Chapter 2
Assessment Area Characteristics

What's Covered in Chapter 2:

- Regional Characteristics
- Port Neches Assessment Area Characteristics

Jefferson County, Texas, was selected as the initial study area because it exhibited the source characteristics, receptor characteristics, and other practical considerations that were deemed desirable for an optimal pilot study area (see Section 1.3). To facilitate the evaluation of the RAIMI Pilot Study, Jefferson County was subdivided into five individual assessment areas. Each of the individual assessment areas exhibit characteristics such as areas of dense source distribution–including RCRA combustion sources–in close proximity of residential neighborhoods. Of the five assessment areas, Port Neches was selected as the first assessment area evaluated for the RAIMI Pilot Study. This chapter summarizes the demographic, urban development, industrial, and emissions-related characteristics of the Port Neches Assessment Area. Presentation of methodologies employed in the RAIMI Pilot Study, as well as findings, is reserved for subsequent chapters.

Section 2.1 provides a brief overview of regional (Jefferson County) information. Port Neches Assessment Area characteristics relevant to any of the study components (emissions characterization [Chapter 3], air dispersion modeling [Chapter 4], and risk modeling [Chapter 5]) are presented in Section 2.2. Specific characteristics described in Section 2.2 include demographics, transportation, urban development, and industrial development. A summary of available emissions and air monitoring data are also provided.

2.1 REGIONAL CHARACTERISTICS

Jefferson County is located in southeast Texas on the gulf coast (Figure 2-1). The County is bounded to the East by the Neches River, and to the south by the Gulf of Mexico. Jefferson County has a population of 241,322, according to 1999 census estimates (U.S. Census Bureau 2001a). There are two main urban areas in the county, both of which are included in the Beaumont-Port Arthur Metropolitan Statistical

Area. The City of Beaumont is located in the north-central part of the county, and has a population of 109,697, based on 1999 census estimates (U.S. Census Bureau 2001b). The second urban area is located about 20 kilometers southeast of Beaumont, and includes the cities of Port Arthur (1999 estimated population 56,574), Port Neches (13,981), Nederland (17,599), and Groves (16,362) (U.S. Census Bureau 2001c). Numerous local industrial complexes are interspersed with surrounding residential and commercial areas of single and multi-family dwellings, including schools, parks, child and elderly care centers, and hospitals. A significant portion of Jefferson County land area, mostly in the west half of the county, is representative of undeveloped, rural, and agricultural land use.

2.2 PORT NECHES ASSESSMENT AREA CHARACTERISTICS

The Port Neches Assessment Area is located south of Beaumont and North of Port Arthur, centered among the cities of Port Neches, Groves, and Nederland. The Port Neches Assessment Area covers an area 23 kilometers west to east and 12 kilometers south to north (276 sq. km.) (Figure 2-1). The area is characterized by several large industrial facilities located within Port Neches, Groves, and Nederland, in close proximity to several residential neighborhoods.

The following subsections provide a general description of the Port Neches Assessment Area demographics (Section 2.2.1), transportation (Section 2.2.2), urban development (Section 2.2.3), and industrial development (Section 2.2.4). An overview is also provided for existing emissions data (Section 2.2.5), CEP results (Section 2.2.6), and ambient air monitoring data (Section 2.2.7).

2.2.1 Demographics

Demographic attributes of the Port Neches Assessment Area–population, average income, and ethnicity–were obtained from the U.S. Census Bureau's topologically integrated geographic encoding and referencing (TIGER) system (U.S. Census Bureau 1990; 1999). This information is based on 1990 census data; which are provided at a resolution of census block group. Comparison of 1990 demographics data with population estimates for 1999 indicates that the combined population of the cities of Nederland, Groves, and Port Neches increased less than 2 percent from 1990 to 1999 (U.S. Census Bureau 2001c). Figures 2-2, 2-3, and 2-4 identify the geographic distribution of population, average income levels, and ethnicity makeup, respectively, of census tracts and census block groups within the Port Neches Assessment Area.

Direct use of demographics data, other than as a general characterization of the assessment area, is not

directly required to meet RAIMI Pilot Study objectives. However, design of the RAIMI Pilot Study does provide the ability to conduct more refined analyses where demographics data and population trending may be directly incorporated and viewed as superimposed over air modeling grids and source-specific modeled plumes, land use mapping, and various combinations of risk results (i.e., individual sources, groupings of sources by facility, type, industry sector, or contaminant emitted, etc.). Also, the GIS-based platform of the RAIMI Pilot Study allows for the various software components to provide expanded presentation and graphical evaluation of risk results in correlation to assessment area characteristics (see Sections 5.1 and 5.4.3). An example specific to demographics information would be the GIS platform capability of the risk modeling component which can import and utilize as a direct graphical interface aerial photography, site specific mapping, and/or demographic data sets from the U.S. Census Bureau's TIGER database. This can be especially beneficial for evaluating the representativeness of exposure inputs used in the risk modeling with respect to neighborhood characteristics and demographic attributes. Any modifications to these types of data sets (e.g., increased resolution of demographics data as proposed by the LandScan project) can also be directly imported if the data is available in one of various standard file formats, including the shape file format specific to ArcView™ software developed by Environmental Systems Research Institute, Inc. (Environmental Systems Research Institute, Inc. 1997).

2.2.2 Transportation

Identification of the type and location of transportation in the assessment area is important to characterizing potential releases of various contaminants to the atmosphere from transportation related emission sources (see Chapter 3), as well as the location of these releases relative to potentially exposed populations. Such identification can be facilitated within a GIS platform by viewing digital line graphic coverages (available from USGS) of transportation and hydrography (important in considering marine transport) features across the assessment area and in combination with source locations obtained in the emissions characterization component (see Chapter 3) and source-specific emission plumes generated in the air modeling component (see Chapter 4).

The transportation infrastructure within the Port Neches Assessment Area consists of three major types to serve the population and economic needs of the area: marine transportation, rail transportation, and roadways. The distribution and layout of the transportation components are illustrated on Figure 2-5.

Marine

The Neches River flows through the eastern part of the Port Neches Assessment Area, and the river is the

eastern boundary of Jefferson County. The Neches River and the Sabine-Neches ship channel provide ocean going vessels and intra-coastal barges access to and from the Gulf of Mexico and to the two inland ports in Jefferson County. The Port of Beaumont, several kilometers north (inland) of the Port Neches Assessment Area, was ranked 8th in 1996 in total tonnage among U.S. ports (U.S. Army Corps of Engineers 1999). The Port of Port Arthur is located south of the assessment area. In addition to these inland port facilities, several industrial facilities within and outside of the Port Neches Assessment Area operate loading and unloading terminals along the river and ship channel. The facilities in the Port Neches Assessment Area that operate loading/unloading terminals on the Neches River are listed in Table 2-1.

