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***Community Air Toxics  
Monitoring Network Report  
October 1993 — December 1994***



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Monitoring Operations Division

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TEXAS NATURAL RESOURCE CONSERVATION COMMISSION





***Community Air Toxics  
Monitoring Network Report  
October 1993 — December 1994***

Prepared by  
Monitoring Operations Division  
(512)239-1716

AS-97  
December 1995

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October 1993 — December 1994

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MC 165

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## Project Background

The Community Air Toxics Monitoring Network, a program mandated by the Texas State Legislature, was established in 1992. The legislative directive came in response to stricter pollution limits required in the 1990 Federal Clean Air Act Amendments and growing public concern over air quality. (Texas is home to 60 percent of the nation's petrochemical production and 25 percent of its refining capacity.) The network is designed primarily to collect information on volatile organic air pollutants that can result in long-term health effects.

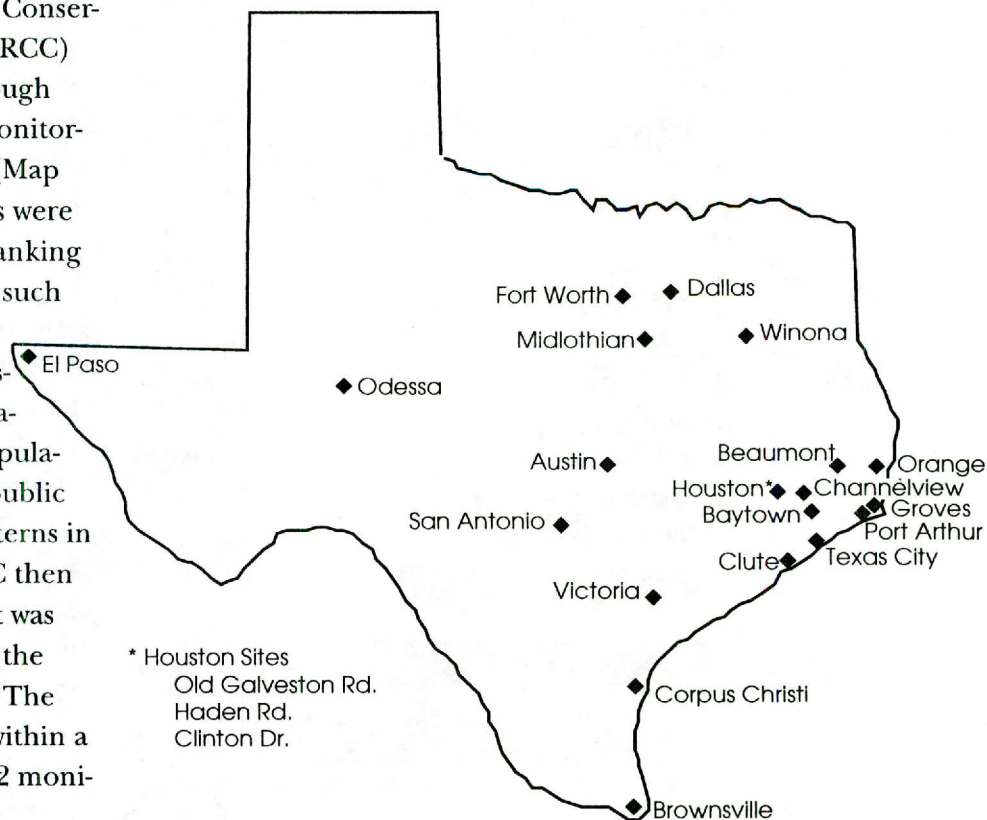
The data analyzed in this report were collected by the Texas Natural Resource Conservation Commission (TNRCC) from October 1993 through December 1994 at 22 monitoring sites in 15 counties (Map 1). Monitoring locations were selected based upon a ranking process that considered such information as the magnitude of pollution emissions within a 6.2-mile radius, wind direction, population density, degree of public concern, and traffic patterns in the vicinity. The TNRCC then had to identify land that was available for location of the monitoring equipment. The total population living within a two-mile radius of the 22 monitoring sites in 1990 was 422,369, according to the last U.S. Census.

Air samples were collected for 24 hours every sixth day. Samples were analyzed for 71 volatile organic compounds (VOCs) at the TNRCC's Austin laboratory using gas chromatography and ion trap detection.

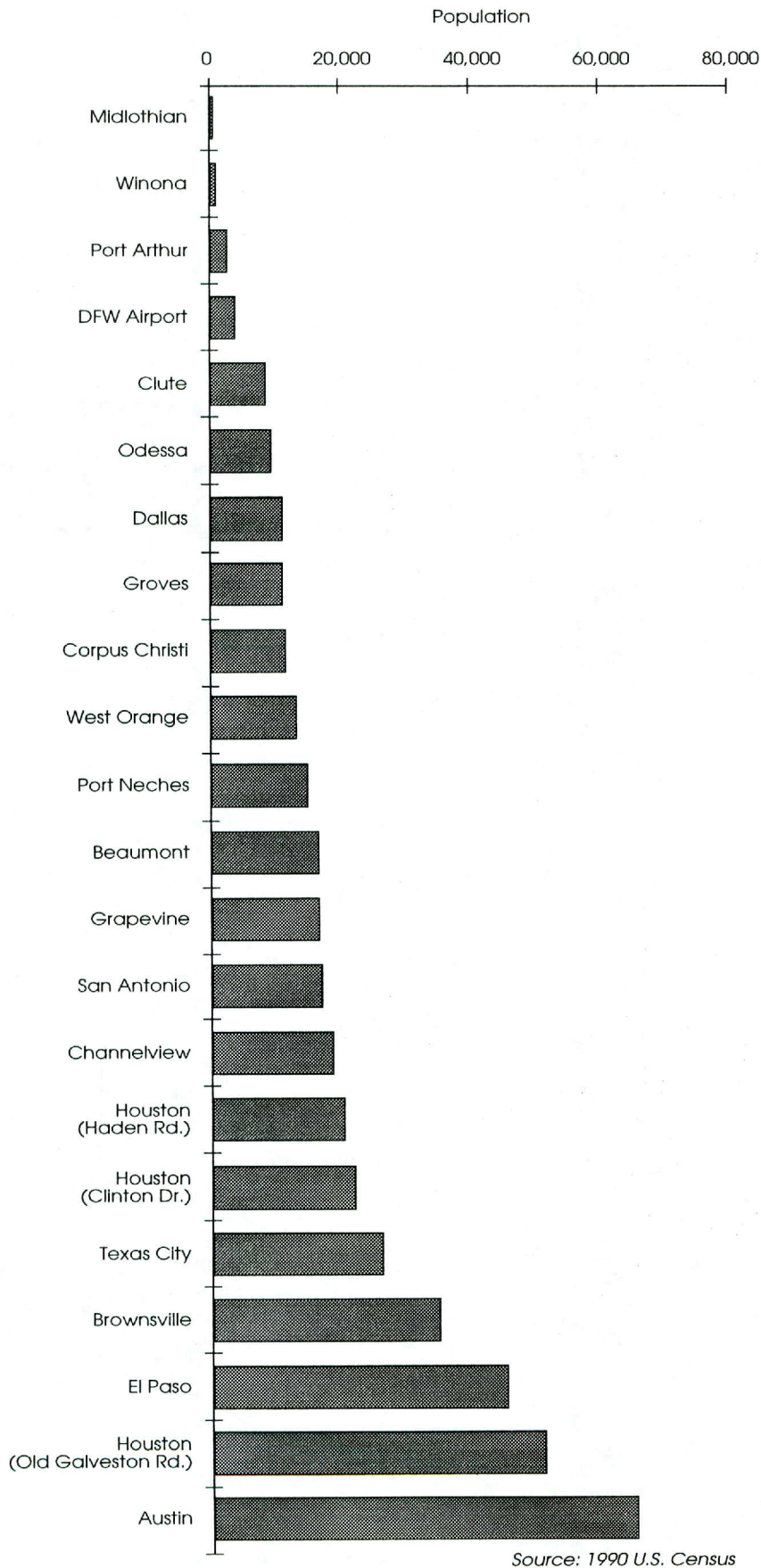
Plans call for the network to be expanded to a total of 50 sites and to increase the number of compounds measured.

Data analysis on the first 12 months of data collected by the network is included in *Community Air Toxics Monitoring Program Report, October 1992 - September 1993, AS-27*, which was published by the TNRCC in May 1994.

## Introduction and Summary



Map 1. TNRCC Community Air Toxics Monitoring Network Sites



**Figure 1. Number of People Living within a 2-Mile Radius of TNRCC Air Toxics Monitoring Sites**

## Summary of Data Analysis and Effects Evaluation

Analysis of air samples collected by the network from October 1993 to December 1994 found that five of the 71 compounds monitored — benzene, 1,3-butadiene, 1,2-dibromoethane, 1,2-dichloroethane, and chloroform — were measured above their TNRCC effects screening levels.

Although there are hundreds of contaminants found in urban air, only six have national standards set by the U.S. Environmental Protection Agency (EPA). The EPA has not established standards for ambient concentrations of VOCs. Therefore, the TNRCC has developed guideline concentrations, called effects screening levels. Effects screening levels are guideline concentrations used to evaluate ambient air concentrations of chemicals, and are based on a chemical's potential to cause adverse health effects, odor nuisances, vegetation effects, or materials damage. Health-based effects screening levels are set to protect the general public, including sensitive subgroups such as children, the elderly, or people with existing respiratory conditions. If an air concentration of a contaminant is below the screening level, adverse effects are not expected. If an air concentration of a contaminant is above the screening level, it is not indicative that an adverse



effect will occur, but rather that further evaluation is warranted.

Benzene was the only compound measured that was consistently found above its annual and 24-hour TNRCC screening levels. In 1994, the average benzene concentrations measured exceeded the annual benzene screening level of 1 ppbv at eight of the 22 monitoring sites: Haden Road, Clinton Drive, and Old Galveston Road in Houston; El Paso, Odessa, Port Arthur, Texas City, and Channelview. The TNRCC's Toxicology and Risk Assessment (TARA) Section staff determined that these measured levels of benzene do not represent a significant increase in risk above the annual screening level. While these levels do not significantly increase the risk of adverse health effects associated with benzene exposure, the TNRCC considers it important that benzene levels do not increase.

Measured concentrations of benzene exceeded its 24-hour screening level at nine sites: Odessa, nine exceedances; El Paso, eight; Houston (Clinton Drive), six; Houston (Haden Road), five; Port Arthur, three; Texas City, two; and Groves, Corpus Christi, and Houston (Old Galveston Road), one exceedance each. The TNRCC's

TARA Section determined that the maximum 24-hour concentrations of benzene were less than levels that would result in acute health effects.

Measured concentrations of 1,3-butadiene were higher than its 24-hour screening level at three monitoring sites: Odessa, one exceedance; Texas City, one; and Port Neches, two. Measured concentrations of 1,2-dibromoethane also exceeded its 24-hour screening level in Winona three times. Measured concentrations of 1,2-dichloroethane were above its 24-hour screening level at Houston (Haden Road) on three occasions. Chloroform concentrations exceeded its 24-hour screening level at the same site on one occasion.

The TNRCC's TARA Section determined that 24-hour measured concentrations of 1,3-butadiene, 1,2-dibromoethane, 1,2-dichloroethane, and chloroform were less than levels that would result in acute health effects. ♦



## Austin Site Travis County

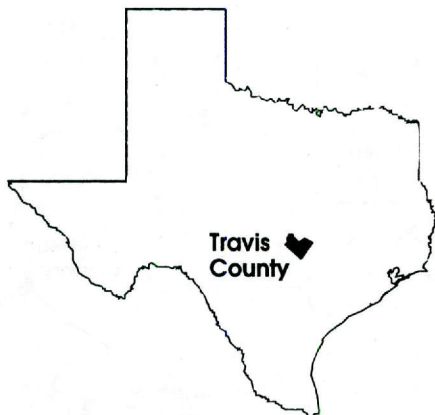


# Monitoring Sites

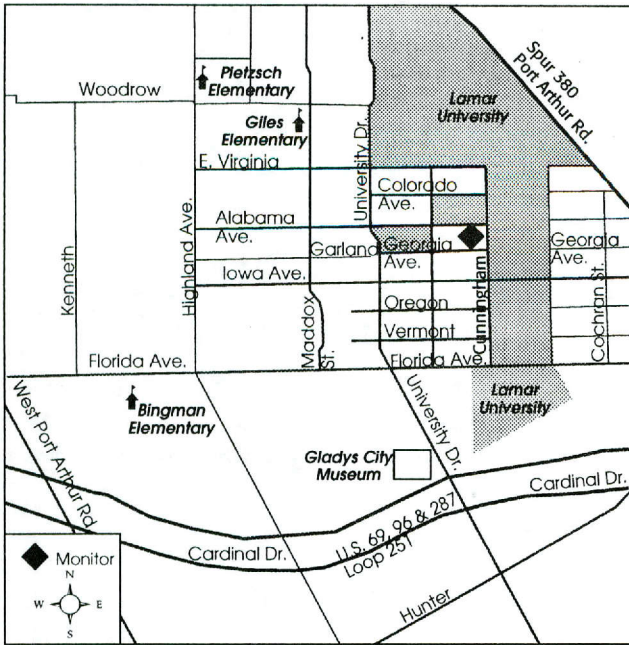
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Map 2

This site is located in downtown Austin at the corner of West Cesar Chavez and Colorado streets. Land use is primarily commercial to the north, east, and west of the site. Town Lake lies south of the site across Cesar Chavez. Mobile emissions are the primary nearby sources of airborne toxics. The site began operating on July 31, 1994. Prevailing winds are from the south. Although there are no residences in the immediate vicinity, according to the latest U.S. Census, 65,887 people lived within a two-mile radius of the site in 1990. This includes the large University of Texas student population living nearby.



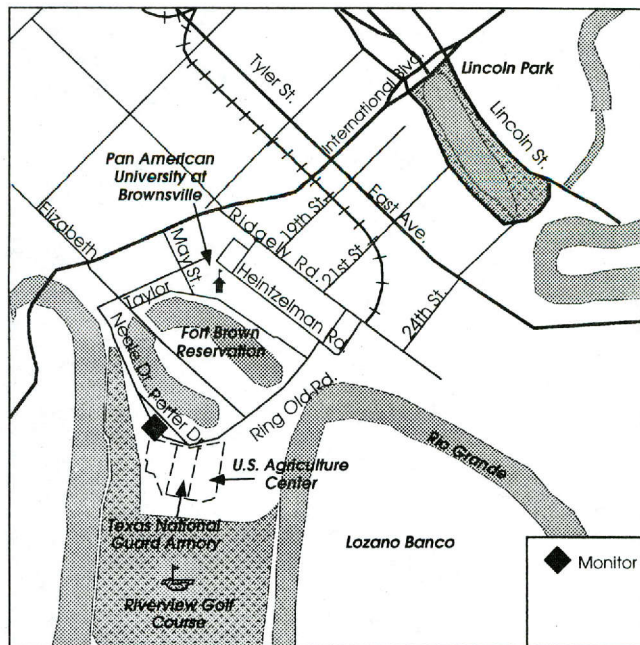
**Beaumont Site**  
**Jefferson County**



**Map 3**

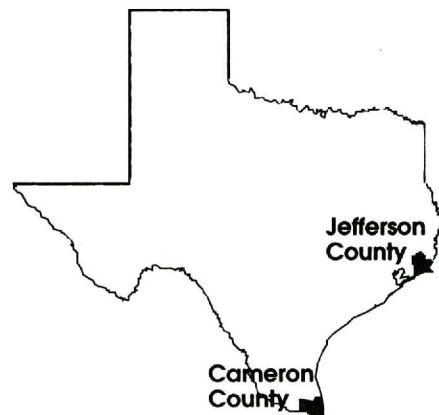
This site is located at the intersection of Georgia Avenue and Cunningham Street in a parking lot south of Lamar University. The site is in a residential neighborhood with single-family and multifamily housing. Mobile emissions are the primary nearby sources of airborne toxics. Oil refining is a major industry in the Beaumont area; however, this site is not located to measure industrial emissions. It started operating on Nov. 19, 1992. Prevailing winds are from the south. According to the latest U.S. Census, 16,800 people lived within a two-mile radius of the site in 1990.

**Brownsville Site**  
**Cameron County**



**Map 4**

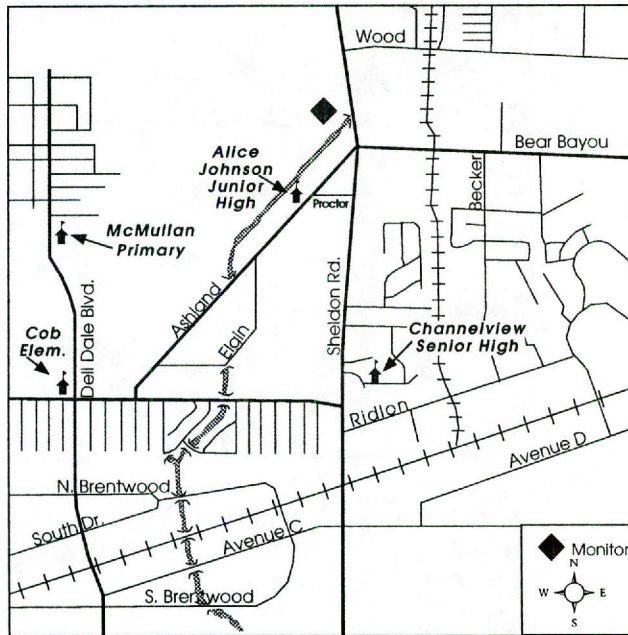
This site is at 344 Porter Drive on the grounds of the National Guard Armory. The site is just south of the University of Texas — Pan American campus, just southeast of Gateway International Bridge between Brownsville and Matamoros, Mexico, and just west of downtown Brownsville. It started operating on Sept. 4, 1993. Prevailing winds are from the southeast. According to the latest U.S. Census, 35,165 people lived within a two-mile radius of the site in 1990.





## Channelview Site

### Harris County

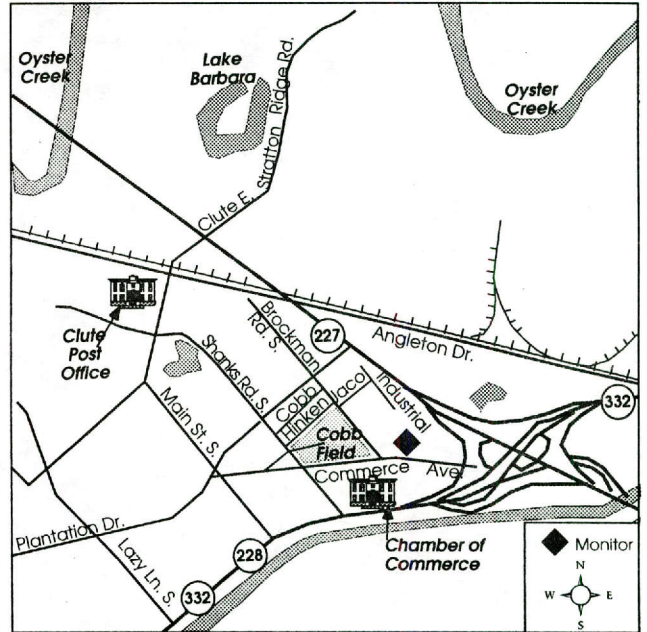


Map 5

This site is at 1401 Sheldon Road, one-quarter of a mile northeast of Alice B. Johnson Junior High School near the maintenance building for the Channelview Independent School District. It is in a highly populated area. The area immediately surrounding it is open with grass and a few trees. Land use south of the site is primarily single-family residences. A petrochemical company and several other companies operate north of this site. The site began operating on Nov. 20, 1992. Prevailing winds are from the south-southeast. According to the latest U.S. Census, 19,092 people lived within a two-mile radius of the site in 1990.

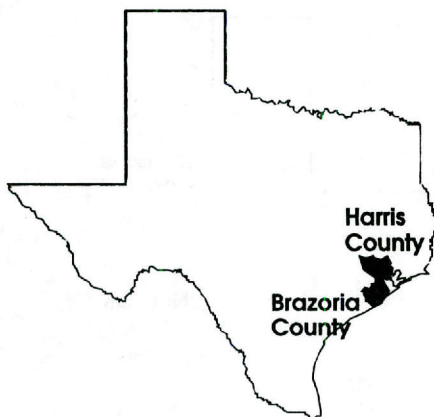
## Clute Site

### Brazoria County

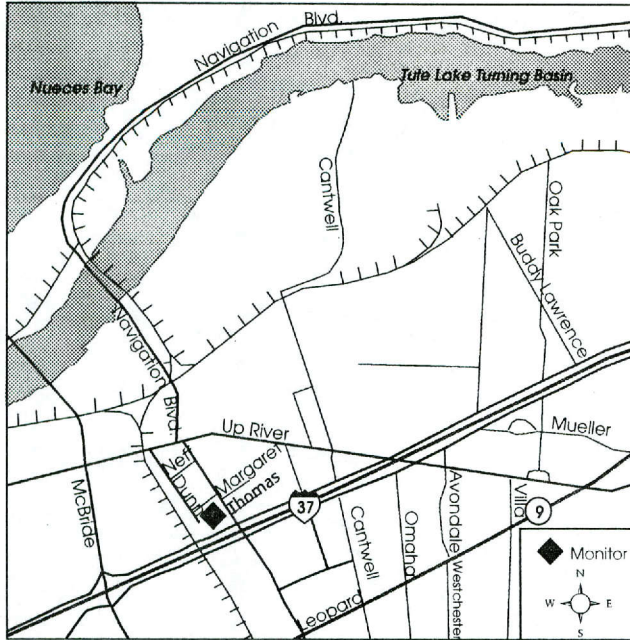


Map 6

This site is at 426 Commerce Avenue near a baseball field. It is just west of the intersection of Texas highways 227, 288, and 332. There are several industrial facilities to the north, south, and southeast of the site. Immediately north of the site is a residential neighborhood. It began operating on Nov. 20, 1992. Prevailing winds are from the southeast. According to the latest U.S. Census, 8,901 people lived within a two-mile radius of the site in 1990.



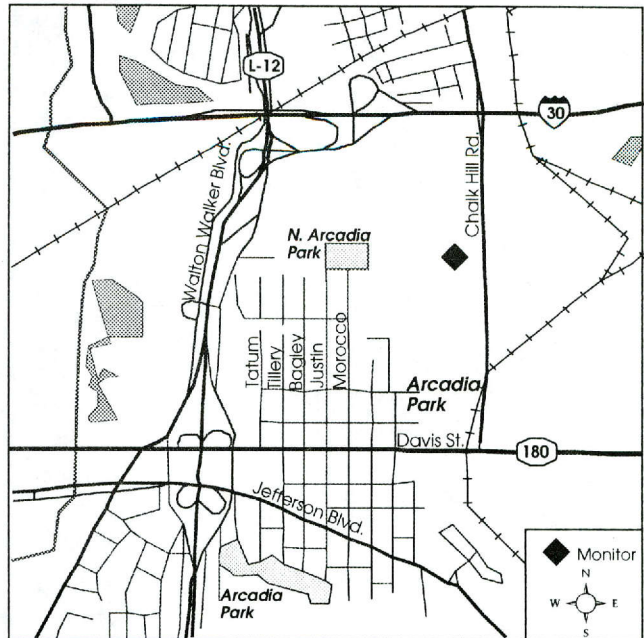
## Corpus Christi Site Nueces County



Map 7

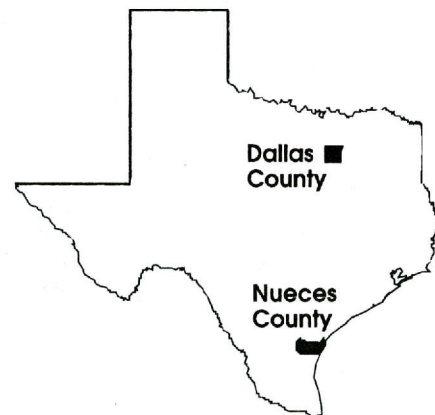
This site, at 1111 Navigation Boulevard, is just north of Interstate Highway 37 on the grounds of the humane society in a highly populated area. Land use near the site is primarily single-family residential and commercial, although industrial facilities are visible to the northwest. Commercial operations near the site include gas stations and motels. One-quarter of a mile north of the site is a refinery, and further to the north is the Intercoastal Waterway. The site began operating on Dec. 20, 1992. Prevailing winds are from the south-southeast. According to the latest U.S. Census, 12,040 people lived within a two-mile radius of the site in 1990.

## Dallas Site Dallas County



Map 8

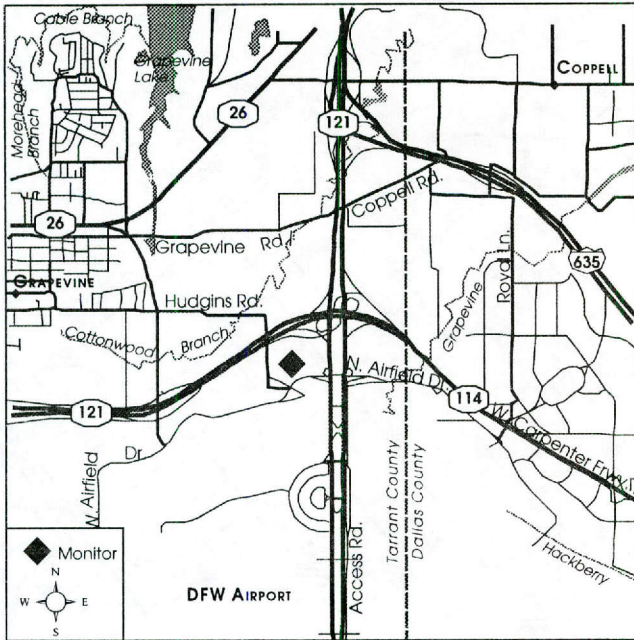
This site, at 1601 Chalk Hill Road, is on a radio tower at the TXI repair facility near the Eagle Ford School District building. It is in west Dallas. The area has mostly mobile sources of air pollution and relatively few industrial emissions. Immediately surrounding the site is an open area with grass and a few trees. Beyond the open area are commercial establishments and major roadways, including Texas Highway 180 and Interstate Highway 30. It started operating on March 2, 1993. Prevailing winds are from the south. According to the latest U.S. Census, 11,486 people lived within a two-mile radius of the site in 1990.





## Dallas-Fort Worth Airport Site

### Tarrant County

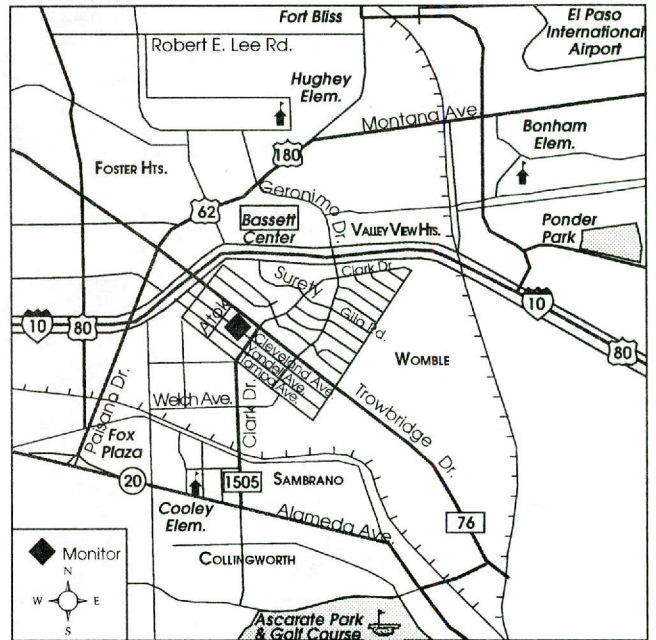


Map 9

This site is located on North Airfield Drive at the Dallas-Fort Worth International Airport. It is at the far north end of the airport just south of Texas Highway 114 and International Parkway intersection near the north parking shuttle. The area is predominantly commercial in all directions. There are no residential areas in the immediate vicinity. Operations began on Aug. 12, 1994. Prevailing winds are from the south. According to the latest U.S. Census, 4,425 people lived within a two-mile radius of the site in 1990.

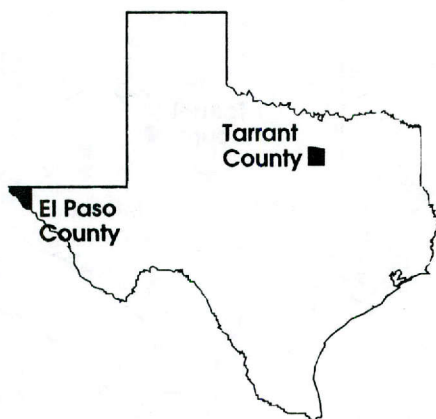
## El Paso Site

### El Paso County



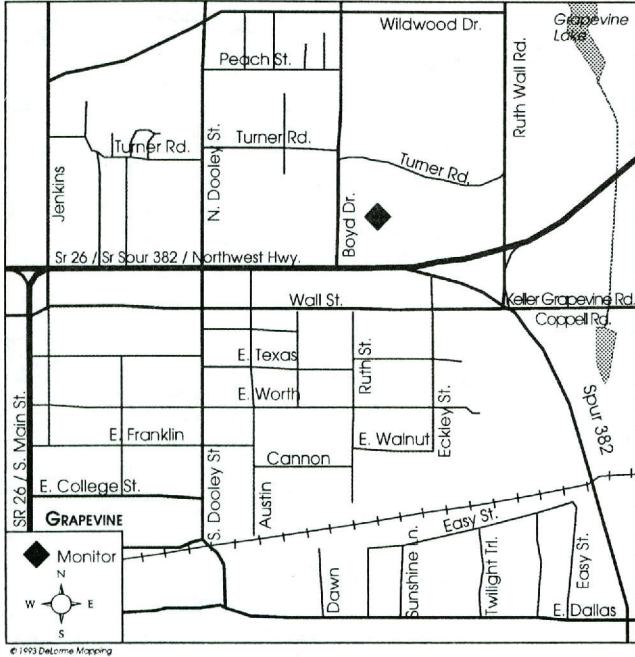
Map 10

This solar-powered site is at the intersection of Clark Drive and Cleveland Avenue south of Interstate Highway 10. The site is on an unpaved lot that contains two city water tanks and a water well. It is in a residential area with primarily single-family homes. There are two refining facilities approximately two blocks east (1,200 meters) from the site. It started operating on April 19, 1993. Prevailing winds are from the north. According to the latest U.S. Census, 45,574 people lived within a two-mile radius of the site in 1990.



# Grapevine Site

## Tarrant County

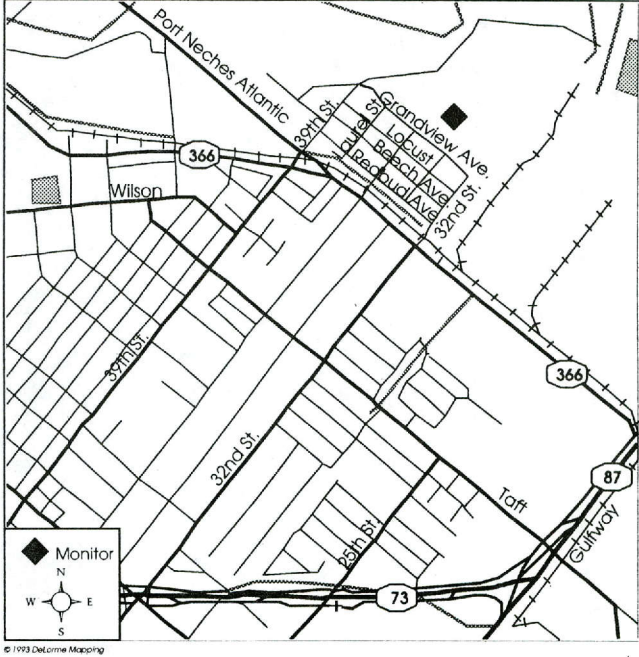


Map 11

This site is at the fire station at 601 Boyd Drive in Grapevine. Residential areas are located to the north and east of the site. Areas to the south and west are primarily commercial. This site began operating on July 1, 1994. Prevailing winds are from the south. According to the latest U.S. Census, 16,925 people lived within a two-mile radius of the site in 1990.

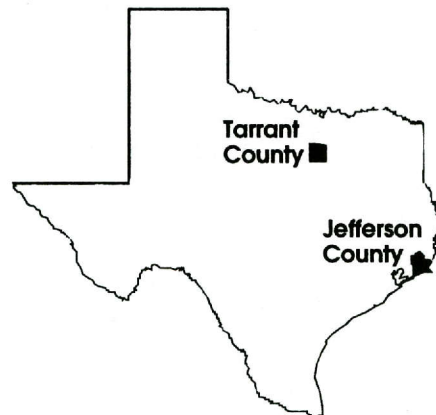
# Groves Site

## Jefferson County



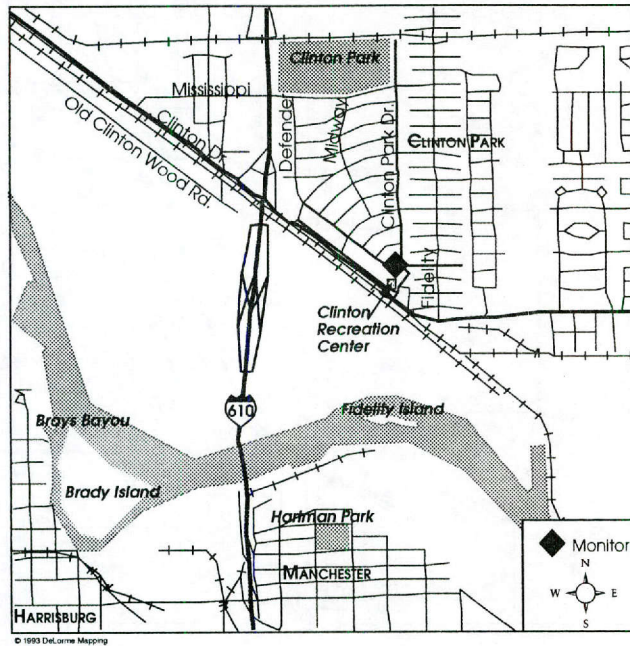
Map 12

This site is on a vacant lot at 3355 Grandview Avenue in a residential area adjacent to a petrochemical refinery. The lot is covered with grass and a few trees. Several houses have been removed from this area in recent months as part of a buyout by the refinery. The site began operating on Sept. 4, 1993. Prevailing winds are from the south. According to the latest U.S. Census, 11,551 people lived within a two-mile radius of the site in 1990.



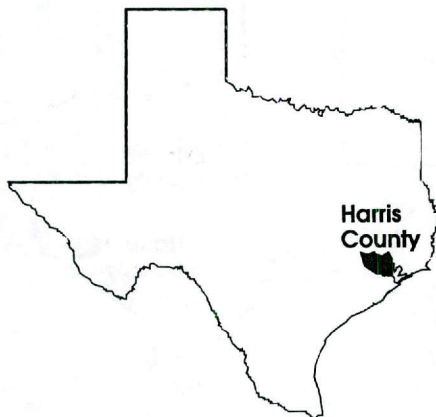


## Houston (Clinton Drive) Site Harris County

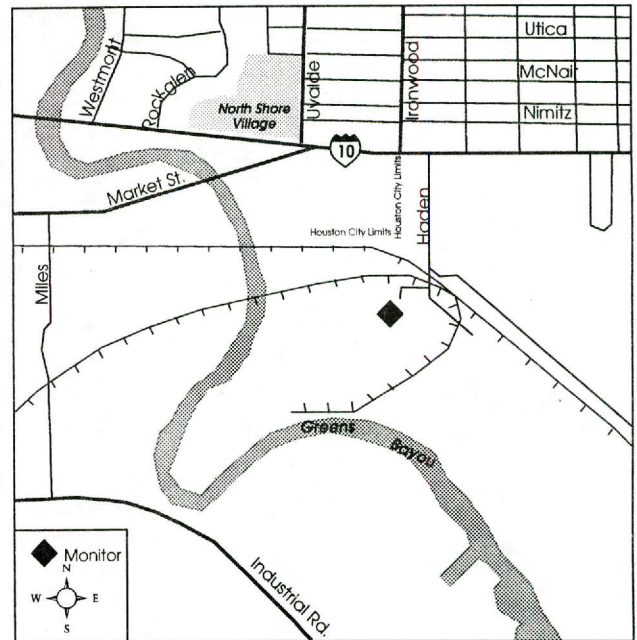


Map 13

This site is at 9525 Clinton Drive in the parking lot of an adult day care center, which is in a highly populated area. South across Clinton Drive are railroad tracks and the Houston Ship Channel. West, north, and east of the site are residential neighborhoods. This site is affected by both industrial sources from the Houston Ship Channel and mobile sources from Clinton Drive. It began operating on Nov. 20, 1992. Prevailing winds are from the south-southeast. According to the latest U.S. Census, 22,214 people lived within a two-mile radius of the site in 1990.



## Houston (Haden Road) Site Harris County



Map 14

This site is at 1504 Haden Road. It is collocated with a site operated by the Houston Regional Monitoring Network (HRM), thus allowing a check for monitor precision. The monitor is less than one mile from a chemical plant, and other chemical and petroleum refining facilities are within five miles of the site. To the west and northwest are shopping and fast food facilities. To the north and east are residential neighborhoods. The site started operating on Dec. 20, 1992. Prevailing winds are from the south-southeast. According to the latest U.S. Census, 20,664 people lived within a two-mile radius of the site in 1990.



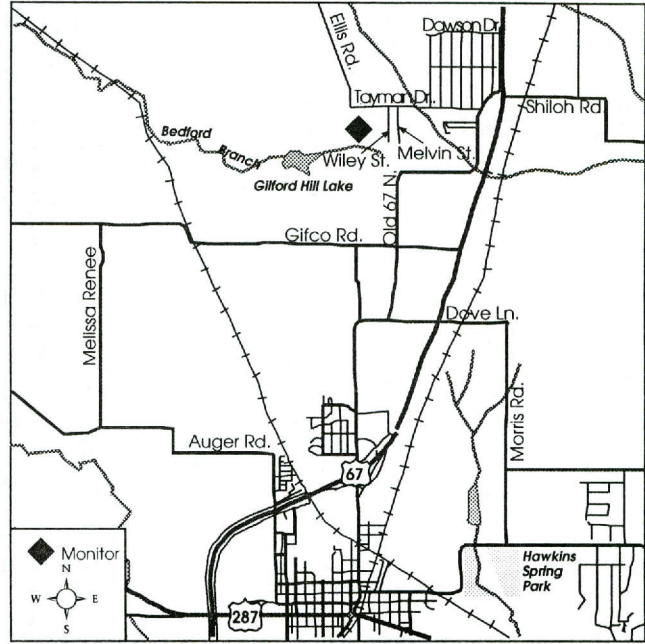
**Houston (Old Galveston Road) Site**  
**Harris County**



**Map 15**

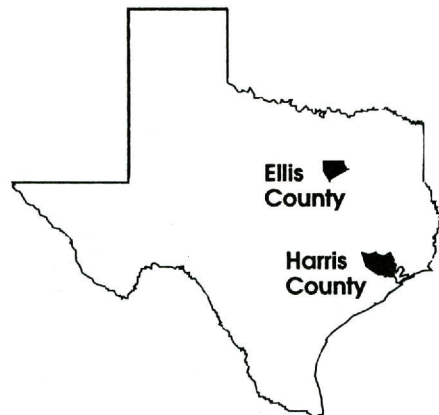
This solar-powered site is at 3100 Old Galveston Road. Several industrial facilities are within two miles of the area, including a waste water treatment plant and chemical and petroleum refining facilities. A large gasoline storage terminal is north of the monitoring site. Residential neighborhoods lie within two miles to the south, southwest, and west of this site. It began operating on Feb. 12, 1993. Prevailing winds are from the south-southeast. According to the latest U.S. Census, 51,729 people lived within a two-mile radius of the site in 1990.

