EVALUATION OF AIR EMISSIONS TRENDS USING TRI DATA

Prepared for:
OFFICE OF POLICY ANALYSIS AND REVIEW
U.S. Environmental Protection Agency
Washington, DC 20460

and

OFFICE OF AIR QUALITY PLANNING AND STANDARDS
U.S. Environmental Protection Agency
Research Triangle Park, NC 27711

Prepared by:
ENERGY AND ENVIRONMENTAL ANALYSIS, INC.
1655 North Fort Myer Drive, Suite 600
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Evaluation Of Air Emissions Trends Using Tri Data

SECTION 1

Introduction

Industrial releases of toxic chemicals to the air, water, or ground and transfers of these chemicals from one site to another are reported to EPA annually and maintained in the Toxic Release Inventory (TRI) database. Data from 1987, 1988, 1989, and 1990 currently is available to the public in the TRI database. This data can be used to evaluate toxic releases on a national, regional, or local basis and identify emission trends over time. This report reviews the data on emissions of industrial chemicals to the air for all four years.

Section 2 - Trends In Toxic Air Emissions compares the change in emissions from year to year. Generally, total emissions have fallen over time. To better understand this reduction, change in total emissions for a variety of geographic areas, such as EPA Regions, states, and counties, are reviewed highlighting areas that have shown the most significant emission reductions. Similar changes are shown for individual industries and chemicals.

Toxic chemical emissions for individual years are summarized in Section 3 - Annual Toxic Air Emissions. Again, emissions are shown for EPA Regions, states, counties,

industries, and individual chemicals. These yearly summaries are useful for understanding the variation in emissions from area to area and industry to industry. The chemicals also are grouped to define the emissions target for various environmental programs, notably those being developed by EPA in response to the Clean Air Act Amendments of 1990.

To create the emission summaries shown in Sections 2 and 3, two sets of data were created from the original TRI data. The Basic set contains quality reviewed data. The Linked set contains air emissions data from the Basic set that can be linked for facilities that reported in all four years. A description of the procedures followed to produce the two sets of data is included in Section 4 - Data Handling Procedures.

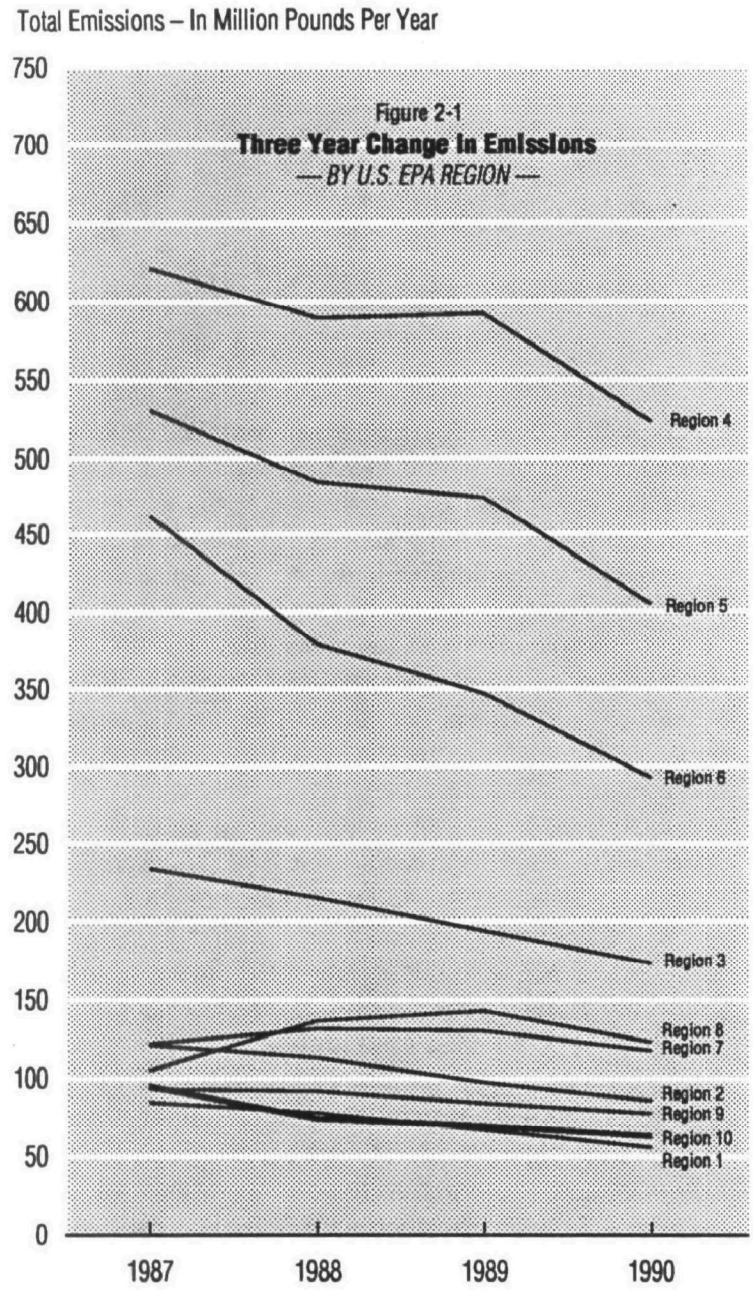
Each year, shortly after a new TRI data set is released to the public, EPA's Office of Pesticides and Toxic Substances publishes a report providing detailed summaries of the data. Reports have been published for 1987, 1988, and 1989. A report summarizing 1990 releases was published in May 1992. A more detailed analysis of national toxic releases will be published by the end of 1992. These reports cover releases to air and water and transfers to other sites. Readers interested in media other than air may find these reports very helpful.

SECTION 2

Trends In Toxic Air Emissions

This section describes changes in toxic air emissions between 1987 and 1990, the four years for which data on industrial toxic releases is available. Since 1987 the number of facilities reporting each year has increased. This is due to the fact that more facilities realized they were required to report and the chemical use threshold for reporting was progressively lowered, among other reasons. Also, some facilities may shutdown or make some change to their processes so they fall below the threshold. In this case they would have reported in an early year but not in later years. To identify trends in air toxic emissions the facilities used for the analysis in this section were held constant. As noted in Section 1, TRI data for the four years was linked to create a separate data set of facilities that reported all four years. This Linked data set covered about 88% of the total reported emissions. The discussion of emissions in this section are based on analysis of that data. Industrial air toxic emissions in progressively smaller geographic divisions are presented followed by a review of emissions of specific chemicals and chemical groups. Section 3 describes emissions for each year separately, based on the complete TRI data set for that year.

For each of the charts or tables presented in this section, more detailed data can be found in the appendix. Also, it should be noted that toxicity of the specific chemicals was not considered in this report. The actual toxicity of the chemicals covered by the TRI database ranges from slight to extreme and no attempt was made to adjust for differential toxicity.



REGIONAL HOT SPOTS

EPA Regions

Figure 2-1 shows the emissions reported in the ten EPA regions. Table 2-1 provides the same information numerically. Nine of the ten regions showed emission reductions over the four year period. Regions 4, 5, and 6 have the largest concentration of industry and largest reported emissions. Together they represent about 65% of the national total. Each of these regions had emission reductions of 100 million pounds or more over four years. While some of the reduction may reflect refinements in emissions reporting it is likely that real reductions in toxic air emissions have occurred.

Because of the size of the EPA regions they generally are not influenced by changes at a single facility. The one exception is Region 8, which does not have a high concentration of industry but does have one very large facility in Utah. That facility largely was responsible for the reported increase in emissions between 1987 and 1990.

Table 2-1
Regional Hot Spots
— EPA REGIONS – 1987 BASIS —

EPA Region	Amount Emitted (lb/yr) 1987	1988	1989	1990	Three Year Change (lb/yr)	Pct
04	621,664,527	589,758,062	592,344,907	523,726,327	-97,938,200	-15.75
05	530,990,282	484,808,375	474,447,160	405,212,823	-125,777,459	-23.69
06	462,251,285	379,362,209	347,131,355	293,108,331	-169,142,954	-36.59
03	234,398,214	215,559,165	194,486,556	174,020,016	-60,378,198	-25.76
07	121,612,041	131,919,474	130,441,146	117,592,501	-4,019,540	-3.31
02	120,764,704	113,233,785	97,552,883	86,133,023	-34,631,681	-28.68
08	104,844,500	136,753,217	143,467,996	123,164,214	18,319,714	17.47
10	95,094,041	74,641,562	69,961,153	63,425,609	-31,668,432	-33.30
09	93,296,592	92,153,542	84,232,151	77,975,810	-15,320,782	-16.42
01	85,027,725	78,167,971	67,286,110	55,806,962	-29,220,763	-34.37

REGIONAL HOT SPOTS

States

Figure 2-2 and Table 2-2 show the change in emissions for the states that reported the greatest emissions in 1987. Going from regions to states and subsequently to smaller geographic areas, individual facilities have more of an impact on the combined emissions. Among the top states, Tennessee and Utah both showed increased emissions between 1987 and 1990. In both cases, increases at a few very large facilities influenced the total. Reported emissions decreased for all of the other states. Texas, which reported the greatest emissions in each of the four years, showed a reduction of about 90 million pounds during that period. That represents a reduction of about 38% in four years.

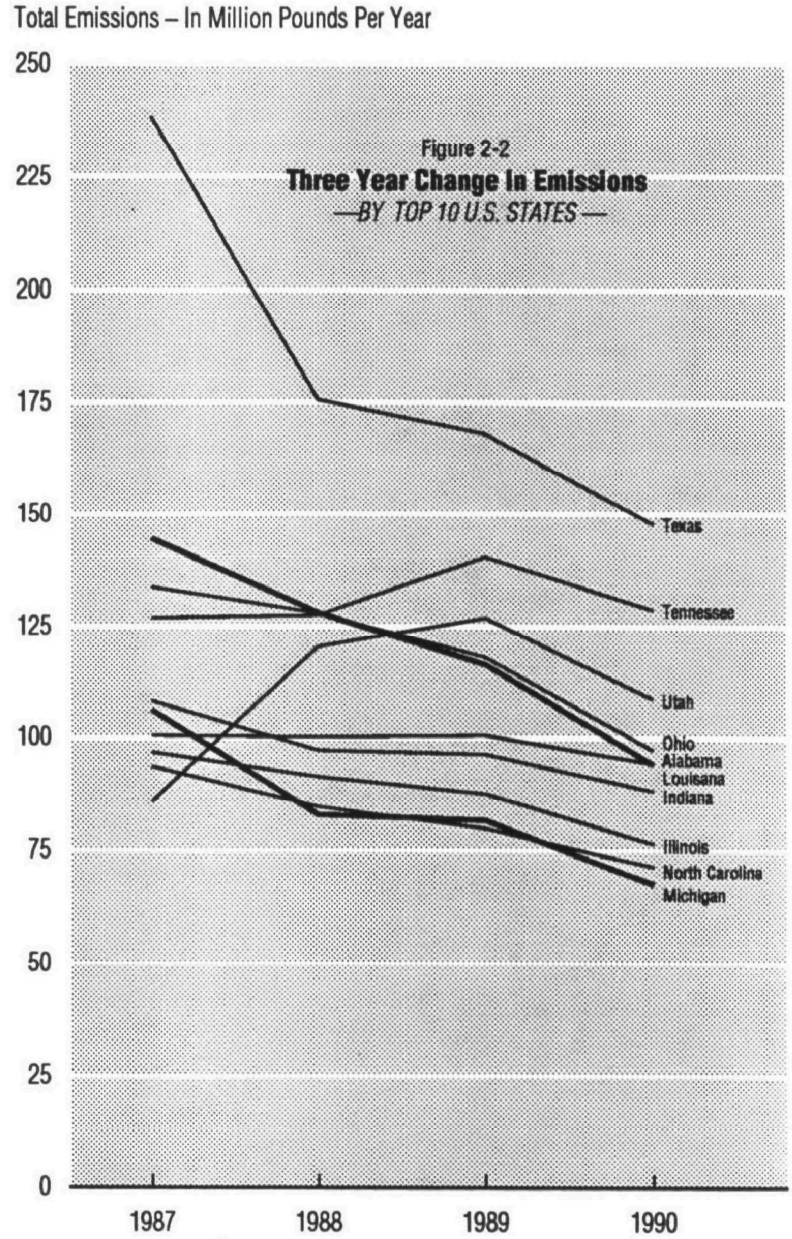
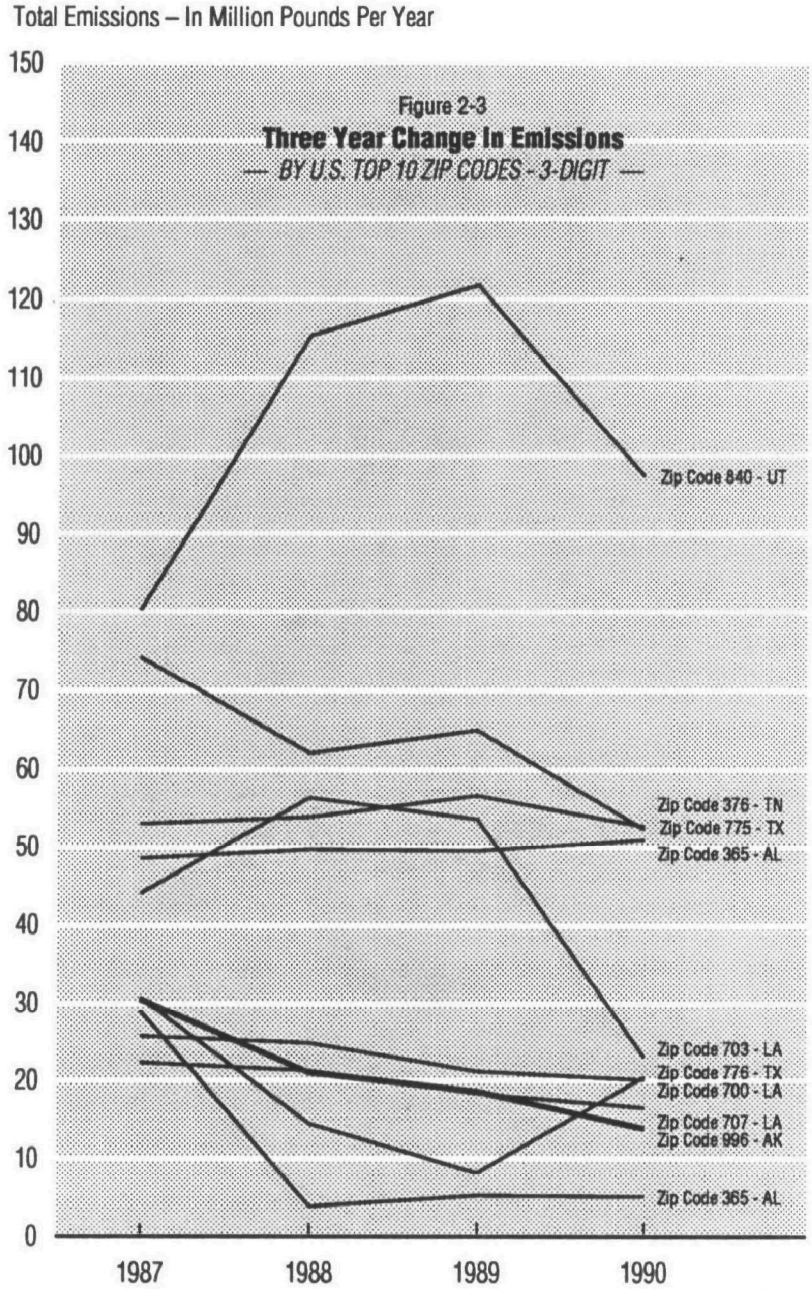


Figure 2-2
Three Year Change In Emissions
—BY TOP 10 U.S. STATES—

Table 2-2
Regional Hot Spots
— TOP 20 STATES - 1987 BASIS —

State	Amount Emitted (lb/yr) 1987	1988	1989	1990	Three Year Change (lb/yr)	Pct
TX	238,275,406	175,429,432	167,991,897	147,628,675	-90,646,731	-38.04
LA	144,359,410	128,008,706	116,401,665	94,039,252	-50,320,158	-34.86
OH	133,572,741	127,788,785	117,995,184	97,115,443	-36,457,298	-27.29
TN	126,736,161	127,396,894	140,392,040	128,562,788	1,826,627	1.44
IN	108,148,431	97,047,492	96,167,777	87,978,942	-20,169,489	-18.65
MI	106,051,124	82,748,534	81,639,845	67,479,479	-38,571,645	-36.37
AL	100,431,221	100,051,930	100,368,744	94,162,974	-6,268,247	-6.24
IL	96,633,375	91,370,375	87,447,210	76,428,660	-20,204,715	-20.91
NC	93,559,598	84,592,816	79,814,411	71,319,077	-22,240,521	-23.77
UT	85,741,098	120,424,480	126,722,058	108,620,776	22,879,678	26.68
GA	85,090,791	77,489,831	69,226,759	63,807,295	-21,283,496	-25.01
PA	84,518,628	78,088,092	69,539,063	61,662,671	-22,855,957	-27.04
VA	83,986,937	80,402,424	71,550,633	68,460,561	-15,526,376	-18.49
CA	75,257,676	75,713,529	71,153,056	64,895,866	-10,361,810	-13.77
NY	70,027,865	64,414,892	57,604,582	49,641,242	-20,386,623	-29.11
SC	61,061,327	61,736,939	64,785,378	54,801,677	-6,259,650	-10.25
MS	56,258,233	56,028,443	55,603,780	49,664,068	-6,594,165	-11.72
KY	51,144,009	45,141,618	40,395,235	32,710,735	-18,433,274	-36.04
FL	47,383,187	37,319,591	41,758,560	28,697,713	-18,685,474	-39.43
AR	47,215,941	44,528,771	38,069,603	27,231,347	-19,984,594	-42.33



REGIONAL HOT SPOTS

ZIP Code Areas

The linked data set was reviewed to identify regional "hot spots" that report high levels of emissions. Figure 2-3 and Table 2-3 show the three-digit ZIP Code areas reporting the greatest emissions. The Post Office assigns ZIP Codes roughly in proportion to the population of a geographic area. The first three digits of the ZIP Code are assigned to transportation hubs that also are centers of economic activity. Evaluating emissions by three-digit ZIP Code may then identify areas where large emissions and population centers are coincident.

Since three-digit ZIP Code areas are relatively small geographically, their total emissions often are dominated by a single facility. Among the ten top areas only 775 in Texas and 481 in Michigan had more than 100 reporting facilities. About 70% of the emissions reported in area 840 in Utah were reported

Table 2-3

Regional Hot Spots

— TOP 20 3-DIGIT ZIP CODES – 1987 BASIS —

3-digit Zip Code	State	Amount Emitted (lb/yr) 1987	1988	1989	1990	Three Year Change (lb/yr)	Pct
840	UT	80,260,510	115,533,035	121,797,804	97,449,460	17,188,950	21.42
775	TX	74,200,063	62,055,500	65,001,349	52,315,406	-21,884,657	-29.49
376	TN	53,031,565	53,885,615	56,589,700	52,673,030	-358,535	-0.68
365	AL	48,542,835	49,644,636	49,486,002	50,923,247	2,380,412	4.90
703	LA	44,019,671	56,378,839	53,648,655	23,047,199	-20,972,472	-47.64
700	LA	30,737,521	14,436,097	8,182,294	20,364,832	-10,372,689	-33.75
996	AK	30,551,825	20,958,860	18,604,215	13,835,648	-16,716,177	-54.71
797	TX	29,033,878	3,825,542	5,273,633	5,107,048	-23,926,830	-82.41
776	TX	25,731,849	24,876,096	21,189,721	20,068,027	-5,663,822	-22.01
707	LA	22,255,031	21,217,431	18,298,938	16,505,353	-5,749,678	-25.84
480	MI	21,428,949	15,440,706	14,385,269	6,944,729	-14,484,220	-67.59
779	TX	21,265,124	8,073,149	5,315,839	4,831,852	-16,433,272	-77.28
286	NC	20,699,329	18,415,056	17,070,188	15,452,553	-5,246,776	-25.35
706	LA	20,015,906	15,985,729	14,634,086	11,418,692	-8,597,214	-42.95
377	TN	19,455,819	19,587,362	28,107,058	26,412,907	6,957,088	35.76
314	GA	19,188,412	19,318,987	16,326,594	13,124,755	-6,063,657	-31.60
356	AL	18,905,338	15,611,697	17,966,859	15,440,808	-3,464,530	-18.33
244	VA	18,476,345	19,602,514	13,326,394	11,582,074	-6,894,271	-37.31
371	TN	17,753,155	17,921,402	17,677,507	16,491,564	-1,261,591	-7.11
723	AR	17,304,014	16,182,296	14,355,290	5,509,033	-11,794,981	-68.16

by a single facility. Area 703 in Louisiana, number five on the list, included only 16 facilities, the fewest number of facilities for any ZIP Code area.

REGIONAL HOT SPOTS

Counties

Counties, more familiar boundaries, typically cover a smaller geographic area than three-digit ZIP Codes. Figure 2-4 and Table 2-4 show the counties reporting the greatest emissions. Counties most frequently are dominated by only one or two facilities. As a result, it is more difficult to discern trends. One very large facility with large emission increases or decreases can mask significant changes taking place in several other facilities in the same county. Ascension Parish, Louisiana, Kenai Peninsula, Alaska, and Ector County, Texas all reported emission decreases of more than 16 million pounds. The decrease in Ector County, an 88% drop, probably reflects a reporting error in 1987 rather than a true decrease in emissions.

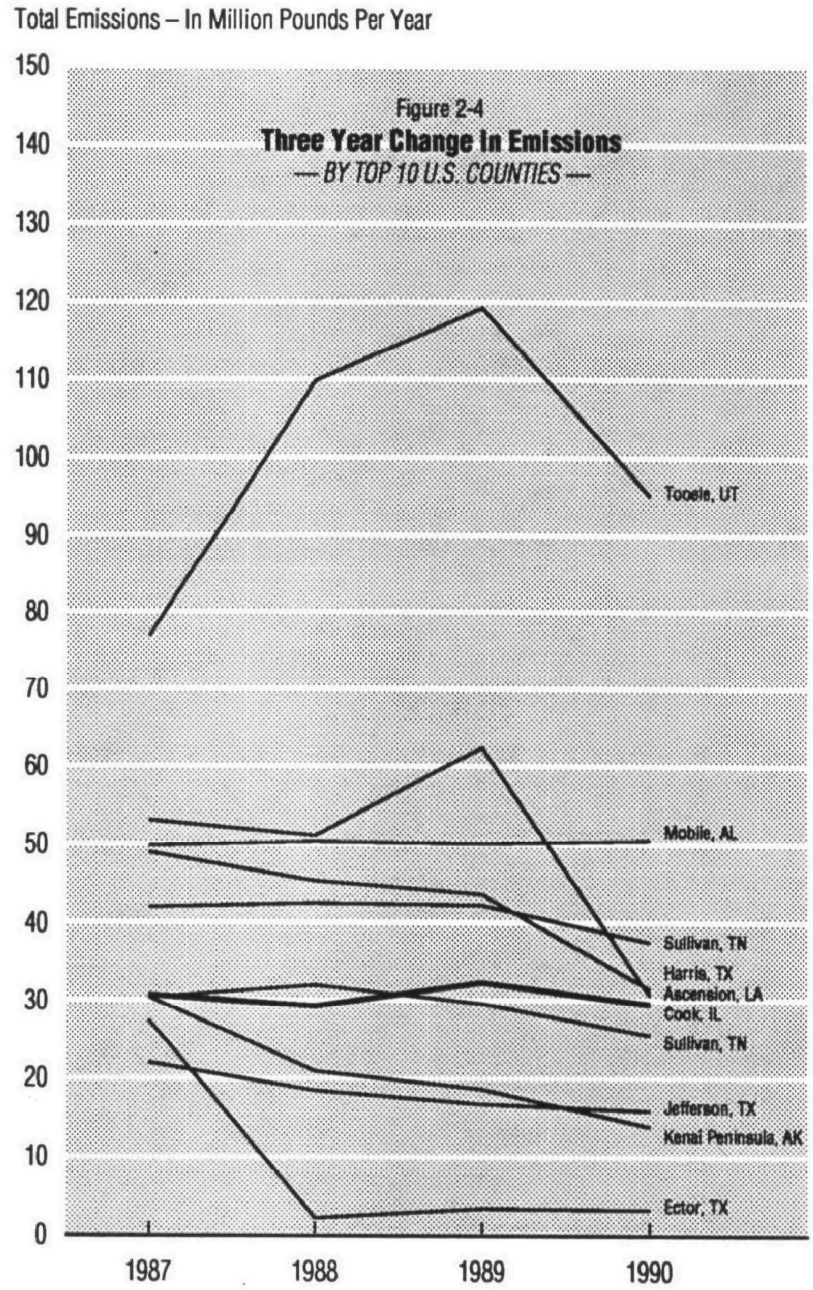


Table 2-4
Regional Hot Spots
— TOP 20 COUNTIES -1987 BASIS —

County	State	Amount Emitted (lb/yr) 1987	1988	1989	1990	Three Year Change (lb/yr)	Pct
Tooele	UT	76,989,600	109,867,272	119,207,748	95,171,481	18,181,881	23.62
Ascension	LA	53,169,833	51,213,273	62,454,882	30,789,313	-22,380,520	-42.09
Mobile	AL	49,936,678	50,479,785	50,212,530	50,619,233	682,555	1.37
Harris	TX	49,047,229	45,473,832	43,689,922	31,618,810	-17,428,419	-35.53
Sullivan	TN	42,058,444	42,634,881	42,365,300	37,656,528	-4,401,916	-10.47
Cook	IL	30,816,250	29,376,092	32,489,055	29,626,135	-1,190,115	-3.86
Kenai Peninsula	AK	30,551,825	20,958,860	18,604,215	13,835,648	-16,716,177	-54.71
Los Angeles	CA	30,499,813	32,129,171	29,691,926	25,486,075	-5,013,738	-16.44
Ector	TX	27,421,333	2,211,643	3,473,153	3,315,692	-24,105,641	-87.91
Jefferson	TX	22,003,740	18,392,433	16,679,190	15,826,602	-6,177,138	-28.07
Brazoria	TX	21,823,595	17,972,406	18,053,425	15,784,026	-6,039,569	-27.67
Chatham	GA	19,188,412	19,318,987	16,326,594	13,124,755	-6,063,657	-31.60
Calcasieu	LA	18,788,259	15,225,083	13,916,509	10,673,131	-8,115,128	-43.19
Calhoun	TX	18,123,053	5,389,523	3,588,587	3,018,795	-15,104,258	-83.34
Alleghany	VA	17,845,769	19,009,264	10,042,999	8,177,060	-9,668,709	-54.18
Mississippi	AR	17,242,395	16,125,232	14,288,567	5,424,839	-11,817,556	-68.54
St James	LA	16,239,492	15,408,007	931,727	15,084,391	-1,155,101	-7.11
Hamblen	TN	16,181,264	16,294,219	24,916,031	23,604,411	7,423,147	45.87
Mc Leod	MN	15,591,355	16,567,333	25,782,081	20,208,526	4,617,171	29.61
Lake	IN	15,025,811	11,021,400	10,069,351	11,229,390	-3,796,421	-25.27

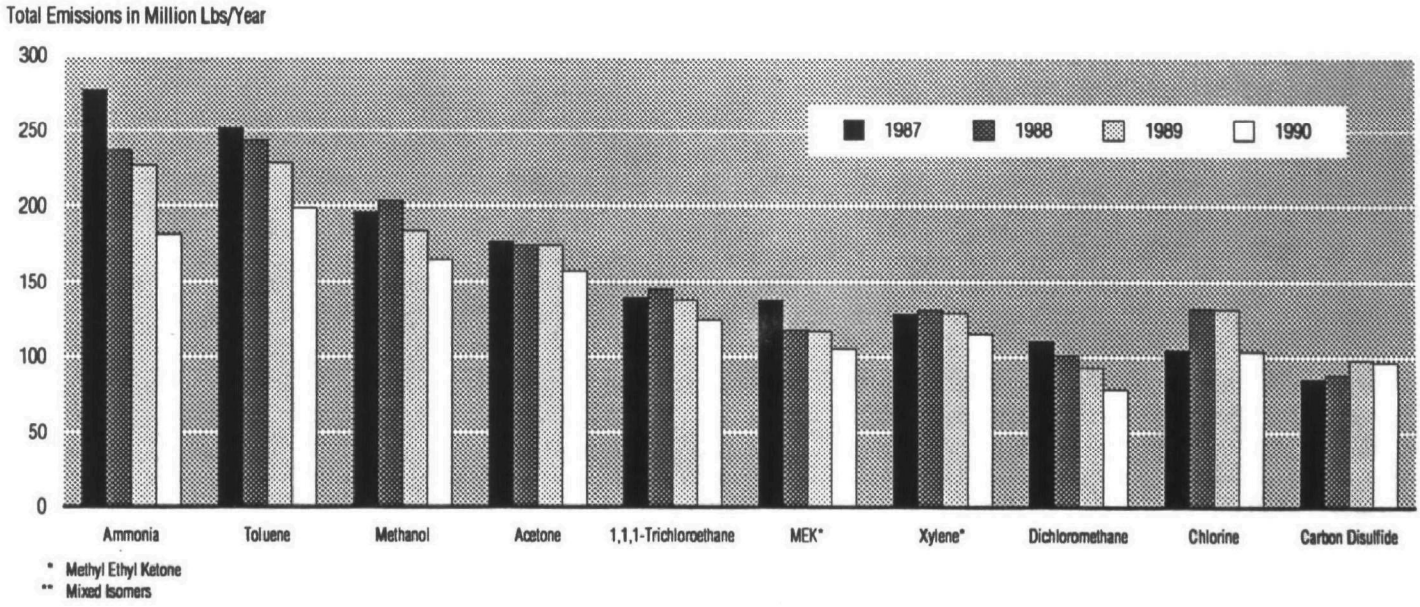
Table 2-5
Top 20 Chemicals
— 1987 BASIS —

Chemical	Amount Emitted (lb/yr) 1987	1988	1989	1990	Three Year Change (lb/yr)	Pct
Ammonia	277,388,831	237,606,361	226,977,094	181,697,260	-95,691,571	-34.50
Toluene	251,982,231	243,792,436	229,026,603	199,512,073	-52,470,158	-20.82
Methanol	196,559,936	203,806,647	184,231,445	165,049,027	-31,510,909	-16.03
Acetone	177,750,109	175,215,296	175,168,870	157,837,161	-19,912,948	-11.20
1,1,1-Trichloroethane	140,163,526	145,564,167	138,238,987	124,183,587	-15,979,939	-11.40
Methyl Ethyl Ketone	138,251,483	118,087,703	117,346,230	105,467,819	-32,783,664	-23.71
Xylene (Mixed Isomers)	128,876,481	131,418,148	129,162,509	115,499,330	-13,377,151	-10.38
Dichloromethane	110,954,722	102,158,498	93,270,030	79,038,482	-31,916,240	-28.77
Chlorine	105,001,108	132,890,733	132,027,251	104,239,889	-761,219	-0.72
Carbon Disulfide	85,913,732	88,522,526	98,431,764	96,954,830	11,041,098	12.85
Aluminum (Fume Or Dust)	81,574,716	2,831,694	1,527,480	1,315,171	-80,259,545	-98.39
Hydrochloric Acid	70,395,841	65,104,444	69,358,736	67,294,145	-3,101,696	-4.41
Ethylene	59,766,006	42,394,117	41,853,869	34,588,353	-25,177,653	-42.13
Freon 113	49,479,901	57,244,514	52,248,201	35,911,342	-13,568,559	-27.42
Trichloroethylene	47,484,928	45,722,543	41,277,631	32,616,922	-14,868,006	-31.31
Propylene	38,686,477	23,807,387	23,898,179	21,014,890	-17,671,587	-45.68
Glycol Ethers	37,515,524	42,985,363	42,329,635	39,409,230	1,893,706	5.05
Benzene	30,633,229	28,548,426	25,070,583	23,226,988	-7,406,241	-24.18
n-Butyl Alcohol	29,157,749	32,376,359	32,149,145	28,284,184	-873,565	-3.00
Tetrachloroethylene	28,769,776	29,736,927	22,362,024	17,574,604	-11,195,172	-38.91

Chemicals

Figure 2-5 and Table 2-5 show reported emissions of the individual chemicals reported in the greatest amounts. The emission quantities represent national totals. The chemicals listed generally are common industrial feedstocks and solvents. For most of them reported emissions are steadily decreasing between 1987 and 1990. Emissions of two of the top chemicals shown in Figure 2-5, chlorine and carbon disulfide, show little or no decrease over the four-year period. Emissions of both of these chemicals are dominated by a single large facility. In both cases, more than 50% of the national total is reported by a single location.

Figure 2-5
Top 10 Chemicals
— 1987 BASIS —



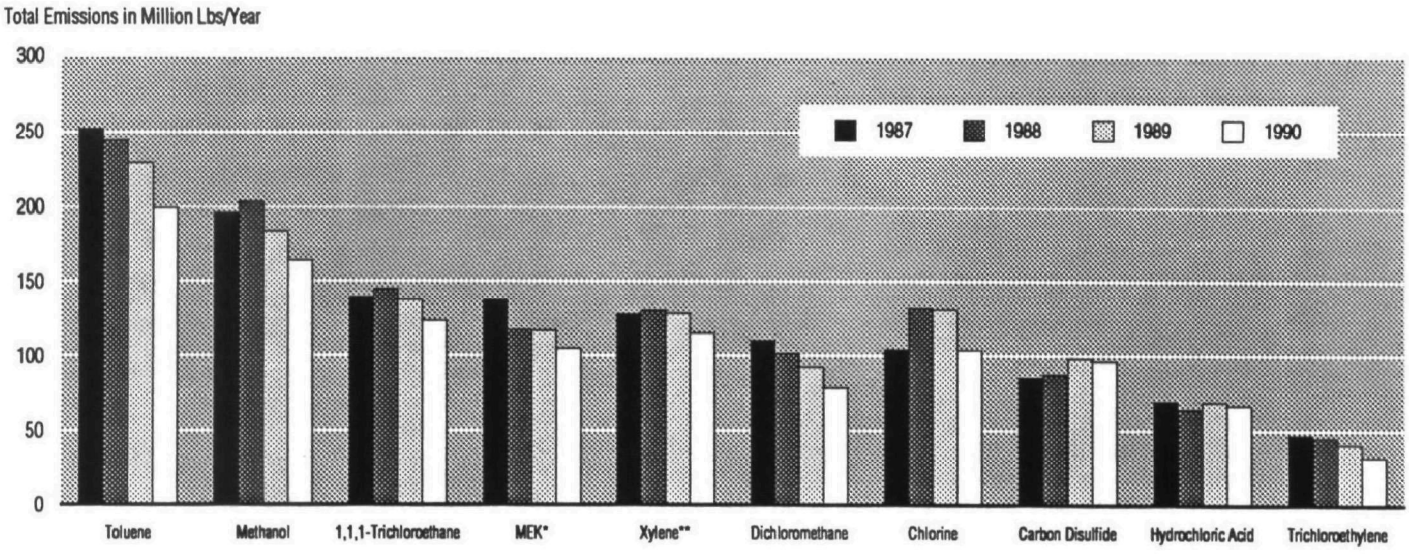
Hazardous Air Pollutants

The Clean Air Act Amendments of 1990 listed 189 individual chemicals as hazardous air pollutants (HAP). All 189 chemicals are listed in Table 4-5 in Section 4 (As noted in Table 4-5, 16 of the HAP chemicals are not covered by TRI). Figure 2-6 and Table 2-6 show the HAPs with the largest reported emissions. Major sources of emissions of each of these chemicals will be regulated under the Clean Air Act in the future. The emissions reported to date serve as a useful baseline to measure future reductions once the new regulations are in place. While most of the chemicals already are showing a downward trend, significant reductions are expected in the future.

Table 2-6
Top 20 Hazardous Air Pollutants
— 1987 BASIS —

	Amount Emitted (lb/yr)				Three Year Change	
Chemical	1987	1988	1989	1990	(lb/yr)	Pct
Toluene	251,982,231	243,792,436	229,026,603	199,512,073	-52,470,158	-20.82
Methanol	196,559,936	203,806,647	184,231,445	165,049,027	-31,510,909	-16.03
1,1,1-Trichloroethane	140,163,526	145,564,167	138,238,987	124,183,587	-15,979,939	-11.40
Methyl Ethyl Ketone	138,251,483	118,087,703	117,346,230	105,467,819	-32,783,664	-23.71
Xylene (Mixed Isomers)	128,876,481	131,418,148	129,162,509	115,499,330	-13,377,151	-10.38
Dichloromethane	110,954,722	102,158,498	93,270,030	79,038,482	-31,916,240	-28.77
Chlorine	105,001,108	132,890,733	132,027,251	104,239,889	-761,219	-0.72
Carbon Disulfide	85,913,732	88,522,526	98,431,764	96,954,830	11,041,098	12.85
Hydrochloric Acid	70,395,841	65,104,444	69,358,736	67,294,145	-3,101,696	-4.41
Trichloroethylene	47,484,928	45,722,543	41,277,631	32,616,922	-14,868,006	-31.31
Glycol Ethers	37,515,524	42,985,363	42,329,635	39,409,230	1,893,706	5.05
Benzene	30,633,229	28,548,426	25,070,583	23,226,988	-7,406,241	-24.18
Tetrachloroethylene	28,769,776	29,736,927	22,362,024	17,574,604	-11,195,172	-38.91
Methyl Isobutyl Ketone	27,189,624	27,905,037	28,030,679	24,025,550	-3,164,074	-11.64
Styrene	26,438,085	24,556,434	21,937,401	21,164,893	-5,273,192	-19.95
Chloroform	24,034,760	23,256,805	24,438,028	21,549,202	-2,485,558	-10.34
Carbonyl Sulfide	22,459,520	19,554,837	17,798,541	18,463,675	-3,995,845	-17.79
Ethylene Glycol	14,378,138	12,565,574	11,756,072	8,159,622	-6,218,516	-43.25
Formaldehyde	12,359,020	10,338,268	11,398,634	10,664,037	-1,694,983	-13.71
Chloromethane	12,068,836	10,837,852	9,318,569	7,326,285	-4,742,551	-39.30

Figure 2-6
Top 10 Hazardous Air Pollutants
— 1987 BASIS —



* Methyl Ethyl Ketone
** Mixed Isomers

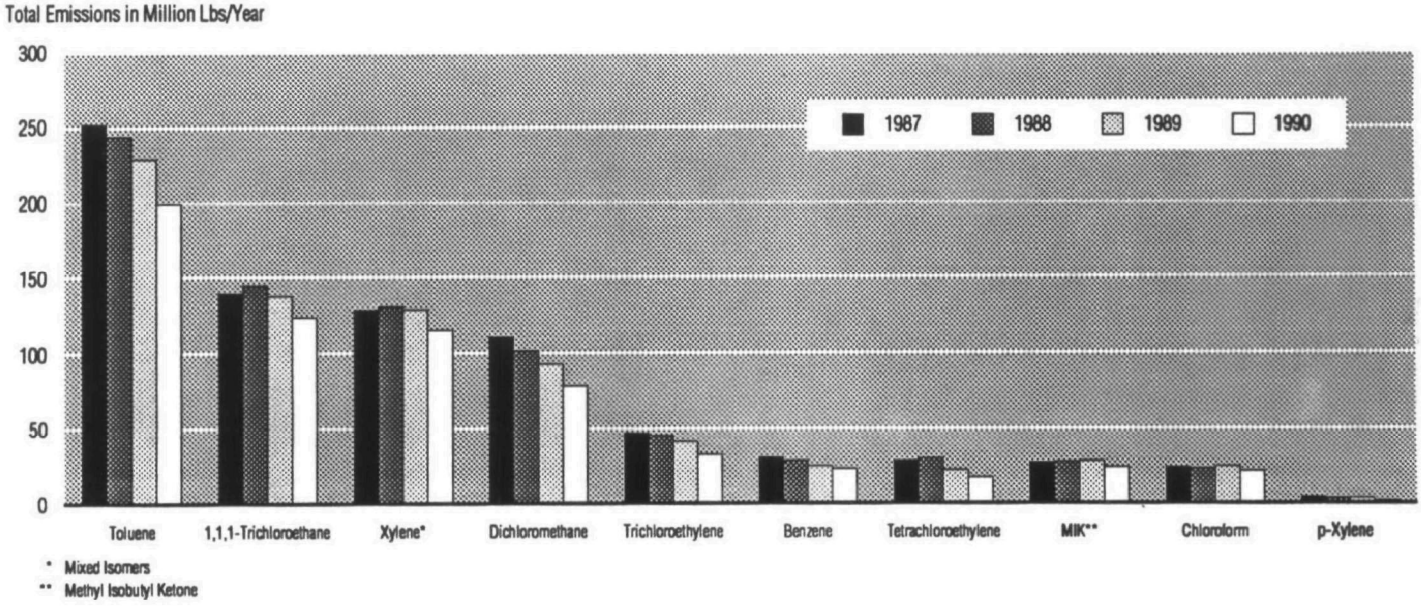
Table 2-7
EPA 33/50 Program Chemicals
— 1987 BASIS —

Chemical	Amount Emitted (lb/yr) 1987	1988	1989	1990	Three Year Change (lb/yr)	Pct
Toluene	251,982,231	243,792,436	229,026,603	199,512,073	-52,470,158	-20.82
1,1,1-Trichloroethane	140,163,526	145,564,167	138,238,987	124,183,587	-15,979,939	-11.40
Methyl Ethyl Ketone	138,251,483	118,087,703	117,346,230	105,467,819	-32,783,664	31.08
Xylene (Mixed Isomers)	128,876,481	131,418,148	129,162,509	115,499,330	-13,377,151	-10.38
Dichloromethane	110,954,722	102,158,498	93,270,030	79,038,482	-31,916,240	-28.77
Trichloroethylene	47,484,928	45,722,543	41,277,631	32,616,922	-14,868,006	-31.31
Benzene	30,633,229	28,548,426	25,070,583	23,226,988	-7,406,241	-24.18
Tetrachloroethylene	28,769,776	29,736,927	22,362,024	17,574,604	-11,195,172	-38.91
Methyl Isobutyl Ketone	27,189,624	27,905,037	28,030,679	24,025,550	-3,164,074	-11.64
Chloroform	24,034,760	23,256,805	24,438,028	21,549,202	-2,485,558	-10.34
p-Xylene	7,437,936	6,003,302	4,933,722	4,752,672	-2,685,264	-36.10
Carbon Tetrachloride	4,334,230	3,640,586	3,290,440	1,646,835	-2,687,395	-62.00
o-Xylene	3,608,212	2,064,641	1,808,306	1,904,571	-1,703,641	-47.22
m-Xylene	2,995,819	2,194,146	1,200,771	1,202,284	-1,793,535	-59.87
Cyanide Compounds	1,402,741	878,066	814,061	1,127,652	-275,089	-24.39
Lead	1,233,373	961,328	756,502	769,669	-463,704	-37.60
Lead Compounds	1,104,599	1,379,549	1,326,054	1,515,828	411,229	27.13
Chromium Compounds	730,014	684,338	1,250,261	570,905	-159,109	-27.87
Nickel	392,126	244,249	253,515	289,245	-102,881	-26.24
Chromium	334,776	367,520	265,936	175,764	-159,012	-47.50
Nickel Compounds	296,704	221,064	202,245	187,392	-109,312	-58.33
Cadmium Compounds	151,547	86,443	73,745	84,596	-66,951	-79.14
Mercury	23,158	23,145	24,007	21,639	-1,519	-6.56
Cadmium	11,021	15,472	22,414	6,721	-4,300	-39.02
Mercury Compounds	1,586	1,616	3,254	898	-688	-76.62

33/50 Program Chemicals

Under a voluntary program, the EPA Administrator has asked industry to reduce the emissions of seventeen chemicals, mostly solvents and metals. Figure 2-7 shows the reported emissions for the top ten chemicals between 1987 and 1990. Table 2-7 lists the reported emissions for all of the chemicals covered by the program. Under this program, companies were asked to reduce their emissions of these chemicals 33% by 1992 and 50% by 1995. Again, the data presented represents a baseline of emissions rather than the impact of the program since significant results are not expected before 1992.

Figure 2-7
Top 10 EPA 33/50 Program Chemicals
— 1987 BASIS —



* Mixed Isomers
** Methyl Isobutyl Ketone

High Risk/Early Reduction

Figure 2-8 and Table 2-8 show emissions of those HAPs that EPA has preliminarily identified as high risk substances for the purpose of theEarly Reduction Program. These high risk substances receive a higher weighting in determining whether a source has met its 90% reduction target. The 35 high risk substances are listed in Table 4-7. Like the other chemical groupings discussed in this report, there are no regulations, specific to this group, currently in place that require industry to reduce their emissions. As such this data serves as a baseline for evaluating program progress in the future.

