601	
-DICHLOROBENZENE	NONE DET.	UG/L	EPA601	
DICHLORODIFLUOROMETHANE	NONE DET.	UG/L	EPA601	
1,1-DICHLOROETHANE	NONE DET.	UG/L	EPA601	
2-DICHLOROETHANE	NONE DET.	UG/L	EPA601	
1,1-DICHLOROETHENE	NONE DET.	UG/L	EPA601	
TRANS-1,2-DICHLOROETHENE	NONE DET.	UG/L	EPA601	
2-DICHLOROPROPANE	NONE DET.	UG/L	EPA601	
S-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA601	
TRANS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA601	
THYLENE CHLORIDE	NONE DET.	UG/L	EPA601	
1,2,2-TETRACHLOROETHANE	NONE DET.	UG/L	EPA601	
TETRACHLOROETHENE	NONE DET.	UG/L	EPA601	
1,1,1-TRICHLOROETHANE	NONE DET.	UG/L	EPA601	
1,2-TRICHLOROETHANE	NONE DET.	UG/L	EPA601	
TRICHLOROETHENE	NONE DET.	UG/L	EPA601	
TRICHLOROFLUOROMETHANE	NONE DET.	UG/L	EPA601	
NYLCHLORIDE	NONE DET.	UG/L	EPA601	
EPA METHOD 602:	----------	----------	------	
BENZENE	NONE DET.	UG/L	EPA602	
LOROBENZENE	NONE DET.	UG/L	EPA602	
2-DICHLOROBENZENE	NONE DET.	UG/L	EPA602	
1,3-DICHLOROBENZENE	NONE DET.	UG/L	EPA602	
1,4-DICHLOROBENZENE	NONE DEE.	UG/L	EPA602	
HYL BENZENE	NONE DET.	UG/L	EPA602	
LUENE	NONE DET.	UG/L	EPA602	
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_055A ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 4065B SAMPLE TYPE: MISC DATE REPORTED: 07/18/86
ACILITY: LPC ACCT NO: DATE RECEIVED: 07/09/86
600 CONGRESS AVE, SUITE 2'80 SAMPLE DATE: 07/09/86
AUSTIN TX 78701 SAMPLE TIME: 14:00
LOCATION ID: 4065B NAME: EFFLUENT

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
--EPA METHOD 610				
ACENAPTHENE	<5	UG/L	EPA610	
ACENAPTHYLENE	<5	UG/L	EPA610	
ANTHRACENE+PHENANTHRENE	<5	UG/L	EPA610	
BENZO(A)ANTHRACENE	<10	UG/L	EPA610	
BENZO(A)PYRENE	<25	UG/L	EPA610	
BENZO FLUORANTHENE	<20	UG/L	EPA610	
BENZO(GHI)PERYLENE	<60	UG/L	EPA610	
DIBENZO(A,H)ANTHRACENE	<60	UG/L	EPA610	
INDENO(1,2,3-CD)PYRENE	<60	UG/L	EPA610	
CHRYSENE	<10	UG/L	EPA610	
FLUORANTHENE	<5	UG/L	EPA610	
FLUORENE	<5	UG/L	EPA610	
NAPTHALENE	<5	UG/L	EPA610	
PYRENE	<5	UG/L	EPA610	

Buck Henderson

BUCK HENDERSON
LABORATORY SUPERVISOR

LPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 5304B SAMPLE TYPE: MISC DATE REPORTED: 10/06/86
FACILITY: LPC ACCT NO: DATE RECEIVED: 09/25/86
600 CONGRESS AVE. SUITE 2180 SAMPLE DATE: 09/25/86
AUSTIN TX 78701 SAMPLE TIME: 15:30
LOCATION ID: 5304B NAME: EFFLUENT

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
--------EPA METHOD 610---------	----------	----------	------	
ACENAPTHENE	<5	UG/L	EPA610	
ACENAPTHYLENE	<5	UG/L	EPA610	
ANTHRACENE+PHENANTHRENE	<5	UG/L	EPA610	
BENZO(A)ANTHRACENE	<10	UG/L	EPA610	
BENZO(A)PYRENE	<25	UG/L	EPA610	
BENZO FLUORANTHENE	<20	UG/L	EPA610	
BENZO(GHI)PERYLENE	<60	UG/L	EPA610	
DIBENZO(A,H)ANTHRACENE	<60	UG/L	EPA610	
INDENO(1,2,3-CD)PYRENE	<60	UG/L	EPA610	
CHRYSENE	<10	UG/L	EPA610	
FLUORANTHENE	<5	UG/L	EPA610	
FLUORENE	<5	UG/L	EPA610	
NAPTHALENE	<5	UG/L	EPA610	
PYRENE	<5	UG/L	EPA610	

Buck Henderson

BUCK HENDERSON
LABORATORY SUPERVISOR

PPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 5307B SAMPLE TYPE: MISC DATE REPORTED: 10/06/86
FACILITY: LPC ACCT NO: DATE RECEIVED: 09/25/86
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 09/25/86
AUSTIN TX 78701 SAMPLE TIME: 15:30
LOCATION ID: 5307B NAME: SUMP

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
------EPA METHOD 610---------	----------	----------	------	
ACENAPTHENE	<5	UG/L	EPA610	
ACENAPTHYLENE	<5	UG/L	EPA610	
ANTHRACENE+PHENANTHRENE	<5	UG/L	EPA610	
BENZO(A)ANTHRACENE	<10	UG/L	EPA610	
BENZO(A)PYRENE	<25	UG/L	EPA610	
BENZO FLUORANTHENE	<20	UG/L	EPA610	
BENZO(GHI)PERYLENE	<60	UG/L	EPA610	
DIBENZO(A,H)ANTHRACENE	<60	UG/L	EPA610	
INDENO(1,2,3-CD)PYRENE	<60	UG/L	EPA610	
CHRYSENE	<10	UG/L	EPA610	
FLUORANTHENE	<5	UG/L	EPA610	
FLUORENE	<5	UG/L	EPA610	
NAPTHALENE	<5	UG/L	EPA610	
PYRENE	<5	UG/L	EPA610	

Buck Henderson

BUCK HENDERSON
LABORATORY SUPERVISOR

WPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 5306B SAMPLE TYPE: MISC DATE REPORTED: 10/06/86
FACILITY: LPC ACCT NO: DATE RECEIVED: 09/25/86
600 CONGRESS AVE. SUITE 2180 SAMPLE DATE: 09/25/86
AUSTIN TX 78701 SAMPLE TIME: 15:30
LOCATION ID: 5306B NAME: FRAC TANK