**Midlothian Site**  
**Ellis County**

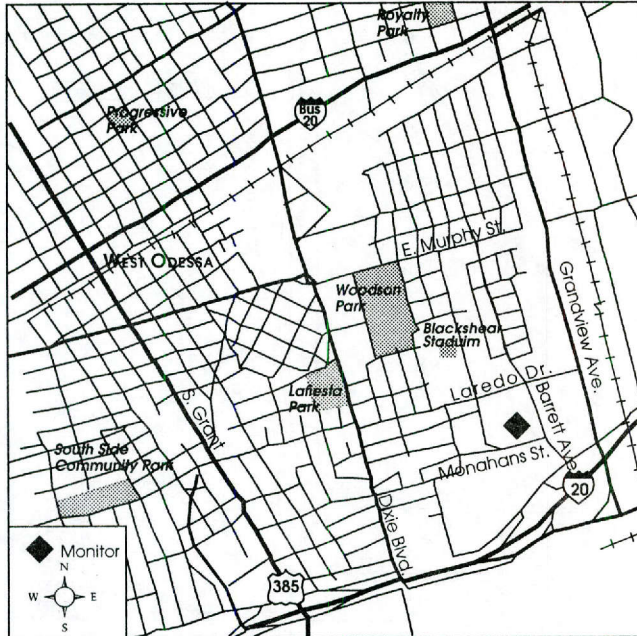


**Map 16**

This site is at 440 Tayman Drive on the first floor roof of the Midlothian Water Treatment Plant just south of a paved parking lot. It was established in response to citizen concerns about hazardous waste burning in nearby cement kilns and emissions from other industry. It is located in a primarily agricultural rural area. There are residences to the east and northeast of the monitor. It began operating on Jan. 25, 1993. Prevailing winds are from the south. According to the latest U.S. Census, 911 people lived within a two-mile radius of the site in 1990.

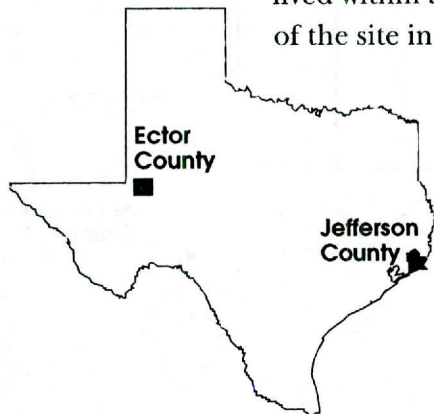


## Odessa Site Ector County

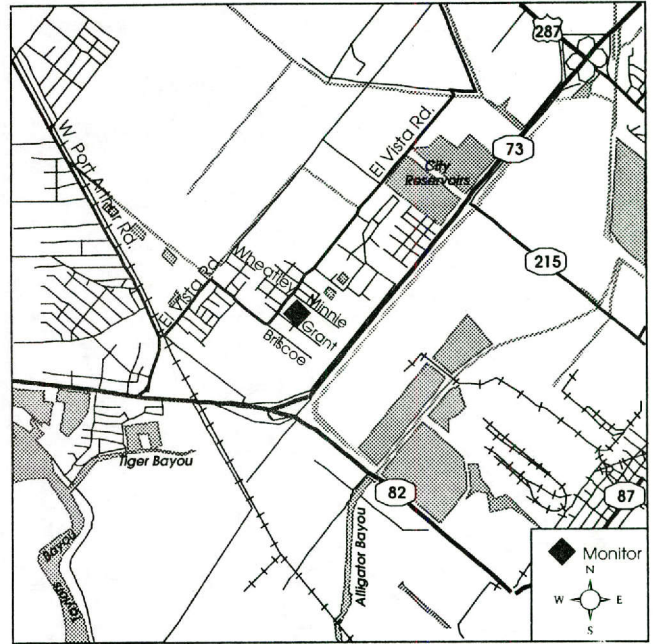


Map 17

This solar-powered site is on the grounds of Hays Elementary School, 400 feet west of the school building at the intersection of Barrett Avenue and Monahans Street. The site is north of Interstate Highway 20. The area immediately surrounding the site is primarily vacant fields with Blackshear and Milam schools nearby. North and west of the site are residential areas with parks. South and east of the site are industrial areas and an oil field that includes a refinery and solar ponds. The site is also affected by vehicle emissions. It started operating on Feb. 18, 1993. Prevailing winds are from the south-southeast. According to the latest U.S. Census, 9,748 people lived within a two-mile radius of the site in 1990.



## Port Arthur Site Jefferson County



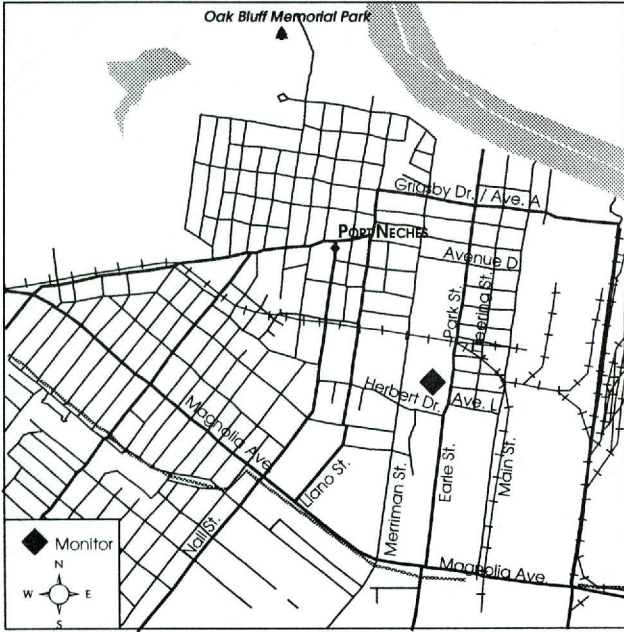
Map 18

This site is at 800 El Vista on a grassy playground on the grounds of Wheatley Elementary School. Residences, a church, and a park are in the area immediately surrounding the school. Several refining facilities are to the south and southeast of the site. It began operating on Nov. 20, 1992. Prevailing winds are from the south. According to the latest U.S. Census, 3,059 people lived within a two-mile radius of the site in 1990.



## Port Neches Site

### Jefferson County

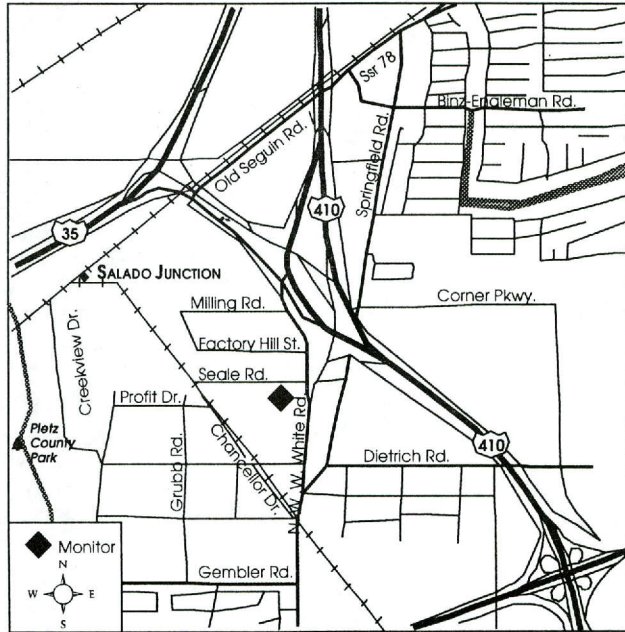


Map 19

This site is at 1225 Merriman Street on the grounds of a community baseball field. Residences and several schools are in the immediate area. There are several refining facilities located to the south and southeast of the site. The site began operating on July 25, 1994. Prevailing winds are from the south. According to the latest U.S. Census, 15,455 people lived within a two-mile radius of the site in 1990.

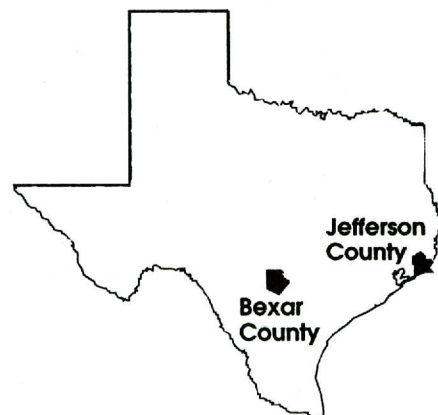
## San Antonio Site

### Bexar County

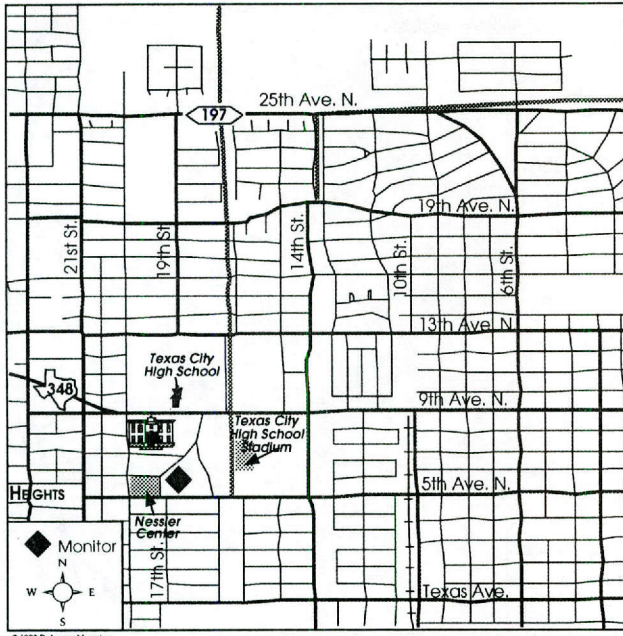


Map 20

The San Antonio site is at 254 Seale Road at the Van Dyke Service Center in a predominantly residential and commercial area. There are open grassy areas north and northwest of the monitor. Petroleum storage tanks are located to the southwest of the monitor. The area is affected by mobile emissions from W.W. White Road and Interstate Highway 410. The site started operating on July 13, 1994. Prevailing winds are from the southeast. According to the latest U.S. Census, 17,289 people lived within a two-mile radius of the site in 1990.



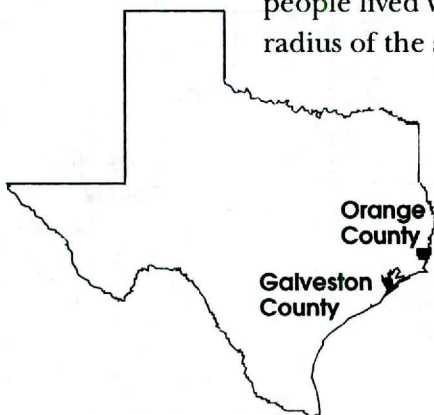
## Texas City Site Galveston County



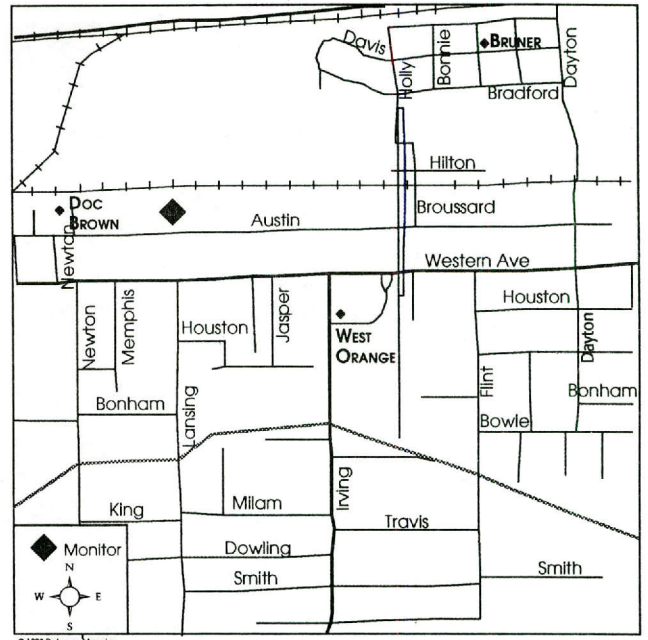
Map 21

This site is on a small, one-story brick building adjacent to the Nessler Center swimming pool at 17th Street and 5th Avenue. It is in a highly populated area. The Galveston County Health District owns and operates the monitor and developed the site location. Land use around the site is primarily recreational. Immediately south of the park are single-family residences. North of the site is a grass-covered park. Numerous petrochemical plants and refineries are located from the southeast to the southwest from 1.5 to 3.5 miles from the site. It began operating on Oct. 3, 1992. Prevailing winds are from the northeast. According to the latest U.S. Census, 26,672

people lived within a two-mile radius of the site in 1990.



## West Orange Site Orange County



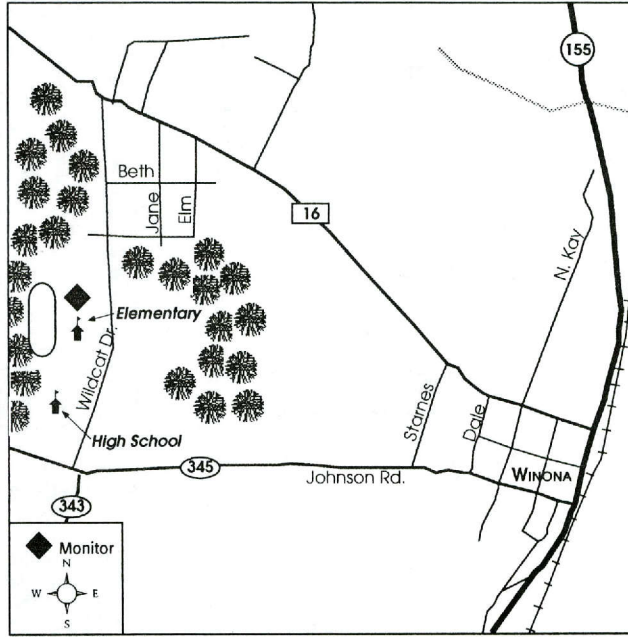
Map 22

This site, at 2700 Austin Avenue, is near the grounds of West Orange City Hall. A city equipment facility and police headquarters are also nearby. Residences are located to the south and northeast of the site. The site began operating on July 25, 1994. Prevailing winds are from the south. According to the latest U.S. Census, 13,734 people lived within a two-mile radius of the site in 1990.



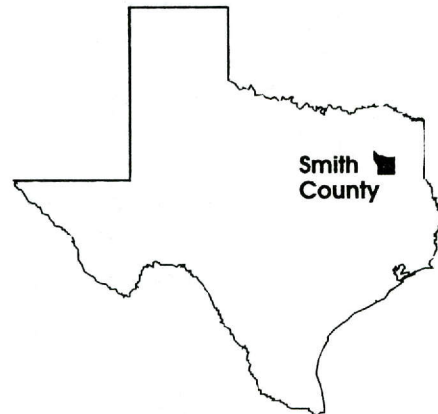
# Winona Site

## Smith County



**Map 23**

This site is at 605 Wildcat Drive on the grounds of property owned by Winona Independent School District. Elementary, middle, and high schools are located at this site. There are residential areas to the north and northeast. Areas to the east, west, and south of the site are wooded with some pastures. The nearest industrial facility is a chemical manufacturer located two miles south-southeast of the monitor. The site is also affected by vehicle emissions. It began operating on June 25, 1994. Prevailing winds are from the south. According to the latest U.S. Census, 1,359 people lived within a two-mile radius of the site in 1990. ♦



## Sampling Duration and Frequency

Air samples were collected into specially treated stainless steel canisters two ways. For samples taken with the pump system, ambient air was continuously pumped into the canisters through a sampling train at a rate of 10 cubic centimeters per minute for a period of 24 hours from midnight to midnight every sixth day. For samples collected with the vacuum system, ambient air was drawn into the canisters at the rate of 3.8 cubic centimeters per minute. The filled canisters were returned to the agency's Austin laboratory for analysis of the air samples.

## Analytical Methods and Validation

Samples were analyzed in accordance with EPA Method TO-14 as published in the *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air* (EPA/600/4-89-017). Samples were analyzed by TNRCC staff using gas chromatography (Saturn II system made by Varian, Inc.) and ion trap detection at the agency's Austin laboratory. One liter of the vapor phase sample is typically drawn for each analysis. The sample is concentrated by an ENTECH M-2000 cryogenic sampler. The ENTECH M-2000 employs three separate sample traps: a glass bead trap, a Tenax resin trap, and cryofocusing in a de-

activated transfer line. The cryogen is liquid nitrogen, and sample concentration occurs at -150 degrees Celsius. The concentrated sample is transferred at 120 degrees Celsius to a DB-624 capillary column for chromatographic separation. The column is 75 meters long with a 0.53 inch diameter bore and has a 3 micron coating.

The gas chromatograph is programmed to hold the column oven at 35 degrees Celsius for two minutes after receiving the sample from the concentrator. The temperature is then increased to 200 degrees Celsius at 10 degrees Celsius per minute. The analysis program ends at 200 degrees Celsius (approximately 20 minutes following sample delivery from the concentrator). As each of the separated organic masses elute from the end of the column, they are transferred to the ion trap detector. In the ion trap detector, the compound is bombarded with an ion stream that causes the compound to fracture and emit an ion fracture pattern. The fracture patterns and their intensity generally reflect the structure and concentration of the individual compound being analyzed. The Saturn II data reduction software is used to interpret each fracture pattern. A compound is identified when its fracture pattern

# Sampling Duration, Validation, and Analysis

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matches the characteristic pattern of a reference compound.

Monitored compounds were selected based upon the expected frequency of occurrence, potential to cause health effects, and their known applicability to the canister collection technique. The majority of the compounds were selected from the EPA Photochemical Assessment Monitoring Station target list (EPA/454/B-93-051) and the Method TO-14 (Determination of VOCs in Ambient Air Using

SUMMA® Passivated Canister Sampling and Gas Chromatographic Analysis) target list. During 1994, the TNRCC laboratory increased the number of compounds measured from 19 to 71 compounds. The 71 compounds monitored during 1994 are listed below. Compounds range in toxicity from those of high toxicity known to cause health effects to those of low or no toxicity.

Data validation is a routine part of the TNRCC's quality assurance/quality control process. Agency staff closely examine all air pollutant data and the conditions under which they were recorded to determine whether the data is valid and whether individual measurements are representative of ambient conditions. Only valid measurements are included in the analysis and calculation of the annual means.

For the 1994 calendar year, 79 out of 992 benzene measurements (8 percent), 192 out of 992 carbon tetrachloride measurements (19 percent), and 388 out of 992 measurements of 1,1,1-trichloroethane (39 percent) were invalidated due to technical problems. Most of the problems were due to design deficiencies in the commercial air samplers. As a result, an abnormal number of air pump failures occurred. Additionally, under certain operating conditions, compounds were released from sampler

## Compounds Monitored

Benzene	Methylcyclohexane
Bromomethane	Methylcyclopentane
1,3-Butadiene	Methylene Chloride
n-Butane	2-Methylheptane
1-Butene	3-Methylheptane
c-2-Butene	2-Methylhexane
t-2-Butene	3-Methylhexane
Carbon Tetrachloride	2-Methylpentane
Chlorobenzene	3-Methylpentane
Chloroform	2-Methyl-1-pentene
2-Chloropentane	4-Methyl-1-pentene
Cumene	n-Nonane
Cyclohexane	n-Octane
Cyclopentane	n-Pentane
Cyclopentene	1-Pentene
n-Decane	c-2-Pentene
1,2-Dibromoethane	t-2-Pentene
1,1-Dichloroethane	Perchloroethylene
1,2-Dichloroethane	a-Pinene
1,1-Dichloroethylene	b-Pinene
1,2-Dichloropropane	Propane
2,2-Dimethylbutane	n-Propylbenzene
2,3-Dimethylbutane	Propylene
2,3-Dimethylpentane	Styrene
2,4-Dimethylpentane	Toluene
Ethyl Benzene	1,1,1-Trichloroethane
n-Heptane	Trichloroethylene
1-Heptene	Trichlorofluoromethane
n-Hexane	1,2,4-Trimethylbenzene
c-2-Hexene	1,3,5-Trimethylbenzene
t-2-Hexene	2,3,4-Trimethylpentane
Isobutane	n-Undecane
Isopentane	Vinyl Chloride
Isoprene	o-Xylene
3-Methyl-1-butene	m- and p-Xylenes
2-Methyl-2-butene	



components, which resulted in elevated levels of these compounds in samples.

All data were entered into the TNRCC's air toxics database, but the measurements that were invalidated have been flagged and were not used in this report's data summaries and analysis. The TNRCC is developing an air sampler that will eliminate the need for the components that were the source of the contamination. The sampler pump also will be eliminated. These new samplers will be used in the next phase of the program, and the existing commercial samplers will be phased out.

## Statistical Data Analysis

The compounds that exceeded their TNRCC screening levels — benzene, 1,3-butadiene, chloroform, 1,2-dibromoethane, and 1,2-dichloroethane — were selected for further analysis.

TNRCC staff calculated summary statistics for each compound measured at each site by calendar year 1992, 1993, and 1994. The summary statistics for 1992 were calculated from less than one full calendar year of sampling because the first network monitors were installed during the latter part of that year. The statistics include the number of valid samples, the number of samples greater than or equal to the compound's method detection limit (MDL),

the mean, or average, the median, and the maximum and second highest measurements. These are listed in Appendix B. Each page contains the summary data for one compound. The MDL for each compound was determined experimentally using EPA methods. If a compound is found at or above its MDL, TNRCC staff can be 99 percent certain of its presence in an air sample.

The average frequency of each compound detected at all of the sites was calculated as the "network percent occurrence." For this report, the TNRCC primarily conducted additional statistical analysis of benzene and 1,3-butadiene, the most commonly detected pollutants that were found above their screening levels.

Time plots of the benzene concentrations by site were analyzed to look for seasonal trends in the data. Day-of-the-week and monthly averages were calculated to determine if benzene concentrations varied by day of the week or by month.

At the Houston (Haden Road) site, the TNRCC air toxics monitor is colocated with a monitor operated by the Houston Regional Monitoring (HRM) Corporation, a consortium of chemical and petroleum refining industries in Harris and Chambers counties. The monitors collect ambient air samples from the same air intake. Measurements of 20 compounds were

compared to assess how well the measurements made by different laboratories agreed. The average absolute percent difference was calculated to assess overall agreement, and an average signed percent difference was calculated to look for laboratory bias. (See Table 2,

Appendix A for definition.) Statistical correlations and a visual inspection of the data were also conducted. Only samples where the TNRCC measured a compound above its MDL and HRM also had a measurement were compared. ♦

## Frequently Found Compounds in Texas

Benzene was frequently detected in urban air samples statewide in 1994 as shown in Figure 2. Benzene was detected in 50 percent or more of the samples at 14 of the 22 sites. It was detected in 95 and 93 percent of the samples at the El Paso and Channelview sites, respectively, but was detected in less than 10 percent of the samples at the Midlothian site.

Propane and n-hexane were each detected in 94 percent of the samples, and toluene and benzene were detected in 64 percent of the samples. 1,3-Butadiene was detected in 11 percent of the samples. Of the 71 compounds measured during 1994, 13 were detected in 50 percent or more of the samples. Forty compounds were detected in 10 percent or less of the samples. Six compounds were not detected at any sites. Figure 3 shows the network percent occurrence of the 71 pollutants.

## Comparison of Measured Levels to Effects Screening Levels

Measured concentrations of the 71 compounds that were monitored at the 22 sites from Oct. 3, 1993, through Dec. 28, 1994, were less than their respective 24-hour and annual screening levels except for benzene, 1,3-butadiene, 1,2-dibromoethane, 1,2-dichloroethane,

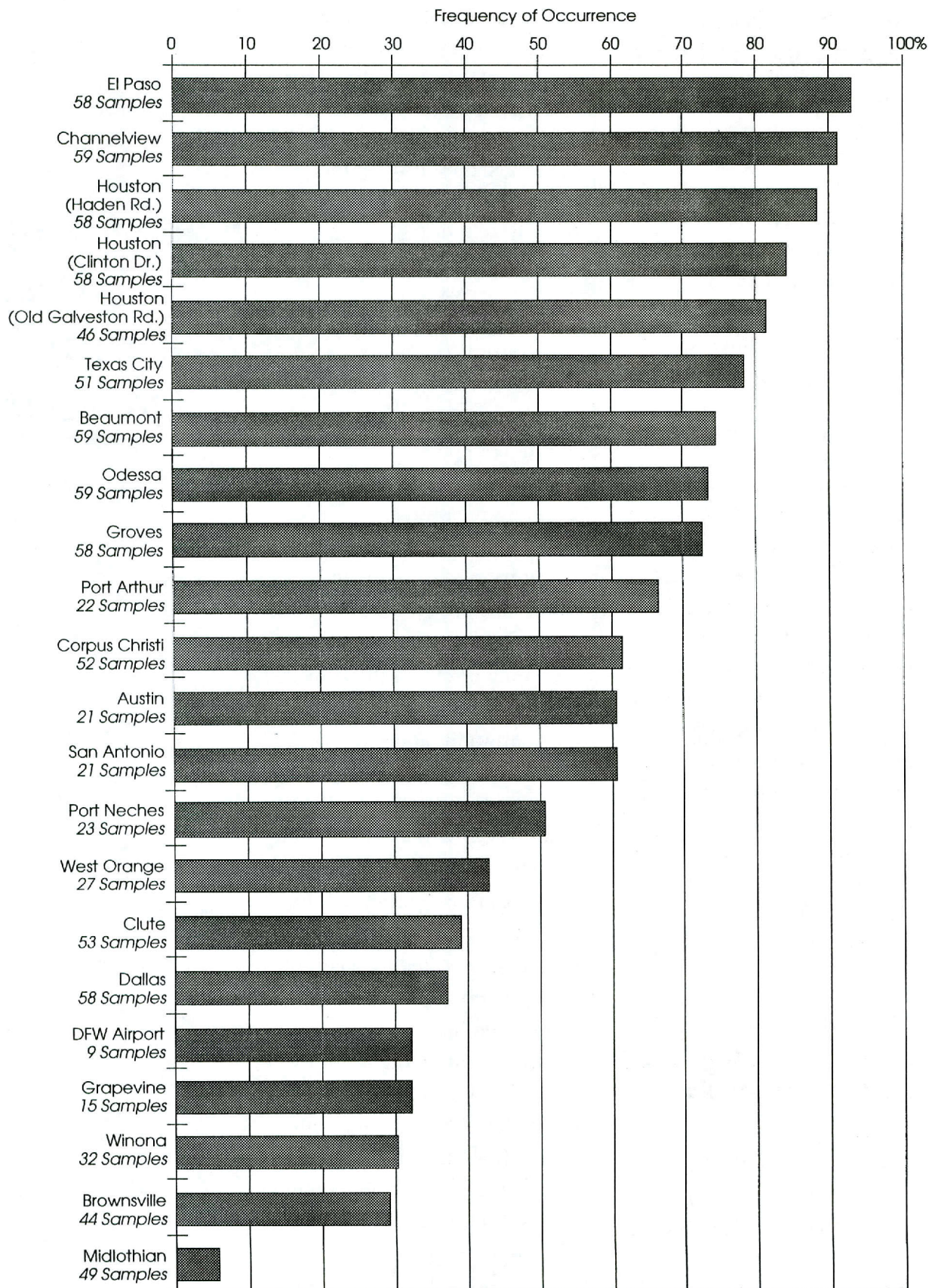
and chloroform. Figures 4a-i, 8a-c, 10, 11, and 12 show time plots of all valid measurements at a site where concentrations of a compound were larger than the 24-hour screening level and where there were more than 20 valid measurements.

Measured concentrations of the remaining 66 monitored compounds were below their 24-hour and annual screening levels at all sites. At 13 of the 22 monitoring sites in the network, no compounds exceeded either their annual or 24-hour screening levels. Of the compounds that were measured at concentrations above their 24-hour screening levels (benzene, 1,3-butadiene, 1,2-dibromoethane, 1,2-dichloroethane, and chloroform), the TNRCC's TARA Section determined that no acute adverse health effects would be expected to occur. In addition, no adverse health effects would be expected to occur as a result of long-term exposure to the measured concentrations of 1,2-dichloroethane or 1,3-butadiene; laboratory techniques available do not yield sufficient information to accurately assess long-term health risks of 1,2-dibromoethane. No adverse health effects would be expected to occur as a result of exposure to the

# Data Analysis Results and Toxicological Evaluation

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Source: TNRCC air toxics database

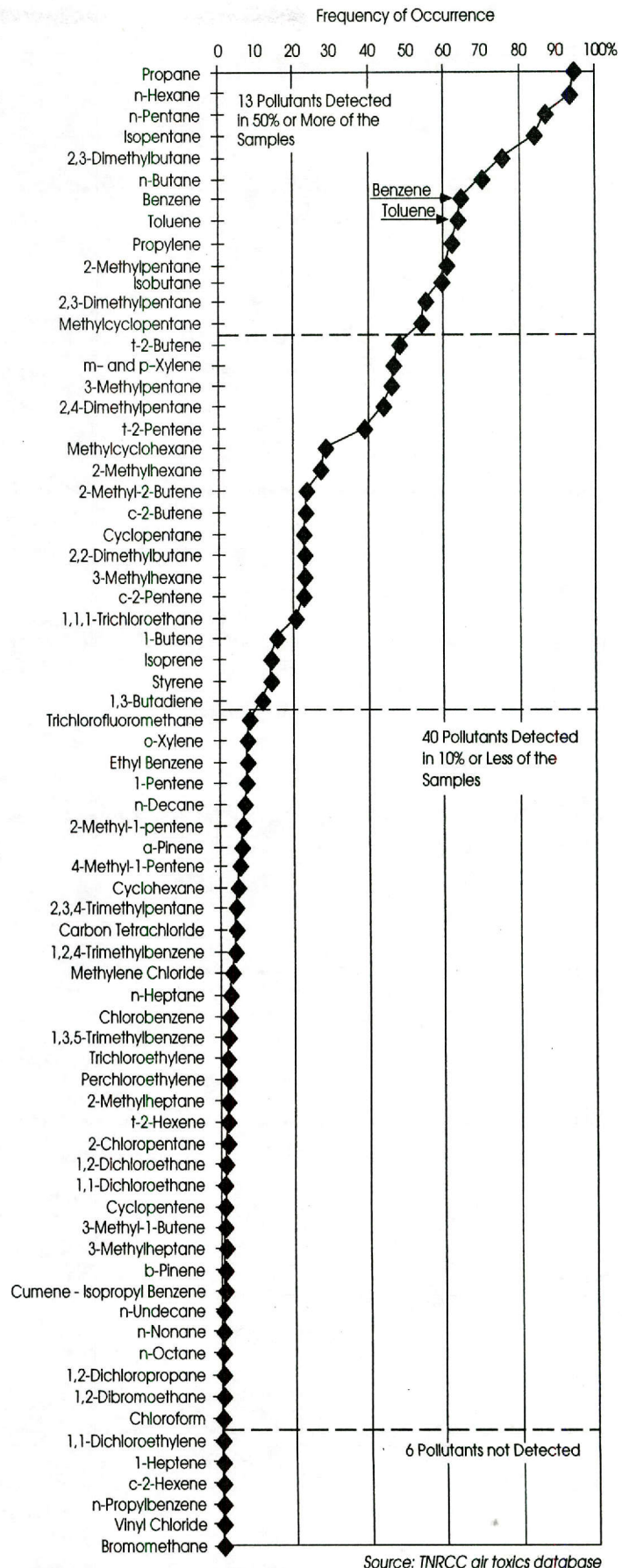
Figure 2. Percent of Samples where Benzene was Detected at TNRCC Sites in 1994



measured concentrations of chloroform.

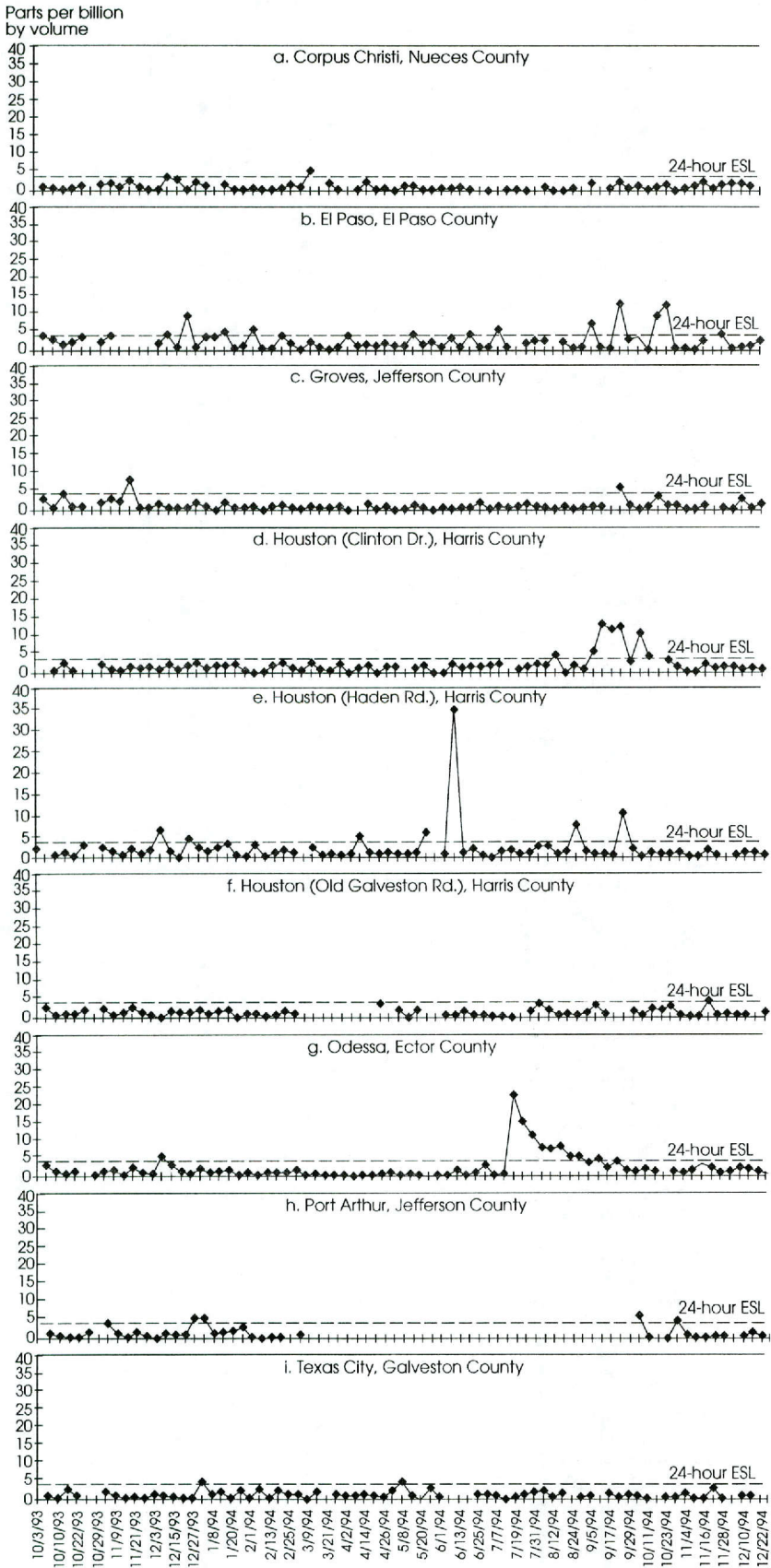
The measured concentrations of benzene above the annual screening level of 1 ppbv do not represent a significant risk to health. Long-term exposures to levels of benzene significantly in excess of the annual screening level may increase a person's lifetime risk of developing leukemia. While the measured levels at the eight monitoring sites where benzene exceeded its annual screening level do not significantly increase the risk of adverse health effects associated with benzene exposure, the TNRCC considers it important that benzene levels not increase.

The TNRCC's effects screening levels are guidelines used to evaluate ambient concentrations of compounds. If a chemical's concentration is below its screening level, the TNRCC's TARA Section does not expect adverse effects to occur. However, if an air concentration of a pollutant is above the screening level, it is not indicative that adverse effects will occur, but that further evaluation is warranted. The annual average concentration (the average of a year's worth of 24-hour measurements) of a compound by site was compared to the compound's respective TNRCC annual screening level to evaluate the potential for health effects.



Source: TNRCC air toxics database

Figure 3. TNRCC Toxics Network Percent Occurrence of Compounds in 1994



Source: TNRCC air toxics database

**Figures 4a-i. Twenty-Four-Hour Benzene Levels at TNRCC Toxics Sites that had More than 20 Valid Measurements and that Measured Exceedances of the 24-Hour Screening Level**

Although there are no national air quality standards for the compounds analyzed in the network, the TNRCC monitors for them because they exhibit toxic properties. The selected toxic compounds are monitored primarily because they can induce chronic (long-term) toxic effects. Potential acute effects would occur only at much higher concentrations than those normally observed in ambient air.

**Benzene**

Benzene was the only compound of the 71 compounds measured that was consistently found above its screening levels. Benzene exceeded the 24-hour screening level at nine sites and the annual screening level at eight sites from Oct. 3, 1993, through Dec. 28, 1994. Figure 5 shows mean and maximum benzene levels for 1993 and 1994. Potential causes of different annual averages include different meteorological conditions or emission patterns. Sites' differences in annual average concentrations can be ascribed to the normal variation that is observed in all sampling, including seasonal effects and missing and invalidated data.