There are also ship and barge repair yards, berthing areas, and fueling docks on the waterways within the Port Neches Assessment Area.

Rail

The Port Neches Assessment Area is served by two railroads, Kansas City Southern and Union Pacific. These rail lines run north-south through the assessment area connecting the local industries with those in Port Arthur and Beaumont. Several of the marine terminals listed in Table 2-1 are served by these railways. The main lines for these railroads run east-west through Beaumont, about 10 km north of the assessment area. In addition to the Kansas City Southern and Union Pacific, Jefferson County is also served by Burlington Northern-Santa Fe and the Tex-Mex railways, which also run through the Beaumont area.

TABLE 2-1

MARINE TERMINAL FACILITIES
PORT NECHES ASSESSMENT AREA

Facility	Commodities Shipped or Received
Union Oil Company of California	Crude oil, petroleum products
Texaco Chemical Company/Ameripol Synpol	Petrochemicals
Texaco Chemical	Petrochemicals, liquid caustic soda
Texaco Port Neches Asphalt Complex	Crude oil, petroleum products, asphalt
Fina Oil and Chemical Company	Crude oil, petroleum products, petrochemicals, asphalt
B.F. Goodrich Chemical Division	Petrochemicals
Pabtex	Coke
Sun Marine Terminals	Crude oil, petroleum products, petrochemicals
Du Pont Beaumont Works	Propylene, aqueous waste, aniline, benzene, methanol
Amoco	Petroleum products
Texas Gulf Chemicals	Dry bulk sulphur, liquid sulphur
Olin Chemicals	Sulphuric acid
Texas Eastern Transmission Corp.	Petroleum products
Independent Refining Corporation	Crude oil, petroleum products
Keown Supply Company	Sand, gravel, crushed rock, shell

Source: U.S. Army Corps of Engineers 1999.

Roadways

Five major roadways cross Jefferson County (See Figure 2-1). Interstate highway 10 runs east-west through Beaumont, connecting Jefferson County with Houston, Texas, to the West, and Lake Charles, Baton Rouge, and New Orleans to the East. U.S. Highway 90 parallels Interstate 10. U.S. Highways 69 and 287 run north/northwest and south, and U.S. Highway 96 runs north/northeast and south. Major roadway access through the Port Neches Assessment Area is via U.S. Highway 287, which runs northwest to Interstate highway 10 near Beaumont. This is the primary route into and out of the assessment area. Other significant roadways in the assessment area include State Highways 73, 136, 347, and 365.

2.2.3 Urban Development

Identification of the type and location of urban development in the assessment area is important to characterizing potential releases of various contaminants to the atmosphere from urban development related emission sources, as well as the location of these releases relative to potentially exposed populations. Such identification is facilitated within the RAIMI Pilot Study through review of Standard Industrial Classification (SIC) codes, and use of GIS capabilities to import land use information like Land Use Land Cover (LULC) mapped data from USGS. Specific to the RAIMI Pilot Study, SIC codes are reviewed along with available emissions characterization information to better understand the types of commercial and urban development in the assessment area relative to the contaminants manufactured, handled, and potentially released. By importing LULC mapped data for the assessment area using GIS-based risk modeling tools as noted in Section 2.2.1 (also see Sections 5.1 and 5.2), the locations of emission sources attributable to various types of urban development can be correlated to populations that may be impacted. Also, similar to capabilities of graphically superimposing and viewing demographics data within the assessment area, the LULC mapping can be directly imported as the backdrop of the graphical interface to support viewing of superimposed air modeling grids, source-specific modeled plumes, and various combinations of risk results (i.e., individual sources, groupings of sources by facility, type, industry sector, or contaminant emitted, etc.).

Figure 2-5 illustrates the distribution of different land uses in the assessment area. This figure is derived from LULC data obtained from USGS. The distribution of urban development as shown on Figure 2-5 is generally within or adjacent to larger residential land use areas. Urban development in the Port Neches Assessment Area, indicated in Figure 2-5 as “Other Urban”, was established by combining the following USGS LULC second level categories for urban and built-up land:

- Commercial Services
- Transportation, Communications
- Industrial and Commercial
- Mixed Urban or Built-Up Land
- Other Urban or Built-Up Land

In terms of emissions potential, sources representative of urban development areas are likely represented

by grouped sources (see Chapter 3) where emissions are estimated and allocated across a specific area based on a surrogate such as population, land area, or industry-specific employment.

2.2.4 Industrial Development

Similar to considerations noted for urban development in Section 2.2.3, identification of the type and location of industrial development in the assessment area is important to characterizing potential releases of various contaminants to the atmosphere from related emission sources, as well as the location of these releases relative to potentially exposed populations. Within the RAIMI Pilot Study, review of SIC codes, use of GIS capabilities to import LULC mapped data, and evaluation of available emissions characterization information are all used to better understand the types of industrial development located within the assessment area relative to the contaminants manufactured, handled, and potentially released. By importing LULC mapped data for the assessment area using GIS-based risk modeling tools as noted in Section 2.2.1 (also see Sections 5.1 and 5.2), the locations of emission sources attributable to various types of industrial development can be correlated to populations that may be impacted.

The Port Neches Assessment Area contains substantial industrial development, as shown on Figure 2-5. Most of this development is located in the parts of the assessment area along, or with access to, the Neches River. SIC codes for industrial facilities represented in the Port Neches Assessment Area include synthetic rubber (SIC 2822), industrial inorganic chemicals (SIC 2819), industrial organic chemicals (SIC 2869), petroleum refining (SIC 2911), plastics products (SIC 3089), and petroleum bulk stations and terminals (SIC 5171). Most of the industrial facilities in the Port Neches Assessment Area are in the petroleum refining and related industries category (SIC 290), and the chemicals and allied products category (SIC 280), as listed below:

- SIC 280: chemicals and allied products
  - Ameripol Synpol Corporation
  - BASF Corporation
  - Beaumont Methanol
  - Calabrian Chemicals
  - Dupont Dow Elastomers
  - E.I. Du Pont De Nemours & Company
  - Fina Oil and Chemical Company
  - Huntsman Corporation
  - Huntsman Petrochemical Corporation
  - I.C.I. Acrylics

- SIC 290: petroleum refining and related industries
  - Calabrian Chemicals Corporation
  - Carotex Incorporated
  - Fina Oil and Chemical Company
  - Mobil Oil Corporation
  - Sun Marine Terminal
  - Union Oil Company of California

In terms of reported emissions on a mass basis, the industrial facilities in the Port Neches Assessment Area account for most of the emissions compiled in State and Federal databases (see Section 2.2.5 and Chapter 3). As a result of data availability from emissions reporting by these types of facilities, many emission sources representative of these industries are likely to be evaluated as individual sources, where emissions are estimated and allocated specific to each definable emission source and not grouped (see Chapter 3 for emissions characterization information).