Table 2-8
Top 20 High Risk/Early Reduction Chemicals
— 1987 BASIS —

	Amount Emitted (lb/yr)				Three Year Change	
Chemical	1987	1988	1989	1990	(lb/yr)	Pct
Benzene	30,633,229	28,548,426	25,070,583	23,226,988	-7,406,241	-24.18
1,3-Butadiene	9,383,347	6,622,693	5,664,918	4,955,664	-4,427,683	-47.19
Acrylonitrile	5,380,510	4,182,336	4,106,690	2,877,318	-2,503,192	-46.52
Ethylene Oxide	4,183,635	3,747,481	2,646,726	1,967,894	-2,215,741	-52.96
Vinyl Chloride	1,568,004	1,292,466	1,132,240	1,064,839	-503,165	-32.09
Acrylic Acid	821,770	784,265	348,271	396,046	-425,724	-51.81
Methylenebis (Phenylisocyanate)	792,813	144,864	183,698	280,237	-512,576	-64.65
Chromium Compounds	730,014	684,338	1,250,261	570,905	-159,109	-21.80
Toluene-2,4-Diisocyanate	611,310	141,009	71,133	33,062	-578,248	-94.59
Vinylidene Chloride	465,989	295,745	220,042	301,292	-164,697	-35.34
Chloroprene	282,135	423,513	303,087	172,692	-109,443	-38.79
Arsenic Compounds	270,853	198,821	154,185	154,516	-116,337	-42.95
Cadmium Compounds	151,547	86,443	73,745	84,596	-66,951	-44.18
Methyl Isocyanate	143,237	9,425	13,948	14,123	-129,114	-90.14
1,1,2,2-Tetrachloroethane	103,740	43,685	34,778	34,452	-69,288	-66.79
Phosgene	83,534	21,532	8,261	4,853	-78,681	-94.19
1,2-Dibromoethane	65,119	63,277	59,167	57,830	-7,289	-11.19
Acrolein	48,654	33,596	20,075	22,017	-26,637	-54.75
Asbestos (Friable)	42,266	35,225	28,607	13,313	-28,953	-68.50
Dibenzofuran	36,158	36,227	41,140	26,468	-9,690	-26.80

Figure 2-8
Top 10 High Risk/Early Reduction Chemicals
— 1987 BASIS —

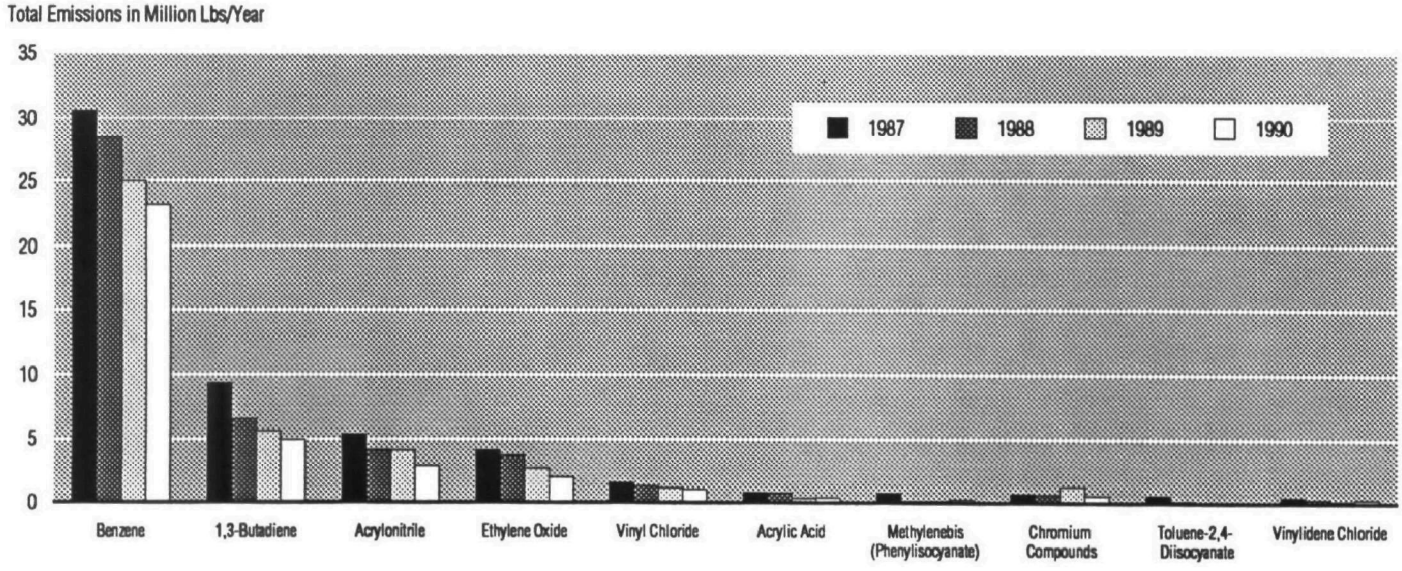


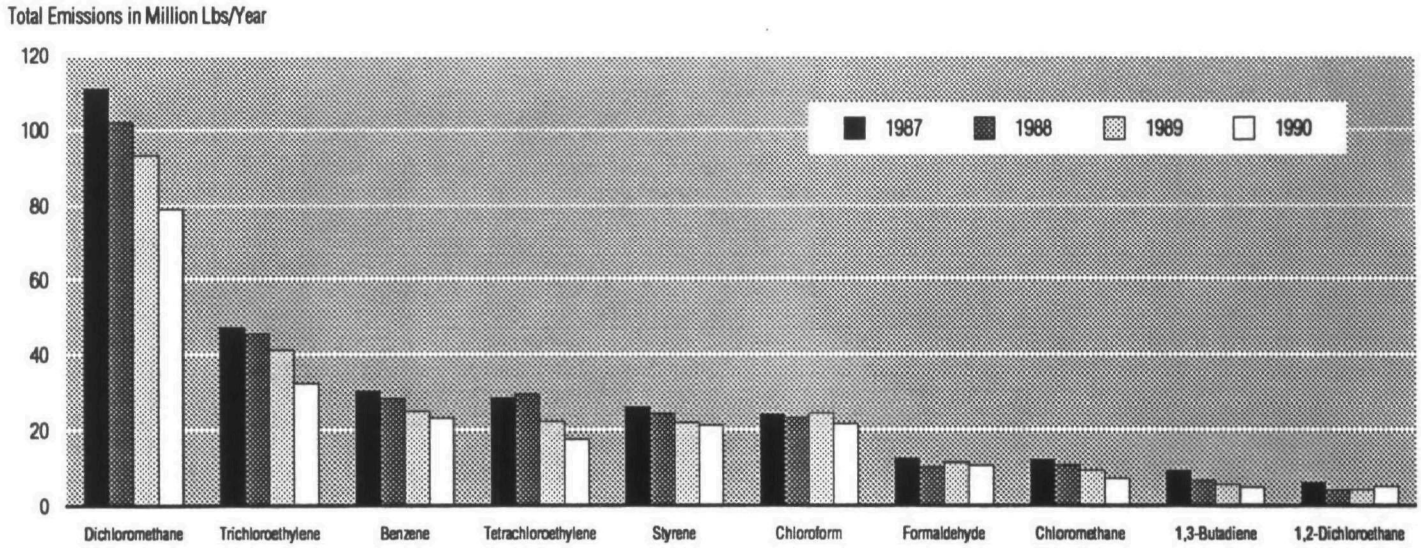
Table 2-9
Top 20 Carcinogenic Chemicals in TRI Database
— 1987 BASIS —

Chemical	Amount Emitted (lb/yr) 1987	1988	1989	1990	Three Year Change (lb/yr)	Pct
Dichloromethane	110,954,722	102,158,498	93,270,030	79,038,482	-31,916,240	-28.77
Trichloroethylene	47,484,928	45,722,543	41,277,631	32,616,922	-14,868,006	-31.31
Benzene	30,633,229	28,548,426	25,070,583	23,226,988	-7,406,241	-24.18
Tetrachloroethylene	28,769,776	29,736,927	22,362,024	17,574,604	-11,195,172	-38.91
Styrene	26,438,085	24,556,434	21,937,401	21,164,893	-5,273,192	-19.95
Chloroform	24,034,760	23,256,805	24,438,028	21,549,202	-2,485,558	-10.34
Formaldehyde	12,359,020	10,338,268	11,398,634	10,664,037	-1,694,983	-13.71
Chloromethane	12,068,836	10,837,852	9,318,569	7,326,285	-4,742,551	-39.30
1,3-Butadiene	9,383,347	6,622,693	5,664,918	4,955,664	-4,427,683	-47.19
1,2-Dichloroethane	6,196,495	4,280,244	4,107,894	5,059,732	-1,136,763	-18.35
Acrylonitrile	5,380,510	4,182,336	4,106,690	2,877,318	-2,503,192	-46.52
Carbon Tetrachloride	4,334,230	3,640,586	3,290,440	1,646,835	-2,687,395	-62.00
Ethylene Oxide	4,183,635	3,747,481	2,646,726	1,967,894	-2,215,741	-52.96
1,1,2-Trichloroethane	1,975,207	1,710,892	742,098	579,198	-1,396,009	-70.68
Vinyl Chloride	1,568,004	1,292,466	1,132,240	1,064,839	-503,165	-32.09
Urethane	796,000	144,373	3,450	3,310	-792,690	-99.58
Vinylidene Chloride	465,989	295,745	220,042	301,292	-164,697	-35.34
Epichlorohydrin	420,988	464,009	471,099	383,522	-37,466	-8.90
Chromium	334,776	367,520	265,936	175,764	-159,012	-47.50
2-Nitropropane	275,202	274,360	225,222	16,258	-258,944	-94.09

Carcinogens

Fifty three of the chemicals in the TRI database are known or suspected human carcinogens. Figure 2-9 and Table 2-9 summarize the carcinogens emitted in the greatest amount. There is a clear downward trend of carcinogen emissions over the four year period. Since many of these chemicals are or will be covered by specific EPA programs designed to reduce chemical emissions, further reductions are expected in the future.

Figure 2-9
Top 10 Carcinogenic Chemicals in TRI Database
—1987 BASIS —



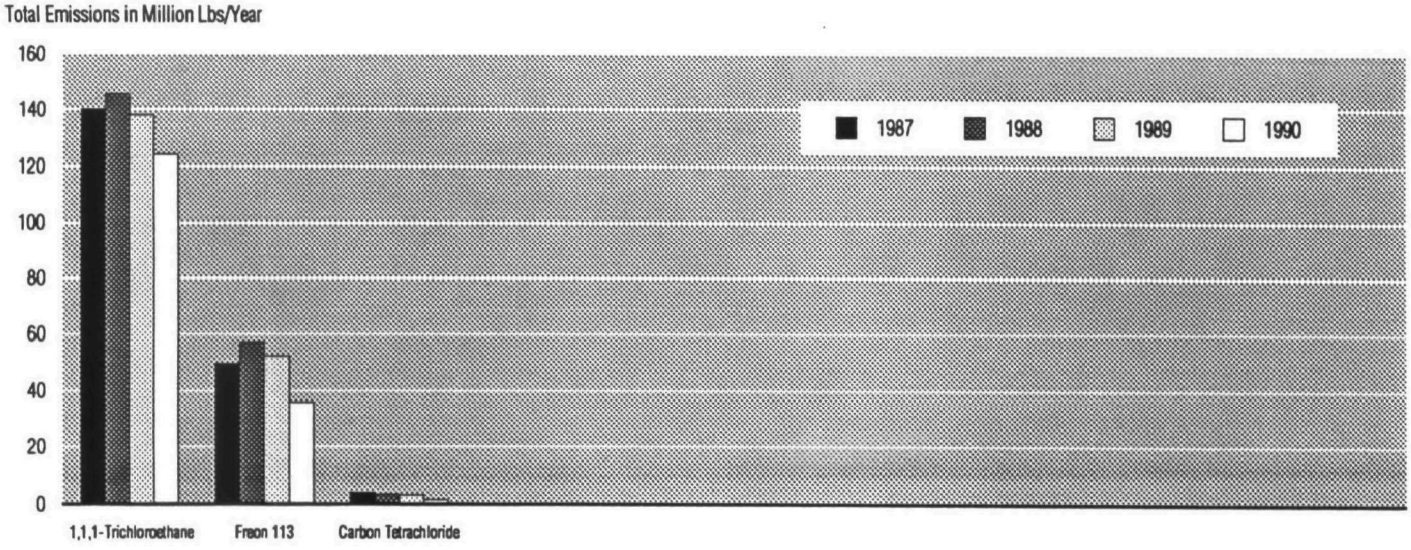
Ozone Depleting Chemicals

The TRI database covers three substances that react with stratospheric ozone to contribute to destruction of the ozone layer: carbon tetrachloride, 1,1,1 trichloroethane, and freon 113. Figure 2-10 and Table 2-10 show the reported emissions of these substances. Several other chemicals, which are known to attack the ozone layer, such as halons and other freons, are not covered by the TRI database. Several of these additional substances were added to the TRI reporting list after the 1989 reports were submitted. The first reports of these additional chemical will appear in the 1991 data. Production and use of these substances are being phased out by Executive Order and as a result of regulations from the Clean Air Act. The 1987 to 1990 data serves as a baseline against which future emission reductions can be measured.

Table 2-10
Ozone Depleting Chemicals In TRI Database
— 1987 BASIS —

Chemical	Amount Emitted (lb/yr) 1987	1988	1989	1990	Three Year Change (lb/yr)	Pct
1,1,1-Trichloroethane	140,163,526	145,564,167	138,238,987	124,183,587	-15,979,939	-11.40
Freon 113	49,479,901	57,244,514	52,248,201	35,911,342	-13,568,559	-27.42
Carbon Tetrachloride	4,334,230	3,640,586	3,290,440	1,646,835	-2,687,395	-62.00

Figure 2-10
Ozone Depleting Chemicals In TRI Database
— 1987 BASIS —



87-90

SECTION 3

Annual Toxic Air Emissions

This section summarizes the TRI reported emissions for 1990, 1989, 1988, and 1987. The same data is reported for each year for easy reference and comparison. As noted in Section 1, the Basic data set was used for the analysis in this section. This is different from the Linked set used for Section 2 analysis.

Emission "hot spots" are reported first by EPA region, followed by successively smaller geographic areas; states, three-digit ZIP Code areas, and county. Data on emissions by industry type (SIC Code) is presented next. Emissions of groups of individual chemicals also are shown. These groups are intended to highlight targets of EPA programs. Special attention has been paid to the 189 hazardous air pollutants listed in Title III of the Clean Air Act Amendments of 1990. (Only 172 of the 189 listed chemicals are covered by the TRI data. Fewer than 172 HAPs are listed in these tables because no air emissions were reported for approximately 25 chemicals each year.). Each chart or table is accompanied by a table in the appendix providing additional detail.

1990 EMISSIONS

EPA Regions

Figure 3-1 and Table 3-1 break out the reported emissions by EPA region. Nationally, 2.2 billion pounds of toxics were emitted by 20,270 facilities. Regions 4, 5, and 6 reported the greatest emissions with 28%, 22%, and 15% of the total respectively. These three regions also had the greatest number of facilities reporting, although Region 6 was only slightly ahead of Regions 2, 3, and 9 in number of facilities.

Figure 3-1
EPA Regional Hot Spots
— 1990 —

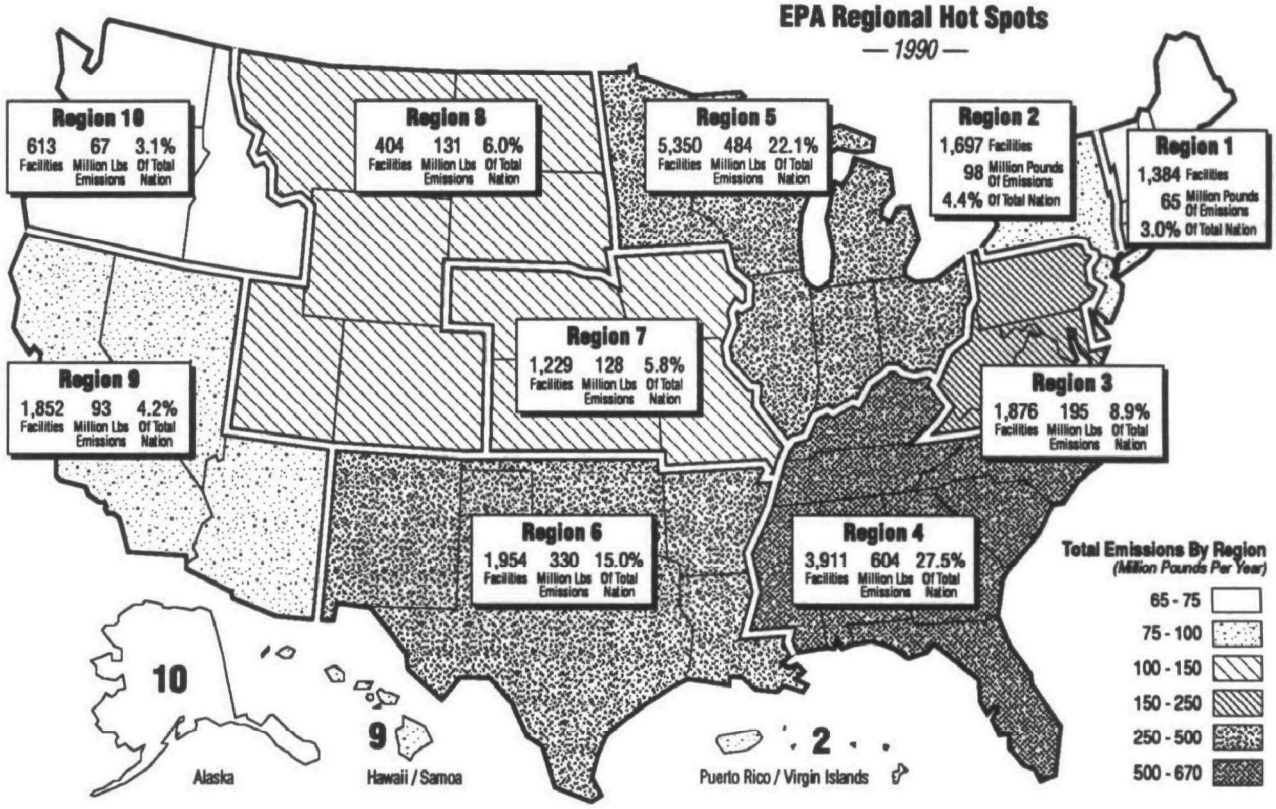


Table 3-1
Regional Hot Spots
— 1990 EPA REGIONS —

EPA Region	No. Of Release Reports	No. Of Facilities	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	Region % Of Total TRI Emissions
04	12,272	3,911	451,979,692	604,078,286	27.52
05	17,882	5,350	377,044,718	484,261,829	22.06
06	8,125	1,954	165,785,506	329,950,107	15.03
03	6,292	1,876	146,070,884	194,601,413	8.87
08	1,220	404	120,591,961	130,841,870	5.96
07	3,900	1,229	89,394,965	127,925,832	5.83
02	5,224	1,697	73,735,183	97,668,390	4.45
09	5,270	1,852	64,451,597	93,125,814	4.24
10	1,816	613	36,369,269	67,120,142	3.06
01	3,675	1,384	50,291,721	65,348,914	2.98
	65,676	20,270	1,575,715,496	2,194,922,597	100.00

1990 EMISSIONS

States

Toxic air emissions reported in the states are shown in Figure 3-2 and Table 3-2. Generally the states reporting the greatest emissions are the industrial states in the Northeast, Great Lakes, Middle Atlantic, and Gulf Coast, along with California. The one exception is Utah, which is dominated by one facility with very large emissions. Texas ranked first with reported emissions of 162 million pounds, equivalent to 7% of the national total.

Figure 3-2
Toxic Air Emissions By State
— 1990 —

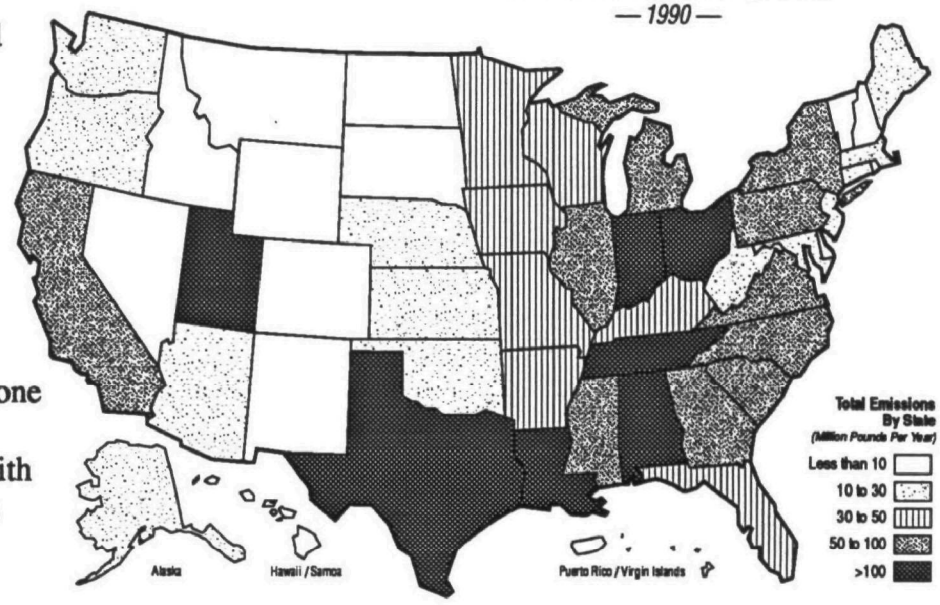


Table 3-2
State Total Emissions
— 1990 —

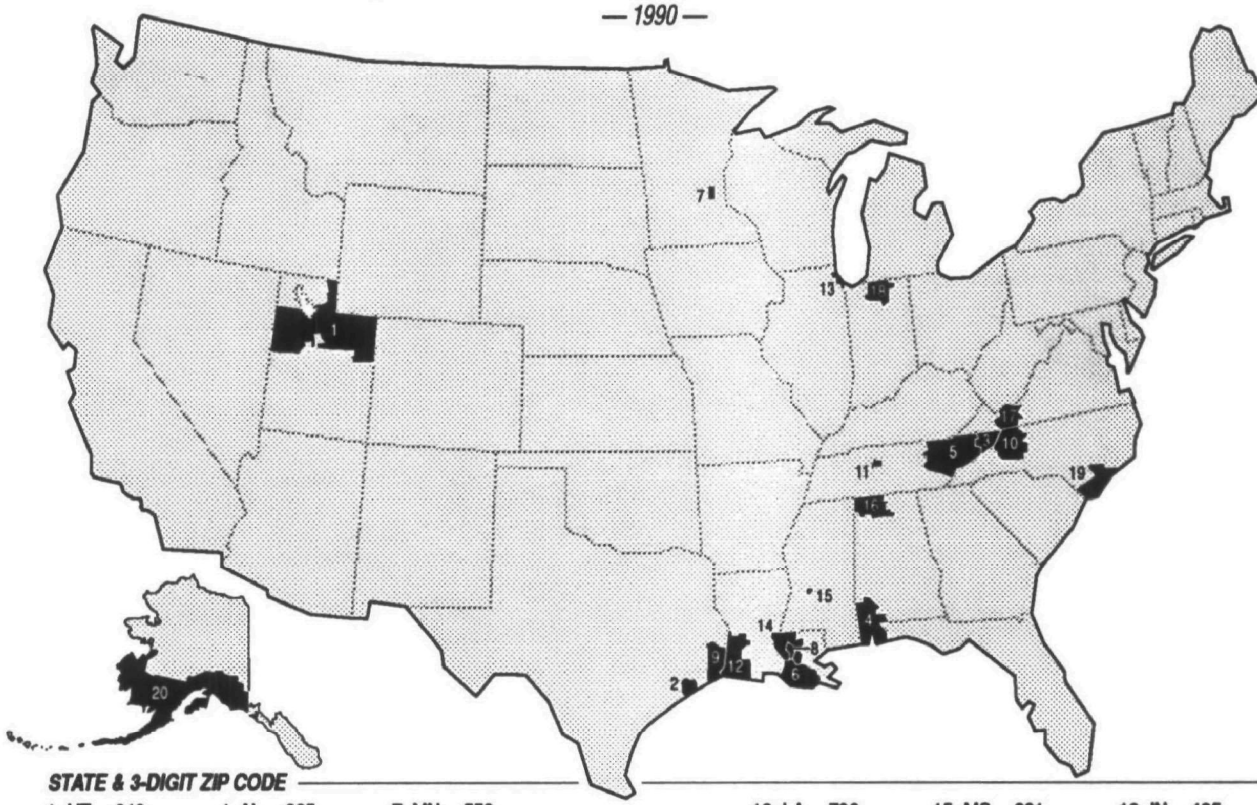
State	No. Of Release Reports	No. Of Facilities	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	State % Of Total TRI Emissions
AK	44	7	1,258,970	14,974,077	0.68
AL	1,423	404	91,462,935	100,003,159	4.56
AR	979	329	22,229,372	31,198,124	1.42
AS	2	2	0	19,300	0.00
AZ	452	161	6,826,457	12,982,871	0.59
CA	4,683	1,640	56,627,380	78,720,752	3.59
CO	463	168	4,317,672	6,720,962	0.31
CT	1,067	392	14,502,098	17,163,546	0.78
DE	234	64	5,348,155	6,017,850	0.27
FL	1,214	471	20,179,293	45,146,178	2.06
GA	1,847	622	57,094,042	72,373,750	3.30
HI	57	12	395,800	680,611	0.03
IA	952	332	24,692,826	38,089,638	1.74
ID	144	48	2,163,610	5,684,535	0.26
IL	4,051	1,220	68,051,331	87,820,948	4.00
IN	2,713	808	84,601,343	107,618,816	4.90
KS	739	226	17,806,915	28,818,281	1.31
KY	1,334	348	32,764,624	40,537,717	1.85
LA	1,441	266	42,444,330	105,855,063	4.82
MA	1,513	566	15,910,439	20,472,219	0.93
MD	623	193	10,895,032	12,907,327	0.59
ME	305	97	9,352,842	13,696,471	0.62
MI	2,964	815	63,784,825	84,475,079	3.85
MN	1,163	432	43,124,619	49,643,597	2.26
MO	1,790	515	35,582,816	44,258,618	2.02
MS	895	264	37,795,682	55,446,967	2.53
MT	113	25	1,748,256	2,476,359	0.11
NC	2,428	846	70,146,608	86,595,680	3.95
ND	75	28	1,561,291	2,006,352	0.09
NE	419	156	11,312,408	16,759,295	0.76
NH	311	132	5,690,259	7,937,403	0.36
NJ	2,449	732	17,454,952	24,304,137	1.11
NM	146	41	936,351	2,465,120	0.11
NV	76	37	601,960	722,280	0.03
NY	2,322	815	45,809,849	56,886,344	2.59
OH	4,887	1,411	84,313,441	113,594,102	5.18
OK	656	217	14,426,664	28,046,095	1.28
OR	679	230	13,353,144	18,313,715	0.83
PA	3,487	1,079	55,755,117	72,487,569	3.30
PR	432	149	9,484,611	15,265,444	0.70
RI	389	160	4,110,106	5,197,873	0.24
SC	1,458	408	48,778,408	64,757,916	2.95
SD	79	46	2,046,948	2,884,555	0.13
TN	1,673	548	93,758,100	139,216,919	6.34
TX	4,903	1,101	85,748,789	162,385,705	7.40
UT	394	115	110,211,863	112,435,864	5.12
VA	1,379	424	53,166,029	75,291,739	3.43
VI	21	1	985,771	1,212,465	0.06
VT	90	37	725,977	881,402	0.04
WA	949	328	19,593,545	28,147,815	1.28
WI	2,104	664	33,169,159	41,109,287	1.87
WV	569	116	20,906,551	27,896,928	1.27
WY	96	22	705,931	4,317,778	0.20
	65,676	20,270	1,575,715,496	2,194,922,597	100.00

1990 EMISSIONS

Three-Digit ZIP Code Areas

Since ZIP Codes are assigned generally according to population, three-digit ZIP Code areas represent convenient geographic areas smaller than states. Figure 3-3 and Table 3-3 show the top 20 ZIP Code areas. Area 840 in Utah reported the greatest emissions with nearly 5% of the national total. The top 20 areas together reported 25% of the national total.

Figure 3-3
20 ZIP Code Areas With Greatest Toxic Air Emissions
— 1990 —



STATE & 3-DIGIT ZIP CODE

1. UT... 840	4. AL... 365	7. MN... 553		12. LA... 706	15. MS... 391	18. IN... 465
2. TX... 775	5. TN... 377	8. LA... 700	10. NC... 286	13. IL... 606	16. AL... 356	19. NC... 284
3. TN... 376	6. LA... 703	9. TX... 776	11. TN... 371	14. LA... 707	17. VA... 241	20. AK... 996

Table 3-3
3-Digit ZIP Codes
— 1990 —

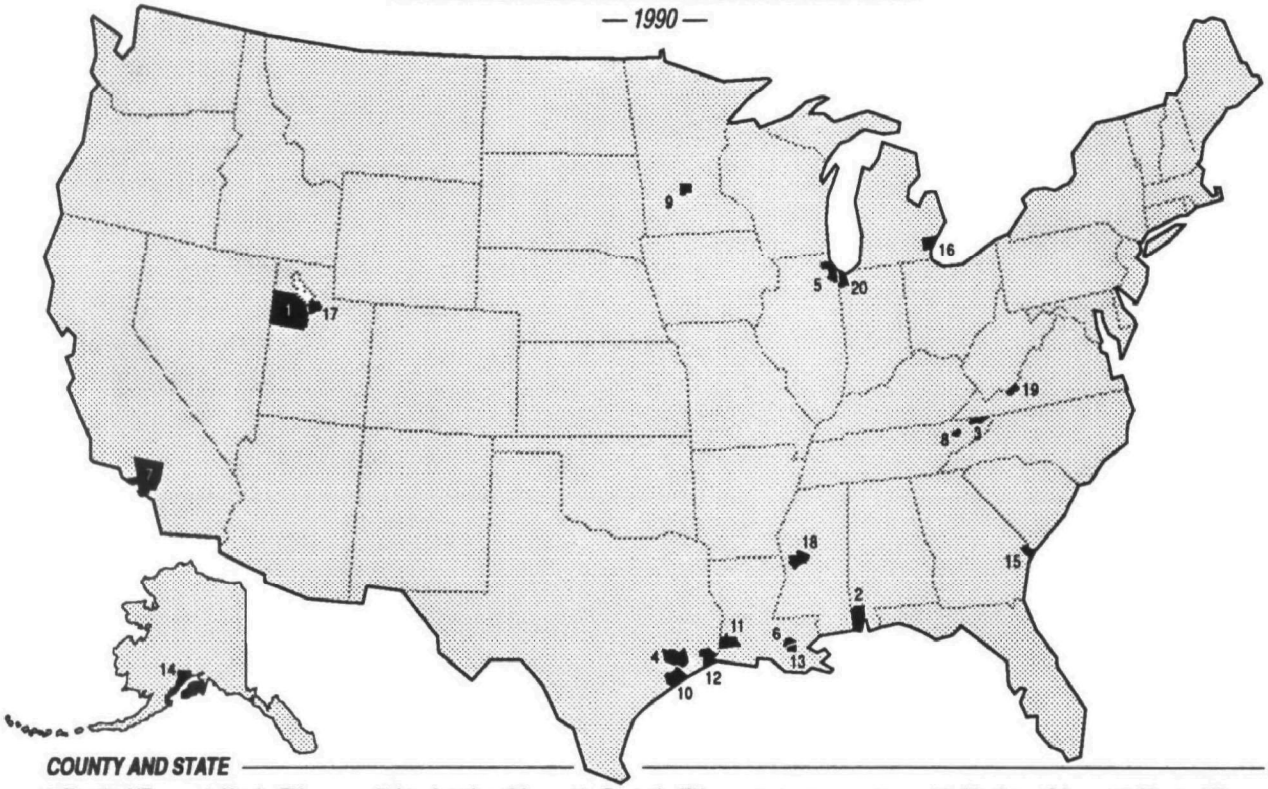
3-Digit ZIP Code	State	No. Of Release Reports	No. Of Facilities	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	ZIP % Of Total TRI Emissions
840	UT	163	43	99,536,894	100,849,411	4.59
775	TX	1,234	137	25,902,429	57,469,488	2.62
376	TN	158	32	18,697,209	53,092,595	2.42
365	AL	191	31	50,256,060	51,037,042	2.33
377	TN	89	36	26,827,726	27,019,504	1.23
703	LA	70	14	1,055,326	23,143,897	1.05
553	MN	189	69	21,554,465	22,511,087	1.03
700	LA	328	53	4,412,128	21,760,019	0.99
776	TX	246	28	8,957,230	20,150,787	0.92
286	NC	451	144	15,420,673	18,602,667	0.85
371	TN	181	50	16,527,463	18,117,226	0.83
706	LA	203	28	6,470,824	16,862,650	0.77
606	IL	904	285	12,679,529	16,822,780	0.77
707	LA	352	38	9,647,290	16,821,716	0.77
391	MS	49	21	3,101,298	16,371,227	0.75
356	AL	199	49	13,921,610	15,956,127	0.73
241	VA	117	33	3,624,169	15,762,380	0.72
465	IN	352	137	13,275,575	15,376,861	0.70
284	NC	106	27	13,043,199	14,305,755	0.65
996	AK	22	4	327,394	13,835,898	0.63
		5,604	1,259	365,238,491	555,869,117	25.33

1990 EMISSIONS

Counties

Figure 3-4 and Table 3-4 show the 20 counties with the greatest emissions. Again, Utah had the county reporting the greatest emissions. Together the top 20 counties reported 23% of the total national emissions. Four of these counties included more than 100 facilities while six had fewer than ten. The distribution of counties reporting the largest emissions generally reflects the same geographic concentration as the state and ZIP Code areas, with the large emission reports coming from the industrial areas.

Figure 3-4
20 Counties With Greatest Toxic Air Emissions
— 1990 —



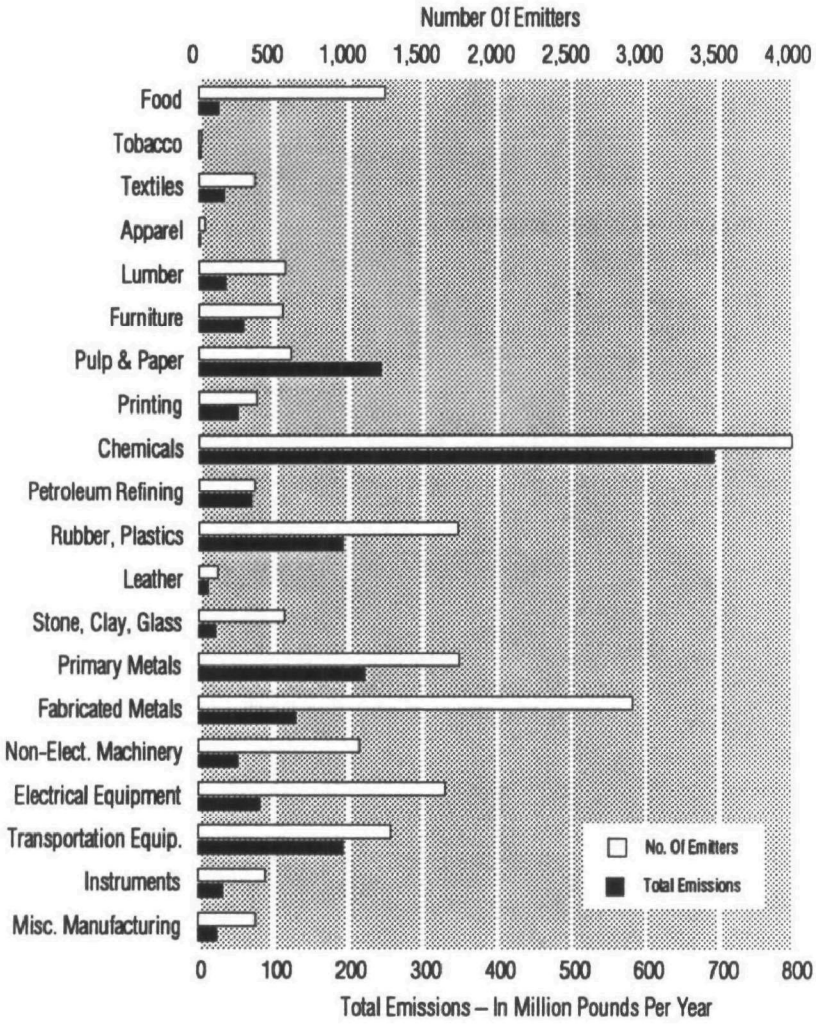
COUNTY AND STATE

1. Tooele, UT
2. Mobile, AL
3. Sullivan, TN
4. Harris, TX
5. Cook, IL
6. Ascension, LA
7. Los Angeles, CA
8. Hamblen, TN
9. McLeod, MN
10. Brazoria, TX
11. Calcasieu, LA
12. Jefferson, TX
13. St. James, LA
14. Kenai-Cook Inlet, AK
15. Chatham, GA
16. Wayne, MI
17. Salt Lake, UT
18. Yazoo, MS
19. Giles, VA
20. Lake, IN

Table 3-4
Counties
— 1990 —

County	State	No. Of Release Reports	No. Of Facilities	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	County % Of Total TRI Emissions
Tooele	Ut	8	4	95,211,736	95,211,991	4.34
Mobile	Al	205	40	49,891,576	50,811,215	2.31
Sullivan	TN	102	14	5,597,485	37,869,166	1.73
Harris	TX	1,348	234	20,723,405	37,102,085	1.69
Cook	IL	1,800	551	26,669,597	33,785,348	1.54
Ascension	LA	146	13	4,142,097	30,789,313	1.40
Los Angeles	CA	1,900	634	23,825,820	30,547,084	1.39
Hamblen	TN	60	21	24,814,689	25,102,702	1.14
Mc Leod	MN	35	8	19,816,689	20,221,634	0.92
Brazoria	TX	232	22	7,257,824	16,945,486	0.77
Calcasieu	LA	181	22	5,740,333	16,022,184	0.73
Jefferson	TX	298	31	7,250,901	15,853,701	0.72
St James	LA	38	7	246,853	15,106,674	0.69
Kenai Peninsula	AK	21	3	327,394	13,835,648	0.63
Chatham	GA	89	24	11,050,637	13,368,437	0.61
Wayne	MI	608	145	10,112,592	12,878,736	0.59
Salt Lake	UT	186	48	11,089,889	12,625,358	0.58
Yazoo	MS	2	1	3,800	12,287,721	0.56
Giles	VA	8	1	1,038,003	11,608,003	0.53
Lake	IN	225	42	9,908,093	11,431,419	0.52
		7,492	1,865	334,719,413	513,403,905	23.39

Figure 3-5
Toxic Air Emissions
— BY U.S. INDUSTRY - 1990 —



1990 EMISSIONS

Industries By 2-Digit SIC Code

As shown in Figure 3-5 and Table 3-5, the chemicals industry is by far the largest industrial emitter with nearly one third of total national emissions. Together with the Pulp & Paper and Primary Metals industries, three industries reported more than 50% of the total. Figure 3-5 shows a comparison of total emissions with number of facilities. This shows that the Pulp & Paper facilities generally report high emissions per facility (almost 400,000 pounds per facility) compared to

Table 3-5
Air Emissions By U.S. Industry
— 1990 —

2-Digit SIC Code	U.S. Industry	No. Of Emitters	Total Emissions (lb/yr)	Industry % Of Total TRI Emissions
20	Food	1,245	26,825,739	1.22
21	Tobacco	18	2,475,256	0.11
22	Textiles	370	33,965,968	1.55
23	Apparel	38	1,600,203	0.07
24	Lumber	578	35,331,018	1.61
25	Furniture	559	60,050,069	2.74
26	Pulp & Paper	618	243,894,677	11.11
27	Printing	382	52,033,362	2.37
28	Chemicals	3,988	691,856,635	31.52
29	Petroleum Refining	368	70,738,380	3.22
30	Rubber, Plastics	1,737	192,270,498	8.76
31	Leather	124	11,845,521	0.54
32	Stone, Clay, Glass	573	21,844,026	1.00
33	Primary Metals	1,746	221,864,484	10.11
34	Fabricated Metals	2,911	129,161,415	5.88
35	Non-Elect. Machinery	1,075	52,614,164	2.40
36	Electrical Equipment	1,649	81,808,173	3.73
37	Transport. Equipment	1,285	193,232,254	8.80
38	Instruments	445	32,456,885	1.48
39	Misc. Manufacturing	381	24,442,174	1.11

fabricated metals, for example, which report a relatively small amount per facility (44,000 pounds per facility).

Figure 3-6 and Table 3-6 show the number of release reports submitted to EPA for TRI reporting. Again the chemicals industry has nearly one third of the national total. Each report represents one chemical released at a single facility. Because the chemicals industry is such a large part of the total, additional details on the industry are presented below.

Figure 3-6
Number Of Release Reports
— BY U.S. INDUSTRY - 1990 —

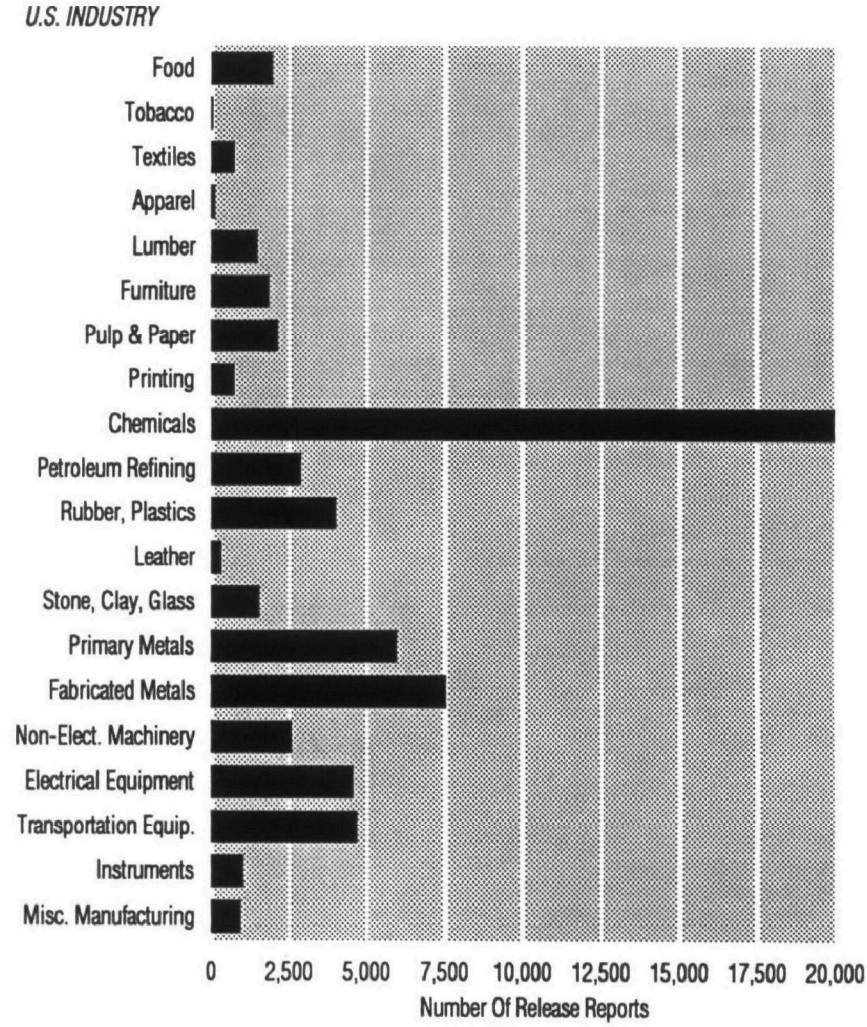
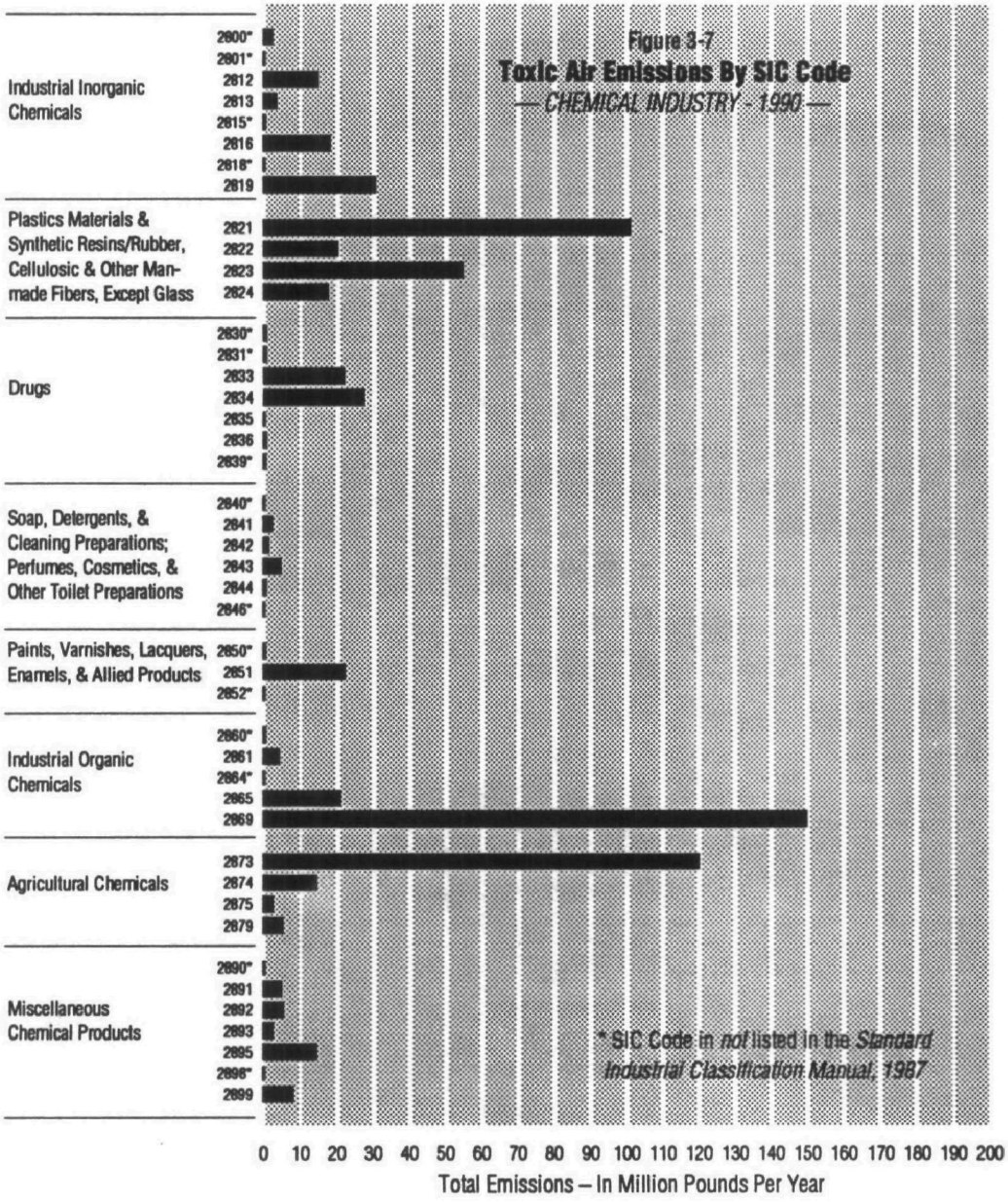


Table 3-6
No. of Release Reports by U.S. Industry
— 1990 —

2-Digit SIC Code	U.S. Industry	No. Of Release Reports	Industry % Of Total TRI Reports
20	Food	1,963	1.22
21	Tobacco	24	0.11
22	Textiles	721	1.55
23	Apparel	90	0.07
24	Lumber	1,459	1.61
25	Furniture	1,842	2.74
26	Pulp & Paper	2,129	11.11
27	Printing	723	2.37
28	Chemicals	19,948	31.52
29	Petroleum Refining	2,868	3.22
30	Rubber, Plastics	3,996	8.76
31	Leather	302	0.54
32	Stone, Clay, Glass	1,538	1.00
33	Primary Metals	5,969	10.11
34	Fabricated Metals	7,511	5.88
35	Non-Elect. Machinery	2,573	2.40
36	Electrical Equipment	4,561	3.73
37	Transport. Equipment	4,686	8.80
38	Instruments	1,026	1.48
39	Misc. Manufacturing	942	1.11



1990 EMISSIONS

Industries By 3 And 4-Digit SIC Code

To subdivide the industrial sector further, Tables 3-7 and 3-8 present the top industries by 3-digit SIC codes and 4-digit SIC codes respectively. The top ten industries as shown in Table 3-7 represent more than 50% of total emissions. By breaking it down one level further, the top ten 4-digit industries, as shown in Table 3-8, reported 37% of the total.

Figure 3-7 shows the toxic air emissions reported by all of the 4-digit chemical industries. Plastic materials, industrial organic chemicals, and agricultural chemicals are the segments of the industry reporting the majority of the industry's emissions.

Table 3-7

Top Industrial Emitters - 1990

3-DIGIT SIC CODES

3-Digit SIC Rank	Code	U.S. Industry	Total Emissions (lb/yr)	Industry % Of 2-Digit SIC Total	Industry % Of Total TRI Emissions
1	282	Plastics Materials & Synthetic Resins, Synthetic Rubber, Cellulosic & Other Manmade Fibers, Except Glass	193,055,771	27.90	8.80
2	286	Industrial Organic Chemicals	174,560,422	25.23	7.95
3	287	Agricultural Chemicals	141,278,647	20.42	6.44
4	333	Primary Smelting & Refining of Nonferrous Metals	116,063,690	52.31	5.29
5	308	Miscellaneous Plastics Products	114,405,418	59.50	5.21
6	371	Motor Vehicles & Motor Vehicle Equipment	108,166,438	55.98	4.93
7	261	Pulp Mills	80,195,837	32.88	3.65
8	291	Petroleum Refining	66,770,890	94.39	3.04
9	281	Industrial Inorganic Chemicals	66,563,751	9.62	3.03
10	267	Converted Paper & Paperboard Products, Except Containers & Boxes	54,084,477	22.18	2.46
			1,115,145,341		50.81

Table 3-8

Top Industrial Emitters - 1990

4-DIGIT SIC CODES

4-Digit SIC Rank	Code	U.S. Industry	Total Emissions (lb/yr)	Industry % Of 2-Digit SIC Code	SIC % Of Total TRI Emissions
1	2869	Industrial Organic Chemicals, Not Elsewhere Classified	149,570,880	21.62	6.81
2	2873	Nitrogenous Fertilizers	119,866,933	17.33	5.46
3	3339	Primary Smelting & Refining of Nonferrous Metals, Except Copper & Aluminum	101,574,712	45.78	4.63
4	2821	Plastics Materials, Synthetic Resins, & Nonvulcanizable Elastomers	100,945,869	14.59	4.60
5	2611	Pulp Mills	79,159,992	32.46	3.61
6	2911	Petroleum Refining	66,740,635	94.35	3.04
7	3711	Motor Vehicles & Passenger Car Bodies	56,399,188	29.19	2.57
8	2823	Cellulosic Manmade Fibers	54,666,806	7.90	2.49
9	2621	Paper Mills	49,492,015	20.29	2.25
10	3089	Plastics Products, Not Elsewhere Classified	42,963,419	22.35	1.96
			821,380,449		37.42

Table 3-9
Chemicals Emitted in the Greatest Amount
— 1990 —

Chemical	No. Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions	Cumulative Chemical %
Toluene	3,943	233,183,332	10.62	10.62
Ammonia	2,927	208,585,542	9.50	20.12
Methanol	2,427	181,736,117	8.28	28.40
Acetone	2,683	180,207,465	8.21	36.61
1,1,1-Trichloroethane	3,854	161,300,622	7.35	43.96
Xylene (Mixed Isomers)	3,488	139,944,280	6.38	50.34
Methyl Ethyl Ketone	2,494	121,284,483	5.53	55.87
Chlorine	1,310	104,888,670	4.78	60.65
Carbon Disulfide	79	98,222,679	4.47	65.12
Dichloromethane	1,333	92,469,428	4.21	69.33
Hydrochloric Acid	2,495	73,444,872	3.35	72.68
Glycol Ethers	1,704	46,896,269	2.14	74.82
Freon 113	1,293	45,208,966	2.06	76.88
Ethylene	263	38,543,316	1.76	78.64
Trichloroethylene	741	37,849,923	1.72	80.36
n-Butyl Alcohol	1,185	32,642,953	1.49	81.85
Styrene	1,343	31,630,955	1.44	83.29
Methyl Isobutyl Ketone	1,061	27,311,372	1.24	84.53
Benzene	484	24,013,998	1.09	85.62
Sulfuric Acid	3,091	23,553,119	1.07	86.69
		1,902,918,361		86.70

1990 EMISSIONS
Individual Chemicals

Figure 3-8 and Table 3-9 show the individual chemicals emitted in the greatest amount. The 10 top chemicals represent nearly 70% of the total emissions while the 20 top chemicals represent almost 87% of the total. Toluene emissions alone represent more than 10% of the national total.

1990 EMISSIONS
Groups of Chemicals

It is useful to look at groups of chemicals whose emissions are targeted by EPA programs. Several of these programs have just gotten underway or have not yet begun so the effect of the program does not show up in the reported emissions.