In 1994, benzene concentrations exceeded the 24-hour screening level of 4 ppbv at Haden Road, Clinton Drive, and Old Galveston Road in Houston; El Paso, Groves,



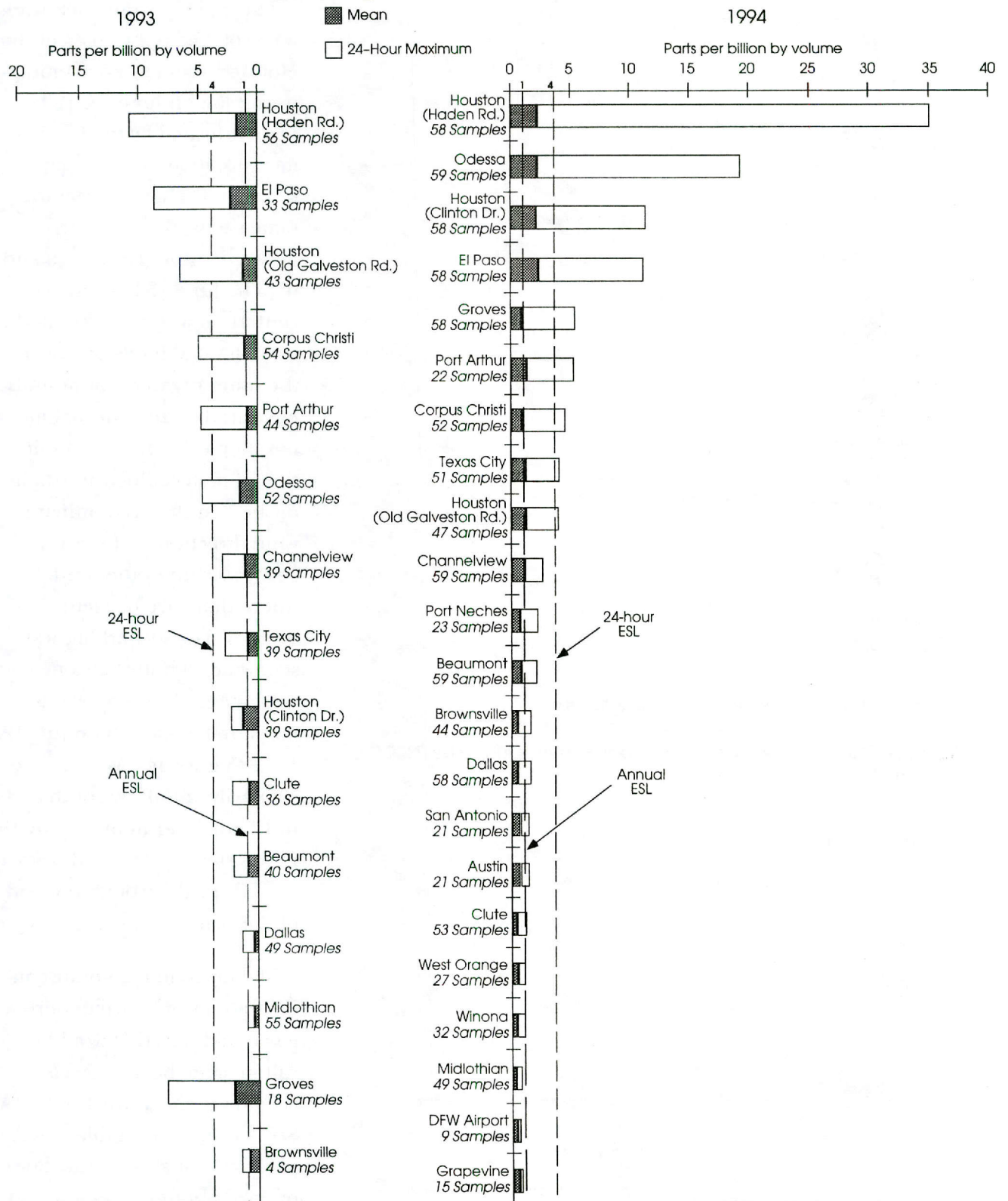
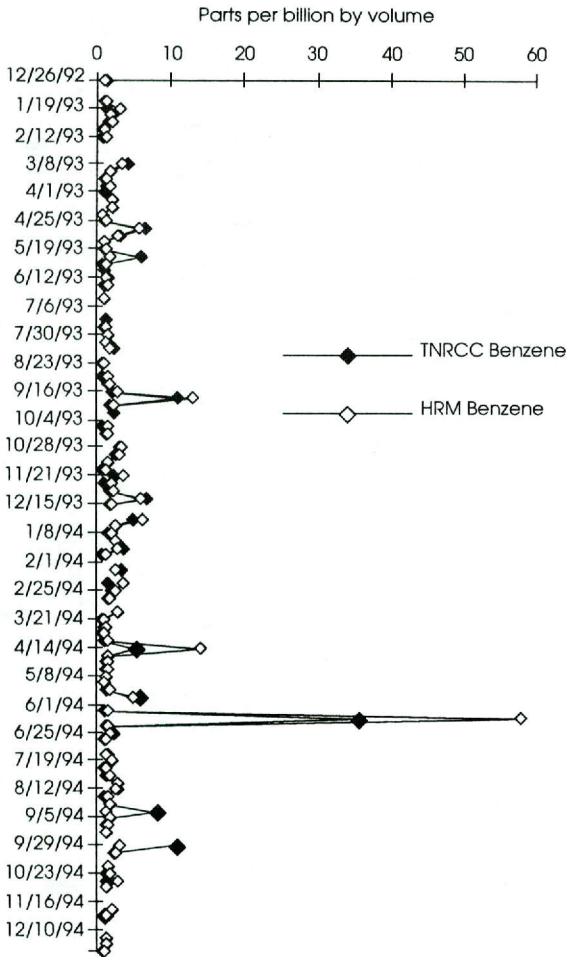


Figure 5. Mean and Maximum Benzene Levels at TNRCC Toxics Monitoring Sites in 1993 and 1994

Odessa, Port Arthur, Corpus Christi, and Texas City.

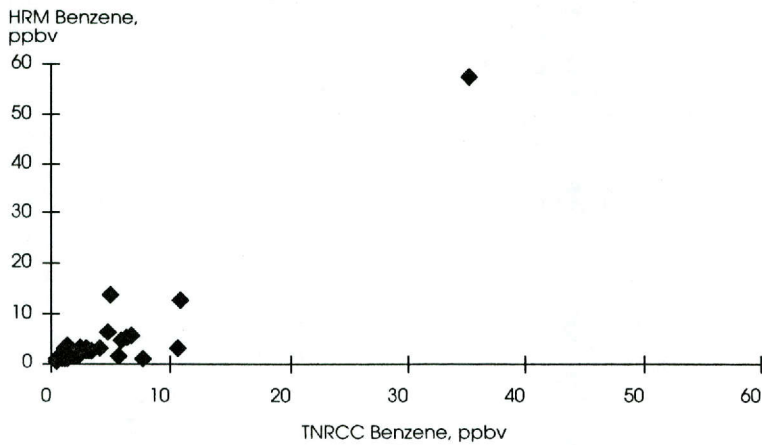
The high benzene measurement of 35.2 ppbv taken at the Houston (Haden Road) monitoring site on June 13, 1994, was confirmed by the benzene measurement of 57.3 ppbv taken on the same day at the same site by the colocated HRM monitor (Figures 6a and b). The June 13 benzene concentration was not associated with elevated levels of any of the other organic compounds measured or any unusual meteorological events. An evaluation of meteorological data indicate that the predominant wind direction on June 13, 1994, was out of the south, where there are benzene sources. The second highest statewide 24-hour benzene concentration of 19.4 ppbv was measured at Odessa on July 19, 1994 (Figure 4g). Winds were primarily out of the south at 8 to 12 miles per hour on July 19. Levels steadily declined from the July peak through the end of the year.

The maximum 24-hour concentrations of benzene were less than levels that would result in acute health effects, according to the TNRCC's TARA Section staff. See Table 1 in Appendix A for a list of the dates of the 24-hour exceedances and the benzene concentrations measured.



\* All concentrations are above the method detection limit.

**Figure 6a. Comparison of Benzene Measurements Made by TNRCC and HRM Network Laboratories\***

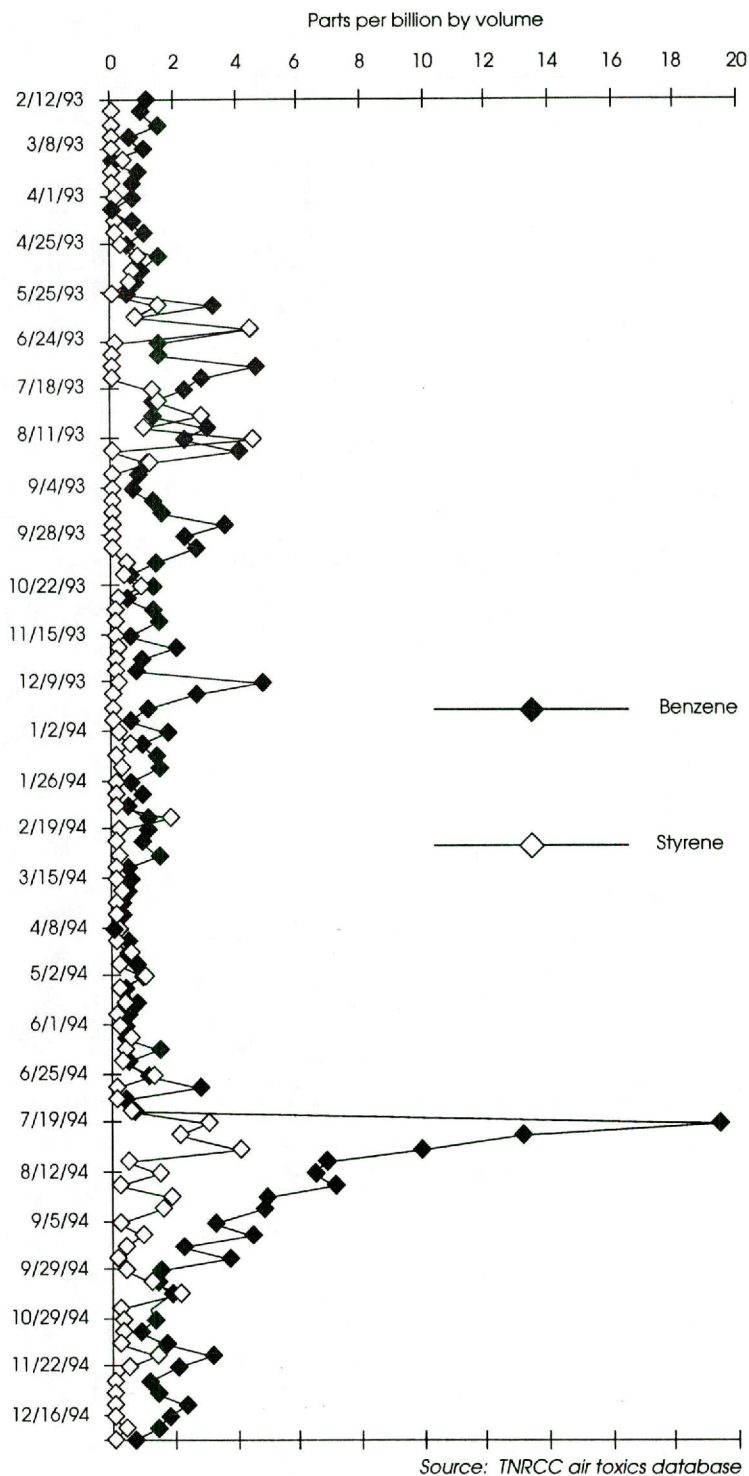


Sources: HRM data provided by Radian, Inc. (Austin, Texas)  
TNRCC data from the air toxics database

**Figure 6b. Correlation Between TNRCC and HRM Network Laboratories' Benzene Measurements is 0.93**

Benzene concentrations exceeded the annual screening level of 1 ppbv in 1994 at Haden Road, Clinton Drive, and Old Galveston Road in Houston; Channelview, Texas City, Port Arthur, Odessa, and El Paso (Figure 5). The highest mean benzene level at a site where more than 20 samples were taken in 1994 was 2.3 ppbv at the El Paso site. The Clute and Midlothian sites had the lowest annual average benzene levels; concentrations never exceeded the screening levels. During 1994, measured annual concentrations at sites where the annual screening level was exceeded ranged from 1.13 ppbv to 2.34 ppbv.

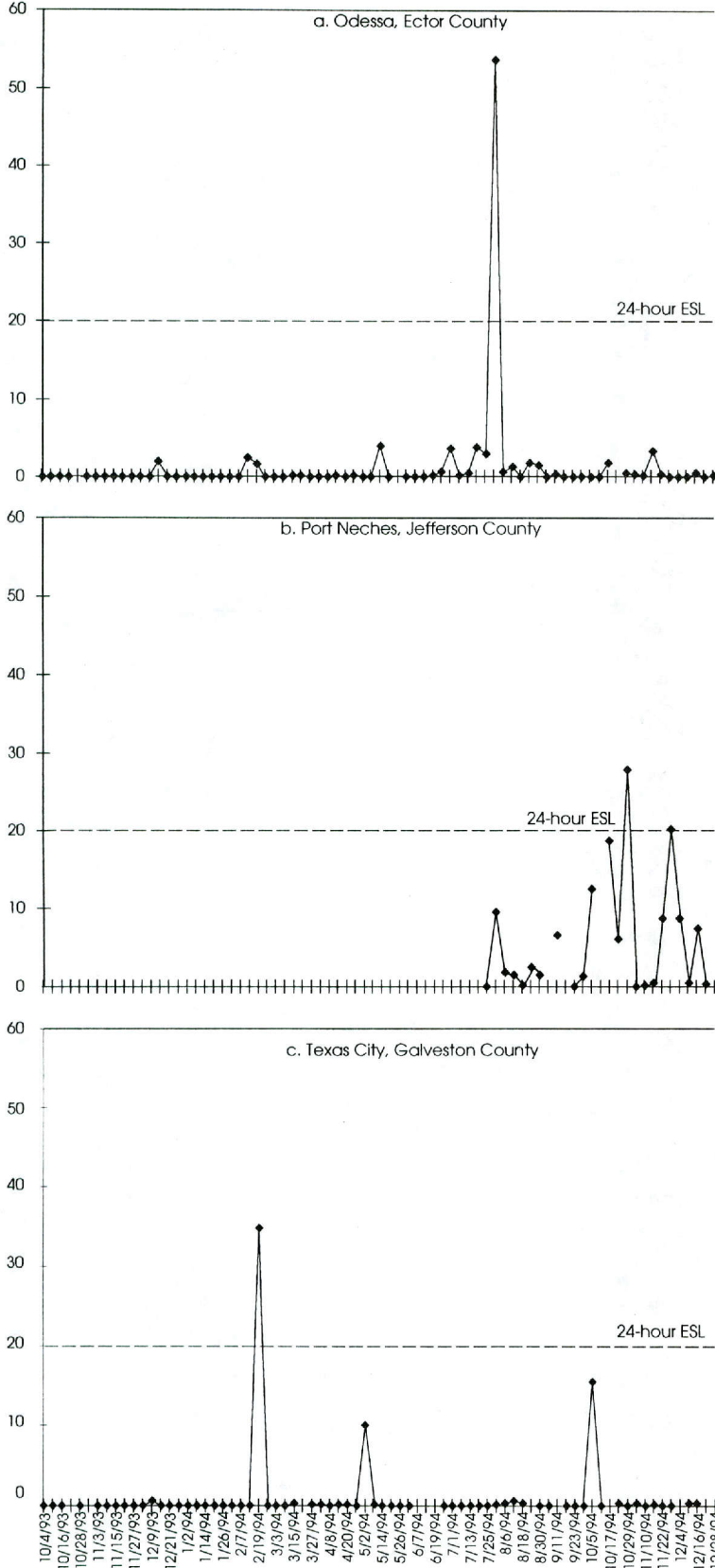
Analysis of the Odessa data suggests that some benzene emissions in the area are from industrial and not mobile sources (automobiles, gasoline-powered equipment) and that benzene may be associated with the production or use of styrene. Benzene is commonly used as a starting material in the production of styrene. Styrene is not produced by mobile sources. Benzene was moderately correlated with styrene (correlation coefficient 0.51, sample size = 110 with a significant p-value <0.0001) at Odessa from February 1993 through December 1994 (Figure 7). For the same period, benzene was poorly correlated with toluene (0.19, sample size = 111 with a significant p-value of 0.05).



**Figure 7. Benzene versus Styrene at the Odessa Site**



Parts per billion  
by volume



Figures 8a-c. Twenty-Four-Hour 1,3-Butadiene Levels at TNRCC Toxics Sites that had More than 20 Valid Measurements and that Measured Exceedances of the 24-Hour Screening Level

## 1,3-Butadiene

1,3-Butadiene exceeded its 24-hour screening level of 20 ppbv at three sites. Odessa and Texas City had one exceedance each from Oct. 3, 1993, through Dec. 28, 1994; in Port Neches the 24-hour screening level was exceeded twice since the monitor began operating on July 25, 1994, through Dec. 22, 1994. The highest concentration of 1,3-butadiene during 1994, 53.6 ppbv, was recorded at Odessa on July 31, 1994 (Figures 8a-c). The TNRCC's TARA Section determined that the maximum 24-hour concentrations of 1,3-butadiene were less than levels that would result in acute health effects. An evaluation of meteorological conditions indicates that winds were out of the south-southeast on July 31. There are a number of 1,3-butadiene sources south-southeast of the monitoring site.

The annual averages of 1,3-butadiene at all sites were below the annual screening level of 5 ppbv. The monitor in Port Neches was activated in late July 1994 and operated until October 1994 during this sampling period. Thus according to the TNRCC's TARA Section, insufficient data are available to evaluate long-term health implications at this site.

Figure 9 shows that 1,3-butadiene was infrequently detected

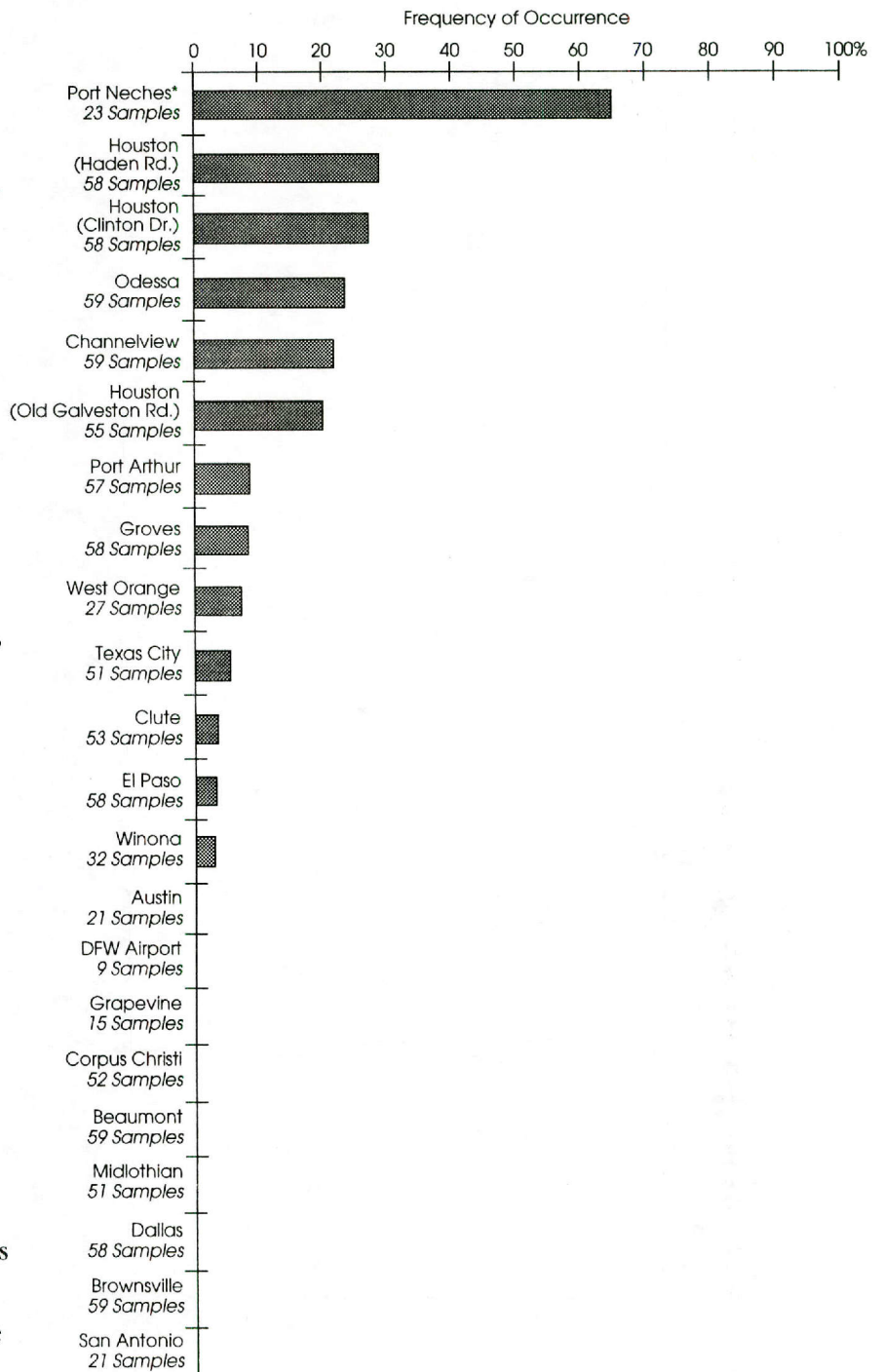
in urban air samples statewide in 1994. However, it was detected in 65 percent of the samples at the Port Neches site and was detected in less than 30 percent of the samples from all other sites. It was not detected in samples from nine sites.

### 1,2-Dibromoethane

Measured concentrations of 1,2-dibromoethane exceeded the 24-hour screening level of 0.20 ppbv in Winona on three occasions since the monitor began operating on June 25, 1994, through Dec. 22, 1994. The 24-hour screening levels were exceeded on: July 19, Sept. 29, and Oct. 29, 1994. The highest measurement was 1.79 ppbv on Sept. 29, 1994. The TNRCC's TARA Section determined that the maximum 24-hour concentrations of 1,2-dibromoethane were less than levels that would result in acute health effects. The majority of concentrations measured were below the MDL (Figure 10). The MDL for 1,2-dibromoethane (0.5 ppbv) is greater than its annual screening level of 0.05 ppbv. Thus, the laboratory techniques available do not yield sufficient information to accurately assess long-term health risks.

### 1,2-Dichloroethane

Measured concentrations of 1,2-dichloroethane exceeded the 24-hour screening level of 4 ppbv at Houston (Haden Road) on three occasions from Oct. 3,



Source: TNRCC air toxics database

\* Port Neches data set for 1994 is incomplete. Monitor operated from July 25, 1994, through Dec. 22, 1994.

Figure 9. Percent of Samples where 1,3-Butadiene was Detected at TNRCC Toxics Sites in 1994

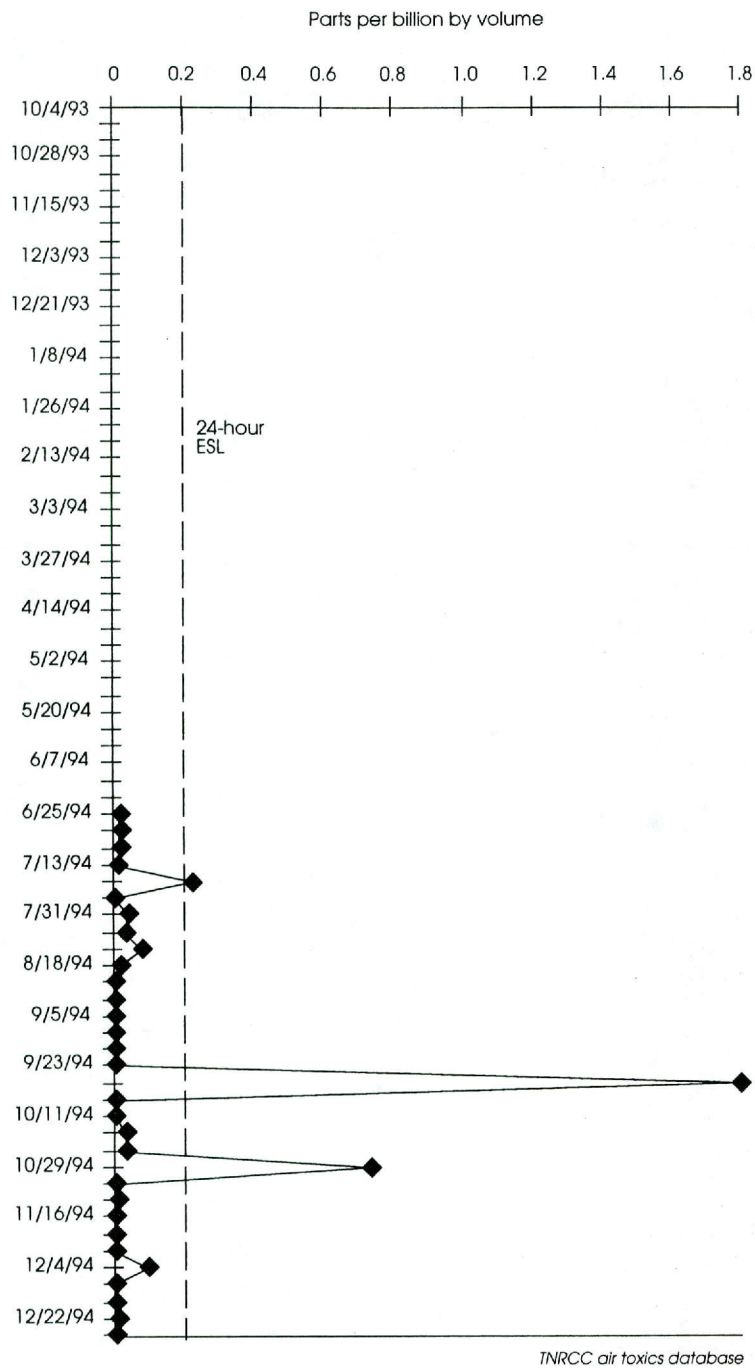


Figure 10. Twenty-Four-Hour 1,2-Dibromoethane Levels at Winona

1993, through Dec. 28, 1994 (Figure 11). The 24-hour screening levels were exceeded on: May 2, May 8, and July 1, 1994. The peak measurement was 10.83 ppbv on May 8, 1994. The TNRCC's TARA Section determined that the maximum 24-hour concentrations of 1,2-dichloroethane were less than levels that would result in acute health effects. The annual average of 1,2-dichloroethane was less than its annual screening level of 1 ppbv at all sites. No adverse health effects would be expected to occur as a result of exposure to the measured concentrations of 1,2-dichloroethane.

### Chloroform

Measured concentrations of chloroform exceeded the 24-hour screening level of 8 ppbv at Houston (Haden Road) on one occasion from Oct. 3, 1993 through Dec. 28, 1994 (Figure 12). The maximum 24-hour concentrations of chloroform were less than levels that would result in acute health effects. The annual average concentration of chloroform was less than its annual screening level at this and all other sites. No adverse health effects would be expected to occur as a result of exposure to these measured concentrations of chloroform.



## Comparison of Measurements Made by TNRCC and an Independent Laboratory

At the Houston (Haden Road) site, both the TNRCC and HRM networks measure organic compounds. When the measurements for benzene, toluene, m- and p-xylenes, ethyl benzene, and carbon tetrachloride made by the two laboratories were compared, the data indicated that when measuring the same compound, the two labs found similar concentrations. For styrene, the quantitative agreement between the two laboratories was not as good, and on average TNRCC and HRM concentrations varied by more than 30 percent (greater than 0.4 ppbv). For three compounds, o-xylene, 1,1,1-trichloroethane, and trichlorofluoromethane, measurements by the two laboratories did not correlate. However, these three compounds were usually measured close to their detection limits where measurements are expected to be less accurate. Because most of the differences between the two laboratories occurred at concentrations near the compounds' detection limits, it is not expected to affect the annual averages or trends. Figure 6a shows two plots comparing TNRCC and HRM measurements of benzene at the Houston (Haden Road) site. Table 2 in Appendix

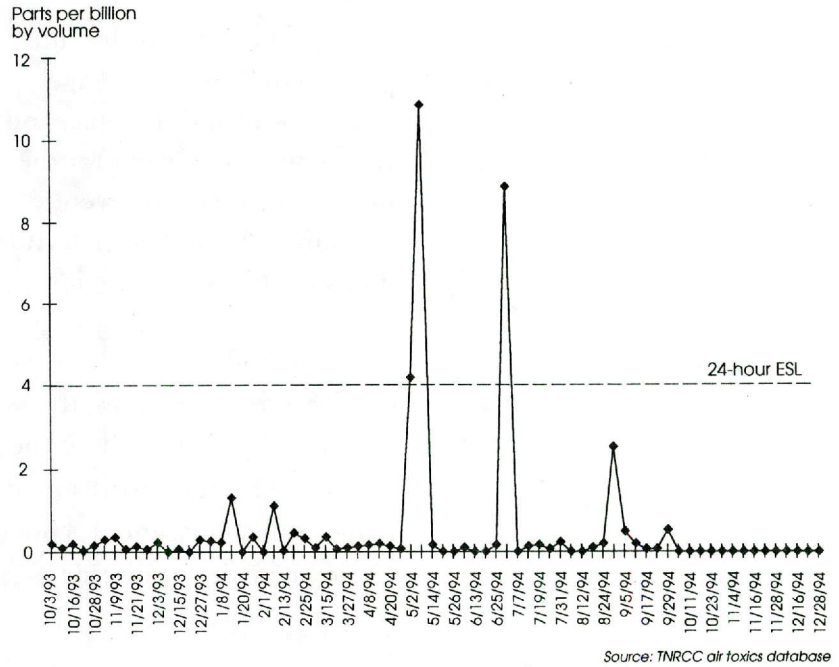


Figure 11. Twenty-Four-Hour 1,2-Dichloroethane Levels at Houston (Haden Road)

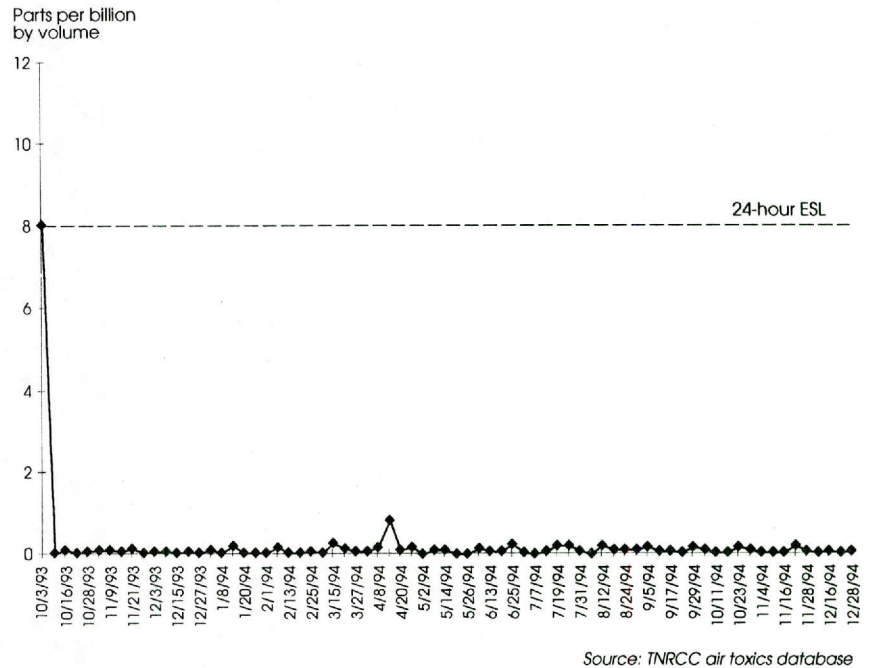


Figure 12. Twenty-Four-Hour Chloroform Levels at Houston (Haden Road)

A shows the average absolute percent difference, average signed percent difference, and correlation coefficient for the nine compounds that were measured above their detection limits in at least 20 samples.

Compounds that were infrequently measured above their method detection limits at the Houston (Haden Road) site include: chlorobenzene, 1,3-butadiene, methylene chloride,

chloroform, 1,2-dichloroethane, perchloroethylene, trichloroethylene, 1,2-dichloropropane, 1,2-dibromoethane, bromomethane, and vinyl chloride. There was not enough data to compare TNRCC measurements with HRM measurements of these compounds. ♦

Most Texans come into contact with benzene every day. It is widespread at low concentrations in urban air. Benzene is emitted primarily from industrial and mobile sources. It is a significant component of gasoline and is released during industrial refining processes, during gasoline storage and transfer, and from benzene storage tanks. Mobile sources also emit benzene through evaporation during refueling, engine running losses, and from tail pipe emissions. Mobile sources include both highway vehicles and off-road vehicles such as recreational, agricultural, and lawn and garden equipment.

### **Comparison of Texas' Benzene Levels with Benzene Levels Measured Nationwide**

The concentrations of benzene measured in Texas cities are typical of levels measured in other urban areas in the United States. Benzene is commonly found in urban air nationwide. The California Air Resources Toxics Monitoring Network found benzene levels above the TNRCC's screening levels at 25 monitoring sites from 1980 through 1990. These sites are primarily in central and southern California. The New York State

Ambient Toxic Air Monitoring Network also found mean levels above TNRCC's screening level at five monitoring sites in 1990. Data collected in 1989 and 1990 by the EPA's Urban Air Toxics Monitoring Program monitors in 17 major cities across the country also showed benzene levels that exceeded the TNRCC's screening levels.

## ***Benzene in Texas***

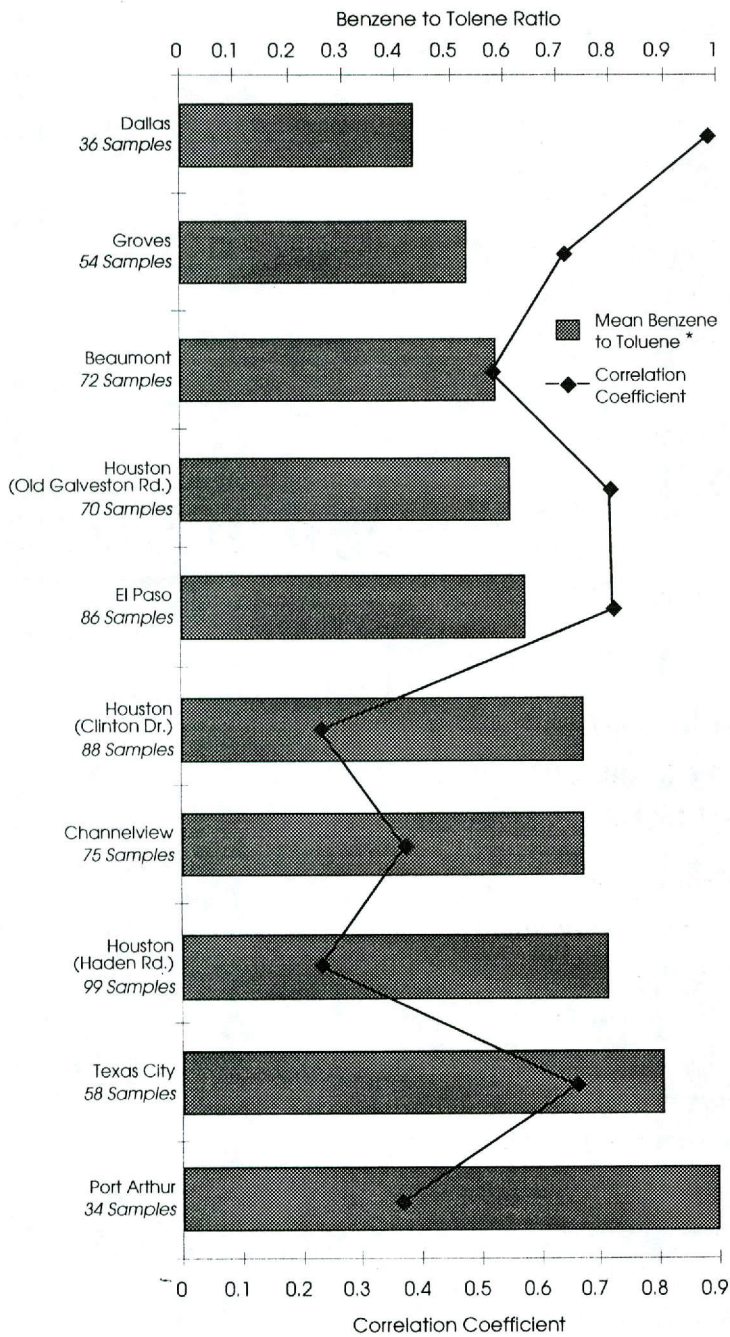
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### **Benzene to Toluene Ratio May Indicate Source of Benzene**

Figure 13 shows the mean of the ratio of benzene to toluene and the correlation coefficient of benzene to toluene at the TNRCC toxics monitoring sites from 1992 through 1994. Only values of benzene and toluene equal to or greater than their respective detection limits were used. Sites that had too little data to classify (sites with less than 20 observations) were eliminated. (Sites whose correlation coefficients had p-values greater than 0.05 [Corpus Christi, Clute, and Odessa] also were eliminated.)

Published data suggest that the ratio of benzene to toluene in gasolines and in tail pipe emissions can range from





about 0.3 to 0.7.<sup>1,2,3</sup> At the Dallas site, the mean benzene to toluene ratio is 0.43 and the correlation coefficient is high, 0.89. In contrast, at an industrial site, such as the Port Arthur site, the mean benzene to toluene ratio is 0.99, and the correlation coefficient is relatively low, 0.36. Other factors such as monitor siting, meteorological conditions, sampling frequency, and/or impacts of emissions from large industrial sources of toluene would also have the potential to influence this ratio. ♦

\* Concentrations measured are equal to or above the method detection limit.

Source: TNRCC air toxics database

**Figure 13. Ratio of Benzene to Toluene at TNRCC Toxics Monitoring Sites from 1992 to 1994**

1. Lonneman, W.A., Sella, R.L. and Meeks, S.A. "Non-Methane Organic Composition in the Lincoln Tunnel." *Environmental Science & Technology* 20 (1986): 790-796.
2. Zweidinger, R.B., Sigsby, Jr. J.E., Tejada, S.B., Stump, F.D., Dropkin, D.L. and Ray, W.D. "Detailed Hydrocarbon and Aldehyde Mobile Source Emissions From Roadway Studies." *Environmental Science & Technology* 22 (1988): 956-962.
3. Bailey, J.C., Schmidl, B., and Williams, M.S. "Speciated Hydrocarbon Emissions from Vehicles Operated Over the Normal Speed Range on the Road." *Atmospheric Environment* 24A (1990): 43-52.

## Sources of Benzene Emissions

The Texas counties with the largest total point source benzene emissions are along the Gulf Coast where there is a heavy concentration of petrochemical facilities. Map 24, which is based on the TNRCC point source database, illustrates this. Harris County has the largest total point source emissions of benzene. The TNRCC point source database contains information on all air pollutants by point source. The primary use of the database is to provide an inventory of all emissions in the state of Texas. Facilities that emit selected pollutants over a specified level must report their emissions to the TNRCC.