2.2.5 Emissions Data

Transportation, urban development, and industrial development activities in the assessment area result in atmospheric emissions of a broad range of contaminants. Within the RAIMI Pilot Study, review of available emissions characterization information is used to better understand the minimum range of emissions from industrial sources–in terms of facilities, contaminants, and mass. This section provides an emissions snapshot from EPA's Toxic Release Inventory (TRI) and Texas Natural Resource Conservation Commission's (TNRCC's) Point Source Database (PSDB). In discussing these databases and their potential applicability, it is important to note that major differences in data resolution exist between the TRI and PSDB due to these databases representing different regulatory programs with different objectives and emissions reporting requirements. While generalized databases that only report emissions on a facility wide basis, such as TRI data, can be useful as a gross index of emissions within the assessment area, only emissions data reported at a resolution specific to individual sources, such as TNRCC's PSDB, can actually be used to support a quantitative assessment for accurately estimating risks on a localized level (see Sections 3.2 and 4.3.2). For example, use of TRI data in a quantitative assessment requires that very limiting assumptions be made regarding source location, type (e.g., stack or fugitive), and characteristics (e.g., stack sizes, fugitive area or volume, release height, etc.) that may severely compromise the confidence in obtained results (see Section 4.3.2). For these reasons, TRI is used in the RAIMI Pilot Study only as an information source to help identify facilities with significant emissions within the Port Neches Assessment Area. As discussed in Chapter 3 which outlines the emissions characterization component, only emissions data meeting minimum resolution and completeness

requirements have been modeled in the RAIMI Pilot Study.

The TRI tracks facility-reported releases on an annual basis for facilities that, in addition to other criteria, manufacture or process more than 25,000 pounds or otherwise uses more than 10,000 pounds of any listed chemical during a calendar year. A summary of the 1997 TRI data for facilities in the Port Neches Assessment Area is presented in Tables 2-2 and 2-3.

Table 2-2 identifies the total amounts of media-specific releases for those facilities in the assessment area that reported TRI releases via air emissions, surface water discharge, underground injection, and release to land. Table 2-3 identifies the contaminant-specific releases to the various media. Likewise, for facilities in the Port Neches Assessment Area, Tables 2-4 and 2-5 present the 1998 facility-specific and contaminant-specific TRI data, respectively.

The 1997 TRI data indicate that Jefferson County, Texas, ranked second in the State of Texas, third in U.S. EPA Region 6, and sixth in the United States, in terms of total air releases (U.S. EPA 2000g). In 1998, Jefferson County ranked twelfth in the nation in total air releases (U.S. EPA 2000h). Jefferson County's TRI rankings fell because, for reporting year 1998, several new industrial categories were required to report TRI emissions. These categories, most notably electric power generation, transmission, and distribution (SIC 4911), were responsible for large emissions from power plants east of the Mississippi River, resulting in Jefferson County's lower ranking. However, Jefferson County's TRI emissions were essentially unchanged between 1997 and 1998, including an additional 71,911 pounds of total air emissions resulting from the new industrial categories. The TRI tracks multi-media releases of emissions from industrial facilities, but does not provide information regarding exposure or health impacts from a release.

The Texas Point Source Database (PSDB) is the repository for point source emissions inventory data, an annual survey of chemical plants, refineries, electric utility plants and other industrial sites that meet the reporting criteria in the TNRCC emissions inventory rule (Texas Register 1992). The PSDB, and its use in the RAIMI pilot, is discussed in greater detail in Chapter 3. A summary of 1997 PSDB data for the Port Neches Assessment Area is presented in Table 2-6, which identifies the facility-specific releases to air, and Table 2-7, which identifies the contaminant-specific emissions.

TABLE 2-2

1997 TRI FACILITY SUMMARY

Facility	TRI Releases (pounds)						
	Fugitive Air Emissions	Stack Air Emissions	Total Air Emissions	Surface Water Discharges	Underground Injection	Releases to Land	Total On-site Releases
Ameripol Synpol Corp.	545,350	350,100	895,450	0	0	24,600	920,050
Basf Corp.	64,470	8,875	73,345	31	572,661	0	646,037
Beaumont Methanol L.P.	60,005	30,005	90,010	15,255	0	0	105,265
Calabrian Chemicals Corp.	255	264	519	0	0	0	519
Du Pont Beaumont Plant	45,069	258,685	303,754	1,273	8,795,862	0	9,100,889
Dupont Dow Elastomers	122,252	566,561	688,813	177	0	0	688,990
Fina Oil & Chemical Co.	70,827	164,098	234,925	525	0	0	235,450
Huntsman Corp. - C4/O&O Plant	397,420	380,714	778,134	66,200	0	65,471	909,805
Huntsman Corp. - PO/MTBE Plant	68,327	172,029	240,356	0	0	5,000	245,356
ICI Acrylics Inc.	11,148	11,062	22,210	0	0	0	22,210
Motiva Port Neches Terminal	275	2,750	3,025	0	0	0	3,025
Southern Mfg. Co.	0	123,387	123,387	0	0	0	123,387
Port Neches Total	**1,385,398**	**2,068,530**	**3,453,928**	**83,461**	**9,368,523**	**95,071**	**13,000,983**
Jefferson County Total	**6,507,734**	**7,506,970**	**14,014,704**	**344,734**	**9,368,523**	**98,732**	**24,436,279**