Figure 3-8
U.S. Air Toxics Emissions
— 1990 —

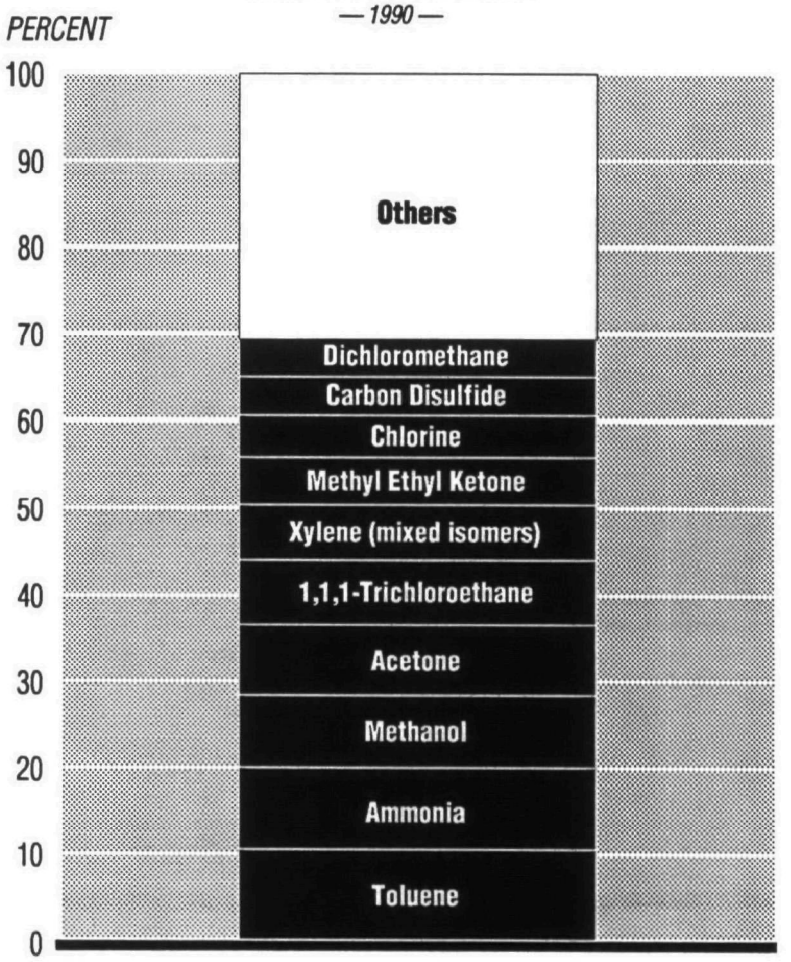


Table 3-10
Major Sources
— 1990 —

The Number of Facilities Emitting
10 TPY of Any One HAP or 25 TPY of Any HAPs

10 Tpy Of One HAP	25 Tpy Of Any HAPs	10 Or 25 Tpy	Total Emissions (lb/yr)	% Of Total HAP Emissions	HAP % Of Total Tri Emissions
6,269	4,230	6,291	1,505,539,990	95 55	71 79

Table 3-11
HAPs Emitted in the Greatest Amount
— 1990 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions	Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions
Toluene	3,943	233,183,332	10 62	Trichloroethylene	741	37,849,923	1 72
Methanol	2,427	181,736,117	8 28	Styrene	1,343	31,630,955	1 44
1,1,1-Trichloroethane	3,854	161,300,622	7 35	Methyl Isobutyl Ketone	1,061	27,311,372	1 24
Xylene (Mixed Isomers)	3,488	139,944,280	6 38	Benzene	484	24,013,998	1 09
Methyl Ethyl Ketone	2,494	121,284,483	5 53	Chloroform	184	21,762,461	0 99
Chlorine	1,310	104,888,670	4 78	Tetrachloroethylene	598	21,624,949	0 99
Carbon Disulfide	79	98,222,679	4 47	Carbonyl Sulfide	36	18,634,864	0 85
Dichloromethane	1,333	92,469,428	4 21	Formaldehyde	807	12,765,498	0 58
Hydrochloric Acid	2,495	73,444,872	3 35	Ethylene Glycol	1,002	9,375,633	0 43
Glycol Ethers	1,704	46,896,269	2 14	Ethylbenzene	761	8,604,518	0 39
						1,466,944,923	66 83

Table 3-12
33/50 Chemicals Emitted In The Greatest Amount
— 1990 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total Tri Emissions	Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total Tri Emissions
Toluene	3,943	233,183,332	10.62	Lead Compounds	647	1,623,709	0 07
1,1,1-Trichloroethane	3,854	161,300,622	7 35	m-Xylene	52	1,202,284	0.05
Xylene (Mixed Isomers)	3,488	139,944,280	6 38	Cyanide Compounds	192	1,138,102	0 05
Methyl Ethyl Ketone	2,494	121,284,483	5 53	Lead	611	860,573	0 04
Dichloromethane	1,333	92,469,428	4 21	Chromium Compounds	999	769,517	0 04
Trichloroethylene	741	37,849,923	1 72	Chromium	843	737,710	0 03
Methyl Isobutyl Ketone	1,061	27,311,372	1 24	Nickel	840	654,459	0 03
Benzene	484	24,013,998	1.09	Nickel Compounds	468	265,421	0 01
Chloroform	184	21,762,461	0.99	Cadmium Compounds	102	90,013	0 00
Tetrachloroethylene	598	21,624,949	0 99	Mercury	34	22,404	0 00
p-Xylene	42	4,752,672	0 22	Cadmium	53	17,037	0 00
o-Xylene	77	1,904,571	0 09	Mercury Compounds	14	1,158	0 00
Carbon Tetrachloride	88	1,671,092	0 08			896,455,570	40 83

Hazardous Air Pollutants – The Clean Air Act Amendments of 1990 listed 189 chemicals for control under Title III. Major sources, defined as facilities that emit 10 tons per year of one HAP or 25 tons of total HAPs, must apply the maximum available control technology. Table 3-10 shows the number of facilities that would qualify as major sources according to the TRI reports (As mentioned earlier, 17 of the 189 HAPs specified in the Clean Air Act are not covered by TRI). These 6,291 facilities, which is equivalent to 31% of the total facilities reporting, represent 96% of the total HAP emissions and 72% of all TRI chemical emissions. Table 3-11 show the twenty HAPs emitted in the greatest amount. They represent two thirds of the total national toxic emissions.

33/50 Chemicals – EPA initiated a voluntary emissions reduction program targeting 17 specific chemicals (or groups of related chemicals in some cases). Reported emissions of these chemicals are shown in Table 3-12. Together this group of chemicals is equivalent to 35% of the total toxic emissions.

High Risk/Early Reduction Chemicals – Table 3-13 lists 20 high risk/early reduction chemicals. These chemicals are considered high risk because of their toxicity. Together they represented less than 2% of the total national toxics emissions in 1990.

Carcinogens – Table 3-14 summarizes the emissions of the 20 carcinogens emitted in the greatest amount as reported to the TRI. Their significance is due to their carcinogenicity. Together the top twenty represent 12% of total emissions with the largest carcinogen, dichloromethane or methylene chloride, just over 4%.

Table 3-13
High Risk/Early Reduction Chemicals Emitted in the Greatest Amount
— 1990 —

Chemical	Total No Of Emitters	Chemical % Emissions (lb/yr)	Of Total TRI Emissions
Benzene	484	24,013,998	1 09
1,3-Buladiene	158	5,037,331	0 23
Acrylonitrile	113	3,147,995	0 14
Ethylene Oxide	179	2,447,494	0 11
Vinyl Chloride	47	1,135,809	0 05
Chromium Compounds	999	769,517	0 04
Chromium	843	737,710	0 03
Methylenebis (Phenylisocyanate)	374	660,906	0 03
Acrylic Acid	163	426,854	0 02
Vinylidene Chloride	20	303,602	0 01
Chloroprene	5	175,134	0 01
Arsenic Compounds	215	165,805	0 01
Cadmium Compounds	102	90,013	0 00
1,2-Dibromoethane	25	58,070	0 00
Toluene-2,4-Diisocyanate	97	57,312	0 00
Acrylamide	53	49,968	0 00
1,1,2,2-Tetrachloroethane	16	44,596	0 00
Dibenzofuran	43	30,225	0 00
Hydrazine	41	27,859	0 00
Mercury	34	22,404	0 00
		39,402,602	1 77

Table 3-14
TRI Carcinogens Emitted in The Greatest Amount
— 1990 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions
Dichloromethane	1,333	92,469,428	4.21
Trichloroethylene	741	37,849,923	1.72
Styrene	1,343	31,630,955	1 44
Benzene	484	24,013,998	1 09
Chloroform	184	21,762,461	0 99
Tetrachloroethylene	598	21,624,949	0 99
Formaldehyde	807	12,765,498	0 58
Chloromethane	88	7,373,241	0 34
1,2-Dichloroethane	97	5,595,973	0 25
1,3-Buladiene	158	5,037,331	0 23
Acrylonitrile	113	3,147,995	0 14
Ethylene Oxide	179	2,447,494	0 11
Carbon Tetrachloride	88	1,671,092	0 08
Vinyl Chloride	47	1,135,809	0 05
Chromium	843	737,710	0 03
1,1,2-Trichloroethane	27	598,704	0 03
Epichlorohydrin	81	427,361	0 02
Vinylidene Chloride	20	303,602	0 01
2-Nitropropane	8	84,258	0 00
1,2-Dibromoethane	25	58,070	0 00
		270,735,852	12.33

Table 3-15
TRI Ozone Depletors Emitted in The Greatest Amount
— 1990 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions
1,1,1-Trichloroethane	3,854	161,300,622	7 35
Freon 113	1,293	45,208,966	2 06
Carbon Tetrachloride	88	1,671,092	0 08
		208,180,680	9 48

Ozone Depletors – In 1990, only three ozone depletors were included in the TRI database. Table 3-15 summarizes their emissions, which are just under 10% of all toxic emissions.

1989 EMISSIONS

EPA Regions

Figure 3-9 and Table 3-16 break out the reported emissions by EPA region. Nationally, 2.5 billion pounds of toxics were emitted by 19,856 facilities. Regions 4, 5, and 6 reported the greatest emissions with 27%, 22%, and 16% of the total respectively. These three regions also had the greatest number of facilities reporting, although Region 6 was only slightly ahead of Regions 2, 3, and 9 in number of facilities.

Figure 3-9
EPA Regional Hot Spots
— 1989 —

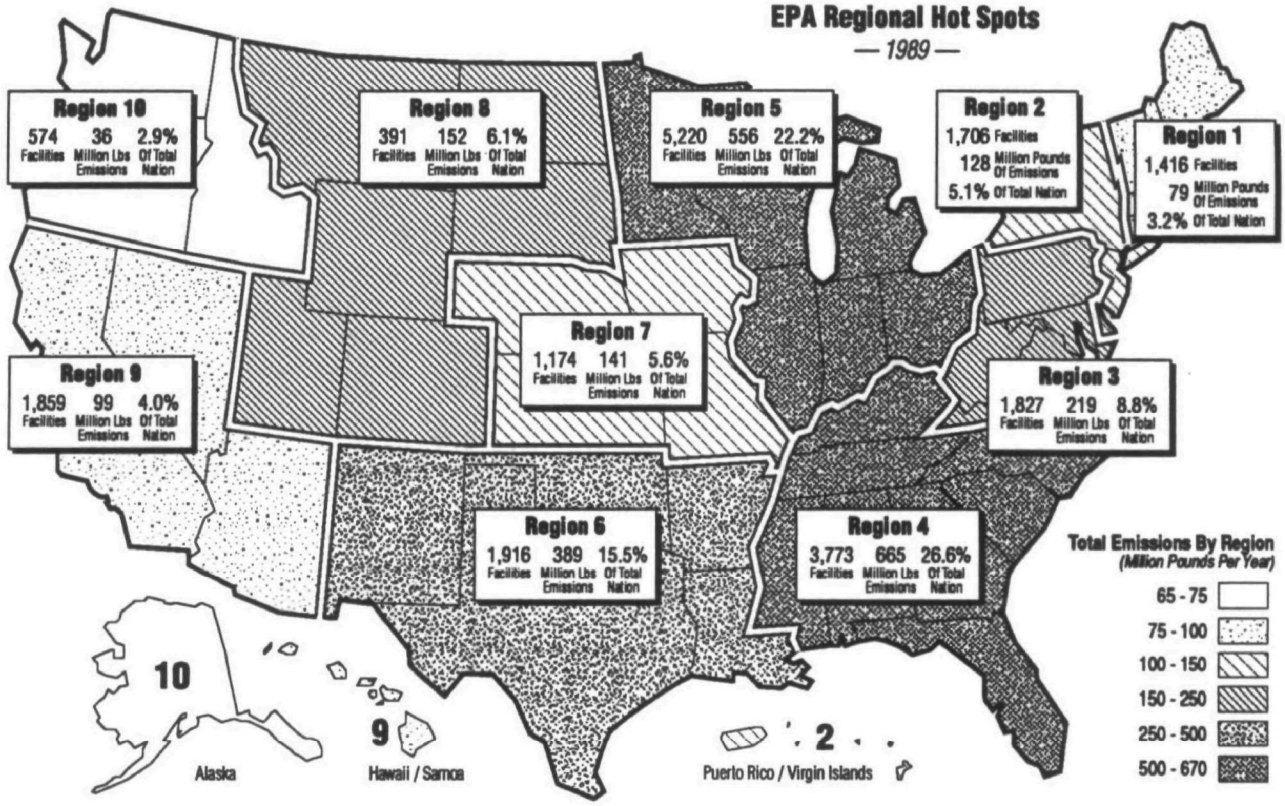


Table 3-16
Regional Hot Spots - 1989
EPA REGIONS

EPA Region	No. Of Release Reports	No. Of Facilities	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	Region % Of Total TRI Emissions
04	12,033	3,773	486,738,842	665,365,019	26.59
05	17,327	5,220	431,831,837	555,506,402	22.20
06	7,926	1,916	187,821,464	389,086,008	15.55
03	6,299	1,827	162,562,157	219,298,500	8.76
08	1,205	391	139,094,578	151,593,721	6.06
07	3,798	1,174	98,435,573	141,290,321	5.65
02	5,397	1,706	98,229,642	127,884,290	5.11
09	5,298	1,859	67,253,139	99,370,754	3.97
01	3,809	1,416	60,550,456	79,396,378	3.17
10	1,694	574	36,145,225	73,201,682	2.93
	64,786	19,856	1,768,662,913	2,501,993,075	100.00

1989 EMISSIONS

States

Toxic air emissions reported in the states are shown in Figure 3-10 and Table 3-17. Generally the states reporting the greatest emissions are the industrial states in the Northeast, Great Lakes, Middle Atlantic, and Gulf Coast, along with California. The one exception is Utah, which is dominated by one facility with very large emissions. Texas ranked first with reported emissions of 183 million pounds, equivalent to 7% of the national total.

Figure 3-10
Toxic Air Emissions By State
— 1989 —

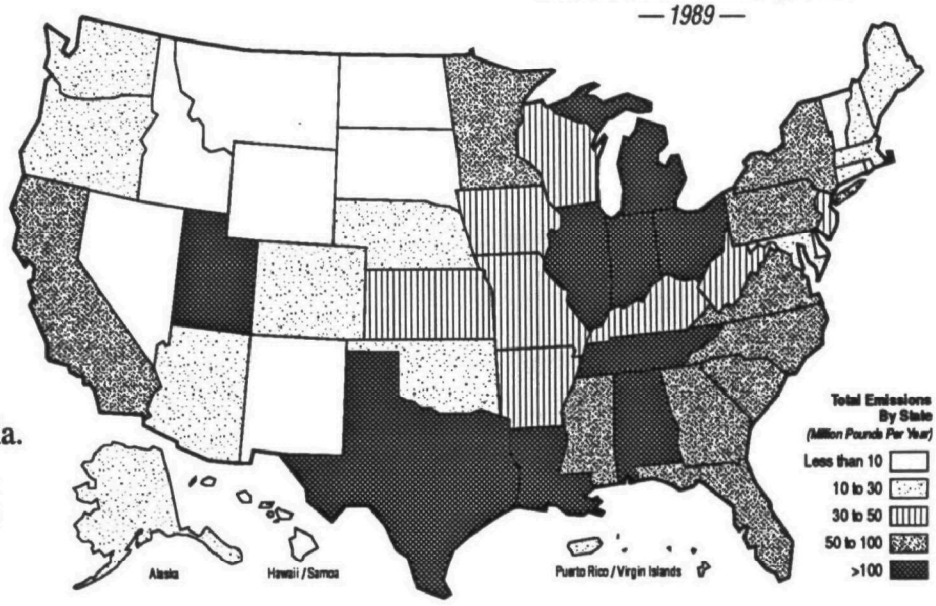


Table 3-17
State Total Emissions
— 1989 —

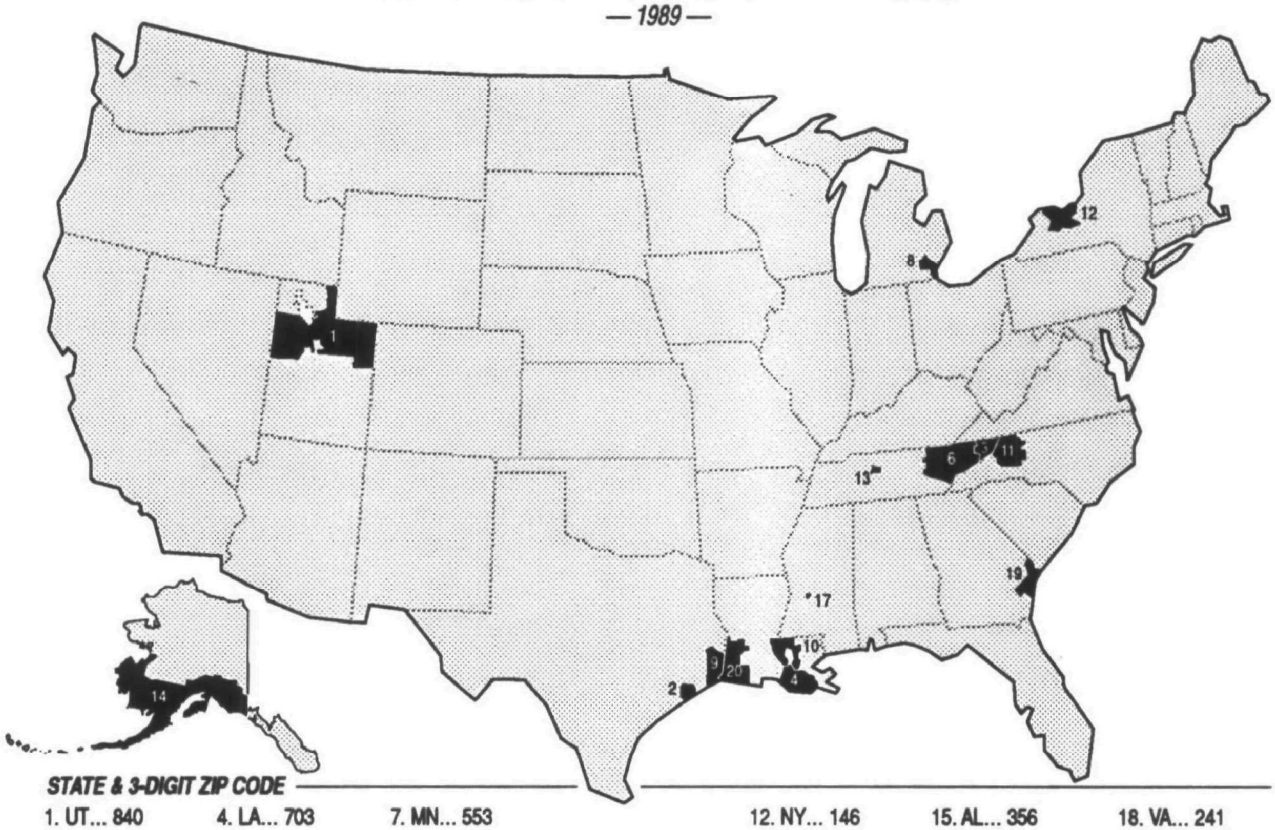
State	No. Of Release Reports	No. Of Facilities	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	State % Of Total TRI Emissions
AK	39	6	1,193,700	19,726,823	0.79
AL	1,432	394	95,761,435	105,118,859	4.20
AR	916	318	24,082,284	43,381,301	1.73
AS	2	2	0	27,750	0.00
AZ	487	180	6,470,110	13,008,488	0.52
CA	4,688	1,631	59,892,466	84,962,457	3.40
CO	487	177	5,908,844	10,627,629	0.42
CT	1,072	393	17,996,787	21,235,167	0.85
DE	227	61	6,686,219	7,452,834	0.30
FL	1,163	456	23,744,549	58,901,883	2.35
GA	1,793	603	60,981,378	76,709,164	3.07
HI	49	11	404,834	685,263	0.03
IA	906	311	27,918,680	43,926,521	1.76
ID	127	40	1,955,278	5,335,187	0.21
IL	3,952	1,226	79,618,395	101,017,785	4.04
IN	2,607	776	87,415,683	111,562,812	4.46
KS	718	212	20,117,391	32,535,187	1.30
KY	1,293	328	35,312,975	44,671,560	1.79
LA	1,466	264	47,064,354	129,815,300	5.19
MA	1,602	584	18,607,404	24,530,731	0.98
MD	642	200	14,622,314	18,207,890	0.73
ME	307	99	10,041,210	15,228,499	0.61
MI	2,873	786	81,301,259	104,212,897	4.17
MN	1,083	388	53,779,107	62,439,015	2.50
MO	1,792	507	38,976,715	48,054,400	1.92
MS	851	261	40,509,692	60,563,826	2.42
MT	98	19	1,847,758	2,480,425	0.10
NC	2,462	828	75,624,236	93,295,294	3.73
ND	64	24	805,146	1,333,448	0.05
NE	382	144	11,422,787	16,774,213	0.67
NH	324	133	8,400,546	11,005,803	0.44
NJ	2,531	735	22,659,965	30,742,704	1.23
NM	140	37	1,215,153	2,896,052	0.12
NV	72	35	485,729	686,796	0.03
NY	2,424	823	65,334,526	82,377,212	3.29
OH	4,799	1,399	96,560,893	134,725,162	5.38
OK	614	197	15,753,154	29,491,904	1.18
OR	642	212	13,911,012	19,728,276	0.79
PA	3,511	1,031	61,348,901	80,256,710	3.21
PR	425	147	9,118,691	13,604,972	0.54
RI	391	164	4,541,852	6,241,265	0.25
SC	1,411	387	53,676,743	71,150,804	2.84
SD	85	44	1,946,419	3,201,845	0.13
TN	1,628	516	101,127,834	154,953,629	6.19
TX	4,790	1,100	99,706,519	183,501,451	7.33
UT	374	107	127,513,509	130,290,872	5.21
VA	1,348	428	56,195,999	79,727,662	3.19
VI	17	1	1,116,460	1,159,402	0.05
VT	113	43	962,657	1,154,913	0.05
WA	886	316	19,085,235	28,411,396	1.14
WI	2,013	645	33,156,500	41,548,731	1.66
WV	571	107	23,708,724	33,653,404	1.35
WY	97	20	1,072,902	3,659,502	0.15
	64,786	19,856	1,768,662,913	2,501,993,075	100.00

1989 EMISSIONS

Three-Digit ZIP Code Areas

Since ZIP Codes are assigned generally according to population, three-digit ZIP Code areas represent convenient geographic areas smaller than states. Figure 3-11 and Table 3-18 show the top 20 ZIP Code areas. Area 840 in Utah reported the greatest emissions with nearly 5% of the national total. The top 20 areas together reported almost 27% of the national total.

Figure 3-11
20 ZIP Code Areas With Greatest Toxic Air Emissions
— 1989 —



STATE & 3-DIGIT ZIP CODE

1. UT... 840	4. LA... 703	7. MN... 553		12. NY... 146	15. AL... 356	18. VA... 241
2. TX... 775	5. AL... 356	8. MI... 481	10. LA... 707	13. TN... 371	16. IL... 606	19. GA... 314
3. TN... 376	6. TN... 377	9. TX... 776	11. NC... 286	14. AK... 996	17. MS... 391	20. LA... 706

Table 3-18
3-Digit ZIP Codes
— 1989 —

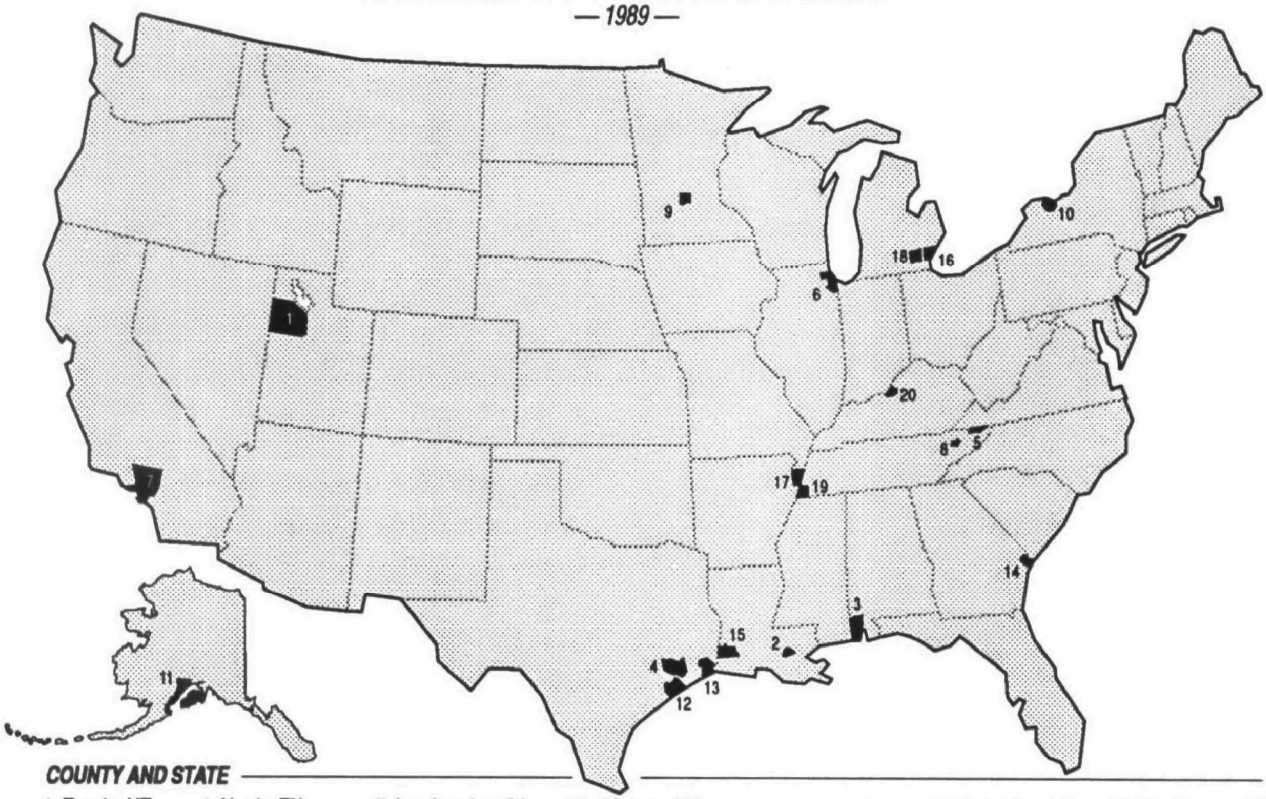
3-Digit ZIP Code	State	No. Of Release Reports	No. Of Facilities	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	ZIP % Of Total TRI Emissions
840	UT	151	35	123,499,332	124,926,334	4.99
775	TX	1,193	133	33,834,153	67,514,934	2.70
376	TN	166	32	18,844,269	57,433,650	2.30
703	LA	76	16	710,280	53,769,804	2.15
365	AL	166	23	48,742,819	49,583,284	1.98
377	TN	78	35	28,733,800	29,040,910	1.16
553	MN	162	59	27,664,355	28,586,651	1.14
481	MI	426	112	21,564,884	25,582,830	1.02
776	TX	246	30	9,782,964	23,726,475	0.95
707	LA	338	41	12,391,681	20,282,437	0.81
286	NC	476	143	17,024,781	20,118,360	0.80
146	NY	210	54	15,052,668	19,979,701	0.80
371	TN	148	42	16,138,146	18,667,116	0.75
996	AK	18	3	274,365	18,604,215	0.74
356	AL	203	48	15,587,429	18,566,446	0.74
606	IL	923	294	13,952,172	18,489,888	0.74
391	MS	45	21	3,933,733	18,397,399	0.74
241	VA	115	32	4,060,002	17,057,985	0.68
314	GA	84	23	14,050,378	16,612,517	0.66
706	LA	222	28	6,273,448	16,477,335	0.66
		5,446	1,204	432,115,659	663,418,271	26.52

1989 EMISSIONS

Counties

Figure 3-12 and Table 3-19 show the 20 counties with the greatest emissions. Again, Utah had the county reporting the greatest emissions. Together the top 20 counties reported 25% of the total national emissions. Four of these counties included more than 100 facilities while three had fewer than ten. The distribution of counties reporting the largest emissions generally reflects the same geographic concentration as the state and ZIP Code areas, with the large emission reports coming from the industrial areas.

Figure 3-12
20 Counties With Greatest Toxic Air Emissions
— 1989 —



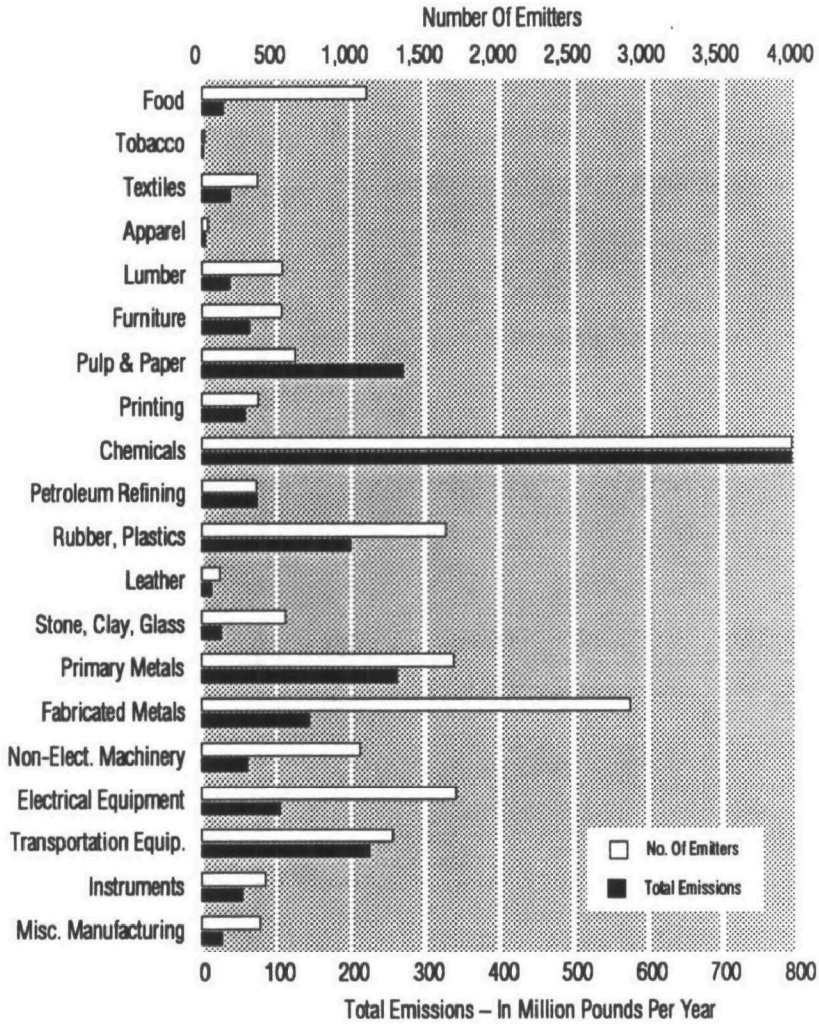
COUNTY AND STATE

1. Tooele, UT
2. Ascension, LA
3. Mobile, AL
4. Harris, TX
5. Sullivan, TN
6. Cook, IL
7. Los Angeles, CA
8. Hamblen, TN
9. McLeod, MN
10. Monroe, NY
11. Kenai-Cook Inlet, AK
12. Brazoria, TX
13. Jefferson, TX
14. Chatham, GA
15. Calcasieu, LA
16. Wayne, MI
17. Mississippi, AR
18. Washtenaw, MI
19. Shelby, TN
20. Jefferson, KY

Table 3-19
Counties
- 1990 -

County	State	No. Of Release Reports	No. Of Facilities	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	County % Of Total TRI Emissions
Tooele	UT	9	5	119,265,478	119,265,728	4.77
Ascension	LA	148	17	4,568,353	62,477,679	2.50
Mobile	AL	183	30	49,433,531	50,399,718	2.01
Harris	TX	1,301	237	28,918,090	46,891,805	1.87
Sullivan	TN	109	14	6,966,709	43,146,461	1.72
Cook	IL	1,751	552	31,057,015	39,033,046	1.56
Los Angeles	CA	1,967	632	26,940,242	35,440,773	1.42
Hamblen	TN	69	21	26,448,675	26,714,640	1.07
Mc Leod	MN	30	6	25,496,692	25,782,081	1.03
Monroe	NY	248	66	15,494,023	20,558,791	0.82
Kenai Peninsula	AK	18	3	274,365	18,604,215	0.74
Brazoria	TX	233	22	8,192,620	18,572,338	0.74
Jefferson	TS	301	35	8,422,442	18,038,473	0.72
Chatham	GA	84	23	14,050,378	16,612,517	0.66
Calcasieu	LA	194	21	5,593,804	15,664,609	0.63
Wayne	MI	600	143	11,421,941	14,782,936	0.59
Mississippi	AR	48	15	3,080,502	14,458,523	0.58
Washtenaw	MI	65	19	12,934,557	14,197,992	0.57
Shelby	TN	266	72	6,192,969	13,537,600	0.54
Jefferson	KY	337	71	12,097,905	13,403,053	0.54
		7,961	2,004	416,850,291	627,582,978	25.08

Figure 3-13
Toxic Air Emissions
— BY U.S. INDUSTRY - 1989 —



1989 EMISSIONS

Industries by 2-Digit SIC Code

As shown in Figure 3-13 and Table 3-20, the chemicals industry is by far the largest industrial emitter with nearly one third of total national emissions. Together with the Pulp & Paper and Primary Metals industries, three industries reported more than 50% of the total. Figure 3-13 shows a comparison of total emissions with number of facilities. This shows that the Pulp & Paper facilities generally report high emissions per facility (more than 431,000 pounds

Table 3-20
Air Emissions By U.S. Industry
— 1989 —

2-Digit SIC Code	U.S. Industry	No. Of Emitters	Total Emissions (lb/yr)	Industry % Of Total TRI Emissions
20	Food	1,105	28,598,439	1.14
21	Tobacco	17	1,725,798	0.07
22	Textiles	371	37,462,074	1.50
23	Apparel	42	4,381,856	0.18
24	Lumber	537	37,255,402	1.49
25	Furniture	536	63,961,987	2.56
26	Pulp & Paper	626	269,785,941	10.78
27	Printing	379	58,174,976	2.33
28	Chemicals	3,967	793,130,665	31.70
29	Petroleum Refining	362	73,472,974	2.94
30	Rubber, Plastics	1,636	200,229,247	8.00
31	Leather	124	13,206,920	0.53
32	Stone, Clay, Glass	563	26,123,954	1.04
33	Primary Metals	1,692	262,280,892	10.48
34	Fabricated Metals	2,877	144,606,396	5.78
35	Non-Elect. Machinery	1,060	62,068,033	2.48
36	Electrical Equipment	1,704	104,774,079	4.19
37	Transport. Equipment	1,278	225,302,351	9.00
38	Instruments	427	54,641,638	2.18
39	Misc. Manufacturing	390	27,567,074	1.10

per facility) compared to fabricated metals, for example, which report a relatively small amount per facility (about 50,000 pounds per facility).

Figure 3-14 and Table 3-21 show the number of release reports submitted to EPA for TRI reporting. Again the chemicals industry has nearly one third of the national total. Each report represents one chemical released at a single facility. Because the chemicals industry is such a large part of the total, additional details on the industry are presented below.

Figure 3-14
Number Of Release Reports
— BY U.S. INDUSTRY - 1989 —

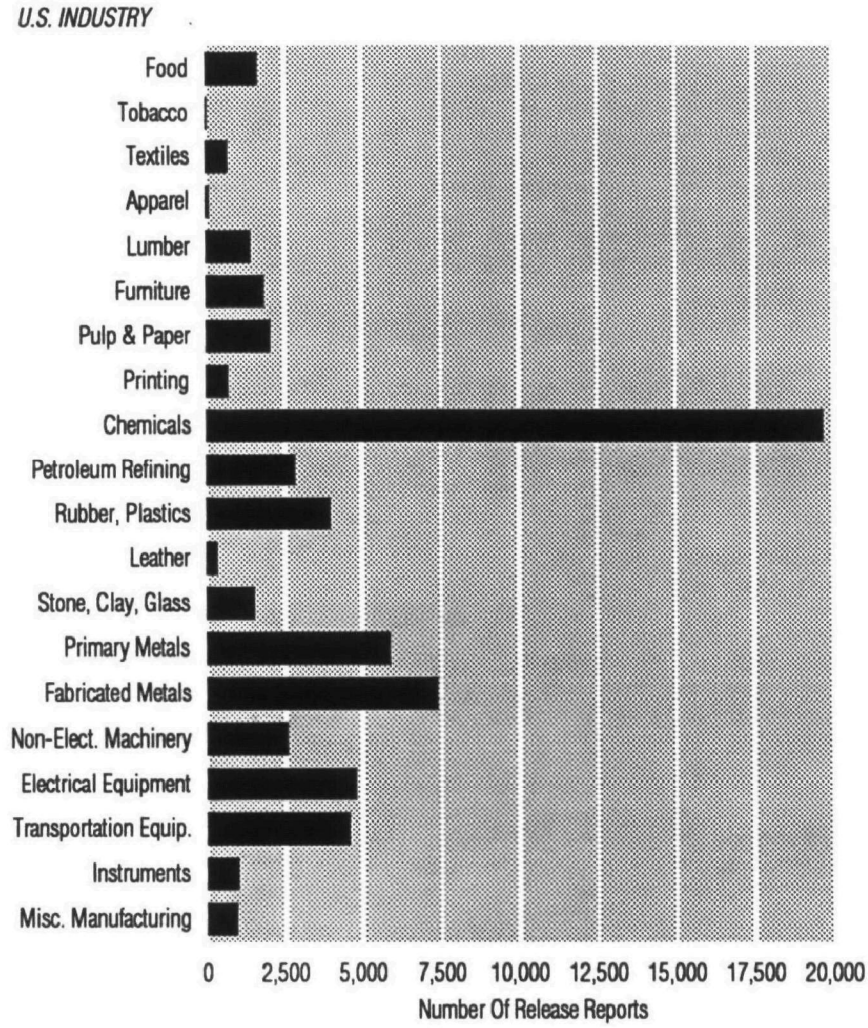
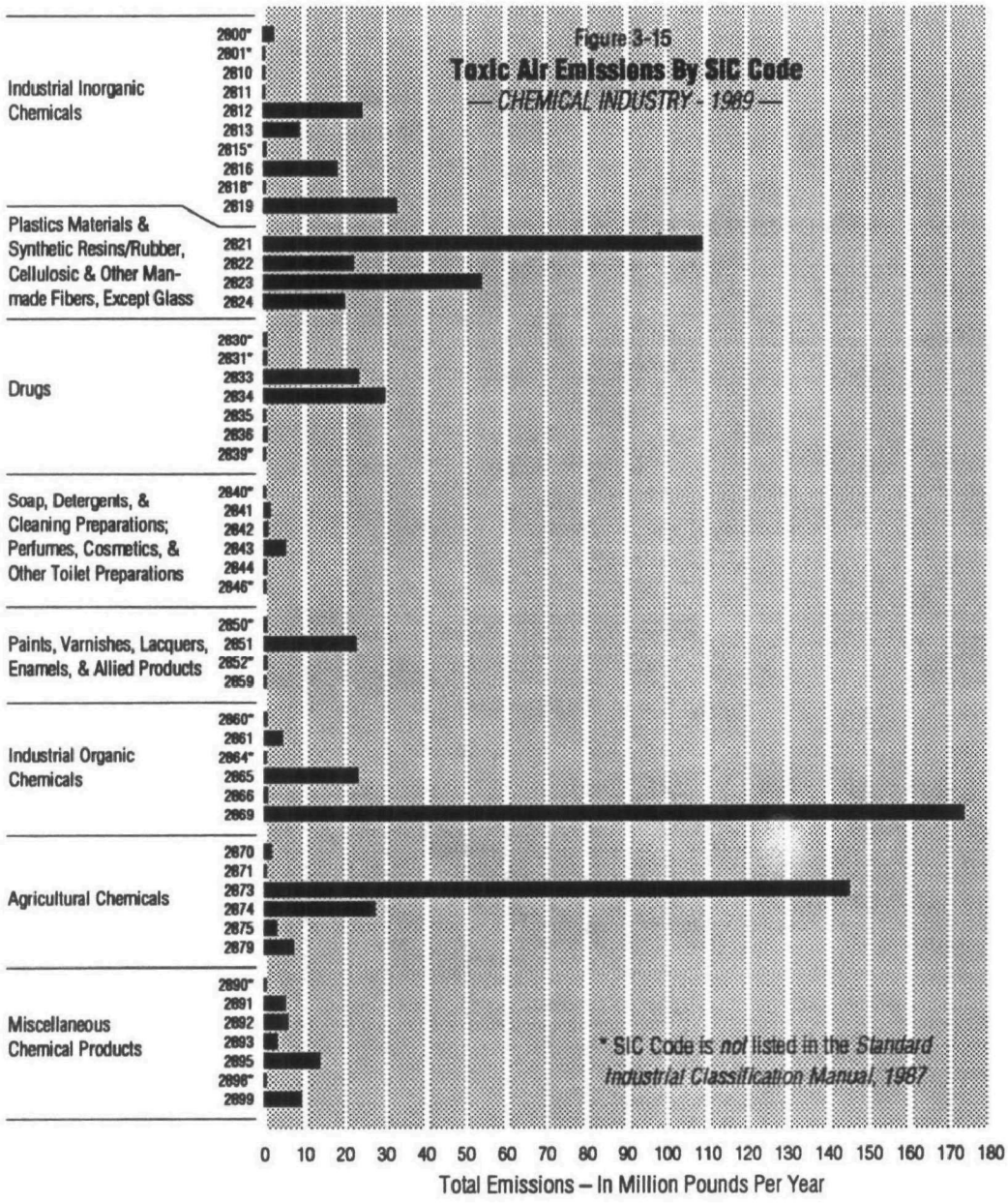


Table 3-21
No. of Release Reports by U.S. Industry
— 1989 —

2-Digit SIC Code	U.S. Industry	No. Of Release Reports	Industry % Of Total TRI Reports	2-Digit SIC Code	U.S. Industry	No. Of Release Reports	Industry % Of Total TRI Reports
20	Food	1,654	1.14	30	Rubber, Plastics	3,978	8.00
21	Tobacco	22	0.07	31	Leather	334	0.53
22	Textiles	700	1.50	32	Stone, Clay, Glass	1,537	1.04
23	Apparel	89	0.18	33	Primary Metals	5,891	10.48
24	Lumber	1,416	1.49	34	Fabricated Metals	7,371	5.78
25	Furniture	1,856	2.56	35	Non-Elect. Machinery	2,587	2.48
26	Pulp & Paper	2,070	10.78	36	Electrical Equipment	4,788	4.19
27	Printing	709	2.33	37	Transport. Equipment	4,582	9.00
28	Chemicals	19,717	31.70	38	Instruments	1,010	2.18
29	Petroleum Refining	2,856	2.94	39	Misc. Manufacturing	951	1.10



1989 EMISSIONS

Industries by 3 and 4-Digit SIC Code

To subdivide the industrial sector further, Tables 3-22 and 3-23 present the top industries by 3-digit SIC codes and 4-digit SIC codes respectively. The top ten industries as shown in Table 3-22 represent more than 50% of total emissions. By breaking it down one level further, the top ten 4-digit industries, as shown in Table 3-23, reported 37% of the total.

Figure 3-15 shows the toxic air emissions reported by all of the 4-digit chemical industries. Plastic materials, industrial organic chemicals, and agricultural chemicals are the segments of the industry reporting the majority of the industry's emissions.

Table 3-22

Top Industrial Emitters - 1989

3-DIGIT SIC CODES

3-Digit SIC Rank	Code	U.S. Industry	Total Emissions (lb/yr)	Industry % Of 2-Digit SIC Total	Industry % Of Total TRI Emissions
1	282	Plastics Materials &Synthetic Resins, Synthetic Rubber, Cellulosic & Other Manmade Fibers, Except Glass	204,380,119	25.77	8.17
2	286	Industrial Organic Chemicals	201,108,955	25.36	8.04
3	287	Agricultural Chemicals	182,700,303	23.04	7.30
4	333	Primary Smelting & Refining of Nonferrous Metals	142,982,873	54.52	5.71
5	371	Motor Vehicles & Motor Vehicle Equipment	130,738,054	58.03	5.23
6	308	Miscellaneous Plastics Products	108,845,145	54.36	4.35
7	261	Pulp Mills	87,401,871	32.40	3.49
8	281	Industrial Inorganic Chemicals	83,391,117	10.51	3.33
9	291	Petroleum Refining	68,283,704	92.94	2.73
10	331	Steel Works, Blast Furnaces, & Rolling & Fininshing Mills	58,231,095	22.20	2.33
			1,268,063,236		50.68

Table 3-23

Top Industrial Emitters - 1989

4-DIGIT SIC CODES

4-Digit SIC Rank	Code	U.S. Industry	Total Emissions (lb/yr)	Industry % Of 2-Digit SIC Total	Industry % Of Total TRI Emissions
1	2869	Industrial Organic Chemicals, Not Elsewhere Classified	173,358,318	21.86	6.93
2	2873	Nitrogenou Fertilizers	145,049,237	18.29	5.80
3	3339	Primary Smelting & Refining of Nonferrous Metals, Except Copper & Aluminum	127,008,798	48.42	5.08
4	2821	Plastics Materials, Synthetic Resins, & Nonvulcanizable Elastomers	108,733,357	13.71	4.35
5	2611	Pulp Mills	85,945,112	31.86	3.44
6	3711	Motor Vehicles & Passenger Car Bodies	69,171,476	30.70	2.76
7	2911	Petroleum Refining	68,257,091	92.90	2.73
8	2823	Cellulosic Manmade Fibers	53,853,875	6.79	2.15
9	2621	Paper Mills	51,135,635	18.95	2.04
10	3079	Miscellaneous Plastics Products	45,820,041	22.88	1.83
			928,332,940		37.11

Table 3-24
Chemicals Emitted in the Greatest Amount
— 1989 —

Chemical	No. Of Emitters	Emissions (lb/yr)	Of Total TRI Emissions	Cumulative Chemical %
Toluene	3,970	261,960,919	10.47	10.47
Ammonia	2,799	251,967,698	10.07	20.54
Methanol	2,429	206,396,888	8.25	28.79
Acetone	2,743	202,624,803	8.10	36.89
1,1,1-Trichloroethane	3,889	172,745,485	6.90	43.79
Xylene (Mixed Isomers)	3,532	152,001,772	6.08	49.87
Chlorine	1,253	132,643,321	5.30	55.17
Methyl Ethyl Ketone	2,480	131,116,286	5.24	60.41
Dichloromethane	1,539	122,809,412	4.91	65.32
Carbon Disulfide	78	99,983,802	4.00	69.32
Hydrochloric Acid	2,416	73,204,206	2.93	72.25
Freon 113	1,492	64,010,405	2.56	74.81
Glycol Ethers	1,637	47,977,093	1.92	76.73
Trichloroethylene	832	47,501,723	1.90	78.63
Ethylene	267	42,468,462	1.70	80.33
n-Butyl Alcohol	1,173	36,603,123	1.46	81.79
Styrene	1,319	34,102,196	1.36	83.15
Methyl Isobutyl Ketone	1,049	30,895,812	1.23	84.38
Tetrachloroethylene	663	27,006,973	1.08	85.46
Benzene	475	25,863,548	1.03	86.49
		2,163,883,927		86.49

1989 EMISSIONS
Individual Chemicals

Figure 3-16 and Table 3-24 show the individual chemicals emitted in the greatest amount. The 10 top chemicals represent nearly 70% of the total emissions while the 20 top chemicals represent almost 87% of the total. Toluene and ammonia emissions each represent more than 10% of the national total.

1989 EMISSIONS
Groups of Chemicals

It is useful to look at groups of chemicals whose emissions are targeted by EPA programs. None of these programs were underway during 1989 so the effect of the program does not show up in the reported emissions.