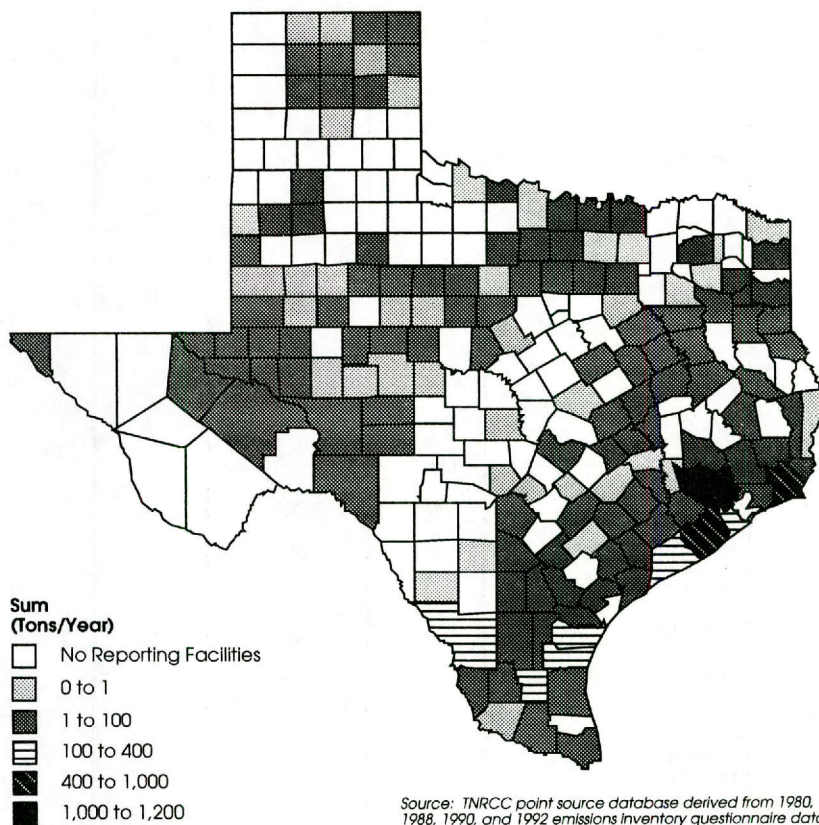
Figure 14 shows the total point source benzene emissions and the number of benzene point sources for each county with a Community Air Toxics Monitoring Program site. Harris County has not only the largest amount of point source emissions but also the largest number of industrial emissions sources.

Table 3, from the TNRCC's point source database, shows the total annual point source benzene emissions and the annual amount emitted by the largest single source within a 5- and 10-mile radius of each TNRCC air toxics monitor. The Channelview site in Harris

County had the highest total annual point source emissions, 996.8 tons per year, within a 10-mile radius of the site. The Port Arthur and the Groves sites in Jefferson County had the largest single emissions source within a 10-mile radius. This source emits 125.4 tons of benzene a year.

Data from the 1993 Toxic Chemical Release Inventory (TRI) obtained from the EPA also show that Harris County had the largest total countywide benzene point source emissions (731 tons/year) during that year (Table 4). Jefferson County had the largest single source of benzene

## Benzene and 1,3-Butadiene Emissions Sources

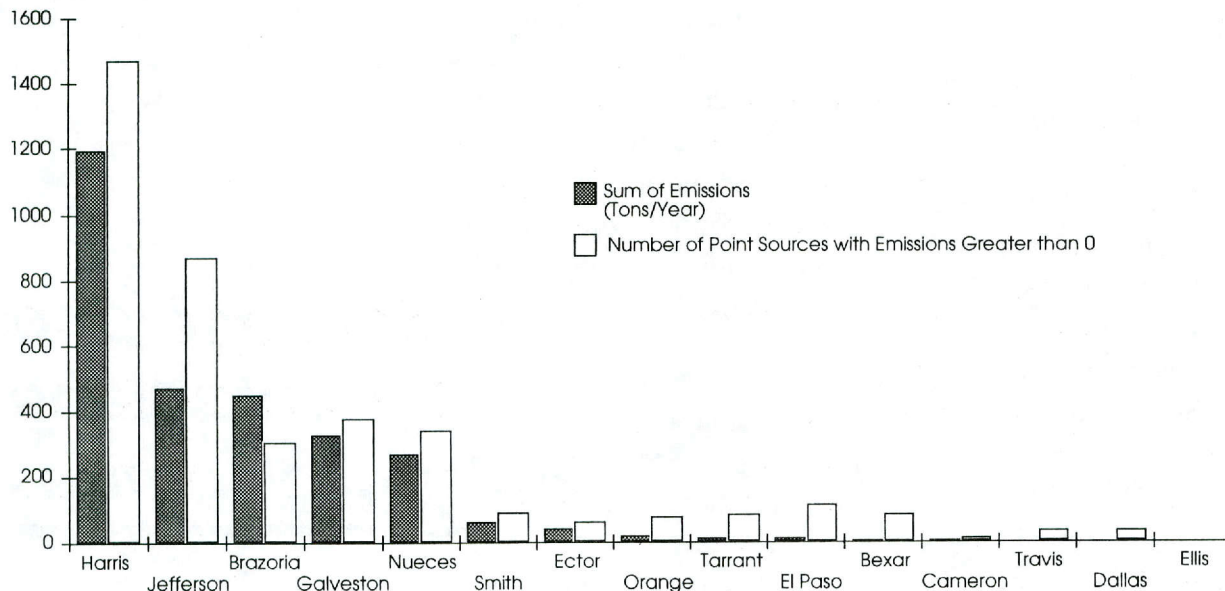


Source: TNRCC point source database derived from 1980, 1985, 1988, 1990, and 1992 emissions inventory questionnaire data

Map 24. Annual Benzene Point Source Emissions in Texas in 1995



Tons per Year  
and Number of Sources



Source: TNRCC point source database

Figure 14. Benzene Emissions and Number of Point Sources in Counties with TNRCC Air Toxics Monitors

Table 3. Benzene Point Sources within a 5- and 10-Mile Radius of TNRCC Air Toxics Monitoring Sites

County	City/AIRS No.	10-Mile Radius		5-Mile Radius		Percent Occurrence	Number of Samples	Average Concentration During 1994
		Sum of Emissions (Tons/Year)	Largest Single Emissions Source (Tons/Year)	Sum of Emissions (Tons/Year)	Largest Single Emissions Source (Tons/Year)			
Bexar	San Antonio 029 0051	8	1	1	0	62	21	0.66
Brazoria	Clute 039 1003	55	24	54	24	34	53	0.40
Cameron *	Brownsville 061 0006	0	0	0	0	25	59	0.49
Dallas	Dallas 113 0070	8	1	0	0	35	58	0.46
Ector	Odessa 135 0003	42	22	10	6	75	59	2.26
Ellis	Midlothian 139 0007	0	0	0	0	6	51	0.26
El Paso *	El Paso 141 0047	12	9	12	9	93	58	2.34
Galveston	Texas City 167 0053	372	53	0	0	78	51	1.21
Harris	Channelview 201 0026	997	58	16	4	90	59	1.13
Harris	Houston (Old Galveston Rd.) 201 0064	424	58	1	0	76	54	1.23
Harris	Houston (Haden Rd.) 201 0803	423	58	421	58	86	58	2.28
Harris	Houston (Clinton Dr.) 201 1035	423	58	0	0	85	58	2.14
Jefferson	Beaumont 245 0009	133	26	114	26	75	59	0.81
Jefferson	Port Arthur 245 0011	306	125	2	1	59	57	1.37
Jefferson	Groves 245 0014	457	125	75	6	71	58	0.95
Jefferson	Port Neches 245 0017	243	26	64	26	52	23	0.70
Nueces	Corpus Christi 355 0020	250	21	163	19	58	52	0.93
Orange	West Orange 361 1001	95	5	0	0	37	27	0.48
Smith	Winona 423 0005	58	21	0	0	31	32	0.44
Tarrant	Grapevine 439 3002	6	1	1	0	7	15	0.42
Tarrant	DFW Airpot 439 3004	6	1	1	0	33	9	0.45
Travis	Austin 453 0017	4	2	4	2	62	21	0.67

\* Emission data from Mexican border city are unknown.

Source: TNRCC point source database



emissions among the 15 counties where TNRCC air toxic monitors are located. Figure 15, which compares data for point source emissions of benzene in counties with TNRCC air toxics monitors, shows that the TNRCC database is recording greater releases of benzene into ambient air than is the TRI database.

The TRI is a publicly available database that contains specific toxic chemical release and transfer information from manufacturing facilities throughout the United States. Facilities that meet thresholds for the manufacturing, processing, or for otherwise using listed chemicals must report their releases and transfers.

## Sources of 1,3-Butadiene Emissions

1,3-Butadiene is a colorless gas with an aromatic odor. It is used principally in industry in the production of polymers, resins, and other chemicals. Although it may also be emitted by vehicles, mobile emissions are not a significant source of 1,3-butadiene. It is not a component of gasoline or other widely used fuels, and only trace amounts have been measured in tail pipe emissions.

The Texas counties with the largest total point source 1,3-butadiene emissions are also along the Gulf Coast where there is a heavy concentration of petrochemical facilities. Harris

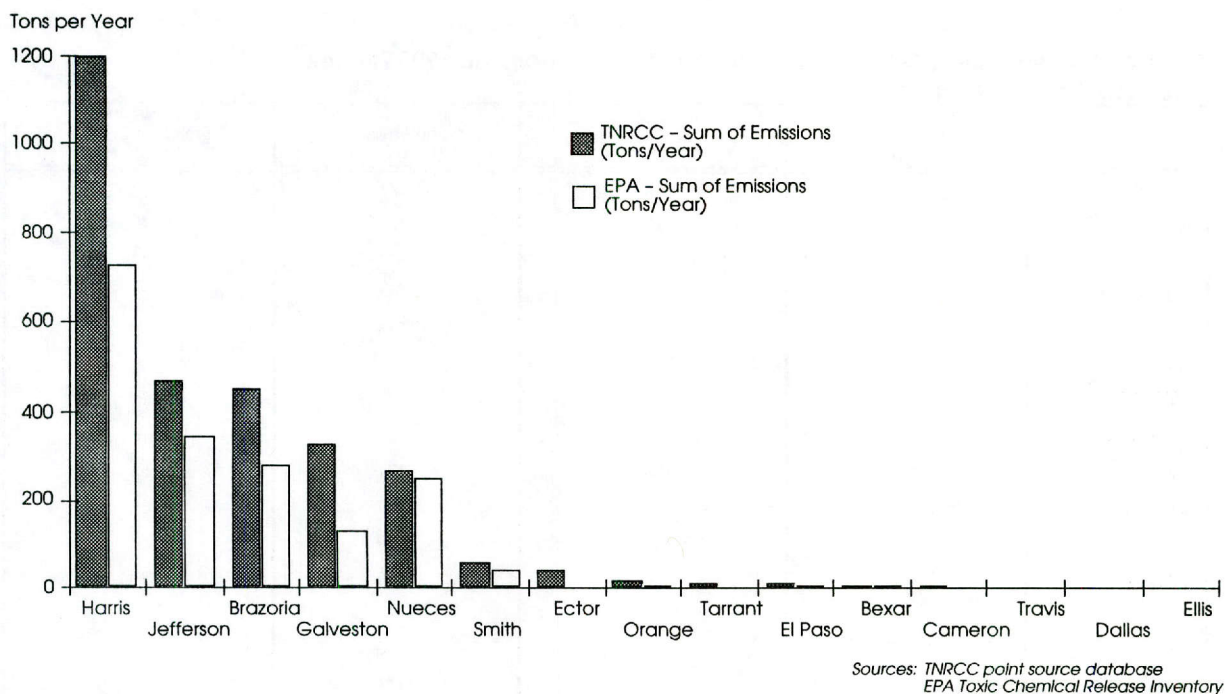
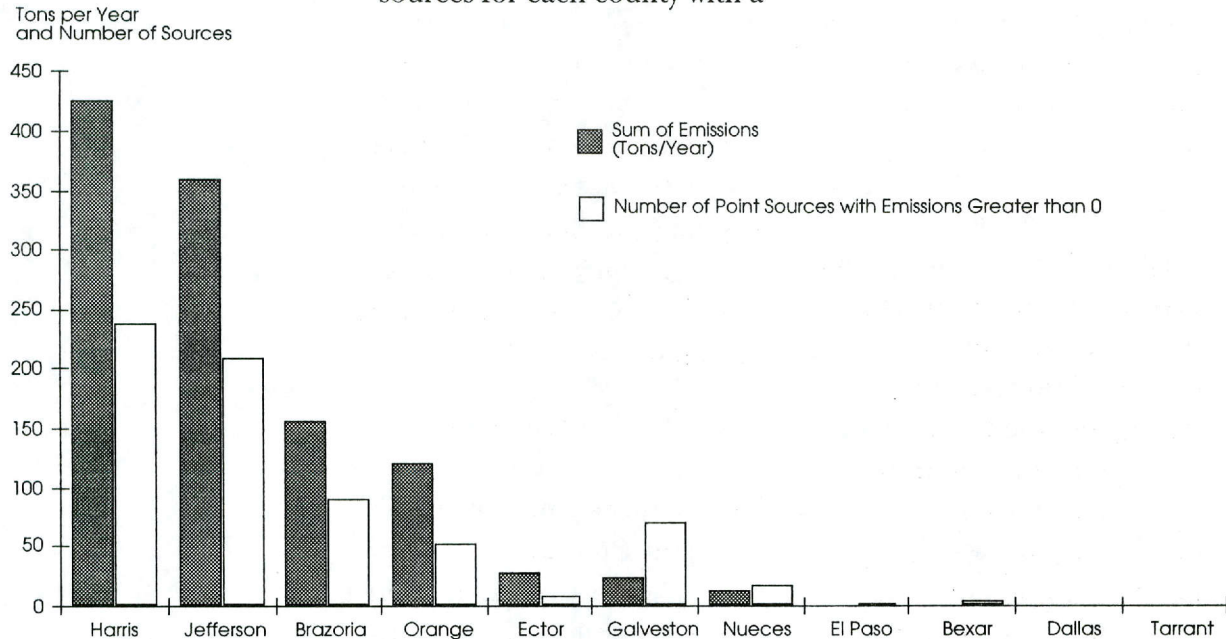


Figure 15. Benzene Point Source Emissions According to the TNRCC and EPA

County has the largest total point source emissions of 1,3-butadiene. Figure 16 shows the total point source 1,3-butadiene emissions and the number of 1,3-butadiene point sources for each county with a

Community Air Toxics Monitoring Program site. Harris County has not only the largest amount of point source emissions, but the largest number of industrial emissions sources.



Source: TNRCC point source database

Figure 16. 1,3-Butadiene Emissions and Point Sources in Counties with TNRCC Air Toxics Monitors

Table 4. Benzene and 1,3-Butadiene Total Air Emissions from the 1993 EPA Toxic Chemical Release Inventory

County	Sum of Benzene Emissions (Tons/Year)	Largest Single Emissions Source (Tons/Year)	Sum of 1,3-Butadiene Emissions (Tons/Year)	Largest Single Emissions Source (Tons/Year)
Bexar	8	8	**	**
Brazoria	279	79	163	70
Cameron	*	*	**	**
Dallas	*	*	**	**
Ector	43	37	34	20
Ellis	0	0	0	0
El Paso	12	7	0	0
Galveston	135	47	29	14
Harris	731	186	371	155
Jefferson	347	209	197	65
Nueces	254	104	229	7
Orange	9	9	229	178
Smith	42	42	**	**
Tarrant	0	0	0	0
Travis	*	*	**	**

\* County not reporting any benzene air releases in 1993.  
 \*\* County not reporting any 1,3-butadiene air releases in 1993.

Source: EPA Toxic Chemical Release Inventory

Data from the 1993 TRI obtained from the EPA and shown in Table 4, show that Harris County had the largest total countywide 1,3-butadiene point source emissions during that year. Jefferson County had the largest single source of 1,3-butadiene emissions among the 15 counties where TNRCC air toxic monitors are located.

Table 5, from the TNRCC's point source database, shows the total annual point source

1,3-butadiene emissions and the annual amount emitted by the largest single source within a 5- and 10-mile radius of each TNRCC air toxics monitor. The Channelview site in Harris County had the highest total annual point source emissions, 418 tons per year, within a 10-mile radius of the site. The Channelview site also had the largest single emissions source within a 10-mile radius. The source emitted 61 tons of benzene per year. ♦

**Table 5. 1,3-Butadiene within a 5- and 10-Mile Radius of TNRCC Air Toxics Monitoring Sites**

County	City/AIRS No.	10-Mile Radius		5-Mile Radius		Percent Occurrence	Number of Samples	Average Concentration During 1994
		Sum of Emissions (Tons/Year)	Largest Single Emissions Source (Tons/Year)	Sum of Emissions (Tons/Year)	Largest Single Emissions Source (Tons/Year)			
Bexar	San Antonio 029 0051	0	0	0	0	0	21	0.05
Brazoria	Clute 039 1003	30	12	30	12	4	53	0.09
Cameron *	Brownsville 061 0006	0	0	0	0	0	59	0.09
Dallas	Dallas 113 0070	0	0	0	0	0	58	0.04
Ector	Odessa 135 0003	25	8	25	8	24	59	1.48
Ellis	Midlothian 139 0007	0	0	0	0	0	51	0.01
El Paso *	El Paso 141 0047	0	0	0	0	3	58	0.12
Galveston	Texas City 167 0053	25	8	0	0	6	51	1.27
Harris	Channelview 201 0026	418	61	18	10	22	59	0.40
Harris	Houston (Old Galveston Rd.) 201 0064	151	23	0	0	20	54	0.60
Harris	Houston (Haden Dr.) 201 0803	151	23	151	23	29	58	0.48
Harris	Houston (Clinton Dr.) 201 1035	151	23	0	0	28	58	0.54
Jefferson	Beaumont 245 0009	52	12	33	12	0	59	0.10
Jefferson	Port Arthur 245 0011	76	55	0	0	9	57	0.20
Jefferson	Groves 245 0014	340	55	241	48	9	58	0.17
Jefferson	Port Neches 245 0017	285	48	10	3	65	23	5.94
Nueces	Corpus Christi 355 0020	12	3	12	3	0	52	0.03
Orange	West Orange 361 1001	362	48	0	0	7	27	0.17
Smith	Winona 423 0005	0	0	0	0	3	32	0.29
Tarrant	Grapevine 439 3002	0	0	0	0	0	15	0.01
Tarrant	DFW Airpot 439 3004	0	0	0	0	0	9	0.02
Travis	Austin 453 0017	0	0	0	0	0	21	0.11

\* Emission data from Mexican border city are unknown.

Source: TNRCC point source database





**ambient air:** outdoor air

**colocated Houston (Haden Road) site:** a monitoring site that is home to a TNRCC monitor and an HRM monitor

**Community Air Toxics Monitoring Network:** the TNRCC's network of monitors that check ambient air for volatile organic compounds

**cryogen:** a refrigerant

**effects screening levels (screening levels):** guideline concentrations used to evaluate ambient air concentrations of chemicals. Based on a chemical's potential to cause adverse health effects, odor nuisances, vegetation effects, or materials damage. Health-based screening levels are set at levels lower than levels reported to produce adverse health effects, and are set to protect the general public, including sensitive subgroups such as children, the elderly, or people with existing respiratory conditions. If an air concentration of a contaminant is below the screening level, adverse effects are not expected. If an air concentration of a contaminant is above the screening level, it is not indicative that an adverse effect will occur, but rather that further evaluation is warranted.

**elute:** to remove from an absorbent material by means of a solvent

**gas chromatography:** a laboratory method by which mixtures of a wide range of components are separated and identified using a capillary column, a carrier gas, and a detector

**integrated samples:** samples collected at a constant rate on a medium or in a container during a set period

**ion trap detection:** a laboratory method that creates ions from contaminants in an air sample and compares them to known ion fracture patterns to identify particular compounds

**method detection limit:** the TNRCC can be 99 percent certain of a compound's presence if it is measured at or above this level

**point source emissions:** air pollution emissions from large or medium sized industry

**reporting limit:** the lowest measurement the TNRCC's current methods and instrumentation are capable of reporting (RL = 0.01 ppbv)

**volatile organic compounds (VOCs):** organic chemicals that readily vaporize at ambient temperatures

## Glossary and Acronyms

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**AIRS:** Aerometric Information Retrieval System

**EPA:** U.S. Environmental Protection Agency

**HRM:** Houston Regional Monitoring Corporation

**MDL:** Method Detection Limit

**ND:** levels less than the reporting limit (0.01 ppbv)

**ppbv:** parts per billion by volume

**TNRCC:** Texas Natural Resource Conservation Commission

**TRI:** Toxic Chemical Release Inventory





# ***Appendix A***

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**Table 1. Benzene Exceedances of the 24-Hour Effects Screening Level\***

Location	Date	Benzene ppbv	Location	Date	Benzene ppbv
Corpus Christi	1/7/93	5.01	Texas City	11/14/92	5.67
	1/19/93	4.21		1/2/94	4.12
	3/15/94	4.67		5/8/94	4.16
El Paso	12/15/93	4.01	Port Arthur	12/27/93	4.85
	12/27/93	8.73		1/2/94	4.71
	1/20/94	4.35		10/5/94	5.38
	2/7/94	5.09		10/29/94	4.12
	7/13/94	5.15	Odessa	6/18/93	4.36
	9/11/94	6.64		7/6/93	4.57
	9/29/94	11.27		8/17/93	4.05
	10/23/94	8.33		12/9/93	4.78
	10/29/94	11.02		7/19/94	19.4
	12/4/94	4.02		7/25/94	13.06
Groves	9/28/93	7.81	7/31/94	9.87	
	10/16/93	4.03	8/6/94	6.81	
	11/21/93	7.28	8/12/94	6.46	
	9/29/94	5.41	8/18/94	7.11	
Houston			8/24/94	4.9	
	Clinton Dr.	8/18/94	4.19	8/30/94	4.76
		9/11/94	4.97	9/11/94	4.36
		9/17/94	11.41		
		9/23/94	10.09		
		9/29/94	10.85		
	Old Galveston Rd.	10/11/94	9.28		
		9/28/93	6.54		
	Haden Rd.	11/22/94	4.03		
		5/1/93	6.38		
		5/25/93	5.71		
		9/22/93	10.83		
		12/9/93	6.57		
		12/27/93	4.65		
		4/14/94	5.05		
5/26/94		5.93			
6/13/94		35.17			
8/30/94	7.76				
9/29/94	10.6				

\* 4 parts per billion by volume;  
total exceedances = 55 from November 1992  
through December 1994.

Source: TNRCC air toxics database



**Table 2. Comparison of TNRCC and HRM Network Measurements at the Colocated Canister Site in Houston (Haden Road) \***

	Detection Limit	Number of Samples Above Detection Limit	Average Absolute Percent Difference from Mean	Average Signed Percent Difference from Mean	Mean for all TNRCC Samples (ppbv)	Correlation Coefficient: TNRCC and HRM for $\geq$ MDL
Benzene	0.50	103	14.3%	-7.4%	2.0	0.9324 p=0.0001 n=99
Toluene	0.88	106	13.3%	3.0%	2.8	0.7561 p=0.0001 n=103
o-Xylene	1.02	17	49.6%	49.6%	<MDL	-0.3206 p=0.2096 n=17
m- and p-Xylenes	0.68	59	26.4%	2.6%	2.0	0.74694 p=0.0001 n=58
Styrene	0.77	49	44.4%	37.1%	1.3	0.72108 p=0.0001 n=46
Ethyl Benzene	1.07	18	23.5%	17.2%	0.8	0.8068 p=0.0001 n=17
Carbon Tetrachloride	0.45	23	20.5%	-2.2%	<MDL	0.76479 p=0.0001 n=22
1,1,1-Trichloroethane	0.38	44	45.8%	-34.4%	0.4	-0.07778 p=0.7179 n=24
Trichlorofluoromethane	0.40	36	41.4%	37.0%	0.4	-0.17187 p=0.3389 n=33

\* Data is from start-up in December 1992 to December 1994. Only samples where TNRCC measured above or equal to the method detection limit and HRM reported a value were used in the analysis.

Sources: HRM data provided by Radlar, Inc. (Austin, Texas)  
TNRCC data from the air toxics database

Note: There were not enough samples where TNRCC measured concentrations above the method detection limit to compare measurements made by TNRCC with measurements made by HRM for the following compounds: chlorobenzene, 1,3-butadiene, methylene chloride, chloroform, trichloroethylene, 1,2-dichloroethane, perchloroethylene, 1,2-dichloropropane, 1,2-dibromoethane, bromomethane, and vinyl chloride.

Absolute percent difference from the mean is

$$\text{Absolute Percent Difference} = \left| \frac{\text{compound TNRCC, } i - \bar{x}_i}{\bar{x}_i} \right| \times 100$$

where  $\bar{x}_i$  is the average of the measurements made by the TNRCC and HRM.

Signed percent difference from the mean is

$$\text{Signed Percent Difference} = \frac{\text{compound TNRCC, } i - \bar{x}_i}{\bar{x}_i} \times 100$$

where  $\bar{x}_i$  is the average of the measurements made by the TNRCC and HRM.

**Table 6. TNRCC Air Toxics Network Sites**

County	Name	Location	AIRS No.	Start	Stop
Bexar*	San Antonio	254 Seale Rd.	029 0051	07/13/94	12/16/94
Brazoria	Clute	426 Commerce St.	039 1003	11/20/92	
Cameron	Brownsville	344 Porter Dr.	061 0006	09/04/93	
Dallas	Dallas	1601 Chalk Hill Rd.	113 0070	02/24/93	
Ector	Odessa	Barrett and Monahans St.	135 0003	02/12/93	
Ellis	Midlothian	440 Tayman Dr.	139 0007	01/25/93	
El Paso	El Paso	Clark and Cleveland	141 0047	05/13/93	
Galveston	Texas City	17th and 5th Ave.	167 0053	10/27/92	
Harris	Channelview	1401 Sheldon Rd.	201 0026	11/20/92	
Harris	Houston (Old Galveston Rd.)	3100 Old Galveston Rd.	201 0064	01/25/93	
Harris	Houston (Haden Rd.)	1504 Haden Rd.	201 0803	12/26/92	
Harris	Houston (Clinton Dr.)	9525 Clinton Dr.	201 1035	11/19/92	
Jefferson	Beaumont	Georgia Ave. and Cunningham St.	245 0009	11/19/92	
Jefferson	Port Arthur	800 El Vista	245 0011	11/19/92	
Jefferson	Groves	3355 Grandview Ave.	245 0014	09/04/93	
Jefferson*	Port Neches	1225 Merriman St.	245 0017	07/25/94	10/19/94
Nueces	Corpus Christi	1111 Navigation Blvd.	355 0020	01/01/93	
Orange	West Orange	2700 Austin Ave.	361 1001	07/25/94	
Smith	Winona	605 Wildcat Rd.	423 0005	06/25/94	
Tarrant*	Grapevine	601 Boyd Dr.	439 3002	07/01/94	10/20/94
Tarrant*	DFW Airport	North Airfield Dr.	439 3004	08/12/94	12/04/94
Travis*	Austin	West Cesar Chavez and Colorado St.	453 0017	07/31/94	12/04/94

\* Five of the seven monitoring sites put in operation in 1994 stopped operating because of technical problems.

Source: TNRCC air toxics database





## ***Appendix B***

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## Summary Statistics

Using EPA calibration gas standards, the TNRCC laboratory can certify with 99 percent confidence the presence of a compound when the compound is present in concentrations greater than or equal to an MDL. The MDL for each compound has been determined experimentally using EPA methods. For concentrations of a compound measured less than the MDL but greater than or equal to 0.01 ppbv, there may be indications that the compound is present, but with less than 99 percent confidence. In order to present as much information as possible, a reporting limit for all compounds has been set at 0.01 ppbv. The reporting limit is the lowest measurement the TNRCC's current methods and instrumentation are capable of reporting.

## Field Samples

This report includes the following statistical measures: the mean (average), the median, the maximum, and the second highest concentration. If a compound was measured in any sample at a concentration greater than or equal to the reporting limit of 0.01 ppbv, the concentration reported by the laboratory was used in the calculation of summary statistics. If the compound was measured less than the reporting limit, a

value equal to one-half the reporting limit was substituted for the calculation of the mean. Measurements that the laboratory determines are invalid due to equipment failure or other causes are not used in the calculation of summary statistics.

## Means

The mean concentration values are reported for each monitoring location. These mean values are the average of all of the individual 24-hour samples for each compound measured at each site. Values were substituted for compounds below the reporting limit as discussed above. For the mean, there are three possible outcomes that are used to convey information about the data. The three outcomes are described below:

$$\text{Mean} = \begin{cases} \text{ND} = \text{all samples are less than the reporting limit} \\ < \text{MDL} = \text{average is less than the compound's MDL} \\ \text{number} = \text{average is greater than or equal to the compound's MDL} \end{cases}$$

A "<MDL" summary value implies that at least once in the summary period the compound was measured at a concentration greater than or equal to the reporting limit. When a compound was measured at a concentration less than the reporting limit in all of the samples during a summary period an "ND" appears as the mean.



## **Maximum, Second Highest, and Median**

Three other statistics are reported for each monitoring location. The value reported for the maximum, second highest observation, or the median is equivalent to the measured concentration of the sample holding the maximum, second highest, or median position in the set of measurements for this summary period. These values may be reported as ND if the compound was measured at a concentration less than the reporting limit, <MDL if the compound was measured at a concentration less than the MDL

but greater than or equal to the reporting limit, or as a number if the compound was measured at a concentration greater than or equal to the MDL. When there were an even number of measurements during the summary period, the median is defined as the average of the middle two measurements. In this case, the protocol described above for the mean is used in reporting the average of the middle two measurements. ♦

**TNRCC Network**  
**Benzene Data Summary**  
**Method Detection Limit (MDL) = 0.50**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 1 ppbv)	Median	24-Hour High (ESL = 4 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	21	13	0.66	0.55	1.46	1.17
Brazoria	Clute 0391003	92	7	3	<MDL	<MDL	0.93	0.65
		93	36	26	0.78	0.72	2.24	1.49
		94	53	21	<MDL	<MDL	1.21	1.01
Cameron	Brownsville 0610006	93	4	3	0.85	0.91	1.56	1.09
		94	44	13	<MDL	<MDL	1.68	1.54
Dallas	Dallas 1130070	93	49	19	<MDL	<MDL	1.47	1.46
		94	58	22	<MDL	<MDL	1.60	1.10
Ector	Odessa 1350003	93	52	46	1.51 *	1.17	4.78 **	4.57 **
		94	59	44	2.26 *	1.14	19.40 **	13.06 **
Ellis	Midlothian 1390007	93	55	13	<MDL	<MDL	1.00	0.94
		94	49	3	<MDL	<MDL	0.80	0.73
El Paso	El Paso 1410047	93	33	33	2.26 *	2.05	8.73 **	4.01 **
		94	58	55	2.34 *	1.36	11.27 **	11.02 **
Galveston	Texas City 1670053	92	9	6	1.42 *	0.99	5.67 **	1.92
		93	39	29	0.97	0.83	2.86	2.52
		94	51	41	1.21 *	1.04	4.16 **	4.12 **
Harris	Channelview 2010026	92	7	6	1.39 *	1.13	3.31	2.31
		93	39	35	1.16 *	0.95	3.11	2.76
		94	59	55	1.13 *	1.02	2.64	2.52
Harris	Houston (Old Galveston Rd.) 2010064	93	43	37	1.19 *	0.99	6.54 **	2.48
		94	47	39	1.21 *	0.86	4.03 **	3.40
Harris	Houston (Haden Rd.) 2010803	92	1	1	1.07 *	1.07		
		93	56	50	1.72 *	1.21	10.83 **	6.57 **
		94	58	52	2.28 *	1.15	35.17 **	10.60 **
Harris	Houston (Clinton Dr.) 2011035	92	8	5	1.17 *	1.12	3.05	1.80
		93	39	37	1.29 *	1.21	2.40	2.28
		94	58	50	2.14 *	1.56	11.41 **	10.85 **
Jefferson	Beaumont 2450009	92	7	1	<MDL	<MDL	0.58	<MDL
		93	40	34	0.88	0.76	2.17	2.08
		94	59	45	0.81	0.74	2.18	1.99
Jefferson	Port Arthur 2450011	92	7	3	<MDL	<MDL	1.55	0.64
		93	44	29	0.95	0.70	4.85 **	3.60
		94	22	15	1.37 *	0.71	5.38 **	4.71 **
Jefferson	Groves 2450014	93	18	18	2.17 *	1.19	7.81 **	7.28 **
		94	58	43	0.95	0.78	5.41 **	3.41
Jefferson	Port Neches 2450017	94	23	12	0.70	0.59	2.23	1.54
Nueces	Corpus Christi 3550020	93	54	34	1.17 *	0.79	5.01 **	4.21 **
		94	52	33	0.93	0.66	4.67 **	2.22
Orange	West Orange 3611001	94	27	12	<MDL	<MDL	1.16	0.81
Smith	Winona 4230005	94	32	10	<MDL	<MDL	1.11	0.84
Tarrant	Grapevine 4393002	94	15	5	<MDL	<MDL	0.59	<MDL
Tarrant	DFW Airport 4393004	94	9	3	<MDL	<MDL	0.69	0.59
Travis	Austin 4530017	94	21	13	0.67	0.63	1.43	1.21

† = Aerometric Information Retrieval System  
\* = Mean is greater than the annual ESL  
\*\* = Greater than the 24-Hour ESL  
ND = Less than the reporting limit

Source: TNRCC air toxics database

**TNRCC Network**  
**Bromomethane Data Summary**  
**Method Detection Limit (MDL) = 0.62**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 5 ppbv)	Median	24-Hour High (ESL = 20 ppbv)	24-Hour Second High
Brazoria	Clute 0391003	92	7	0	ND	ND	ND	ND
		93	46	0	<MDL	<MDL	<MDL	<MDL
		94	4	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	93	19	0	<MDL	<MDL	<MDL	<MDL
		94	5	0	<MDL	<MDL	<MDL	<MDL
Dallas	Dallas 1130070	93	49	0	<MDL	<MDL	<MDL	<MDL
		94	5	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	93	52	0	<MDL	<MDL	<MDL	<MDL
		94	5	0	<MDL	ND	<MDL	<MDL
Ellis	Midlothian 1390007	93	55	0	<MDL	ND	<MDL	<MDL
		94	4	0	ND	ND	ND	ND
El Paso	El Paso 1410047	93	33	0	<MDL	<MDL	<MDL	<MDL
		94	5	0	<MDL	<MDL	<MDL	<MDL
Galveston	Texas City 1670053	92	9	0	<MDL	ND	<MDL	ND
		93	51	0	<MDL	<MDL	<MDL	<MDL
		94	5	0	<MDL	<MDL	<MDL	<MDL
Harris	Channelview 2010026	92	7	0	ND	ND	ND	ND
		93	49	0	<MDL	ND	<MDL	<MDL
		94	5	0	<MDL	ND	<MDL	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	93	43	0	<MDL	<MDL	<MDL	<MDL
		94	5	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Haden Rd.) 2010803	92	1	0	ND	ND		
		93	56	0	<MDL	ND	<MDL	<MDL
		94	5	0	<MDL	ND	<MDL	ND
Harris	Houston (Clinton Dr.) 2011035	92	8	0	ND	ND	ND	ND
		93	50	0	<MDL	<MDL	<MDL	<MDL
		94	5	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Beaumont 2450009	92	7	0	ND	ND	ND	ND
		93	56	0	<MDL	ND	<MDL	<MDL
		94	5	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Arthur 2450011	92	7	0	ND	ND	ND	ND
		93	60	0	<MDL	ND	<MDL	<MDL
		94	5	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Groves 2450014	93	18	0	<MDL	<MDL	<MDL	<MDL
		94	5	0	<MDL	ND	<MDL	ND
Nueces	Corpus Christi 3550020	93	55	0	<MDL	ND	<MDL	<MDL
		94	4	0	<MDL	<MDL	<MDL	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

NOTE: The TNRCC was unable to obtain Bromomethane gas to use as a standard in analyzing samples in February 1994 through the remainder of the year. So no data was collected for this compound at the seven new sites that began operation in 1994.



**TNRCC Network**  
**1,3-Butadiene Data Summary**  
**Method Detection Limit (MDL) = 0.63**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 5 ppbv)	Median	24-Hour High (ESL = 20 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	21	0	<MDL	ND	<MDL	<MDL
Brazoria	Clute 0391003	92	2	0	ND	ND	ND	ND
		93	29	1	<MDL	ND	1.07	<MDL
		94	53	2	<MDL	ND	0.70	0.64
Cameron	Brownsville 0610006	93	19	0	ND	ND	ND	ND
		94	59	0	<MDL	<MDL	<MDL	<MDL
Dallas	Dallas 1130070	93	34	0	<MDL	ND	<MDL	<MDL
		94	58	0	<MDL	ND	<MDL	<MDL
Ector	Odessa 1350003	93	39	7	<MDL	ND	2.02	1.87
		94	59	14	1.48	<MDL	53.62 **	3.98
Ellis	Midlothian 1390007	93	39	0	<MDL	ND	<MDL	ND
		94	51	0	<MDL	ND	<MDL	<MDL
El Paso	El Paso 1410047	93	22	0	<MDL	ND	<MDL	ND
		94	58	2	<MDL	<MDL	0.96	0.66
Galveston	Texas City 1670053	92	5	1	<MDL	ND	1.27	ND
		93	35	1	<MDL	ND	0.67	<MDL
		94	51	3	1.27	ND	34.98 **	15.64
Harris	Channelview 2010026	92	5	0	<MDL	ND	<MDL	<MDL
		93	28	3	<MDL	ND	1.23	1.20
		94	59	13	<MDL	<MDL	2.74	1.69
Harris	Houston (Old Galveston Rd.) 2010064	93	39	5	<MDL	ND	1.81	1.80
		94	55	11	<MDL	<MDL	5.18	3.30
Harris	Houston (Haden Rd.) 2010803	92	1	0	<MDL	<MDL		
		93	33	1	<MDL	ND	1.21	<MDL
		94	58	17	<MDL	<MDL	2.95	1.85
Harris	Houston (Clinton Dr.) 2011035	92	6	0	ND	ND	ND	ND
		93	37	6	<MDL	ND	1.61	1.57
		94	58	16	<MDL	<MDL	4.03	2.35
Jefferson	Beaumont 2450009	92	7	0	<MDL	ND	<MDL	ND
		93	36	2	<MDL	ND	0.83	0.72
		94	59	0	<MDL	ND	<MDL	<MDL
Jefferson	Port Arthur 2450011	92	6	0	<MDL	ND	<MDL	ND
		93	45	2	<MDL	ND	0.69	0.65
		94	57	5	<MDL	ND	2.73	1.30
Jefferson	Groves 2450014	93	18	0	ND	ND	ND	ND
		94	58	5	<MDL	ND	1.39	1.35
Jefferson	Port Neches 2450017	94	23	15	5.94 *	1.80	27.75 **	20.15 **
Nueces	Corpus Christi 3550020	93	39	0	<MDL	ND	<MDL	<MDL
		94	52	0	<MDL	ND	<MDL	<MDL
Orange	West Orange 3611001	94	27	2	<MDL	<MDL	0.71	0.69
Smith	Winona 4230005	94	32	1	<MDL	ND	8.75	<MDL
Tarrant	Grapevine 4393002	94	15	0	<MDL	ND	<MDL	<MDL
Tarrant	DFW Airport 4393004	94	9	0	<MDL	ND	<MDL	ND
Travis	Austin 4530017	94	21	0	<MDL	<MDL	<MDL	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

Source: TNRCC air toxics database

NOTE: A full year's worth of data is not available for Port Neches because the monitor only operated from July 25 to Oct. 19, 1994.