Source: U.S. EPA 2000g

TABLE 2-3

1997 TRI CHEMICAL SUMMARY

Chemical	TRI Releases (pounds)						
	Fugitive Air Emissions	Stack Air Emissions	Total Air Emissions	Surface Water Discharges	Underground Injection	Releases to Land	Total On-site Releases
Ammonia	467,802	67,307	535,109	64,034	2,792,222	18,000	3,409,365
N-Hexane	87,200	438,121	525,321	0	750	0	526,071
Styrene	56,620	413,387	470,007	3,200	0	8,500	481,707
Propylene	142,909	244,272	387,181	0	0	0	387,181
Methanol	87,215	191,693	278,908	15,000	334,200	0	628,108
Ethylene	103,546	174,925	278,471	0	0	0	278,471
1,3-Butadiene	154,714	86,399	241,113	0	0	287	241,400
Chlorine	14,787	134,861	149,648	0	0	0	149,648
Carbon Tetrachloride	9,607	77,847	87,454	81	0	0	87,535
Benzene	39,430	32,326	71,756	12	14	4	71,786
Cyclohexane	10,505	58,250	68,755	0	0	1,500	70,255
Ethylene Oxide	29,000	23,000	52,000	0	0	980	52,980
Xylene (mixed isomers)	27,954	22,006	49,960	0	69,904	0	119,864
Propylene Oxide	9,400	36,200	45,600	0	0	420	46,020
Methyl Tert-Butyl Ether	36,100	5,600	41,700	0	0	0	41,700
Toluene	16,143	12,908	29,051	0	830	0	29,881
Tert-Butyl Alcohol	20,130	950	21,080	0	0	0	21,080
Aniline	11,791	7,640	19,431	0	4,099	0	23,530
Nitrobenzene	13,599	761	14,360	0	78,059	0	92,419
Chloroform	1,828	12,278	14,106	96	0	0	14,202
Methyl Methacrylate	8,951	2,392	11,343	0	0	0	11,343
Hydrogen Cyanide	1,147	9,691	10,838	0	0	0	10,838
1,2,4-Trichlorobenzene	8,780	250	9,030	0	5,800	0	14,830
Acrylonitrile	2,586	4,807	7,393	0	101,856	10	109,259
Chlorodifluoromethane	7,000	5	7,005	0	0	0	7,005
Ethylbenzene	1,677	3,896	5,573	0	0	0	5,573
Chloromethane	5,100	250	5,350	0	0	0	5,350
2,4-Dichlorophenol	2,850	250	3,100	0	16,020	0	19,120
Ethylene Glycol	2,620	250	2,870	0	2,642	61,000	66,512
Port Neches Total	**1,380,991**	**2,062,522**	**3,443,513**	**82,423**	**3,406,396**	**90,701**	**7,023,033**

Source: U.S. EPA 2000g

Notes: Data sorted based on total air emissions. To limit the volume of data to be presented, only contaminants for which total air emissions are greater than 2,000 pounds are shown. This limit is arbitrary and does not relate to prioritization of emissions included in the RAIMI Pilot Study (see Section 3.3; Emissions Prioritization).

TABLE 2-4

1998 TRI FACILITY SUMMARY

Facility	TRI Releases (pounds)						
	Fugitive Air Emissions	Stack Air Emissions	Total Air Emissions	Surface Water Discharges	Underground Injection	Releases to Land	Total On- & Off-site Releases
Air Liquide Port Neches Plant	300	3,000	3,300	0	0	0	3,300
Ameripol Synpol Corp.	838,426	291,069	1,129,495	0	0	0	1,129,495
BASF Corp.	28,225	20,430	48,655	72	473,010	0	521,737
Beaumont Methanol L.P.	79,005	26,005	105,010	0	0	0	105,010
Calabrian Chemicals Corp.	255	264	519	0	0	0	519
Clark Refining & Marketing Inc. Beaumont Terminal	5,100	0	5,100	0	0	0	5,100
Colonial Tank Farm	36	11,920	11,956	0	0	0	11,956
Du Pont Beaumont Plant	46,552	355,668	402,220	1,361	10,373,873	0	10,777,454
Dupont Dow Elastomers	111,197	587,454	698,651	77	0	0	698,728
Huntsman Corp. - C4/O&O Plant	449,190	1,427,794	1,876,984	25,000	0	60,343	1,962,327
Huntsman Corp. - PO/MTBE Plant	76,813	25,487	102,300	0	0	5,000	107,300
ICI Acrylics Inc.	14,362	6,064	20,426	0	0	0	20,426
Mobil Oil Hebert Terminal	395	8,064	8,459	30	0	0	8,489
Motiva Port Neches Terminal	100	1,440	1,540	0	0	0	1,540
Southern Mfg. Co.	0	73,198	73,198	0	0	0	73,198
Port Neches Assessment Area Total	**1,649,956**	**2,837,857**	**4,487,813**	**26,540**	**10,846,883**	**65,343**	**15,426,579**
Jefferson County Total	**6,676,924**	**7,723,687**	**14,400,611**	**176,951**	**10,853,208**	**70,812**	**26,455,282**

Source: U.S. EPA 2000h

TABLE 2-5

1998 TRI CHEMICAL SUMMARY

Chemical	TRI Releases (pounds)						
	Fugitive Air Emissions	Stack Air Emissions	Total Air Emissions	Surface Water Discharges	Underground Injection	Releases to Land	Total On-site Releases
Ethylene Glycol	5,017	850,195	855,212	0	750	57,000	912,962
Styrene	30,497	568,170	598,667	0	0	0	598,667
N-Hexane	80,560	492,736	573,296	5	750	0	574,051
Ethylene	207,249	164,462	371,711	0	0	0	371,711
Propylene	180,486	177,097	357,583	0	0	0	357,583
Methanol	97,755	176,225	273,980	0	285,400	0	559,380
1,3-Butadiene	61,906	103,702	165,608	0	0	47	165,655
Chlorine	12,810	135,931	148,741	0	0	0	148,741
Carbon Tetrachloride	11,502	67,904	79,406	14	0	0	79,420
Propylene Oxide	65,600	11,000	76,600	0	0	250	76,850
Benzene	34,021	32,981	67,002	13	12	4	67,031
Ammonia	6,012	52,712	58,724	26,603	3,206,679	3,400	3,295,406
Toluene	34,276	18,390	52,666	5	1,050	0	53,721
Xylene (mixed isomers)	15,896	31,334	47,230	5	55,000	0	102,235
Ethylene Oxide	18,000	23,000	41,000	0	0	1,500	42,500
Cyclohexane	37,093	100	37,193	0	0	0	37,193
Ethylbenzene	2,239	30,577	32,816	5	0	0	32,821
Aniline	11,986	12,956	24,942	0	21,878	0	46,820
Methyl Tert-Butyl Ether	10,062	10,341	20,403	5	750	0	21,158
Nitrobenzene	14,769	1,240	16,009	0	167,090	0	183,099
Tert-Butyl Alcohol	13,060	1,200	14,260	0	0	0	14,260
Methyl Methacrylate	10,676	1,686	12,362	0	0	0	12,362
Chloroform	2,184	8,260	10,444	63	0	0	10,507
Hydrogen Cyanide	1,115	8,394	9,509	0	0	0	9,509
Sodium Dicambra	250	8,300	8,550	0	750	0	9,300
Acrylonitrile	2,681	5,766	8,447	0	178,444	0	186,891
1,2,4-Trichlorobenzene	4,000	5	4,005	0	8,960	0	12,965
Sulfuric Acid	1,648	1,049	2,697	0	0	0	2,697
Chloromethane	2,400	5	2,405	0	0	0	2,405
Port Neches Total	**975,750**	**2,995,718**	**3,971,468**	**26,718**	**3,927,513**	**62,201**	**7,987,900**