Figure 3-16
U.S. Air Toxics Emissions
— 1989 —

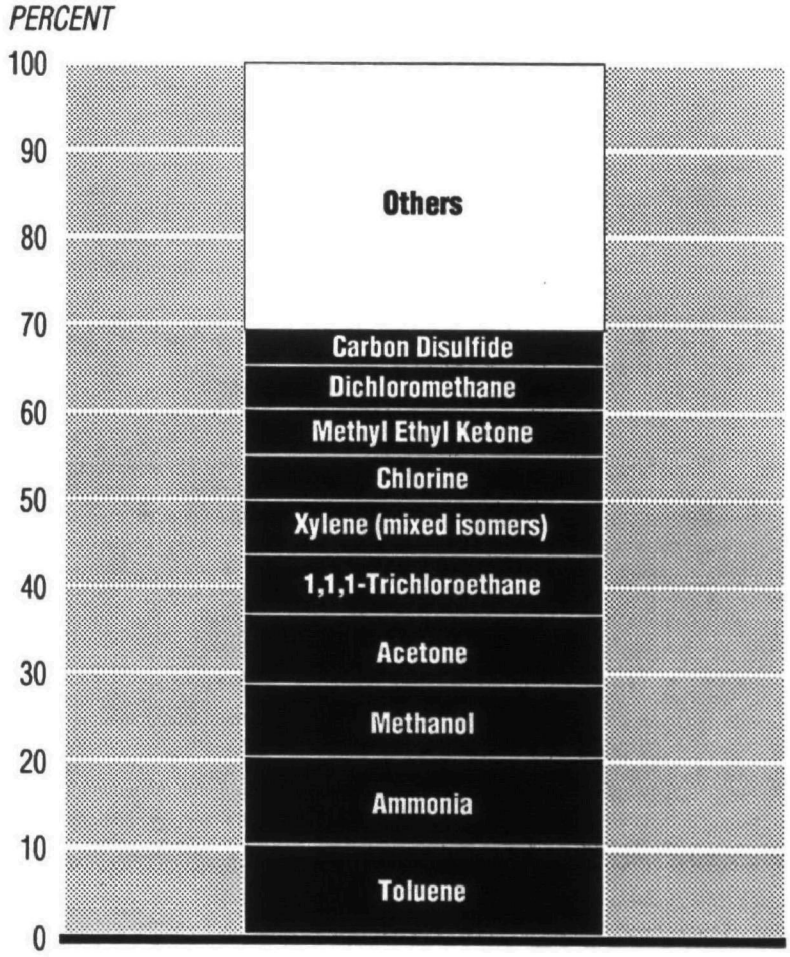


Table 3-25
Major Sources
— 1989 —

The Number of Facilities Emitting
10 TPY of Any One HAP or 25 TPY of Any HAPs

10 Tpy Of One HAP	25 Tpy Of Any HAPs	10 Or 25 Tpy	Total Emissions (lb/yr)	% Of Total HAP Emissions	HAP % Of Total Tri Emissions
6,521	4,470	6,550	1,699,546,730	96 09	70 69

Hazardous Air Pollutants - The Clean Air Act Amendments of 1990 listed 189 chemicals for control under Title III. Major sources, defined as facilities that emit 10 tons per year of one HAP or 25 tons of total HAPs, must apply the maximum available control technology. Table 3-25 shows the number of facilities that would qualify as major sources according to the TRI reports (As mentioned earlier, 17 of the 189 HAPs specified in the Clean Air Act are not covered by TRI). These 6,550 facilities, which is equivalent to 33% of the total facilities reporting, represent 96% of the total HAP emissions and 71% of all TRI chemical emissions. Table 3-26 show the twenty HAPs emitted in the greatest amount. They represent about two thirds of the total national emissions.

Table 3-26
HAPs Emitted In the Greatest Amount
— 1989 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions	Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions
Toluene	3,970	261,960,919	10 47	Trichloroethylene	832	47,501,723	1 90
Methanol	2,429	206,396,888	8 25	Styrene	1,319	34,102,196	1 36
1,1,1-Trichloroethane	3,889	172,745,485	6 90	Methyl Isobutyl Ketone	1,049	30,895,812	1 23
Xylene (Mixed Isomers)	3,532	152,001,772	6 08	Tetrachloroethylene	663	27,006,973	1 08
Chlorine	1,253	132,643,321	5 30	Benzene	475	25,863,548	1 03
Methyl Ethyl Ketone	2,480	131,116,286	5 24	Chloroform	186	25,269,682	1 01
Dichloromethane	1,539	122,809,412	4 91	Carbonyl Sulfide	32	18,075,606	0 72
Carbon Disulfide	78	99,983,802	4 00	Ethylene Glycol	938	13,197,795	0 53
Hydrochloric Acid	2,416	73,204,206	2.93	Formaldehyde	840	12,925,115	0.52
Glycol Ethers	1,637	47,977,093	1 92	Hydrogen Fluoride	455	10,006,434	0 40
						1,645,684,068	65 77

33/50 Chemicals - EPA initiated a voluntary emissions reduction program targeting 17 specific chemicals (or groups of related chemicals in some cases). Reported emissions of these chemicals are shown in Table 3-27. Together this group of chemicals is equivalent to 40% of the total toxic emissions.

Table 3-27
33/50 Chemicals Emitted In the Greatest Amount
— 1989 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions	Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions
Toluene	3,970	261,960,919	10 47	Lead Compounds	569	1,570,821	0 06
1,1,1-Trichloroethane	3,889	172,745,485	6 90	Chromium Compounds	846	1,409,098	0 06
Xylene (Mixed Isomers)	3,532	152,001,772	6 08	m-Xylene	53	1,200,771	0 05
Methyl Ethyl Ketone	2,480	131,116,286	5 24	Chromium	819	1,139,201	0 05
Dichloromethane	1,539	122,809,412	4 91	Nickel	776	1,116,287	0 04
Trichloroethylene	832	47,501,723	1 90	Lead	637	861,598	0 03
Methyl Isobutyl Ketone	1,049	30,895,812	1 23	Cyanide Compounds	199	824,908	0 03
Tetrachloroethylene	663	27,006,973	1 08	Nickel Compounds	396	272,689	0 01
Benzene	475	25,863,548	1 03	Cadmium Compounds	88	85,004	0 00
Chloroform	186	25,269,682	1 01	Cadmium	57	35,267	0 00
p-Xylene	37	4,933,722	0 20	Mercury	38	25,085	0 00
Carbon Tetrachloride	95	3,369,248	0 13	Mercury Compounds	12	4,009	0 00
o-Xylene	69	1,808,306	0 07			1,015,827,626	40 60

High Risk/Early Reduction Chemicals - Table 3-28 lists 20 high risk/early reduction chemicals. These chemicals are considered high risk because of their toxicity. Together they represented less than 2% of the total national toxics emissions in 1989.

Carcinogens - Table 3-29 summarizes the emissions of the 20 carcinogens emitted in the greatest amount as reported to the TRI. Their significance is due to their carcinogenicity. Together the top twenty represent 13% of total emissions with the largest carcinogen, dichloromethane or methylene chloride, almost 5%.

Table 3-28
High Risk/Early Reduction Chemicals Emitted In the Greatest Amount
- 1989 -

Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions
Benzene	475	25,863,548	1 03
1,3-Butadiene	157	5,700,676	0 23
Acrylonitrile	112	4,387,467	0 18
Ethylene Oxide	194	3,235,634	0 13
Manganese Compounds	466	1,833,491	0 07
Chromium Compounds	846	1,409,098	0 06
Vinyl Chloride	49	1,269,032	0 05
Chromium	819	1,139,201	0 05
Chloroprene	7	1,006,341	0 04
Methylenebis (Phenylisocyanate)	296	380,213	0 02
Acrylic Acid	155	357,523	0 01
Vinylidene Chloride	23	220,632	0 01
Arsenic Compounds	133	175,584	0 01
Toluene-2,4-Diisocyanate	240	90,946	0 00
Cadmium Compounds	88	85,004	0 00
Dibenzofuran	106	64,510	0 00
1,2-Dibromoethane	25	59,167	0 00
Arsenic	37	58,150	0 00
Asbestos (Friable)	66	38,435	0 00
1,1,2,2-Tetrachloroethane	16	35,401	0 00
Cadmium	57	35,267	0 00
		45,611,829	1 82

Table 3-29
TRI Carcinogens Emitted In The Greatest Amount
— 1989 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions
Dichloromethane	1,539	122,809,412	4 91
Trichloroethylene	832	47,501,723	1 90
Styrene	1,319	34,102,196	1 36
Tetrachloroethylene	663	27,006,973	1 08
Benzene	475	25,863,548	1 03
Chloroform	186	25,269,682	1 01
Formaldehyde	840	12,925,115	0 52
Chloromethane	83	9,707,459	0 39
1,3-Butadiene	157	5,700,676	0 23
Acrylonitrile	112	4,387,467	0 18
1,2-Dichloroethane	98	4,284,066	0 17
Carbon Tetrachloride	95	3,369,248	0 13
Ethylene Oxide	194	3,235,634	0 13
Vinyl Chloride	49	1,269,032	0 05
Chromium	819	1,139,201	0 05
1,1,2-Trichloroethane	28	786,898	0 03
Epichlorohydrin	76	472,548	0 02
2-Nitropropane	10	225,222	0 01
Vinylidene Chloride	23	220,632	0 01
2,4-Dinitrotoluene	9	87,293	0 00
		330,364,025	13 20

Table 3-30
TRI Ozone Depletors Emitted In The Greatest Amount
— 1989 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions
1,1,1-Trichloroethane	3,889	172,745,485	6 90
Freon 113	1,492	64,010,405	2 56
Carbon Tetrachloride	95	3,369,248	0 13
		240,125,138	9 60

Ozone Depletors - In 1989, only three ozone depletors were included in the TRI database. Table 3-30 summarizes their emissions, which are just under 10% of all toxic emissions.

1988 EMISSIONS

EPA Regions

Figure 3-17 and Table 3-31 break out the reported emissions by EPA region. Nationally, 2.6 billion pounds of toxics were emitted by 18,300 facilities. Regions 4, 5, and 6 reported the greatest emissions with 25%, 21%, and 16% of the total respectively. These three regions also had the greatest number of facilities reporting, although Region 6 was only slightly ahead of Regions 2, 3, and 9 in number of facilities.

Figure 3-17
EPA Regional Hot Spots
— 1988 —

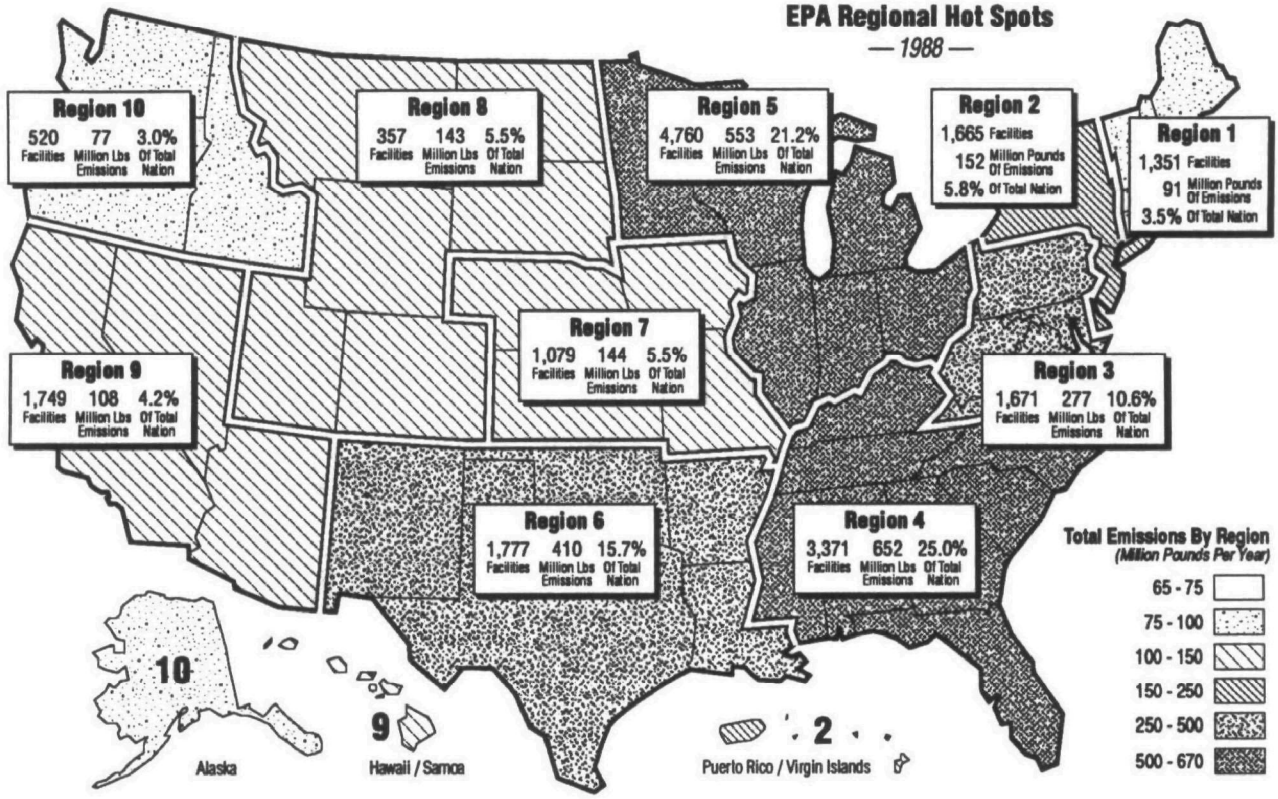


Table 3-31
Regional Hot Spots
— 1988 EPA REGIONS —

EPA Region	No. Of Release Reports	No. Of Facilities	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	Region % Of Total Tri Emissions
04	10,461	3,371	486,490,668	652,133,885	25.02
05	15,460	4,760	423,571,319	553,441,733	21.23
06	7,270	1,777	206,782,960	409,689,743	15.72
03	5,737	1,671	218,116,013	277,038,496	10.63
02	5,044	1,665	118,230,274	151,907,179	5.83
07	3,334	1,079	105,162,263	143,589,419	5.51
08	1,067	357	131,115,812	142,579,669	5.47
09	4,882	1,749	70,952,794	107,971,558	4.14
01	3,592	1,351	70,710,157	90,868,669	3.49
10	1,490	520	38,476,943	77,422,408	2.97
	58,337	18,300	1,869,609,203	2,606,642,759	100.00

1988 EMISSIONS

States

Toxic air emissions reported in the states are shown in Figure 3-18 and Table 3-32. Generally the states reporting the greatest emissions are the industrial states in the Northeast, Great Lakes, Middle Atlantic, and Gulf Coast, along with California. The one exception is Utah, which is dominated by one facility with very large emissions. Texas ranked first with reported emissions of 192 million pounds, equivalent to 7% of the national total.

Figure 3-18
Toxic Air Emissions By State
— 1988 —

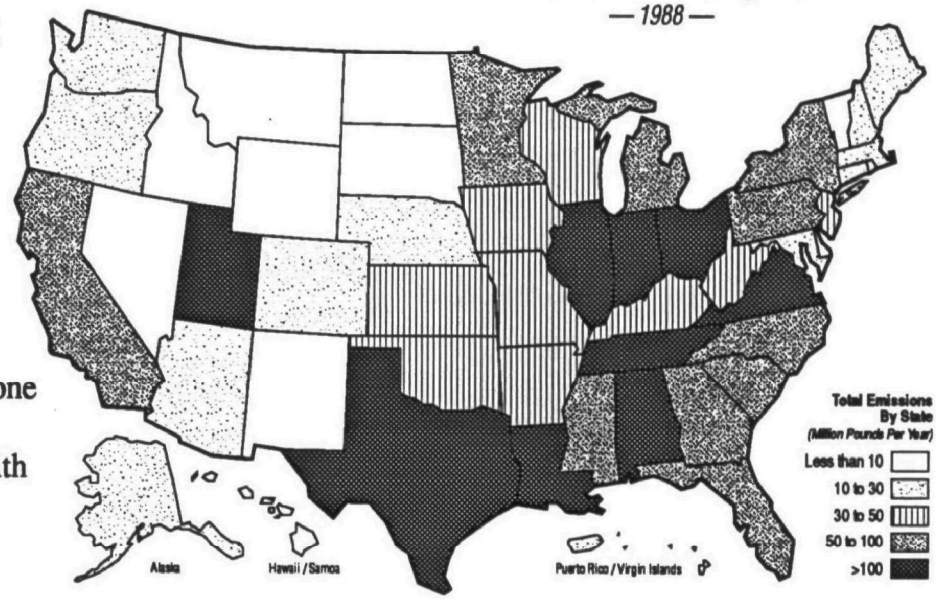


Table 3-32
State Total Emissions
— 1988 —

State	No. Of Release Reports	No. Of Facilities	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	State % Of Total TRI Emissions
AK	35	6	1,036,098	21,749,696	0.83
AL	1,254	346	94,303,080	104,488,067	4.01
AR	823	286	26,410,535	48,403,282	1.86
AS	2	2	0	29,500	0.00
AZ	399	156	7,266,840	16,190,594	0.62
CA	4,375	1,549	62,703,045	90,188,611	3.46
CO	417	154	6,704,871	12,078,387	0.46
CT	1,033	381	22,005,204	25,351,278	0.97
DC	1	1	0	250	0.00
DE	202	56	7,026,193	7,564,595	0.29
FL	1,031	426	23,952,711	50,237,247	1.93
GA	1,564	527	69,278,574	86,120,168	3.30
HI	52	12	477,308	874,145	0.03
IA	808	287	30,204,138	43,294,129	1.66
ID	119	40	2,142,879	5,358,683	0.21
IL	3,541	1,145	80,464,431	106,865,656	4.10
IN	2,349	696	90,018,161	109,393,235	4.20
KS	630	191	22,234,103	31,728,083	1.22
KY	1,143	288	39,284,340	47,941,452	1.84
LA	1,389	250	45,789,138	131,984,769	5.06
MA	1,458	546	20,908,305	27,235,140	1.04
MD	588	177	13,965,343	17,978,759	0.69
ME	290	91	11,468,966	17,048,429	0.65
MI	2,581	728	76,487,500	98,046,366	3.76
MN	931	334	45,044,858	54,218,230	2.08
MO	1,550	469	40,695,324	49,949,105	1.92
MS	680	221	39,460,265	59,608,700	2.29
MT	100	19	1,765,493	2,365,977	0.09
NC	2,189	752	79,951,258	96,842,867	3.72
ND	58	25	869,803	1,267,924	0.05
NE	346	132	12,028,698	18,618,102	0.71
NH	314	130	9,344,282	11,952,622	0.46
NJ	2,360	736	27,671,897	38,568,974	1.48
NM	117	32	730,744	2,133,198	0.08
NV	54	30	505,601	688,708	0.03
NY	2,274	787	78,124,619	96,167,936	3.69
OH	4,196	1,264	95,245,924	139,344,996	5.35
OK	569	185	19,450,279	35,615,898	1.37
OR	562	188	14,356,631	20,891,887	0.80
PA	3,179	950	70,116,859	91,607,673	3.51
PR	396	141	10,980,728	15,679,477	0.60
RI	373	160	5,704,543	7,761,907	0.30
SC	1,182	335	49,858,705	66,722,597	2.56
SD	59	36	1,709,532	2,499,867	0.10
TN	1,418	476	90,401,735	140,172,787	5.38
TX	4,372	1,024	114,402,264	191,552,596	7.35
UT	351	105	118,682,667	121,476,450	4.66
VA	1,219	383	100,386,868	123,292,360	4.73
VI	14	1	1,453,030	1,490,792	0.06
VT	124	43	1,278,857	1,519,293	0.06
WA	774	286	20,941,335	29,422,142	1.13
WI	1,862	593	36,310,445	45,573,250	1.75
WV	548	104	26,620,750	36,594,859	1.40
WY	82	18	1,383,446	2,891,064	0.11
	58,337	18,300	1,869,609,203	2,606,642,759	100.00

1988 EMISSIONS

Three-Digit ZIP Code Areas

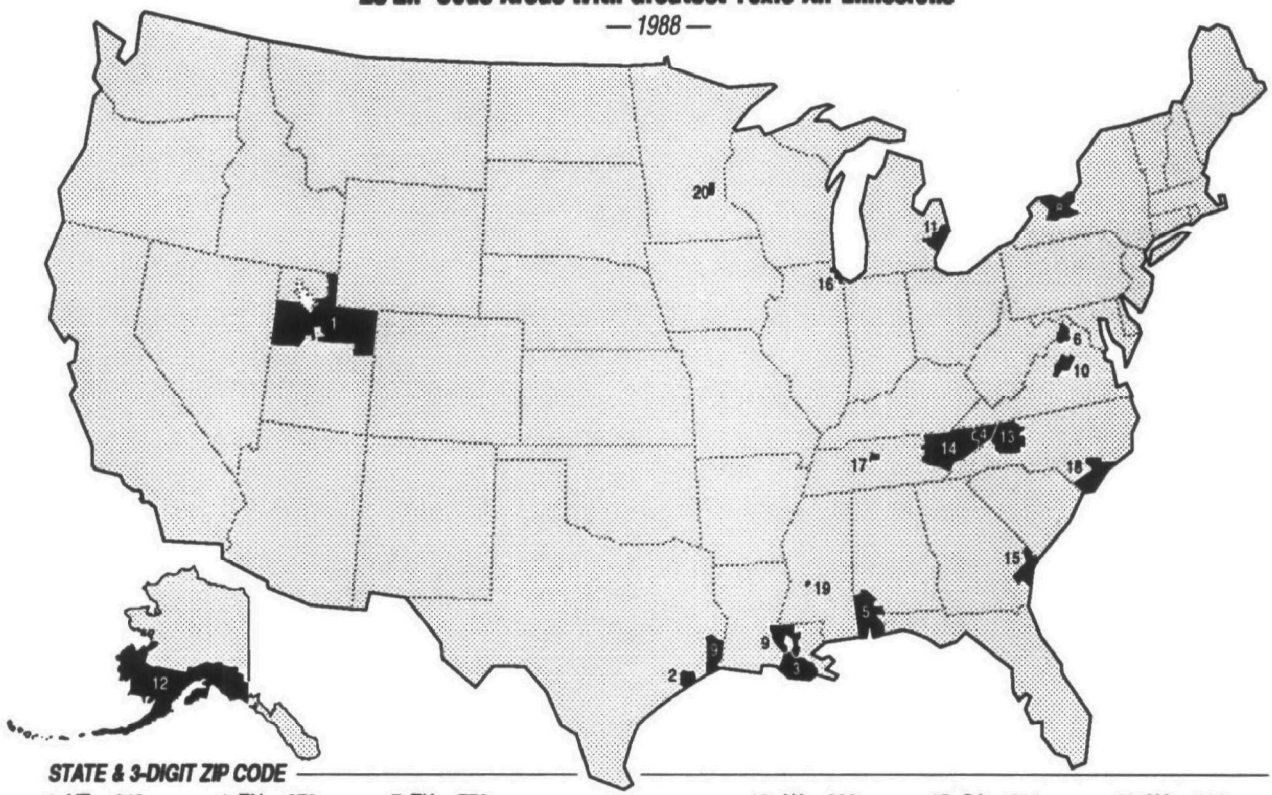
Since ZIP Codes are assigned generally according to population, three-digit ZIP Code areas represent convenient geographic areas smaller than states.

Figure 3-19 and Table 3-33 show the top 20 ZIP Code areas. Area 840 in Utah reported the greatest emissions with more than 4% of the national total. The top 20 areas together reported almost 26% of the national total.

Figure 3-19

20 ZIP Code Areas With Greatest Toxic Air Emissions

— 1988 —



STATE & 3-DIGIT ZIP CODE

1. UT... 840	4. TN... 376	7. TX... 776		12. AK... 996	15. GA... 314	18. NC... 284
2. TX... 775	5. AL... 365	8. NY... 146	10. VA... 244	13. NC... 286	16. IL... 606	19. MS... 391
3. LA... 703	6. VA... 226	9. LA... 707	11. MI... 480	14. TN... 377	17. TN... 371	20. MN... 553

Table 3-33

3-Digit ZIP Codes

- 1988 -

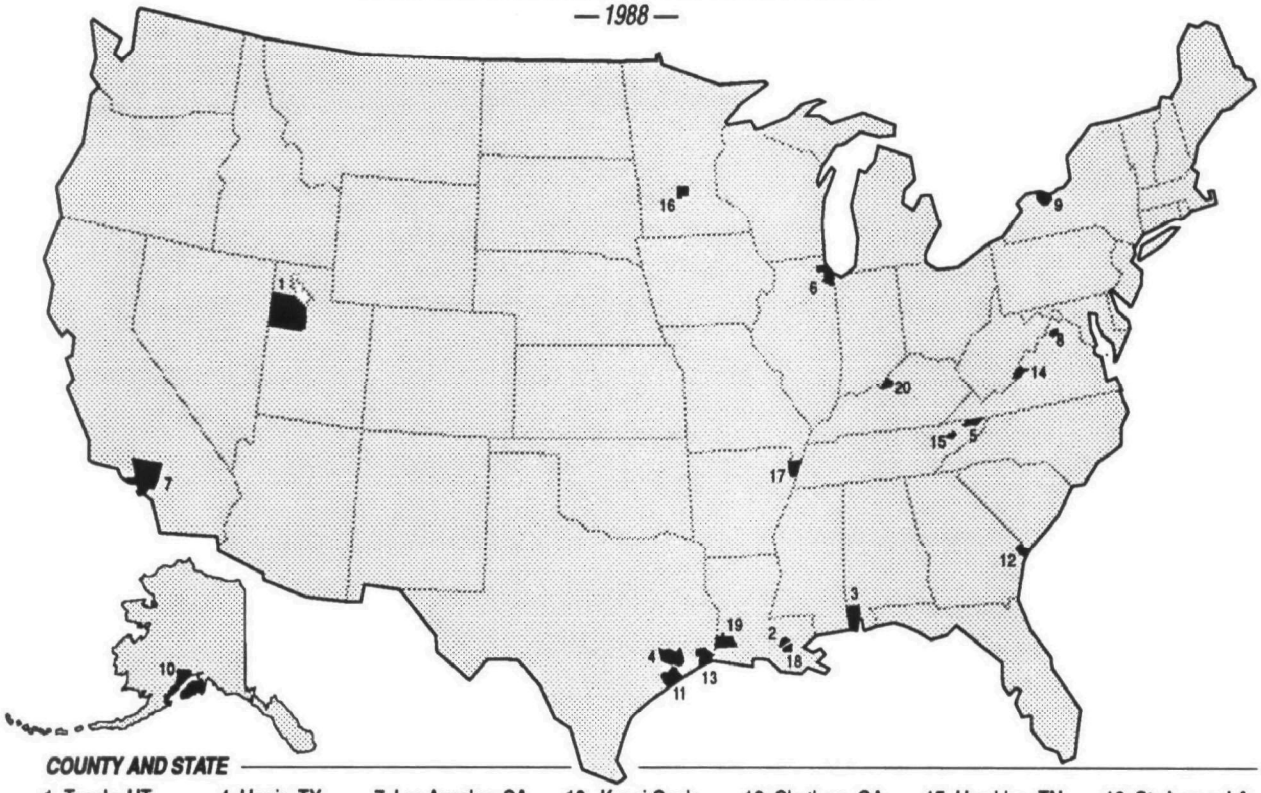
3-Digit ZIP Code	State	No. Of Release Reports	No. Of Facilities	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	ZIP % Of Total TRI Emissions
840	UT	154	37	114,570,350	115,881,488	4.45
775	TX	1,143	125	36,279,834	64,007,392	2.46
703	LA	66	14	1,418,606	56,473,822	2.17
376	TN	143	30	19,288,620	54,538,069	2.09
365	AL	163	23	48,844,932	49,687,881	1.91
226	VA	61	17	39,641,648	40,129,374	1.54
776	TX	241	26	14,164,991	26,766,399	1.03
146	NY	215	52	19,961,588	25,270,117	0.97
707	LA	337	39	12,236,944	21,406,082	0.82
244	VA	60	21	20,113,830	21,085,475	0.81
480	MI	371	100	18,237,968	20,978,288	0.80
996	AK	18	3	276,935	20,958,860	0.80
286	NC	415	127	17,779,009	20,591,196	0.79
377	TN	77	33	19,903,936	20,146,764	0.77
314	GA	78	22	17,306,213	19,619,444	0.75
606	IL	788	274	14,920,127	19,362,897	0.74
371	TN	142	38	15,991,370	19,000,092	0.73
284	NC	100	23	16,531,178	18,714,468	0.72
391	MS	34	16	3,049,386	18,665,403	0.72
553	MN	137	60	17,518,991	18,320,048	0.70
		4,743	1,080	468,036,456	671,603,559	25.77

1988 EMISSIONS

Counties

Figure 3-20 and Table 3-34 show the 20 counties with the greatest emissions. Again, Utah had the county reporting the greatest emissions. Together the top 20 counties reported almost 25% of the total national emissions. Three of these counties included more than 100 facilities while six had fewer than ten. The distribution of counties reporting the largest emissions generally reflects the same geographic concentration as the state and ZIP Code areas, with the large emission reports coming from the industrial areas.

Figure 3-20
20 Counties With Greatest Toxic Air Emissions
— 1988 —



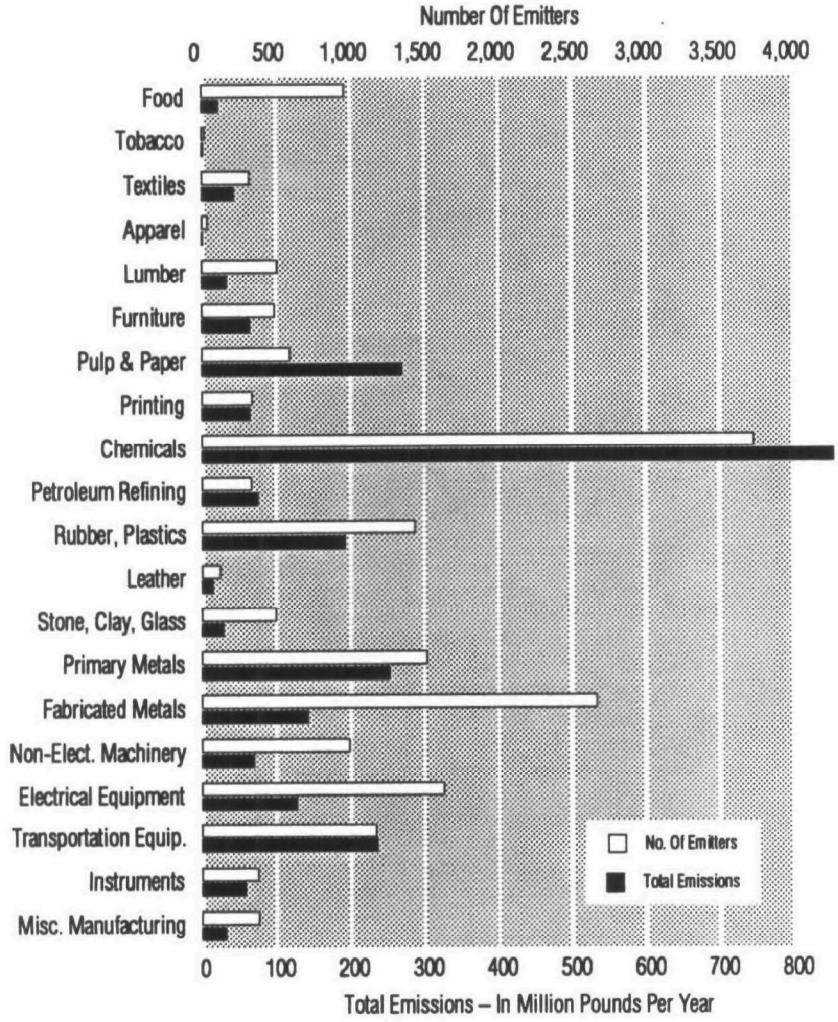
COUNTY AND STATE

1. Tooele, UT
2. Ascension, LA
3. Mobile, AL
4. Harris, TX
5. Sullivan, TN
6. Cook, IL
7. Los Angeles, CA
8. Warren, VA
9. Monroe, NY
10. Kenai-Cook Inlet, AK
11. Brazoria, TX
12. Chatham, GA
13. Jefferson, TX
14. Alleghany, VA
15. Hamblen, TN
16. McLeod, MN
17. Mississippi, AR
18. St. James, LA
19. Calcasieu, LA
20. Jefferson, KY

Table 3-34
Counties
- 1988 -

County	State	No. Of Release Reports	No. Of Facilities	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	County % Of Total TRI Emissions
Tooele	UT	8	4	109,868,022	109,868,272	4.21
Ascension	LA	137	15	5,614,188	51,237,547	1.97
Mobile	AL	179	27	49,711,651	50,581,837	1.94
Harris	TX	1,158	223	29,203,555	47,859,672	1.84
Sullivan	TN	103	14	9,074,646	42,806,100	1.64
Cook	IL	1,536	517	29,546,827	38,078,024	1.46
Los Angeles	CA	1,868	624	28,879,726	37,733,455	1.45
Warren	VA	27	4	34,579,400	34,639,208	1.33
Monroe	NY	245	61	20,640,798	26,091,597	1.00
Kenai Peninsula	AK	18	3	276,935	20,958,860	0.80
Brazoria	TX	232	22	10,555,741	19,938,165	0.76
Chatham	GA	78	22	17,306,213	19,619,444	0.75
Jefferson	TX	308	32	9,172,464	19,581,551	0.75
Alleghany	VA	15	3	18,228,664	19,009,264	0.73
Hamblen	TN	50	19	17,099,246	17,253,775	0.66
Mc Leod	MN	26	7	16,302,055	16,567,333	0.64
Mississippi	AR	39	13	2,888,492	16,140,137	0.62
St James	LA	46	8	440,575	15,594,639	0.60
Calcasieu	LA	186	21	5,877,986	15,242,628	0.58
Jefferson	KY	300	61	13,660,821	15,080,839	0.58
		6,559	1,700	428,928,005	633,882,347	24.32

Figure 3-21
Toxic Air Emissions
— BY U.S. INDUSTRY - 1988 —



1988 EMISSIONS

Industries by 2-Digit SIC Code

As shown in Figure 3-21 and Table 3-35, the chemicals industry is by far the largest industrial emitter with nearly one third of total national emissions. Together with the Pulp & Paper, Primary Metals, and Transportation Equipment industries, four industries reported more than 60% of the total. Figure 3-21 shows a comparison of total emissions with number of facilities. This shows that the Pulp & Paper facilities generally report high emissions per facility (more than

Table 3-35
Air Emissions By U.S. Industry
— 1988 —

2-Digit SIC Code	U.S. Industry	No. Of Emitters	Total Emissions (lb/yr)	Industry % Of Total TRI Emissions
20	Food	960	22,350,401	0.86
21	Tobacco	19	1,817,354	0.07
22	Textiles	320	43,684,491	1.68
23	Apparel	38	1,665,803	0.06
24	Lumber	507	33,142,943	1.27
25	Furniture	490	64,818,870	2.49
26	Pulp & Paper	595	270,398,044	10.37
27	Printing	339	64,998,394	2.49
28	Chemicals	3,729	854,587,986	32.79
29	Petroleum Refining	334	75,530,418	2.90
30	Rubber, Plastics	1,437	192,919,849	7.40
31	Leather	121	14,850,396	0.57
32	Stone, Clay, Glass	497	28,603,514	1.10
33	Primary Metals	1,518	253,267,435	9.72
34	Fabricated Metals	2,664	142,788,595	5.48
35	Non-Elect. Machinery	994	70,091,651	2.69
36	Electrical Equipment	1,630	127,625,211	4.90
37	Transport. Equipment	1,173	236,353,758	9.07
38	Instruments	378	58,384,902	2.24
39	Misc. Manufacturing	384	32,306,637	1.24

450,000 pounds per facility) compared to Fabricated Metals, for example, which report a relatively small amount per facility (about 54,000 pounds per facility).

Figure 3-22 and Table 3-36 show the number of release reports submitted to EPA for TRI reporting. Again the chemicals industry has about 30% of the national total. Each report represents one chemical released at a single facility. Because the chemicals industry is such a large part of the total, additional details on the industry are presented below.

Figure 3-22
Number Of Release Reports
— BY U.S. INDUSTRY - 1988 —

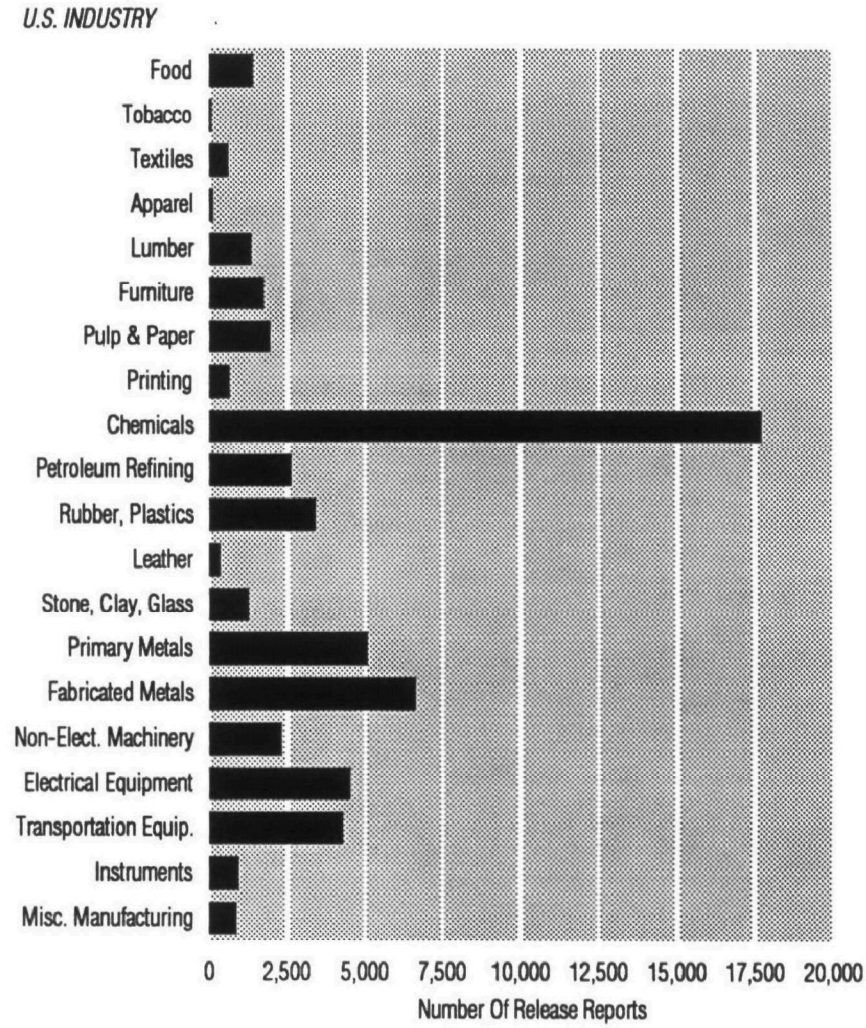
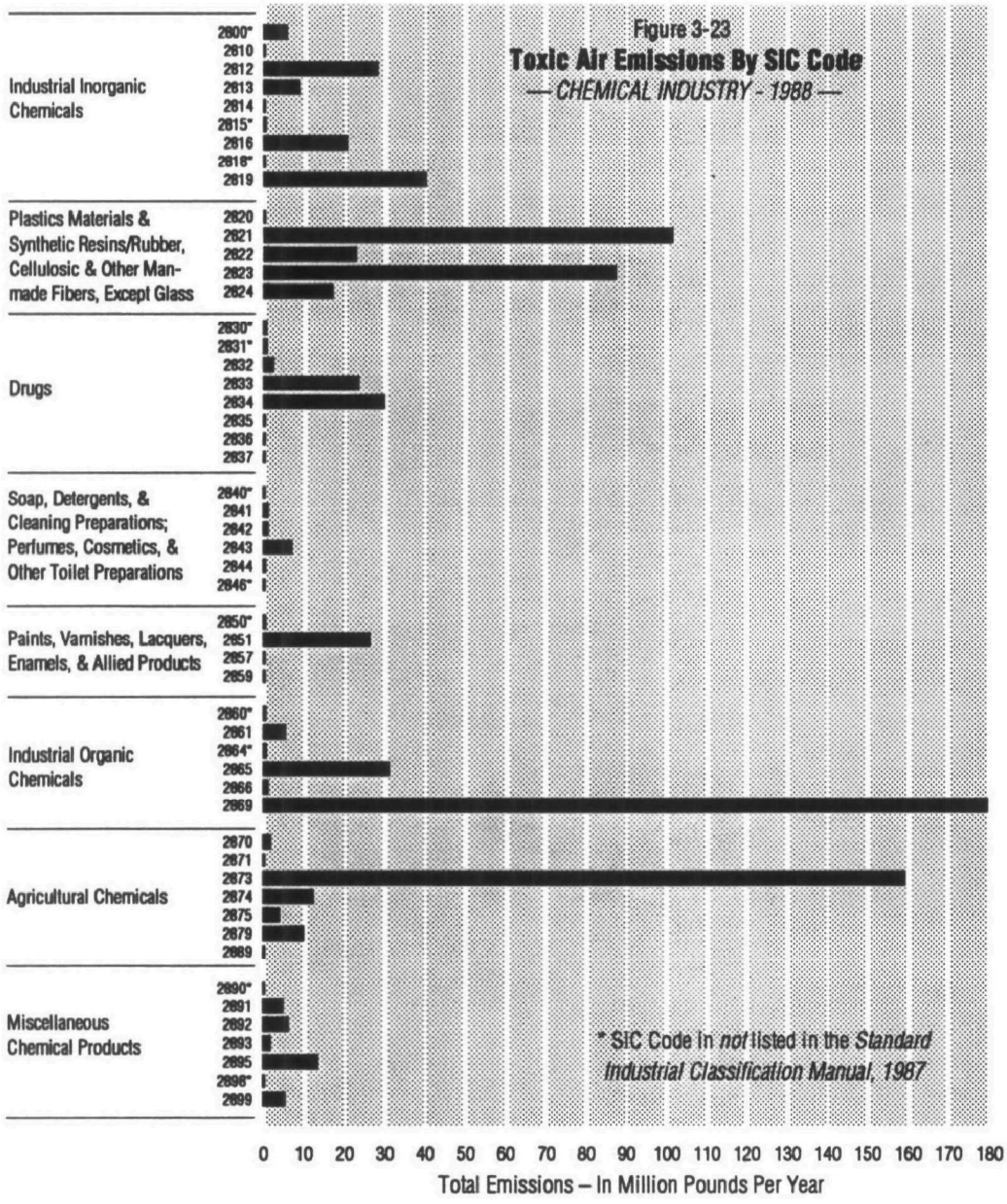


Table 3-36
No. of Release Reports by U.S. Industry
— 1988 —

2-Digit SIC Code	U.S. Industry	No. Of Release Reports	Industry % Of Total TRI Reports	2-Digit SIC Code	U.S. Industry	No. Of Release Reports	Industry % Of Total TRI Reports
20	Food	1,399	0.86	30	Rubber, Plastics	3,404	7.40
21	Tobacco	40	0.07	31	Leather	328	0.57
22	Textiles	589	1.68	32	Stone, Clay, Glass	1,254	1.10
23	Apparel	66	0.06	33	Primary Metals	5,073	9.72
24	Lumber	1,321	1.27	34	Fabricated Metals	6,629	5.48
25	Furniture	1,733	2.49	35	Non-Elect. Machinery	2,301	2.69
26	Pulp & Paper	1,952	10.37	36	Electrical Equipment	4,517	4.90
27	Printing	621	2.49	37	Transport. Equipment	4,296	9.07
28	Chemicals	17,676	32.79	38	Instruments	937	2.24
29	Petroleum Refining	2,623	2.90	39	Misc. Manufacturing	862	1.24



1988 EMISSIONS

Industries by 3 and 4-Digit SIC Code

To subdivide the industrial sector further, Tables 3-37 and 3-38 present the top industries by 3-digit SIC codes and 4-digit SIC codes respectively. The top ten industries as shown in Table 3-37 represent almost 50% of total emissions. By breaking it down one level further, the top ten 4-digit industries, as shown in Table 3-38, reported 38% of the total.

Figure 3-23 shows the toxic air emissions reported by all of the 4-digit chemical industries. Plastic materials, industrial organic chemicals, and agricultural chemicals are the segments of the industry reporting the majority of the industry's emissions.

Table 3-37

Top Industrial Emitters - 1988

3-DIGIT SIC CODES

3-Digit SIC Rank	Code	U.S. Industry	Total Emissions (lb/yr)	Industry % Of 2-Digit SIC Total	Industry % Of Total TRI Emissions
1	282	Plastics Materials & Synthetic Resins, Synthetic Rubber, Cellulosic & Other Manmade Fibers, Except Glass	228,273,763	26.71	8.76
2	286	Industrial Organic Chemicals	216,651,476	25.35	8.31
3	287	Agricultural Chemicals	185,966,845	21.76	7.13
4	333	Primary Smelting & Refining of Nonferrous Metals	133,011,750	52.52	5.10
5	371	Motor Vehicles & Motor Vehicle Equipment	125,713,309	53.19	4.82
6	281	Industrial Inorganic Chemicals	96,854,744	11.33	3.72
7	261	Pulp Mills	90,471,927	33.46	3.47
8	307	Miscellaneous Plastics Products	73,342,769	38.02	2.81
9	291	Petroleum Refining	71,236,633	94.32	2.73
10	308	Miscellaneous Plastics Products	69,235,509	35.89	2.66
			1,290,758,725		49.52

Table 3-38

Top Industrial Emitters - 1988

4-DIGIT SIC CODES

4-Digit SIC Rank	Code	U.S. Industry	Total Emissions (lb/yr)	Industry % Of 2-Digit SIC Code	SIC % Of Total TRI Emissions
1	2869	Industrial Organic Chemicals, Not Elsewhere Classified	179,381,453	20.99	6.88
2	2873	Nitrogenous Fertilizers	159,132,268	18.62	6.10
3	3339	Primary Smelting & Refining of Nonferrous Metals, Except Copper & Aluminum	115,557,844	45.63	4.43
4	2821	Plastics Materials, Synthetic Resins & Nonvulcanizable Elastomers	101,363,368	11.86	3.89
5	2611	Pulp Mills	88,574,443	32.76	3.40
6	2823	Cellulosic Manmade Fibers	87,327,427	10.22	3.35
7	3079	Miscellaneous Plastics Products	71,505,551	37.06	2.74
8	2911	Petroleum Refining	71,225,233	94.30	2.73
9	3711	Motor Vehicles & Passenger Car Bodies	68,315,256	28.90	2.62
10	2621	Paper Mills	54,756,547	20.25	2.10
			997,139,390		38.24

Table 3-39
Chemicals Emitted in the Greatest Amount
— 1988 —

Chemical	No. Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions	Cumulative Chemical %
Toluene	3,766	285,303,917	10.95	10.95
Ammonia	2,448	252,273,912	9.68	20.63
Methanol	2,283	226,096,844	8.67	29.30
Acetone	2,624	203,280,215	7.80	37.10
1,1,1-Trichloroethane	3,630	173,920,989	6.67	43.77
Xylene (Mixed Isomers)	3,240	151,187,866	5.80	49.57
Chlorine	1,244	133,751,760	5.13	54.70
Methyl Ethyl Ketone	2,373	131,808,179	5.06	59.76
Dichloromethane	1,577	125,849,987	4.83	64.59
Carbon Disulfide	79	123,893,704	4.75	69.34
Freon 113	1,372	68,514,249	2.63	74.63
Hydrochloric Acid	2,253	69,264,605	2.66	72.00
Trichloroethylene	892	52,645,060	2.02	76.65
Glycol Ethers	1,354	47,937,703	1.84	78.49
Ethylene	261	43,233,377	1.66	80.15
n-Butyl Alcohol	1,062	37,365,557	1.43	81.58
Tetrachloroethylene	683	35,555,545	1.36	82.94
Styrene	1,140	32,460,559	1.25	84.19
Methyl Isobutyl Ketone	970	31,435,711	1.21	85.40
Benzene	459	30,226,580	1.16	86.56
		2,256,006,319		86.56

1988 EMISSIONS
Individual Chemicals

Figure 3-24 and Table 3-39 show the individual chemicals emitted in the greatest amount. The 10 top chemicals represent nearly 70% of the total emissions while the 20 top chemicals represent almost 87% of the total. Toluene emissions alone represent more than 10% of the national total.

1988 EMISSIONS
Groups of Chemicals

It is useful to look at groups of chemicals whose emissions are targeted by EPA programs. None of these programs were underway during 1988 so the effect of the program does not show up in the reported emissions.