**TNRCC Network**  
**n-Butane Data Summary**  
**Method Detection Limit (MDL) = 0.74**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 800 ppbv)	Median	24-Hour High (ESL = 3,200 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	8	2.67	1.18	8.17	4.97
Brazoria	Clute 0391003	94	14	8	1.51	0.76	4.32	3.85
Cameron	Brownsville 0610006	94	14	10	2.31	1.29	11.53	5.27
Dallas	Dallas 1130070	94	14	7	1.37	<MDL	5.30	2.93
Ector	Odessa 1350003	94	14	10	1.61	0.91	6.34	5.47
Ellis	Midlothian 1390007	94	12	8	2.52	1.20	14.60	4.64
El Paso	El Paso 1410047	94	14	8	17.62	1.02	129.60	41.05
Galveston	Texas City 1670053	94	11	6	0.94	0.82	2.96	1.39
Harris	Channelview 2010026	94	15	9	2.52	0.78	14.84	7.43
Harris	Houston (Old Galveston Rd.) 2010064	94	14	9	1.51	1.33	5.84	2.76
Harris	Houston (Haden Rd.) 2010803	94	14	12	3.20	1.72	9.94	9.80
Harris	Houston (Clinton Dr.) 2011035	94	14	13	3.84	2.54	13.03	10.73
Jefferson	Beaumont 2450009	94	15	14	4.15	2.59	17.96	9.12
Jefferson	Port Arthur 2450011	94	14	10	2.13	1.03	8.86	8.39
Jefferson	Groves 2450014	94	14	12	11.13	1.58	61.15	32.98
Jefferson	Port Neches 2450017	94	13	11	1.61	1.51	3.40	3.00
Nueces	Corpus Christi 3550020	94	14	11	3.07	1.59	14.67	7.30
Orange	West Orange 3611001	94	15	13	2.97	3.10	7.15	5.72
Smith	Winona 4230005	94	15	7	1.54	<MDL	5.35	3.88
Tarrant	Grapevine 4393002	94	1	0	ND	ND		
Tarrant	DFW Airport 4393004	94	3	0	ND	ND	ND	ND
Travis	Austin 4530017	94	10	6	1.95	0.85	5.08	5.06

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**1-Butene Data Summary**  
**Method Detection Limit (MDL) = 2.56**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 740 ppbv)	Median	24-Hour High (ESL = 2,960 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	<MDL	<MDL	<MDL	<MDL
Brazoria	Clute 0391003	94	14	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	94	14	0	<MDL	<MDL	<MDL	<MDL
Dallas	Dallas 1130070	94	14	1	<MDL	<MDL	3.97 **	<MDL
Ector	Odessa 1350003	94	14	2	<MDL	<MDL	3.62 **	3.24 **
Ellis	Midlothian 1390007	94	12	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	94	14	4	6.94 *	<MDL	41.96 **	38.41 **
Galveston	Texas City 1670053	94	11	2	<MDL	<MDL	4.03 **	2.57 **
Harris	Channelview 2010026	94	15	1	<MDL	<MDL	2.75 **	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	94	14	6	2.84 *	<MDL	11.90 **	5.41 **
Harris	Houston (Haden Rd.) 2010803	94	14	5	<MDL	<MDL	5.26 **	5.26 **
Harris	Houston (Clinton Dr.) 2011035	94	14	5	<MDL	<MDL	5.66 **	3.30 **
Jefferson	Beaumont 2450009	94	15	1	<MDL	<MDL	2.75 **	<MDL
Jefferson	Port Arthur 2450011	94	14	2	<MDL	<MDL	2.90 **	2.76 **
Jefferson	Groves 2450014	94	14	4	2.60 *	<MDL	13.48 **	4.77 **
Jefferson	Port Neches 2450017	94	13	0	<MDL	<MDL	<MDL	<MDL
Nueces	Corpus Christi 3550020	94	14	7	<MDL	<MDL	7.95 **	5.01 **
Orange	West Orange 3611001	94	15	0	<MDL	<MDL	<MDL	<MDL
Smith	Winona 4230005	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	Grapevine 4393002	94	1	0	ND		ND	
Tarrant	DFW Airport 4393004	94	3	0	ND	ND	ND	ND
Travis	Austin 4530017	94	10	1	<MDL	<MDL	3.47 **	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*



**TNRCC Network**  
**c-2-Butene Data Summary**  
**Method Detection Limit (MDL) = 0.18**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 740 ppbv)	Median	24-Hour High (ESL = 2,960 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	<MDL	ND	<MDL	<MDL
Brazoria	Clute 0391003	94	14	0	ND	ND	ND	ND
Cameron	Brownsville 0610006	94	14	4	0.20	ND	1.36	0.56
Dallas	Dallas 1130070	94	14	2	<MDL	ND	0.36	0.30
Ector	Odessa 1350003	94	14	8	0.23	0.18	0.93	0.45
Ellis	Midlothian 1390007	94	12	0	ND	ND	ND	ND
El Paso	El Paso 1410047	94	14	6	0.57	<MDL	3.68	2.02
Galveston	Texas City 1670053	94	11	1	<MDL	ND	0.62	<MDL
Harris	Channelview 2010026	94	15	6	<MDL	ND	0.33	0.26
Harris	Houston (Old Galveston Rd.) 2010064	94	14	6	0.53	<MDL	2.43	1.69
Harris	Houston (Haden Rd.) 2010803	94	14	2	<MDL	ND	0.51	0.19
Harris	Houston (Clinton Dr.) 2011035	94	14	5	0.22	ND	1.05	0.82
Jefferson	Beaumont 2450009	94	15	2	<MDL	ND	0.56	0.24
Jefferson	Port Arthur 2450011	94	14	4	<MDL	ND	1.27	0.57
Jefferson	Groves 2450014	94	14	6	0.63	ND	5.82	1.18
Jefferson	Port Neches 2450017	94	13	5	0.43	ND	2.75	0.91
Nueces	Corpus Christi 3550020	94	14	2	<MDL	ND	0.36	0.27
Orange	West Orange 3611001	94	15	3	<MDL	ND	0.93	0.27
Smith	Winona 4230005	94	15	0	ND	ND	ND	ND
Tarrant	Grapevine 4393002	94	1	0	ND	ND		
Tarrant	DFW Airport 4393004	94	3	0	ND	ND	ND	ND
Travis	Austin 4530017	94	10	1	<MDL	ND	0.26	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**t-2-Butene Data Summary**  
**Method Detection Limit (MDL) = 0.20**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 740 ppbv)	Median	24-Hour High (ESL = 2,960 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	2	<MDL	<MDL	0.28	0.27
Brazoria	Clute 0391003	94	14	2	0.24	<MDL	1.66	1.19
Cameron	Brownsville 0610006	94	14	7	0.31	<MDL	1.04	0.77
Dallas	Dallas 1130070	94	14	5	0.47	<MDL	3.35	1.08
Ector	Odessa 1350003	94	14	11	1.87	0.29	14.77	7.65
Ellis	Midlothian 1390007	94	12	2	<MDL	ND	0.88	0.55
El Paso	El Paso 1410047	94	14	10	1.44	0.37	9.91	4.68
Galveston	Texas City 1670053	94	11	4	0.41	<MDL	2.78	0.61
Harris	Channelview 2010026	94	15	9	0.43	0.23	2.34	1.71
Harris	Houston (Old Galveston Rd.) 2010064	94	14	9	1.49	0.95	7.50	4.38
Harris	Houston (Haden Rd.) 2010803	94	14	7	0.77	0.21	3.67	3.37
Harris	Houston (Clinton Dr.) 2011035	94	14	7	0.92	0.29	8.42	1.15
Jefferson	Beaumont 2450009	94	15	5	0.30	<MDL	2.84	0.27
Jefferson	Port Arthur 2450011	94	14	7	0.39	0.21	1.96	1.10
Jefferson	Groves 2450014	94	14	8	0.68	0.25	5.02	1.24
Jefferson	Port Neches 2450017	94	13	8	1.85	0.87	10.83	3.14
Nueces	Corpus Christi 3550020	94	14	7	1.03	<MDL	9.91	2.23
Orange	West Orange 3611001	94	15	7	0.48	<MDL	3.93	0.96
Smith	Winona 4230005	94	15	3	0.28	ND	1.99	1.63
Tarrant	Grapevine 4393002	94	1	1	1.47	1.47		
Tarrant	DFW Airport 4393004	94	3	3	1.07	0.97	1.40	0.97
Travis	Austin 4530017	94	10	6	0.93	0.29	2.62	2.47

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**Carbon Tetrachloride Data Summary**  
**Method Detection Limit (MDL) = 0.45**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 2 ppbv)	Median	24-Hour High (ESL = 8 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	21	0	<MDL	<MDL	<MDL	<MDL
Brazoria	Clute 0391003	92	0	0				
		93	15	0	<MDL	<MDL	<MDL	<MDL
		94	21	1	<MDL	<MDL	0.51	<MDL
Cameron	Brownsville 0610006	93	19	1	<MDL	<MDL	1.07	<MDL
		94	59	0	<MDL	<MDL	<MDL	<MDL
Dallas	Dallas 1130070	93	27	0	<MDL	<MDL	<MDL	<MDL
		94	58	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	93	13	1	<MDL	<MDL	0.68	<MDL
		94	23	1	<MDL	<MDL	1.17	<MDL
Ellis	Midlothian 1390007	93	20	0	<MDL	<MDL	<MDL	<MDL
		94	32	3	<MDL	<MDL	3.40	1.25
El Paso	El Paso 1410047	93	33	0	<MDL	<MDL	<MDL	<MDL
		94	58	1	<MDL	<MDL	1.20	<MDL
Galveston	Texas City 1670053	92	9	0	<MDL	<MDL	<MDL	<MDL
		93	51	0	<MDL	<MDL	<MDL	<MDL
		94	51	0	<MDL	<MDL	<MDL	<MDL
Harris	Channelview 2010026	92	6	0	<MDL	<MDL	<MDL	<MDL
		93	49	0	<MDL	<MDL	<MDL	<MDL
		94	59	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	93	21	0	<MDL	<MDL	<MDL	<MDL
		94	55	1	<MDL	<MDL	0.49	<MDL
Harris	Houston (Haden Rd.) 2010803	92	1	0	ND	ND		
		93	56	8	<MDL	<MDL	4.90	1.54
		94	58	15	<MDL	<MDL	1.97	1.90
Harris	Houston (Clinton Dr.) 2011035	92	0	0				
		93	23	2	<MDL	<MDL	1.89	0.58
		94	41	8	<MDL	<MDL	1.65	0.85
Jefferson	Beaumont 2450009	92	2	0	<MDL	<MDL	<MDL	ND
		93	38	0	<MDL	<MDL	<MDL	<MDL
		94	44	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Arthur 2450011	92	7	2	0.51	<MDL	1.72	1.35
		93	46	0	<MDL	<MDL	<MDL	<MDL
		94	37	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Groves 2450014	93	12	0	<MDL	<MDL	<MDL	<MDL
		94	21	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Neches 2450017	94	23	0	<MDL	<MDL	<MDL	<MDL
Nueces	Corpus Christi 3550020	93	20	0	<MDL	ND	<MDL	<MDL
		94	52	0	<MDL	<MDL	<MDL	<MDL
Orange	West Orange 3611001	94	27	0	<MDL	<MDL	<MDL	<MDL
Smith	Winona 4230005	94	32	1	<MDL	<MDL	0.45	<MDL
Tarrant	Grapevine 4393002	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	DFW Airport 4393004	94	9	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	21	0	<MDL	<MDL	<MDL	<MDL

† = Aerometric Information Retrieval System  
\* = Mean is greater than the annual ESL  
\*\* = Greater than the 24-Hour ESL  
ND = Less than the reporting limit

Source: TNRCC air toxics database

**TNRCC Network**  
**Chlorobenzene Data Summary**  
**Method Detection Limit (MDL) = 0.74**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 10 ppbv)	Median	24-Hour High (ESL = 40 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	21	0	<MDL	<MDL	<MDL	<MDL
Brazoria	Clute 0391003	92	7	0	ND	ND	ND	ND
		93	46	2	<MDL	<MDL	1.81	0.92
		94	53	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	93	19	0	<MDL	<MDL	<MDL	<MDL
		94	59	0	<MDL	<MDL	<MDL	<MDL
Dallas	Dallas 1130070	93	49	0	<MDL	<MDL	<MDL	<MDL
		94	58	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	93	52	0	<MDL	<MDL	<MDL	<MDL
		94	59	0	<MDL	<MDL	<MDL	<MDL
Ellis	Midlothian 1390007	93	55	0	<MDL	<MDL	<MDL	<MDL
		94	51	2	<MDL	<MDL	0.77	0.77
El Paso	El Paso 1410047	93	33	0	<MDL	<MDL	<MDL	<MDL
		94	58	0	<MDL	<MDL	<MDL	<MDL
Galveston	Texas City 1670053	92	9	1	<MDL	<MDL	1.01	<MDL
		93	51	0	<MDL	<MDL	<MDL	<MDL
		94	51	0	<MDL	<MDL	<MDL	<MDL
Harris	Channelview 2010026	92	7	1	<MDL	ND	0.88	<MDL
		93	49	4	<MDL	<MDL	3.98	2.61
		94	59	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	93	43	0	<MDL	<MDL	<MDL	<MDL
		94	55	8	<MDL	<MDL	5.93	3.88
Harris	Houston (Haden Rd.) 2010803	92	1	0	ND	ND		
		93	56	5	<MDL	<MDL	5.32	3.15
		94	58	8	<MDL	<MDL	3.44	2.81
Harris	Houston (Clinton Dr.) 2011035	92	8	1	<MDL	ND	1.70	ND
		93	50	0	<MDL	<MDL	<MDL	<MDL
		94	58	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Beaumont 2450009	92	7	0	<MDL	ND	<MDL	ND
		93	56	0	<MDL	<MDL	<MDL	<MDL
		94	59	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Arthur 2450011	92	7	0	<MDL	ND	<MDL	ND
		93	60	5	<MDL	<MDL	2.11	1.69
		94	57	1	<MDL	<MDL	0.85	<MDL
Jefferson	Groves 2450014	93	18	0	<MDL	<MDL	<MDL	<MDL
		94	58	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Neches 2450017	94	23	0	<MDL	<MDL	<MDL	<MDL
Nueces	Corpus Christi 3550020	93	55	1	<MDL	<MDL	0.78	<MDL
		94	52	0	<MDL	<MDL	<MDL	<MDL
Orange	West Orange 3611001	94	27	0	<MDL	<MDL	<MDL	<MDL
Smith	Winona 4230005	94	32	1	<MDL	<MDL	1.05	<MDL
Tarrant	Grapevine 4393002	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	DFW Airport 4393004	94	9	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	21	0	<MDL	<MDL	<MDL	<MDL

† = Aerometric Information Retrieval System  
\* = Mean is greater than the annual ESL  
\*\* = Greater than the 24-Hour ESL  
ND = Less than the reporting limit

Source: TNRCC air toxics database



**TNRCC Network**  
**Chloroform Data Summary**  
**Method Detection Limit (MDL) = 0.64**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 2 ppbv)	Median	24-Hour High (ESL = 8 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	21	0	<MDL	<MDL	<MDL	<MDL
Brazoria	Clute 0391003	92	7	0	<MDL	ND	<MDL	ND
		93	46	0	<MDL	<MDL	<MDL	<MDL
		94	53	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	93	19	0	<MDL	<MDL	<MDL	<MDL
		94	59	0	<MDL	<MDL	<MDL	<MDL
Dallas	Dallas 1130070	93	49	0	<MDL	<MDL	<MDL	<MDL
		94	58	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	93	52	0	<MDL	<MDL	<MDL	<MDL
		94	59	0	<MDL	<MDL	<MDL	<MDL
Ellis	Midlothian 1390007	93	55	0	<MDL	<MDL	<MDL	<MDL
		94	51	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	93	33	0	<MDL	<MDL	<MDL	<MDL
		94	58	0	<MDL	<MDL	<MDL	<MDL
Galveston	Texas City 1670053	92	9	0	<MDL	ND	<MDL	<MDL
		93	51	0	<MDL	<MDL	<MDL	<MDL
		94	51	0	<MDL	<MDL	<MDL	<MDL
Harris	Channelview 2010026	92	7	0	<MDL	ND	<MDL	ND
		93	49	0	<MDL	<MDL	<MDL	<MDL
		94	59	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	93	43	0	<MDL	<MDL	<MDL	<MDL
		94	55	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Haden Rd.) 2010803	92	1	0	ND	ND		
		93	56	2	<MDL	<MDL	8.03 **	4.34
		94	58	1	<MDL	<MDL	0.81	<MDL
Harris	Houston (Clinton Dr.) 2011035	92	8	0	<MDL	ND	<MDL	<MDL
		93	50	0	<MDL	<MDL	<MDL	<MDL
		94	58	1	<MDL	<MDL	0.69	<MDL
Jefferson	Beaumont 2450009	92	7	0	ND	ND	ND	ND
		93	56	2	<MDL	<MDL	2.20	0.64
		94	59	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Arthur 2450011	92	7	0	<MDL	ND	<MDL	ND
		93	60	0	<MDL	<MDL	<MDL	<MDL
		94	57	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Groves 2450014	93	18	0	<MDL	<MDL	<MDL	<MDL
		94	58	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Neches 2450017	94	23	0	<MDL	<MDL	<MDL	<MDL
Nueces	Corpus Christi 3550020	93	55	0	<MDL	<MDL	<MDL	<MDL
		94	52	0	<MDL	<MDL	<MDL	<MDL
Orange	West Orange 3611001	94	27	0	<MDL	<MDL	<MDL	<MDL
Smith	Winona 4230005	94	32	0	<MDL	<MDL	<MDL	<MDL
Tarrant	Grapevine 4393002	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	DFW Airport 4393004	94	9	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	21	0	<MDL	<MDL	<MDL	<MDL

† = Aerometric Information Retrieval System  
\* = Mean is greater than the annual ESL  
\*\* = Greater than the 24-Hour ESL  
ND = Less than the reporting limit

Source: TNRCC air toxics database

**TNRCC Network**  
**2-Chloropentane Data Summary**  
**Method Detection Limit (MDL) = 0.50**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 19 ppbv)	Median	24-Hour High (ESL = 76 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	12	0	ND	ND	ND	ND
Brazoria	Clute 0391003	93	8	2	<MDL	<MDL	0.69	0.53
		94	39	1	<MDL	ND	1.87	<MDL
Cameron	Brownsville 0610006	93	14	7	<MDL	<MDL	1.35	0.97
		94	45	0	ND	ND	ND	ND
Dallas	Dallas 1130070	93	15	4	<MDL	<MDL	0.96	0.77
		94	44	0	ND	ND	ND	ND
Ector	Odessa 1350003	93	15	10	0.90	1.02	2.12	1.80
		94	45	0	ND	ND	ND	ND
Ellis	Midlothian 1390007	93	15	0	<MDL	<MDL	<MDL	<MDL
		94	39	0	ND	ND	ND	ND
El Paso	El Paso 1410047	93	11	8	1.36	1.16	3.27	2.84
		94	44	2	<MDL	ND	2.84	1.85
Galveston	Texas City 1670053	93	14	7	0.84	<MDL	5.19	1.83
		94	40	0	ND	ND	ND	ND
Harris	Channelview 2010026	93	8	2	<MDL	<MDL	1.55	0.52
		94	44	1	<MDL	ND	0.77	ND
Harris	Houston (Old Galveston Rd.) 2010064	93	15	10	0.97	0.94	2.58	2.28
		94	41	0	ND	ND	ND	ND
Harris	Houston (Haden Rd.) 2010803	93	15	10	0.76	0.77	1.89	1.49
		94	44	1	<MDL	ND	1.55	<MDL
Harris	Houston (Clinton Dr.) 2011035	93	13	8	0.71	0.57	2.37	1.48
		94	44	3	<MDL	ND	2.83	2.22
Jefferson	Beaumont 2450009	93	13	8	0.88	0.76	2.34	2.19
		94	44	0	ND	ND	ND	ND
Jefferson	Port Arthur 2450011	93	15	8	0.51	0.50	1.66	1.37
		94	43	0	ND	ND	ND	ND
Jefferson	Groves 2450014	93	15	10	1.87	0.86	6.44	5.87
		94	44	0	ND	ND	ND	ND
Jefferson	Port Neches 2450017	94	10	0	ND	ND	ND	ND
Nueces	Corpus Christi 3550020	93	15	9	3.86	2.11	12.04	11.43
		94	38	1	<MDL	ND	3.00	ND
Orange	West Orange 3611001	94	12	0	ND	ND	ND	ND
Smith	Winona 4230005	94	17	0	ND	ND	ND	ND
Tarrant	Grapevine 4393002	94	14	0	ND	ND	ND	ND
Tarrant	DFW Airport 4393004	94	6	0	ND	ND	ND	ND
Travis	Austin 4530017	94	11	0	ND	ND	ND	ND

† = Aerometric Information Retrieval System  
\* = Mean is greater than the annual ESL  
\*\* = Greater than the 24-Hour ESL  
ND = Less than the reporting limit

Source: TNRCC air toxics database

**TNRCC Network**  
**Cumene - Isopropyl Benzene Data Summary**  
**Method Detection Limit (MDL) = 0.44**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 50 ppbv)	Median	24-Hour High (ESL = 200 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	<MDL	<MDL	<MDL	<MDL
Brazoria	Clute 0391003	94	14	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	94	14	0	<MDL	ND	<MDL	<MDL
Dallas	Dallas 1130070	94	14	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	94	14	0	<MDL	<MDL	<MDL	<MDL
Ellis	Midlothian 1390007	94	12	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	94	14	1	<MDL	<MDL	1.21	<MDL
Galveston	Texas City 1670053	94	11	0	<MDL	<MDL	<MDL	<MDL
Harris	Channelview 2010026	94	15	0	<MDL	ND	<MDL	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	94	14	1	<MDL	ND	1.04	<MDL
Harris	Houston (Haden Rd.) 2010803	94	14	0	<MDL	ND	<MDL	<MDL
Harris	Houston (Clinton Dr.) 2011035	94	14	0	<MDL	ND	<MDL	<MDL
Jefferson	Beaumont 2450009	94	15	0	ND	ND	ND	ND
Jefferson	Port Arthur 2450011	94	14	0	<MDL	ND	<MDL	<MDL
Jefferson	Groves 2450014	94	14	0	<MDL	ND	<MDL	<MDL
Jefferson	Port Neches 2450017	94	13	0	<MDL	ND	<MDL	<MDL
Nueces	Corpus Christi 3550020	94	14	0	<MDL	<MDL	<MDL	<MDL
Orange	West Orange 3611001	94	15	0	ND	ND	ND	ND
Smith	Winona 4230005	94	15	0	ND	ND	ND	ND
Tarrant	Grapevine 4393002	94	1	0	<MDL	<MDL		
Tarrant	DFW Airport 4393004	94	3	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	10	0	<MDL	<MDL	<MDL	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**Cyclohexane Data Summary**  
**Method Detection Limit (MDL) = 1.06**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 100 ppbv)	Median	24-Hour High (ESL = 400 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	<MDL	ND	<MDL	<MDL
Brazoria	Clute 0391003	94	14	2	<MDL	<MDL	3.52	1.26
Cameron	Brownsville 0610006	94	14	0	<MDL	ND	<MDL	<MDL
Dallas	Dallas 1130070	94	14	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	94	14	0	<MDL	<MDL	<MDL	<MDL
Ellis	Midlothian 1390007	94	12	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	94	14	4	<MDL	<MDL	6.72	1.78
Galveston	Texas City 1670053	94	11	0	<MDL	<MDL	<MDL	<MDL
Harris	Channelview 2010026	94	15	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	94	14	1	<MDL	<MDL	2.43	<MDL
Harris	Houston (Haden Rd.) 2010803	94	14	1	<MDL	<MDL	1.18	<MDL
Harris	Houston (Clinton Dr.) 2011035	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Beaumont 2450009	94	15	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Arthur 2450011	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Groves 2450014	94	14	3	<MDL	<MDL	1.59	1.52
Jefferson	Port Neches 2450017	94	13	0	<MDL	<MDL	<MDL	<MDL
Nueces	Corpus Christi 3550020	94	14	1	<MDL	<MDL	2.14	<MDL
Orange	West Orange 3611001	94	15	0	<MDL	<MDL	<MDL	<MDL
Smith	Winona 4230005	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	Grapevine 4393002	94	1	0	<MDL	<MDL		
Tarrant	DFW Airport 4393004	94	3	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	10	0	<MDL	ND	<MDL	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*



**TNRCC Network  
Cyclopentane Data Summary  
Method Detection Limit (MDL) = 0.20**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 119 ppbv)	Median	24-Hour High (ESL = 476 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	1	<MDL	<MDL	0.23	<MDL
Brazoria	Clute 0391003	94	14	2	<MDL	<MDL	0.22	0.20
Cameron	Brownsville 0610006	94	14	2	<MDL	<MDL	0.28	0.25
Dallas	Dallas 1130070	94	14	2	<MDL	<MDL	0.29	0.22
Ector	Odessa 1350003	94	14	7	0.20	<MDL	0.51	0.51
Ellis	Midlothian 1390007	94	12	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	94	14	7	2.46	0.20	17.29	12.21
Galveston	Texas City 1670053	94	11	3	<MDL	<MDL	0.37	0.28
Harris	Channelview 2010026	94	15	2	<MDL	<MDL	0.23	0.22
Harris	Houston (Old Galveston Rd.) 2010064	94	14	4	0.21	<MDL	0.94	0.71
Harris	Houston (Haden Rd.) 2010803	94	14	2	<MDL	<MDL	0.54	0.21
Harris	Houston (Clinton Dr.) 2011035	94	14	6	<MDL	<MDL	0.39	0.38
Jefferson	Beaumont 2450009	94	15	4	<MDL	<MDL	0.32	0.21
Jefferson	Port Arthur 2450011	94	14	4	<MDL	<MDL	0.25	0.22
Jefferson	Groves 2450014	94	14	8	0.27	0.24	1.19	0.42
Jefferson	Port Neches 2450017	94	13	1	<MDL	<MDL	0.30	<MDL
Nueces	Corpus Christi 3550020	94	14	5	<MDL	<MDL	0.70	0.48
Orange	West Orange 3611001	94	15	0	<MDL	<MDL	<MDL	<MDL
Smith	Winona 4230005	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	Grapevine 4393002	94	1	0	ND	ND		
Tarrant	DFW Airport 4393004	94	3	0	ND	ND	ND	ND
Travis	Austin 4530017	94	10	2	<MDL	<MDL	0.43	0.23

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**Cyclopentene Data Summary**  
**Method Detection Limit (MDL) = 0.39**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 293 ppbv)	Median	24-Hour High (ESL = 1,172 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	<MDL	ND	<MDL	<MDL
Brazoria	Clute 0391003	94	14	0	ND	ND	ND	ND
Cameron	Brownsville 0610006	94	14	0	<MDL	ND	<MDL	<MDL
Dallas	Dallas 1130070	94	14	0	<MDL	ND	<MDL	<MDL
Ector	Odessa 1350003	94	14	0	<MDL	ND	<MDL	<MDL
Ellis	Midlothian 1390007	94	12	0	ND	ND	ND	ND
El Paso	El Paso 1410047	94	14	0	<MDL	ND	<MDL	<MDL
Galveston	Texas City 1670053	94	11	0	<MDL	ND	<MDL	ND
Harris	Channelview 2010026	94	15	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	94	14	2	<MDL	<MDL	0.58	0.56
Harris	Houston (Haden Rd.) 2010803	94	14	0	<MDL	ND	<MDL	<MDL
Harris	Houston (Clinton Dr.) 2011035	94	14	0	<MDL	ND	<MDL	<MDL
Jefferson	Beaumont 2450009	94	15	0	ND	ND	ND	ND
Jefferson	Port Arthur 2450011	94	14	0	<MDL	ND	<MDL	<MDL
Jefferson	Groves 2450014	94	14	1	<MDL	ND	0.41	ND
Jefferson	Port Neches 2450017	94	13	0	ND	ND	ND	ND
Nueces	Corpus Christi 3550020	94	14	0	<MDL	ND	<MDL	ND
Orange	West Orange 3611001	94	15	0	<MDL	ND	<MDL	<MDL
Smith	Winona 4230005	94	15	0	<MDL	ND	<MDL	ND
Tarrant	Grapevine 4393002	94	1	0	ND	ND		
Tarrant	DFW Airport 4393004	94	3	0	ND	ND	ND	ND
Travis	Austin 4530017	94	10	0	<MDL	ND	<MDL	ND

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**n-Decane Data Summary**  
**Method Detection Limit (MDL) = 0.92**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 173 ppbv)	Median	24-Hour High (ESL = 690 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	<MDL	ND	<MDL	<MDL
Brazoria	Clute 0391003	94	14	0	<MDL	ND	<MDL	<MDL
Cameron	Brownsville 0610006	94	14	1	<MDL	ND	1.99	<MDL
Dallas	Dallas 1130070	94	14	0	<MDL	ND	<MDL	<MDL
Ector	Odessa 1350003	94	14	0	<MDL	ND	<MDL	ND
Ellis	Midlothian 1390007	94	12	0	<MDL	ND	<MDL	<MDL
El Paso	El Paso 1410047	94	14	2	<MDL	ND	1.72	1.57
Galveston	Texas City 1670053	94	11	0	<MDL	ND	<MDL	<MDL
Harris	Channelview 2010026	94	15	2	<MDL	ND	5.62	4.48
Harris	Houston (Old Galveston Rd.) 2010064	94	14	1	<MDL	ND	2.28	<MDL
Harris	Houston (Haden Rd.) 2010803	94	14	1	<MDL	ND	1.73	<MDL
Harris	Houston (Clinton Dr.) 2011035	94	14	0	<MDL	ND	<MDL	<MDL
Jefferson	Beaumont 2450009	94	15	1	<MDL	ND	0.94	<MDL
Jefferson	Port Arthur 2450011	94	14	2	<MDL	ND	2.22	1.39
Jefferson	Groves 2450014	94	14	1	<MDL	ND	2.23	<MDL
Jefferson	Port Neches 2450017	94	13	2	<MDL	ND	2.12	<MDL
Nueces	Corpus Christi 3550020	94	14	1	<MDL	ND	0.95	<MDL
Orange	West Orange 3611001	94	15	0	<MDL	ND	<MDL	<MDL
Smith	Winona 4230005	94	15	2	<MDL	ND	3.63	1.80
Tarrant	Grapevine 4393002	94	1	0	<MDL	<MDL		
Tarrant	DFW Airport 4393004	94	3	1	<MDL	<MDL	0.97	<MDL
Travis	Austin 4530017	94	10	1	<MDL	<MDL	2.38	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**1,2-Dibromoethane Data Summary**  
**Method Detection Limit (MDL) = 0.49**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 0.05 ppbv)	Median	24-Hour High (ESL = 0.20 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	21	0	<MDL	<MDL	<MDL	<MDL
Brazoria	Clute 0391003	92	7	0	ND	ND	ND	ND
		93	46	0	<MDL	ND	<MDL	<MDL
		94	53	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	93	19	0	<MDL	ND	<MDL	<MDL
		94	59	0	<MDL	<MDL	<MDL	<MDL
Dallas	Dallas 1130070	93	49	0	<MDL	ND	<MDL	<MDL
		94	58	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	93	52	0	<MDL	ND	<MDL	<MDL
		94	59	0	<MDL	ND	<MDL	<MDL
Ellis	Midlothian 1390007	93	55	1	<MDL	ND	0.60 **	<MDL
		94	51	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	93	33	1	<MDL	ND	0.84 **	<MDL
		94	58	0	<MDL	ND	<MDL	<MDL
Galveston	Texas City 1670053	92	9	0	<MDL	ND	<MDL	ND
		93	51	1	<MDL	ND	0.50 **	<MDL
		94	51	0	<MDL	ND	<MDL	<MDL
Harris	ChannelView 2010026	92	7	0	<MDL	ND	<MDL	ND
		93	49	0	<MDL	ND	<MDL	<MDL
		94	59	0	<MDL	ND	<MDL	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	93	43	0	<MDL	ND	<MDL	<MDL
		94	55	0	<MDL	ND	<MDL	<MDL
Harris	Houston (Haden Rd.) 2010803	92	1	0	ND	ND	<MDL	<MDL
		93	56	0	<MDL	ND	<MDL	<MDL
		94	58	0	<MDL	ND	<MDL	<MDL
Harris	Houston (Clinton Dr.) 2011035	92	8	1	<MDL	ND	0.96 **	ND
		93	50	0	<MDL	ND	<MDL	<MDL
		94	58	0	<MDL	ND	<MDL	<MDL
Jefferson	Beaumont 2450009	92	7	0	<MDL	ND	<MDL	ND
		93	56	0	<MDL	ND	<MDL	<MDL
		94	59	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Arthur 2450011	92	7	0	ND	ND	ND	ND
		93	60	0	<MDL	ND	<MDL	<MDL
		94	57	0	<MDL	ND	<MDL	<MDL
Jefferson	Groves 2450014	93	18	0	<MDL	ND	<MDL	ND
		94	58	0	<MDL	ND	<MDL	<MDL
Jefferson	Port Neches 2450017	94	23	0	<MDL	ND	<MDL	<MDL
Nueces	Corpus Christi 3550020	93	55	0	<MDL	ND	<MDL	<MDL
		94	52	0	<MDL	ND	<MDL	<MDL
Orange	West Orange 3611001	94	27	0	<MDL	ND	<MDL	<MDL
Smith	Winona 4230005	94	32	2	<MDL	<MDL	1.79 **	0.73 **
Tarrant	Grapevine 4393002	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	DFW Airport 4393004	94	9	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	21	0	<MDL	<MDL	<MDL	<MDL

† = Aerometric Information Retrieval System  
\* = Mean is greater than the annual ESL  
\*\* = Greater than the 24-Hour ESL  
ND = Less than the reporting limit

Source: TNRCC air toxics database



**TNRCC Network**  
**1,1-Dichloroethane Data Summary**  
**Method Detection Limit (MDL) = 0.10**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 100 ppbv)	Median	24-Hour High (ESL = 400 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	21	0	<MDL	ND	<MDL	<MDL
Brazoria	Clute 0391003	94	49	0	<MDL	ND	<MDL	<MDL
Cameron	Brownsville 0610006	94	54	0	<MDL	ND	<MDL	ND
Dallas	Dallas 1130070	94	53	0	<MDL	ND	<MDL	<MDL
Ector	Odessa 1350003	94	54	0	<MDL	ND	<MDL	<MDL
Ellis	Midlothian 1390007	94	47	0	<MDL	ND	<MDL	<MDL
El Paso	El Paso 1410047	94	53	0	<MDL	ND	<MDL	ND
Galveston	Texas City 1670053	94	46	7	<MDL	ND	0.22	0.18
Harris	Channelview 2010026	94	54	0	<MDL	ND	<MDL	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	94	50	0	<MDL	ND	<MDL	<MDL
Harris	Houston (Haden Rd.) 2010803	94	53	0	<MDL	ND	<MDL	ND
Harris	Houston (Clinton Dr.) 2011035	94	53	1	<MDL	ND	0.67	ND
Jefferson	Beaumont 2450009	94	54	0	<MDL	ND	<MDL	<MDL
Jefferson	Port Arthur 2450011	94	52	0	<MDL	ND	<MDL	<MDL
Jefferson	Groves 2450014	94	53	0	<MDL	ND	<MDL	<MDL
Jefferson	Port Neches 2450017	94	23	0	<MDL	ND	<MDL	<MDL
Nueces	Corpus Christi 3550020	94	48	1	<MDL	ND	0.19	<MDL
Orange	West Orange 3611001	94	27	0	<MDL	ND	<MDL	<MDL
Smith	Winona 4230005	94	32	2	<MDL	ND	0.37	0.28
Tarrant	Grapevine 4393002	94	15	0	ND	ND	ND	ND
Tarrant	DFW Airport 4393004	94	9	0	ND	ND	ND	ND
Travis	Austin 4530017	94	21	0	<MDL	ND	<MDL	ND

Source: TNRCC air toxics database

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

**TNRCC Network**  
**1,2-Dichloroethane Data Summary**  
**Method Detection Limit (MDL) = 0.52**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 1 ppbv)	Median	24-Hour High (ESL = 4 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	21	0	<MDL	ND	<MDL	<MDL
Brazoria	Clute 0391003	92	6	1	<MDL	ND	1.07	ND
		93	46	1	<MDL	<MDL	0.95	<MDL
		94	53	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	93	19	0	<MDL	<MDL	<MDL	<MDL
		94	59	0	<MDL	<MDL	<MDL	<MDL
Dallas	Dallas 1130070	93	49	0	<MDL	<MDL	<MDL	<MDL
		94	58	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	93	52	0	<MDL	<MDL	<MDL	<MDL
		94	59	0	<MDL	<MDL	<MDL	<MDL
Ellis	Midlothian 1390007	93	55	0	<MDL	<MDL	<MDL	<MDL
		94	51	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	93	33	0	<MDL	<MDL	<MDL	<MDL
		94	58	0	<MDL	<MDL	<MDL	<MDL
Galveston	Texas City 1670053	92	9	0	<MDL	ND	<MDL	ND
		93	51	0	<MDL	<MDL	<MDL	<MDL
		94	51	0	<MDL	<MDL	<MDL	<MDL
Harris	Channelview 2010026	92	7	0	ND	ND	ND	ND
		93	49	2	<MDL	<MDL	1.57	0.90
		94	59	2	<MDL	<MDL	1.59	1.06
Harris	Houston (Old Galveston Rd.) 2010064	93	43	0	<MDL	ND	<MDL	<MDL
		94	55	0	<MDL	ND	<MDL	<MDL
Harris	Houston (Haden Rd.) 2010803	92	1	0	ND	ND		
		93	56	2	<MDL	<MDL	3.72	0.77
		94	58	7	0.60	<MDL	10.83 **	8.83 **
Harris	Houston (Clinton Dr.) 2011035	92	8	1	<MDL	ND	0.99	ND
		93	50	2	<MDL	<MDL	0.83	0.53
		94	58	1	<MDL	<MDL	1.41	<MDL
Jefferson	Beaumont 2450009	92	5	0	ND	ND	ND	ND
		93	56	1	<MDL	ND	0.73	<MDL
		94	59	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Arthur 2450011	92	7	0	ND	ND	ND	ND
		93	60	1	<MDL	<MDL	0.53	<MDL
		94	57	1	<MDL	ND	0.93	<MDL
Jefferson	Groves 2450014	93	18	0	<MDL	<MDL	<MDL	<MDL
		94	58	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Neches 2450017	94	23	0	<MDL	ND	<MDL	<MDL
Nueces	Corpus Christi 3550020	93	55	1	<MDL	<MDL	0.67	<MDL
		94	52	0	<MDL	<MDL	<MDL	<MDL
Orange	West Orange 3611001	94	27	0	<MDL	ND	<MDL	<MDL
Smith	Winona 4230005	94	32	1	<MDL	ND	0.96	<MDL
Tarrant	Grapevine 4393002	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	DFW Airport 4393004	94	9	0	<MDL	ND	<MDL	<MDL
Travis	Austin 4530017	94	21	0	<MDL	ND	<MDL	<MDL