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
-----EPA METHOD 610----------				
ACENAPTHENE	<5	UG/L	EPA610	
ACENAPTHYLENE	<5	UG/L	EPA610	
ANTHRACENE+PHENANTHRENE	<5	UG/L	EPA610	
BENZO(A)ANTHRACENE	<10	UG/L	EPA610	
BENZO(A)PYRENE	<25	UG/L	EPA610	
BENZO FLUORANTHENE	<20	UG/L	EPA610	
BENZO(GHI)PERYLENE	<60	UG/L	EPA610	
DIBENZO(A,H)ANTHRACENE	<60	UG/L	EPA610	
INDENO(1,2,3-CD)PYRENE	<60	UG/L	EPA610	
CHRYSENE	<10	UG/L	EPA610	
FLUORANTHENE	<5	UG/L	EPA610	
FLUORENE	<5	UG/L	EPA610	
NAPTHALENE	<5	UG/L	EPA610	
PYRENE	<5	UG/L	EPA610	

Buck Henderson

BUCK HENDERSON
LABORATORY SUPERVISOR

WPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 5305B SAMPLE TYPE: MISC DATE REPORTED: 10/06/86
FACILITY: LPC ACCT NO: DATE RECEIVED: 09/25/86
600 CONGRESS AVE. SUITE 2180 SAMPLE DATE: 09/25/86
AUSTIN TX 78701 SAMPLE TIME: 15:30
LOCATION ID: 5305B NAME: BETWEEN COLUMNS

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
-----EPA METHOD 610----------	----------	----------	------	
ACENAPTHENE	<5	UG/L	EPA610	
ACENAPTHYLENE	<5	UG/L	EPA610	
ANTHRACENE+PHENANTHRENE	<5	UG/L	EPA610	
BENZO(A)ANTHRACENE	<10	UG/L	EPA610	
BENZO(A)PYRENE	<25	UG/L	EPA610	
BENZO FLUORANTHENE	<20	UG/L	EPA610	
BENZO(GHI)PERYLENE	<60	UG/L	EPA610	
DIBENZO(A,H)ANTHRACENE	<60	UG/L	EPA610	
INDENO(1,2,3-CD)PYRENE	<60	UG/L	EPA610	
CHRYSENE	<10	UG/L	EPA610	
FLUORANTHENE	<5	UG/L	EPA610	
FLUORENE	<5	UG/L	EPA610	
NAPTHALENE	<5	UG/L	EPA610	
PYRENE	<5	UG/L	EPA610	

Buck Henderson

BUCK HENDERSON
LABORATORY SUPERVISOR

RESULTS OF SECOND QUARTER MONITORING

OCTOBER - DECEMBER, 1986

100 CONGRESS AVENUE

WATER TREATMENT SYSTEM

LINCOLN PROPERTY COMPANY

26 January 1987

City of Austin
Wastewater Treatment Division
P.O. Box 1088
Austin, TX 78767

Attention: Mr. Jack Gatlin, Industrial Waste Control Section

Dear Mr. Gatlin:

This letter is submitted in compliance with the reporting requirements of Part I, Section E of the Industrial Waste Discharge Permit (No. 141861) issued to Lincoln Property Company. The following tables summarize the results of second quarter monitoring for groundwater discharged from the 100 Congress Avenue construction site. Tables 1A, 2A, and 3A present analytical results of sampling for October, November, and December, respectively. Tables 1B, 2B, and 3B present flow records for the same months. All groundwaters discharged to the sanitary sewer system have received activated carbon pretreatment.

The table below presents effluent parameters specified in the Permit, the maximum values allowed, and the maximum values observed during the monitoring period. All parameters observed were within permit guidelines.

Parameters	Maximum Value Allowed (mg/L)	Maximum Value Observed (mg/L)
pH	6.0 to 11.0 (pH units)	6.0 to 8.0 (pH units)
Total Organic Carbon (TOC), Effluent	20.0	4.0
Polyaromatic Hydrocarbons (PAH), Effluent	2.0	Not detected
Total Toxic Organics (TTO)	2.0	(Not required during this monitoring period)
Flow*	20 gpm 100 gpm	18 gpm (Oct.) 40 gpm (Nov., Dec.)
Volume*	28,800 gpd 144,000 gpd	28,600 gpd (Oct.) 42,200 gpd (Nov., Dec.)

* Flow restrictors were removed from the treatment system at the end of October to allow an increased flow rate and discharge volume. The permit amendment authorizing a maximum flow of 100 gpm is documented in a letter dated 4 November 1986, included as Attachment 1 to this report.

600 Congress Avenue Suite 2180 Austin, TX 78701 512 499-8811

Attachment 2 contains all sample analytical results for this monitoring period.

If you have any questions regarding this matter, please do not hesitate to contact me.

Sincerely,

Kevin A. Fleming
Construction Manager
Lincoln Property Company

Attachments (2)

LINCOLN PROPERTY COMPANY

26 January 1987

Austin-Travis County Health Department
15 Waller Street
Austin, TX 78702

Attention: Mr. Tim Powell

Dear Mr. Powell:

This letter is submitted in compliance with the reporting requirements of Part I, Section E of the Industrial Waste Discharge Permit (No. 141861) issued to Lincoln Property Company. The following tables summarize the results of second quarter monitoring for groundwater discharged from the 100 Congress Avenue construction site. Tables 1A, 2A, and 3A present analytical results of sampling for October, November, and December, respectively. Tables 1B, 2B, and 3B present flow records for the same months. All groundwaters discharged to the sanitary sewer system have received activated carbon pretreatment.

The table below presents effluent parameters specified in the Permit, the maximum values allowed, and the maximum values observed during the monitoring period. All parameters observed were within permit guidelines.

Parameters	Maximum Value Allowed (mg/L)	Maximum Value Observed (mg/L)
pH	6.0 to 11.0 (pH units)	6.0 to 8.0 (pH units)
Total Organic Carbon (TOC), Effluent	20.0	4.0
Polyaromatic Hydrocarbons (PAH), Effluent	2.0	Not detected
Total Toxic Organics (TTO)	2.0	(Not required during this monitoring period)
Flow*	20 gpm 100 gpm	18 gpm (Oct.) 40 gpm (Nov., Dec.)
Volume*	28,800 gpd 144,000 gpd	28,600 gpd (Oct.) 42,200 gpd (Nov., Dec.)