Figure 3-24
U.S. Air Toxics Emissions
— 1988 —

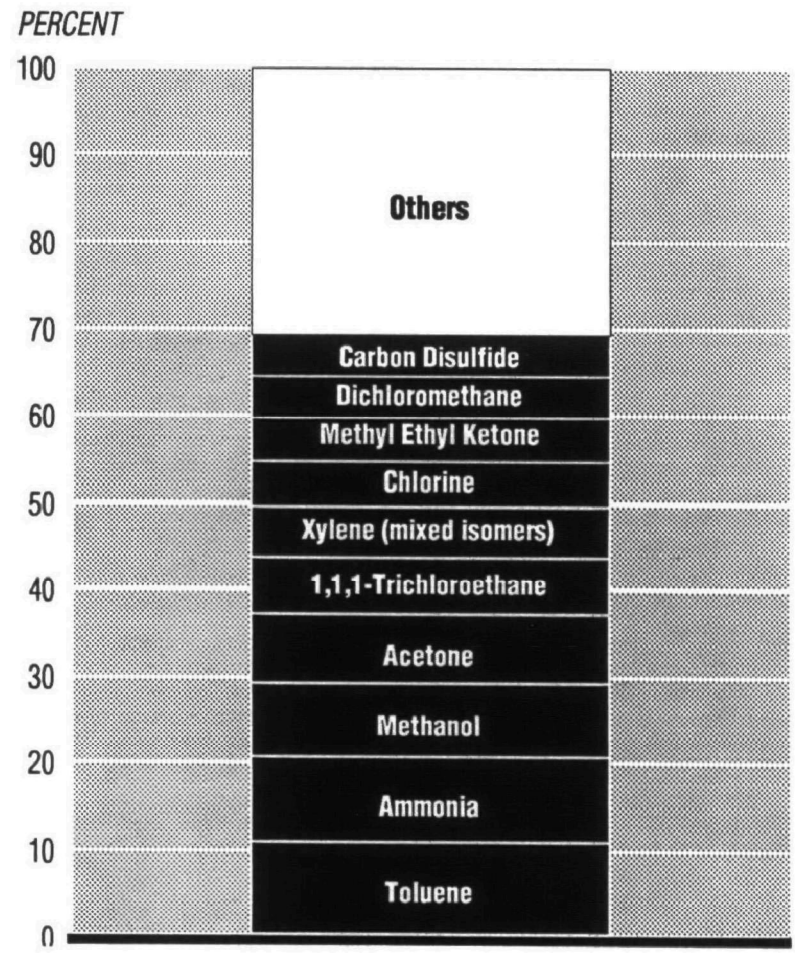


Table 3-40
Major Sources
— 1988 —

The Number of Facilities Emitting
10 TPY of Any One HAP or 25 TPY of Any HAPs

10 Tpy Of One HAP	25 Tpy Of Any HAPs	10 Or 25 Tpy	Total Emissions (lb/yr)	% Of Total HAP Emissions	HAP % Of Total Tri Emissions
6,424	4,487	6,455	1,806,014,829	96 60	71 72

Table 3-41
HAPs Emitted in the Greatest Amount
— 1988 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions	Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions
Toluene	3,766	285,303,917	10 95	Glycol Ethers	1,354	47,937,703	1 84
Methanol	2,283	226,096,844	8 67	Tetrachloroethylene	683	35,555,545	1 36
1,1,1-Trichloroethane	3,630	173,920,989	6 67	Styrene	1,140	32,460,559	1 25
Xylene (Mixed Isomers)	3,240	151,187,866	5.80	Methyl Isobutyl Ketone	970	31,435,711	1 21
Chlorine	1,244	133,751,760	5 13	Benzene	459	30,226,580	1.16
Methyl Ethyl Ketone	2,373	131,808,179	5 06	Chloroform	164	23,871,504	0 92
Dichloromethane	1,577	125,849,987	4 83	Carbonyl Sulfide	30	20,183,072	0 77
Carbon Disulfide	79	123,893,704	4 75	Ethylene Glycol	858	13,569,932	0 52
Hydrochloric Acid	2,253	69,264,605	2.66	Hydrogen Fluoride	423	12,114,046	0 46
Trichloroethylene	892	52,645,060	2.02	Formaldehyde	724	11,891,313	0 46
						1,732,968,876	66 48

Table 3–42
33/50 Chemicals Emitted in the Greatest Amount
— 1988 —

Chemical	No. Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total Tri Emissions	Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total Tri Emissions
Toluene	3,766	285,303,917	10.95	o-Xylene	63	2,064,641	0 08
1,1,1-Trichloroethane	3,630	173,920,989	6 67	Lead Compounds	489	1,518,309	0 06
Xylene (Mixed Isomers)	3,240	151,187,866	5 80	Lead	559	1,168,231	0 04
Methyl Ethyl Ketone	2,373	131,808,179	5 06	Cyanide Compounds	210	907,726	0.03
Dichloromethane	1,577	125,849,987	4 83	Chromium Compounds	713	791,922	0 03
Trichloroethylene	892	52,645,060	2.02	Chromium	659	547,745	0 02
Tetrachloroethylene	683	35,555,545	1 36	Nickel	590	421,570	0 02
Methyl Isobutyl Ketone	970	31,435,711	1 21	Nickel Compounds	321	254,761	0 01
Benzene	459	30,226,580	1 16	Cadmium Compounds	65	100,487	0 00
Chloroform	164	23,871,504	0.92	Mercury	27	23,395	0 00
p-Xylene	46	6,003,302	0.23	Cadmium	45	21,925	0 00
Carbon Tetrachloride	87	3,715,421	0 14	Mercury Compounds	7	2,366	0 00
m-Xylene	66	2,194,146	0 08			1,061,541,285	40 72

Hazardous Air Pollutants - The Clean Air Act Amendments of 1990 listed 189 chemicals for control under Title III. Major sources, defined as facilities that emit 10 tons per year of one HAP or 25 tons of total HAPs, must apply the maximum available control technology. Table 3-40 shows the number of facilities that would qualify as major sources according to the TRI reports (As mentioned earlier, 17 of the 189 HAPs specified in the Clean Air Act are not covered by TRI). These 6,455 facilities, which is equivalent to 35% of the total facilities reporting, represent 97% of the total HAP emissions and 72% of all TRI chemical emissions. Table 3-41 show the twenty HAPs emitted in the greatest amount. They represent about two thirds of the total national emissions.

33/50 Chemicals - EPA initiated a voluntary emissions reduction program targeting 17 specific chemicals (or groups of related chemicals in some cases). Reported emissions of these chemicals are shown in Table 3-42. Together this group of chemicals is equivalent to 35% of the total toxic emissions.

High Risk/Early Reduction Chemicals - Table 3-43 lists 20 high risk/early reduction chemicals. These chemicals are considered high risk because of their toxicity. Together they represented less than 2% of the total national toxics emissions in 1988.

Carcinogens - Table 3-44 summarizes the emissions of the 20 carcinogens emitted in the greatest amount as reported to the TRI. Their significance is due to their carcinogenicity. Together the top twenty represent 14% of total emissions with the largest carcinogen, dichloromethane or methylene chloride, almost 5%.

Table 3-43
High Risk/Early Reduction Chemicals Emitted in the Greatest Amount
- 1988 -

Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions
Benzene	459	30,226,580	1 16
1,3-Butadiene	145	6,654,123	0 26
Ethylene Oxide	193	4,762,901	0 18
Acrylonitrile	100	4,195,667	0 16
Vinyl Chloride	47	1,436,427	0 06
Chloroprene	12	1,218,426	0 05
Acrylic Acid	139	799,178	0 03
Chromium Compounds	713	791,922	0 03
Chromium	659	547,745	0 02
Vinylidene Chloride	21	296,353	0 01
Arsenic Compounds	123	267,252	0 01
Methylenebis (Phenylisocyanate)	228	247,319	0 01
Toluene-2,4-Diisocyanate	228	196,977	0 01
Cadmium Compounds	65	100,487	0 00
Dibenzofuran	99	71,054	0 00
1,2-Dibromoethane	28	63,327	0 00
Heptachlor	2	49,055	0 00
Asbestos (Friable)	65	47,615	0 00
1,1,2,2-Tetrachloroethane	13	43,855	0 00
Acrolein	12	33,652	0 00
		52,049,914	2.00

Table 3-44
TRI Carcinogens Emitted in The Greatest Amount
— 1988 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions
Dichloromethane	1,577	125,849,987	4 83
Trichloroethylene	892	52,645,060	2 02
Tetrachloroethylene	683	35,555,545	1 36
Styrene	1,140	32,460,559	1 25
Benzene	459	30,226,580	1 16
Chloroform	164	23,871,504	0 92
Formaldehyde	724	11,891,313	0.46
Chloromethane	77	11,290,415	0.43
1,3-Butadiene	145	6,654,123	0 26
Ethylene Oxide	193	4,762,901	0 18
1,2-Dichloroethane	100	4,524,929	0.17
Acrylonitrile	100	4,195,667	0 16
Carbon Tetrachloride	87	3,715,421	0 14
1,1,2-Trichloroethane	29	1,741,342	0 07
Vinyl Chloride	47	1,436,427	0 06
Chromium	659	547,745	0 02
Epichlorohydrin	70	465,268	0 02
2-Nitropropane	12	389,385	0 01
Vinylidene Chloride	21	296,353	0 01
Urethane	6	145,373	0 01
		352,665,897	13 53

Table 3-45
TRI Ozone Depletors Emitted in The Greatest Amount
— 1988 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions
1,1,1-Trichloroethane	3,630	173,920,989	6 67
Freon 113	1,372	68,514,249	2 63
Carbon Tetrachloride	87	3,715,421	0 14
		246,150,659	9 44

Ozone Depletors - In 1988, only three ozone depletors were included in the TRI database. Table 3-45 summarizes their emissions, which are just under 10% of all toxic emissions.

1987 EMISSIONS

EPA Regions

Figure 3-25 and Table 3-46 break out the reported emissions by EPA region. Nationally, 2.8 billion pounds of toxics were emitted by 16,929 facilities. Regions 4, 5, and 6 reported the greatest emissions with 24%, 21%, and 18% of the total respectively. Regions 4 and 5 also had the greatest number of facilities reporting, although Region 9 was slightly ahead of Region 6 in number of facilities.

Figure 3-25
EPA Regional Hot Spots
— 1987 —

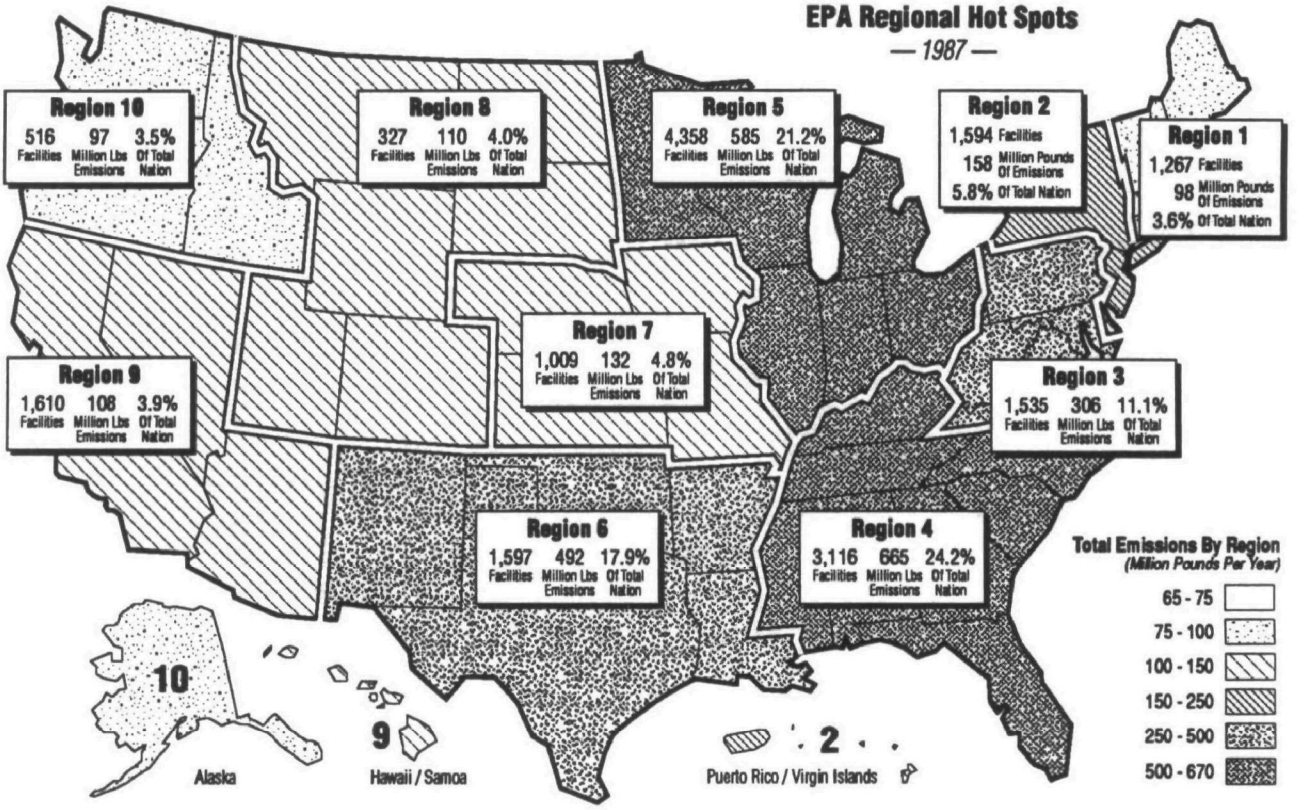


Table 3-46
Regional Hot Spots
— 1987 EPA REGIONS —

EPA Region	No. Of Release Reports	No. Of Facilities	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	Region % Of Total TRI Emissions
04	9,714	3,116	484,205,004	665,126,546	24.16
05	14,167	4,358	443,314,672	584,526,605	21.23
06	6,705	1,597	206,796,870	492,164,503	17.88
03	5,257	1,535	238,691,177	306,424,076	11.13
02	4,957	1,594	120,925,228	158,459,472	5.76
07	3,040	1,009	94,833,132	132,308,699	4.81
08	1,009	327	94,515,847	109,693,895	3.98
09	4,513	1,610	70,282,879	108,421,610	3.94
01	3,494	1,267	76,502,385	98,141,784	3.57
10	1,493	516	39,522,651	97,466,442	3.54
	54,349	16,929	1,869,589,845	2,752,733,632	100.00

1987 EMISSIONS

States

Toxic air emissions reported in the states are shown in Figure 3-26 and Table 3-47. Generally the states reporting the greatest emissions are the industrial states in the Northeast, Great Lakes, Middle Atlantic, and Gulf Coast, along with California. The one exception is Utah, which is dominated by one facility with very large emissions. Texas ranked first with reported emissions of 250 million pounds, equivalent to 9% of the national total.

Figure 3-26
Toxic Air Emissions By State
— 1987 —

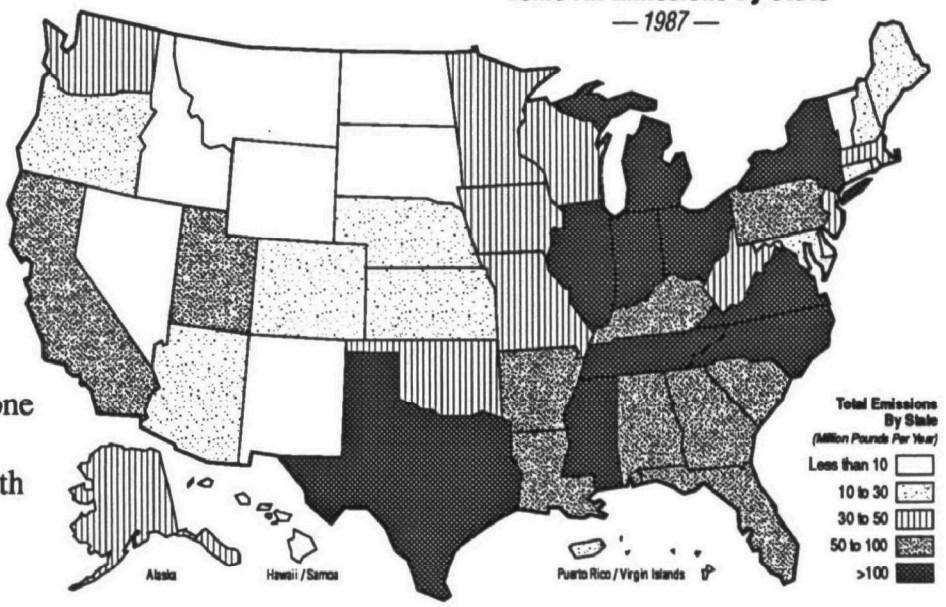


Table 3-47
State Total Emissions
— 1987 —

State	No. Of Release Reports	No. Of Facilities	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	State % Of Total TRI Emissions
AK	43	7	1,319,895	31,538,413	1.15
AL	1,141	311	90,774,819	102,358,308	3.72
AR	749	261	28,069,292	53,042,954	1.93
AS	2	2	0	27,750	0.00
AZ	373	140	8,188,317	17,665,050	0.64
CA	4,036	1,427	61,088,527	88,989,864	3.23
CO	395	147	5,941,487	10,575,961	0.38
CT	1,023	355	24,432,969	27,889,433	1.01
DE	181	51	8,505,907	9,155,948	0.33
FL	866	354	17,824,654	51,005,159	1.85
GA	1,440	492	77,076,554	93,139,842	3.38
HI	47	13	386,315	966,550	0.04
IA	723	256	29,124,492	40,333,436	1.47
ID	116	40	1,742,093	5,040,834	0.18
IL	3,206	1,036	80,426,499	106,191,820	3.86
IN	2,071	648	93,609,775	116,145,318	4.22
KS	573	184	18,497,764	28,048,660	1.02
KY	1,108	267	38,538,236	53,956,980	1.96
LA	1,312	219	50,895,973	148,837,096	5.41
MA	1,439	532	23,700,028	32,319,851	1.17
MD	518	152	13,177,965	20,544,923	0.75
ME	258	79	11,622,816	16,186,878	0.59
MI	2,453	683	93,837,027	119,780,329	4.35
MN	834	271	41,952,806	50,174,935	1.82
MO	1,432	447	38,603,617	49,462,906	1.80
MS	645	215	40,787,633	58,807,963	2.14
MT	113	24	2,009,046	5,675,133	0.21
NC	2,055	709	82,087,503	102,293,456	3.72
ND	56	25	610,023	1,666,024	0.06
NE	312	122	8,607,259	14,463,697	0.53
NH	317	117	9,644,847	12,593,688	0.46
NJ	2,370	725	30,866,552	43,791,313	1.59
NM	102	32	1,632,541	3,898,634	0.14
NV	55	28	619,720	772,396	0.03
NY	2,193	737	79,033,904	100,183,463	3.64
OH	3,945	1,153	95,546,373	142,697,406	5.18
OK	528	178	18,871,589	37,158,341	1.35
OR	527	185	14,964,242	21,525,234	0.78
PA	2,931	889	69,118,767	93,706,988	3.40
PR	377	131	9,309,172	12,710,823	0.46
RI	343	143	6,155,456	7,881,481	0.29
SC	1,148	331	51,418,664	66,178,001	2.40
SD	54	28	1,789,295	2,514,080	0.09
TN	1,311	437	85,696,941	137,386,837	4.99
TX	4,014	907	107,327,475	249,227,478	9.05
UT	311	86	82,862,166	86,323,243	3.14
VA	1,082	345	118,887,942	141,289,197	5.13
VI	17	1	1,715,600	1,773,873	0.06
VT	114	41	946,269	1,270,453	0.05
WA	807	284	21,496,421	39,361,961	1.43
WI	1,658	567	37,942,192	49,536,797	1.80
WV	545	98	29,000,596	41,727,020	1.52
WY	80	17	1,303,830	2,939,454	0.11
	54,349	16,929	1,869,589,845	2,752,733,632	100.00

1987 EMISSIONS

Three-Digit ZIP Code Areas

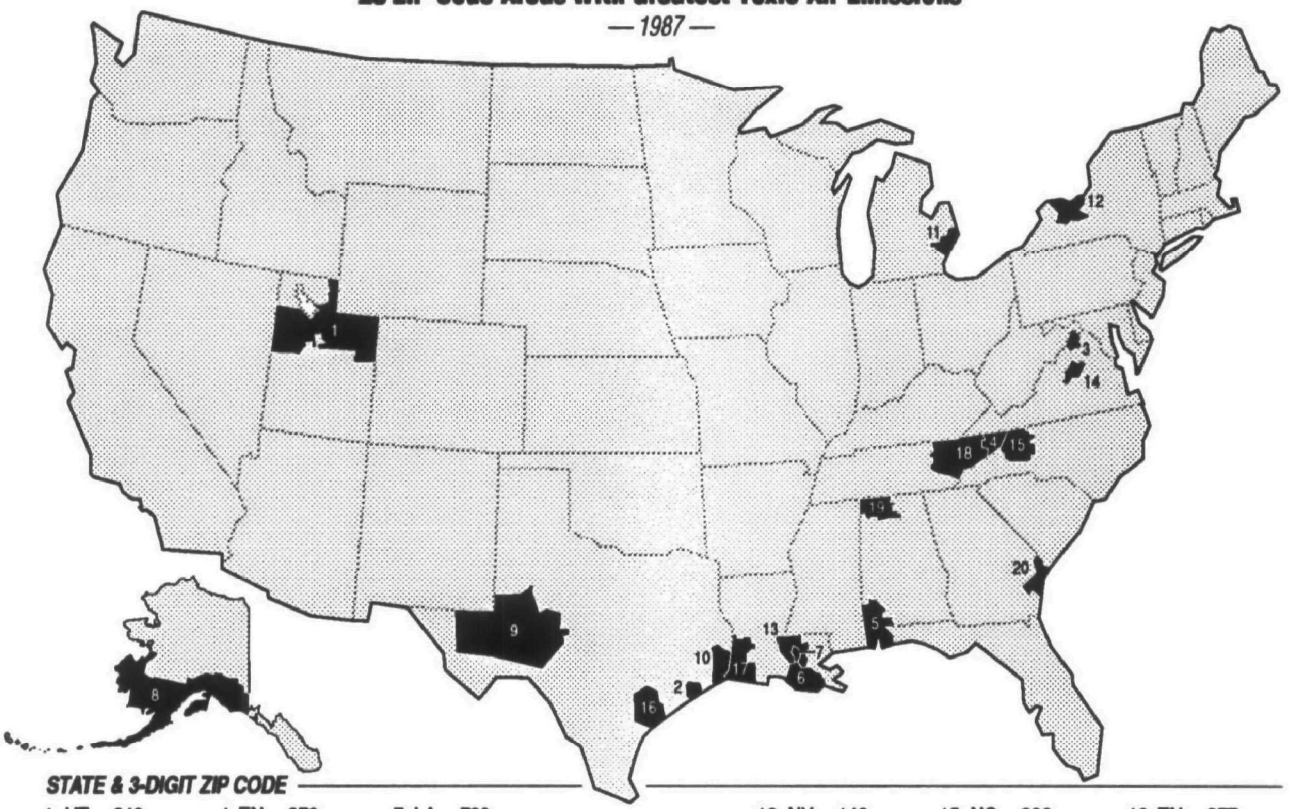
Since ZIP Codes are assigned generally according to population, three-digit ZIP Code areas represent convenient geographic areas smaller than states.

Figure 3-27 and Table 3-48 show the top 20 ZIP Code areas. Area 840 in Utah reported the greatest emissions with more than 4% of the national total. The top 20 areas together reported almost 26% of the national total.

Figure 3-27

20 ZIP Code Areas With Greatest Toxic Air Emissions

— 1987 —



STATE & 3-DIGIT ZIP CODE

1. UT... 840	4. TN... 376	7. LA... 700		12. NY... 146	15. NC... 286	18. TN... 377
2. TX... 775	5. AL... 365	8. AK... 996	10. TX... 776	13. LA... 707	16. TX... 779	19. AL... 356
3. VA... 226	6. LA... 703	9. TX... 797	11. MI... 480	14. VA... 244	17. LA... 706	20. GA... 314

Table 3-48

3-Digit ZIP Codes

— 1987 —

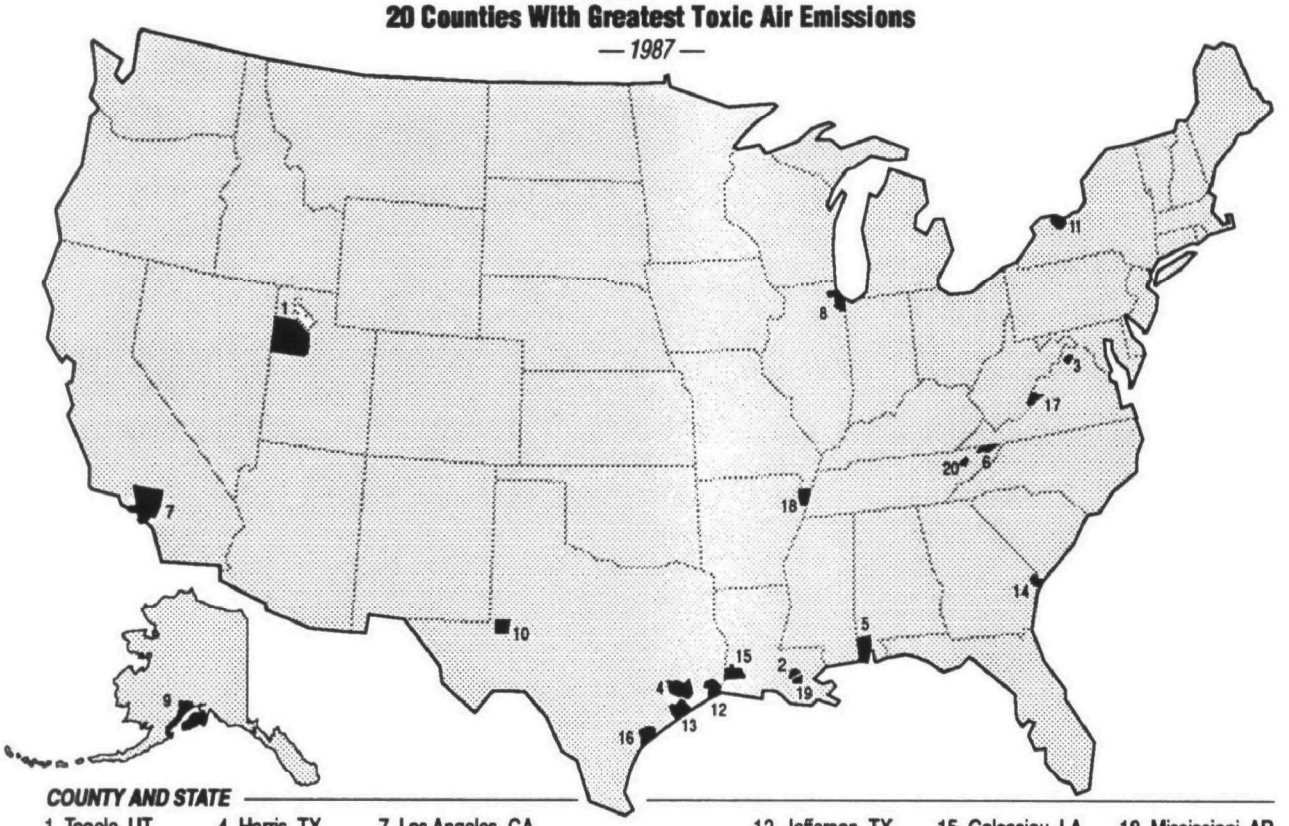
3-Digit ZIP Code	State	No. Of Release Reports	No. Of Facilities	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	ZIP % Of Total TRI Emissions
840	UT	127	30	79,693,562	80,404,209	2.92
775	TX	1,076	114	37,447,395	75,638,519	2.75
226	VA	45	12	53,864,892	54,112,601	1.97
376	TN	129	27	17,509,812	53,276,986	1.94
365	AL	165	21	47,688,861	48,562,188	1.76
703	LA	48	11	2,843,110	44,101,738	1.60
700	LA	280	35	7,073,563	32,340,914	1.17
996	AK	18	3	348,025	30,551,825	1.11
797	TX	70	14	2,126,028	29,039,058	1.05
776	TX	237	26	10,555,268	27,844,287	1.01
480	MI	387	106	24,133,692	26,516,990	0.96
146	NY	197	47	21,079,005	26,235,492	0.95
707	LA	337	36	12,961,101	22,374,031	0.81
244	VA	50	17	20,896,673	21,947,671	0.80
286	NC	363	118	19,925,968	21,843,602	0.79
779	TX	95	13	2,893,857	21,295,388	0.77
706	LA	215	25	7,680,927	20,034,371	0.73
377	TN	64	24	19,402,905	19,715,264	0.72
356	AL	165	39	15,290,163	19,249,498	0.70
314	GA	68	20	17,199,190	19,194,300	0.70
		4,136	738	420,613,997	694,278,932	25.22

1987 EMISSIONS

Counties

Figure 3-28 and Table 3-49 show the 20 counties with the greatest emissions. Again, Utah had the county reporting the greatest emissions. Together the top 20 counties reported 24% of the total national emissions. Three of these counties included more than 100 facilities while seven had fewer than ten. The distribution of counties reporting the largest emissions generally reflects the same geographic concentration as the state and ZIP Code areas, with the large emission reports coming from the industrial areas.

Figure 3-28
20 Counties With Greatest Toxic Air Emissions
— 1987 —



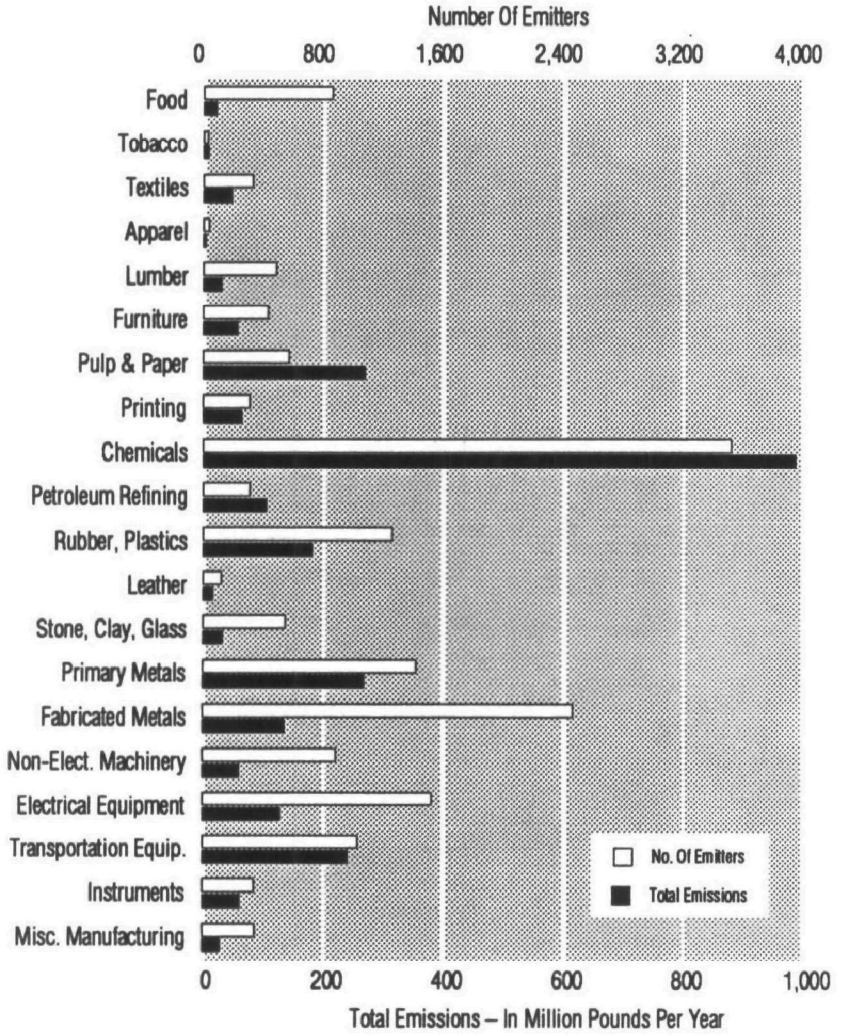
COUNTY AND STATE

1. Tooele, UT
2. Ascension, LA
3. Warren, VA
4. Harris, TX
5. Mobile, AL
6. Sullivan, TN
7. Los Angeles, CA
8. Cook, IL
9. Kenai-Cook Inlet, AK
10. Ector, TX
11. Monroe, NY
12. Jefferson, TX
13. Brazoria, TX
14. Chatham, GA
15. Calcasieu, LA
16. Calhoun, TX
17. Alleghany, VA
18. Mississippi, AR
19. St. James, LA
20. Hamblen, TN

Table 3-49
Counties
— 1987 —

County	State	No. Of Release Reports	No. Of Facilities	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	County % Of Total TRI Emissions
Tooele	UT	7	3	76,990,850	76,990,850	2.80
Ascension	LA	137	14	7,138,666	53,192,833	1.93
Warren	VA	16	2	51,049,650	51,098,900	1.86
Harris	TX	1,083	195	31,423,089	51,013,127	1.85
Mobile	AL	179	25	48,860,435	50,131,309	1.82
Sullivan	TN	87	10	8,824,570	42,157,825	1.53
Los Angeles	CA	1,733	590	27,847,064	37,142,886	1.35
Cook	IL	1,455	485	28,941,283	36,451,718	1.32
Kenai Peninsula	AK	18	3	348,025	30,551,825	1.11
Ector	TX	39	6	1,314,626	27,426,263	1.00
Monroe	NY	225	57	21,879,315	27,147,265	0.99
Jefferson	TX	321	32	9,245,670	23,474,705	0.85
Brazoria	TX	192	16	9,081,338	22,300,923	0.81
Chatham	GA	68	20	17,199,190	19,194,300	0.70
Calcasieu	LA	192	20	6,686,739	18,805,514	0.68
Calhoun	TX	64	7	1,731,973	18,123,053	0.66
Alleghany	VA	19	4	17,081,669	17,845,769	0.65
Mississippi	AR	42	12	2,980,128	17,257,687	0.63
St James	LA	45	8	1,062,259	17,252,819	0.63
Hamblen	TN	36	17	16,728,883	16,793,737	0.61
		5,958	1,526	386,415,422	654,353,308	23.77

Figure 3-29
Toxic Air Emissions
— BY U.S. INDUSTRY - 1987 —



1987 EMISSIONS

Industries by 2-Digit SIC Code

As shown in Figure 3-29 and Table 3-50, the chemicals industry is by far the largest industrial emitter with more than one third of total national emissions. Together with the Pulp & Paper, Primary Metals, and Transportation Equipment industries, four industries reported 64% of the total. Figure 3-29 shows a comparison of total emissions with number of facilities. This shows that the Pulp & Paper facilities generally report high emissions per facility (more than 470,000 pounds per facility)

Table 3-50
Air Emissions By U.S. Industry
— 1987 —

2-Digit SIC Code	U.S. Industry	No. Of Emitters	Total Emissions (lb/yr)	Industry % Of Total TRI Emissions
20	Food	853	21,128,105	0.77
21	Tobacco	24	6,768,722	0.25
22	Textiles	323	46,050,449	1.67
23	Apparel	35	2,753,619	0.10
24	Lumber	484	29,259,256	1.06
25	Furniture	426	56,978,226	2.07
26	Pulp & Paper	569	268,281,645	9.75
27	Printing	309	63,330,437	2.30
28	Chemicals	3,517	986,334,064	35.83
29	Petroleum Refining	305	105,111,872	3.82
30	Rubber, Plastics	1,253	180,609,219	6.56
31	Leather	118	14,847,725	0.54
32	Stone, Clay, Glass	545	32,320,624	1.17
33	Primary Metals	1,414	267,773,799	9.73
34	Fabricated Metals	2,458	135,399,921	4.92
35	Non-Elect. Machinery	882	60,023,399	2.18
36	Electrical Equipment	1,519	128,165,761	4.66
37	Transport. Equipment	1,023	240,892,720	8.75
38	Instruments	338	61,074,605	2.22
39	Misc. Manufacturing	341	28,824,848	1.05

compared to Fabricated Metals, for example, which report a relatively small amount per facility (about 55,000 pounds per facility).

Figure 3-30 and Table 3-51 show the number of release reports submitted to EPA for TRI reporting. Again the chemicals industry has about 30% of the national total. Each report represents one chemical released at a single facility. Because the chemicals industry is such a large part of the total, additional details on the industry are presented below.

Figure 3-30
Number Of Release Reports
— BY U.S. INDUSTRY - 1987 —

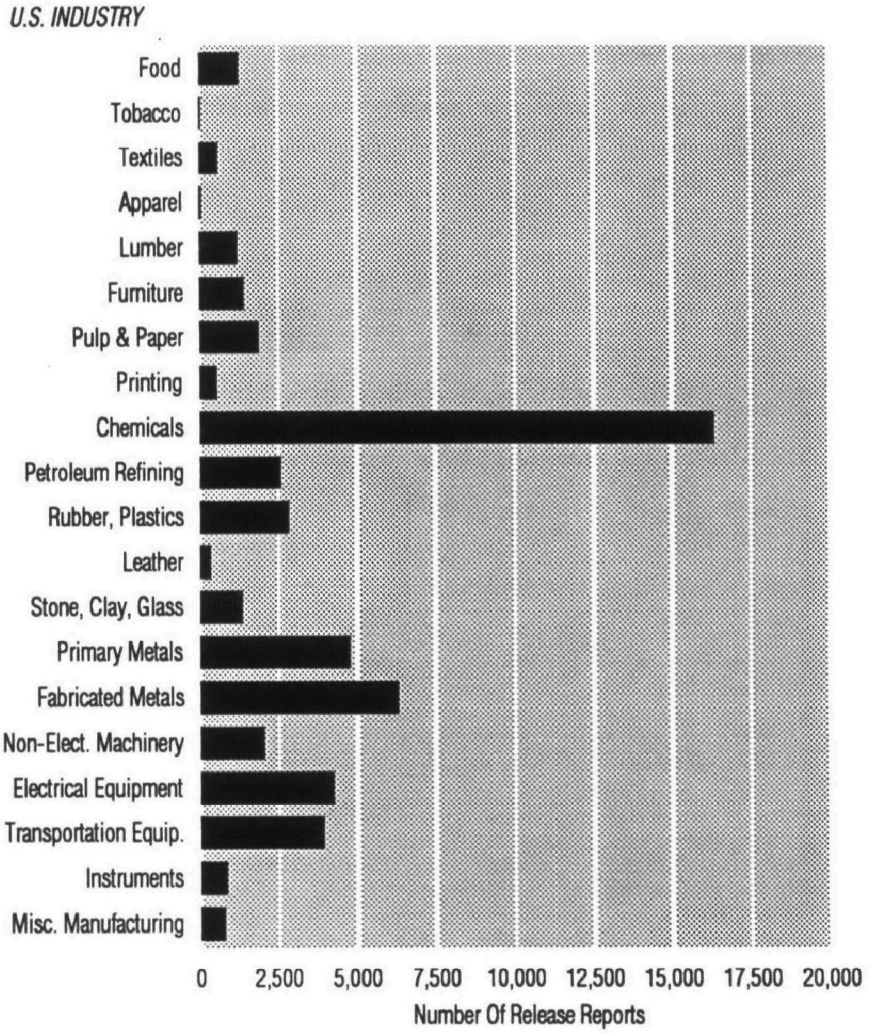
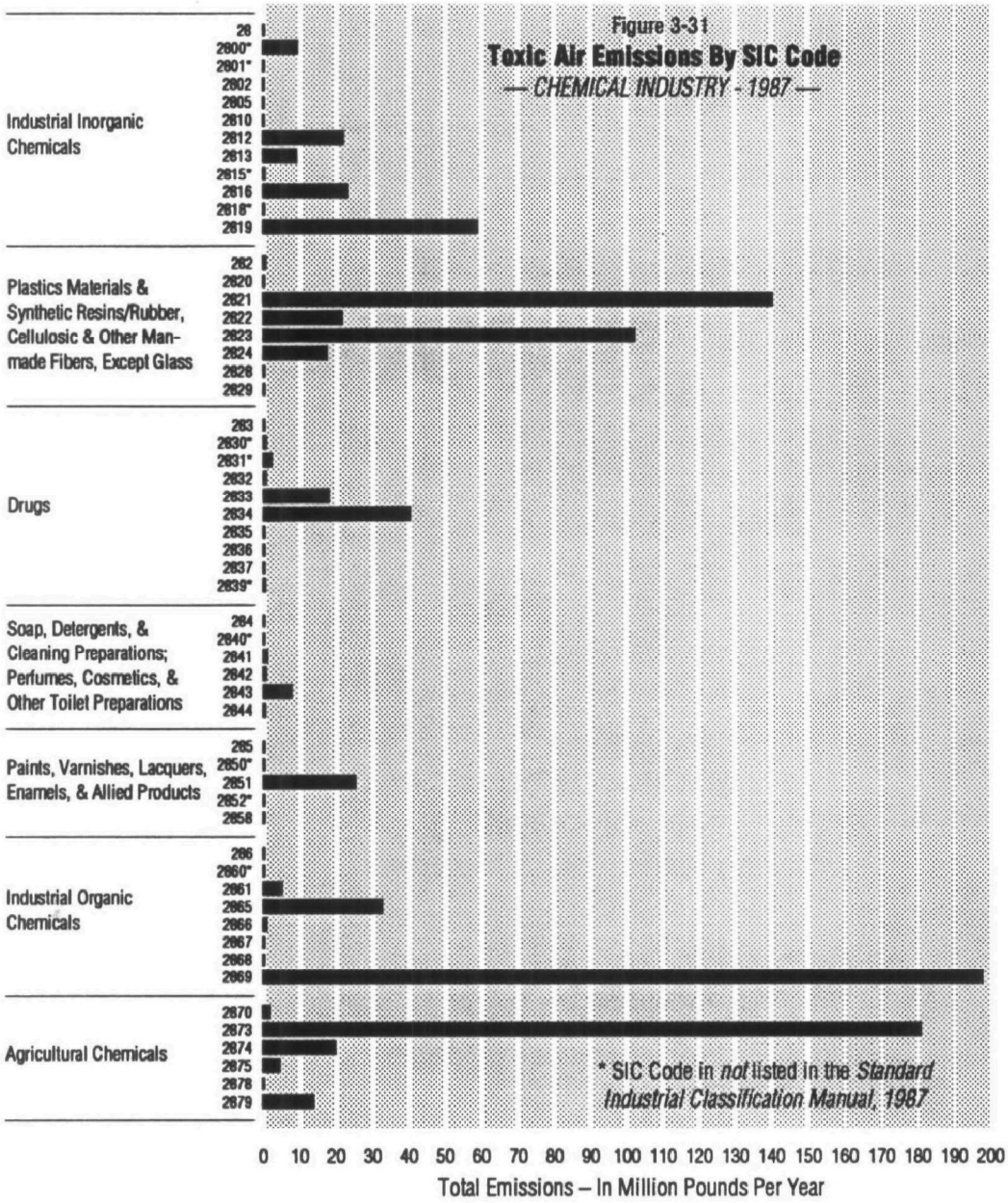


Table 3-51
No. of Release Reports by U.S. Industry
— 1987 —

2-Digit SIC Code	U.S. Industry	No. Of Release Reports	Industry % Of Total TRI Reports
20	Food	1,278	0.77
21	Tobacco	42	0.25
22	Textiles	577	1.67
23	Apparel	51	0.10
24	Lumber	1,228	1.06
25	Furniture	1,412	2.07
26	Pulp & Paper	1,880	9.75
27	Printing	538	2.30
28	Chemicals	16,324	35.83
29	Petroleum Refining	2,593	3.82
30	Rubber, Plastics	2,839	6.56
31	Leather	341	0.54
32	Stone, Clay, Glass	1,349	1.17
33	Primary Metals	4,792	9.73
34	Fabricated Metals	6,296	4.92
35	Non-Elect. Machinery	2,034	2.18
36	Electrical Equipment	4,258	4.66
37	Transport. Equipment	3,932	8.75
38	Instruments	847	2.22
39	Misc. Manufacturing	770	1.05



1987 EMISSIONS

Industries by 3 and 4-Digit SIC Code

To subdivide the industrial sector further, Tables 3-52 and 3-53 present the top industries by 3-digit SIC codes and 4-digit SIC codes respectively. The top ten industries as shown in Table 3-52 represent 54% of total emissions. By breaking it down one level further, the top ten 4-digit industries, as shown in Table 3-53, reported 41% of the total.

Figure 3-31 shows the toxic air emissions reported by all of the 4-digit chemical industries. Plastic materials, industrial organic chemicals, and agricultural chemicals are the segments of the industry reporting the majority of the industry's emissions.

Table 3-52

Top Industrial Emitters - 1987

3-DIGIT SIC CODES

3-Digit SIC Rank	Code	U.S. Industry	Total Emissions (lb/yr)	Industry % Of 2-Digit SIC Total	Industry % Of Total TRI Emissions
1	282	Plastics Materials & Synthetic Resins, Synthetic Rubber, Cellulosic & Other Manmade Fibers, Except Glass	281,787,487	28.57	10.24
2	286	Industrial Organic Chemicals	236,052,679	23.93	8.58
3	287	Agricultural Chemicals	219,969,105	22.30	7.99
4	371	Motor Vehicles & Motor Vehicle Equipment	142,480,452	59.15	5.18
5	333	Primary Smelting & Refining of Nonferrous Metals	139,831,819	52.22	5.08
6	281	Industrial Inorganic Chemicals	112,801,463	11.44	4.10
7	307	Miscellaneous Plastics Products	109,982,387	60.90	4.00
8	261	Pulp Mills	97,442,223	36.32	3.54
9	291	Petroleum Refining	95,244,002	90.61	3.46
10	331	Steel Works, Blast Furnaces, & Rolling & Finishing Mills	63,879,798	23.86	2.32
			1,499,471,415		54.47

Table 3-53

Top Industrial Emitters - 1987

4-DIGIT SIC CODES

4-Digit SIC Rank	Code	U.S. Industry	Total Emissions (lb/yr)	Industry % Of 2-Digit SIC Code	SIC % Of Total TRI Emissions
1	2869	Industrial Organic Chemicals, Not Elsewhere Classified	197,709,781	20.04	7.18
2	2873	Nitrogenous Fertilizers	180,745,494	18.32	6.57
3	2821	Plastics Materials, Synthetic Resins, & Nonvulcanizable Elastomers	140,064,943	14.20	5.09
4	3079	Miscellaneous Plastics Products	108,153,975	59.88	3.93
5	2823	Cellulosic Manmade Fibers	102,156,702	10.36	3.71
6	2911	Petroleum Refining	95,243,502	90.61	3.46
7	3711	Motor Vehicles & Passenger Car Bodies	85,315,599	35.42	3.10
8	2611	Pulp Mills	84,697,366	31.57	3.08
9	3339	Primary Smelting & Refining of Nonferrous Metals, Except Copper & Aluminum	83,513,443	31.19	3.03
10	2819	Industrial Inorganic Chemicals, Not Elsewhere Classified	58,764,259	5.96	2.13
			1,136,365,064		41.28

Table 3-54
Chemicals Emitted in the Greatest Amount
— 1987 —

Chemical	No. Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions	Cumulative Chemical %
Ammonia	2,174	289,662,920	10.52	10.52
Toluene	3,370	287,852,372	10.46	20.98
Methanol	2,006	215,232,880	7.82	28.80
Acetone	2,230	195,382,721	7.10	35.90
1,1,1-Trichloroethane	3,235	162,870,224	5.92	41.82
Methyl Ethyl Ketone	2,230	152,253,887	5.53	47.35
Xylene (Mixed Isomers)	2,878	147,727,850	5.37	52.72
Carbon Disulfide	75	135,392,401	4.92	57.64
Dichloromethane	1,474	131,093,612	4.76	62.40
Chlorine	1,210	107,179,298	3.89	66.29
Aluminum (Fume Or Dust)	1,149	90,852,286	3.30	69.59
Hydrochloric Acid	2,088	72,783,444	2.64	72.23
Ethylene	236	60,011,146	2.18	74.41
Freon 113	1,107	56,946,595	2.07	76.48
Trichloroethylene	888	53,740,241	1.95	78.43
Glycol Ethers	995	41,994,951	1.53	79.96
Propylene	283	38,906,600	1.41	81.37
Tetrachloroethylene	651	32,701,045	1.19	82.56
n-Butyl Alcohol	911	32,572,937	1.18	83.74
Styrene	923	32,076,780	1.17	84.91
		2,337,234,190		84.91

1987 EMISSIONS
Individual Chemicals

Figure 3-32 and Table 3-54 show the individual chemicals emitted in the greatest amount. The 10 top chemicals represent about 66% of the total emissions while the 20 top chemicals represent almost 85% of the total. Toluene and ammonia emissions each represent more than 10% of the national total.

1987 EMISSIONS
Groups of Chemicals

It is useful to look at groups of chemicals whose emissions are targeted by EPA programs. None of these programs were underway during 1987 so the effect of the program does not show up in the reported emissions.