Source: U.S. EPA 2000h

Notes: Data sorted based on total air emissions. To limit the volume of data to be presented, only contaminants for which total air emissions are greater than 2,000 pounds are shown. This limit is arbitrary and does not relate to prioritization of emissions included in the RAIMI Pilot Study (see Section 3.3; Emissions Prioritization).

2.2.6 CEP Results

As discussed in Section 1.1.1, the CEP estimated exposure levels for a wide variety of toxic pollutants to the county and census tract level based on preliminary 1990 emissions of HAPs (U.S. EPA 1999a). The CEP modeled air concentrations represent long-term outdoor concentrations present in any one location. To screen for whether a modeled concentration represents a potential health risk to the general population, CEP compared the modeled concentration to benchmark concentrations for cancer and noncancer effects. Concentrations posing a one-in-a-million cancer risk were used by CEP as benchmark concentrations for cancer effects. The EPA's inhalation reference concentrations (RfC), or similar values developed by other agencies, representing levels below which long-term exposure is not expected to result in any adverse health effects, were selected as the benchmark concentrations for non-cancer health effects from long-term exposure. A modeled long-term concentration greater than one of the benchmarks was considered to be an indicator of *potential* adverse health effects (Woodruff, et al. 1998).

Hazard ratios were computed by dividing each estimated ambient air concentration by the contaminants benchmark concentrations for both cancer and non-cancer effects. Hazard ratios greater than 1 indicate that the estimated concentration exceeds the benchmark concentration. The CEP results for Jefferson County are presented in Table 2-8, and include eleven chemicals for which the CEP hazard ratio exceeded unity (U.S. EPA 1999a; Woodruff, et al, 1998). Ratios above 1 but relatively close to 1 are of less concern than ratios far above 1, but the ratio scale is not easily interpreted for values above 1 (true only for hazard ratios derived from noncancer benchmarks). Levels where there would be “high concern” for population effects would differ on a chemical-specific basis, but there is no readily available list to link ratio values with “degrees of concern” for specific chemicals. For some level for each chemical above an RfC or RfD, for example, there are observed effects in animal test populations or human epidemiology studies, but the RfD or RfC process usually builds in “safety factors” of from 3 to 1000 to account for uncertainties associated with animal sensitivity vs. human sensitivity, variability within the human population, and other issues.

TABLE 2-6

1997 PSDB FACILITY SUMMARY

Facility	PSDB Releases (pounds)			
	Fugitive Air Emissions	Stack Air Emissions	Flare Air Emissions	Total Air Emissions
Air Liquide Port Neches Plant	0	152,481	0	152,481
Ameripol Synpol Corp.	688,886	1,350,000	1,200	2,040,086
BASF Corp.	92,020	521,857	72,968	686,845
Beaumont Methanol L.P.	61,303	2,504,360	1,225	2,566,888
Carotex, Inc.	1,418	102,940	0	104,358
Clark Port Arthur Pipeline Company	241,501	262,717	0	504,218
Duke Energy Field Services, Inc.	8,980	679,580	240	688,800
Dupont Dow Elastomers L.L.C	119,560	854,640	0	974,200
E.I. Du Pont De Nemours & Company	221,460	6,289,160	305,960	6,816,580
Fina Oil and Chemical Company	1,113,363	3,462,940	841,800	5,418,103
General Atlantic Resources	3,320	4,855	0	8,175
Huntsman Corporation	1,597,460	7,637,700	400,900	9,636,060
Huntsman Petrochemical Corporation	180,416	0	0	180,416
I.C.I. Acrylics, Inc.	17,265	79,900	17,286	114,451
Mobil Oil Corporation	1,036,063	184,430	0	1,220,493
Mobil Pipe Line Company	8,227	103,640	0	111,867
Motiva Enterprises, LLC	115,460	24,960	0	140,420
Oiltanking Beaumont Partners, L.P.	32,822	31,835	2,827	67,484
Southern Manufacturing Company	0	83,480	0	83,480
Sun Marine Terminal	71,298	498,620	0	569,918
Te Products Pipeline Company, L.P.	1,400	584,236	0	585,636
Tejas Gas Pipeline Company	564	11,997	0	12,561
U S Intec Incorporated	4,728	18,072	0	22,800
UCAR Pipeline, Inc.	35,280	0	11,100	46,380
Union Oil Company of California	963,040	419,000	0	1,382,040
Port Neches Assessment Area Total	6,615,835	25,863,400	1,655,507	34,134,741
Jefferson County Total	28,646,810	58,166,670	2,216,794	89,030,275

Source: TNRCC 1999d
Notes: The data in this table represents total emissions listed in the PSDB for each of the facilities.
This summary of emissions data does not include carbon monoxide, carbon dioxide, nitrogen dioxide, or sulfur dioxide.