† = Aerometric Information Retrieval System  
\* = Mean is greater than the annual ESL  
\*\* = Greater than the 24-Hour ESL  
ND = Less than the reporting limit

Source: TNRCC air toxics database

**TNRCC Network**  
**1,1-Dichloroethylene Data Summary**  
**Method Detection Limit (MDL) = 0.15**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 1 ppbv)	Median	24-Hour High (ESL = 4 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	21	0	ND	ND	ND	ND
Brazoria	Clute 0391003	94	49	0	<MDL	ND	<MDL	<MDL
Cameron	Brownsville 0610006	94	54	0	ND	ND	ND	ND
Dallas	Dallas 1130070	94	53	0	ND	ND	ND	ND
Ector	Odessa 1350003	94	54	0	ND	ND	ND	ND
Ellis	Midlothian 1390007	94	47	0	ND	ND	ND	ND
El Paso	El Paso 1410047	94	53	0	ND	ND	ND	ND
Galveston	Texas City 1670053	94	46	0	ND	ND	ND	ND
Harris	Channelview 2010026	94	54	0	ND	ND	ND	ND
Harris	Houston (Old Galveston Rd.) 2010064	94	50	0	ND	ND	ND	ND
Harris	Houston (Haden Rd.) 2010803	94	53	0	ND	ND	ND	ND
Harris	Houston (Clinton Dr.) 2011035	94	53	0	ND	ND	ND	ND
Jefferson	Beaumont 2450009	94	54	0	ND	ND	ND	ND
Jefferson	Port Arthur 2450011	94	52	0	ND	ND	ND	ND
Jefferson	Groves 2450014	94	53	0	ND	ND	ND	ND
Jefferson	Port Neches 2450017	94	23	0	ND	ND	ND	ND
Nueces	Corpus Christi 3550020	94	48	0	ND	ND	ND	ND
Orange	West Orange 3611001	94	27	0	ND	ND	ND	ND
Smith	Winona 4230005	94	32	0	ND	ND	ND	ND
Tarrant	Grapevine 4393002	94	15	0	ND	ND	ND	ND
Tarrant	DFW Airport 4393004	94	9	0	ND	ND	ND	ND
Travis	Austin 4530017	94	21	0	ND	ND	ND	ND

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**1,2-Dichloropropane Data Summary**  
**Method Detection Limit (MDL) = 0.25**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 75 ppbv)	Median	24-Hour High (ESL = 300 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	21	0	ND	ND	ND	ND
Brazoria	Clute 0391003	92	7	0	ND	ND	ND	ND
		93	46	1	<MDL	ND	0.51	<MDL
		94	53	0	<MDL	ND	<MDL	ND
Cameron	Brownsville 0610006	93	19	0	ND	ND	ND	ND
		94	59	0	ND	ND	ND	ND
Dallas	Dallas 1130070	93	49	0	<MDL	ND	<MDL	ND
		94	58	0	ND	ND	ND	ND
Ector	Odessa 1350003	93	52	0	ND	ND	ND	ND
		94	59	0	ND	ND	ND	ND
Ellis	Midlothian 1390007	93	55	1	<MDL	ND	0.44	ND
		94	51	0	<MDL	ND	<MDL	ND
El Paso	El Paso 1410047	93	33	0	ND	ND	ND	ND
		94	58	0	ND	ND	ND	ND
Galveston	Texas City 1670053	92	9	0	ND	ND	ND	ND
		93	51	0	<MDL	ND	<MDL	ND
		94	51	0	ND	ND	ND	ND
Harris	Channelview 2010026	92	7	0	ND	ND	ND	ND
		93	49	0	ND	ND	ND	ND
		94	59	0	ND	ND	ND	ND
Harris	Houston (Old Galveston Rd.) 2010064	93	43	0	ND	ND	ND	ND
		94	55	0	ND	ND	ND	ND
Harris	Houston (Haden Rd.) 2010803	92	1	0	ND	ND	ND	ND
		93	56	0	<MDL	ND	<MDL	ND
		94	58	0	ND	ND	ND	ND
Harris	Houston (Clinton Dr.) 2011035	92	8	0	ND	ND	ND	ND
		93	50	0	<MDL	ND	<MDL	ND
		94	58	1	<MDL	ND	0.51	ND
Jefferson	Beaumont 2450009	92	7	0	ND	ND	ND	ND
		93	56	0	ND	ND	ND	ND
		94	59	0	ND	ND	ND	ND
Jefferson	Port Arthur 2450011	92	7	0	ND	ND	ND	ND
		93	60	0	ND	ND	ND	ND
		94	57	0	ND	ND	ND	ND
Jefferson	Groves 2450014	93	18	0	ND	ND	ND	ND
		94	58	0	ND	ND	ND	ND
Jefferson	Port Neches 2450017	94	23	0	ND	ND	ND	ND
Nueces	Corpus Christi 3550020	93	55	0	ND	ND	ND	ND
		94	52	1	<MDL	ND	0.32	ND
Orange	West Orange 3611001	94	27	0	ND	ND	ND	ND
Smith	Winona 4230005	94	32	1	<MDL	ND	0.59	<MDL
Tarrant	Grapevine 4393002	94	15	0	ND	ND	ND	ND
Tarrant	DFW Airport 4393004	94	9	0	ND	ND	ND	ND
Travis	Austin 4530017	94	21	0	ND	ND	ND	ND

† = Aerometric Information Retrieval System  
\* = Mean is greater than the annual ESL  
\*\* = Greater than the 24-Hour ESL  
ND = Less than the reporting limit

Source: TNRCC air toxics database



**TNRCC Network**  
**2,2-Dimethylbutane Data Summary**  
**Method Detection Limit (MDL) = 0.30**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 100 ppbv)	Median	24-Hour High (ESL = 400 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	2	<MDL	<MDL	0.41	0.30
Brazoria	Clute 0391003	94	14	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	94	14	3	<MDL	<MDL	0.91	0.41
Dallas	Dallas 1130070	94	14	1	<MDL	<MDL	0.42	<MDL
Ector	Odessa 1350003	94	14	1	<MDL	<MDL	0.44	<MDL
Ellis	Midlothian 1390007	94	12	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	94	14	2	<MDL	<MDL	0.98	0.40
Galveston	Texas City 1670053	94	11	3	<MDL	<MDL	0.58	0.42
Harris	ChannelView 2010026	94	15	2	<MDL	<MDL	0.40	0.40
Harris	Houston (Old Galveston Rd.) 2010064	94	14	2	<MDL	<MDL	1.10	0.36
Harris	Houston (Haden Rd.) 2010803	94	14	1	<MDL	<MDL	0.42	<MDL
Harris	Houston (Clinton Dr.) 2011035	94	14	4	<MDL	<MDL	0.76	0.44
Jefferson	Beaumont 2450009	94	15	4	<MDL	<MDL	0.75	0.56
Jefferson	Port Arthur 2450011	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Groves 2450014	94	14	7	<MDL	<MDL	0.51	0.41
Jefferson	Port Neches 2450017	94	13	9	4.60	5.36	11.02	9.28
Nueces	Corpus Christi 3550020	94	14	3	<MDL	<MDL	0.72	0.56
Orange	West Orange 3611001	94	15	11	0.30	0.37	0.69	0.48
Smith	Winona 4230005	94	15	3	0.53	<MDL	6.38	0.75
Tarrant	Grapevine 4393002	94	1	0	ND	ND		
Tarrant	DFW Airport 4393004	94	3	0	ND	ND	ND	ND
Travis	Austin 4530017	94	10	3	<MDL	<MDL	0.94	0.42

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**2,3-Dimethylbutane Data Summary**  
**Method Detection Limit (MDL) = 0.13**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 100 ppbv)	Median	24-Hour High (ESL = 400 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	7	0.42	0.43	1.03	0.61
Brazoria	Clute 0391003	94	14	9	0.27	0.18	1.02	0.66
Cameron	Brownsville 0610006	94	14	7	0.54	0.24	2.10	2.00
Dallas	Dallas 1130070	94	14	9	0.39	0.23	1.79	0.86
Ector	Odessa 1350003	94	14	11	0.66	0.49	2.08	1.35
Ellis	Midlothian 1390007	94	12	8	0.36	0.24	1.50	0.73
El Paso	El Paso 1410047	94	14	11	2.38	0.47	16.21	8.10
Galveston	Texas City 1670053	94	11	11	0.83	0.65	2.26	1.32
Harris	Channelview 2010026	94	15	6	0.31	<MDL	1.37	0.78
Harris	Houston (Old Galveston Rd.) 2010064	94	14	13	1.01	0.43	7.21	1.32
Harris	Houston (Haden Rd.) 2010803	94	14	13	0.51	0.43	1.49	1.05
Harris	Houston (Clinton Dr.) 2011035	94	14	13	0.93	0.64	2.72	1.89
Jefferson	Beaumont 2450009	94	15	13	0.70	0.46	3.63	1.24
Jefferson	Port Arthur 2450011	94	14	8	0.27	0.18	0.73	0.73
Jefferson	Groves 2450014	94	14	12	0.84	0.80	2.16	1.75
Jefferson	Port Neches 2450017	94	13	11	0.55	0.37	1.97	1.64
Nueces	Corpus Christi 3550020	94	14	10	0.67	0.28	2.40	2.27
Orange	West Orange 3611001	94	15	13	0.62	0.44	1.97	1.34
Smith	Winona 4230005	94	15	10	0.29	0.16	1.44	1.10
Tarrant	Grapevine 4393002	94	1	0	ND	ND		
Tarrant	DFW Airport 4393004	94	3	3	0.18	0.15	0.25	0.15
Travis	Austin 4530017	94	10	8	0.56	0.49	1.53	0.93

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**2,3-Dimethylpentane Data Summary**  
**Method Detection Limit (MDL) = 0.12**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 100 ppbv)	Median	24-Hour High (ESL = 400 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	5	0.16	0.17	0.29	0.28
Brazoria	Clute 0391003	94	14	5	<MDL	<MDL	0.31	0.19
Cameron	Brownsville 0610006	94	14	7	0.17	<MDL	0.63	0.57
Dallas	Dallas 1130070	94	14	8	0.17	0.14	0.69	0.60
Ector	Odessa 1350003	94	14	10	0.38	0.35	1.09	0.66
Ellis	Midlothian 1390007	94	12	3	<MDL	<MDL	0.15	0.14
El Paso	El Paso 1410047	94	14	10	0.37	0.22	1.48	1.07
Galveston	Texas City 1670053	94	11	5	0.15	<MDL	0.37	0.34
Harris	Channelview 2010026	94	15	5	<MDL	<MDL	0.24	0.24
Harris	Houston (Old Galveston Rd.) 2010064	94	14	11	0.28	0.17	1.15	0.66
Harris	Houston (Haden Rd.) 2010803	94	14	9	0.22	0.16	0.53	0.47
Harris	Houston (Clinton Dr.) 2011035	94	14	10	0.33	0.28	1.19	0.66
Jefferson	Beaumont 2450009	94	15	11	0.17	0.19	0.31	0.31
Jefferson	Port Arthur 2450011	94	14	8	0.17	0.16	0.34	0.34
Jefferson	Groves 2450014	94	14	8	0.29	0.17	0.95	0.80
Jefferson	Port Neches 2450017	94	13	5	<MDL	<MDL	0.31	0.17
Nueces	Corpus Christi 3550020	94	14	7	0.30	<MDL	1.98	0.64
Orange	West Orange 3611001	94	15	9	0.13	0.14	0.40	0.23
Smith	Winona 4230005	94	15	8	0.16	0.12	0.46	0.30
Tarrant	Grapevine 4393002	94	1	0	ND	ND		
Tarrant	DFW Airport 4393004	94	3	0	<MDL	ND	<MDL	ND
Travis	Austin 4530017	94	10	5	0.17	0.15	0.63	0.34

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**2,4-Dimethylpentane Data Summary**  
**Method Detection Limit (MDL) = 0.19**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 100 ppbv)	Median	24-Hour High (ESL = 400 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	3	<MDL	ND	0.41	0.29
Brazoria	Clute 0391003	94	14	2	<MDL	<MDL	0.25	0.20
Cameron	Brownsville 0610006	94	14	7	<MDL	<MDL	0.45	0.34
Dallas	Dallas 1130070	94	14	4	<MDL	<MDL	0.30	0.22
Ector	Odessa 1350003	94	14	8	0.29	0.36	0.75	0.65
Ellis	Midlothian 1390007	94	12	0	<MDL	ND	<MDL	<MDL
El Paso	El Paso 1410047	94	14	11	0.58	0.37	2.61	0.98
Galveston	Texas City 1670053	94	11	5	<MDL	<MDL	0.34	0.30
Harris	Channelview 2010026	94	15	6	<MDL	<MDL	0.40	0.35
Harris	Houston (Old Galveston Rd.) 2010064	94	14	9	0.26	0.26	0.67	0.56
Harris	Houston (Haden Rd.) 2010803	94	14	7	0.21	<MDL	0.44	0.41
Harris	Houston (Clinton Dr.) 2011035	94	14	9	0.31	0.29	0.80	0.66
Jefferson	Beaumont 2450009	94	15	10	0.36	0.34	1.63	0.75
Jefferson	Port Arthur 2450011	94	14	6	<MDL	<MDL	0.29	0.29
Jefferson	Groves 2450014	94	14	7	0.21	0.20	0.64	0.35
Jefferson	Port Neches 2450017	94	13	4	<MDL	<MDL	0.28	0.21
Nueces	Corpus Christi 3550020	94	14	4	<MDL	<MDL	0.59	0.29
Orange	West Orange 3611001	94	15	6	<MDL	<MDL	0.39	0.29
Smith	Winona 4230005	94	15	3	<MDL	<MDL	0.44	0.29
Tarrant	Grapevine 4393002	94	1	1	0.27	0.27		
Tarrant	DFW Airport 4393004	94	3	1	<MDL	<MDL	0.20	<MDL
Travis	Austin 4530017	94	10	6	0.23	0.20	0.36	0.36

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*



**TNRCC Network**  
**Ethyl Benzene Data Summary**  
**Method Detection Limit (MDL) = 1.07**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 100 ppbv)	Median	24-Hour High (ESL = 400 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	21	0	<MDL	<MDL	<MDL	<MDL
Brazoria	Clute 0391003	92	7	0	<MDL	<MDL	<MDL	<MDL
		93	46	1	<MDL	<MDL	1.67	<MDL
		94	53	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	93	19	0	<MDL	<MDL	<MDL	<MDL
		94	59	1	<MDL	<MDL	1.14	<MDL
Dallas	Dallas 1130070	93	49	0	<MDL	<MDL	<MDL	<MDL
		94	58	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	93	52	2	<MDL	<MDL	1.33	1.10
		94	59	1	<MDL	<MDL	1.24	<MDL
Ellis	Midlothian 1390007	93	55	1	<MDL	<MDL	1.38	0.80
		94	51	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	93	33	8	<MDL	<MDL	1.55	1.54
		94	58	9	<MDL	<MDL	2.25	1.73
Galveston	Texas City 1670053	92	9	0	<MDL	<MDL	<MDL	<MDL
		93	51	0	<MDL	<MDL	<MDL	<MDL
		94	51	1	<MDL	<MDL	1.39	<MDL
Harris	Channelview 2010026	92	7	1	0.93	<MDL	3.63	<MDL
		93	49	17	0.95	<MDL	5.93	2.30
		94	59	13	0.78	<MDL	2.75	2.42
Harris	Houston (Old Galveston Rd.) 2010064	93	43	2	<MDL	<MDL	2.24	1.22
		94	55	5	<MDL	<MDL	2.73	1.55
Harris	Houston (Haden Rd.) 2010803	92	1	0	<MDL	<MDL	<MDL	<MDL
		93	56	10	<MDL	<MDL	3.99	2.30
		94	58	8	<MDL	<MDL	11.89	5.65
Harris	Houston (Clinton Dr.) 2011035	92	8	2	<MDL	<MDL	1.45	1.38
		93	50	3	<MDL	<MDL	1.92	1.62
		94	58	4	<MDL	<MDL	1.34	1.21
Jefferson	Beaumont 2450009	92	7	0	<MDL	ND	<MDL	<MDL
		93	56	0	<MDL	<MDL	<MDL	<MDL
		94	59	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Arthur 2450011	92	7	0	<MDL	ND	<MDL	<MDL
		93	60	1	<MDL	<MDL	1.12	<MDL
		94	57	1	<MDL	<MDL	1.77	<MDL
Jefferson	Groves 2450014	93	18	5	0.82	<MDL	4.25	1.56
		94	58	2	<MDL	<MDL	3.53	1.07
Jefferson	Port Neches 2450017	94	23	19	2.25	2.24	5.86	3.85
Nueces	Corpus Christi 3550020	93	55	5	<MDL	<MDL	2.20	1.90
		94	52	1	<MDL	<MDL	2.41	<MDL
Orange	West Orange 3611001	94	27	0	<MDL	<MDL	<MDL	<MDL
Smith	Winona 4230005	94	32	3	<MDL	<MDL	2.46	2.20
Tarrant	Grapevine 4393002	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	DFW Airport 4393004	94	9	2	<MDL	<MDL	1.55	1.22
Travis	Austin 4530017	94	21	0	<MDL	<MDL	<MDL	<MDL

† = Aerometric Information Retrieval System  
\* = Mean is greater than the annual ESL  
\*\* = Greater than the 24-Hour ESL  
ND = Less than the reporting limit

Source: TNRCC air toxics database

**TNRCC Network**  
**n-Heptane Data Summary**  
**Method Detection Limit (MDL) = 0.93**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 85 ppbv)	Median	24-Hour High (ESL = 340 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	<MDL	<MDL	<MDL	<MDL
Brazoria	Clute 0391003	94	14	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	94	14	0	<MDL	<MDL	<MDL	<MDL
Dallas	Dallas 1130070	94	14	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	94	14	1	<MDL	<MDL	1.21	<MDL
Ellis	Midlothian 1390007	94	12	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	94	14	2	<MDL	<MDL	3.22	<MDL
Galveston	Texas City 1670053	94	11	0	<MDL	<MDL	<MDL	<MDL
Harris	Channelview 2010026	94	15	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	94	14	1	<MDL	<MDL	1.04	<MDL
Harris	Houston (Haden Rd.) 2010803	94	14	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Clinton Dr.) 2011035	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Beaumont 2450009	94	15	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Arthur 2450011	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Groves 2450014	94	14	1	<MDL	<MDL	1.57	<MDL
Jefferson	Port Neches 2450017	94	13	0	<MDL	<MDL	<MDL	<MDL
Nueces	Corpus Christi 3550020	94	14	1	<MDL	<MDL	2.75	<MDL
Orange	West Orange 3611001	94	15	0	<MDL	<MDL	<MDL	<MDL
Smith	Winona 4230005	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	Grapevine 4393002	94	1	0	ND	ND		
Tarrant	DFW Airport 4393004	94	3	0	ND	ND	ND	ND
Travis	Austin 4530017	94	10	0	<MDL	<MDL	<MDL	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**1-Heptene Data Summary**  
**Method Detection Limit (MDL) = 0.20**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 350 ppbv)	Median	24-Hour High (ESL = 1,400 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	ND	ND	ND	ND
Brazoria	Clute 0391003	94	14	0	ND	ND	ND	ND
Cameron	Brownsville 0610006	94	14	0	ND	ND	ND	ND
Dallas	Dallas 1130070	94	14	0	ND	ND	ND	ND
Ector	Odessa 1350003	94	14	0	ND	ND	ND	ND
Ellis	Midlothian 1390007	94	12	0	ND	ND	ND	ND
El Paso	El Paso 1410047	94	14	0	ND	ND	ND	ND
Galveston	Texas City 1670053	94	11	0	ND	ND	ND	ND
Harris	Channelview 2010026	94	15	0	ND	ND	ND	ND
Harris	Houston (Old Galveston Rd.) 2010064	94	14	0	ND	ND	ND	ND
Harris	Houston (Haden Rd.) 2010803	94	14	0	ND	ND	ND	ND
Harris	Houston (Clinton Dr.) 2011035	94	14	0	ND	ND	ND	ND
Jefferson	Beaumont 2450009	94	15	0	ND	ND	ND	ND
Jefferson	Port Arthur 2450011	94	14	0	ND	ND	ND	ND
Jefferson	Groves 2450014	94	14	0	ND	ND	ND	ND
Jefferson	Port Neches 2450017	94	13	0	ND	ND	ND	ND
Nueces	Corpus Christi 3550020	94	14	0	ND	ND	ND	ND
Orange	West Orange 3611001	94	15	0	ND	ND	ND	ND
Smith	Winona 4230005	94	15	0	ND	ND	ND	ND
Tarrant	Grapevine 4393002	94	1	0	ND	ND		
Tarrant	DFW Airport 4393004	94	3	0	ND	ND	ND	ND
Travis	Austin 4530017	94	10	0	ND	ND	ND	ND

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**n-Hexane Data Summary**  
**Method Detection Limit (MDL) = 0.12**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 50 ppbv)	Median	24-Hour High (ESL = 200 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	8	0.74	0.65	2.30	0.83
Brazoria	Clute 0391003	94	14	13	0.49	0.44	1.60	0.74
Cameron	Brownsville 0610006	94	14	10	0.42	0.40	1.34	1.07
Dallas	Dallas 1130070	94	14	13	0.64	0.51	1.61	1.09
Ector	Odessa 1350003	94	14	13	1.04	0.83	2.66	2.30
Ellis	Midlothian 1390007	94	12	12	0.39	0.41	0.58	0.55
El Paso	El Paso 1410047	94	14	14	6.08	1.44	35.39	30.97
Galveston	Texas City 1670053	94	11	11	0.78	0.77	1.87	1.55
Harris	Channelview 2010026	94	15	14	0.52	0.33	1.51	1.05
Harris	Houston (Old Galveston Rd.) 2010064	94	14	13	1.31	0.59	6.73	2.43
Harris	Houston (Haden Rd.) 2010803	94	14	14	1.61	0.58	7.40	6.98
Harris	Houston (Clinton Dr.) 2011035	94	14	14	1.48	1.18	4.87	2.70
Jefferson	Beaumont 2450009	94	15	15	2.24	1.83	7.15	3.21
Jefferson	Port Arthur 2450011	94	14	13	0.84	0.85	2.01	1.64
Jefferson	Groves 2450014	94	14	14	1.79	1.20	6.25	3.94
Jefferson	Port Neches 2450017	94	13	13	1.02	0.80	2.33	2.11
Nueces	Corpus Christi 3550020	94	14	10	1.29	1.14	3.82	2.88
Orange	West Orange 3611001	94	15	14	0.81	0.51	4.13	1.41
Smith	Winona 4230005	94	15	14	0.58	0.37	3.65	0.64
Tarrant	Grapevine 4393002	94	1	1	0.48	0.48		
Tarrant	DFW Airport 4393004	94	3	3	0.53	0.63	0.78	0.63
Travis	Austin 4530017	94	10	10	1.48	1.47	2.68	2.47

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*



**TNRCC Network**  
**c-2-Hexene Data Summary**  
**Method Detection Limit (MDL) = 0.41**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 466 ppbv)	Median	24-Hour High (ESL = 1,864 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	ND	ND	ND	ND
Brazoria	Clute 0391003	94	14	0	ND	ND	ND	ND
Cameron	Brownsville 0610006	94	14	0	ND	ND	ND	ND
Dallas	Dallas 1130070	94	14	0	ND	ND	ND	ND
Ector	Odessa 1350003	94	14	0	ND	ND	ND	ND
Ellis	Midlothian 1390007	94	12	0	ND	ND	ND	ND
El Paso	El Paso 1410047	94	14	0	ND	ND	ND	ND
Galveston	Texas City 1670053	94	11	0	ND	ND	ND	ND
Harris	Channelview 2010026	94	15	0	ND	ND	ND	ND
Harris	Houston (Old Galveston Rd.) 2010064	94	14	0	ND	ND	ND	ND
Harris	Houston (Haden Rd.) 2010803	94	14	0	ND	ND	ND	ND
Harris	Houston (Clinton Dr.) 2011035	94	14	0	ND	ND	ND	ND
Jefferson	Beaumont 2450009	94	15	0	ND	ND	ND	ND
Jefferson	Port Arthur 2450011	94	14	0	ND	ND	ND	ND
Jefferson	Groves 2450014	94	14	0	ND	ND	ND	ND
Jefferson	Port Neches 2450017	94	13	0	ND	ND	ND	ND
Nueces	Corpus Christi 3550020	94	14	0	ND	ND	ND	ND
Orange	West Orange 3611001	94	15	0	ND	ND	ND	ND
Smith	Winona 4230005	94	15	0	ND	ND	ND	ND
Tarrant	Grapevine 4393002	94	1	0	ND	ND		
Tarrant	DFW Airport 4393004	94	3	0	ND	ND	ND	ND
Travis	Austin 4530017	94	10	0	ND	ND	ND	ND

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**†-2-Hexene Data Summary**  
**Method Detection Limit (MDL) = 0.29**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 466 ppbv)	Median	24-Hour High (ESL = 1,864 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	<MDL	ND	<MDL	<MDL
Brazoria	Clute 0391003	94	14	0	<MDL	ND	<MDL	<MDL
Cameron	Brownsville 0610006	94	14	0	<MDL	ND	<MDL	<MDL
Dallas	Dallas 1130070	94	14	0	<MDL	ND	<MDL	<MDL
Ector	Odessa 1350003	94	14	0	<MDL	ND	<MDL	<MDL
Ellis	Midlothian 1390007	94	12	0	<MDL	ND	<MDL	<MDL
El Paso	El Paso 1410047	94	14	2	<MDL	<MDL	1.75	0.61
Galveston	Texas City 1670053	94	11	0	<MDL	ND	<MDL	ND
Harris	Channelview 2010026	94	15	0	<MDL	ND	<MDL	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	94	14	1	<MDL	ND	0.35	<MDL
Harris	Houston (Haden Rd.) 2010803	94	14	0	<MDL	ND	<MDL	<MDL
Harris	Houston (Clinton Dr.) 2011035	94	14	1	<MDL	ND	0.61	<MDL
Jefferson	Beaumont 2450009	94	15	0	<MDL	ND	<MDL	<MDL
Jefferson	Port Arthur 2450011	94	14	0	<MDL	ND	<MDL	<MDL
Jefferson	Groves 2450014	94	14	0	<MDL	ND	<MDL	<MDL
Jefferson	Port Neches 2450017	94	13	0	<MDL	ND	<MDL	<MDL
Nueces	Corpus Christi 3550020	94	14	0	<MDL	ND	<MDL	<MDL
Orange	West Orange 3611001	94	15	0	<MDL	ND	<MDL	<MDL
Smith	Winona 4230005	94	15	0	<MDL	ND	<MDL	ND
Tarrant	Grapevine 4393002	94	1	0	<MDL	<MDL		
Tarrant	DFW Airport 4393004	94	3	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	10	0	<MDL	<MDL	<MDL	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**Isobutane Data Summary**  
**Method Detection Limit (MDL) = 1.73**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 800 ppbv)	Median	24-Hour High (ESL = 3,200 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	5	1.86	1.94	2.83	2.72
Brazoria	Clute 0391003	94	14	4	1.86	<MDL	6.09	4.40
Cameron	Brownsville 0610006	94	14	5	<MDL	<MDL	4.52	3.61
Dallas	Dallas 1130070	94	14	4	<MDL	<MDL	4.91	2.54
Ector	Odessa 1350003	94	14	10	3.65	2.95	8.14	6.81
Ellis	Midlothian 1390007	94	12	1	<MDL	<MDL	2.10	<MDL
El Paso	El Paso 1410047	94	14	8	7.10	2.80	34.70	27.98
Galveston	Texas City 1670053	94	11	8	3.12	2.34	5.93	5.73
Harris	Channelview 2010026	94	15	12	3.67	3.36	8.51	6.87
Harris	Houston (Old Galveston Rd.) 2010064	94	14	9	5.39	3.33	19.56	12.42
Harris	Houston (Haden Rd.) 2010803	94	14	9	3.17	3.32	6.34	5.21
Harris	Houston (Clinton Dr.) 2011035	94	14	10	3.85	4.19	8.08	6.86
Jefferson	Beaumont 2450009	94	15	12	3.90	3.64	8.63	7.20
Jefferson	Port Arthur 2450011	94	14	12	3.95	3.58	9.03	8.04
Jefferson	Groves 2450014	94	14	13	16.05	11.80	45.70	40.45
Jefferson	Port Neches 2450017	94	13	10	2.75	2.31	6.46	5.45
Nueces	Corpus Christi 3550020	94	14	10	5.22	3.05	13.44	10.56
Orange	West Orange 3611001	94	15	10	2.77	2.36	6.60	4.70
Smith	Winona 4230005	94	15	6	<MDL	<MDL	3.12	2.93
Tarrant	Grapevine 4393002	94	1	0	ND	ND		
Tarrant	DFW Airport 4393004	94	3	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	10	3	<MDL	<MDL	4.48	1.88

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**Isopentane Data Summary**  
**Method Detection Limit (MDL) = 0.48**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 100 ppbv)	Median	24-Hour High (ESL = 400 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	9	3.51	3.38	5.65	4.49
Brazoria	Clute 0391003	94	14	9	1.36	1.17	5.14	4.06
Cameron	Brownsville 0610006	94	14	11	2.47	1.75	9.98	7.19
Dallas	Dallas 1130070	94	14	13	2.65	1.72	8.35	6.89
Ector	Odessa 1350003	94	14	11	2.75	1.64	8.59	5.79
Ellis	Midlothian 1390007	94	12	11	1.13	1.24	1.98	1.53
El Paso	El Paso 1410047	94	14	11	21.49	3.83	215.50	23.50
Galveston	Texas City 1670053	94	11	10	3.35	3.28	7.14	6.93
Harris	Channelview 2010026	94	15	12	2.07	1.60	7.27	5.50
Harris	Houston (Old Galveston Rd.) 2010064	94	14	13	6.87	3.32	37.75	11.29
Harris	Houston (Haden Rd.) 2010803	94	14	13	3.83	2.98	8.87	7.20
Harris	Houston (Clinton Dr.) 2011035	94	14	14	6.47	7.19	15.70	10.70
Jefferson	Beaumont 2450009	94	15	13	4.62	3.46	23.53	6.63
Jefferson	Port Arthur 2450011	94	14	11	3.29	2.78	8.38	7.91
Jefferson	Groves 2450014	94	14	12	4.73	3.90	16.99	8.52
Jefferson	Port Neches 2450017	94	13	11	2.12	1.90	6.06	3.35
Nueces	Corpus Christi 3550020	94	14	11	6.07	4.16	22.81	13.98
Orange	West Orange 3611001	94	15	13	3.29	3.52	8.15	7.04
Smith	Winona 4230005	94	15	11	1.27	1.45	3.00	2.28
Tarrant	Grapevine 4393002	94	1	1	2.04	2.04		
Tarrant	DFW Airport 4393004	94	3	2	1.06	1.08	2.08	1.08
Travis	Austin 4530017	94	10	8	4.45	3.63	16.18	7.67

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**Isoprene Data Summary**  
**Method Detection Limit (MDL) = 0.23**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 14 ppbv)	Median	24-Hour High (ESL = 56 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	<MDL	<MDL	<MDL	<MDL
Brazoria	Clute 0391003	94	14	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	94	14	0	<MDL	<MDL	<MDL	<MDL
Dallas	Dallas 1130070	94	14	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	94	14	0	<MDL	<MDL	<MDL	<MDL
Ellis	Midlothian 1390007	94	12	0	<MDL	ND	<MDL	<MDL
El Paso	El Paso 1410047	94	14	4	<MDL	<MDL	0.78	0.33
Galveston	Texas City 1670053	94	11	2	<MDL	<MDL	0.60	0.31
Harris	Channelview 2010026	94	15	3	<MDL	<MDL	0.80	0.44
Harris	Houston (Old Galveston Rd.) 2010064	94	14	5	0.24	<MDL	1.08	0.54
Harris	Houston (Haden Rd.) 2010803	94	14	4	<MDL	<MDL	0.75	0.28
Harris	Houston (Clinton Dr.) 2011035	94	14	5	<MDL	<MDL	1.04	0.38
Jefferson	Beaumont 2450009	94	15	5	<MDL	<MDL	1.07	0.61
Jefferson	Port Arthur 2450011	94	14	2	<MDL	<MDL	1.03	0.28
Jefferson	Groves 2450014	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Neches 2450017	94	13	1	<MDL	<MDL	0.30	<MDL
Nueces	Corpus Christi 3550020	94	14	0	<MDL	<MDL	<MDL	<MDL
Orange	West Orange 3611001	94	15	2	<MDL	<MDL	0.35	0.32
Smith	Winona 4230005	94	15	2	<MDL	ND	0.81	0.48
Tarrant	Grapevine 4393002	94	1	0	<MDL	<MDL		
Tarrant	DFW Airport 4393004	94	3	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	10	2	<MDL	<MDL	0.29	0.28

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*



**TNRCC Network**  
**3-Methyl-1-Butene Data Summary**  
**Method Detection Limit (MDL) = 0.72**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 800 ppbv)	Median	24-Hour High (ESL = 3,200 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	<MDL	<MDL	<MDL	<MDL
Brazoria	Clute 0391003	94	14	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	94	14	0	<MDL	ND	<MDL	<MDL
Dallas	Dallas 1130070	94	14	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	94	14	0	<MDL	ND	<MDL	<MDL
Ellis	Midlothian 1390007	94	12	0	<MDL	ND	<MDL	<MDL
El Paso	El Paso 1410047	94	14	1	<MDL	<MDL	0.81	<MDL
Galveston	Texas City 1670053	94	11	0	<MDL	<MDL	<MDL	<MDL
Harris	Channelview 2010026	94	15	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	94	14	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Haden Rd.) 2010803	94	14	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Clinton Dr.) 2011035	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Beaumont 2450009	94	15	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Arthur 2450011	94	14	1	<MDL	<MDL	0.93	<MDL
Jefferson	Groves 2450014	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Neches 2450017	94	13	0	<MDL	<MDL	<MDL	<MDL
Nueces	Corpus Christi 3550020	94	14	0	<MDL	<MDL	<MDL	<MDL
Orange	West Orange 3611001	94	15	0	<MDL	<MDL	<MDL	<MDL
Smith	Winona 4230005	94	15	0	<MDL	ND	<MDL	<MDL
Tarrant	Grapevine 4393002	94	1	0	<MDL	<MDL		
Tarrant	DFW Airport 4393004	94	3	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	10	0	<MDL	<MDL	<MDL	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**2-Methyl-2-Butene Data Summary**  
**Method Detection Limit (MDL) = 0.40**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 800 ppbv)	Median	24-Hour High (ESL = 3,200 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	2	<MDL	<MDL	0.44	0.41
Brazoria	Clute 0391003	94	14	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	94	14	3	<MDL	<MDL	0.91	0.86
Dallas	Dallas 1130070	94	14	3	<MDL	<MDL	0.82	0.70
Ector	Odessa 1350003	94	14	3	<MDL	<MDL	0.91	0.47
Ellis	Midlothian 1390007	94	12	0	<MDL	ND	<MDL	<MDL
El Paso	El Paso 1410047	94	14	9	1.17	0.60	6.49	2.31
Galveston	Texas City 1670053	94	11	3	<MDL	<MDL	0.76	0.67
Harris	Channelview 2010026	94	15	2	<MDL	<MDL	1.15	0.55
Harris	Houston (Old Galveston Rd.) 2010064	94	14	6	0.79	<MDL	3.76	1.87
Harris	Houston (Haden Rd.) 2010803	94	14	6	0.42	<MDL	1.14	0.78
Harris	Houston (Clinton Dr.) 2011035	94	14	7	0.56	0.42	1.96	1.63
Jefferson	Beaumont 2450009	94	15	1	<MDL	ND	0.44	<MDL
Jefferson	Port Arthur 2450011	94	14	3	<MDL	<MDL	0.99	0.48
Jefferson	Groves 2450014	94	14	6	0.55	<MDL	3.70	0.65
Jefferson	Port Neches 2450017	94	13	0	<MDL	ND	<MDL	<MDL
Nueces	Corpus Christi 3550020	94	14	3	<MDL	<MDL	1.25	0.52
Orange	West Orange 3611001	94	15	3	<MDL	<MDL	0.83	0.80
Smith	Winona 4230005	94	15	0	<MDL	ND	<MDL	<MDL
Tarrant	Grapevine 4393002	94	1	0	ND	ND		
Tarrant	DFW Airport 4393004	94	3	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	10	3	<MDL	<MDL	1.06	0.65