Figure 3-32
U.S. Air Toxics Emissions
— 1987 —

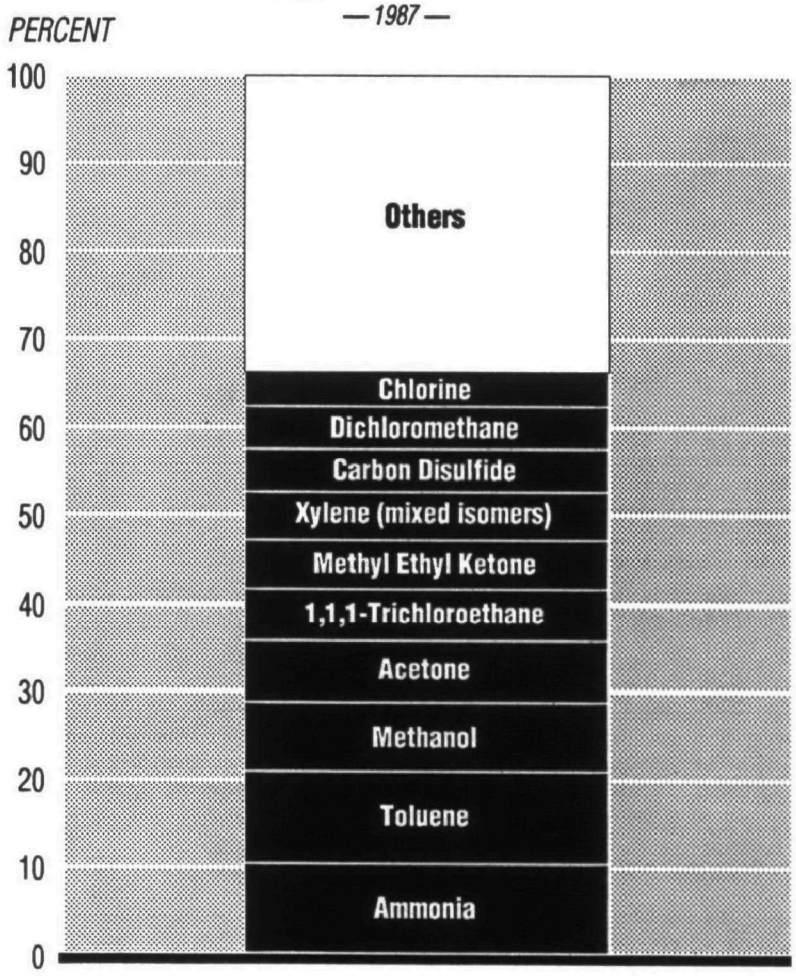


Table 3-55
Major Sources
— 1987 —

The Number of Facilities Emitting
10 TPY of Any One HAP or 25 TPY of Any HAPs

10 Tpy Of One HAP	25 Tpy Of Any HAPs	10 Or 25 Tpy	Total Emissions (lb/yr)	% Of Total HAP Emissions	HAP % Of Total Tri Emissions
5,946	4,212	5,962	1,815,155,735	97 09	67 92

Hazardous Air Pollutants - The Clean Air Act Amendments of 1990 listed 189 chemicals for control under Title III. Major sources, defined as facilities that emit 10 tons per year of one HAP or 25 tons of total HAPs, must apply the maximum available control technology. Table 3-55 shows the number of facilities that would qualify as major sources according to the TRI reports (As mentioned earlier, 17 of the 189 HAPs apecified in the Clean Air Act are not covered by TRI). These 5,962 facilities, which is equivalent to 35% of the total facilities reporting, represent 97% of the total HAP emissions and 68% of all TRI chemical emissions. Table 3-56 show the twenty HAPs emitted in the greatest amount. They represent almost two thirds of the total national emissions.

Table 3-56
HAPs Emitted In the Greatest Amount
— 1987 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions	Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions
Toluene	3,370	287,852,372	10 46	Glycol Ethers	995	41,994,951	1 53
Methanol	2,006	215,232,880	7 82	Tetrachloroethylene	651	32,701,045	1 19
1,1,1-Trichloroethane	3,235	162,870,224	5 92	Styrene	923	32,076,780	1 17
Methyl Ethyl Ketone	2,230	152,253,887	5 53	Benzene	460	31,203,577	1 13
Xylene (Mixed Isomers)	2,878	147,727,850	5 37	Methyl Isobutyl Ketone	778	29,595,348	1 08
Carbon Disulfide	75	135,392,401	4 92	Chloroform	157	24,674,317	0 90
Dichloromethane	1,474	131,093,612	4 76	Carbonyl Sulfide	24	22,487,005	0 82
Chlorine	1,210	107,179,298	3 89	Ethylene Glycol	746	15,428,233	0 56
Hydrochloric Acid	2,088	72,783,444	2 64	Formaldehyde	686	13,455,716	0 49
Trichloroethylene	888	53,740,241	1 95	Chloromethane	79	13,134,398	0 48
						1,722,877,579	62 59

33/50 Chemicals - EPA initiated a voluntary emissions reduction program targeting 17 specific chemicals (or groups of related chemicals in some cases). Reported emissions of these chemicals are shown in Table 3-57. Together this group of chemicals is equivalent to 339% of the total toxic emissions.

Table 3-57
33/50 Chemicals Emitted In the Greatest Amount
— 1987 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions	Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions
Toluene	3,370	287,852,372	10 46	m-Xylene	67	2,995,819	0.11
1,1,1-Trichloroethane	3,235	162,870,224	5 92	Lead	472	1,469,218	0 05
Methyl Ethyl Ketone	2,230	152,253,887	5 53	Cyanide Compounds	205	1,419,188	0 05
Xylene (Mixed Isomers)	2,878	147,727,850	5 37	Lead Compounds	384	1,158,164	0 04
Dichloromethane	1,474	131,093,612	4 76	Chromium Compounds	546	775,139	0 03
Trichloroethylene	888	53,740,241	1 95	Nickel	464	419,585	0 02
Tetrachloroethylene	651	32,701,045	1 19	Chromium	558	407,195	0 01
Benzene	460	31,203,577	1 13	Nickel Compounds	251	306,365	0 01
Methyl Isobutyl Ketone	778	29,595,348	1 08	Cadmium Compounds	52	163,918	0 01
Chloroform	157	24,674,317	0 90	Mercury	29	23,409	0 00
p-Xylene	52	7,437,936	0 27	Cadmium	42	14,119	0 00
Carbon Tetrachloride	87	4,378,209	0 16	Mercury Compounds	5	2,336	0 00
o-Xylene	90	3,680,212	0 13			1,078,363,185	39 18

High Risk/Early Reduction Chemicals - Table 3-58 lists 20 high risk/early reduction chemicals. These chemicals are considered high risk because of their toxicity. Together they represented about 2% of the total national toxics emissions in 1987.

Carcinogens - Table 3-59 summarizes the emissions of the 20 carcinogens emitted in the greatest amount as reported to the TRI. Their significance is due to their carcinogenicity. Together the top twenty represent 13% of total emissions with the largest carcinogen, dichloromethane or methylene chloride, almost 5%.

Table 3-58
High Risk/Early Reduction Chemicals Emitted In the Greatest Amount
- 1987 -

Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions
Benzene	460	31,203,577	1 13
1,3-Butadiene	140	9,413,317	0 34
Acrylonitrile	95	5,387,496	0 20
Ethylene Oxide	190	5,184,403	0 19
Vinyl Chloride	46	1,794,472	0 07
Chloroprene	12	1,064,028	0 04
Methylenebis (Phenylisocyanate)	151	834,270	0 03
Acrylic Acid	127	831,599	0 03
Toluene-2,4-Diisocyanate	207	788,742	0 02
Chromium Compounds	546	775,139	0 03
Vinylidene Chloride	21	466,859	0 02
Chromium	558	407,195	0 01
Methyl Isocyanate	5	286,544	0 01
Arsenic Compounds	105	284,221	0 01
Cadmium Compounds	52	163,918	0 01
1,1,2,2-Tetrachloroethane	16	126,289	0 00
Phosgene	30	83,640	0 00
Dibenzofuran	98	76,545	0 00
1,2-Dibromoethane	34	65,669	0 00
Asbestos (Friable)	60	51,461	0 00
		59,289,384	2.15

Table 3-59
TRI Carcinogens Emitted In The Greatest Amount
— 1987 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions
Dichloromethane	1,474	131,093,612	4 76
Trichloroethylene	888	53,740,241	1.95
Tetrachloroethylene	651	32,701,045	1 19
Styrene	923	32,076,780	1 17
Benzene	460	31,203,577	1 13
Chloroform	157	24,674,317	0 90
Formaldehyde	686	13,455,716	0 49
Chloromethane	79	13,134,398	0 48
1,3-Butadiene	140	9,413,317	0 34
1,2-Dichloroethane	112	6,368,587	0 23
Acrylonitrile	95	5,387,496	0.20
Ethylene Oxide	190	5,184,403	0 19
Carbon Tetrachloride	87	4,378,209	0 16
1,1,2-Trichloroethane	51	2,139,959	0 08
Vinyl Chloride	46	1,794,472	0 07
Urethane	7	797,000	0 03
Vinylidene Chloride	21	466,859	0 02
2-Nitropropane	13	466,252	0 02
Epichlorohydrin	67	423,522	0 02
Chromium	558	407,195	0 01
		369,306,957	13 42

Table 3-60
TRI Ozone Depletors Emitted In The Greatest Amount
— 1987 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	Chemical % Of Total TRI Emissions
1,1,1-Trichloroethane	3,235	162,870,224	5 92
Freon 113	1,107	56,946,595	2 07
Carbon Tetrachloride	87	4,378,209	0 16
		224,195,028	8 14

Ozone Depletors - In 1987, only three ozone depletors were included in the TRI database. Table 3-60 summarizes their emissions, which about 8% of all toxic emissions.

SECTION 4

Data Handling Procedures

This section describes the data handling procedures used to create the Basic and Linked data sets on which the analyses in this report are based. Since the report's focus is on air emissions, several of the data fields in the master database were not used. For each year's data, two sets were created: first, a quality-reviewed set of all air emissions data and second, a subset of that data, which represented emissions reported by facilities that responded in all four years. The first set (Basic Set) was used for the analysis of each year's air emissions and the second (Linked Set) was used to compare changes from year to year. This section explains how each data set was created.

Data Management

The latest versions of the TRI data tapes were obtained for 1987, 1988, 1989, and 1990. The tapes used for this report were created March 21, 1992. Any data revisions made to EPA's master data files before March 21, 1992 are included in this data set. Data revisions include quality control modifications made by EPA or data revisions voluntarily submitted by an individual facility. The tapes were obtained from: TRIS User Support/Public Data Branch in EPA's Office of Pollution Prevention and Toxics. The 1989 TRI tape documentation was obtained from the National Technical Information Service (NTIS), (PB91-187500) Springfield, VA. TRI tapes also are available for purchase from NTIS.

Data Extraction and Handling Procedures

Selected variables were extracted from the TRI data tapes for each of the four years. The data was used to develop a new set of four data files in Statistical Analysis System (SAS). The new set of data files was labeled the Basic set. The variables selected are listed in Table 4-1.

Substance name, CAS number, and air emission quantities for each year were quality reviewed for misspellings and outliers. Unique substance names and CAS numbers were reviewed for typographical errors and inconsistencies. The substance names were standardized by making various modifications. For example, some companies simply reported 'Xylene.' These repors were included as 'Xylene (mixed isomers)' rather than the individual names of o-Xylene, m-Xylene, or p-Xylene. Some substances, such as antimony compounds, do not have CAS numbers. The CAS number may have been reported as a blank or NA. If the CAS number was reported as NA, it was modified to a blank for data processing consistency.

Table 4-1
Variable List

- Document Control Number
- Reporting Year
- Last Revision Date
- EPA Region
- Covered Facility
- Facility Name
- Facility Street Address
- Facility City
- Facility County
- Facility State
- Facility ZIP Code
- Parent Company Name
- TRI Facility ID
- CAS Registry Number
- Substance Name
- Trade Secret Status
- Maximum Amount Onsite
- Waste Minimization Modification
- Waste Minimization Current Year Quantity
- Waste Minimization Prior Year Quantity
- Waste Minimization Percent Change
- Waste Minimization Ratio of Production
- Waste Minimization Reason for Action
- SIC Codes (1 through 4)
- Release Medium
- Release Transfer Amount
- Basis for Estimate
- Sum of Air Releases
- Sum of Water Releases
- Sum of Land Releases
- Sum of All Releases
- Sum of POTW Transfers
- Sum of Offsite Transfers
- Sum of POTW and Offsite Transfers
- Sum of All Releases and Transfers

The list of substances required to be reported to EPA and contained in the TRI data files have been revised over the four years. Several substances were dropped from the TRI data collection because of low toxicity. A few substances also were added to TRI after 1989 reporting that affected 1990 reporting. Substances that were not required to be reported in all four years were deleted from the data files for ease in comparing results. Delisted chemicals that were deleted from the data files are listed in Table 4-2. The chemicals added to TRI after 1989 were deleted from the 1990 data file and are listed in Table 4-3. Reports missing a substance name (i.e. blank or NA) or with zero air emissions for a specific substance were suppressed.

A single report should be contained in the data file for each chemical reported by a particular facility. If a chemical was reported more than once at a facility, only the report with the greatest air emissions for that chemical were retained in the data file. Exceptionally large emissions were identified by substance and facility and checked for reasonableness. Also, a report for a chemical can list up to six four-digit SIC codes. The first SIC code listed for each chemical was assumed to be the primary SIC code and, therefore, the only SIC code used in subsequent analysis.

Each industrial facility required to report its emissions to EPA is assigned a unique TRI facility identification. The TRI facility identification for a particular facility remains constant from reporting year to reporting year. The Linked set of data files was created by matching the TRI facility identification variable from year to year. Since the TRI facility identification variable was used in linking the data files, the procedure was not affected by ownership or name changes that may have occurred over the four years. Facilities that did not submit data in all four reporting years were excluded from the data files. The Linked set of data files was used for analyzing changes in emissions over the four years to identify possible trends.

Table 4-2
Delisted Chemicals

Delistings to TRIS made prior to 1989 reporting:

Chemical	CAS No
Aluminum Oxide (Non-Fibrous Forms)	1344-28-1
C I Acid Blue 9, Diammonium Salt	2650-18-2
C I Acid Blue 9, Disodium Salt	3844-45-9
Melamine Crystal	108-78-1
Sodium Hydroxide (Solution)	1310-73-2
Sodium Sulfate (Solution)	7757-82-6
Titanium Dioxide	13463-67-7

Delistings to TRIS made after 1989 reporting (affected 1990 reporting);

Chemical	CAS No
Terephthalic Acid	100-21-0
C I Pigment Green 7	N/A
C I Pigment Blue 15	N/A
C I Pigment Green 36	N/A

Table 4-3
1990 Chemical Additions

Chemical	CAS No
Allyl Alcohol	107-18-6
Creosote	8001-58-9
2,3-Dichloropropene	78-88-6
m-Dinitrobenzene	99-65-0
o-Dinitrobenzene	528-29-0
p-Dinitrobenzene	10-25-4
Dinitrotoluene (mixed isomers)	25321-14-6
Isosafrole	120-58-1
Toluene Diisocyanate (mixed isomers)	26471-62-5

The data sets created following quality review and linking are summarized in Table 4-4. There are three sets of data files:

- **Original** – The latest EPA version of the data files as of March 21, 1992 with no modifications.
- **Basic** – The quality reviewed and modified Original data file.
- **Linked** –The Basic data files reduced to only those facilities that occur in all four reporting years.

Table 4-4
Data File Characteristics

	1987	1988	1989	1990
No. Of Parent Companies				
Original	5,563	4,369	4,880	5,354
Basic	5,547	4,307	4,876	5,336
Linked	N/A	N/A	N/A	N/A
No. Of Facilities				
Original	16,978	18,693	19,871	20,366
Basic	16,929	18,300	19,856	20,270
Linked	12,114	12,114	12,114	12,114
Linked % of Basic	72%	66%	61%	60%
No. Of Reports				
Original	55,813	62,512	65,441	66,170
Basic	54,349	58,337	64,786	65,676
Linked	44,200	45,654	48,659	48,410
Linked % of Basic	81%	78%	75%	74%
Total Air Emissions (lb/yr)				
Original	2,808,860,778	2,713,310,406	2,561,151,806	2,203,511,260
Basic	2 752,733,632	2,606,642,759	2,501,993,075	2,194,922,597
Linked	2,469,943,911	2,296,357,362	2,201,351,417	1,920,165,616
Linked % of Basic	90%	88%	88%	87%

As can be seen from Table 4-4, the quality control modifications were quite small, generally affecting less than 2% of the original data. Linking facilities over the four year period also required little deletion of data. The linked data set included about 88% of the basic data set.

A final change made to the data sets for use in analyzing the data was the addition of chemical type identifiers. These included: Hazardous Air Pollutant (HAP), EPA's 33/50 Program, High Risk/Early Reduction, Carcinogen, and Ozone Depletor. The chemicals listed under each category are provided in Tables 4-5 through 4-9. A chemical type category, such as High Risk/Early Reduction, may contain chemicals that are not required to be reported under the TRI system. These chemicals are included in the tables to provide a complete list. Summary tables are provided in the appendix that list all of the chemicals reported each year with CAS number, and amount emitted. The chemical type identifiers also are listed.

Table 4-5
Hazardous Air Pollutants

Chemical	Cas #	Chemical	Cas #	Chemical	Cas #
1,1,1-Trichloroethane	000071556	1,2-Dibromoethane	000106934	1,4-Dioxane	000123911
1,1,2,2-Tetrachloroethane	000079345	1,2-Dichloroethane	000107062	2,2,4-Trimethylpentane*	000540841
1,1,2-Trichloroethane	000079005	1,2-Dichloropropane	000078875	2,3,7,8-Tetrachlorodibenzo-p-Dioxin*	001746016
1,1-Dichloroethane*	000075343	1,2-Diphenylhydrazine	000122667	2,4,5-Trichlorophenol	000095954
1,1-Dimethyl Hydrazine	000057147	1,3-Butadiene	000106990	2,4,6-Trichlorophenol	000088062
1,2,4-Trichlorobenzene	000120821	1,3-Dichloropropylene	000542756	2,4-D	000094757
1,2-Butylene Oxide	000106887	1,3-Propane Sultone	001120714	2,4-Diaminotoluene	000095807
1,2-Dibromo-3-Chloropropane	000096128	1,4-Dichlorobenzene	000106467	2,4-Dinitrophenol	000051285

Table 4-5

Hazardous Air Pollutants

(CONTINUED)

Chemical	Cas #	Chemical	Cas #	Chemical	Cas #
2,4-Dinitrotoluene	000121142	Chloroacetic Acid	000079118	Hydroquinone	000123319
2-Acetylaminofluorene	000053963	Chlorobenzene	000108907	Isophorone*	000078591
2-Chloroacetophenone	000532274	Chlorobenzilate	000510156	Lead Compounds	
2-Nitropropane	000079469	Chloroform	000067663	Lindane	000058899
3,3-Dichlorobenzidene	000091941	Chloroethane	000075003	m-Cresol	000108394
3,3-Dimethoxybenzidine	000119904	Chloromethane	000074873	m-Xylenes	000108383
3,3'-Dimethylbenzidine	000079447	Chloromethyl Methyl Ether	000107302	Maleic Anhydride	000108316
4,4-Methylene Bis(2-Chloroaniline)	000101144	Chloroprene	000126998	Manganese Compounds	
4,4'-Methylenedianiline	000101779	Chromium Compounds		Mercury Compounds	
4,6-Dinitro-o-Cresol	000534521	Cobalt Compounds		Methanol	000067561
4-Aminobiphenyl	000092671	Coke Oven Emissions*		Methoxychlor	000072435
4-Nitrobiphenyl	000092933	Cresol (Mixed Isomers)	001319773	Methyl Ethyl Ketone	000078933
4-Nitrophenol	000100027	Cumene	000098828	Methyl Hydrazine	000060344
Acetaldehyde*	000075070	Cyanide Compounds		Methyl Iodide	000074884
Acetamide	000060355	DDE*	003547044	Methyl Isobutyl Ketone	000108101
Acetonitrile	000075058	Diazomethane	000334883	Methyl Isocyanate	000624839
Acetophenone*	000098862	Di(2-Ethylhexyl) Phthalate	000117817	Methyl Methacrylate	000080626
Acrolein	000107028	Dibenzofuran	000132649	Methyl Tert-Butyl Ether	001634044
Acrylamide	000079061	Dibutyl Phthalate	000084742	Methylenebis (Phenylisocyanate)**	000101688
Acrylic Acid	000079107	Dichloromethane	000075092	n-Nitroso-N-Methylurea	000684935
Acrylonitrile	000107131	Dichlorvos	000062737	n-Nitrosodimethylamine	000062759
Allyl Chloride	000107051	Diethanolamine	000111422	n-Nitrosomorpholine	000059892
Aniline	000062533	Diethyl Sulfate	000064675	N,N-Dimethylaniline	000121697
Antimony Compounds		Dimethyl Aminoazobenzene	000060117	Naphthalene	000091203
Arsenic Compounds		Dimethyl Carbamoyl Chloride	000079447	Nickel Compounds	
Asbestos (Friable)	001332214	Dimethyl Formamide*	000068122	Nitrobenzene	000098953
Benzene	000071432	Dimethyl Phthalate	000131113	o-Anisidine	000090040
Benzidine	000092875	Dimethyl Sulfate	000077781	o-Cresol	000095487
Benzoic Trichloride	000098077	Epichlorohydrin	000106898	o-Toluidine	000095534
Benzyl Chloride	000100447	Ethyl Acrylate	000140885	o-Xylene	000095476
Beryllium Compounds		Ethylbenzene	000100414	p-Cresol	000106445
Beta-Propiolactone	000057578	Ethylene Glycol	000107211	p-Phenylenediamine	000106503
Biphenyl	000092524	Ethylene Oxide	000075218	p-Xylene	000106423
Bis(2-Chloroethyl) Ether	000111444	Ethylene Thiourea	000096457	Parathion	000056382
Bis(Chloromethyl) Ether	000542881	Ethyleneimine	000151564	Pentachlorophenol	000087865
Bromoform	000075252	Fine Mineral Fibers*		Phenol	000108952
Bromomethane	000074839	Formaldehyde	000050000	Phosgene	000075445
Cadmium Compounds		Glycol Ethers		Phosphine*	007803512
Calcium Cyanamide	000156627	Heptachlor	000076448	Phosphorus (Yellow Or White)	007723140
Caprolactam*	000105602	Hexachloro-1,3-Butadiene	000087683	Phthalic Anhydride	000085449
Captan	000133062	Hexachlorobenzene	000118741	Polychlorinated Biphenyls	001336363
Carbaryl	000063252	Hexachlorocyclopentadiene	000077474	Polycylic Organic Matter*	
Carbon Disulfide	000075150	Hexachloroethane	000067721	Propionaldehyde	000123386
Carbon Tetrachloride	000056235	Hexamethylene-1,6-Diisocyanate*	000822060	Propoxur	000114261
Carbonyl Sulfide	000463581	Hexamethylphosphoramide	000680319	Propylene Oxide	000075569
Catechol	000120809	Hexane*	000110543	Propyleneimine	000075558
Chloramben	000133904	Hydrazine	000302012	Quinoline	000091225
Chlordane	000057749	Hydrochloric Acid	007647010	Quinone	000106514
Chlorine	007782505	Hydrogen Fluoride	007664393	Quintobenzene	000082688

Table 4-5

Hazardous Air Pollutants

(CONTINUED)

Chemical	Cas #
Radionuclides*	
Selenium Compounds	
Styrene	000100425
Styrene Oxide	000096093
Tetrachloroethylene	000127184
Titanium Tetrachloride	007550450
Toluene	000108883
Toluene-2,4-Diisocyanate	000584849
Toxaphene	008001352
Trichloroethylene	000079016
Triethylamine*	000121448
Trifluralin	001582098
Urethane	000051796
Vinyl Acetate	000108054
Vinyl Bromide	000593602
Vinyl Chloride	000075014
Vinylidene Chloride	000075354
Xylene (Mixed Isomers)	001330207

* Not Reported in TRI Database

** Also known as Methylene Diphenyl Diisocyanate

Table 4-6

EPA 33/50 Program Chemicals

Chemical	Cas #
1,1,1-Trichloroethane	000071556
Benzene	000071432
Cadmium	007440439
Cadmium Compounds	
Carbon Tetrachloride	000056235
Chloroform	000067663
Chromium	007440473
Chromium Compounds	
Cyanide*	
Cyanide Compounds	
Dichloromethane	000075092
Lead	007439921
Lead Compounds	
Mercury	007439976
Mercury Compounds	
Methyl Ethyl Ketone	000078933
Methyl Isobutyl Ketone	000108101
Nickel	007440020
Nickel Compounds	
Tetrachloroethylene	000127184
Toluene	000108883
Trichloroethylene	000079016
Xylene (Mixed Isomers)	001330207

* Not Reported in TRI Database

Table 4-7

High Risk/Early Reduction Chemicals

Chemical	Cas #
1,1,2,2-Tetrachloroethane	000079345
1,2-Dibromoethane	000106934
1,3-Butadiene	000106990
2,3,7,8-Tetrachlorodibenzo-p-Dioxin*	001746016
Acrolein	000107028
Acrylamide	000079061
Acrylic Acid	000079107
Acrylonitrile	000107131
Arsenic	007440382
Arsenic Compounds	
Asbestos (Friable)	001332214
Benzene	000071432
Benzidine	000092875
Benzoic Trichloride	000098077
Beryllium	007440417
Beryllium Compounds	
Bis(2-Chloroethyl) Ether	000111444
Bis(Chloromethyl) Ether	000542881
Cadmium	007440439
Cadmium Compounds	
Chlordane	000057749
Chloromethyl Methyl Ether	000107302
Chromium	007440473
Chromium Compounds	
Chloroprene	000126998
Coke Oven Emissions*	
Dibenzofuran	000132649
Ethylene Oxide	000075218
Heptachlor	000076448
Hexachlorobenzene	000118741
Hydrazine	000302012
Mercury	007439976
Mercury Compounds	
Methyl Isocyanate	000624839
Methylenebis (Phenylisocyanate)**	000101688
Phosgene	000075445
Propyleneimine	000075558
Toluene-2,4-Diisocyanate	000584849
Vinyl Chloride	000075014
Vinylidene Chloride	000075354

* Not Reported in TRI Database

** Also known as Methylene Diphenyl Diisocyanate

Table 4-8
Carcinogenic Chemicals in TRI Database

Chemical	Cas #	Chemical	Cas #	Chemical	Cas #
1,1,2,2-Tetrachloroethane	000079345	Bis(2-Chloroethyl) Ether	000111444	Hexachloroethane	000067721
1,1,2-Trichloroethane	000079005	Bis(Chloromethyl) Ether	000542881	Hydrazine	000302012
1,1-Dimethyl Hydrazine	000057147	Cadmium	007440439	Lindane	000058899
1,2-Dibromoethane	000106934	Carbon Tetrachloride	000056235	Methyl Iodide	000074884
1,2-Dichloroethane	000107062	Chlordane	000057749	o-Toluidine	000095534
1,3-Butadiene	000106990	Chlorobenzilate	000510156	Polychlorinated Biphenyls	001336363
2,4,6-Trichlorophenol	000088062	Chloroform	000067663	Propane Sultone	001120714
2,4-Diaminotoluene	000095807	Chloromethane	000074873	Propyleneimine	000075558
2,4-Dinitrotoluene	000121142	Chloromethyl Methyl Ether	000107302	Quintozene	000082688
2,6-Dinitrotoluene	000606202	Chromium	007440473	Saccharin (Manufacturing Only)	000081072
2-Nitropropane	000079469	Dichloromethane	000075092	Safrole	000094597
3,3'-Dichlorobenzidine	000091941	Dimethyl Sulfate	000077781	Styrene	000100425
4,4'-Methylenebis(2-Chloroaniline)	000101144	Epichlorohydrin	000106898	Tetrachloroethylene	000127184
Acrylonitrile	000107131	Ethylene Oxide	000075218	Thiourea	000062566
Alpha-Naphthylamine	000134327	Ethylene Thiourea	000096457	Trichloroethylene	000079016
Arsenic	007440382	Ethyleneimine	000151564	Urethane	000051796
Asbestos (Friable)	001332214	Formaldehyde	000050000	Vinyl Chloride	000075014
Benzene	000071432	Heptachlor	000076448	Vinylidene Chloride	000075354
Benzyl Chloride	000100447	Hexachloro-1,3-Butadiene	000087683		
Beryllium	007440417	Hexachlorobenzene	000118741		

Table 4-9
Ozone Depleting Chemicals in TRI Database

Chemical	Cas #
1,1,1-Trichloroethane	000071556
Carbon Tetrachloride	000056235
Freon 113	000076131

Appendix A

- Data from Linked Data Set -

TABLE A-1

Regional Hot Spots

EPA REGIONS — 1987 BASIS

EPA Region	Amount Emitted 1987	1988	1989	1990	Amount Of Change 1987-1988		1988-1989		1989-1990	
	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(pct)	(lb/yr)	(pct)	(lb/yr)	(pct)
04	621,664,527	589,758,062	592,344,907	523,726,327	-31 906,465	-5 13	2,586,845	0 44	-68,618,580	-11 58
05	530,990,282	484,808,375	474,447,160	405,212,823	-46,181,907	-8 70	-10,361,215	-2 14	-69,234 337	-14 59
06	462,251,285	379 362,209	347,131,355	293,108,331	-82,889,076	-17 93	-32,230,854	-8 50	-54,023 024	-15 56
03	234 398,214	215,559 165	194,486,556	174,020,016	-18,839,049	-8 04	-21,072,609	-9 78	-20 466 540	-10 52
07	121,612,041	131,919,474	130,441,146	117,592,501	10,307,433	8 48	-1,478,328	-1 12	-12,848,645	-9 85
02	120,764,704	113,233,785	97,552,883	86,133,023	-7,530,919	-6 24	-15,680,902	-13 85	-11,419 860	-11 71
08	104,844,500	136,753,217	143,467,996	123,164,214	31,908,717	30 43	6,714,779	4 91	-20,303,782	-14 15
10	95,094,041	74,641,562	69,961,153	63,425,609	-20,452,479	-21 51	-4,680,409	-6 27	-6,535 544	-9 34
09	93,296,592	92,153,542	84,232,151	77,975,810	-1,143,050	-1 23	-7,921,391	-8 60	-6,256,341	-7 43
01	85,027,725	78,167,971	67,286,110	55,806,962	-6,859,754	-8 07	-10,881,861	-13 92	-11,479,148	-17 06

TABLE A-2

Regional Hot Spots

TOP 20 STATES — 1987 BASIS

State	Amount Emitted 1987	1988	1989	1990	Amount Of Change 1987-1988		1988-1989		1989-1990	
	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(pct)	(lb/yr)	(pct)	(lb/yr)	(pct)
TX	238,275,406	175,429,432	167,991,897	147,628,675	-62 845,974	-26 38	-7,437,535	-4 24	-20,363,222	-12 12
LA	144,359,410	128,008,706	116,401,665	94,039,252	-16 350,704	-11 33	-11,607,041	-9 07	-22,362,413	-19 21
OH	133,572,741	127,788,785	117,995,184	97,115,443	-5,783 956	-4 33	-9,793,601	-7.66	-20,879,741	-17 70
TN	126,736,161	127,396,894	140 392,040	128,562,788	660 733	0 52	12,995,146	10 20	-11,829,252	-8 43
IN	108,148,431	97 047,492	96,167 777	87,978,942	-11,100 939	-10 26	-879,715	-0 91	-8,188,835	-8 52
MI	106,051,124	82 748,534	81 639,845	67,479,479	-23 302 590	-21 97	-1,108,689	-1 34	-14,160,366	-17 34
AL	100,431,221	100,051,930	100,368,744	94 162,974	-379,291	-0 38	316,814	0 32	-6,205,770	-6 18
IL	96,633,375	91,370,375	87,447,210	76,428,660	-5,263,000	-5 45	-3,923,165	-4 29	-11,018,550	-12 60
NC	93,559,598	84,592,816	79,814,411	71,319,077	-8,966,782	-9 58	-4,778,405	-5 65	-8,495,334	-10 64
UT	85,741,098	120,424,480	126,722,058	108,620,776	34,683,382	40 45	6,297,578	5 23	-18,101,282	-14 28
GA	85,090,791	77,489,831	69,226,759	63,807,295	-7,600 960	-8 93	-8,263,072	-10 66	-5,419,464	-7 83
PA	84,518,628	78,088,092	69,539,063	61,662 671	-6,430,536	-7 61	-8,549,029	-10.95	-7,876,392	-11 33
VA	83,986,937	80,402,424	71,550,633	68,460,561	-3,584,513	-4 27	-8,851,791	-11 01	-3,090,072	-4 32
CA	75,257,676	75,713,529	71,153,056	64,895,866	455,853	0 61	-4,560,473	-6 02	-6,257,190	-8 79
NY	70,027,865	64,414,892	57,604,582	49,641,242	-5,612 973	-8 02	-6,810,310	-10 57	-7,963,340	-13 82
SC	61,061,327	61,736,939	64,785,378	54,801,677	675,612	1 11	3,048,439	4 94	-9,983,701	-15 41
MS.	56,258,233	56,028,443	55,603,780	49,664,068	-229,790	-0 41	-424,663	-0 76	-5,939,712	-10 68
KY	51,144,009	45,141,618	40,395,235	32,710,735	-6,002 391	-11 74	-4,746,383	-10 51	-7,684,500	-19 02
FL	47,383,187	37,319,591	41,758,560	28,697,713	-10,063,596	-21 24	4,438,969	11 89	-13,060,847	-31 28
AR	47,215,941	44,528,771	38,069,603	27,231,347	-2,687 170	-5 69	-6,459,168	-14 51	-10,838,256	-28 47

TABLE A-3

Regional Hot Spots

TOP 20 3-DIGIT ZIP CODES — 1987 BASIS

3-digit Zip Code		Amount Emitted 1987	1988	1989	1990	Amount Of Change 1987-1988		1988-1989		1989-1990	
		(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(pct)	(lb/yr)	(pct)	(lb/yr)	(pct)
840	UT	80 260,510	115,533,035	121,797,804	97 449,460	35,272,525	43 95	6,264,769	5 42	-24,348 344	-19 99
775	TX	74 200,063	62,055,500	65,001,349	52,315,406	-12 144 563	-16 37	2,945,849	4 75	-12,685,943	-19 52
376	TN	53,031,565	53,885,615	56 589,700	52 673,030	854,050	1 61	2,704,085	5 02	-3,916,670	-6 92
365	AL	48,542,835	49,644,636	49,486,002	50,923,247	1,101,801	2 27	-158 634	-0 32	1,437,245	2 90
703	LA	44,019,671	56,378,839	53,648,655	23,047,199	12,359,168	28 08	-2,730,184	-4 84	-30,601,456	-57 04
700	LA	30,737,521	14,436,097	8,182,294	20,364,832	-16,301,424	-53 03	-6,253,803	-43 32	12,182,538	148 89
996	AK	30,551,825	20,958,860	18,604,215	13,835,648	-9,592,965	-31 40	-2,354,645	-11 23	-4,768,567	-25 63
797	TX	29 033,878	3,825,542	5,273,633	5,107,048	-25,208,336	-86 82	1,448,091	37 85	-166,585	-3 16
776	TX	25 731,849	24,876,096	21,189,721	20,068,027	-855,753	-3 33	-3,686,375	-14 82	-1,121,694	-5 29
707	LA	22,255,031	21,217,431	18,298,938	16,505,353	-1,037,600	-4 66	-2,918,493	-13 76	-1,793,585	-9 80
480	MI	21,428,949	15,440,706	14,385,269	6,944,729	-5 988,243	-27 94	-1,055,437	-6 84	-7 440,540	-51 72
779	TX	21,265,124	8,073,149	5 315,839	4,831,852	-13,191,975	-62 04	-2,757,310	-34 15	-483,987	-9 10
286	NC	20,699,329	18,415,056	17 070,188	15,452,553	-2,284,273	-11 04	-1,344,868	-7 30	-1,617,635	-9 48
706	LA	20,015,906	15,985,729	14,634,086	11,418,692	-4 030,177	-20 13	-1,351,643	-8 46	-3,215 394	-21 97
377	TN	19,455,819	19,587,362	28,107,058	26,412,907	131,543	0 68	8,519,696	43 50	-1,694,151	-6 03
314	GA	19,188,412	19,318,987	16,326,594	13,124,755	130,575	0 68	-2,992,393	-15 49	-3,201,839	-19 61
356	AL	18,905,338	15,611,697	17,966,859	15,440,808	-3,293,641	-17 42	2,355,162	15 09	-2,526,051	-14 06
244	A	18,476,345	19,602,514	13,326,394	11,582,074	1,126,169	6 10	-6,276,120	-32 02	-1,744,320	-13 09
371	TN	17,753,155	17,921,402	17,677,507	16,491 564	168,247	0 95	-243,895	-1 36	-1,185,943	-6 71
723	AR	17,304,014	16,182,296	14,355,290	5,509,033	-1,121,718	-6 48	-1,827,006	-11 29	-8,846,257	-61 62

TABLE A-4

Regional Hot Spots

Top 20 Counties - 1987 Basis

County		Amount Emitted 1987	1988	1989	1990	Amount Of Change 1987-1988		1988-1989		1989-1990	
		(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(pct)	(lb/yr)	(pct)	(lb/yr)	(pct)
TOOELE	UT	76,989,600	109,867,272	119,207,748	95,171,481	32,877,672	42 70	9,340,476	8 50	-24,036,267	-20 16
ASCENSION	LA	53,169,833	51,213,273	62,454,882	30,789,313	-1,956,560	-3 68	11,241,609	21 95	-31,665,569	-50 70
MOBILE	AL	49,936,678	50,479,785	50,212,530	50,619,233	543,107	1 09	-267,255	-0 53	406,703	0 81
HARRIS	TX	49,047,229	45,473,832	43,689,922	31,618,810	-3,573,397	-7 29	-1,783,910	-3 92	-12,071,112	-27 63
SULLIVAN	TN	42,058,444	42,634,881	42,365,300	37,656,528	576,437	1 37	-269,581	-0 63	-4,708,772	-11 11
COOK	IL	30,816,250	29,376,092	32,489,055	29,626,135	-1,440 158	-4 67	3,112,963	10 60	-2,862,920	-8 81
KENAI PENINSULA	AK	30,551,825	20,958,860	18,604,215	13 835,648	-9 592,965	-31 40	-2,354,645	-11 23	-4,768,567	-25 63
LOS ANGELES	CA	30,499,813	32,129,171	29,691,926	25,486,075	1,629 358	5 34	-2,437,245	-7 59	-4,205,851	-14 16
ECTOR	TX	27,421,333	2,211,643	3,473,153	3,315,692	-25 209,690	-91 93	1,261,510	57 04	-157,461	-4 53
JEFFERSON	TX	22,003,740	18,392,433	16,679,190	15,826,602	-3,611,307	-16 41	-1,713,243	-9 31	-852,588	-5 11
BRAZORIA	TX	21,823,595	17,972,406	18,053,425	15,784,026	-3,851,189	-17 65	81,019	0 45	-2,269,399	-12 57
CHATHAM	GA	19,188,412	19,318,987	16,326,594	13,124,755	130,575	0 68	-2,992,393	-15 49	-3,201,839	-19 61
CALCASIEU	LA	18,788,259	15,225,083	13,916,509	10,673,131	-3,563,176	-18 96	-1,308,574	-8 59	-3,243,378	-23 31
CALHOUN	TX	18,123,053	5,389,523	3,588,587	3,018,795	-12,733,530	-70 26	-1,800,936	-33 42	-569,792	-15 88
ALLEGHANY	VA	17,845 769	19,009,264	10,042,999	8,177,060	1,163,495	6 52	-8,966,265	-47 17	-1,865,939	-18 58
MISSISSIPPI	AR	17,242,395	16,125,232	14,288,567	5,424,839	-1,117,163	-6 48	-1,836,665	-11 39	-8,863,728	-62 03
ST JAMES	LA	16,239,492	15,408,007	931,727	15,084,391	-831,485	-5 12	-14,476,280	-93 95	14,152,664	1518 97
HAMBLEN	TN	16,181,264	16,294,219	24,916,031	23,604,411	112,955	0 70	8,621,812	52 91	-1,311,620	-5 26
MC LEOD	MN	15,591,355	16,567,333	25,782,081	20,208,526	975,978	6 26	9,214,748	55 62	-5,573,555	-21 62
LAKE	IN	15,025,811	11,021,400	10,069,351	11,229,390	-4,004,411	-26 65	-952,049	-8 64	1,160,039	11 52

TABLE A-5

Top 20 Chemicals

— 1987 BASIS —

Chemical	Amount Emitted 1987	1988	1989	1990	Amount Of Change 1987-1988		1988-1989		1989-1990	
	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(pct)	(lb/yr)	(pct)	(lb/yr)	(pct)
Ammonia	277,388 831	237,606,361	226,977,094	181,697,260	-39 782 470	-14 34	-10,629,267	-4 47	-45,279,834	-19 95
Toluene	251,982,231	243,792,436	229,026,603	199,512,073	-8 189,795	-3 25	-14,765,833	-6 06	-29 514,530	-12 89
Methanol	196,559,936	203,806,647	184,231,445	165,049,027	7,246,711	3 69	-19,575,202	-9 60	-19,182 418	-10 41
Acetone	177,750,109	175,215,296	175,168,870	157,837,161	-2,534,813	-1 43	-46,426	-0 03	-17,331,709	-9 89
1,1,1-Trichloroethane	140,163,526	145,564,167	138,238,987	124,183,587	5,400,641	3 85	-7,325 180	-5 03	-14,055,400	-10 17
Methyl Ethyl Ketone	138,251,483	118,087,703	117,346,230	105,467,819	-20,163,780	-14 58	-741,473	-0 63	-11,878 411	-10 12
Xylene (Mixed Isomers)	128,876,481	131,418,148	129,162,509	115,499,330	2,541,667	1 97	-2,255,639	-1 72	-13,663,179	-10 58
Dichloromethane	110,954,722	102,158,498	93,270,030	79,038,482	-8,796,224	-7 93	-8,888,468	-8 70	-14,231,548	-15 26
Chlorine	105,001,108	132,890,733	132,027,251	104,239,889	27,889,625	26 56	-863,482	-0 65	-27,787,362	-21 05
Carbon Disulfide	85,913,732	88,522,526	98,431,764	96,954,830	2,608 794	3 04	9,909,238	11 19	-1,476,934	-1 50
Aluminum (Fume Or Dust)	81,574,716	2,831,694	1,527,480	1,315,171	-78 743,022	-96 53	-1,304,214	-46 06	-212 309	-13 90
Hydrochloric Acid	70,395,841	65 104,444	69,358,736	67,294,145	-5 291,397	-7 52	4,254,292	6 53	-2,064 591	-2 98
Ethylene	59,766,006	42,394,117	41,853,869	34,588,353	-17,371,889	-29 07	-540,248	-1 27	-7,265,516	-17 36
Freon 113	49,479,901	57,244,514	52,248,201	35,911,342	7,764,613	15 69	-4,996,313	-8 73	-16,336,859	-31 27
Trichloroethylene	47,484,928	45,722,543	41,277,631	32,616,922	-1,762 385	-3 71	-4,444,912	-9 72	-8,660,709	-20 98
Propylene	38,686,477	23,807,387	23,898,179	21,014,890	-14,879 090	-38 46	90,792	0 38	-2,883,289	-12 06
Glycol Ethers	37,515,524	42,985,363	42 329,635	39,409,230	5,469,839	14 58	-655,728	-1 53	-2,920,405	-6 90
Benzene	30,633,229	28,548,426	25,070,583	23,226,988	-2,084,803	-6 81	-3,477,843	-12 18	-1,843,595	-7 35
n-Butyl Alcohol	29,157,749	32,376 359	32,149,145	28,284,184	3,218,610	11 04	-227,214	-0 70	-3,864,961	-12 02
Tetrachloroethylene	28,769,776	29,736,927	22,362,024	17,574,604	967,151	3 36	-7,374,903	-24 80	-4,787,420	-21 41

TABLE A-6

Top 20 Hazardous Air Pollutants

— 1987 BASIS —

Chemical	Amount Emitted 1987	1988	1989	1990	Amount Of Change 1987-1988		1988-1989		1989-1990	
	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(pct)	(lb/yr)	(pct)	(lb/yr)	(pct)
Toluene	251,982,231	243,792,436	229,026,603	199,512,073	-8,189,795	-3 25	-14,765,833	-6 06	-29,514,530	-12 89
Methanol	196,559,936	203,806,647	184,231,445	165,049,027	7,246,711	3 69	-19,575,202	-9 60	-19,182,418	-10 41
1,1,1-Trichloroethane	140,163 526	145,564,167	138,238,987	124,183,587	5 400 641	3 85	-7,325,180	-5 03	-14,055,400	-10 17
Methyl Ethyl Ketone	138,251,483	118,087,703	117,346,230	105 467,819	-20,163 780	-14 58	-741,473	-0 63	-11,878,411	-10 12
Xylene (Mixed Isomers)	128,876,481	131,418,148	129,162,509	115 499 330	2 541,667	1 97	-2,255,639	-1 72	-13,663,179	-10 58
Dichloromethane	110,954,722	102,158,498	93,270,030	79,038,482	-8 796 224	-7 93	-8,888,468	-8 70	-14,231,548	-15 26
Chlorine	105,001,108	132,890,733	132,027,251	104 239,889	27,889 625	26 56	-863,482	-0 65	-27,787,362	-21 05
Carbon Disulfide	85,913,732	88,522,526	98,431,764	96,954 830	2,608,794	3 04	9,909,238	11 19	-1,476,934	-1 50
Hydrochloric Acid	70,395,841	65,104,444	69,358,736	67,294,145	-5,291,397	-7 52	4,254,292	6 53	-2,064,591	-2 98
Trichloroethylene	47,484,928	45,722,543	41,277,631	32,616,922	-1 762,385	-3 71	-4,444,912	-9 72	-8,660,709	-20 98
Glycol Ethers	37,515,524	42,985,363	42,329,635	39,409,230	5,469,839	14 58	-655,728	-1 53	-2,920,405	-6 90
Benzene	30,633,229	28,548,426	25,070,583	23,226,988	-2 084 803	-6 81	-3,477,843	-12 18	-1,843,595	-7 35
Tetrachloroethylene	28,769,776	29,736,927	22,362,024	17,574,604	967,151	3 36	-7,374,903	-24 80	-4,787,420	-21 41
Methyl Isobutyl Ketone	27,189,624	27,905,037	28,030,679	24,025,550	715,413	2 63	125,642	0 45	-4,005,129	-14 29
Styrene	26,438,085	24,556,434	21,937,401	21,164,893	-1,881,651	-7 12	-2,619,033	-10 67	-772,508	-3 52
Chloroform	24,034,760	23,256,805	24,438,028	21,549,202	-777,955	-3 24	1,181,223	5 08	-2,888,826	-11 82
Carbonyl Sulfide	22,459,520	19,554,837	17,798,541	18,463,675	-2,904,683	-12 93	-1,756,296	-8 98	665,134	3 74
Ethylene Glycol	14,378,138	12,565,574	11,756,072	8,159,622	-1,812,564	-12 61	-809,502	-6 44	-3,596,450	-30 59
Formaldehyde	12,359,020	10,338,268	11,398,634	10,664,037	-2,020,752	-16 35	1,060,366	10 26	-734,597	-6 44
Chloromethane	12,068,836	10,837,852	9,318,569	7,326,285	-1,230,984	-10 20	-1,519,283	-14 02	-1,992,284	-21 38

TABLE A-7

EPA 33/50 Program Chemicals

— 1987 BASIS —

Chemical	Amount Emitted 1987	1988	1989	1990	Amount Of Change 1987-1988		1988-1989		1989-1990	
	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(pct)	(lb/yr)	(pct)	(lb/yr)	(pct)
Toluene	251,982,231	243,792,436	229,026,603	199,512,073	-8,189,795	-3 25	-14,765,833	-6 06	-29,514,530	-12 89
1,1,1-Trichloroethane	140,163,526	145,564,167	138,238,987	124,183,587	5,400,641	3 85	-7,325,180	-5 03	-14,055,400	-10 17
Methyl Ethyl Ketone	138,251,483	118,087,703	117,346,230	105,467,819	-20,163,780	-17 08	-741,473	-0 63	-11,878,411	-11 26
Xylene (Mixed Isomers)	128,876,481	131,418,148	129,162,509	115,499,330	2 541,667	1 97	-2 255 639	-1 72	-13,663,179	-10 58
Dichloromethane	110,954,722	102,158,498	93,270,030	79,038,482	-8,796 224	-7 93	-8,888,468	-8 70	-14,231 548	-15 26
Trichloroethylene	47,484 928	45,722,543	41,277,631	32,616,922	-1,762 385	-3 71	-4,444,912	-9 72	-8,660 709	-20 98
Benzene	30,633,229	28,548,426	25,070,583	23,226,988	-2,084,803	-6 81	-3,477,843	-12 18	-1,843,595	-7 35
Tetrachloroethylene	28,769,776	29,736,927	22,362,024	17,574,604	967,151	3 36	-7,374,903	-24 80	-4,787,420	-21 41
Methyl Isobutyl Ketone	27,189,624	27 905,037	28,030,679	24,025,550	715,413	2 63	125,642	0 45	-4,005 129	-14 29
Chloroform	24,034,760	23,256,805	24,438,028	21,549,202	-777,955	-3 24	1,181,223	5 08	-2,888,826	-11 82
p-Xylene	7,437,936	6,003,302	4,933,722	4,752,672	-1,434,634	-19 29	-1,069,580	-17 82	-181,050	-3 67
Carbon Tetrachloride	4,334,230	3,640,586	3,290,440	1,646,835	-693,644	-16 00	-350,146	-9 62	-1,643,605	-49 95
o-Xylene	3,680,212	2,064,641	1,808,306	1,904,571	-1,615,571	-43 90	-256,335	-12 42	96,265	5 32
m-Xylene	2,995,819	2,194,146	1,200,771	1,202,284	-801,673	-26 76	-993,375	-45 27	1,513	0 13
Cyanide Compounds	1,402,741	878,066	814,061	1,127,652	-524,675	-59 75	-64,005	7 86	313,591	27 81
Lead	1,233,373	961,328	756,502	769,669	-272,045	-22 06	-204,826	-21 31	13,167	1 74
Lead Compounds	1,104,599	1,379,549	1,326,054	1,515,828	274,950	19 93	-53,495	-4.03	189,774	12 52
Chromium Compounds	730,014	684,338	1,250,261	570,905	-45,676	-6 67	565,923	45 26	-679,356	-118 99
Nickel	392,126	244,249	253,515	289,245	-147,877	-37 71	9,266	3 79	35,730	14 09
Chromium	334,776	367,520	265,936	175,764	32,744	9 78	-101,584	-27 64	-90,172	-33 91
Nickel Compounds	296,704	221,064	202,245	187,392	-75,640	-34 22	-18,819	-9 31	-14,853	-7 92
Cadmium Compounds	151,547	86,443	73,745	84,596	-65,104	-75 31	-12,698	-17 22	10,851	12 83
Mercury	23,158	23,145	24,007	21,639	-13	-0 06	862	3 72	-2,368	-9 86
Cadmium	11,021	15,472	22,414	6,721	4,451	40 39	6,942	44 87	-15,693	-70 01
Mercury Compounds	1,586	1,616	3,254	898	30	1 86	1,638	50 34	-2,356	-262 36