* Flow restrictors were removed from the treatment system at the end of October to allow an increased flow rate and discharge volume. The permit amendment authorizing a maximum flow of 100 gpm is documented in a letter dated 4 November 1986, included as Attachment 1 to this report.

600 Congress Avenue Suite 2180 Austin, TX 78701 512 499-8811

Attachment 2 contains all sample analytical results for this monitoring period.

If you have any questions regarding this matter, please do not hesitate to contact me.

Sincerely,

Kevin A. Fleming
Construction Manager
Lincoln Property Company

Attachments (2)

TABLE 1A. MONTHLY DATA FOR OCTOBER 1986 - 100 CONGRESS AVENUE WATER TREATMENT

Day	Amount Treated (gal)	pH	Effluent TOC (mg/L)[1]	Additional Sampling Location[2]	Results (TOC in mg/L unless otherwise indicated)
1	0**				
2	24,000				
3	4,665*	8.0			
4	4,665*				
5	4,665*				
6	23,100				
7	13,600	7.0	1		
8	21,200	7.0	2		
9	3,100	7.0	2		
10	9,800*	7.0	2		
				Sump	22
				Frac Tank	7
				Between Columns	9
11	9,800*				
12	9,800*				
13	22,400	7.0	2		
14	28,600	7.0	2		
15	17,100	7.0	3		
16	27,400	7.0	3		
17	21,000*	7.0	3		
				Sump	7
				Frac Tank	7
				Between Columns	6
18	21,000*				
19	21,000*				
20	21,700	7.0	3		
21	34,500[3]	7.5	3		
22	21,400	7.5	3		
23	17,100	7.0	3		
24	27,300*	7.0	3		
				Sump	8
				Frac Tank	6
				Between Columns	5
25	27,300*				
26	27,300*				
27	7,400	6.0	4		
28	23,600	6.0	4		
29	15,600	7.0	3		
30	100	6.5	4		
31	25,200*			Sump	6

[1] Composite samples are drawn off from the system effluent line.
[2] Grab samples are taken from between the carbon columns and from the sump and frac tank.
[3] Suspected entry error in Daily Log; treatment system with flow restrictors can discharge a maximum of 20 gpm (28,800 gpd).
*Indicates that data was not available for individual days but was averaged over the period.
**Indicates that no water was treated due to dry weather conditions or system malfunctions.

TABLE 1B. SUMMARY OF FLOW RECORD FOR OCTOBER 1986

Initial meter reading - 589,400 gallons (1 October)
Final meter reading - 1,124,800 gallons (31 October)

Total volume of water treated = 535,400 gallons
Period of treatment = 31 days

1. Monthly average of daily flows = $\frac{\text{Total vol. treated}}{\text{No. of days}}$

$= \frac{535{,}400 \text{ gal}}{31 \text{ days}} = 17{,}271$ gpd

2. Monthly peak daily flow (largest vol. treated in a single day) = 28,600 gpd[1]

3. Monthly peak daily flow rate = 18 gpm[2]

[1] The discharge of 34,500 gallons on October 21 (see Table 1A) is not considered accurate for the purpose of this flow record.

[2] The treatment system pumps at a constant rate of 18 gpm when operating.

TABLE 2A. MONTHLY DATA FOR NOVEMBER 1986 - 100 CONGRESS AVENUE WATER TREATMENT

Day	Amount Treated (gal)	pH	Effluent TOC (mg/L)[1]	Additional Sampling Location[2]	Additional Sampling Results (TOC in mg/L unless otherwise indicated)
1	25,200*				
2	25,200*				
3	2,800	7.0	2		
4	19,100	7.0	4		
5	14,400	6.5	2		
6	7,000	7.0	3		
7	19,335*	6.0	3		
				Sump	16
				Frac Tank	41
8	19,335*				
9	19,335*				
10	32,100	7.0	2		
11	9,200	6.0	2		
12	13,000	6.5	2		
				Sump	5
				Frac Tank	11
				Between Columns	4
13	12,900	6.0	2		
14	11,130*	6.0	2		
15	11,130*				
16	11,130*				
17	13,000	7.0	2		
18	13,800	7.0	2		
19	9,300	7.0	<1		
20	11,300		2		
21	8,370*				
				Sump	5
				Frac Tank	5
22	8,370*				
23	8,370*				
24	17,500				
25	0**				
26	0**				
27	0**				
28	25,035*				
29	25,035*				
30	25,035*				

[1]Composite samples are drawn off from the system effluent line.
[2]Grab samples are taken from between the carbon columns and from sump and frac tank.
*Indicates that data was not available for individual days but was averaged over the period.
**Indicates that no water was treated due to dry weather conditions or system malfunctions.

TABLE 2B. SUMMARY OF FLOW RECORD FOR NOVEMBER 1986

Initial meter reading - 1,124,800 gallons (1 November)
Final meter reading - 1,542,200 gallons (30 November)

Total volume of water treated = 417,400 gallons
Period of treatment = 30 days

1. Monthly average of daily flows = $\frac{\text{Total vol. treated}}{\text{No. of days}}$

$= \frac{417{,}400 \text{ gal}}{30 \text{ days}} = 13{,}913$ gpd

2. Monthly peak daily flow (largest vol. treated in a single day) = 32,100 gpd

3. Monthly peak daily flow rate = 40 gpm[1]

[1] Flow restrictors were removed at the beginning of this treatment period to allow a greater flow rate and thus discharge volume.

TABLE 3A. MONTHLY DATA FOR DECEMBER 1986 - 100 CONGRESS AVENUE WATER TREATMENT

Day	Amount Treated (gal)	pH	Effluent TOC (mg/L)[1]	Additional Sampling Location[2]	Additional Sampling Results (TOC in mg/L unless otherwise indicated)
1	13,400	6.0	<1		
2	15,800	6.0	<1		
3	4,100	7.0	<1		
4	100				
5	5,800*	6.0			
				Sump	5
				Frac Tank	10
6	5,800*				
7	5,800*				
8	10,650*	7.0	<1		
9	10,650*				
10	23,900	6.0	<1		
11	800	6.0	<1		
12	25,730*				
				Sump	4
				Frac Tank	4
13	25,730*				
14	25,730*				
15	21,900	6.0	1		
16	16,900	6.0	2	Effluent	PAH not detected[3]
				Sump	PAH=1.2 mg/L
				Frac Tank	PAH not detected
				Between Columns	PAH not detected
17	2,400				
18	23,600				
19	5,600*	6.0	2		
				Sump	4
				Frac Tank	5
20	5,600*				
21	5,600*				
22	12,700	7.0	2		
23	25,700	7.0	2		
24	37,850*	6.0	3		
25	37,850*				
26	30,970*	6.0	4		
				Sump	4
				Frac Tank	5
27	30,970*				
28	30,970*				
29	8,100	6.0	3		
30	42,200		2		
31	30,250*	6.0	2		

[1] Composite samples are drawn off from the system effluent line.
[2] Effluent samples are composite; grab samples are taken from all other additional sampling locations.
[3] Analysis for Polyaromatic Hydrocarbons by gas chromatography (GC) was performed every 3 months and when effluent TOC limit of 20 mg/L is exceeded.
*Indicates that data was not available for individual days but was averaged over the period.