TABLE 2-7

1997 PSDB Summary

Facility	Chemical	PSDB Releases (pounds)			
		Fugitive Air Emissions	Stack Air Emissions	Flare Air Emissions	Total Air Emissions
Air Liquide Port Neches Plant	Nitrogen Oxides (unspeciated)	0	89,115	0	89,115
	Nonmethane VOCs (unspeciated)	0	12,586	0	12,586
	Particulates (unspeciated)	0	50,780	0	50,780
Ameripol Synpol Corp.	Ammonia	565,600	0	0	565,600
	1,3-Butadiene	8,640	0	0	8,640
	Carbon Disulfide	0	8,280	0	8,280
	Cyclohexane	0	58,000	0	58,000
	Methane	0	64,000	0	64,000
	Nitrogen Oxides (unspeciated)	0	845,560	0	845,560
	Nonmethane VOC (unspeciated)	0	9,720	0	9,720
	Particulates (unspeciated)	28,920	50,060	0	78,980
	PM10 Particulates (unspeciated)	28,220	0	0	28,220
	Styrene	33,734	295,881	0	329,614
	Vinyl Cyclohexene	12,000	0	0	12,000
	VOC Gas Mixture (unspeciated)	22,912	3,000	0	25,912
BASF Corp.	Dichloroacetylene	0	12,260	0	12,260
	Dimethyl Ether	0	0	57,520	57,520
	Ethylene Glycol	2,600	0	0	2,600
	Hydrogen Chloride	7,640	3,068	0	10,708
	Methanol	17,280	0	3,740	21,020
	Methyl Chloride	5,060	0	0	5,060
	Nitrogen Oxides (unspeciated)	0	430,740	6,760	437,500
	Nonmethane VOCs (unspeciated)	34,020	39,920	0	73,940
	Particulate (unspeciated)	0	11,580	0	11,580
	PM10 Particulates (unspeciated)	0	9,760	0	9,760
	1,2,4-Trichlorobenzene	8,720	0	0	8,720
	VOC Gas Mixture (unspeciated)	0	9,560	0	9,560
	Xylene (unspeciated)	16,400	0	4,880	21,280
Beaumont Methanol L.P.	Methane	0	268,816	0	268,816
	Methanol	61,303	11,957	0	73,260
	Nitrogen Oxides (unspeciated)	0	2,166,218	0	2,166,218
	Nonmethane VOCs (unspeciated)	0	10,048	0	10,048
	Particulates (unspeciated)	0	23,650	0	23,650
	PM10 Particulates (unspeciated)	0	23,650	0	23,650

TABLE 2-7

1997 PSDB Summary

Facility	Chemical	PSDB Releases (pounds)			
		Fugitive Air Emissions	Stack Air Emissions	Flare Air Emissions	Total Air Emissions
Carotex, Inc.	Acetone	0	4,797	0	4,797
	Benzene	0	9,106	0	9,106
	Crude Oil	0	5,600	0	5,600
	Cyclohexane	0	2,925	0	2,925
	Tert-Butyl-Methyl Ether	0	22,583	0	22,583
	Gasoline (unspeciated)	0	11,608	0	11,608
	Methanol	0	2,533	0	2,533
	Naptha, coal-tar	0	4,395	0	4,395
	Nonmethane VOCs (unspeciated)	0	25,227	0	25,227
	Raffinate (unspeciated)	0	4,148	0	4,148
	Toluene	0	2,488	0	2,488
Clark Port Arthur Pipeline Company	Benzene	0	4,826	0	4,826
	Cumene	0	5,270	0	5,270
	Ethyl Benzene	0	2,932	0	2,932
	Gasoline (unspeciated)	59,420	13,020	0	72,440
	Hexane	4,984	0	0	4,984
	Iso Octane	0	6,676	0	6,676
	Meta-xylene	0	5,285	0	5,285
	Nonmethane VOCs (unspeciated)	174,115	195,705	0	369,820
	Para-xylene	0	2,309	0	2,309
	Toluene	0	21,510	0	21,510
Duke Energy Field Services, Inc.	Nitrogen Oxides (unspeciated)	0	626,020	0	626,020
	Nonmethane VOCs (unspeciated)	8,980	50,900	0	59,880
Dupont Dow Elastomers L.L.C	1,3-Butadiene	5,451	2,057	0	7,508
	Carbon Tetrachloride	9,607	77,840	0	87,447
	Chloroform	0	12,281	0	12,281
	Ethylene	6,167	5,655	0	11,822
	Hexadiene	9,859	52,458	0	62,317
	Hexane	32,831	435,987	0	468,818
	Methyl Pentane	24,255	122,698	0	146,953
	Methylcyclopentane	16,019	77,297	0	93,316
	Nonmethane VOCs (unspeciated)	0	33,987	0	33,987
	Particulates (unspeciated)	0	13,521	0	13,521
	Propylene	7,992	15,648	0	23,641

TABLE 2-7

1997 PSDB Summary

Facility	Chemical	PSDB Releases (pounds)			
		Fugitive Air Emissions	Stack Air Emissions	Flare Air Emissions	Total Air Emissions
E.I. Du Pont De Nemours & Company	Acrylonitrile	2,586	0	3,916	6,502
	Ammonia	4,680	23,043	11,637	39,361
	Aniline	11,791	7,554	0	19,344
	Argon	0	354,931	0	354,931
	Benzene	9,407	3,933	0	13,340
	Carbon Tetrachloride	0	2,180	0	2,180
	Ethane	0	4,739	0	4,739
	Ethanolamine	12,285	0	0	12,285
	Ethylene	0	12,951	0	12,951
	Hydrocyanic Acid	0	0	9,163	9,163
	Hydrogen	0	198,144	0	198,144
	Methane	41,563	2,720,627	0	2,762,189
	Methanol	112,278	36,940	0	149,218
	Nitric Oxide	0	114,760	187,716	302,477
	Nitrobenzene	13,599	0	0	13,599
	Nitrogen Oxides (unspeciated)	0	2,587,447	13,121	2,600,568
	Nitrous Oxide	0	0	77,166	77,166
	Nonmethane VOCs (unspeciated)	3,037	47,828	0	50,865
	Particulates (unspeciated)	0	34,929	0	34,929
	Particulates (unspeciated)	0	14,701	0	14,701
	Propane	0	85,230	0	85,230
	Propylene	0	33,859	0	33,859
Fina Oil and Chemical Company	Alkylate	0	42,684	0	42,684
	Benzene	60,218	15,211	22,182	97,611
	Crude Oil (unspeciated)	0	105,612	0	105,612
	Diesel (unspeciated)	0	9,888	0	9,888
	Ethyl Benzene	0	4,539	0	4,539
	Ethylene	4,162	7,902	73,890	85,954
	Gasoline (unspeciated)	0	186,638	2,056	188,694
	Hexane	6,374	15,708	0	22,082
	Hydrochloric Acid	0	17,459	0	17,459
	Hydrogen Sulfide	0	3,062	0	3,062
	Isobutane	4,042	0	0	4,042
	Jet Fuel (unspeciated)	0	20,778	0	20,778
	N Butane	3,554	0	0	3,554
	Naphtha	88,360	158,800	0	247,160
	Nitrogen Oxides (unspeciated)	0	2,061,541	3,530	2,065,071
	Nonmethane VOCs (unspeciated)	308,052	28,135	2,086	338,273
	Particulate - Chemical (unspeciated)	0	244,458	0	244,458