TABLE A-8

Top 20 High Risk/Early Reduction Chemicals

— 1987 BASIS —

Chemical	Amount Emitted 1987	1988	1989	1990	Amount Of Change 1987-1988		1988-1989		1989-1990	
	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(pct)	(lb/yr)	(pct)	(lb/yr)	(pct)
Benzene	30,633,229	28,548,426	25,070,583	23,226,988	-2,084,803	-6 81	-3,477,843	-12 18	-1,843,595	-7 35
1,3-Buladiene	9,383 347	6,622,693	5,664,918	4,955,664	-2,760,654	-29 42	-957,775	-14 46	-709,254	-12 52
Acrylonitrile	5,380,510	4,182,336	4,106,690	2,877,318	-1,198,174	-22 27	-75,646	-1 81	-1,229,372	-29 94
Ethylene Oxide	4,183,635	3,747,481	2,646,726	1,967,894	-436,154	-10 43	-1,100,755	-29 37	-678,832	-25 65
Vinyl Chloride	1,568,004	1,292,466	1,132,240	1,064,839	-275,538	-17 57	-160,226	-12 40	-67,401	-5 95
Acrylic Acid	821,770	784,265	348,271	396,046	-37,505	-4 56	-435,994	-55 59	47,775	13 72
Methylenebis(Phenylisocyanate)	792,813	144,864	183,698	280,237	-647,949	-81 73	38,834	26 81	96,539	52 55
Chromium Compounds	730,014	684,338	1,250,261	570,905	-45,676	-6 26	565,923	82 70	-679,356	-54 34
Toluene-2,4-Diisocyanate	611,310	141,009	71,133	33,062	-470,301	-76 93	-69,876	-49 55	-38,071	-53 52
Vinylidene Chloride	465,989	295,745	220,042	301,292	-170,244	-36.53	-75,703	-25 60	81,250	36 92
Chloroprene	282,135	423,513	303,087	172,692	141,378	50 11	-120,426	-28 44	-130,394	-43 02
Arsenic Compounds	270,853	198,821	154,185	154,516	-72,032	-26 59	-44,636	-22 45	331	0 21
Cadmium Compounds	151,547	86,443	73,745	84,596	-65,104	-42 96	-12,698	-14 69	10,851	14 71
Methyl Isocyanate	143,237	9,425	13,948	14,123	-133,812	-93 42	4,523	47 99	175	1 25
1,1,2,2-Tetrachloroethane	103,740	43,685	34,778	34,452	-60,055	-57 89	-8,907	-20 39	-326	-0 94
Phosgene	83,534	21,532	8,261	4,853	-62,002	-74 22	-13,271	-61 63	-3,408	-41 25
1,2-Dibromoethane	65,119	63,277	59,167	57,830	-1,842	-2 83	-4,110	-6 50	-1,337	-2 26
Acrolein	48,654	33,596	20,075	22,017	-15,058	-30 95	-13,521	-40 25	1,942	9 67
Asbestos (Friable)	42,266	35,225	28,607	13,313	-7,041	-16 66	-6,618	-18 79	-15,294	-53 46
Dibenzofuran	36,158	36,227	41,140	26,468	69	0 19	4,913	13 56	-14,672	-35 66

TABLE A-9

Top 20 Carcinogenic Chemicals in TRI Database

— 1987 BASIS —

Chemical	Amount Emitted 1987	1988	1989	1990	Amount Of Change 1987-1988		1988-1989		1989-1990	
	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(pct)	(lb/yr)	(pct)	(lb/yr)	(pct)
Dichloromethane	110,954,722	102,158,498	93,270,030	79,038,482	-8 796,224	-7 93	-8,888,468	-8 70	-14,231,548	-15 26
Trichloroethylene	47,484,928	45,722,543	41,277,631	32,616,922	-1,762 365	-3 71	-4,444,912	-9 72	-8,660,709	-20 98
Benzene	30,633,229	28,548,426	25,070,583	23,226,988	-2,084,803	-6 81	-3,477,843	-12 18	-1,843 595	-7 35
Tetrachloroethylene	28,769,776	29,736,927	22,362,024	17,574,604	967 151	3 36	-7,374,903	-24 80	-4,787,420	-21 41
Styrene	26,438,085	24,556,434	21,937,401	21,164,893	-1 881,651	-7 12	-2,619,033	-10 67	-772,508	-3 52
Chloroform	24,034,760	23 256,805	24,438 028	21,549,202	-777 955	-3 24	1,181,223	5 08	-2,888,826	-11 82
Formaldehyde	12,359,020	10,338,268	11,398,634	10,664,037	-2,020,752	-16 35	1,060,366	10 26	-734,597	-6 44
Chloromethane	12,068,836	10,837,852	9,318,569	7,326,285	-1,230,984	-10 20	-1,519,283	-14 02	-1,992 284	-21 38
1,3-Butadiene	9,383,347	6,622,693	5,664,918	4,955,664	-2,760,654	-29 42	-957,775	-14 46	-709,254	-12 52
1,2-Dichloroethane	6,196,495	4,280,244	4,107,894	5,059,732	-1,916 251	-30 92	-172,350	-4 03	951,838	23 17
Acrylonitrile	5,380,510	4,182,336	4,106,690	2,877,318	-1,198 174	-22 27	-75,646	-1 81	-1,229,372	-29 94
Carbon Tetrachloride	4,334,230	3,640,586	3,290,440	1,646,835	-693,644	-16 00	-350,146	-9 62	-1,643,605	-49 95
Ethylene Oxide	4,183,635	3,747,481	2,646,726	1,967,894	-436,154	-10 43	-1,100,755	-29 37	-678,832	-25 65
1 1,2-Trichloroethane	1,975,207	1,710,892	742,098	579,198	-264,315	-13 38	-968,794	-56 63	-162,900	-21 95
Vinyl Chloride	1,568,004	1,292,466	1,132,240	1,064,839	-275,538	-17 57	-160,226	-12 40	-67,401	-5 95
Urethane	796,000	144,373	3,450	3 310	-651,627	-81 86	-140,923	-97 61	-140	-4 06
Vinylidene Chloride	465,989	295,745	220,042	301,292	-170,244	-36 53	-75,703	-25 60	81 250	36 92
Epichlorohydrin	420,988	464 009	471,099	383,522	43,021	10 22	7,090	1 53	-87,577	-18 59
Chromium	334,776	367,520	265,936	175,764	32 744	9 78	-101,584	-27 64	-90,172	-33 91
2-Nitropropane	275,202	274,360	225,222	16,258	-842	-0 31	-49,138	-17 91	-208,964	-92 78

TABLE A-10

Ozone Depleting Chemicals in TRI Database

— 1987 BASIS —

Chemical	Amount Emitted 1987	1988	1989	1990	Amount Of Change 1987-1988		1988-1989		1989-1990	
	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(pct)	(lb/yr)	(pct)	(lb/yr)	(pct)
1,1,1-Trichloroethane	140,163 526	145,564,167	138,238,987	124,183,587	5,400,641	3 85	-7,325,180	-5 03	-14,055,400	-10 17
Freon 113	49,479,901	57,244,514	52,248,201	35,911,342	7,764,613	15 69	-4 996,313	-8 73	-16,336,859	-31 27
Carbon Tetrachloride	4,334,230	3,640,586	3,290,440	1,646,835	-693,644	-16 00	-350,146	-9 62	-1,643,605	-49 95

Appendix B

- Data from Basic Data Set -

TABLE B-1

Regional Hot Spots

—1990 EPA REGIONS —

Rank	EPA Region	Total Emissions (lb/yr)	Region % Of Total TRI Emissions	Rank	Chemical	Total Emissions (lb/yr)
1	4	604,078 286	27 52	1	Methanol	81,580,189
				2	Carbon Disulfide	76,259,382
				3	Acetone	70,081,476
				4	Toluene	63,727,693
				5	Ammonia	46,309,830
				6	Methyl Ethyl Ketone	30,744,593
				7	1,1,1-Trichloroethane	28,881,839
				8	Xylene (Mixed Isomers)	28,062,870
				9	Dichloromethane	24,167,720
				10	Hydrochloric Acidmethanol	21,858,069
2	5	484,261,829	22 06	1	Toluene	72,200,418
				2	Xylene (Mixed Isomers)	50,089,051
				3	1,1,1-Trichloroethane	45 965,323
				4	Methyl Ethyl Ketone	41,840,483
				5	Acetone	38,287,719
				6	Dichloromethane	26,743,035
				7	Ammonia	24,989,385
				8	Methanol	21 206,220
				9	Glycol Ethers	16 646 513
				10	Hydrochloric Acid	13 139,337
3	6	329,950,107	15 03	1	Ammonia	75,015,260
				2	Ethylene	28,750,622
				3	Methanol	22,414,496
				4	Toluene	18,887,953
				5	Acetone	16,722,418
				6	Propylene	15,326,522
				7	Xylene (Mixed Isomers)	14,331,573
				8	Methyl Ethyl Ketone	10,760,792
				9	1,1,1-Trichloroethane	10,126,636
				10	Carbon Disulfide	9,939,002
4	3	194,601,413	8 87	1	Toluene	26,330,516
				2	Acetone	22,990,567
				3	Methanol	21,809,028
				4	Methyl Ethyl Ketone	13,511,435
				5	Xylene (Mixed Isomers)	12,614,012
				6	Hydrochloric Acid	11,950,539
				7	1,1,1-Trichloroethane	11,429,765
				8	Ammonia	7,901,050
				9	Dichloromethane	7,351,150
				10	Benzene	5,025,976
5	8	130,841,870	5 96	1	Chlorine	88,312 080
				2	Hydrochloric Acid	8,589,489
				3	Xylene (Mixed Isomers)	8,497,725
				4	1,1,1-Trichloroethane	4,845 481
				5	Toluene	2,425,143
				6	Sulfuric Acid	2,378,965
				7	Freon 113	2,009 923
				8	Dichloromethane	1,660 427
				9	Ammonia	1,463,968
				10	Methanol	1,194,714
6	7	127,925,832	5 83	1	Ammonia	19,708,178
				2	Toluene	19,649,573
				3	Xylene (Mixed Isomers)	14,965 837
				4	1,1,1-Trichloroethane	9,314,547
				5	Methyl Ethyl Ketone	8,732 685
				6	Methanol	7,203 176
				7	Acetone	5,958,516
				8	Dichloromethane	5,129,199
				9	Trichloroethylene	3,802,974
				10	Glycol Ethers	3 363,988
7	2	97,668,390	4 45	1	Toluene	13,199,701
				2	Acetone	10,984,138
				3	Dichloromethane	8,950 567
				4	1,1,1-Trichloroethane	8,059,131
				5	Methanol	7 847,596
				6	Hydrochloric Acid	7,357,243
				7	Xylene (Mixed Isomers)	5,080,218
				8	Freon 113	4 536,407
				9	Methyl Ethyl Ketone	3,988,539
				10	Trichloroethylene	3,556,207
8	9	93,125,814	4 24	1	1,1,1-Trichloroethane	25,515,424
				2	Ammonia	9,888,315
				3	Methanol	7,685 962
				4	Freon 113	6 268,234
				5	Acetone	6,217,525
				6	Dichloromethane	6,121,068
				7	Tetrachloroethylene	3,901,750
				8	Toluene	3,649,506
				9	Methyl Ethyl Ketone	3,270,373
				10	Glycol Ethers	2,698,136
9	10	67,120,142	3 06	1	Ammonia	20,219,832
				2	Methanol	6,689,695
				3	Acetone	4,963,761
				4	Toluene	4,905,926
				5	Chloroform	3,739,619
				6	Methyl Ethyl Ketone	3,651,806
				7	1,1,1-Trichloroethane	2,194,173
				8	Xylene (Mixed Isomers)	2,173,580
				9	Freon 113	2,114,945
				10	Hydrogen Fluoride	1,818,012
10	1	65,348,914	2 98	1	1,1,1-Trichloroethane	14,968,303
				2	Toluene	8,206,903
				3	Freon 113	4,723,831
				4	Dichloromethane	4,196,633
				5	Methanol	4,105,041
				6	Methyl Ethyl Ketone	3,942,373
				7	Acetone	3 210,549
				8	Sulfuric Acid	2,826,814
				9	Trichloroethylene	2,291,673
				10	Glycol Ethers	2,227,714

TABLE B-2

State Emissions

— 1990 —

State	Rank	Chemical	Total Emissions (lb/yr)	No Of Emitters	% Of State Total
AK	1	Ammonia	13,483,804	5	90 05
	2	Hydrochloric Acid	548,500	2	3 66
	3	Methanol	329,005	3	2 20
	4	Chloroform	206,991	2	1 38
	5	Sulfuric Acid	182,010	2	1 22
	6	Benzene	81,923	3	0 55
	7	Xylene (Mixed Isomers)	37,818	3	0 25
	8	Toluene	33,012	3	0 22
	9	Acetone	22,510	1	0 15
	10	Cyclohexane	21,650	3	0 14
AL	1	Carbon Disulfide	46,577,271	4	46 58
	2	Methanol	8,052,654	46	8 05
	3	Methyl Ethyl Ketone	6,364,473	41	6 36
	4	Toluene	5,401,636	70	5 40
	5	Xylene (Mixed Isomers)	4,778,967	77	4 78
	6	Hydrochloric Acid	4,503,002	54	4 50
	7	Chloroform	2,751,919	11	2 75
	8	1,1,1-Trichloroethane	2,695,436	49	2 70
	9	Ammonia	2,330,419	72	2 33
	10	Acetone	1,578,781	44	1 58
AR	1	Ammonia	3,911,743	61	12 54
	2	Toluene	3,327,557	85	10 67
	3	Methanol	3,250,676	35	10 42
	4	Acetone	2,918,514	50	9 35
	5	Xylene (Mixed Isomers)	2,854,124	75	9 15
	6	Methyl Ethyl Ketone	2,798,597	46	8 97
	7	1,1,1-Trichloroethane	2,656,401	47	8 51
	8	Carbon Disulfide	1,689,195	3	5 41
	9	Dichloromethane	1,480,148	24	4 74
	10	Freon 113	1,055,540	18	3 38
AS	1	Ammonia	19,300	2	100
AZ	1	Acetone	2,729,278	24	21 02
	2	1,1,1-Trichloroethane	2,562,221	56	19 74
	3	Methanol	1,300,000	18	10 01
	4	Freon 113	1,250,434	34	9 63
	5	Copper Compounds	771,972	13	5 95
	6	Methyl Ethyl Ketone	712,140	19	5 49
	7	Toluene	482,275	17	3 71
	8	Ammonia	479,810	22	3 70
	9	Aluminum Oxide (Fibrous Form)	391,777	1	3 02
	10	Glycol Ethers	274,423	13	2 11
CA	1	1,1,1-Trichloroethane	22,924,095	527	29 12
	2	Ammonia	9,352,400	252	11 88
	3	Methanol	6,348,393	114	8 06
	4	Dichloromethane	5,828,439	102	7 40
	5	Freon 113	5,012,280	171	6 37
	6	Tetrachloroethylene	3,718,016	81	4 72
	7	Acetone	3,393,865	213	4 31
	8	Toluene	2,694,066	185	3 42
	9	Methyl Ethyl Ketone	2,529,013	171	3 21
	10	Glycol Ethers	2,337,188	134	2 97
CO	1	1,1,1-Trichloroethane	1,017,010	28	15 13
	2	Freon 113	963,019	27	14 33
	3	Methanol	677,907	14	10 09
	4	n-Butyl Alcohol	655,718	6	9 76
	5	Glycol Ethers	625,526	10	9 31
	6	Toluene	561,363	21	8 35
	7	Acetone	449,777	17	6 69
	8	Methyl Ethyl Ketone	280,197	12	4 17
	9	Tetrachloroethylene	271,598	5	4 04
	10	Dichloromethane	200,052	11	2 98
CT	1	1,1,1-Trichloroethane	7,204,314	151	41 97
	2	Dichloromethane	2,180,645	47	12 71
	3	Freon 113	1,445,598	40	8 42
	4	Toluene	889,009	36	5 18
	5	Methanol	788,025	33	4 59
	6	Tetrachloroethylene	747,334	22	4 35
	7	Methyl Ethyl Ketone	681,548	43	3 97
	8	Acetone	407,160	27	2 37
	9	Ammonia	368,253	55	2 15
	10	Glycol Ethers	317,571	24	1 85
DE	1	Methanol	1,298,889	14	21 58
	2	Hydrochloric Acid	737,688	15	12 26
	3	Xylene (Mixed Isomers)	591,360	6	9 83
	4	Carbonyl Sulfide	582,000	1	9 67
	5	Trichloroethylene	412,000	1	6 85
	6	Methyl Ethyl Ketone	288,653	9	4 80
	7	Acetone	231,111	12	3 84
	8	Toluene	230,627	14	3 83
	9	Dichloromethane	176,813	7	2 94
	10	Vinyl Chloride	158,091	2	2 63
FL	1	Ammonia	12,935,122	79	28 65
	2	Acetone	5,425,898	106	12 02
	3	Methanol	4,942,216	35	10 95
	4	Toluene	2,688,839	53	5 96
	5	Styrene	2,106,702	80	4 67
	6	Sulfuric Acid	2,013,270	68	4 46
	7	Freon 113	1,929,518	52	4 27
	8	1,1,1-Trichloroethane	1,922,728	76	4 26
	9	Hydrochloric Acid	1,661,853	49	3 68
	10	Cyclohexane	1,263,252	3	2 80
GA	1	Methanol	20,729,459	83	28 64
	2	Acetone	6,531,231	75	9 02
	3	Hydrochloric Acid	5,240,176	60	7 24
	4	Toluene	5,216,463	100	7 21
	5	Ammonia	4,693,299	110	6 48
	6	1,1,1-Trichloroethane	3,817,247	82	5 27
	7	Xylene (Mixed Isomers)	3,699,771	108	5 11
	8	Dichloromethane	3,399,193	49	4 70
	9	Methyl Ethyl Ketone	2,469,898	63	3 41
	10	Chloroform	2,052,000	5	2 84
HI	1	Propylene	119,100	2	17 50
	2	Toluene	95,500	2	14 03
	3	Glycol Ethers	82,320	1	12 10
	4	Benzene	72,400	2	10 64
	5	n-Butyl Alcohol	72,400	1	10 64
	6	m-Xylene	50,300	2	7 39
	7	Cyclohexane	35,800	2	5 26
	8	Dichloromethane	28,924	1	4 25
	9	o-Xylene	24,000	2	3 53
	10	1,2,4-Trimethylbenzene	18,450	2	2 71
IA	1	Ammonia	8,367,744	63	21 97
	2	Toluene	6,896,867	70	18 11
	3	Xylene (Mixed Isomers)	3,677,125	89	9 65
	4	Methanol	2,698,900	22	7 09
	5	1,1,1-Trichloroethane	2,552,320	58	6 70
	6	Methyl Ethyl Ketone	2,536,460	27	6 66
	7	Acetone	2,042,387	35	5 36
	8	Tetrachloroethylene	1,223,571	9	3 21
	9	Ethylene	992,000	2	2 60
	10	Glycol Ethers	875,884	20	2 30

Table B-2 (Continued)

State Emissions — 1990

State	Rank	Chemical	Total Emissions (lb/yr)	No Of Emitters	% Of State Total
ID	1	Ammonia	2,705,209	20	47 59
	2	Chloroform	904,000	1	15 90
	3	Methanol	785,656	6	13 82
	4	Freon 113	268,622	4	4 73
	5	Acetone	231,096	9	4 07
	6	Sulfuric Acid	153,293	15	2 70
	7	Chlorine Dioxide	114,250	1	2 01
	8	1,1,1-Trichloroethane	106,398	4	1 87
	9	Hydrogen Fluoride	87,756	4	1
	10	Formaldehyde	87,463	5	1 54
IL	1	Toluene	12,697,019	233	14 46
	2	1,1,1-Trichloroethane	9,049,746	230	10 30
	3	Xylene (Mixed Isomers)	6,573,182	224	7 48
	4	Ammonia	6,151,226	141	7 00
	5	Methyl Ethyl Ketone	5,468,171	167	6 23
	6	Chlorine	4,116,039	52	4 69
	7	Carbon Disulfide	4,110,750	3	4 68
	8	Trichloroethylene	3,557,260	104	4 05
	9	Hydrochloric Acid	3,401,225	162	3 87
	10	Acetone	3,383,423	108	3 85
IN	1	Toluene	16,082,285	208	14 94
	2	Acetone	14,629,409	130	13 59
	3	Dichloromethane	11,995,822	69	11 15
	4	1,1,1-Trichloroethane	11,214,621	159	10 42
	5	Xylene (Mixed Isomers)	9,636,929	210	8 95
	6	Methyl Ethyl Ketone	5,664,080	118	5 26
	7	Methanol	3,890,193	94	3 61
	8	Trichloroethylene	3,678,230	51	3 42
	9	Ammonia	2,984,621	67	2 77
	10	Benzene	2,745,138	16	2 55
KS	1	Ammonia	5,322,560	44	18 47
	2	Toluene	2,863,093	59	9 93
	3	Trichloroethylene	2,385,290	11	8 28
	4	Xylene (Mixed Isomers)	2,043,250	49	7 09
	5	Methyl Ethyl Ketone	1,982,115	29	6 88
	6	Propylene	1,824,275	6	6 33
	7	Carbon Disulfide	1,638,076	2	5 68
	8	1,1,1-Trichloroethane	1,434,684	33	4 98
	9	Acetone	1,364,253	34	4 73
	10	Ethylene	1,070,444	5	3 71
KY	1	Toluene	8,476,610	75	20 91
	2	Xylene (Mixed Isomers)	4,597,087	73	11 34
	3	Methanol	4,394,941	37	10 84
	4	Acetone	2,604,518	41	6 42
	5	1,1,1-Trichloroethane	2,215,042	46	5 46
	6	Ethylene	2,024,170	7	4 99
	7	Glycol Ethers	1,660,761	25	4 10
	8	Dichloromethane	1,515,355	18	3 74
	9	Methyl Ethyl Ketone	1,404,847	46	3 47
	10	Hydrochloric Acid	1,280,147	42	3 16
LA	1	Ammonia	48,927,723	67	46 22
	2	Methanol	7,018,912	73	6 63
	3	Carbon Disulfide	6,392,429	9	6 04
	4	Ethylene	6,103,489	37	5 77
	5	Toluene	4,055,942	74	3 83
	6	Propylene	3,086,981	29	2 92
	7	Xylene (Mixed Isomers)	2,192,927	61	2 07
	8	Styrene	2,161,963	24	2 04
	9	Hydrochloric Acid	1,989,805	59	1 88
	10	Carbonyl Sulfide	1,831,628	7	1 73
MA	1	Toluene	4,041,280	103	19 74
	2	1,1,1-Trichloroethane	3,853,563	141	18 82
	3	Freon 113	1,998,703	70	9 76
	4	Methyl Ethyl Ketone	1,949,369	58	9 52
	5	Trichloroethylene	1,567,610	43	7 66
	6	Dichloromethane	1,339,295	47	6 54
	7	Acetone	1,069,764	65	5 23
	8	Methanol	819,363	63	4 00
	9	Xylene (Mixed Isomers)	446,348	52	2 18
	10	Glycol Ethers	365,940	33	1 79
MD	1	Toluene	2,649,726	36	20 53
	2	Hydrochloric Acid	1,761,624	25	13 65
	3	1,1,1-Trichloroethane	1,336,243	33	10 35
	4	Methyl Ethyl Ketone	811,641	23	6 29
	5	Xylene (Mixed Isomers)	713,267	27	5 53
	6	Ammonia	628,035	37	4 87
	7	Dichloromethane	627,017	10	4 86
	8	Methanol	601,710	17	4 66
	9	Glycol Ethers	552,297	25	4 28
	10	Sulfuric Acid	516,096	33	4 00
ME	1	Sulfuric Acid	2,463,498	19	17 99
	2	Methanol	1,993,113	13	14 55
	3	Glycol Ethers	1,405,302	5	10 26
	4	Chlorine	1,326,828	14	9 69
	5	1,1,1-Trichloroethane	1,323,702	24	9 66
	6	Chloroform	1,082,487	7	7 90
	7	Acetone	796,621	23	5 82
	8	Chlorine Dioxide	566,204	7	4 13
	9	Hydrochloric Acid	511,628	15	3 74
	10	Toluene	468,360	17	3 42
MI	1	Toluene	14,217,008	196	16 83
	2	Xylene (Mixed Isomers)	11,805,955	167	13 98
	3	Acetone	9,474,537	139	11 22
	4	Methyl Ethyl Ketone	5,957,423	133	7 05
	5	Dichloromethane	5,349,093	50	6 33
	6	1,1,1-Trichloroethane	5,059,027	143	5.99
	7	Methanol	4,578,987	97	5 42
	8	Glycol Ethers	3,484,346	108	4 12
	9	Ammonia	2,992,218	87	3 54
	10	Methyl Isobutyl Ketone	2,975,936	71	3 52
MN	1	Methyl Ethyl Ketone	12,786,476	47	25 76
	2	Toluene	12,758,642	88	25 70
	3	Xylene (Mixed Isomers)	4,754,197	76	9 58
	4	1,1,1-Trichloroethane	3,098,528	86	6 24
	5	Freon 113	1,880,315	52	3 79
	6	Methanol	1,701,799	30	3 43
	7	Acetone	1,556,487	63	3 14
	8	Dichloromethane	1,447,317	34	2 92
	9	Formaldehyde	1,147,802	18	2 31
	10	Trichloroethylene	793,907	26	1 60
MO	1	Xylene (Mixed Isomers)	7,689,499	110	17 37
	2	Toluene	4,855,804	127	10 97
	3	1,1,1-Trichloroethane	4,209,923	83	9 51
	4	Methanol	3,191,803	61	7 21
	5	Methyl Ethyl Ketone	3,002,844	80	6 78
	6	Dichloromethane	2,615,397	50	5 91
	7	n-Butyl Alcohol	2,259,036	46	5 10
	8	Acetone	2,175,820	71	4 92
	9	Glycol Ethers	2,110,808	59	4 77
	10	Ammonia	1,996,580	61	4 51

Table B-2 (Continued)

State Emissions — 1990

State	Rank	Chemical	Total Emissions (lb/yr)	No Of Emitters	% Of State Total
MS	1	Ammonia	14 016,110	57	25 28
	2	Toluene	6,173,170	65	11 13
	3	Carbonyl Sulfide	5,821 000	2	10 50
	4	Dichloromethane	4,797,880	22	8 65
	5	Methyl Ethyl Ketone	4,660,687	29	8 41
	6	Xylene (Mixed Isomers)	4,432,188	63	7 99
	7	Methanol	2,425,499	35	4 37
	8	1,1 1-Trichloroethane	2 201,067	44	3 97
	9	Acetone	1,493,641	31	2 69
	10	Hydrochloric Acid	1,451,540	22	2 62
MT	1	Hydrogen Fluoride	536,200	5	21 65
	2	Ammonia	297,120	7	12
	3	Xylene (Mixed Isomers)	233,100	4	9 41
	4	Formaldehyde	197,192	6	7 96
	5	Toluene	152,876	5	6 17
	6	Methanol	141,550	2	5 72
	7	Propylene	119,490	4	4 83
	8	Lead Compounds	110,975	4	4 48
	9	Chloroform	80,500	1	3 25
	10	Ethylene	75,200	3	3 04
NC	1	Methanol	14,380,492	195	16 61
	2	Toluene	14,168,480	201	16 36
	3	Methyl Ethyl Ketone	7,994,627	136	9 23
	4	Dichloromethane	7,208,757	49	8 32
	5	Acetone	6,600,879	151	7 62
	6	1,1,1-Trichloroethane	5,379,024	168	6 21
	7	Ammonia	3,538,595	132	4 09
	8	Hydrochloric Acid	3,360,712	63	3 88
	9	n-Butyl Alcohol	2,322,493	87	2 68
	10	Chloroform	2,234,250	5	2 58
ND	1	Toluene	480,445	2	23 95
	2	Xylene (Mixed Isomers)	367,999	6	18 34
	3	Methyl Ethyl Ketone	319,794	4	15 94
	4	1,2,4-Trimethylbenzene	127,451	1	6 35
	5	Benzene	116,540	1	5 81
	6	Ammonia	116,498	5	5 81
	7	1,1,1-Trichloroethane	87,825	4	4 38
	8	Freon 113	63,675	1	3 17
	9	Styrene	56,261	4	2 80
	10	Propylene	54,704	1	2 73
NE	1	Toluene	5,033,809	27	30 04
	2	Ammonia	4,021,294	39	23 99
	3	Xylene (Mixed Isomers)	1,555 963	40	9 28
	4	Dichloromethane	1,233,162	4	7 36
	5	Methyl Ethyl Ketone	1,211,266	18	7 23
	6	1,1,1-Trichloroethane	1,117,620	30	6 67
	7	Freon 113	412,651	7	2 46
	8	Acetone	376,066	18	2 24
	9	Ammonium Nitrate (Solution)	325,200	1	1 94
	10	Methanol	299,135	8	1 78
NH	1	Toluene	1,123,514	19	14 15
	2	1,1,1-Trichloroethane	1,061,257	37	13 37
	3	Freon 113	898,550	24	11 32
	4	Methyl Ethyl Ketone	847,260	19	10 67
	5	Chlorine	690,750	2	8 70
	6	Chlorine Dioxide	640,250	1	8 07
	7	Dichloromethane	503,897	13	6 35
	8	Xylene (Mixed Isomers)	350,209	11	4 41
	9	Acetone	338,297	15	4 26
	10	Methyl Isobutyl Ketone	289,661	3	3 65
NJ	1	Toluene	4,161,854	169	17 12
	2	Acetone	3,306,482	94	13 60
	3	Methanol	2,311,765	108	9 51
	4	Xylene (Mixed Isomers)	2,075,891	134	8 54
	5	Methyl Ethyl Ketone	1,727,391	104	7 11
	6	1,1,1-Trichloroethane	1,366,264	105	5 62
	7	n-Butyl Alcohol	1,118,522	64	4 60
	8	Glycol Ethers	991,581	77	4 08
	9	Trichloroethylene	878,938	14	3 62
	10	Dichloromethane	840,840	51	3 46
NM	1	Sulfuric Acid	681,387	11	27 64
	2	Copper Compounds	343,510	3	13 93
	3	Freon 113	238,181	8	9 66
	4	1,1,1-Trichloroethane	234,361	9	9 51
	5	Toluene	212,717	10	8 63
	6	Acetone	151,733	8	6 16
	7	Hydrochloric Acid	137,957	7	5 60
	8	Xylene (Mixed Isomers)	120,012	5	4 87
	9	Formaldehyde	87,172	1	3 54
	10	Benzene	59,119	4	2 40
NV	1	Toluene	377,665	4	52 29
	2	Acetone	84,710	3	11 73
	3	Xylene (Mixed Isomers)	75,949	5	10 52
	4	Methanol	37,314	1	5 17
	5	Methyl Ethyl Ketone	29,220	2	4 05
	6	1,1,1-Trichloroethane	29,108	3	4 03
	7	Ammonia	21,145	3	2 93
	8	Chlorine	19,983	6	2 77
	9	Manganese Compounds	12,900	1	1 79
	10	Styrene	10,243	1	1 42
NY	1	Toluene	7,560,295	160	13 29
	2	Hydrochloric Acid	7,056,179	114	12 40
	3	1,1,1-Trichloroethane	6,237,309	159	10 96
	4	Acetone	4,809,828	88	8 46
	5	Methanol	4,639,404	97	8 16
	6	Dichloromethane	4,154,054	61	7 30
	7	Xylene (Mixed Isomers)	2,690,313	116	4 73
	8	Trichloroethylene	2,666,709	60	4 69
	9	Freon 113	2,390,274	73	4 20
	10	Methyl Ethyl Ketone	1,968,162	87	3 46
OH	1	Xylene (Mixed Isomers)	12,851,774	229	11 31
	2	Toluene	11,945,107	288	10 52
	3	1,1,1-Trichloroethane	11,859,212	270	10 44
	4	Ammonia	11,183,947	156	9 85
	5	Methyl Ethyl Ketone	8,676,114	195	7 64
	6	Acetone	7,234,299	153	6 37
	7	Methanol	6,864,148	131	6 04
	8	Glycol Ethers	4,517,963	132	3 98
	9	Dichloromethane	3,223,389	99	2 84
	10	n-Butyl Alcohol	3,010,729	87	2 65
OK	1	Ammonia	10 489,047	24	37 40
	2	Methanol	3,465,979	18	12 36
	3	Toluene	2,192,812	39	7 82
	4	Dichloromethane	1,529,447	11	5 45
	5	Xylene (Mixed Isomers)	1,136,673	34	4 05
	6	Methyl Ethyl Ketone	1,105,030	27	3 94
	7	1,1,1-Trichloroethane	946,137	36	3 37
	8	Tetrachloroethylene	787,682	8	2 81
	9	Carbon Disulfide	588,965	1	2 10
	10	Styrene	579,955	10	2 07

Table B-2 (Continued)

State Emissions — 1990

State	Rank	Chemical	Total Emissions (lb/yr)	No Of Emitters	% Of State Total
OR	1	Methanol	3,530,666	31	19 28
	2	Acetone	2,440,476	46	13 33
	3	Toluene	2,152,560	39	11 75
	4	Methyl Ethyl Ketone	1,137,231	31	6 21
	5	Ammonia	1,057,578	43	5 77
	6	Formaldehyde	783,703	33	4 28
	7	Trichloroethylene	749,757	14	4 09
	8	Xylene (Mixed Isomers)	729,177	31	3 98
	9	Freon 113	698,572	13	3 81
	10	1,1,1-Trichloroethane	686,685	25	3 75
PA	1	Toluene	12,042,062	202	16 61
	2	1,1,1-Trichloroethane	7,648,281	190	10 55
	3	Methyl Ethyl Ketone	4,558,396	121	6 29
	4	Xylene (Mixed Isomers)	4,419,802	198	6 10
	5	Ammonia	4,160,426	129	5 74
	6	Hydrochloric Acid	4,097,918	116	5 65
	7	Dichloromethane	3,669,467	58	5 06
	8	Acetone	3,178,569	127	4 38
	9	Methanol	2,834,233	122	3 91
	10	Benzene	2,622,503	19	3 62
PR	1	Dichloromethane	3,955,673	21	25 91
	2	Acetone	2,867,828	25	18 79
	3	Freon 113	1,432,023	31	9 38
	4	Toluene	1,233,652	23	8 08
	5	Methanol	895,733	26	5 87
	6	Carbon Disulfide	841,100	1	5 51
	7	n-Butyl Alcohol	776,141	8	5 08
	8	1,1,1-Trichloroethane	446,808	23	2 93
	9	Methyl Ethyl Ketone	292,986	9	1 92
	10	Ethylene Oxide	270,918	6	1 77
RI	1	Toluene	1,510,520	15	29 06
	2	1,1,1-Trichloroethane	1,198,226	48	23 05
	3	Acetone	524,882	17	10 10
	4	Freon 113	305,053	17	5 87
	5	Methanol	290,426	11	5 59
	6	Methyl Ethyl Ketone	245,419	15	4 72
	7	Trichloroethylene	213,794	15	4 11
	8	Xylene (Mixed Isomers)	159,237	13	3 06
	9	Ammonia	159,048	26	3 06
	10	Dichloromethane	143,794	12	2 77
SC	1	Methanol	14,777,023	76	22 82
	2	Acetone	8,975,199	55	13 86
	3	Toluene	8,243,082	69	12 73
	4	Methyl Ethyl Ketone	4,507,055	48	6 96
	5	1,1,1-Trichloroethane	4,460,809	67	6 89
	6	Ammonia	2,778,976	69	4 29
	7	Hydrochloric Acid	2,723,426	47	4 21
	8	Xylene (Mixed Isomers)	2,442,364	67	3 77
	9	Dichloromethane	1,685,964	27	2 60
	10	Glycol Ethers	1,289,166	38	1 99
SD	1	Xylene (Mixed Isomers)	700,446	11	24 28
	2	Toluene	466,547	7	16 17
	3	Cyclohexane	440,872	1	15 28
	4	Freon 113	224,495	3	7 78
	5	1,1,1-Trichloroethane	212,634	7	7 37
	6	Lead Compounds	183,506	1	6 36
	7	Methyl Ethyl Ketone	155,611	6	5 39
	8	Methanol	141,907	3	4 92
	9	Ammonia	107,501	7	3 73
	10	Formaldehyde	89,000	1	3 09
TN	1	Acetone	36,871,329	83	26 48
	2	Carbon Disulfide	29,679,416	5	21 32
	3	Toluene	13,359,413	131	9 60
	4	Methanol	11,877,905	72	8 53
	5	Carbonyl Sulfide	8,500,000	1	6 11
	6	1,1,1-Trichloroethane	6,190,496	90	4 45
	7	Ammonia	5,180,326	59	3 72
	8	Xylene (Mixed Isomers)	5,051,692	111	3 63
	9	Dichloromethane	3,124,319	40	2 24
	10	Methyl Ethyl Ketone	2,242,721	64	1 61
TX	1	Ethylene	22,312,265	82	13 74
	2	Acetone	12,161,384	162	7 49
	3	Propylene	11,979,030	86	7 38
	4	Ammonia	11 681,687	205	7 19
	5	Toluene	9,098,925	240	5 60
	6	Methanol	8,673,336	197	5 34
	7	Xylene (Mixed Isomers)	8,027,837	242	4 94
	8	Cyclohexane	6,727,724	63	4 14
	9	Methyl Ethyl Ketone	5,604,068	127	3 45
	10	1,1,1-Trichloroethane	5,485,510	156	3 38
UT	1	Chlorine	88,220,193	13	78 46
	2	Hydrochloric Acid	8,565,279	20	7 62
	3	Xylene (Mixed Isomers)	6,862,828	22	6 10
	4	1,1,1-Trichloroethane	3,527,494	22	3 14
	5	Dichloromethane	1,460,375	4	1 30
	6	Freon 113	758,734	15	0 67
	7	Sulfuric Acid	556,505	24	0 49
	8	Toluene	545,535	22	0 49
	9	Acetone	250,243	15	0 22
	10	Methanol	203,187	10	0 18
VA	1	Acetone	15,517,240	78	20 61
	2	Methanol	15,410,500	82	20 47
	3	Toluene	9,184,718	116	12 20
	4	Methyl Ethyl Ketone	7,216,535	86	9 58
	5	Xylene (Mixed Isomers)	5,832,803	105	7 75
	6	Hydrochloric Acid	3,672,516	41	4 88
	7	Ammonia	1,849,153	59	2 46
	8	1,1,1-Trichloroethane	1,823,511	71	2 42
	9	Dichloromethane	1,697,659	29	2 25
	10	Methyl Isobutyl Ketone	1,399,026	30	1 86
VI	1	p-Xylene	253,500	1	20 91
	2	Toluene	243,900	1	20 12
	3	Xylene (Mixed Isomers)	226,800	1	18 71
	4	Benzene	160,500	1	13 24
	5	Propylene	116,000	1	9 57
	6	Ethylbenzene	78,000	1	6 43
	7	Ethylene	58,000	1	4 78
	8	Cyclohexane	31,120	1	2 57
	9	1,2,4-Trimethylbenzene	14,132	1	1 17
	10	1,1,1-Trichloroethane	8,750	1	0 72
VT	1	1,1,1-Trichloroethane	327,241	12	37.13
	2	Toluene	174,220	5	19 77
	3	Methyl Isobutyl Ketone	87,582	3	9 94
	4	Acetone	73,825	4	8 38
	5	Methanol	47,286	4	5 36
	6	Sulfuric Acid	35,212	8	3 99
	7	Xylene (Mixed Isomers)	32,066	3	3 64
	8	Freon 113	30,701	3	3 48
	9	Methyl Ethyl Ketone	26,350	2	2 99
	10	Hydrochloric Acid	6,211	4	0 70

Table B-2 (Continued)

State Emissions — 1990

State	Rank	Chemical	Total Emissions (lb/yr)	No Of Emitters	% Of State Total
WA	1	Ammonia	2,973,241	61	10 56
	2	Toluene	2,720,104	55	9 66
	3	Methyl Ethyl Ketone	2,510,425	44	8 92
	4	Acetone	2,269,679	65	8 06
	5	Methanol	2,044,368	35	7 26
	6	Chloroform	2,022,502	12	7 19
	7	Hydrogen Fluoride	1,515,497	14	5 38
	8	Xylene (Mixed Isomers)	1,406,335	47	5 00
	9	1,1,1-Trichloroethane	1,401,090	39	4 98
	10	Freon 113	1,147,751	27	4 08
WI	1	1,1,1-Trichloroethane	5,684,189	148	13 83
	2	Toluene	4,500,357	126	10 95
	3	Xylene (Mixed Isomers)	4,467,014	121	10 87
	4	Methyl Ethyl Ketone	3,288,219	94	8 00
	5	Glycol Ethers	3,007,905	82	7 32
	6	Hydrochloric Acid	2,738,902	79	6 66
	7	Methanol	2,019,119	65	4 91
	8	Acetone	2,009,564	71	4 89
	9	Dichloromethane	1,445,916	45	3 52
	10	n-Butyl Alcohol	1,254,524	41	3.05
WV	1	Acetone	3,847,856	16	13 79
	2	Toluene	2,223,383	25	7 97
	3	Hydrochloric Acid	1,680,793	24	6 03
	4	Methanol	1,663,696	18	5 96
	5	Benzene	1,640,814	8	5 88
	6	Ethylene Glycol	1,341,722	12	4 81
	7	Ammonia	1,192,136	23	4 27
	8	Dichloromethane	1,180,194	6	4 23
	9	1,2-Dichloroethane	1,104,911	1	3 96
	10	Styrene	1,072,824	10	3 85
WY	1	Sulfuric Acid	1,762,473	6	40 82
	2	Ammonium Nitrate (Solution)	721,890	1	16 72
	3	Ammonia	692,181	8	16 03
	4	Xylene (Mixed Isomers)	227,285	7	5 26
	5	Toluene	218,377	5	5 06
	6	n-Butyl Alcohol	138,489	2	3 21
	7	Phosphoric Acid	80,068	2	1 85
	8	Glycol Ethers	77,810	2	1 80
	9	Cyclohexane	64,784	3	1 50
	10	Benzene	55,969	4	1 30

TABLE B-3

Regional Hot Spots

— 1990 3-DIGIT ZIP CODES —

3-Digit ZIP Code	State	No Of Release Reports	No Of Facilities	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	ZIP % Of Total TRI Emissions
840	UT	163	43	99,536,894	100,849,411	4 59
775	TX	1234	137	25,902,429	57,469,488	2 62
376	TN	158	32	18,697 209	53,092 595	2 42
365	AL	191	31	50,256,060	51,037,042	2 33
377	TN	89	36	26,827,726	27,019,504	1 23
703	LA	70	14	1,055,326	23,143,897	1 05
553	MN	189	69	21,554,465	22,511,087	1 03
700	LA	328	53	4,412,128	21,760,019	0 99
776	TX	246	28	8,957,230	20,150,787	0 92
286	NC	451	144	15,420,673	18,602,667	0 85
371	TN	181	50	16,527,463	18,117,226	0 83
706	LA	203	28	6,470,824	16,862,650	0 77
606	IL	904	285	12,679,529	16,822,780	0 77
707	LA	352	38	9,647,290	16,821,716	0 77
391	MS	49	21	3,101,298	16,371,227	0 75
356	AL	199	49	13,921,610	15,956,127	0 73
241	VA	117	33	3,624,169	15,762,380	0 72
465	IN	352	137	13,275,575	15,376,861	0 70
284	NC	106	27	13,043,199	14,305,755	0 65
996	AK	22	4	327,394	13,835,898	0 63
314	GA	83	22	11,050,607	13,368,392	0 61
481	MI	426	116	10,079,341	13,076,896	0 60
6	PR	234	84	7,853,998	12,857,474	0 59
244	VA	47	20	10,898,012	11,835,815	0 54
463	IN	337	67	10,719,300	11,814,123	0 54
294	SC	155	42	9,569,068	11,237,403	0 51
473	IN	205	60	6,878,389	11,022,348	0 50
479	IN	138	38	8,832,738	10,996,949	0 50
315	GA	104	25	8,774,284	10,979,639	0 50
402	KY	367	78	9,350,609	10,855,534	0 49
480	MI	288	86	9,759,594	10,707 687	0 49
388	MS	105	44	9,810,747	10,435,696	0 48
476	IN	56	9	7,988,435	10,347,889	0 47
440	OH	479	141	8,769,442	9,867 259	0 45
490	MI	292	101	8,068,355	9,683,069	0 44
604	IL	463	107	6,776,005	9,555,324	0 44
441	OH	657	194	7,454,064	9,401,692	0 43
395	MS	207	22	7,993,394	9,269,835	0 42
630	MO	236	64	7,754,645	9,267,374	0 42
430	OH	188	48	6,287,223	9,178,104	0 42
458	OH	234	61	5,129,532	9,099,944	0 41
295	SC	142	51	6,824,570	9,083,792	0 41
232	VA	150	47	7,499,214	9,077,450	0 41
756	TX	189	40	3,589,998	8,832,115	0 40
457	OH	79	14	4,833,428	8,670,306	0 40
841	UT	133	37	7,919,372	8,435,448	0 38
672	KS	168	37	7,722,269	8,385,318	0 38
494	MI	327	86	6,089,639	8,311,285	0 38
708	LA	156	20	5,123,816	8,179,382	0 37
619	IL	57	17	6,850,748	8,115,903	0 37
381	TN	216	60	3,532,260	7,851,866	0 36
420	KY	147	26	5,211,007	7,838,917	0 36
551	MN	230	78	6,112,556	7,776,532	0 35
272	NC	282	99	6,561,785	7,727,861	0 35
777	TX	152	18	3,267,749	7,638,579	0 35
296	SC	358	116	6,217,705	7,625,586	0 35
70	NJ	724	218	5,503,147	7,591,723	0 35
299	SC	32	4	5,744,330	7,585,138	0 35
297	SC	133	33	3,474,192	7,463,647	0 34
605	IL	211	55	5,852,316	7,328,580	0.33
317	GA	100	36	5,849,431	7,309,692	0 33
456	OH	108	25	3,978,222	7 308,541	0 33
768	TX	21	5	5,545,032	7,295,966	0 33
260	WV	109	28	6,318 151	7,254,611	0 33
226	VA	81	16	6,877,847	7,233,208	0 33
740	OK	151	35	3,712,635	7,197,638	0 33
601	IL	486	164	5,833,413	7,173,195	0 33
945	CA	411	103	3,649,710	7,022,044	0 32
705	LA	52	18	7,004,599	7,010,644	0 32
342	FL	50	26	716,462	6,980,389	0 32
495	MI	291	75	5,725,474	6,975,577	0 32
397	MS	80	24	6,381,807	6,896,815	0 31
370	TN	166	54	5,934,885	6,889,981	0 31
902	CA	389	138	5,365,097	6,843,448	0.31
483	MI	138	39	5,019,751	6,712,416	0 31
452	OH	409	114	5,430,605	6,702,997	0 31
527	IA	118	33	2,973,084	6,621,773	0 30
852	AZ	178	57	2,704,211	6,586,337	0 30
926	CA	224	98	4,790,094	6,487,602	0 30
278	NC	164	69	3,609,489	6,383,933	0 29
281	NC	224	67	5,704,103	6,363,539	0 29
261	WV	121	18	5,636,380	6,272,145	0.29
150	PA	243	53	2,866,720	6,246,441	0 28
143	NY	99	20	6,108,507	6,241,702	0 28
631	MO	482	129	5,455,765	6,218,364	0 28
238	VA	101	29	4,170,291	6,143,991	0 28
292	SC	77	21	5,669,013	6,143,451	0 28
712	LA	72	21	5,200,597	6,094,697	0 28
770	TX	523	127	3,882,632	6,080,868	0 28
723	AR	109	31	3,281,754	6,046,717	0 28
132	NY	78	27	2,880,519	5,941,733	0 27
467	IN	212	84	4,950,688	5,938,490	0 27
338	FL	117	46	702,022	5,918,325	0 27
287	NC	128	41	4,678,673	5,850,207	0 27
550	MN	155	35	5,049,158	5,826,232	0 27
190	PA	198	59	4,082,359	5,771,402	0 26
293	SC	204	54	4,834,161	5,700,003	0 26
737	OK	11	5	1,755,075	5,535,587	0 25
245	VA	176	56	5,034,159	5,532,441	0 25
462	IN	289	80	4,291,313	5,516,490	0 25
		22136	5904	836,620,262	1,192,516,623	54 33