TABLE 3B. SUMMARY OF FLOW RECORD FOR DECEMBER 1986

Initial meter reading - 1,542,200 gallons (1 December)
Final meter reading - 2,085,350 gallons (31 December)

Total volume of water treated = 543,150 gallons
Period of treatment = 31 days

1. Monthly average of daily flows = $\frac{\text{Total vol. treated}}{\text{No. of days}}$

$= \frac{543{,}150 \text{ gal}}{31 \text{ days}} = 17{,}521$ gpd

2. Monthly peak daily flow (largest vol. treated in a single day) = 42,200 gpd

3. Monthly peak daily flow rate = 36 gpm

L055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 6602B SAMPLE TYPE: MISC DATE REPORTED: 12/23/86
FACILITY: LPC ACCT NO: DATE RECEIVED: 12/16/86
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 12/16/86
AUSTIN TX 78701 SAMPLE TIME: 10:30
LOCATION ID: 6602B NAME: EFFLUENT

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
=======PAH ANALYSIS==========	==========	==========	======	
NAPTHALENE	<0.05	MG/L	EPA610	
ACENAPHTHYLENE	<0.10	MG/L	EPA610	
ACENAPHTHENE	<0.05	MG/L	EPA610	
FLUORENE	<0.01	MG/L	EPA610	
PHENANTHRENE	<0.01	MG/L	EPA610	
ANTHRACENE	<0.01	MG/L	EPA610	
FLUORANTHENE	<0.01	MG/L	EPA610	
PYRENE	<0.01	MG/L	EPA610	
BENZO(A)ANTHRACENE	<0.01	MG/L	EPA610	
CHRYSENE	<0.01	MG/L	EPA610	
BENZO(B)FLUORANTHENE	<0.01	MG/L	EPA610	
BENZO(K)FLUORANTHENE	<0.01	MG/L	EPA610	
BENZO(A)PYRENE	<0.01	MG/L	EPA610	
BENZO(A,H)ANTHRACENE	<0.01	MG/L	EPA610	
BENZO(G,H,I)PERYLENE	<0.01	MG/L	EPA610	
INDENO(1,2,3,C,D)PYRENE	<0.01	MG/L	EPA610	

Buck Henderson

BUCK HENDERSON
LABORATORY SUPERVISOR

L055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 6603B SAMPLE TYPE: MISC DATE REPORTED: 12/23/86
ACILITY: LPC ACCT NO: DATE RECEIVED: 12/16/86
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 12/16/86
AUSTIN TX 78701 SAMPLE TIME: 10:30
LOCATION ID: 6603B NAME: SUMP #1

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
=======PAY ANALYSIS==========	==========	==========	======	
AFTHALENE	0.48	MG/L	EPA610	
ACENAPHTHYLENE	0.33	MG/L	EPA610	
ACENAPHTHENE	0.21	MG/L	EPA610	
LUORENE	0.14	MG/L	EPA610	
HENANTHRENE	0.03	MG/L	EPA610	
ANTHRACENE	0.01	MG/L	EPA610	
LUORANTHENE	0.02	MG/L	EPA610	
YRENE	<0.01	MG/L	EPA610	
BENZO(A)ANTHRACENE	<0.01	MG/L	EPA610	
HRYSENE	<0.01	MG/L	EPA610	
ENZO(B)FLUORANTHENE	<0.01	MG/L	EPA610	
BENZO(K)FLUORANTHENE	<0.01	MG/L	EPA610	
BENZO(A)PYRENE	<0.01	MG/L	EPA610	
ENZO(A,H)ANTHRACENE	<0.01	MG/L	EPA610	
ENZO(G,H,I)PERYLENE	<0.01	MG/L	EPA610	
INDENO(1,2,3,C,D)PYRENE	<0.01	MG/L	EPA610	

Buck Henderson

BUCK HENDERSON
LABORATORY SUPERVISOR

L055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 6600B SAMPLE TYPE: MISC DATE REPORTED: 12/23/86
FACILITY: LPC ACCT NO: DATE RECEIVED: 12/16/86
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 12/16/86
AUSTIN TX 78701 SAMPLE TIME: 10:30
LOCATION ID: 6600B NAME: FRAC TANK

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
========PAH ANALYSIS=========	==========	==========	======	
NAPTHALENE	<0.05	MG/L	EPA610	
ACENAPHTHYLENE	<0.10	MG/L	EPA610	
ACENAPHTHENE	<0.05	MG/L	EPA610	
FLUORENE	<0.01	MG/L	EPA610	
PHENANTHRENE	<0.01	MG/L	EPA610	
ANTHRACENE	<0.01	MG/L	EPA610	
FLUORANTHENE	<0.01	MG/L	EPA610	
PYRENE	<0.01	MG/L	EPA610	
BENZO(A)ANTHRACENE	<0.01	MG/L	EPA610	
CHRYSENE	<0.01	MG/L	EPA610	
BENZO(B)FLUORANTHENE	<0.01	MG/L	EPA610	
BENZO(K)FLUORANTHENE	<0.01	MG/L	EPA610	
BENZO(A)PYRENE	<0.01	MG/L	EPA610	
DIBENZO(A,H)ANTHRACENE	<0.01	MG/L	EPA610	
BENZO(G,H,I)PERYLENE	<0.01	MG/L	EPA610	
INDENO(1,2,3,C,D)PYRENE	<0.01	MG/L	EPA610	

Buck Henderson

BUCK HENDERSON
LABORATORY SUPERVISOR

L055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 6601B SAMPLE TYPE: MISC
FACILITY: LPC ACCT NO:
600 CONGRESS AVE, SUITE 2180
AUSTIN TX 78701
LOCATION ID: 6601B NAME: BETWEEN COLUMNS