TABLE 2-7

1997 PSDB Summary

Facility	Chemical	PSDB Releases (pounds)			
		Fugitive Air Emissions	Stack Air Emissions	Flare Air Emissions	Total Air Emissions
	Particulates (unspeciated)	0	38,722	0	38,722
	PM10 Particulate - Chemical (unspeciated)	0	281,198	0	281,198
	Propane	18,624	0	0	18,624
	Propylene	9,674	4,052	17,130	30,856
	Raffinate (unspeciated)	18,520	44,214	0	62,734
	Reformate (unspeciated)	4,698	3,236	0	7,934
	Toluene	15,142	13,518	5,402	34,062
	VOC Gas Mixture (unspeciated)	542,906	131,684	714,662	1,389,252
	Xylene (unspeciated)	22,648	20,349	0	42,997
General Atlantic Resources	Nonmethane VOCs (unspeciated)	3,320	0	0	3,320
Huntsman Corporation	Alcohols (unspeciated)	3,580	0	0	3,580
	Alkyl Phenol Ethoxylate	19,250	23,284	0	42,534
	Ammonia	160,712	269,341	0	430,053
	Benzene	3,319	40,957	0	44,276
	1,3-Butadiene	136,457	276,455	63,544	476,456
	Butene	23,470	0	0	23,470
	Chlorine	0	127,133	0	127,133
	Diethanolamine	3,571	2,153	0	5,724
	Ethane	187,596	0	0	187,596
	Ethanolamine	0	5,686	0	5,686
	Ethylene	92,957	38,172	7,722	138,850
	Ethylene Glycol	13,400	48,755	0	62,155
	Ethylene Oxide	38,279	50,723	0	89,002
	Fatty Alcohols (unspeciated)	0	7,764	0	7,764
	Gasoline (unspeciated)	0	37,360	0	37,360
	Iso Octane	0	7,002	0	7,002
	Isobutane	4,531	0	0	4,531
	Iso-butene	9,145	0	0	9,145
	Methane	4,166	43,457	51,565	99,188
	Methanol	33,855	27,966	0	61,821
	Methyl Tert-Butyl Ether	35,883	0	0	35,883
	Monononylphenol	2,571	2,860	0	5,431
	Morpholine	3,691	6,276	0	9,967
	N Butane	5,783	0	0	5,783
	N-butyl Lactate	3,100	0	0	3,100
	Nitrogen Oxides	0	5,305,571	69,294	5,374,865
	Nonmethane VOCs (unspeciated)	649,729	120,245	179,144	949,118

TABLE 2-7

1997 PSDB Summary

Facility	Chemical	PSDB Releases (pounds)			
		Fugitive Air Emissions	Stack Air Emissions	Flare Air Emissions	Total Air Emissions
	Particulates (unspeciated)	0	244,182	0	244,182
	PM10 Particulates (unspeciated)	0	244,182	0	244,182
	Propylene	94,733	3,959	27,719	126,412
	Propylene Oxide	9,383	11,783	0	21,166
	Styrene	54,877	685,531	0	740,408
Huntsman Petrochemical Corporation	Hexane	7,107	0	0	7,107
	N Butane	49,069	0	0	49,069
	Pentane	99,729	0	0	99,729
	Toluene	20,601	0	0	20,601
I.C.I. Acrylics, Inc.	Acetone	0	0	2,123	2,123
	Acetone Cyanohydrin	2,024	0	0	2,024
	Methane	0	3,380	0	3,380
	Methyl Methacrylate	10,844	0	0	10,844
	Nitrogen Oxides (unspeciated)	0	68,966	2,023	70,989
	Nonmethane VOCs (unspeciated)	0	0	3,367	3,367
	Particulates (unspeciated)	0	2,741	3,720	6,461
	PM10 Particulates (unspeciated)	0	2,741	3,720	6,461
Mobil Oil Corporation	Benzene	13,401	0	0	13,401
	Ethyl Benzene	9,602	0	0	9,602
	Hexane	13,882	0	0	13,882
	Methyl Tert-Butyl Ether	9,106	5,780	0	14,886
	N Butane	30,342	0	0	30,342
	Naphthalene	3,136	0	0	3,136
	Nonmethane VOCs (unspeciated)	0	155,793	0	155,793
	Toluene	54,351	2,067	0	56,418
	1,2,4-Trimethyl Benzene	21,937	0	0	21,937
	2,2,4-Trimethyl Pentene	20,341	0	0	20,341
	VOC Gas Mixture (unspeciated)	803,947	9,383	0	813,331
	Xylene (unspeciated)	50,844	3,074	0	53,918
Mobil Pipe Line Company	Gasoline (unspeciated)	7,726	92,042	0	99,768
	Methyl Tert-Butyl Ether	0	3,676	0	3,676
	Nitrogen Oxides (unspeciated)	0	2,919	0	2,919
Motiva Enterprises, LLC	Nonmethane VOCs (unspeciated)	114,153	24,223	0	138,376
Oiltanking Beaumont Partners, L.P.	Gas Oil (unspeciated)	14,082	0	0	14,082
	Methyl Tert-Butyl Ether	3,740	28,904	2,629	35,273
	Naphtha	12,660	0	0	12,660
	Nonmethane VOCs (unspeciated)	0	2,625	0	2,625
	Toluene	2,340	0	0	2,340

TABLE 2-7

1997 PSDB Summary

Facility	Chemical	PSDB Releases (pounds)			
		Fugitive Air Emissions	Stack Air Emissions	Flare Air Emissions	Total Air Emissions
Southern Manufacturing Company	Acetone	0	25,960	0	25,960
	Styrene	0	57,520	0	57,520
Sun Marine Terminal	Benzene	0	3,868	0	3,868
	Crude Oil (unspeciated)	66,169	467,741	0	533,910
	Hexane	0	14,343	0	14,343
	Nitrogen Oxides (unspeciated)	0	6,588	0	6,588
	Toluene	0	2,059	0	2,059
Te Products Pipeline Company, L.P.	Benzene	0	4,020	0	4,020
	Gasoline (unspeciated)	0	13,620	0	13,620
	Hexane	0	7,200	0	7,200
	Iso Octane	0	23,640	0	23,640
	Methyl Tert-Butyl Ether	0	24,320	0	24,320
	Nonmethane VOCs (unspeciated)	0	503,600	0	503,600
	Toluene	0	5,176	0	5,176
	Xylene (unspeciated)	0	2,220	0	2,220
Tejas Gas Pipeline Company	Nitrogen Oxides (unspeciated)	0	10,057	0	10,057
U S Intec Incorporated	Asphalt Fumes (unspeciated)	0	3,400	0	3,400
	Nitrogen Oxides (unspeciated)	0	4,440	0	4,440
	Nonmethane VOC (unspeciated)	4,728	3,672	0	8,400
	Particulates (unspeciated)	0	4,580	0	4,580
UCAR Pipeline, Inc.	Ethylene	35,280	0	8,780	44,060
	Nitrogen Oxides (unspeciated)	0	0	2,320	2,320
Union Oil Company of California	Benzene	0	2,140	0	2,140
	Cyclohexane	3,640	10,700	0	14,340
	Ethyl Benzene	0	9,020	0	9,020
	Hexane	3,520	6,500	0	10,020
	Methyl Tert-Butyl Ether	749,680	173,300	0	922,980
	Naphthalene	23,380	29,100	0	52,480
	Nitrogen Oxides (unspeciated)	0	5,860	0	5,860
	Nonmethane VOCs (unspeciated)	162,440	154,460	0	316,900
	Toluene	16,220	10,500	0	26,720
	Xylene (unspeciated)	2,200	15,620	0	17,820
Port Neches PSDB Total		**6,570,508**	**25,775,025**	**1,644,227**	**33,989,760**