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**Methylcyclohexane Data Summary**  
**Method Detection Limit (MDL) = 0.31**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 400 ppbv)	Median	24-Hour High (ESL = 1,600 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	1	<MDL	<MDL	0.48	<MDL
Brazoria	Clute 0391003	94	14	1	<MDL	<MDL	0.35	<MDL
Cameron	Brownsville 0610006	94	14	1	<MDL	<MDL	0.32	<MDL
Dallas	Dallas 1130070	94	14	2	<MDL	<MDL	0.41	0.33
Ector	Odessa 1350003	94	14	7	0.38	0.32	0.90	0.64
Ellis	Midlothian 1390007	94	12	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	94	14	7	0.85	0.35	4.33	3.10
Galveston	Texas City 1670053	94	11	5	0.32	<MDL	0.76	0.64
Harris	Channelview 2010026	94	15	5	<MDL	<MDL	1.23	0.75
Harris	Houston (Old Galveston Rd.) 2010064	94	14	5	0.35	<MDL	0.90	0.72
Harris	Houston (Haden Rd.) 2010803	94	14	5	<MDL	<MDL	0.85	0.57
Harris	Houston (Clinton Dr.) 2011035	94	14	9	0.53	0.38	2.00	1.11
Jefferson	Beaumont 2450009	94	15	6	<MDL	<MDL	0.48	0.44
Jefferson	Port Arthur 2450011	94	14	4	<MDL	<MDL	0.66	0.46
Jefferson	Groves 2450014	94	14	5	0.32	<MDL	1.26	0.81
Jefferson	Port Neches 2450017	94	13	1	<MDL	<MDL	0.50	<MDL
Nueces	Corpus Christi 3550020	94	14	10	0.69	0.51	2.45	1.69
Orange	West Orange 3611001	94	15	1	<MDL	<MDL	0.38	<MDL
Smith	Winona 4230005	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	Grapevine 4393002	94	1	0	<MDL	<MDL		
Tarrant	DFW Airport 4393004	94	3	0	<MDL	ND	<MDL	ND
Travis	Austin 4530017	94	10	1	<MDL	<MDL	0.43	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**Methylcyclopentane Data Summary**  
**Method Detection Limit (MDL) = 0.29**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 75 ppbv)	Median	24-Hour High (ESL = 300 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	6	0.41	0.32	1.44	0.64
Brazoria	Clute 0391003	94	14	3	<MDL	<MDL	0.62	0.42
Cameron	Brownsville 0610006	94	14	3	<MDL	<MDL	0.69	0.68
Dallas	Dallas 1130070	94	14	5	0.31	<MDL	0.85	0.69
Ector	Odessa 1350003	94	14	10	0.62	0.54	1.45	1.24
Ellis	Midlothian 1390007	94	12	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	94	14	11	4.08	0.93	21.94	19.37
Galveston	Texas City 1670053	94	11	5	0.34	<MDL	0.77	0.69
Harris	Channelview 2010026	94	15	5	0.31	<MDL	1.04	0.87
Harris	Houston (Old Galveston Rd.) 2010064	94	14	8	0.59	0.37	2.23	1.04
Harris	Houston (Haden Rd.) 2010803	94	14	8	0.67	0.41	2.34	2.04
Harris	Houston (Clinton Dr.) 2011035	94	14	10	0.74	0.57	2.81	1.42
Jefferson	Beaumont 2450009	94	15	15	0.81	0.68	2.32	1.10
Jefferson	Port Arthur 2450011	94	14	9	0.45	0.45	1.05	0.82
Jefferson	Groves 2450014	94	14	9	0.66	0.47	2.53	1.26
Jefferson	Port Neches 2450017	94	13	9	0.43	0.34	0.80	0.77
Nueces	Corpus Christi 3550020	94	14	10	0.72	0.53	3.07	1.45
Orange	West Orange 3611001	94	15	7	0.60	<MDL	4.69	0.97
Smith	Winona 4230005	94	15	3	0.43	<MDL	3.77	0.58
Tarrant	Grapevine 4393002	94	1	0	<MDL	<MDL		
Tarrant	DFW Airport 4393004	94	3	2	0.58	0.68	0.93	0.68
Travis	Austin 4530017	94	10	9	1.61	1.49	3.42	3.19

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**Methylene Chloride Data Summary**  
**Method Detection Limit (MDL) = 0.40**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 7.50 ppbv)	Median	24-Hour High (ESL = 30 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	21	2	<MDL	ND	0.80	0.50
Brazoria	Clute 0391003	92	7	0	ND	ND	ND	ND
		93	46	8	<MDL	ND	1.24	1.10
		94	53	10	<MDL	ND	1.63	0.99
Cameron	Brownsville 0610006	93	19	0	<MDL	ND	<MDL	<MDL
		94	59	1	<MDL	ND	1.72	<MDL
Dallas	Dallas 1130070	93	49	3	<MDL	ND	0.82	0.47
		94	58	1	<MDL	ND	0.58	<MDL
Ector	Odessa 1350003	93	52	1	<MDL	ND	0.93	<MDL
		94	59	0	ND	ND	ND	ND
Ellis	Midlothian 1390007	93	55	1	<MDL	<MDL	0.40	<MDL
		94	51	0	<MDL	ND	<MDL	<MDL
El Paso	El Paso 1410047	93	33	5	<MDL	ND	5.33	0.66
		94	58	2	<MDL	ND	1.05	1.01
Galveston	Texas City 1670053	92	9	0	ND	ND	ND	ND
		93	51	5	<MDL	ND	1.99	1.31
		94	51	0	<MDL	ND	<MDL	<MDL
Harris	Channelview 2010026	92	7	0	ND	ND	ND	ND
		93	49	3	<MDL	ND	1.91	0.62
		94	59	2	<MDL	ND	1.01	0.58
Harris	Houston (Old Galveston Rd.) 2010064	93	43	5	<MDL	ND	0.87	0.81
		94	55	0	<MDL	ND	<MDL	<MDL
Harris	Houston (Haden Rd.) 2010803	92	1	0	ND	ND		
		93	56	4	<MDL	ND	4.28	1.11
		94	58	3	<MDL	ND	1.59	0.95
Harris	Houston (Clinton Dr.) 2011035	92	8	0	ND	ND	ND	ND
		93	50	3	<MDL	ND	0.71	0.57
		94	58	2	<MDL	ND	0.56	0.40
Jefferson	Beaumont 2450009	92	7	1	<MDL	ND	0.50	ND
		93	56	1	<MDL	ND	0.40	<MDL
		94	59	1	<MDL	ND	0.46	<MDL
Jefferson	Port Arthur 2450011	92	7	0	ND	ND	ND	ND
		93	60	2	<MDL	ND	1.67	1.20
		94	57	0	<MDL	ND	<MDL	<MDL
Jefferson	Groves 2450014	93	18	0	<MDL	ND	<MDL	<MDL
		94	58	1	<MDL	ND	9.36	<MDL
Jefferson	Port Neches 2450017	94	23	1	<MDL	ND	0.51	<MDL
Nueces	Corpus Christi 3550020	93	55	4	<MDL	ND	1.92	0.90
		94	52	1	<MDL	ND	9.16	ND
Orange	West Orange 3611001	94	27	0	<MDL	ND	<MDL	<MDL
Smith	Winona 4230005	94	32	2	<MDL	ND	1.27	0.82
Tarrant	Grapevine 4393002	94	15	0	<MDL	ND	<MDL	<MDL
Tarrant	DFW Airport 4393004	94	9	0	ND	ND	ND	ND
Travis	Austin 4530017	94	21	0	<MDL	ND	<MDL	<MDL

† = Aerometric Information Retrieval System  
\* = Mean is greater than the annual ESL  
\*\* = Greater than the 24-Hour ESL  
ND = Less than the reporting limit

Source: TNRCC air toxics database



**TNRCC Network**  
**2-Methylheptane Data Summary**  
**Method Detection Limit (MDL) = 0.89**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 75 ppbv)	Median	24-Hour High (ESL = 300 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	<MDL	<MDL	<MDL	<MDL
Brazoria	Clute 0391003	94	14	1	1.19 *	MDL	15.93 **	<MDL
Cameron	Brownsville 0610006	94	14	0	<MDL	<MDL	<MDL	<MDL
Dallas	Dallas 1130070	94	14	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	94	14	0	<MDL	<MDL	<MDL	<MDL
Ellis	Midlothian 1390007	94	12	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	94	14	1	<MDL	<MDL	1.29 **	<MDL
Galveston	Texas City 1670053	94	11	0	<MDL	<MDL	<MDL	<MDL
Harris	Channelview 2010026	94	15	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	94	14	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Haden Rd.) 2010803	94	14	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Clinton Dr.) 2011035	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Beaumont 2450009	94	15	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Arthur 2450011	94	14	1	<MDL	<MDL	1.58 **	<MDL
Jefferson	Groves 2450014	94	14	1	<MDL	<MDL	0.89**	<MDL
Jefferson	Port Neches 2450017	94	13	0	<MDL	<MDL	<MDL	<MDL
Nueces	Corpus Christi 3550020	94	14	0	<MDL	<MDL	<MDL	<MDL
Orange	West Orange 3611001	94	15	0	<MDL	<MDL	<MDL	<MDL
Smith	Winona 4230005	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	Grapevine 4393002	94	1	0	<MDL	<MDL		
Tarrant	DFW Airport 4393004	94	3	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	10	0	<MDL	<MDL	<MDL	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**3-Methylheptane Data Summary**  
**Method Detection Limit (MDL) = 0.67**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 100 ppbv)	Median	24-Hour High (ESL = 400 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	<MDL	<MDL	<MDL	<MDL
Brazoria	Clute 0391003	94	14	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	94	14	0	<MDL	<MDL	<MDL	<MDL
Dallas	Dallas 1130070	94	14	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	94	14	0	<MDL	<MDL	<MDL	<MDL
Ellis	Midlothian 1390007	94	12	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	94	14	1	<MDL	<MDL	0.72	<MDL
Galveston	Texas City 1670053	94	11	0	<MDL	<MDL	<MDL	<MDL
Harris	Channelview 2010026	94	15	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	94	14	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Haden Rd.) 2010803	94	14	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Clinton Dr.) 2011035	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Beaumont 2450009	94	15	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Arthur 2450011	94	14	1	<MDL	<MDL	1.36	<MDL
Jefferson	Groves 2450014	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Neches 2450017	94	13	0	<MDL	<MDL	<MDL	<MDL
Nueces	Corpus Christi 3550020	94	14	0	<MDL	<MDL	<MDL	<MDL
Orange	West Orange 3611001	94	15	0	<MDL	<MDL	<MDL	<MDL
Smith	Winona 4230005	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	Grapevine 4393002	94	1	0	<MDL	<MDL		
Tarrant	DFW Airport 4393004	94	3	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	10	0	<MDL	<MDL	<MDL	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**2-Methylhexane Data Summary**  
**Method Detection Limit (MDL) = 5.02**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 75 ppbv)	Median	24-Hour High (ESL = 300 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	<MDL	<MDL	<MDL	<MDL
Brazoria	Clute 0391003	94	14	0	ND	ND	ND	ND
Cameron	Brownsville 0610006	94	14	0	<MDL	<MDL	<MDL	<MDL
Dallas	Dallas 1130070	94	14	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	94	14	0	<MDL	ND	<MDL	<MDL
Ellis	Midlothian 1390007	94	12	0	<MDL	ND	<MDL	<MDL
El Paso	El Paso 1410047	94	14	0	<MDL	<MDL	<MDL	<MDL
Galveston	Texas City 1670053	94	11	0	<MDL	ND	<MDL	<MDL
Harris	Channelview 2010026	94	15	0	<MDL	ND	<MDL	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	94	14	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Haden Rd.) 2010803	94	14	0	<MDL	ND	<MDL	<MDL
Harris	Houston (Clinton Dr.) 2011035	94	14	0	<MDL	ND	<MDL	ND
Jefferson	Beaumont 2450009	94	15	0	<MDL	ND	<MDL	<MDL
Jefferson	Port Arthur 2450011	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Groves 2450014	94	14	0	<MDL	ND	<MDL	ND
Jefferson	Port Neches 2450017	94	13	0	<MDL	ND	<MDL	<MDL
Nueces	Corpus Christi 3550020	94	14	0	<MDL	<MDL	<MDL	<MDL
Orange	West Orange 3611001	94	15	0	<MDL	ND	<MDL	<MDL
Smith	Winona 4230005	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	Grapevine 4393002	94	1	0	ND	ND		
Tarrant	DFW Airport 4393004	94	3	0	ND	ND	ND	ND
Travis	Austin 4530017	94	10	0	<MDL	ND	<MDL	<MDL

*Source: TNRCC air toxics database*

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

**TNRCC Network**  
**3-Methylhexane**  
**Method Detection Limit (MDL) = 0.31**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 100 ppbv)	Median	24-Hour High (ESL = 400 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	<MDL	<MDL	<MDL	<MDL
Brazoria	Clute 0391003	94	14	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	94	14	2	<MDL	<MDL	0.58	0.53
Dallas	Dallas 1130070	94	14	3	<MDL	<MDL	0.64	0.50
Ector	Odessa 1350003	94	14	8	0.42	0.34	1.00	0.98
Ellis	Midlothian 1390007	94	12	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	94	14	6	0.59	<MDL	3.10	1.31
Galveston	Texas City 1670053	94	11	2	<MDL	<MDL	0.33	0.31
Harris	Channelview 2010026	94	15	2	<MDL	<MDL	0.67	0.60
Harris	Houston (Old Galveston Rd.) 2010064	94	14	6	0.36	<MDL	1.10	0.80
Harris	Houston (Haden Rd.) 2010803	94	14	5	<MDL	<MDL	0.50	0.45
Harris	Houston (Clinton Dr.) 2011035	94	14	8	0.42	0.34	1.11	0.86
Jefferson	Beaumont 2450009	94	15	2	<MDL	<MDL	0.43	0.41
Jefferson	Port Arthur 2450011	94	14	1	<MDL	<MDL	0.31	<MDL
Jefferson	Groves 2450014	94	14	7	0.40	0.34	1.12	1.11
Jefferson	Port Neches 2450017	94	13	0	<MDL	<MDL	<MDL	<MDL
Nueces	Corpus Christi 3550020	94	14	7	0.35	<MDL	1.54	0.57
Orange	West Orange 3611001	94	15	0	<MDL	<MDL	<MDL	<MDL
Smith	Winona 4230005	94	15	1	<MDL	<MDL	0.48	<MDL
Tarrant	Grapevine 4393002	94	1	0	<MDL	<MDL		
Tarrant	DFW Airport 4393004	94	3	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	10	1	<MDL	<MDL	0.48	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**2-Methylpentane Data Summary**  
**Method Detection Limit (MDL) = 0.32**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 100 ppbv)	Median	24-Hour High (ESL = 400 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	6	0.49	0.46	1.13	0.68
Brazoria	Clute 0391003	94	14	3	<MDL	<MDL	0.84	0.42
Cameron	Brownsville 0610006	94	14	8	0.47	0.36	1.46	1.42
Dallas	Dallas 1130070	94	14	7	0.46	0.32	1.45	1.06
Ector	Odessa 1350003	94	14	10	0.66	0.57	1.91	1.57
Ellis	Midlothian 1390007	94	12	2	<MDL	0.21	0.39	0.32
El Paso	El Paso 1410047	94	14	10	2.78	0.61	17.09	12.54
Galveston	Texas City 1670053	94	11	6	0.63	0.46	2.15	1.03
Harris	Channelview 2010026	94	15	5	<MDL	<MDL	0.94	0.70
Harris	Houston (Old Galveston Rd.) 2010064	94	14	10	1.10	0.52	5.60	1.83
Harris	Houston (Haden Rd.) 2010803	94	14	10	0.61	0.41	1.67	1.47
Harris	Houston (Clinton Dr.) 2011035	94	14	12	1.11	0.98	3.35	2.34
Jefferson	Beaumont 2450009	94	15	13	0.86	0.66	3.00	1.24
Jefferson	Port Arthur 2450011	94	14	7	0.44	0.33	1.00	0.81
Jefferson	Groves 2450014	94	14	9	1.05	0.81	4.42	1.80
Jefferson	Port Neches 2450017	94	13	10	0.45	0.42	1.08	0.65
Nueces	Corpus Christi 3550020	94	14	11	0.77	0.63	1.68	1.62
Orange	West Orange 3611001	94	15	10	0.45	0.41	1.17	0.68
Smith	Winona 4230005	94	15	5	<MDL	<MDL	0.51	0.51
Tarrant	Grapevine 4393002	94	1	1	0.47		0.47	
Tarrant	DFW Airport 4393004	94	3	1	<MDL	<MDL	0.42	<MDL
Travis	Austin 4530017	94	10	9	0.77	0.70	1.55	1.33

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*



**TNRCC Network**  
**3-Methylpentane Data Summary**  
**Method Detection Limit (MDL) = 0.34**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 100 ppbv)	Median	24-Hour High (ESL = 400 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	6	0.35	0.37	0.73	0.66
Brazoria	Clute 0391003	94	14	3	<MDL	<MDL	0.76	0.49
Cameron	Brownsville 0610006	94	14	6	0.39	<MDL	1.27	1.18
Dallas	Dallas 1130070	94	14	5	0.40	<MDL	1.32	1.01
Ector	Odessa 1350003	94	14	9	0.57	0.47	1.62	1.30
Ellis	Midlothian 1390007	94	12	1	0.94	<MDL	9.59	<MDL
El Paso	El Paso 1410047	94	14	10	3.78	0.62	20.86	20.25
Galveston	Texas City 1670053	94	11	5	0.51	<MDL	1.79	0.98
Harris	Channelview 2010026	94	15	2	<MDL	ND	0.67	0.36
Harris	Houston (Old Galveston Rd.) 2010064	94	14	3	<MDL	ND	1.11	0.44
Harris	Houston (Haden Rd.) 2010803	94	14	8	0.44	0.37	1.20	1.11
Harris	Houston (Clinton Dr.) 2011035	94	14	7	0.82	0.46	2.44	2.25
Jefferson	Beaumont 2450009	94	15	11	0.62	0.67	1.31	1.18
Jefferson	Port Arthur 2450011	94	14	6	<MDL	<MDL	0.85	0.72
Jefferson	Groves 2450014	94	14	7	0.78	0.37	3.12	1.76
Jefferson	Port Neches 2450017	94	13	6	0.35	<MDL	0.86	0.75
Nueces	Corpus Christi 3550020	94	14	10	0.66	0.63	1.78	1.38
Orange	West Orange 3611001	94	15	8	0.42	0.36	1.15	0.75
Smith	Winona 4230005	94	15	2	<MDL	<MDL	0.87	0.39
Tarrant	Grapevine 4393002	94	1	0	<MDL	<MDL		
Tarrant	DFW Airport 4393004	94	3	1	6.66	<MDL	19.38	<MDL
Travis	Austin 4530017	94	10	9	2.54	0.72	18.63	1.55

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**2-Methyl-1-Pentene Data Summary**  
**Method Detection Limit (MDL) = 0.11**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 800 ppbv)	Median	24-Hour High (ESL = 3,200 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	ND	ND	ND	ND
Brazoria	Clute 0391003	94	14	0	ND	ND	ND	ND
Cameron	Brownsville 0610006	94	14	2	<MDL	ND	0.30	0.25
Dallas	Dallas 1130070	94	14	1	<MDL	ND	0.32	ND
Ector	Odessa 1350003	94	14	0	ND	ND	ND	ND
Ellis	Midlothian 1390007	94	12	0	ND	ND	ND	ND
El Paso	El Paso 1410047	94	14	4	0.13	ND	0.97	0.41
Galveston	Texas City 1670053	94	11	0	ND	ND	ND	ND
Harris	Channelview 2010026	94	15	0	ND	ND	ND	ND
Harris	Houston (Old Galveston Rd.) 2010064	94	14	2	0.12	ND	1.32	0.30
Harris	Houston (Haden Rd.) 2010803	94	14	3	<MDL	ND	0.55	0.20
Harris	Houston (Clinton Dr.) 2011035	94	14	2	0.12	ND	1.35	0.20
Jefferson	Beaumont 2450009	94	15	0	ND	ND	ND	ND
Jefferson	Port Arthur 2450011	94	14	0	<MDL	ND	<MDL	ND
Jefferson	Groves 2450014	94	14	0	<MDL	ND	<MDL	<MDL
Jefferson	Port Neches 2450017	94	13	0	<MDL	ND	<MDL	ND
Nueces	Corpus Christi 3550020	94	14	0	<MDL	ND	<MDL	ND
Orange	West Orange 3611001	94	15	0	<MDL	ND	<MDL	ND
Smith	Winona 4230005	94	15	0	ND	ND	ND	ND
Tarrant	Grapevine 4393002	94	1	0	ND	ND		
Tarrant	DFW Airport 4393004	94	3	0	ND	ND	ND	ND
Travis	Austin 4530017	94	10	2	<MDL	ND	0.17	0.17

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**4-Methyl-1-Pentene Data Summary**  
**Method Detection Limit (MDL) = 0.50**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 800 ppbv)	Median	24-Hour High (ESL = 3,200 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	<MDL	<MDL	<MDL	<MDL
Brazoria	Clute 0391003	94	14	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	94	14	0	<MDL	ND	<MDL	<MDL
Dallas	Dallas 1130070	94	14	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	94	14	1	<MDL	ND	0.54	<MDL
Ellis	Midlothian 1390007	94	12	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	94	14	2	1.35	<MDL	16.93	0.73
Galveston	Texas City 1670053	94	11	0	<MDL	<MDL	<MDL	<MDL
Harris	Channelview 2010026	94	15	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	94	14	1	<MDL	<MDL	0.56	<MDL
Harris	Houston (Haden Rd.) 2010803	94	14	3	<MDL	<MDL	0.68	0.59
Harris	Houston (Clinton Dr.) 2011035	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Beaumont 2450009	94	15	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Arthur 2450011	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Groves 2450014	94	14	4	<MDL	ND	1.20	0.89
Jefferson	Port Neches 2450017	94	13	0	<MDL	ND	<MDL	<MDL
Nueces	Corpus Christi 3550020	94	14	2	<MDL	<MDL	1.19	0.99
Orange	West Orange 3611001	94	15	0	<MDL	<MDL	<MDL	<MDL
Smith	Winona 4230005	94	15	0	<MDL	ND	<MDL	<MDL
Tarrant	Grapevine 4393002	94	1	0	ND	ND		
Tarrant	DFW Airport 4393004	94	3	0	ND	ND	ND	ND
Travis	Austin 4530017	94	10	0	<MDL	<MDL	<MDL	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**n-Nonane Data Summary**  
**Method Detection Limit (MDL) = 0.94**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 200 ppbv)	Median	24-Hour High (ESL = 800 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	ND	ND	ND	ND
Brazoria	Clute 0391003	94	14	0	ND	ND	ND	ND
Cameron	Brownsville 0610006	94	14	0	ND	ND	ND	ND
Dallas	Dallas 1130070	94	14	0	ND	ND	ND	ND
Ector	Odessa 1350003	94	14	0	ND	ND	ND	ND
Ellis	Midlothian 1390007	94	12	0	ND	ND	ND	ND
El Paso	El Paso 1410047	94	14	0	<MDL	ND	<MDL	ND
Galveston	Texas City 1670053	94	11	0	ND	ND	ND	ND
Harris	Channelview 2010026	94	15	0	ND	ND	ND	ND
Harris	Houston (Old Galveston Rd.) 2010064	94	14	0	ND	ND	ND	ND
Harris	Houston (Haden Rd.) 2010803	94	14	0	ND	ND	ND	ND
Harris	Houston (Clinton Dr.) 2011035	94	14	0	ND	ND	ND	ND
Jefferson	Beaumont 2450009	94	15	0	<MDL	ND	<MDL	<MDL
Jefferson	Port Arthur 2450011	94	14	0	<MDL	ND	<MDL	ND
Jefferson	Groves 2450014	94	14	0	<MDL	ND	<MDL	<MDL
Jefferson	Port Neches 2450017	94	13	1	<MDL	ND	1.16	ND
Nueces	Corpus Christi 3550020	94	14	0	<MDL	ND	<MDL	<MDL
Orange	West Orange 3611001	94	15	0	ND	ND	ND	ND
Smith	Winona 4230005	94	15	0	ND	ND	ND	ND
Tarrant	Grapevine 4393002	94	1	0	ND	ND		
Tarrant	DFW Airport 4393004	94	3	0	ND	ND	ND	ND
Travis	Austin 4530017	94	10	0	ND	ND	ND	ND

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**n-Octane Data Summary**  
**Method Detection Limit (MDL) = 0.80**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 75 ppbv)	Median	24-Hour High (ESL = 300 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	<MDL	<MDL	<MDL	<MDL
Brazoria	Clute 0391003	94	14	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	94	14	0	<MDL	<MDL	<MDL	<MDL
Dallas	Dallas 1130070	94	14	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	94	14	0	<MDL	<MDL	<MDL	<MDL
Ellis	Midlothian 1390007	94	12	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	94	14	0	<MDL	<MDL	<MDL	<MDL
Galveston	Texas City 1670053	94	11	0	<MDL	<MDL	<MDL	<MDL
Harris	Channelview 2010026	94	15	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Cld Galveston Rd.) 2010064	94	14	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Haden Rd.) 2010803	94	14	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Clinton Dr.) 2011035	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Beaumont 2450009	94	15	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Arthur 2450011	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Groves 2450014	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Neches 2450017	94	13	1	<MDL	<MDL	1.46	<MDL
Nueces	Corpus Christi 3550020	94	14	0	<MDL	<MDL	<MDL	<MDL
Orange	West Orange 3611001	94	15	0	<MDL	<MDL	<MDL	<MDL
Smith	Winona 4230005	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	Grapevine 4393002	94	1	0	<MDL	<MDL		
Tarrant	DFW Airport 4393004	94	3	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	10	0	<MDL	<MDL	<MDL	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*



**TNRCC Network**  
**n-Pentane Data Summary**  
**Method Detection Limit (MDL) = 0.58**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 120 ppbv)	Median	24-Hour High (ESL = 480 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	9	1.49	1.40	2.36	2.08
Brazoria	Clute 0391003	94	14	10	0.75	0.75	1.63	1.60
Cameron	Brownsville 0610006	94	14	9	1.21	0.94	4.51	3.71
Dallas	Dallas 1130070	94	14	12	1.28	0.96	3.75	1.96
Ector	Odessa 1350003	94	14	14	3.21	2.25	6.95	6.79
Ellis	Midlothian 1390007	94	12	8	0.77	0.69	1.33	1.12
El Paso	El Paso 1410047	94	14	13	31.32	5.18	201.50	142.90
Galveston	Texas City 1670053	94	11	9	1.56	1.17	3.94	2.52
Harris	Channelview 2010026	94	15	13	1.27	1.07	3.38	2.54
Harris	Houston (Old Galveston Rd.) 2010064	94	14	11	2.35	1.49	9.01	4.67
Harris	Houston (Haden Rd.) 2010803	94	14	14	1.43	1.17	3.03	2.89
Harris	Houston (Clinton Dr.) 2011035	94	14	13	2.82	2.66	6.07	5.77
Jefferson	Beaumont 2450009	94	15	15	2.88	2.03	13.00	3.90
Jefferson	Port Arthur 2450011	94	14	13	1.94	1.59	4.79	4.20
Jefferson	Groves 2450014	94	14	13	3.60	2.70	20.02	4.66
Jefferson	Port Neches 2450017	94	13	12	1.39	1.33	4.55	1.81
Nueces	Corpus Christi 3550020	94	14	13	2.88	2.32	10.65	4.86
Orange	West Orange 3611001	94	15	13	1.14	1.11	2.06	1.70
Smith	Winona 4230005	94	15	10	0.88	0.80	1.49	1.49
Tarrant	Grapevine 4393002	94	1	1	0.97	0.97		
Tarrant	DFW Airport 4393004	94	3	2	0.65	0.58	0.86	0.58
Travis	Austin 4530017	94	10	9	1.71	1.53	4.61	1.91

*Source: TNRCC air toxics database*

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

**TNRCC Network**  
**1-Pentene Data Summary**  
**Method Detection Limit (MDL) = 0.31**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 800 ppbv)	Median	24-Hour High (ESL = 3,200 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	1	<MDL	<MDL	0.34	<MDL
Brazoria	Clute 0391003	94	14	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	94	14	2	<MDL	<MDL	0.36	0.32
Dallas	Dallas 1130070	94	14	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	94	14	0	<MDL	<MDL	<MDL	<MDL
Ellis	Midlothian 1390007	94	12	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	94	14	4	0.48	<MDL	2.87	1.89
Galveston	Texas City 1670053	94	11	0	<MDL	<MDL	<MDL	<MDL
Harris	Channelview 2010026	94	15	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	94	14	4	<MDL	<MDL	1.32	0.50
Harris	Houston (Haden Rd.) 2010803	94	14	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Clinton Dr.) 2011035	94	14	2	<MDL	<MDL	0.61	0.35
Jefferson	Beaumont 2450009	94	15	1	<MDL	<MDL	0.57	<MDL
Jefferson	Port Arthur 2450011	94	14	2	<MDL	<MDL	0.37	0.36
Jefferson	Groves 2450014	94	14	1	<MDL	<MDL	0.91	<MDL
Jefferson	Port Neches 2450017	94	13	0	<MDL	<MDL	<MDL	<MDL
Nueces	Corpus Christi 3550020	94	14	0	<MDL	<MDL	<MDL	<MDL
Orange	West Orange 3611001	94	15	1	<MDL	<MDL	0.32	<MDL
Smith	Winona 4230005	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	Grapevine 4393002	94	1	0	ND	ND		
Tarrant	DFW Airport 4393004	94	3	0	<MDL	ND	<MDL	ND
Travis	Austin 4530017	94	10	1	<MDL	<MDL	0.37	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**c-2-Pentene Data Summary**  
**Method Detection Limit (MDL) = 0.40**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 800 ppbv)	Median	24-Hour High (ESL = 3,200 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	<MDL	<MDL	<MDL	<MDL
Brazoria	Clute 0391003	94	14	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	94	14	3	<MDL	<MDL	0.89	0.82
Dallas	Dallas 1130070	94	14	3	<MDL	<MDL	0.77	0.69
Ector	Odessa 1350003	94	14	3	<MDL	<MDL	0.85	0.47
Ellis	Midlothian 1390007	94	12	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	94	14	8	1.14	0.62	3.68	2.65
Galveston	Texas City 1670053	94	11	3	<MDL	<MDL	0.74	0.65
Harris	Channelview 2010026	94	15	1	<MDL	<MDL	0.55	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	94	14	6	0.75	<MDL	4.43	1.48
Harris	Houston (Haden Rd.) 2010803	94	14	6	0.41	<MDL	1.08	1.08
Harris	Houston (Clinton Dr.) 2011035	94	14	8	0.55	0.50	1.70	1.63
Jefferson	Beaumont 2450009	94	15	1	<MDL	ND	0.78	<MDL
Jefferson	Port Arthur 2450011	94	14	3	<MDL	<MDL	0.84	0.41
Jefferson	Groves 2450014	94	14	5	0.52	<MDL	3.08	0.94
Jefferson	Port Neches 2450017	94	13	0	<MDL	<MDL	<MDL	<MDL
Nueces	Corpus Christi 3550020	94	14	3	<MDL	<MDL	1.04	0.51
Orange	West Orange 3611001	94	15	2	<MDL	<MDL	0.74	0.70
Smith	Winona 4230005	94	15	0	<MDL	ND	<MDL	<MDL
Tarrant	Grapevine 4393002	94	1	0	ND	ND		
Tarrant	DFW Airport 4393004	94	3	1	0.53	<MDL	1.52	<MDL
Travis	Austin 4530017	94	10	5	<MDL	<MDL	1.02	0.56

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**1-2-Pentene Data Summary**  
**Method Detection Limit (MDL) = 0.08**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 800 ppbv)	Median	24-Hour High (ESL = 3,200 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	8	0.13	0.10	0.24	0.22
Brazoria	Clute 0391003	94	14	3	<MDL	ND	0.16	0.14
Cameron	Brownsville 0610006	94	14	4	0.12	ND	0.59	0.48
Dallas	Dallas 1130070	94	14	4	0.10	ND	0.53	0.45
Ector	Odessa 1350003	94	14	3	<MDL	ND	0.23	0.17
Ellis	Midlothian 1390007	94	12	0	<MDL	ND	<MDL	ND
El Paso	El Paso 1410047	94	14	10	0.64	0.26	3.77	1.81
Galveston	Texas City 1670053	94	11	5	0.17	<MDL	0.53	0.49
Harris	Channelview 2010026	94	15	5	0.08	ND	0.41	0.20
Harris	Houston (Old Galveston Rd.) 2010064	94	14	13	0.52	0.18	2.54	1.16
Harris	Houston (Haden Rd.) 2010803	94	14	6	0.15	ND	0.78	0.55
Harris	Houston (Clinton Dr.) 2011035	94	14	7	0.25	<MDL	1.38	0.56
Jefferson	Beaumont 2450009	94	15	2	<MDL	ND	0.15	0.09
Jefferson	Port Arthur 2450011	94	14	8	0.15	0.09	0.71	0.32
Jefferson	Groves 2450014	94	14	6	0.24	<MDL	2.00	0.43
Jefferson	Port Neches 2450017	94	13	2	<MDL	<MDL	0.14	0.09
Nueces	Corpus Christi 3550020	94	14	7	0.14	<MDL	0.77	0.36
Orange	West Orange 3611001	94	15	6	0.14	<MDL	0.56	0.56
Smith	Winona 4230005	94	15	1	<MDL	ND	0.09	<MDL
Tarrant	Grapevine 4393002	94	1	0	ND	ND		
Tarrant	DFW Airport 4393004	94	3	0	ND	ND	ND	ND
Travis	Austin 4530017	94	10	5	0.15	<MDL	0.65	0.35

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**Perchloroethylene Data Summary**  
**Method Detection Limit (MDL) = 0.61**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 5 ppbv)	Median	24-Hour High (ESL = 20 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	21	0	<MDL	<MDL	<MDL	<MDL
Brazoria	Clute 0391003	92	7	0	<MDL	ND	<MDL	ND
		93	46	0	<MDL	<MDL	<MDL	<MDL
		94	53	1	<MDL	<MDL	0.65	<MDL
Cameron	Brownsville 0610006	93	19	0	<MDL	<MDL	<MDL	<MDL
		94	59	0	<MDL	<MDL	<MDL	<MDL
Dallas	Dallas 1130070	93	49	0	<MDL	<MDL	<MDL	<MDL
		94	58	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	93	52	0	<MDL	<MDL	<MDL	<MDL
		94	59	0	<MDL	<MDL	<MDL	<MDL
Ellis	Midlothian 1390007	93	55	0	<MDL	<MDL	<MDL	<MDL
		94	51	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	93	33	0	<MDL	<MDL	<MDL	<MDL
		94	58	0	<MDL	<MDL	<MDL	<MDL
Galveston	Texas City 1670053	92	9	7	1.34	0.83	5.22	2.15
		93	51	3	<MDL	<MDL	2.16	0.69
		94	51	0	<MDL	<MDL	<MDL	<MDL
Harris	Channelview 2010026	92	7	1	<MDL	ND	0.62	ND
		93	49	0	<MDL	<MDL	<MDL	<MDL
		94	59	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	93	43	0	<MDL	<MDL	<MDL	<MDL
		94	55	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Haden Rd.) 2010803	92	1	0	ND	ND		
		93	56	2	<MDL	<MDL	1.34	0.67
		94	58	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Clinton Dr.) 2011035	92	8	0	<MDL	ND	<MDL	<MDL
		93	50	0	<MDL	<MDL	<MDL	<MDL
		94	58	1	<MDL	<MDL	1.07	<MDL
Jefferson	Beaumont 2450009	92	7	0	<MDL	ND	<MDL	<MDL
		93	56	0	<MDL	<MDL	<MDL	<MDL
		94	59	14	<MDL	<MDL	1.30	1.12
Jefferson	Port Arthur 2450011	92	7	1	<MDL	ND	2.01	<MDL
		93	60	0	<MDL	<MDL	<MDL	<MDL
		94	57	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Groves 2450014	93	18	0	<MDL	<MDL	<MDL	<MDL
		94	58	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Neches 2450017	94	23	0	<MDL	<MDL	<MDL	<MDL
Nueces	Corpus Christi 3550020	93	55	1	<MDL	<MDL	0.61	<MDL
		94	52	0	<MDL	<MDL	<MDL	<MDL
Orange	West Orange 3611001	94	27	0	<MDL	<MDL	<MDL	<MDL
Smith	Winona 4230005	94	32	0	<MDL	<MDL	<MDL	<MDL
Tarrant	Grapevine 4393002	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	DFW Airport 4393004	94	9	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	21	0	<MDL	<MDL	<MDL	<MDL

Source: TNRCC air toxics database

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit



**TNRCC Network**  
 **$\alpha$ -Pinene Data Summary**  
**Method Detection Limit (MDL) = 0.96**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples $\geq$ MDL	Annual Mean (ESL = 63 ppbv)	Median	24-Hour High (ESL = 251 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	<MDL	ND	<MDL	<MDL
Brazoria	Clute 0391003	94	14	1	<MDL	ND	2.69	<MDL
Cameron	Brownsville 0610006	94	14	1	<MDL	<MDL	1.99	<MDL
Dallas	Dallas 1130070	94	14	1	<MDL	<MDL	2.05	<MDL
Ector	Odessa 1350003	94	14	0	<MDL	ND	<MDL	<MDL
Ellis	Midlothian 1390007	94	12	0	<MDL	ND	1.02	<MDL
El Paso	El Paso 1410047	94	14	0	<MDL	ND	<MDL	ND
Galveston	Texas City 1670053	94	11	1	<MDL	ND	2.27	<MDL
Harris	Channelview 2010026	94	15	1	<MDL	<MDL	1.65	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	94	14	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Haden Rd.) 2010803	94	14	1	<MDL	<MDL	1.40	<MDL
Harris	Houston (Clinton Dr.) 2011035	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Beaumont 2450009	94	15	3	<MDL	<MDL	3.26	1.10
Jefferson	Port Arthur 2450011	94	14	1	<MDL	<MDL	1.23	<MDL
Jefferson	Groves 2450014	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Neches 2450017	94	13	3	<MDL	<MDL	3.09	1.96
Nueces	Corpus Christi 3550020	94	14	0	<MDL	ND	<MDL	ND
Orange	West Orange 3611001	94	15	0	<MDL	<MDL	<MDL	<MDL
Smith	Winona 4230005	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	Grapevine 4393002	94	1	0	<MDL	<MDL		
Tarrant	DFW Airport 4393004	94	3	1	<MDL	<MDL	1.59	<MDL
Travis	Austin 4530017	94	10	0	<MDL	ND	<MDL	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**b-Pinene Data Summary**  
**Method Detection Limit (MDL) = 0.96**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 63 ppbv)	Median	24-Hour High (ESL = 251 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	<MDL	<MDL	<MDL	<MDL
Brazoria	Clute 0391003	94	14	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	94	14	0	<MDL	<MDL	<MDL	<MDL
Dallas	Dallas 1130070	94	14	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	94	14	0	<MDL	ND	<MDL	<MDL
Ellis	Midlothian 1390007	94	12	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	94	14	0	<MDL	ND	<MDL	<MDL
Galveston	Texas City 1670053	94	11	0	<MDL	<MDL	<MDL	<MDL
Harris	Channelview 2010026	94	15	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	94	14	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Haden Rd.) 2010803	94	14	2	<MDL	<MDL	2.09	1.07
Harris	Houston (Clinton Dr.) 2011035	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Beaumont 2450009	94	15	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Arthur 2450011	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Groves 2450014	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Neches 2450017	94	13	0	<MDL	ND	<MDL	<MDL
Nueces	Corpus Christi 3550020	94	14	0	<MDL	ND	<MDL	<MDL
Orange	West Orange 3611001	94	15	0	<MDL	<MDL	<MDL	<MDL
Smith	Winona 4230005	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	Grapevine 4393002	94	1	0	<MDL	<MDL		
Tarrant	DFW Airport 4393004	94	3	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	10	0	<MDL	<MDL	<MDL	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**Propane Data Summary**  
**Method Detection Limit (MDL) = 0.78**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 1,000 ppbv)	Median	24-Hour High (ESL = 4,000 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	9	2.50	2.70	4.56	4.33
Brazoria	Clute 0391003	94	14	13	2.67	1.64	8.79	6.09
Cameron	Brownsville 0610006	94	14	11	3.10	1.53	12.39	11.40
Dallas	Dallas 1130070	94	14	13	2.90	1.88	11.20	5.18
Ector	Odessa 1350003	94	14	14	8.89	5.92	39.87	16.42
Ellis	Midlothian 1390007	94	12	10	1.69	1.27	5.65	2.30
El Paso	El Paso 1410047	94	14	12	8.69	2.80	45.97	27.98
Galveston	Texas City 1670053	94	11	11	3.42	3.85	5.93	5.73
Harris	Channelview 2010026	94	15	15	4.41	2.70	14.73	12.15
Harris	Houston (Old Galveston Rd.) 2010064	94	14	14	6.24	3.61	26.16	13.25
Harris	Houston (Hcaden Rd.) 2010803	94	14	14	4.83	3.81	12.93	10.37
Harris	Houston (Clinton Dr.) 2011035	94	14	13	5.76	3.70	18.65	12.22
Jefferson	Beaumont 2450009	94	15	15	5.07	3.85	16.83	10.11
Jefferson	Port Arthur 2450011	94	14	14	8.14	4.54	33.02	17.94
Jefferson	Groves 2450014	94	14	14	18.45	8.44	117.80	30.59
Jefferson	Port Neches 2450017	94	13	13	3.34	3.47	6.46	5.45
Nueces	Corpus Christi 3550020	94	14	11	9.69	4.61	34.64	27.10
Orange	West Orange 3611001	94	15	15	3.50	2.74	10.29	6.60
Smith	Winona 4230005	94	15	13	3.47	1.70	13.53	10.10
Tarrant	Grapevine 4393002	94	1	1	4.70	4.70		
Tarrant	DFW Airport 4393004	94	3	3	1.70	1.66	1.94	1.66
Travis	Austin 4530017	94	10	9	3.41	2.89	8.61	5.27