DATE REPORTED: 12/23/86
DATE RECEIVED: 12/16/86
SAMPLE DATE: 12/16/86
SAMPLE TIME: 10:30

PARAMETER	RESULT	UNIT	METHOD	COMMENT
=======PAH ANALYSIS==========	==========	==========	======	
NAPTHALENE	<0.05	MG/L	EPA610	
ACENAPHTHYLENE	<0.10	MG/L	EPA610	
ACENAPHTHENE	<0.05	MG/L	EPA610	
FLUORENE	<0.01	MG/L	EPA610	
PHENANTHRENE	<0.01	MG/L	EPA610	
ANTHRACENE	<0.01	MG/L	EPA610	
FLUORANTHENE	<0.01	MG/L	EPA610	
PYRENE	<0.01	MG/L	EPA610	
BENZO(A)ANTHRACENE	<0.01	MG/L	EPA610	
CHRYSENE	<0.01	MG/L	EPA610	
BENZO(B)FLUORANTHENE	<0.01	MG/L	EPA610	
BENZO(K)FLUORANTHENE	<0.01	MG/L	EPA610	
BENZO(A)PYRENE	<0.01	MG/L	EPA610	
BENZO(A,H)ANTHRACENE	<0.01	MG/L	EPA610	
BENZO(G,H,I)PERYLENE	<0.01	MG/L	EPA610	
INDENO(1,2,3,C,D)PYRENE	<0.01	MG/L	EPA610	

Buck Henderson

BUCK HENDERSON
LABORATORY SUPERVISOR

RESULTS OF THIRD QUARTER MONITORING

JANUARY - MARCH, 1987

100 CONGRESS AVENUE

WATER TREATMENT SYSTEM

LINCOLN PROPERTY COMPANY

15 April 1987

City of Austin
Wastewater Treatment Division
P.O. Box 1088
Austin, TX 78767

Attention: Mr. Jack Gatlin, Industrial Waste Control Section

Dear Mr. Gatlin:

This letter is submitted in compliance with the reporting requirements of the Industrial Waste Discharge Permits issued to Lincoln Property Company by the City of Austin Water and Wastewater Utility (Permit No. 1416861) and the Austin-Travis County Health Department (Permit No. 12169). The following tables summarize the results of third quarter monitoring for ground water discharged from the 100 Congress Avenue site. Tables 1A, 2A, and 3A present analytical results of sampling for January, February, and March, respectively. Tables 1B, 2B, and 3B present flow records for the same months. Discharge to the storm sewer began on March 5, 1987. All ground water discharged to the sanitary and storm sewer systems have received activated carbon pretreatment.

The table below presents effluent parameters specified in the Permits, the maximum values allowed, and the maximum values observed during the monitoring period. All parameters observed were within permit guidelines.

Effluent Parameter	Maximum Value Allowed (mg/L)	Maximum Value Observed (mg/L)
pH	6.0 to 11.0 (pH units)	6.0 to 7.0 (pH units)
Total Organic Carbon (TOC)	20.0	Not detected
Polyaromatic Hydrocarbons (PAH)	2.0	Not detected
Total Toxic Organics (TTO)	2.0	Not detected
Flow	100 gpm	48 gpm
Volume	144,000 gpd	58,000 gpd

600 Congress Avenue Suite 2180 Austin, TX 78701 512 499-8811

Attachment 1 contains all sample analytical results for this monitoring period.

If you have any questions regarding this matter, please do not hesitate to contact me.

Sincerely,

Kevin A. Fleming
Construction Manager
Lincoln Property Company

Attachment (1)

LINCOLN PROPERTY COMPANY

15 April 1987

Austin-Travis County Health Department
Environemtnal Health Services Division
15 Waller Street
Austin, TX 78702

Attention: Mr. Fred Rodgers, Deputy Director

Dear Mr. Rodgers:

This letter is submitted in compliance with the reporting requirements of the Industrial Waste Discharge Permits issued to Lincoln Property Company by the City of Austin Water and Wastewater Utility (Permit No. 1416861) and the Austin-Travis County Health Department (Permit No. 12169). The following tables summarize the results of third quarter monitoring for ground water discharged from the 100 Congress Avenue site. Tables 1A, 2A, and 3A present analytical results of sampling for January, February, and March, respectively. Tables 1B, 2B, and 3B present flow records for the same months. Discharge to the storm sewer began on March 5, 1987. All ground water discharged to the sanitary and storm sewer systems have received activated carbon pretreatment.

The table below presents effluent parameters specified in the Permits, the maximum values allowed, and the maximum values observed during the monitoring period. All parameters observed were within permit guidelines.

Effluent Parameter	Maximum Value Allowed (mg/L)	Maximum Value Observed (mg/L)
pH	6.0 to 11.0 (pH units)	6.0 to 7.0 (pH units)
Total Organic Carbon (TOC)	20.0	6.0
Polyaromatic Hydrocarbons (PAH), Effluent	2.0	Not detected
Total Toxic Organics (TTO)	2.0	Not detected
Flow	100 gpm	48 gpm
Volume	144,000 gpd	58,000 gpd

600 Congress Avenue Suite 2180 Austin, TX 78701 512 499-8811

Attachment 1 contains all sample analytical results for this monitoring period.

If you have any questions regarding this matter, please do not hesitate to contact me.

Sincerely,

Kevin A. Fleming
Construction Manager
Lincoln Property Company

Attachment (1)

TABLE 1A. MONTHLY DATA FOR JANUARY 1987-100 CONGRESS AVENUE WATER TREATMENT

Day	Amount Treated (gal)	pH	Effluent TOC (mg/L)[1]	Additional Sampling Location[2]	Additional Sampling Results (TOC in mg/L unless otherwise indicated)
1	30,250*				
2	24,965*	6	2.0	Sump	6.0
				Frac Tank	4.0
				Between Columns	3.0
3	24,965*				
4	24,965*				
5	17,100	6	3.0		
6	15,600				
7	18,700				
8	2,175*				
9	2,175*				
10	2,175*				
11	2,175*				
12	39,650*	6	4.0	Sump	5.0
				Frac Tank	5.0
13	39,650*				
14	53,200	6	3.0		
15	33,100	5**	4.0		
16	51,500	5**	5.0	Sump	4.0
				Frac Tank	5.0
				Between Columns	10.0
17	51,500*				
18	51,500*				
19	30,000	6	3.0		
20	15,400	6	2.0		
21	32,900	6	3.0		
22	58,000	6	<1.0		
23	44,070*	5**	<1.0	Sump	3.0
				Frac Tank	3.0
				Between Columns	<1.0
24	44,070*				
25	44,070*				
26	47,800	5**	<1.0		
27	20,300	5**	<1.0		
28	4,300	6	1.0		
29	39,000	6	2.0		
30	42,400*	6	2.0	Sump	3.0
				Frac Tank	5.0
				Between Columns	3.0
31	42,400*				

[1] Composite samples are drawn off from the system effluent line.
[2] Grab samples are taken from between the carbon columns and from sump and frac tank.
* Indicates that data was not available for individual days but was averaged over the period.
** pH paper with a range of 2.0 to 6.0 was being used during this time; suspected misinterpretation of results in the field.