Source: TNRCC 1999d

Notes: Emissions included in this table represent those sources that emit at least 2,000 pounds on an individual contaminant basis. To limit the volume of data to be presented, only contaminants for which total air

emissions are greater than 2,000 pounds are shown. This limit is arbitrary and does not relate to prioritization of emissions included in the RAIMI Pilot Study (see Section 3.3; Emissions Prioritization).

"Unspeciated" indicates that this data is not resolved on a contstituent-specific basis to an adequate extent for risk modeling.

TABLE 2-8

CEP RESULTS FOR JEFFERSON COUNTY

Chemical	CEP Modeled Air Concentrations ($\mu g/m^3$)			Benchmark ($\mu g/m^3$)	CEP Hazard Ratio[a] (unitless)
	Average	Minimum	Maximum		
Acrylonitrile	5.24e-02	2.74e-03	4.81e+00	1.47e-02	4
Benzene	7.00e+00	6.47e-01	1.07e+02	1.20e-01	58
1,3-Butadiene	2.82e-01	9.71e-03	2.39e+01	3.57e-03	79
Carbon tetrachloride	9.60e-01	5.47e-01	2.41e+00	6.67e-02	14
Chloroform	1.19e-01	7.67e-02	5.80e-01	4.35e-02	3
Dichlorobenzene	2.04e-01	1.68e-02	1.78e+01	9.09e-02	2
Ethylene dibromide	7.69e-03	3.65e-03	1.15e-01	4.55e-03	2
Ethylene dichloride	1.88e-01	3.48e-02	1.36e+01	3.85e-02	5
Formaldehyde	1.00e+01	8.56e-01	2.55e+02	7.69e-02	131
Methyl chloride	1.24e+00	5.89e-01	1.86e+01	5.60e-01	2
Vinyl Chloride	8.24e-02	3.86e-03	8.09e+00	1.20e-02	7

Notes: (μg/m3) = micrograms per cubic meter
[a] CEP hazard ratio equals the average air concentration divided by the benchmark concentration (which for the contaminants presented in Table 2-8, happen to all be cancer benchmarks)

2.2.7 Ambient Air Monitoring Data

Ambient air monitoring data is available for the Port Neches Assessment Area from TNRCC. The following sections describe the permanent ambient air monitoring and mobile ambient air monitoring programs of the TNRCC. An ambient monitoring data summary and a complete raw ambient monitoring data set are presented in Appendix MON.

2.2.7.1 Permanent Monitoring Stations

The Community Air Toxics Monitoring Network Report (January–December 1997) and the Aerometric Information Retrieval System (AIRS) database are the primary sources of reported ambient air monitoring data for monitoring locations within the Port Neches Assessment Area (TNRCC 1997a; U.S. EPA 1998h). TNRCC established the CATMN in 1992 at the direction of the State Legislature in response to requirements of the Federal 1990 CAA. In 1997, the monitoring network consisted of 40 monitoring stations located throughout the State, including six stations in Jefferson County, two of which are located in the Port Neches Assessment Area: the Port Neches station T136 (also referenced as site no. 017), and the Groves station T119 (also referenced as site no. 014) (Figure 2-5). The monitoring network was designed to measure ambient air concentrations of volatile organic compounds (VOCs). At each site, 24-hour air samples are collected every sixth day and analyzed for 78 VOCs at the TNRCC laboratory in Austin, Texas (TNRCC 1999a).

Review of the CATMN and AIRS data indicates that benzene, 1,3-butadiene, and several other VOCs have been measured at the Groves and Port Neches monitoring stations (TNRCC 1997a; U.S. EPA 1998h). Air monitoring data for formaldehyde is only available at the T136 location in Port Neches, and only for the years 1995 through 1997 (U.S. EPA 1998h). At the Groves station, concentrations of benzene exceeded TNRCC's health-based 24-hour effects screening level (ESL). At the Port Neches station, concentrations of 1,3-butadiene exceeded the 24-hour ESL and the annual ESL. TNRCC compliance and enforcement activities have included a trilateral compliance agreement with area industries to investigate the sources of 1,3-butadiene emissions and reduce long-term public exposure (TNRCC 1999a). Appendix MON contains a summary of the referenced CATMN data for the Port Neches and Groves monitoring stations.

2.2.7.2 Mobile Monitoring Program

The TNRCC has operated a mobile monitoring network, consisting of van-mounted monitoring stations and a mobile analytical laboratory, in the heavily industrialized areas of Jefferson County, including the Port Neches Assessment Area. The mobile monitoring network has measured air concentrations of 69 HAPs at various locations in the Port Neches Assessment Area. The survey locations were selected by TNRCC to specifically identify potential industrial sources of HAPs based on wind patterns on the day of monitoring (TNRCC 1997b).

The mobile monitoring program determined that several HAPs in the Port Neches Assessment Area exceeded ESLs. Measured concentrations of 1,3-butadiene from the area near the Huntsman C-4 facility in Port Neches exceeded the 8-hour ESL, and at other locations the 1-hour ESL was exceeded. Other VOCs were also detected at concentrations that exceed health-based ESLs, including methyl t-butyl ether (MTBE) and alkenes. Other compounds were also detected at concentrations that did not exceed ESLs, including benzene, toluene, ethylbenzene, ethylene, and styrene. Appendix MON contains a summary of the available mobile monitoring data identified for the Port Neches Assessment Area.