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**n-Propylbenzene Data Summary**  
**Method Detection Limit (MDL) = 0.93**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 20 ppbv)	Median	24-Hour High (ESL = 80 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	<MDL	<MDL	<MDL	<MDL
Brazoria	Clute 0391003	94	14	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	94	14	0	<MDL	<MDL	<MDL	<MDL
Dallas	Dallas 1130070	94	14	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	94	14	0	<MDL	<MDL	<MDL	<MDL
Ellis	Midlothian 1390007	94	12	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	94	14	0	<MDL	<MDL	<MDL	<MDL
Galveston	Texas City 1670053	94	11	0	<MDL	<MDL	<MDL	<MDL
Harris	Channelview 2010026	94	15	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	94	14	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Haden Rd.) 2010803	94	14	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Clinton Dr.) 2011035	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Beaumont 2450009	94	15	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Arthur 2450011	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Groves 2450014	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Neches 2450017	94	13	0	<MDL	<MDL	<MDL	<MDL
Nueces	Corpus Christi 3550020	94	14	0	<MDL	<MDL	<MDL	<MDL
Orange	West Orange 3611001	94	15	0	<MDL	<MDL	<MDL	<MDL
Smith	Winona 4230005	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	Grapevine 4393002	94	1	0	<MDL	<MDL		
Tarrant	DFW Airport 4393004	94	3	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	10	0	<MDL	<MDL	<MDL	<MDL

*Source: TNRCC air toxics database*

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

**TNRCC Network**  
**Propylene Data Summary**  
**Method Detection Limit (MDL) = 1.34**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 6,700 ppbv)	Median	24-Hour High (ESL = 26,800 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	5	2.02	1.84	3.91	3.59
Brazoria	Clute 0391003	94	14	9	2.69	1.90	9.90	5.93
Cameron	Brownsville 0610006	94	14	8	2.08	1.38	9.47	4.65
Dallas	Dallas 1130070	94	14	7	1.47	1.15	7.12	3.24
Ector	Odessa 1350003	94	14	9	5.65	5.15	17.07	11.59
Ellis	Midlothian 1390007	94	12	8	2.03	1.84	5.07	4.15
El Paso	El Paso 1410047	94	14	9	2.86	2.15	11.00	6.42
Galveston	Texas City 1670053	94	11	6	2.27	1.51	6.32	6.30
Harris	Channelview 2010026	94	15	11	2.72	2.66	8.65	5.44
Harris	Houston (Old Galveston Rd.) 2010064	94	14	10	6.48	1.94	48.97	9.36
Harris	Houston (Haden Rd.) 2010803	94	14	10	2.91	1.67	8.49	7.63
Harris	Houston (Clinton Dr.) 2011035	94	14	9	2.59	2.33	6.68	5.61
Jefferson	Beaumont 2450009	94	15	11	4.67	2.86	37.33	5.46
Jefferson	Port Arthur 2450011	94	14	10	3.98	2.37	14.01	11.22
Jefferson	Groves 2450014	94	14	11	3.81	3.79	13.30	6.22
Jefferson	Port Neches 2450017	94	13	7	3.77	2.21	19.83	7.30
Nueces	Corpus Christi 3550020	94	14	8	13.93	4.28	77.93	41.03
Orange	West Orange 3611001	94	15	10	2.53	1.95	10.96	6.36
Smith	Winona 4230005	94	15	8	1.76	1.49	4.81	3.47
Tarrant	Grapevine 4393002	94	1	0	ND	ND		
Tarrant	DFW Airport 4393004	94	3	0	ND	ND	ND	ND
Travis	Austin 4530017	94	10	4	1.77	0.49	9.97	3.19

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**Styrene Data Summary**  
**Method Detection Limit (MDL) = 0.90**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 20 ppbv)	Median	24-Hour High (ESL = 80 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	21	0	<MDL	<MDL	<MDL	<MDL
Brazoria	Clute 0391003	93	41	0	<MDL	ND	<MDL	<MDL
		94	53	1	<MDL	<MDL	1.13	<MDL
Cameron	Brownsville 0610006	93	19	0	<MDL	ND	<MDL	<MDL
		94	59	1	<MDL	<MDL	1.11	<MDL
Dallas	Dallas 1130070	93	49	0	<MDL	ND	<MDL	<MDL
		94	58	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	93	51	8	<MDL	<MDL	4.46	4.40
		94	59	13	<MDL	<MDL	4.04	3.03
Ellis	Midlothian 1390007	93	53	0	<MDL	ND	<MDL	<MDL
		94	51	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	93	33	2	<MDL	ND	1.06	0.99
		94	58	0	<MDL	<MDL	<MDL	<MDL
Galveston	Texas City 1670053	93	45	0	<MDL	ND	<MDL	<MDL
		94	51	0	<MDL	<MDL	<MDL	<MDL
Harris	Channelview 2010026	93	43	2	<MDL	<MDL	2.18	1.13
		94	59	12	<MDL	<MDL	9.28	2.52
Harris	Houston (Old Galveston Rd.) 2010064	93	41	2	<MDL	ND	1.22	1.07
		94	55	14	0.94	<MDL	9.49	5.45
Harris	Houston (Haden Rd.) 2010803	93	51	14	0.77	<MDL	8.32	7.36
		94	58	32	1.74	1.04	11.95	6.25
Harris	Houston (Clinton Dr.) 2011035	93	44	0	<MDL	ND	<MDL	<MDL
		94	58	4	<MDL	<MDL	1.72	1.16
Jefferson	Beaumont 2450011	93	49	3	<MDL	<MDL	2.49	1.50
		94	59	23	<MDL	<MDL	5.47	2.31
Jefferson	Port Arthur 2450011	93	55	0	<MDL	ND	<MDL	<MDL
		94	57	2	<MDL	<MDL	1.33	1.00
Jefferson	Groves 2450014	93	18	0	<MDL	ND	<MDL	<MDL
		94	58	9	<MDL	<MDL	2.65	2.04
Jefferson	Port Neches 2450017	94	23	19	6.35	2.33	29.48	28.45
Nueces	Corpus Christi 3550020	93	49	0	<MDL	ND	<MDL	<MDL
		94	52	0	<MDL	<MDL	<MDL	<MDL
Orange	West Orange 3611001	94	27	1	<MDL	<MDL	2.46	<MDL
Smith	Winona 4230005	94	32	3	<MDL	<MDL	1.66	1.54
Tarrant	Grapevine 4393002	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	DFW Airport 4393004	94	9	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	21	0	<MDL	<MDL	<MDL	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*



**TNRCC Network**  
**Toluene Data Summary**  
**Method Detection Limit (MDL) = 0.88**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 50 ppbv)	Median	24-Hour High (ESL = 200 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	21	17	1.81	1.51	5.45	3.82
Brazoria	Clute 0391003	92	7	3	0.98	<MDL	2.18	1.74
		93	46	33	1.51	1.36	4.50	3.79
		94	53	15	<MDL	<MDL	2.21	1.37
Cameron	Brownsville 0610006	93	19	17	1.59	1.36	3.36	2.90
		94	59	29	1.10	<MDL	4.11	3.16
Dallas	Dallas 1130070	93	49	23	1.14	<MDL	5.56	3.55
		94	58	28	1.14	<MDL	4.18	3.67
Ector	Odessa 1350003	93	52	38	1.52	1.31	4.64	4.47
		94	59	34	1.28	1.02	4.03	3.80
Ellis	Midlothian 1390007	93	55	10	0.69	<MDL	6.70	1.82
		94	51	7	<MDL	<MDL	1.22	1.20
El Paso	El Paso 1410047	93	33	33	3.97	3.85	7.54	7.27
		94	58	54	3.45	2.54	10.90	9.79
Galveston	Texas City 1670053	92	9	7	2.88	3.38	6.89	5.69
		93	51	33	1.18	1.24	3.07	2.77
		94	51	34	1.38	1.27	3.41	2.78
Harris	Channelview 2010026	92	7	5	1.57	1.68	3.34	1.93
		93	49	40	2.00	1.53	8.98	5.20
		94	59	41	1.56	1.30	7.12	3.95
Harris	Houston (Old Galveston Rd.) 2010064	93	43	40	2.27	1.85	7.40	7.39
		94	55	43	1.97	1.48	6.83	6.46
Harris	Houston (Haden Rd.) 2010803	92	1	0	<MDL	<MDL	<MDL	<MDL
		93	56	54	2.85	2.28	9.05	7.79
		94	58	52	2.84	2.45	10.65	7.66
Harris	Houston (Clinton Dr.) 2011035	92	8	8	3.56	2.83	8.56	5.68
		93	50	46	2.88	2.71	8.32	8.15
		94	58	51	2.52	2.44	5.82	5.44
Jefferson	Beaumont 2450009	92	7	3	0.93	<MDL	2.16	1.51
		93	56	51	1.91	1.82	6.59	4.07
		94	59	42	1.45	1.25	8.25	3.40
Jefferson	Port Arthur 2450011	92	7	5	1.39	1.13	3.37	1.92
		93	60	40	1.53	1.18	7.94	4.80
		94	57	32	1.30	0.91	6.25	3.39
Jefferson	Groves 2450014	93	18	16	4.32	2.52	22.87	12.39
		94	58	46	2.63	1.85	17.26	12.62
Jefferson	Port Neches 2450017	94	23	22	12.13	12.42	32.09	22.38
Nueces	Corpus Christi 3550020	93	55	49	2.91	2.49	14.95	8.41
		94	52	34	1.49	1.22	5.98	3.97
Orange	West Orange 3611001	94	27	15	1.15	0.93	3.08	2.80
Smith	Winona 4230005	94	32	6	<MDL	<MDL	4.81	1.94
Tarrant	Grapevine 4393002	94	15	10	1.10	1.04	2.10	1.62
Tarrant	DFW Airport 4393004	94	9	6	1.43	1.20	3.25	2.62
Travis	Austin 4530017	94	21	14	1.28	1.21	2.76	2.46

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

Source: TNRCC air toxics database

**TNRCC Network**  
**1,1,1-Trichloroethane Data Summary**  
**Method Detection Limit (MDL) = 0.38 ppbv**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 200 ppbv)	Median	24-Hour High (ESL = 800 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	21	2	<MDL	<MDL	0.81	0.52
Brazoria	Clute 0391003	92	0	0				
		93	11	9	0.49	0.48	0.70	0.60
		94	5	0	<MDL	ND	<MDL	ND
Cameron	Brownsville 0610006	93	18	14	1.00	0.59	3.13	2.89
		94	59	7	<MDL	<MDL	0.97	0.51
Dallas	Dallas 1130070	93	26	17	1.13	0.98	4.30	2.23
		94	58	7	<MDL	<MDL	2.51	1.35
Ector	Odessa 1350003	93	12	12	3.01	2.04	8.47	6.63
		94	13	11	1.47	1.45	3.06	2.87
Ellis	Midlothian 1390007	93	6	3	<MDL	<MDL	0.50	0.40
		94	20	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	93	33	28	0.96	0.93	2.34	2.20
		94	58	28	0.44	<MDL	1.28	1.19
Galveston	Texas City 1670053	92	9	4	0.44	<MDL	1.31	0.83
		93	50	4	<MDL	<MDL	2.71	0.96
		94	51	1	<MDL	<MDL	0.59	<MDL
Harris	Channelview 2010026	92	6	1	<MDL	<MDL	0.42	<MDL
		93	49	10	<MDL	<MDL	0.84	0.64
		94	59	5	<MDL	<MDL	0.58	0.45
Harris	Houston (Old Galveston Rd.) 2010064	93	21	7	<MDL	<MDL	0.58	0.57
		94	55	7	<MDL	<MDL	0.82	0.51
Harris	Houston (Haden Rd.) 2010803	92	1	0	ND	ND		
		93	56	36	0.61	0.40	6.79	3.49
		94	58	8	<MDL	<MDL	1.80	0.77
Harris	Houston (Clinton Dr.) 2011035	92	0	0				
		93	11	11	1.20	1.08	2.50	1.57
		94	4	1	1.80	ND	7.18	ND
Jefferson	Beaumont 2450009	92	0	0				
		93	36	8	<MDL	<MDL	0.87	0.86
		94	44	15	0.54	<MDL	2.80	1.56
Jefferson	Port Arthur 2450011	92	6	1	<MDL	<MDL	1.37	<MDL
		93	34	6	<MDL	<MDL	3.70	1.02
		94	17	4	<MDL	<MDL	0.66	0.41
Jefferson	Groves 2450014	93	0	0				
		94	0	0				
Jefferson	Port Neches 2450017	94	23	6	<MDL	<MDL	1.86	0.48
Nueces	Corpus Christi 3550020	93	5	4	1.34	1.58	2.46	1.68
		94	40	23	0.53	0.44	2.75	1.50
Orange	West Orange 3611001	94	27	2	<MDL	<MDL	0.61	0.43
Smith	Winona 4230005	94	32	2	<MDL	<MDL	0.93	0.60
Tarrant	Grapevine 4393002	94	15	5	<MDL	<MDL	0.83	0.56
Tarrant	DFW Airport 4393004	94	9	3	0.58	<MDL	2.45	0.92
Travis	Austin 4530017	94	21	2	<MDL	<MDL	1.24	0.38

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**Trichloroethylene Data Summary**  
**Method Detection Limit (MDL) = 0.60**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 25 ppbv)	Median	24-Hour High (ESL = 100 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	21	4	<MDL	<MDL	1.80	1.33
Brazoria	Clute 0391003	92	7	0	<MDL	ND	<MDL	<MDL
		93	46	1	<MDL	<MDL	3.14	<MDL
		94	53	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	93	19	0	<MDL	<MDL	<MDL	<MDL
		94	59	0	<MDL	<MDL	<MDL	<MDL
Dallas	Dallas 1130070	93	49	0	<MDL	<MDL	<MDL	<MDL
		94	58	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	93	52	0	<MDL	<MDL	<MDL	<MDL
		94	59	0	<MDL	<MDL	<MDL	<MDL
Ellis	Midlothian 1390007	93	55	0	<MDL	<MDL	<MDL	<MDL
		94	51	1	<MDL	<MDL	0.93	<MDL
El Paso	El Paso 1410047	93	33	0	<MDL	<MDL	<MDL	<MDL
		94	58	1	<MDL	<MDL	12.45	<MDL
Galveston	Texas City 1670053	92	9	1	<MDL	ND	1.69	<MDL
		93	51	1	<MDL	<MDL	0.61	<MDL
		94	51	0	<MDL	<MDL	<MDL	<MDL
Harris	Channelview 2010026	92	7	0	<MDL	ND	<MDL	ND
		93	49	0	<MDL	<MDL	<MDL	<MDL
		94	59	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (O'd Galveston Rd.) 2010064	93	43	0	<MDL	<MDL	<MDL	<MDL
		94	55	1	<MDL	<MDL	1.39	<MDL
Harris	Houston (Haden Rd.) 2010803	92	1	0	<MDL	<MDL	<MDL	<MDL
		93	56	3	<MDL	<MDL	2.44	0.95
		94	58	2	1.01	<MDL	51.01	4.23
Harris	Houston (Clinton Dr.) 2011035	92	8	1	<MDL	<MDL	1.64	<MDL
		93	50	0	<MDL	<MDL	<MDL	<MDL
		94	58	1	<MDL	<MDL	0.92	<MDL
Jefferson	Beaumont 2450009	92	7	0	ND	ND	ND	ND
		93	56	1	<MDL	<MDL	1.70	<MDL
		94	59	3	<MDL	<MDL	1.68	1.07
Jefferson	Port Arthur 2450011	92	7	0	<MDL	ND	<MDL	<MDL
		93	60	2	<MDL	<MDL	7.60	0.63
		94	57	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Groves 2450014	93	18	0	<MDL	<MDL	<MDL	<MDL
		94	58	1	<MDL	<MDL	1.16	<MDL
Jefferson	Port Neches 2450017	94	23	0	<MDL	<MDL	<MDL	<MDL
Nueces	Corpus Christi 3550020	93	55	2	<MDL	<MDL	12.76	1.80
		94	52	2	<MDL	<MDL	0.81	0.74
Orange	West Orange 3611001	94	27	0	<MDL	<MDL	<MDL	<MDL
Smith	Winona 4230005	94	32	1	<MDL	<MDL	0.79	<MDL
Tarrant	Grapevine 4393002	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	DFW Airport 4393004	94	9	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	21	0	<MDL	<MDL	<MDL	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

Source: TNRCC air toxics database

**TNRCC Network**  
**Trichlorofluoromethane Data Summary**  
**Method Detection Limit (MDL) = 0.40**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 1,000 ppbv)	Median	24-Hour High (ESL = 4,000 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	21	1	<MDL	<MDL	2.63	<MDL
Brazoria	Clute 0391003	92	7	0	<MDL	ND	<MDL	ND
		93	46	3	<MDL	<MDL	0.48	0.46
		94	53	1	<MDL	<MDL	0.42	<MDL
Cameron	Brownsville 0610006	93	19	2	<MDL	<MDL	0.72	0.40
		94	59	1	<MDL	<MDL	0.58	<MDL
Dallas	Dallas 1130070	93	49	6	<MDL	<MDL	0.85	0.66
		94	58	1	<MDL	<MDL	0.66	<MDL
Ector	Odessa 1350003	93	52	5	<MDL	<MDL	0.48	0.45
		94	59	0	<MDL	<MDL	<MDL	<MDL
Ellis	Midlothian 1390007	93	55	5	<MDL	<MDL	1.45	0.45
		94	51	1	<MDL	<MDL	5.85	<MDL
El Paso	El Paso 1410047	93	33	2	<MDL	<MDL	0.44	0.41
		94	58	0	<MDL	<MDL	<MDL	<MDL
Galveston	Texas City 1670053	92	9	1	<MDL	<MDL	0.48	<MDL
		93	51	4	<MDL	<MDL	3.80	1.15
		94	51	2	<MDL	<MDL	1.98	0.56
Harris	Channelview 2010026	92	7	1	<MDL	ND	0.42	<MDL
		93	49	27	0.52	0.40	4.10	2.04
		94	59	7	<MDL	<MDL	3.96	0.71
Harris	Houston (Old Galveston Rd.) 2010064	93	43	10	<MDL	<MDL	3.30	0.63
		94	55	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Haden Rd.) 2010803	92	1	0	ND	ND		
		93	56	6	<MDL	<MDL	2.80	0.80
		94	58	30	0.69	0.42	6.07	2.06
Harris	Houston (Clinton Dr.) 2011035	92	8	1	<MDL	ND	0.44	<MDL
		93	50	5	<MDL	<MDL	5.28	1.65
		94	58	1	<MDL	<MDL	0.59	<MDL
Jefferson	Beaumont 2450009	92	7	0	<MDL	ND	<MDL	ND
		93	55	13	<MDL	<MDL	1.50	1.11
		94	59	2	<MDL	<MDL	0.51	0.42
Jefferson	Port Arthur 2450011	92	7	1	<MDL	ND	1.18	ND
		93	60	7	<MDL	<MDL	0.76	0.52
		94	57	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Groves 2450014	93	18	1	<MDL	<MDL	0.46	<MDL
		94	58	1	<MDL	<MDL	5.86	<MDL
Jefferson	Port Neches 2450017	94	23	20	1.93	1.93	5.30	4.27
Nueces	Corpus Christi 3550020	93	55	9	<MDL	<MDL	0.67	0.56
		94	52	2	<MDL	<MDL	1.37	0.41
Orange	West Orange 3611001	94	27	1	0.67	<MDL	11.73	<MDL
Smith	Winona 4230005	94	32	2	<MDL	<MDL	0.85	0.52
Tarrant	Grapevine 4393002	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	DFW Airport 4393004	94	9	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	21	0	<MDL	<MDL	<MDL	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**1,2,4-Trimethylbenzene Data Summary**  
**Method Detection Limit (MDL) = 1.42**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 25 ppbv)	Median	24-Hour High (ESL = 100 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	<MDL	<MDL	<MDL	<MDL
Brazoria	Clute 0391003	94	14	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	94	14	2	<MDL	<MDL	2.11	1.88
Dallas	Dallas 1130070	94	14	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	94	14	0	<MDL	<MDL	<MDL	<MDL
Ellis	Midlothian 1390007	94	12	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	94	14	4	<MDL	<MDL	3.00	1.97
Galveston	Texas City 1670053	94	11	0	<MDL	<MDL	<MDL	<MDL
Harris	Channelview 2010026	94	15	2	<MDL	<MDL	2.49	2.16
Harris	Houston (Old Galveston Rd.) 2010064	94	14	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Haden Rd.) 2010803	94	14	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Clinton Dr.) 2011035	94	14	1	<MDL	<MDL	2.24	<MDL
Jefferson	Beaumont 2450009	94	15	0	<MDL	<MDL	0	<MDL
Jefferson	Port Arthur 2450011	94	14	1	<MDL	<MDL	1.92	<MDL
Jefferson	Groves 2450014	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Neches 2450017	94	13	0	<MDL	<MDL	<MDL	<MDL
Nueces	Corpus Christi 3550020	94	14	0	<MDL	<MDL	<MDL	<MDL
Orange	West Orange 3611001	94	15	0	<MDL	<MDL	<MDL	<MDL
Smith	Winona 4230005	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	Grapevine 4393002	94	1	0	<MDL	<MDL		
Tarrant	DFW Airport 4393004	94	3	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	10	0	<MDL	<MDL	<MDL	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**1,3,5-Trimethylbenzene Data Summary**  
**Method Detection Limit (MDL) = 0.86**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 25 ppbv)	Median	24-Hour High (ESL = 100 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	1	<MDL	<MDL	0.89	<MDL
Brazoria	Clute 0391003	94	14	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	94	14	0	<MDL	<MDL	<MDL	<MDL
Dallas	Dallas 1130070	94	14	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	94	14	0	<MDL	<MDL	<MDL	<MDL
Ellis	Midlothian 1390007	94	12	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	94	14	1	<MDL	<MDL	1.03	<MDL
Galveston	Texas City 1670053	94	11	0	<MDL	<MDL	<MDL	<MDL
Harris	Channelview 2010026	94	15	1	<MDL	<MDL	2.16	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	94	14	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Haden Rd.) 2010803	94	14	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Clinton Dr.) 2011035	94	14	1	<MDL	<MDL	0.99	<MDL
Jefferson	Beaumont 2450009	94	15	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Arthur 2450011	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Groves 2450014	94	14	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Neches 2450017	94	13	0	<MDL	<MDL	<MDL	<MDL
Nueces	Corpus Christi 3550020	94	14	1	<MDL	<MDL	0.93	<MDL
Orange	West Orange 3611001	94	15	0	<MDL	<MDL	<MDL	<MDL
Smith	Winona 4230005	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	Grapevine 4393002	94	1	0	<MDL	<MDL		
Tarrant	DFW Airport 4393004	94	3	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	10	0	<MDL	<MDL	<MDL	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*



**TNRCC Network**  
**2,3,4-Trimethylpentane Data Summary**  
**Method Detection Limit (MDL) = 0.59**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 75 ppbv)	Median	24-Hour High (ESL = 300 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	<MDL	<MDL	<MDL	<MDL
Brazoria	Clute 0391003	94	14	0	<MDL	<MDL	<MDL	<MDL
Cameron	Brownsville 0610006	94	14	0	<MDL	<MDL	<MDL	<MDL
Dallas	Dallas 1130070	94	14	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	94	14	0	<MDL	<MDL	<MDL	<MDL
Ellis	Midlothian 1390007	94	12	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	94	14	4	<MDL	<MDL	1.83	1.19
Galveston	Texas City 1670053	94	11	0	<MDL	<MDL	<MDL	<MDL
Harris	Channelview 2010026	94	15	1	<MDL	<MDL	0.64	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	94	14	1	<MDL	<MDL	0.71	<MDL
Harris	Houston (Haden Rd.) 2010803	94	14	0	<MDL	<MDL	<MDL	<MDL
Harris	Houston (Clinton Dr.) 2011035	94	14	1	<MDL	<MDL	0.73	<MDL
Jefferson	Beaumont 2450009	94	15	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Arthur 2450011	94	14	1	<MDL	<MDL	0.82	<MDL
Jefferson	Groves 2450014	94	14	2	<MDL	<MDL	2.38	<MDL
Jefferson	Port Neches 2450017	94	13	1	0.66	<MDL	8.01	<MDL
Nueces	Corpus Christi 3550020	94	14	0	<MDL	<MDL	<MDL	<MDL
Orange	West Orange 3611001	94	15	0	<MDL	<MDL	<MDL	<MDL
Smith	Winona 4230005	94	15	0	<MDL	<MDL	<MDL	<MDL
Tarrant	Grapevine 4393002	94	1	0	<MDL	<MDL		
Tarrant	DFW Airport 4393004	94	3	0	<MDL	<MDL	<MDL	<MDL
Travis	Austin 4530017	94	10	0	<MDL	<MDL	<MDL	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**n-Undecane Data Summary**  
**Method Detection Limit (MDL) = 5.04**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 100 ppbv)	Median	24-Hour High (ESL = 400 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	9	0	<MDL	ND	<MDL	<MDL
Brazoria	Clute 0391003	94	14	0	<MDL	ND	<MDL	ND
Cameron	Brownsville 0610006	94	14	0	<MDL	ND	<MDL	<MDL
Dallas	Dallas 1130070	94	14	0	<MDL	ND	<MDL	<MDL
Ector	Odessa 1350003	94	14	0	<MDL	ND	<MDL	<MDL
Ellis	Midlothian 1390007	94	12	0	ND	ND	ND	ND
El Paso	El Paso 1410047	94	14	0	<MDL	ND	<MDL	<MDL
Galveston	Texas City 1670053	94	11	0	<MDL	ND	<MDL	ND
Harris	Channelview 2010026	94	15	1	<MDL	ND	6.91	<MDL
Harris	Houston (Old Galveston Rd.) 2010064	94	14	0	<MDL	ND	<MDL	ND
Harris	Houston (Haden Rd.) 2010803	94	14	0	<MDL	ND	<MDL	ND
Harris	Houston (Clinton Dr.) 2011035	94	14	0	<MDL	ND	<MDL	<MDL
Jefferson	Beaumont 2450009	94	15	0	<MDL	ND	<MDL	<MDL
Jefferson	Port Arthur 2450011	94	14	0	<MDL	ND	<MDL	ND
Jefferson	Groves 2450014	94	14	0	<MDL	ND	<MDL	<MDL
Jefferson	Port Neches 2450017	94	13	0	<MDL	ND	<MDL	<MDL
Nueces	Corpus Christi 3550020	94	14	0	<MDL	ND	<MDL	<MDL
Orange	West Orange 3611001	94	15	0	<MDL	ND	<MDL	ND
Smith	Winona 4230005	94	15	1	<MDL	ND	11.46	<MDL
Tarrant	Grapevine 4393002	94	1	0	ND	ND		
Tarrant	DFW Airport 4393004	94	3	0	<MDL	ND	<MDL	ND
Travis	Austin 4530017	94	10	0	<MDL	ND	<MDL	<MDL

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**Vinyl Chloride Data Summary**  
**Method Detection Limit (MDL) = 0.45**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 5 ppbv)	Median	24-Hour High (ESL = 20 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	21	0	ND	ND	ND	ND
Brazoria	Clute 0391003	92	7	0	ND	ND	ND	ND
		93	46	0	<MDL	ND	<MDL	ND
		94	53	0	ND	ND	ND	ND
Cameron	Brownsville 0610006	93	19	0	ND	ND	ND	ND
		94	59	0	<MDL	ND	<MDL	ND
Dallas	Dallas 1130070	93	49	0	<MDL	ND	<MDL	ND
		94	58	0	ND	ND	ND	ND
Ector	Odessa 1350003	93	52	0	<MDL	ND	<MDL	ND
		94	59	0	ND	ND	ND	ND
Ellis	Midlothian 1390007	93	55	0	<MDL	ND	<MDL	ND
		94	51	0	ND	ND	ND	ND
El Paso	El Paso 1410047	93	33	0	<MDL	ND	<MDL	<MDL
		94	58	0	ND	ND	ND	ND
Galveston	Texas City 1670053	92	9	0	ND	ND	ND	ND
		93	51	0	<MDL	ND	<MDL	<MDL
		94	51	0	ND	ND	ND	ND
Harris	Channelview 2010026	92	7	0	ND	ND	ND	ND
		93	49	1	<MDL	ND	0.61	<MDL
		94	59	0	ND	ND	ND	ND
Harris	Houston (Old Galveston Rd.) 2010064	93	43	0	<MDL	ND	<MDL	ND
		94	55	0	ND	ND	ND	ND
Harris	Houston (Haden Rd.) 2010803	92	1	0	ND	ND	ND	ND
		93	56	0	<MDL	ND	<MDL	<MDL
		94	58	0	ND	ND	ND	ND
Harris	Houston (Clinton Dr.) 2011035	92	8	1	<MDL	ND	3.15	ND
		93	50	0	<MDL	ND	<MDL	ND
		94	58	0	ND	ND	ND	ND
Jefferson	Beaumont 2450009	92	7	0	ND	ND	ND	ND
		93	56	0	<MDL	ND	<MDL	<MDL
		94	59	0	ND	ND	ND	ND
Jefferson	Port Arthur 2450011	92	7	0	ND	ND	ND	ND
		93	60	0	<MDL	ND	<MDL	ND
		94	57	0	ND	ND	ND	ND
Jefferson	Groves 2450014	93	18	0	<MDL	ND	<MDL	ND
		94	58	0	ND	ND	ND	ND
Jefferson	Port Neches 2450017	94	23	0	ND	ND	ND	ND
Nueces	Corpus Christi 3550020	93	55	0	<MDL	ND	<MDL	<MDL
		94	52	0	ND	ND	ND	ND
Orange	West Orange 3611001	94	27	0	ND	ND	ND	ND
Smith	Winona 4230005	94	32	0	ND	ND	ND	ND
Tarrant	Grapevine 4393002	94	15	0	ND	ND	ND	ND
Tarrant	DFW Airport 4393004	94	9	0	ND	ND	ND	ND
Travis	Austin 4530017	94	21	0	ND	ND	ND	ND

- † = Aerometric Information Retrieval System
- \* = Mean is greater than the annual ESL
- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

*Source: TNRCC air toxics database*

**TNRCC Network**  
**o-Xylene Data Summary**  
**Method Detection Limit (MDL) = 1.02**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 100 ppbv)	Median	24-Hour High (ESL = 400 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	21	2	<MDL	<MDL	1.29	1.10
Brazoria	Clute 0391003	92	7	0	<MDL	<MDL	<MDL	<MDL
		93	46	2	<MDL	<MDL	1.89	1.75
		94	53	1	<MDL	<MDL	1.05	<MDL
Cameron	Brownsville 0610006	93	19	2	<MDL	<MDL	1.22	1.06
		94	59	2	<MDL	<MDL	1.12	1.02
Dallas	Dallas 1130070	93	49	0	<MDL	<MDL	0.95	0.79
		94	58	0	<MDL	<MDL	<MDL	<MDL
Ector	Odessa 1350003	93	52	2	<MDL	<MDL	2.73	1.17
		94	59	0	<MDL	<MDL	<MDL	<MDL
Ellis	Midlothian 1390007	93	55	2	<MDL	<MDL	1.80	1.30
		94	51	0	<MDL	<MDL	<MDL	<MDL
El Paso	El Paso 1410047	93	33	6	0.78	0.78	1.53	1.51
		94	58	10	<MDL	<MDL	2.45	1.69
Galveston	Texas City 1670053	92	9	5	0.91	1.06	1.45	1.40
		93	51	2	<MDL	<MDL	1.15	1.07
		94	51	2	<MDL	<MDL	3.48	1.37
Harris	Channelview 2010026	92	7	2	<MDL	<MDL	1.58	1.17
		93	49	4	<MDL	<MDL	1.56	1.20
		94	59	3	<MDL	<MDL	1.60	1.08
Harris	Houston (Old Galveston Rd.) 2010064	93	43	8	0.98	<MDL	8.43	5.74
		94	55	6	<MDL	<MDL	1.95	1.95
Harris	Houston (Haden Rd.) 2010803	92	1	0	<MDL	<MDL		
		93	56	9	<MDL	<MDL	2.37	2.23
		94	58	8	<MDL	<MDL	1.73	1.53
Harris	Houston (Clinton Dr.) 2011035	92	8	4	1.09	<MDL	2.32	2.20
		93	50	11	0.82	<MDL	4.48	2.70
		94	58	6	<MDL	<MDL	1.69	1.35
Jefferson	Beaumont 2450009	92	7	0	<MDL	<MDL	<MDL	<MDL
		93	56	1	<MDL	<MDL	2.73	<MDL
		94	59	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Port Arthur 2450011	92	7	0	<MDL	<MDL	<MDL	<MDL
		93	60	1	<MDL	<MDL	1.12	<MDL
		94	57	0	<MDL	<MDL	<MDL	<MDL
Jefferson	Groves 2450014	93	18	3	<MDL	<MDL	2.42	1.39
		94	58	5	<MDL	<MDL	3.51	1.08
Jefferson	Port Neches 2450017	94	23	18	1.60	1.71	4.38	2.98
Nueces	Corpus Christi 3550020	93	55	7	<MDL	<MDL	3.46	1.84
		94	52	2	<MDL	<MDL	2.19	1.03
Orange	West Orange 3611001	94	27	0	<MDL	<MDL	<MDL	<MDL
Smith	Winona 4230005	94	32	3	<MDL	<MDL	2.51	2.43
Tarrant	Grapevine 4393002	94	15	0	<MDL	<MDL	0.74	<MDL
Tarrant	DFW Airport 4393004	94	9	3	0.84	<MDL	2.62	1.88
Travis	Austin 4530017	94	21	0	<MDL	<MDL	<MDL	<MDL

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- \*\* = Greater than the 24-Hour ESL
- ND = Less than the reporting limit

Source: TNRCC air toxics database

**TNRCC Network**  
**m- and p-Xylenes Data Summary**  
**Method Detection Limit (MDL) = 0.68**

County	Site and AIRS No. †	Year	Number Valid Samples	Number Samples ≥ MDL	Annual Mean (ESL = 100 ppbv)	Median	24-Hour High (ESL = 400 ppbv)	24-Hour Second High
Bexar	San Antonio 0290051	94	21	15	1.26	0.90	4.70	2.74
Brazoria	Clute 0391003	93	8	1	<MDL	<MDL	0.89	<MDL
		94	53	5	<MDL	<MDL	1.17	1.13
Cameron	Brownsville 0610006	93	14	6	0.95	<MDL	2.91	2.18
		94	59	18	<MDL	<MDL	2.60	2.51
Dallas	Dallas 1130070	93	15	3	<MDL	<MDL	2.17	1.50
		94	58	19	<MDL	<MDL	2.50	2.21
Ector	Odessa 1350003	93	15	6	<MDL	<MDL	1.54	1.20
		94	59	15	<MDL	<MDL	1.84	1.53
Ellis	Midlothian 1390007	93	15	1	<MDL	<MDL	0.87	<MDL
		94	51	1	<MDL	<MDL	2.40	<MDL
El Paso	El Paso 1410047	93	11	11	2.40	2.53	4.09	3.50
		94	58	42	1.99	1.27	10.47	6.85
Galveston	Texas City 1670053	93	14	3	<MDL	<MDL	1.96	1.63
		94	51	23	0.97	<MDL	4.84	4.40
Harris	Channelview 2010026	93	8	2	0.76	<MDL	2.16	1.10
		94	59	32	0.96	0.70	3.58	3.44
Harris	Houston (O'd Galveston Rd.) 2010064	93	15	13	1.26	1.19	2.54	2.03
		94	55	37	1.25	0.95	5.46	4.51
Harris	Houston (Haden Rd.) 2010803	93	15	13	2.22	1.32	9.77	4.24
		94	58	46	1.95	1.60	5.65	5.62
Harris	Houston (Clinton Dr.) 2011035	93	13	12	1.36	1.52	2.54	1.98
		94	58	46	1.58	1.32	6.25	4.34
Jefferson	Beaumont 2450009	93	13	3	<MDL	<MDL	1.34	0.76
		94	59	23	<MDL	<MDL	2.44	2.21
Jefferson	Port Arthur 2450011	93	15	3	<MDL	<MDL	1.32	0.91
		94	57	10	<MDL	<MDL	4.27	1.69
Jefferson	Groves 2450014	93	15	9	1.20	0.86	3.96	2.03
		94	58	36	1.22	0.91	12.46	3.80
Jefferson	Port Neches 2450017	94	23	20	6.35	6.00	14.76	14.66
Nueces	Corpus Christi 3550020	93	15	7	1.14	<MDL	2.76	2.30
		94	52	27	0.84	0.71	4.27	2.24
Orange	West Orange 3611001	94	27	11	<MDL	<MDL	1.61	1.49
Smith	Winona 4230005	94	32	18	1.20	0.74	4.09	3.44
Tarrant	Grapevine 4393002	94	15	5	0.83	<MDL	2.28	1.95
Tarrant	DFW Airport 4393004	94	9	4	2.11	<MDL	7.15	5.39
Travis	Austin 4530017	94	21	11	0.77	0.68	1.88	1.78

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*Source: TNRCC air toxics database*