TABLE 1B. SUMMARY OF FLOW RECORD FOR JANUARY 1987

Initial meter reading = 2,085,350 gallons (1 January)

Final meter reading = 3,035,405 gallons (31 January)

Total volume of water treated = 950,055 gallons
Period of treatment = 31 days

1. Monthly average of daily flows = $\frac{\text{Total volume treated}}{\text{No. of days}}$

$$= \frac{950{,}055 \text{ gal}}{31 \text{ days}} = 30{,}647 \text{ gpd}$$

2. Monthly peak daily flow (largest vol. treated in a single day)

= 58,000 gpd

3. Monthly peak daily flow rate = 34 gpm

TABLE 2A. MONTHLY DATA FOR FEBRUARY 1987—100 CONGRESS AVENUE WATER TREATMENT

Day	Amount Treated (gal)	pH	Effluent TOC (mg/L)[1]	Additional Sampling Location[2]	Additional Sampling Results (TOC in mg/L unless otherwise indicated)
1	42,400*				
2	34,500	6	3.0		
3	7,400	6	3.0		
4	17,600	6	3.0		
5	9,100	6	2.0		
6	45,500*	6	2.0	Sump	4.0
				Frac Tank	4.0
				Between Columns	3.0
7	45,500*				
8	45,500*				
9	52,500	6	1.0		
10	26,600	6	1.0		
11	49,200	6	2.0		
12	29,800	6	2.0		
13	34,930*	6		Sump	4.0
				Frac Tank	4.0
				Between Columns	1.0
14	34,930*				
15	34,930*				
16	22,500	6	<1.0		
17	41,500	6	1.0		
18	11,400	6	1.0		
19	39,800	6	2.0		
20	28,200*	6	1.0	Sump	3.0
				Frac Tank	4.0
				Between Columns	3.0
21	28,200*				
22	28,200*				
23	36,940	6	2.0		
24	28,300	6	2.0		
25	35,900	6	3.0		
26	30,600	6	3.0		
27	30,600*	6	2.0	Sump	16.0
				Frac Tank	3.0
				Between Columns	8.0
28	30,600*				

[1] Composite samples are drawn off from the system effluent line.
[2] Grab samples are taken from between the carbon columns and from sump and frac tank.
* Indicates that data was not available for individual days but was averaged over the period.

TABLE 2B. SUMMARY OF FLOW RECORD FOR FEBRUARY 1987

Initial meter reading = 3,035,405 gallons (1 February)

Final meter reading = 3,938,595 gallons (28 February)

Total volume of water treated = 903,190 gallons
Period of treatment = 28 days

1. Monthly average of daily flows $= \frac{\text{Total vol. treated}}{\text{No. of days}}$

$= \frac{903{,}190 \text{ gal}}{28 \text{ days}} = 32{,}257 \text{ gpd}$

2. Monthly peak daily flow (largest vol. treated in a single day)

= 52,500 gpd

3. Monthly peak daily flow rate = 36 gpm

TABLE 3A. MONTHLY DATA FOR MARCH 1987—100 CONGRESS AVENUE WATER TREATMENT

Day	Amount Treated (gal)	pH	Effluent TOC (mg/L)[1]	Additional Sampling: Location[2]	Additional Sampling: Results (TOC in mg/L unless otherwise indicated)
1	30,600*				
2	31,400	6	3.0		
3	32,200	6	2.0		
4	25,300	6	2.0		
5**	23,900	6	2.0		
6	31,000*	6	3.0	Sump	46.0
				Frac Tank	5.0
7	31,000*				
8	31,000*				
9	24,500	6	3.0		
10	26,300	6	4.0		
11	27,200	6	3.0		
12	12,400	6	3.0		
13	34,965*	7	3.0	Sump	57.0
				Frac Tank	14.0
				Between Columns	5.0
14	35,965*				
15	34,965*				
16	41,800	6	3.0		
17	22,700	6	6.0		
18	34,000	6	3.0		
19	36,200	7	3.0		
20	31,300*	6	4.0	Sump	265.0
				Frac Tank	7.0
				Between Columns	3.0
21	31,300*				
22	31,300*				
23	40,400	6	4.0	Sump	PAH[3] = 0.08 mg/L, TTO[4] = 0.28 mg/L
				Frac Tank	PAH, TTO not detected
				Between Columns	PAH, TTO not detected
24	44,300	6	1.0		
25	16,700	6	3.0		
26	47,400	6	3.0		
27	29,970*	6	3.0	Sump	22.0
				Frac Tank	15.0
				Between Columns	14.0
28	29,970*				
29	29,970*				

(Continued)

TABLE 3A. MONTHLY DATA FOR MARCH 1987—100 CONGRESS AVENUE WATER TREATMENT (cont.)

Day	Amount Treated (gal)	pH	Effluent TOC (mg/L)[1]	Additional Sampling Location[2]	Additional Sampling Results (TOC in mg/L unless otherwise indicated)
30	45,000	6	2.0		
31	51,900	6	<1.0		

[1]Composite samples are drawn off from the system effluent line.
[2]Grab samples are taken from between the carbon columns and from sump and frac tank.
[3]Analysis for Polyaromatic Hydrocarbons (PAH) by EPA Method 610 is performed every 3 months and when effluent TOC limit of 20 mg/L is exceeded.
[4]Analysis for Total Toxic Organics (TTO) by EPA Methods 601, 602, and 610 is performed every 3 months as specified in permit.
*Indicates that data was not available for individual days but was averaged over the period.
**Begin discharge to storm sewer.

TABLE 3B. SUMMARY OF FLOW RECORD FOR MARCH 1987

Initial meter reading = 3,938,595 gallons (1 March)

Final meter reading = 4,934,500 gallons (31 March)

Total volume of water treated = 995,905 gallons
Period of treatment = 31 days

1. Monthly average of daily flows = $\frac{\text{Total vol. treated}}{\text{No. of days}}$

$$= \frac{995{,}905 \text{ gal}}{31 \text{ days}} = 32{,}126 \text{ gpd}$$

2. Monthly peak daily flow (largest vol. treated in a single day)

= 51,900 gpd

3. Monthly peak daily flow rate = 48 gpm

ATTACHMENT 1

Analytical Results

WPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 7903B SAMPLE TYPE: MISC DATE REPORTED: 04/08/87
FACILITY: LPC ACCT NO: DATE RECEIVED: 03/23/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 03/23/87
AUSTIN TX 78701 SAMPLE TIME: 10:45
LOCATION ID: 7903B NAME: EFFLUENT

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
ACENAPHTHENE	<0.020	MG/L	EPA610	
ACENAPHTHYLENE	<0.040	MG/L	EPA610	
ANTHRACENE	<0.002	MG/L	EPA610	
BENZO(A)ANTHRACENE	<0.002	MG/L	EPA610	
BENZO(A)PYRENE	<0.002	MG/L	EPA610	
BENZO(B)FLUORANTHENE	<0.004	MG/L	EPA610	
BENZO(GHI)PERYLENE	<0.004	MG/L	EPA610	
BENZO(K)FLUORANTHENE	<0.002	MG/L	EPA610	
CHRYSENE	<0.002	MG/L	EPA610	
DIBENZO(A,H)ANTHRACENE	<0.004	MG/L	EPA610	
FLUORANTHENE	<0.004	MG/L	EPA610	
FLUORENE	<0.004	MG/L	EPA610	
INDENO (1,2,3,C,D)PYRENE	<0.002	MG/L	EPA610	
NAPHTHALENE	<0.020	MG/L	EPA610	
PHENANTHRENE	<0.002	MG/L	EPA610	
PYRENE	<0.002	MG/L	EPA610	
----EPA 602----REPORTED 4-9-87	----------	------	------	
BENZENE	NONE DET.	UG/L	EPA624	
CHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,3-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,4-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
ETHYLBENZENE	NONE DET.	UG/L	EPA624	
TOLUENE	NONE DET.	UG/L	EPA624	
----EPA 601----REPORTED 4-9-87	----------	----------	------	
BROMODICHLOROMETHANE	NONE DET.	UG/L	EPA624	
BROMOFORM	NONE DET.	UG/L	EPA624	
BROMOMETHANE	NONE DET.	UG/L	EPA624	
CARBON TETRACHLORIDE	NONE DET.	UG/L	EPA624	
CHLOROBENZENE	NONE DET.	UG/L	EPA624	
CHLOROETHANE	NONE DET.	UG/L	EPA624	
2-CHLOROETHYLVINYL ETHER	NONE DET.	UG/L	EPA624	
CHLOROFORM	NONE DET.	UG/L	EPA624	
CHLOROMETHANE	NONE DET.	UG/L	EPA624	
DIBROMOCHLOROMETHANE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,3-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,4-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
DICHLORODIFLOROMETHANE	NONE DET.	UG/L	EPA624	
1,1-DICHLOROETHANE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROETHANE	NONE DET.	UG/L	EPA624	

WPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 7903B SAMPLE TYPE: MISC DATE REPORTED: 04/08/87
FACILITY: LPC ACCT NO: DATE RECEIVED: 03/23/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 03/23/87
AUSTIN TX 78701 SAMPLE TIME: 10:45
LOCATION ID: 7903B NAME: EFFLUENT

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
1,1-DICHLOROETHENE	NONE DET.	UG/L	EPA624	
TRANS-1,2-DICHLOROETHENE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROPROPANE	NONE DET.	UG/L	EPA624	
CIS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA624	
TRANS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA624	
METHYLENE CHLORIDE	NONE DET.	UG/L	EPA624	
1,1,2,2-TETRACHLOROETHANE	NONE DET.	UG/L	EPA624	
TETRACHLOROETHENE	NONE DET.	UG/L	EPA624	
1,1,1-TRICHLOROETHANE	NONE DET.	UG/L	EPA624	
1,1,2-TRICHLOROETHANE	NONE DET.	UG/L	EPA624	
TRICHLOROETHENE	NONE DET.	UG/L	EPA624	
TRICHLOROFLUOROMETHANE	NONE DET.	UG/L	EPA624	
VINYL CHLORIDE	NONE DET.	UG/L	EPA624	

Buck Henderson

BUCK HENDERSON
LABORATORY SUPERVISOR

WPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 7905B SAMPLE TYPE: MISC DATE REPORTED: 04/08/87
FACILITY: LPC ACCT NO: DATE RECEIVED: 03/23/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 03/23/87
AUSTIN TX 78701 SAMPLE TIME: 10:15
LOCATION ID: 7905B NAME: SUMP

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
ACENAPHTHENE	0.028	MG/L	EPA610	
ACENAPHTHYLENE	<0.040	MG/L	EPA610	
ANTHRACENE	0.004	MG/L	EPA610	
BENZO(A)ANTHRACENE	0.002	MG/L	EPA610	
BENZO(A)PYRENE	<0.002	MG/L	EPA610	
BENZO(B)FLUORANTHENE	<0.004	MG/L	EPA610	
BENZO(GHI)PERYLENE	<0.004	MG/L	EPA610	
BENZO(K)FLUORANTHENE	<0.002	MG/L	EPA610	
CHRYSENE	0.002	MG/L	EPA610	
DIBENZO(A,H)ANTHRACENE	<0.004	MG/L	EPA610	
FLUORANTHENE	0.011	MG/L	EPA610	
FLUORENE	0.014	MG/L	EPA610	
INDENO(1,2,3,C,D)PYRENE	<0.002	MG/L	EPA610	
NAPHTHALENE	<0.020	MG/L	EPA610	
PHENANTHRENE	0.013	MG/L	EPA610	
PYRENE	0.008	MG/L	EPA610	
----EPA 602----REPORTED 4-9-87	----------	----------	------	
BENZENE	62.18	UG/L	EPA624	
CHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,3-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,4-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
ETHYLBENZENE	60.08	UG/L	EPA624	
TOLUENE	22.67	UG/L	EPA624	
----EPA 601----REPORTED 4-9-87	----------	----------	------	
BROMODICHLOROMETHANE	NONE DET.	UG/L	EPA624	
BROMOFORM	NONE DET.	UG/L	EPA624	
BROMOMETHANE	NONE DET.	UG/L	EPA624	
CARBON TETRACHLORIDE	NONE DET.	UG/L	EPA624	
CHLOROBENZENE	NONE DET.	UG/L	EPA624	
CHLOROETHANE	NONE DET.	UG/L	EPA624	
2-CHLOROETHYLVINYL ETHER	NONE DET.	UG/L	EPA624	
CHLOROFORM	62.29	UG/L	EPA624	
CHLOROMETHANE	NONE DET.	UG/L	EPA624	
DIBROMOCHLOROMETHANE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,3-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,4-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
DICHLORODIFLOROMETHANE	NONE DET.	UG/L	EPA624	
1,1-DICHLOROETHANE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROETHANE	NONE DET.	UG/L	EPA624	

W PL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 7905B SAMPLE TYPE: MISC DATE REPORTED: 04/08/87
FACILITY: LPC ACCT NO: DATE RECEIVED: 03/23/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 03/23/87
AUSTIN TX 78701 SAMPLE TIME: 10:15
LOCATION ID: 7905B NAME: SUMP

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
1,1-DICHLOROETHENE	NONE DET.	UG/L	EPA624	
TRANS-1,2-DICHLOROETHENE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROPROPANE	NONE DET.	UG/L	EPA624	
CIS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA624	
TRANS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA624	
METHYLENE CHLORIDE	NONE DET.	UG/L	EPA624	
1,1,2,2-TETRACHLOROETHANE	NONE DET.	UG/L	EPA624	
TETRACHLOROETHENE	NONE DET.	UG/L	EPA624	
1,1,1-TRICHLOROETHANE	NONE DET.	UG/L	EPA624	
1,1,2-TRICHLOROETHANE	NONE DET.	UG/L	EPA624	
TRICHLOROETHENE	NONE DET.	UG/L	EPA624	
TRICHLOROFLUOROMETHANE	NONE DET.	UG/L	EPA624	
VINYL CHLORIDE	NONE DET.	UG/L	EPA624	

Buck Henderson

BUCK HENDERSON
LABORATORY SUPERVISOR

W FL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 7904B SAMPLE TYPE: MISC DATE REPORTED: 04/08/87
FACILITY: LPC ACCT NO: DATE RECEIVED: 03/23/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 03/23/87
AUSTIN TX 78701 SAMPLE TIME: 10:30
LOCATION ID: 7904B NAME: BETWEEN COLUMNS

PARAMETER	RESULT	UNIT	METHOD	COMMENT
ACENAPHTHENE	<0.020	MG/L	EPA610	
ACENAPHTHYLENE	<0.040	MG/L	EPA610	
ANTHRACENE	<0.002	MG/L	EPA610	
BENZO(A)ANTHRACENE	<0.002	MG/L	EPA610	
BENZO(A)PYRENE	<0.002	MG/L	EPA610	
BENZO(B)FLUORANTHENE	<0.004	MG/L	EPA610	
BENZO(GHI)PERYLENE	<0.004	MG/L	EPA610	
BENZO(K)FLUORANTHENE	<0.002	MG/L	EPA610	
CHRYSENE	<0.002	MG/L	EPA610	
DIBENZO(A,H)ANTHRACENE	<0.004	MG/L	EPA610	
FLUORANTHENE	<0.004	MG/L	EPA610	
FLUORENE	<0.004	MG/L	EPA610	
INDENO(1,2,3,C,D)PYRENE	<0.002	MG/L	EPA610	
NAPHTHALENE	<0.020	MG/L	EPA610	
PHENANTHRENE	<0.002	MG/L	EPA610	
PYRENE	<0.002	MG/L	EPA610	
----EPA 602----REPORTED 4-9-87	----------	----------	------	
BENZENE	NONE DET.	UG/L	EPA624	
CHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,3-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,4-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
ETHYLBENZENE	NONE DET.	UG/L	EPA624	
TOLUENE	NONE DET.	UG/L	EPA624	
----EPA 601----REPORTED 4-9-87	----------	----------	------	
BROMODICHLOROMETHANE	NONE DET.	UG/L	EPA624	
BROMOFORM	NONE DET.	UG/L	EPA624	
BROMOMETHANE	NONE DET.	UG/L	EPA624	
CARBON TETRACHLORIDE	NONE DET.	UG/L	EPA624	
CHLOROBENZENE	NONE DET.	UG/L	EPA624	
CHLOROETHANE	NONE DET.	UG/L	EPA624	
2-CHLOROETHYLVINYL ETHER	NONE DET.	UG/L	EPA624	
CHLOROFORM	NONE DET.	UG/L	EPA624	
CHLOROMETHANE	NONE DET.	UG/L	EPA624	
DIBROMOCHLOROMETHANE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,3-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
1,4-DICHLOROBENZENE	NONE DET.	UG/L	EPA624	
DICHLORODIFLOROMETHANE	NONE DET.	UG/L	EPA624	
1,1-DICHLOROETHANE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROETHANE	NONE DET.	UG/L	EPA624	

RPL055A

ENVIRONMENTAL LABORATORY ANALYSIS
MISCELLANEOUS ANALYSES

LAB ID: 7904B SAMPLE TYPE: MISC DATE REPORTED: 04/08/87
FACILITY: LPC ACCT NO: DATE RECEIVED: 03/23/87
600 CONGRESS AVE, SUITE 2180 SAMPLE DATE: 03/23/87
AUSTIN TX 78701 SAMPLE TIME: 10:30
LOCATION ID: 7904B NAME: BETWEEN COLUMNS

PARAMETER	RESULTS	UNITS	METHOD	COMMENTS
1,1-DICHLOROETHENE	NONE DET.	UG/L	EPA624	
TRANS-1,2-DICHLOROETHENE	NONE DET.	UG/L	EPA624	
1,2-DICHLOROPROPANE	NONE DET.	UG/L	EPA624	
CIS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA624	
TRANS-1,3-DICHLOROPROPENE	NONE DET.	UG/L	EPA624	
METHYLENE CHLORIDE	NONE DET.	UG/L	EPA624	
1,1,2,2-TETRACHLOROETHANE	NONE DET.	UG/L	EPA624	
TETRACHLOROETHENE	NONE DET.	UG/L	EPA624	
1,1,1-TRICHLOROETHANE	NONE DET.	UG/L	EPA624	
1,1,2-TRICHLOROETHANE	NONE DET.	UG/L	EPA624	
TRICHLOROETHENE	NONE DET.	UG/L	EPA624	
TRICHLOROFLUOROMETHANE	NONE DET.	UG/L	EPA624	
VINYL CHLORIDE	NONE DET.	UG/L	EPA624	

Buck Henderson

BUCK HENDERSON
LABORATORY SUPERVISOR