TABLE B-4

Regional Hot Spots

— 1990 COUNTIES —

County	State	No Of Release Reports	No Of Facilities	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	County % Of Total TRI Emissions
Tooele	UT	8	4	95,211 736	95,211 991	4 34
Mobile	AL	205	40	49,891,576	50,811,215	2 31
Sullivan	TN	102	14	5,597 485	37,869,166	1 73
Harris	TX	1348	234	20,723 405	37,102,085	1 69
Cook	IL	1800	551	26,669,597	33,785 348	1 54
Ascension	LA	146	13	4,142,097	30,789,313	1 40
Los Angeles	CA	1900	634	23,825,820	30,547,084	1 39
Hamblen	TN	60	21	24,814,689	25,102,702	1 14
Mc Leod	MN	35	8	19,816,689	20,221,634	0 92
Brazoria	TX	232	22	7,257,824	16,945,486	0 77
Calcasieu	LA	181	22	5,740,333	16,022,184	0 73
Jefferson	TX	298	31	7,250,901	15,853,701	0 72
St James	LA	38	7	246,853	15,106,674	0 69
Kenai Peninsula	AK	21	3	327 394	13,835 648	0 63
Chatham	GA	89	24	11,050 637	13,368 437	0 61
Wayne	MI	608	145	10,112,592	12,878 736	0 59
Salt Lake	UT	186	48	11,089 889	12,625,358	0 58
Yazoo	MS	2	1	3,800	12 287,721	0 56
Giles	VA	8	1	1 038,003	11 608,003	0 53
Lake	IN	225	42	9 908,093	11,431,419	0 52
Galveston	TX	191	19	2 903 589	11 160,733	0 51
Jefferson	KY	368	79	9,350,683	10 855,608	0 49
Orange	CA	579	230	7,579,612	10 542,116	0 48
Humphreys	TN	16	4	9,137 601	9,653,259	0 44
Cuyahoga	OH	669	198	7,521,413	9,499 205	0 43
Orange	TX	83	13	3,302,878	9,468 755	0 43
Oakland	MI	261	65	7,076,414	9,262,735	0 42
East Baton Rouge	LA	176	22	6,068,059	9,237,842	0 42
Colbert	AL	59	15	7,640,176	9 214,714	0 42
Catawba	NC	145	56	7,724,051	8,912,005	0 41
Washington	OH	79	14	4,833 428	8 670,306	0 40
Sedgwick	KS	173	40	7,726 159	8,389 708	0 38
Tippecanoe	IN	82	18	6,309 577	8,362,412	0 38
Alleghany	VA	16	4	7 671,402	8,188,157	0 37
Barcelonela	PR	42	8	5,073,200	8,161,835	0 37
Posey	IN	39	3	5,817,341	8 125 943	0 37
Shelby	TN	233	67	3,662,099	8,047,729	0 37
King	WA	318	116	6,120,704	7 849,151	0 36
St Louis	MO	323	82	6,436,164	7,580,479	0 35
Hampton	SC	19	3	5,738,687	7,553,642	0 34
Niagara	NY	169	37	6,930,580	7,549 479	0 34
Kent	MI	325	83	6,037,181	7 424 719	0 34
Brown	TX	19	3	5,498,737	7 249,171	0 33
Hamilton	OH	443	120	5,776,350	7,146,242	0 33
Kanawha	WV	136	12	2,939,294	7,005,916	0 32
Harrison	TX	73	12	2,273,932	6,974 651	0 32
Allegheny	PA	365	81	4,386,199	6,957,273	0 32
Union	OH	43	7	4,370,876	6,905,049	0 31
Glynn	GA	32	7	5 715,117	6 871 032	0 31
Manatee	FL	39	18	631,134	6,847,842	0 31
Marshall	KY	91	9	4 651,410	6 722,956	0 31
Brunswick	NC	30	5	6,659 319	6 722 276	0 31
Charleston	SC	68	17	5 482 416	6,669 449	0 30
Kalamazoo	MI	97	23	5 531,324	6,631,679	0 30
Frederick	VA	37	11	6,286,337	6 572 538	0 30
York	SC	77	19	2,967,991	6 542,379	0 30
Elkhart	IN	195	82	5,553 261	6 511 274	0 30
Onondaga	NY	124	45	3 088,293	6 434 286	0 29
Richland	SC	83	24	5,743,427	6 233,875	0 28
Milwaukee	WI	483	134	4,860 774	6,165,775	0 28
Harrison	MS	20	6	5 958 589	6,070 955	0 28
Hawkins	TN	27	10	3 935,604	6,045 845	0 28
Ramsey	MN	167	62	4,577,068	5 899 417	0 27
Caldwell	NC	136	31	4 654,031	5,828 751	0 27
St Mary	LA	39	5	5 475 604	5,651 704	0 26
Lee	MS	53	23	5,618,220	5,651,071	0 26
Middlesex	NJ	486	128	4,523,814	5,616,057	0 26
Maricopa	AZ	314	115	3,895,843	5,580,836	0 25
New Haven	CT	334	112	4,746,186	5,565,891	0 25
Mississippi	AR	43	16	2,783,525	5,540 753	0 25
Garfield	OK	11	5	1,755,075	5,535,587	0 25
Marion	IN	293	82	4,295 030	5,520,235	0 25
Forsyth	NC	102	39	4,868,891	5,496,460	0 25
Polk	FL	104	41	523,989	5,450,110	0 25
Richmond	GA	74	27	3,420,161	5,428,094	0 25
Tarrant	TX	280	99	3,815,400	5 363,148	0 24
Lowndes	MS	39	9	5,076,984	5,348,298	0 24
Morgan	AL	106	21	5,089,567	5 341 777	0 24
Henry	VA	92	24	4,791,871	5 321,569	0 24
Richmond City	VA	54	20	4,075 653	5,319,175	0 24
Kosciusko	IN	59	19	4,805,028	5,289,163	0 24
Lancaster	PA	192	69	4,309 859	5,169 041	0 24
Hamilton	TN	108	37	4,742 529	5 117 001	0 23
Douglas	IL	16	2	4,092,021	5 103 467	0 23
Spartanburg	SC	174	40	4,299,712	5,012,387	0 23
Lancaster	NE	54	22	4,829,456	4,979 861	0 23
Erie	NY	220	92	4,151 150	4 961,570	0 23
Sebastian	AR	98	30	3,944,988	4 952,072	0 23
Marion	IA	24	6	4,191,195	4 833,027	0 22
Washtenaw	MI	65	20	3,552,720	4,811,383	0 22
Dallas	TX	451	142	3,899,448	4,749 658	0 22
Montgomery	OH	209	49	3,614,223	4 691,773	0 21
Nueces	TX	147	18	3,501,173	4,676,342	0 21
Carter	TN	9	3	4,622,755	4,654,590	0 21
Washington	TN	23	8	4 563,222	4,636,839	0 21
Middlesex	MA	366	133	3,395,645	4,627 974	0 21
Bucks	PA	162	48	4,147,688	4,621,287	0 21
Lake	OH	176	46	4,484,591	4,602 706	0 21
Franklin	OH	240	65	3,661 473	4,575,781	0 21
Blackford	IN	22	3	2,600,706	4,547,585	0 21
		19881	5397	723,087,289	1,036,467 340	47 22

TABLE B-5

Air Emissions By U.S. Industry

— 1990 —

2-Digit SIC Code	U S Industry	No of Emitters	No of Release Reports	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	Industry % Of Total TRI Emissions
		48	90	664,275	991,463	0 05
0		1	1	126 000	126,000	0 01
0		12	39	148,131	166,594	0 01
1		2	3	0	30,960	0 00
2		5	10	522 748	524,498	0 02
3		5	20	763 652	858,042	0 04
10		1	2	0	932,221	0 04
12		1	1	32,000	32,000	0 00
14		7	12	270	7,873	0 00
16		11	20	17,776	43,110	0 00
17		6	7	49,215	49,951	0 00
18		2	6	1,330	1,835	0 00
19		2	11	130,815	182,815	0 01
20	Food	1,245	1,963	7,518,680	26,825,739	1 22
21	Tobacco	18	24	962,244	2,475,256	0 11
22	Textiles	370	721	27 934,842	33,965,968	1 55
23	Apparel	38	90	1,463,725	1,600,203	0 07
24	Lumber	578	1,459	31,631,074	35,331,018	1 61
25	Furniture	559	1,842	51,388,137	60,050,069	2 74
26	Pulp & Paper	618	2,129	201,760,929	243,894,677	11 11
27	Printing	382	723	50,151,702	52,033,362	2 37
28	Chemicals	3,988	19,948	379,708,920	691,856,635	31 52
29	Petroleum Refining	368	2,868	47,083,706	70,738,380	3 22
30	Rubber, Plastics	1,737	3,996	161,355,068	192,270,498	8 76
31	Leather	124	302	9,071,126	11,845,521	0 54
32	Stone, Clay, Glass	573	1,538	16,653,601	21,844,026	1 00
33	Primary Metals	1,746	5,969	183,411,554	221,864,484	10 11
34	Fabricated Metals	2,911	7,511	103 737,952	129,161,415	5 88
35	Non-Elecl Machinery	1,075	2,573	42 654,617	52,614,164	2 40
36	Electrical Equipment	1,649	4,561	56,496,845	81,808,173	3 73
37	Transport Equipment	1,285	4,686	153 414,532	193,232,254	8 80
38	Instruments	445	1,026	19,594,178	32,456,885	1 48
39	Misc. Manufacturing	381	942	18,597 711	24,442,174	1 11
40		1	1	1,000	1,000	0 00
42		1	1	19,000	19,000	0 00
43		3	16	27 855	31,223	0 00
44		2	12	21,839	263,871	0 01
45		2	14	331,528	341,738	0 02
46		1	13	625,000	704,015	0 03
47		1	2	53,207	53,207	0 00
49		11	32	5 041,913	5,083,595	0 23
50		20	40	396,219	584,372	0 03
51		51	224	472,524	1,059,482	0 05
52		1	3	4,786	4,786	0 00
56		1	4	295,760	308,409	0 01
57		1	4	760	1,260	0 00
63		2	2	0	7,900	0 00
65		1	1	23,864	23,864	0 00
73		21	37	108,649	142,687	0 01
75		5	8	83 574	94,060	0 00
76		5	6	53,105	75,110	0 00
78		4	4	5,836	5,846	0 00
80		2	2	4 250	19,250	0 00
84		1	8	23,200	26,700	0 00
85		1	1	1	1	0 00
87		8	46	10,132	265,186	0.01
89		2	2	0	4,409	0 00
91		1	1	229	229	0 00
96		1	50	5,325	9,600	0 00
97		6	19	237,711	382,146	0 02
98		2	2	451	451	0 00
99		2	2	0	47,004	0 00
NA		12	23	784,423	974,537	0 04
TN		1	1	0	39,168	0 00
ZO		1	1	36,000	36,000	0 00
		1	1	0	54,228	0 00
		20,368	65,676	1,575,715,496	2,194,922,597	100 00

(Note Only SICs 20-39 are required to report to TRI)

TABLE B-6

Industrial Emissions

— 1990 —

2 Digit SIC Code	No Of Emitters	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	Industry % Of Total TRI Emissions
28	3,988	379,708,920	691,856,635	31 52
26	618	201,760,929	243,894,677	11 11
33	1,746	183,411,554	221,864,484	10 11
37	1,285	153,414,532	193,232,254	8 80
30	1,737	161,355,068	192,270,498	8 76
34	2,911	103,737,952	129,161,415	5 88
36	1,649	56,496,845	81,808,173	3 73
29	368	47,083,706	70,738,380	3 22
25	559	51,388,137	60,050,069	2 74
35	1,075	42,654,617	52,614,164	2 40
27	382	50,151,702	52,033,362	2 37
24	578	31,631,074	35,331,018	1 61
22	370	27,934,842	33,965,968	1 55
38	445	19,594,178	32,456,885	1 48
20	1,245	7,518,680	26,825,739	1 22
39	381	18,597,711	24,442,174	1 11
32	573	16,653,601	21,844,026	1 00
31	124	9,071,126	11,845,521	0 54
49	11	5,041,913	5,083,595	0 23
21	18	962,244	2,475,256	0 11
23	38	1,463,725	1,600,203	0 07
51	51	472,524	1,059,482	0 05
	48	664,275	991,463	0 05
NA	12	784,423	974,537	0 04
10	1	0	932,221	0 04
3	5	763,652	858,042	0 04
46	1	625,000	704,015	0 03
50	20	396,219	584,372	0 03
2	5	522,748	524,498	0 02
97	6	237 711	382,146	0 02
45	2	331 528	341,738	0 02
56	1	295,760	308,409	0 01
87	8	10,132	265,186	0 01
44	2	21,839	263 871	0 01
19	2	130 815	182 815	0 01
0	12	148,131	166,594	0 01
73	21	108,649	142,687	0 01
0	1	126,000	126,000	0 01
75	5	83,574	94 060	0 00
76	5	53,105	75,110	0 00
	1	0	54,228	0 00
47	1	53,207	53,207	0 00
17	6	49,215	49,951	0 00
99	2	0	47,004	0 00
16	11	17,776	43,110	0 00
TN	1	0	39,168	0 00
70	1	36,000	36,000	0 00
12	1	32,000	32,000	0 00
43	3	27,855	31,223	0 00
1	2	0	30,960	0 00
84	1	23,200	26,700	0 00
65	1	23,864	23,864	0 00
80	2	4,250	19,250	0 00
42	1	19,000	19,000	0 00
96	1	5,325	9,600	0 00
63	2	0	7,900	0 00
14	7	270	7,873	0 00
78	4	5,836	5,846	0 00
52	1	4,786	4,786	0 00
89	2	0	4,409	0 00
18	2	1,330	1,835	0 00
57	1	760	1 260	0 00
40	1	1,000	1,000	0 00
98	2	451	451	0 00
91	1	229	229	0 00
85	1	1	1	0 00
	20,368	1 575,715,496	2,194,922,597	100 00

TABLE B-7

Air Emissions For The U.S. Chemical Industry

— 1990 —

4 Digit SIC Code	Total Emissions (lb/yr)	4 Digit SIC Code	Total Emissions (lb/yr)	4 Digit SIC Code	Total Emissions (lb/yr)
2800	2,153,209	2834	27 267 400	2864	3,925
2801	1,510	2835	17 468	2865	20,769,711
2812	14,743,529	2836	298 378	2869	149,570,880
2813	3,321 466	2839	47,251	2873	119,866,933
2815	158,819	2840	16 849	2874	14,125,378
2816	17,928,301	2841	2 097,446	2875	2,307,809
2818	11,308	2842	1,014 064	2879	4,978,527
2819	30,400,328	2843	4,364 436	2890	12,963
2821	100,945,869	2844	282 070	2891	4 500,138
2822	20,104,714	2846	2,770	2892	5,102,444
2823	54,666,806	2850	107 169	2893	2,347,463
2824	17,338,382	2851	22 107 124	2895	14,233,375
2830	383,798	2852	34,000	2898	2,102
2831	293,915	2860	141 526	2899	7,848,728
2833	21,861 974	2861	4,074 380		691,856,635

TABLE B-8

Top Industrial Emitters

— 1990 4-DIGIT SIC CODES —

Rank	SIC	Total Emissions (lb/yr)	% Of 2 Digit SIC Code	Rank	Chemical	Total Emissions (lb/yr)	% Of Total 2 Digit SIC
1	2869	149,570,880	21 62	1	Acetone	47,816,155	6 91
				2	Methanol	16,248,289	2 35
				3	Ethylene	15,394,973	2 23
				4	Propylene	5,985,871	0 87
				5	Ammonia	5,679,983	0 82
				6	Toluene	5,488,463	0 79
				7	Chloromethane	5,184,807	0 75
				8	Hydrochloric Acid	4,285,313	0 62
				9	Benzene	3,794,851	0 55
				10	1,2-Dichloroethane	3,008,122	0 43
2	2873	119,866,933	17 33	1	Ammonia	109,851,760	15 88
				2	Methanol	6,995,370	1 01
				3	Ammonium Nitrate (Solution)	1,589,759	0 23
				4	Nitric Acid	721,913	0 10
				5	Sulfuric Acid	163,712	0 02
				6	Propylene	153,100	0 02
				7	Acrylonitrile	98,000	0 01
				8	Acetonitrile	93,000	0 01
				9	Diethanolamine	42,432	0 01
				10	Phosphoric Acid	33,979	0 00
3	3339	101,574,712	45 78	1	Chlorine	88,172,906	39 74
				2	Hydrochloric Acid	6,983,785	3 15
				3	Ammonia	3,149,072	1 42
				4	Methyl Isobutyl Ketone	1,000,095	0 45
				5	Zinc Compounds	878,366	0 40
				6	Lead Compounds	596,567	0 27
				7	Tetrachloroethylene	183,393	0 08
				8	Methanol	130,740	0 06
				9	Sulfuric Acid	66,821	0 03
				10	1,1,1-Trichloroethane	62,281	0 03
4	2821	100,945,869	14 59	1	Carbon Disulfide	23 640,447	3 42
				2	Ethylene	13,564,250	1 96
				3	Acetone	9 871,796	1 43
				4	Methanol	9,636,721	1 39
				5	Dichloromethane	6,645,291	0 96
				6	Propylene	4,276,119	0 62
				7	Styrene	3,793,176	0 55
				8	Toluene	3,555,097	0 51
				9	Chlorobenzene	2 964,069	0 43
				10	Vinyl Acetate	2,296,907	0 33
5	2611	79,159 992	32 46	1	Methanol	35,483,069	14 55
				2	Chloroform	11,196,552	4 59
				3	Hydrochloric Acid	8,700,721	3 57
				4	Sulfuric Acid	6,138,487	2 52
				5	Acetone	6,056,215	2 48
				6	Chlorine	4 705,481	1 93
				7	Chlorine Dioxide	3,874,787	1 59
				8	Ammonia	1,575,990	0 65
				9	Toluene	955,000	0 39
				10	n-Butyl Alcohol	185,250	0 08
6	2911	66,740,635	94 35	1	Xylene (Mixed Isomers)	12,410,594	17 54
				2	Toluene	10,515,366	14 87
				3	Ammonia	7,711,697	10 90
				4	Propylene	7,117,324	10 06
				5	Benzene	5,991,763	8 47
				6	Methyl Ethyl Ketone	3,624,133	5 12
				7	Ethylene	3,289,001	4 65
				8	Cyclohexane	1,904,229	2 69
				9	Methyl Tert-Butyl Ether	1,666,914	2 36
				10	Ethylbenzene	1,599,383	2 26
7	3711	56 399 188	29 19	1	Xylene (Mixed Isomers)	20,968,720	10 85
				2	Glycol Ethers	6,125,943	3 17
				3	n-Butyl Alcohol	4,821,814	2 50
				4	Methyl Isobutyl Ketone	4,586,837	2 37
				5	Toluene	4,533,736	2 35
				6	Acetone	3,920 695	2 03
				7	Methyl Ethyl Ketone	3,690,011	1 91
				8	Methanol	2,401,216	1 24
				9	1,1,1-Trichloroethane	2,013,003	1 04
				10	Ethylbenzene	1,566 006	0 81
8	2823	54,666,806	7 9	1	Carbon Disulfide	50,112,000	7 24
				2	Acetone	2,921,778	0 42
				3	Methyl Ethyl Ketone	767,476	0 11
				4	Benzene	528,431	0 08
				5	Dichloromethane	159,132	0 02
				6	Methanol	79,616	0 01
				7	Formaldehyde	50,078	0 01
				8	Ammonia	34,200	0 00
				9	Vinyl Acetate	4,773	0 00
				10	Sulfuric Acid	2,750	0 00
9	2621	49 492,015	20 29	1	Methanol	15,716,088	6 44
				2	Hydrochloric Acid	13,228,381	5 42
				3	Chloroform	6,276,935	2 57
				4	Sulfuric Acid	5,614,805	2 30
				5	Acetone	2,335,637	0 96
				6	Chlorine	1,221,636	0 50
				7	Ammonia	1,161,024	0 48
				8	Chlorine Dioxide	928,773	0 38
				9	1,1,1-Trichloroethane	768,981	0 32
				10	Toluene	564,977	0 23
10	3089	42 963,419	22.35	1	Carbon Disulfide	9,111,829	4 74
				2	Acetone	7,707,623	4 01
				3	Methyl Ethyl Ketone	4,761,091	2 48
				4	Styrene	4,615 367	2 40
				5	Toluene	4,252,974	2 21
				6	1,1,1-Trichloroethane	3,555,979	1 85
				7	Dichloromethane	2,438,943	1 27
				8	Xylene (Mixed Isomers)	1,352,486	0 70
				9	Methanol	1,048,171	0 55
				10	Methyl Isobutyl Ketone	940,614	0 49
11	2672	39,319,382	16 12	1	Toluene	19,180,105	7 86
				2	Methyl Ethyl Ketone	12,461,369	5 11
				3	Methanol	2,221,780	0 91
				4	Xylene (Mixed Isomers)	1,269,886	0 52
				5	Dichloromethane	1,041,346	0 43
				6	Cyclohexane	980,073	0 40
				7	Acetone	666,335	0 27
				8	Tetrachloroethylene	421,400	0 17
				9	1,1,1-Trichloroethane	293,637	0 12
				10	Formaldehyde	120,226	0 05
12	2511	38,805,171	64 62	1	Toluene	11,453,337	19 07
				2	Methanol	8,206,801	13 67
				3	Xylene (Mixed Isomers)	5,763,047	9 60
				4	Methyl Ethyl Ketone	3,838,082	6 39
				5	Acetone	3,723,200	6 20
				6	n-Butyl Alcohol	2,086,159	3 47
				7	Methyl Isobutyl Ketone	1,356,543	2 26
				8	1,1,1-Trichloroethane	750,404	1 25
				9	Isopropyl Alcohol (Manufact)	548,444	0 91
				10	Glycol Ethers	528,630	0 88

Table B-8 (Continued)

Top Industrial Emitters — 1990 4-Digit SIC Codes

Rank	SIC	Total Emissions (lb/yr)	% Of 2 Digit SIC Code	Rank	Chemical	Total Emissions (lb/yr)	% Of Total 2 Digit SIC
13	3086	38,764,514	20 16	1	Dichloromethane	24,672,546	12 83
				2	1 1 1-Trichloroethane	9,670,502	5 03
				3	Chloroethane	1,645,900	0 86
				4	Acetone	1,056,474	0 55
				5	Toluene	519,764	0 27
				6	Methyl Ethyl Ketone	518,094	0 27
				7	Naphthalene	219,923	0 11
				8	Freon 113	131,886	0 07
				9	Tetrachloroethylene	48,250	0 03
				10	Barium Compounds	40,970	0 02
14	3312	37,788,966	17 03	1	Benzene	11,074,169	4 99
				2	Ammonia	6,624,133	2 99
				3	1,1,1-Trichloroethane	3,909,398	1 76
				4	Hydrochloric Acid	2,383,878	1 07
				5	Zinc Compounds	1,332,164	0 60
				6	Xylene (Mixed Isomers)	1,318,318	0 59
				7	Toluene	1,268,027	0 57
				8	Ethylene	1,024,210	0 46
				9	Naphthalene	885,209	0 40
				10	Manganese Compounds	827,108	0 37
15	3411	37,340,435	28 91	1	Glycol Ethers	16,655,739	12 90
				2	n-Butyl Alcohol	11,438,941	8 86
				3	Xylene (Mixed Isomers)	3,736,498	2 89
				4	Methyl Ethyl Ketone	1,304,417	1 01
				5	Toluene	1,280,875	0 99
				6	Methyl Isobutyl Ketone	853,210	0 66
				7	Cyclohexane	733,792	0 57
				8	1,1,1-Trichloroethane	496,953	0 38
				9	Dimethyl Phthalate	244,000	0 19
				10	Trichloroethylene	228,340	0 18
16	3079	35,421,635	18 42	1	Acetone	7,297,365	3 80
				2	Methanol	5,975,345	3 11
				3	Dichloromethane	3,403,872	1 77
				4	Carbon Disulfide	3,100,750	1 61
				5	Methyl Ethyl Ketone	2,620,594	1 36
				6	Toluene	2,295,180	1 19
				7	Ammonia	2,038,975	1 06
				8	Styrene	1,966,907	1 02
				9	1,1,1-Trichloroethane	1,731,885	0 90
				10	Xylene (Mixed Isomers)	1,676,459	0 87
17	3714	33,310,990	17 24	1	Xylene (Mixed Isomers)	4,776,655	2 47
				2	1 1 1-Trichloroethane	4,449,505	2 30
				3	Methyl Ethyl Ketone	4,081,272	2 11
				4	Toluene	3,479,197	1 80
				5	Freon 113	2,646,119	1 37
				6	Trichloroethylene	2,639,929	1 37
				7	Acetone	2,425,501	1 26
				8	Styrene	1,957,272	1 01
				9	Glycol Ethers	1 249,671	0 65
				10	Tetrachloroethylene	1,075,087	0 56
18	2754	32 884,905	63 2	1	Toluene	26,058,409	50 08
				2	Methyl Ethyl Ketone	3,459,532	6 65
				3	Xylene (Mixed Isomers)	1,039 248	2 00
				4	1,1,1-Trichloroethane	736,902	1 42
				5	Methanol	399 122	0 77
				6	Acetone	298,700	0 57
				7	Glycol Ethers	284,206	0 55
				8	Methyl Isobutyl Ketone	198,498	0 38
				9	Cyclohexane	122,000	0 23
				10	n-Butyl Alcohol	63,417	0 12
19	2631	31,872,016	13 07	1	Methanol	15,556,943	6 38
				2	Hydrochloric Acid	7,736,284	3 17
				3	Acetone	3,389,568	1 39
				4	Sulfuric Acid	1,600,749	0 66
				5	Chloroform	1,249,705	0 51
				6	Ammonia	604,384	0 25
				7	Chlorine Dioxide	472,835	0 19
				8	Chlorine	468,858	0 19
				9	Methyl Ethyl Ketone	311,728	0 13
				10	Toluene	123,173	0 05
20	2819	30,400,328	4 39	1	Ammonia	8,609,037	1 24
				2	Chlorine	4,760,133	0 69
				3	Methanol	4,285,900	0 62
				4	Sulfuric Acid	2,590,244	0 37
				5	Ethylene	1,124,759	0 16
				6	Hydrochloric Acid	1,004,461	0 15
				7	Carbon Disulfide	987,274	0 14
				8	Toluene	835,900	0 12
				9	Ethylene Glycol	686,123	0 10
				10	Phosphoric Acid	598,062	0 09

TABLE B-9

National Emissions Of HAPs

— 1990 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total HAPs Emissions	Chemical % Of Total TRI Emissions
Toluene	3,943	233,183,332	14 80	10 62
Methanol	2,427	181,736,117	11 53	8 28
1,1 1-Trichloroethane	3,854	161,300 622	10 24	7 35
Xylene (Mixed Isomers)	3,488	139,944,280	8 88	6 38
Methyl Ethyl Ketone	2,494	121,284,483	7 70	5 53
Chlorine	1,310	104,888,670	6 66	4 78
Carbon Disulfide	79	98,222,679	6 23	4 47
Dichloromethane	1,333	92,469,428	5 87	4 21
Hydrochloric Acid	2,495	73,444,872	4 66	3 35
Glycol Ethers	1,704	46,896,269	2 98	2 14
Trichloroethylene	741	37,849,923	2 40	1 72
Styrene	1,343	31,630,955	2 01	1 44
Methyl Isobutyl Ketone	1,061	27,311,372	1 73	1 24
Benzene	484	24,013,998	1 52	1 09
Chloroform	184	21,762,461	1 38	0 99
Tetrachloroethylene	598	21,624,949	1 37	0 99
Carbonyl Sulfide	36	18,634,864	1 18	0 85
Formaldehyde	807	12,765,498	0 81	0 58
Ethylene Glycol	1,002	9,375,633	0 60	0 43
Ethylbenzene	761	8,604,518	0 55	0 39
Hydrogen Fluoride	458	8,546,064	0 54	0 39
Phenol	581	7,641,485	0 48	0 35
Chloromethane	88	7,373,241	0 47	0 34
Acetaldehyde	76	6,709,663	0 43	0 31
1,2-Dichloroethane	97	5,595,973	0 36	0 25
Vinyl Acetate	146	5,556,759	0 35	0 25
1,3-Butadiene	158	5,037,331	0 32	0 23
p-Xylene	42	4,752,672	0 30	0 22
Chlorobenzene	62	4,046,799	0 26	0 18
Cumene	172	4,012,113	0 25	0 18
Chloroethane	47	3,942,078	0 25	0 18
Naphthalene	363	3,706,121	0 24	0 17
Acrylonitrile	113	3,147,995	0 20	0 14
Methyl Tert-Butyl Ether	110	2,784,624	0 18	0 13
Ethylene Oxide	179	2,447,494	0 16	0 11
Manganese Compounds	607	2,252,644	0 14	0 10
Bromomethane	42	2,205,819	0 14	0 10
Methyl Methacrylate	240	2,116,153	0 13	0 10
o-Xylene	77	1,904,571	0 12	0 09
Carbon Tetrachloride	88	1,671,092	0 11	0 08
Acetonitrile	72	1,663,517	0 11	0 08
Lead Compounds	647	1,623,709	0 10	0 07
Propylene Oxide	123	1,359,996	0 09	0 06
Di(2-Ethylhexyl) Phthalate	236	1,344,695	0 09	0 06
m-Xylene	52	1,202,284	0 08	0 05
Cyanide Compounds	192	1,138,102	0 07	0 05
Vinyl Chloride	47	1,135,809	0 07	0 05
Biphenyl	131	1,119,120	0 07	0 05
Propionaldehyde	17	988,986	0 06	0 05
1,4-Dichlorobenzene	18	818,133	0 05	0 04

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total HAPs Emissions	Chemical % Of Total TRI Emissions
Chromium Compounds	999	769,517	0 05	0 04
Cresol (Mixed Isomers)	112	731,961	0 05	0 03
Phthalic Anhydride	157	687 470	0 04	0 03
Methylenebis(Phenylisocyanate)	374	660,906	0 04	0 03
1,2-Dichloropropane	10	630,513	0 04	0 03
1,1,2-Trichloroethane	27	598,704	0 04	0 03
1,4-Dioxane	79	598,328	0 04	0 03
Maleic Anhydride	179	493,069	0 03	0 02
Aniline	61	474,839	0 03	0 02
Epichlorohydrin	81	427,361	0 03	0 02
Acrylic Acid	163	426,854	0 03	0 02
Diethanolamine	226	383,664	0 02	0 02
1,2,4-Trichlorobenzene	45	376,866	0 02	0 02
Dimethyl Phthalate	45	333,555	0 02	0 02
Vinylidene Chloride	20	303,602	0 02	0 01
Nickel Compounds	468	265,421	0 02	0 01
p-Cresol	14	239,004	0 02	0 01
Allyl Chloride	21	206,024	0 01	0 01
Ethyl Acrylate	98	204,190	0 01	0 01
Chloroprene	5	175,134	0 01	0 01
Arsenic Compounds	215	165,805	0 01	0 01
Antimony Compounds	242	145,951	0 01	0 01
Dibutyl Phthalate	94	108,277	0 01	0 00
Cadmium Compounds	102	90,013	0 01	0 00
Hexachlorocyclopentadiene	4	84,585	0 01	0 00
2-Nitropropane	8	84,258	0 01	0 00
1,2-Butylene Oxide	19	79,465	0 01	0 00
Nitrobenzene	16	66,260	0 00	0 00
1,3-Dichloropropylene	7	59,473	0 00	0 00
1,2-Dibromoethane	25	58,070	0 00	0 00
2,4-Dinitrotoluene	7	57,583	0 00	0 00
Toluene-2,4-Diisocyanate	97	57,312	0 00	0 00
Titanium Tetrachloride	27	54,360	0 00	0 00
Cobalt Compounds	128	51,734	0 00	0 00
N,N-Dimethylaniline	19	50,715	0 00	0 00
Acrylamide	53	49,968	0 00	0 00
Bromoform	2	48,205	0 00	0 00
1,1,2,2-Tetrachloroethane	16	44,596	0 00	0 00
o-Cresol	27	39,146	0 00	0 00
Benzyl Chloride	43	33,545	0 00	0 00
Selenium Compounds	31	30,612	0 00	0 00
Dibenzofuran	43	30,225	0 00	0 00
Methyl Iodide	4	29,816	0 00	0 00
Hydrazine	41	27 859	0 00	0 00
Catechol	23	27,737	0 00	0 00
Quinoline	26	27,690	0 00	0 00
Chloroacetic Acid	22	25,404	0 00	0 00
Phosphorus (Yellow Or White)	33	24 223	0 00	0 00
Pentachlorophenol	44	23,206	0 00	0 00
Acrolein	14	22,029	0 00	0 00

Table B-9 (Continued)

National Emissions Of HAPs — 1990

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total HAPs Emissions	Chemical % Of Total TRI Emissions
4,4'-Methylenedianiline	22	19,523	0 00	0 00
Captan	19	19,252	0 00	0 00
Asbestos (Friable)	57	17,327	0 00	0 00
Trifluralin	19	15,608	0 00	0 00
Methyl Isocyanate	4	14,373	0 00	0 00
Calcium Cyanamide	1	12,620	0 00	0 00
Hydroquinone	41	11,387	0 00	0 00
Vinyl Bromide	2	10,105	0 00	0 00
Dimethyl Sulfate	26	9,739	0 00	0 00
Carbaryl	22	9,170	0 00	0 00
Benzoic Trichloride	4	8,335	0 00	0 00
Hexachloroethane	12	8,041	0 00	0 00
2,4-D	18	7,742	0 00	0 00
4-Nitrophenol	4	7,653	0 00	0 00
m-Cresol	11	7,567	0 00	0 00
o-Toluidine	15	7,442	0 00	0 00
Diethyl Sulfate	28	5,493	0 00	0 00
Hexachloro-1,3-Butadiene	7	4,906	0 00	0 00
Phosgene	28	4,853	0 00	0 00
Chlordane	2	4,422	0 00	0 00
Urethane	6	4,070	0 00	0 00
2,4-Diaminotoluene	3	3,928	0 00	0 00
Heptachlor	1	3,797	0 00	0 00
Bis(2-Chloroethyl) Ether	8	3,778	0 00	0 00
4,4'-Methylenebis(2-Chloroaniline)	7	2,765	0 00	0 00
Styrene Oxide	5	2,423	0 00	0 00
o-Anisidine	4	1 841	0 00	0 00
Methoxychlor	5	1,602	0 00	0 00
Quinone	2	1,602	0 00	0 00
Lindane	9	1,549	0 00	0 00
Hexachlorobenzene	7	1,468	0 00	0 00
Dichlorvos	9	1,310	0 00	0 00
Mercury Compounds	14	1,158	0 00	0 00
p-Phenylenediamine	4	768	0 00	0 00
Parathion	10	613	0 00	0 00
Propyleneimine	6	612	0 00	0 00
1,1-Dimethyl Hydrazine	4	463	0 00	0 00
Quintozene	2	271	0 00	0 00
Propoxur	3	270	0 00	0 00
Beryllium Compounds	2	212	0 00	0 00
Chloromethyl Methyl Ether	2	124	0 00	0 00
2,4 6-Trichlorophenol	1	78	0 00	0 00
4 6-Dinitro-o-Cresol	5	47	0 00	0 00
Acetamide	1	35	0 00	0 00
Ethylene Thiourea	5	35	0 00	0 00
3,3'-Dichlorobenzidine	3	25	0 00	0 00
Chloramben	1	10	0 00	0 00
Bis(Chloromethyl) Ether	2	5	0 00	0 00
Polychlorinated Biphenyls	1	5	0 00	0 00
3,3'-Dimethoxybenzidine	1	4	0 00	0 00
Methyl Hydrazine	1	1	0 00	0 00
		1,575,715,496	100 00	71 79

TABLE B-10

National Emissions Of 33/50 Chemicals

— 1990 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total 33/50 Chemicals	Chemical % Of Total TRI Emissions
Toluene	3,943	233,183,332	26 01	10 62
1,1,1-Trichloroethane	3 854	161 300,622	17 99	7 35
Xylene (mixed isomers)	3,488	139 944,280	15 61	6 38
Methyl Ethyl Ketone	2,494	121 284,483	13 53	5 53
Dichloromethane	1,333	92,469 428	10 32	4 21
Methyl Isobutyl Ketone	1,061	27 311,372	3 05	1 24
Chromium Compounds	999	769,517	0 09	0 04
Chromium	843	737,710	0 08	0 03
Nickel	840	654 459	0 07	0 03
Trichloroethylene	741	37,849,923	4 22	1 72
Lead Compounds	647	1,623,709	0 18	0 07
Lead	611	860,573	0 10	0 04
Tetrachloroethylene	598	21,624,949	2 41	0 99
Benzene	484	24 013 998	2 68	1 09
Nickel Compounds	468	265,421	0 03	0 01
Cyanide Compounds	192	1,138,102	0 13	0 05
Chloroform	184	21,762 461	2 43	0 99
Cadmium Compounds	102	90,013	0 01	0 00
Carbon Tetrachloride	88	1 671 092	0 19	0 08
o-Xylene	77	1,904,571	0 21	0 09
Cadmium	53	17,037	0 00	0 00
m-Xylene	52	1,202,284	0 13	0 05
p-Xylene	42	4,752,672	0 53	0 22
Mercury	34	22 404	0 00	0 00
Mercury Compounds	14	1,158	0 00	0 00
		896,455,570	100 00	40 83

TABLE B-11

National Emissions Of High Risk/Early Reduction Chemicals

— 1990 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total High Risk/Early Reduction Chemicals	Chemical % Of Total TRI Emissions
Benzene	484	24,013,998	60 78	1 09
1,3-Butadiene	158	5,037,331	12 75	0 23
Acrylonitrile	113	3,147,995	7 97	0 14
Ethylene Oxide	179	2 447,494	6 19	0 11
Vinyl Chloride	47	1,135,809	2 87	0 05
Chromium Compounds	999	769,517	1 95	0 04
Chromium	843	737,710	1 87	0 03
Methylenebis(Phenylisocyanate)	374	660,906	1 67	0 03
Acrylic Acid	163	426,854	1 08	0 02
Vinylidene Chloride	20	303,602	0 77	0 01
Chloroprene	5	175,134	0 44	0 01
Arsenic Compounds	215	165 805	0 42	0 01
Cadmium Compounds	102	90,013	0 23	0 00
1 2-Dibromoethane	25	58,070	0 15	0 00
Toluene-2,4-Diisocyanate	97	57,312	0 15	0 00
Acrylamide	53	49,968	0 13	0 00
1,1,2,2-Tetrachloroethane	16	44,596	0 11	0 00
Dibenzofuran	43	30,225	0 08	0 00
Hydrazine	41	27,859	0 07	0 00
Mercury	34	22,404	0 06	0 00
Acrolein	14	22,029	0 06	0 00
Asbestos (Friable)	57	17 327	0 04	0 00
Cadmium	53	17,037	0 04	0 00
Methyl Isocyanate	4	14,373	0 04	0 00
Benzoic Trichloride	4	8,335	0 02	0 00
Arsenic	34	5,836	0 02	0 00
Phosgene	28	4,853	0 01	0 00
Chlordane	2	4,422	0 01	0 00
Heptachlor	1	3 797	0 01	0 00
Bis(2-Chloroethyl) Ether	8	3,778	0 01	0 00
Hexachlorobenzene	7	1,468	0 00	0 00
Beryllium	6	1,370	0 00	0 00
Mercury Compounds	14	1,158	0 00	0 00
Propyleneimine	6	612	0 00	0 00
Beryllium Compounds	2	212	0 00	0 00
Chloromethyl Methyl Ether	2	124	0 00	0 00
Bis(Chloromethyl) Ether	2	5	0 00	0 00
		39,509,338	100 00	1 79

TABLE B-12

National Emissions Of Carcinogens In TRI Database

— 1990 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total Carcinogens	Chemical % Of Total TRI Emissions
Dichloromethane	1,333	92,469,428	34 12	4 21
Trichloroethylene	741	37,849,923	13 97	1 72
Styrene	1,343	31,630,955	11 67	1 44
Benzene	484	24,013,998	8 86	1 09
Chloroform	184	21,762,461	8 03	0 99
Tetrachloroethylene	598	21,624,949	7 98	0 99
Formaldehyde	807	12,765,498	4 71	0 58
Chloromethane	88	7,373,241	2 72	0 34
1,2-Dichloroethane	97	5,595,973	2 06	0 25
1,3-Butadiene	158	5,037,331	1 86	0 23
Acrylonitrile	113	3,147,995	1 16	0 14
Ethylene Oxide	179	2,447,494	0 9	0 11
Carbontetrachloride	88	1,671,092	0 62	0 08
Vinyl Chloride	47	1,135,809	0 42	0 05
Chromium	843	737,710	0 27	0 03
1,1,2-Trichloroethane	27	598,704	0 22	0 03
Epichlorohydrin	81	427,361	0 16	0 02
Vinylidene Chloride	20	303,602	0 11	0 01
2-Nitropropane	8	84,258	0 03	0 00
1,2-Dibromoethane	25	58,070	0 02	0 00
2,4-Dinitrotoluene	7	57,583	0 02	0 00
1,1,2,2-Tetrachloroethane	16	44,596	0 02	0 00
Benzyl Chloride	43	33,545	0 01	0 00
Methyl Iodide	4	29,816	0.01	0 00
Hydrazine	41	27,859	0 01	0 00
2,6-Dinitrotoluene	4	17,737	0 01	0 00
Cadmium	53	17,037	0 01	0 00
Dimethyl Sulfate	26	9,739	0 00	0 00
Hexachloroethane	12	8,041	0 00	0 00
o-Toluidine	15	7,442	0 00	0 00
Arsenic	34	5,836	0 00	0 00
Hexachloro-1 3-Butadiene	7	4,906	0 00	0 00
Chlordane	2	4,422	0 00	0 00
Urethane	6	4,070	0 00	0 00
2,4-Diaminotoluene	3	3,928	0 00	0 00
Heptachlor	1	3,797	0 00	0 00
Bis(2-Chloroethyl) Ether	8	3,778	0 00	0 00
Thiourea	18	2,865	0 00	0 00
Lindane	9	1,549	0 00	0 00
Hexachlorobenzene	7	1,468	0 00	0 00
Beryllium	6	1,370	0 00	0 00
Propyleneimine	6	612	0 00	0 00
Alpha-Naphthylamine	1	500	0 00	0 00
1,1-Dimethyl Hydrazine	4	463	0 00	0 00
Quintozene	2	271	0 00	0 00
Chloromethyl Methyl Ether	2	124	0 00	0 00
2,4,6-Trichlorophenol	1	78	0 00	0 00
Ethylene Thiourea	5	35	0 00	0 00
3,3'-Dichlorobenzidine	3	25	0 00	0 00
Bis(Chloromethyl) Ether	2	5	0 00	0 00
Polychlorinated Biphenyls	1	5	0 00	0 00
Safrole	1	5	0 00	0 00
		271,029,359	100 00	12 35

TABLE B-13

National Emissions Of Ozone Depletors In TRI Database

— 1990 —

Chemical	No. Of Emitters	Total Emissions (lb/yr)	% Of Total Ozone Depletors	Chemical % Of Total TRI Emissions
1,1,1-Trichloroethane	3,854	161,300,522	77 48	7 35
Freon 113	1,293	45 208,966	21 72	2.06
Carbon Tetrachloride	88	1,671,092	0 80	0 08
		208,180,580	100 00	9 48

TABLE B-14

All Chemicals Reported

— 1990 —

Carc	Ozone Depl	HAP	33/50	HR/ER	Chemical	Cas No	Emitted To Air (lb/yr)	Emitted To All Media (lb/yr)
	X	X	X		1,1,1-Trichloroethane	000071556	161,300,622	161,381,336
X		X		X	1,1,2,2-Tetrachloroethane	000079345	44,596	48,620
X		X			1,1,2-Trichloroethane	000079005	598,704	600,301
X		X			1,1-Dimethyl Hydrazine	000057147	463	713
		X			1,2,4-Trichlorobenzene	000120821	376,866	388,487
					1,2,4-Trimethylbenzene	000095636	4,408,182	4,454,300
		X			1,2-Butylene Oxide	000106887	79,465	84,095
X		X		X	1,2-Dibromoethane	000106934	58,070	58,330
					1,2-Dichlorobenzene	000095501	323,948	383,539
X		X			1,2-Dichloroethane	000107062	5,595,973	6,478,751
					1,2-Dichloroethylene	000540590	124,499	125,031
		X			1,2-Dichloropropane	000078875	630,513	634,576
X		X		X	1,3-Butadiene	000106990	5,037,331	5,155,028
					1,3-Dichlorobenzene	000541731	8,682	9,467
		X			1,3-Dichloropropylene	000542756	59,473	59,783
		X			1,4-Dichlorobenzene	000106467	818,133	822,338
		X			1,4-Dioxane	000123911	598,328	772,200
X		X			2,4,6-Trichlorophenol	000088062	78	157
		X			2,4-D	000094757	7,742	10,351
					2,4-Diaminoanisole	000615054	26	26
X		X			2,4-Diaminotoluene	000095807	3,928	4,178
					2,4-Dichlorophenol	000120832	820	21,315
					2,4-Dimethylphenol	000105679	7,326	37,877
					2,4-Dinitrophenol	000051285	24,697	116,511
X		X			2,4-Dinitrotoluene	000121142	57,583	136,441
X					2,6-Dinitrotoluene	000606202	17,737	37,153
					2,6-Xylidine	000087627	17	1,923
					2-Ethoxyethanol	000110805	958,135	1,000,150
					2-Methoxyethanol	000109864	2,472,081	2,518,794
					2-Nitrophenol	000088755	4	33
X		X			2-Nitropropane	000079469	84,258	172,358
					2-Phenylphenol	000090437	9,910	10,585
X		X			3,3'-Dichlorobenzidine	000091941	25	25
		X			3,3'-Dimethoxybenzidine	000119904	4	4
					4,4'-Diaminodiphenyl Ether	000101804	905	1,318
					4,4'-Isopropylidenediphenol	000080057	182,899	763,955
		X			4,4'-Methylenebis (2-Chloroaniline)	000101144	2,765	2,765
		X			4,4'-Methylenedianiline	000101779	19,523	77,130
		X			4,6-Dinitro-o-Cresol	000534521	47	48
		X			4-Nitrophenol	000100027	7,653	8,884
					5-Nitro-o-Anisidine	000099592	10	10
		X			Acetaldehyde	000075070	6,709,663	8,781,171
		X			Acetamide	000060355	35	35
					Acetone	000067641	180,207,465	186,191,822
		X			Acetonitrile	000075058	1,663,517	21,119,751
		X		X	Acrolein	000107028	22,029	125,098
		X		X	Acrylamide	000079061	49,968	3,853,566
		X		X	Acrylic Acid	000079107	426,854	22,090,070

Table B-14 (Continued)

All Chemicals Reported — 1990

Carc	Ozone Depl	HAP	33/50	HR/ER	Chemical	Cas No	Emitted To Air (lb/yr)	Emitted To All Media (lb/yr)
X		X		X	Acrylonitrile	000107131	3,147,995	8,077,416
		X			Allyl Chloride	000107051	206,024	207,359
X					Alpha-Naphthylamine	000134327	500	500
					Aluminum (Fume Or Dust)	007429905	2 122,375	3,391,612
					Aluminum Oxide (Fibrous Form)	001344281	756,067	1,262,572
					Ammonia	007664417	208,585,542	518,383,181
					Ammonium Nitrate (Solution)	006484522	2,707,134	14,223,722
					Ammonium Sulfate (Solution)	007783202	374,567	2,082,396
		X			Aniline	000062533	474,839	2,949,513
					Anthracene	000120127	65,438	71,593
					Antimony	007440360	52,358	237,304
		X			Antimony Compounds		145,951	1,312,848
X				X	Arsenic	007440382	5,836	25,594
		X		X	Arsenic Compounds		165,805	2,794,502
		X		X	Asbestos (Friable)	001332214	17,327	131,362
					Barium	007440393	78,211	317,030
					Barium Compounds		1,188,261	6,523,261
					Benzal Chloride	000098873	1,755	1,755
X		X	X	X	Benzene	000071432	24,013,998	25,372,624
		X		X	Benzoic Trichloride	000098077	8,335	8,335
					Benzoyl Chloride	000098884	23,324	91,085
					Benzoyl Peroxide	000094360	14,630	14,660
X		X			Benzyl Chloride	000100447	33,545	34,145
X				X	Beryllium	007440417	1,370	7,924
		X		X	Beryllium Compounds		212	40,235
		X			Biphenyl	000092524	1,119,120	1,186,106
X		X		X	Bis(2-Chloroethyl) Ether	000111444	3,778	3,788
					Bis(2-Ethylhexyl) Adipate	000103231	106,128	115,313
X		X		X	Bis(Chloromethyl) Ether	000542881	5	5
		X			Bromoform	000075252	48,205	120,205
		X			Bromomethane	000074839	2,205,819	2,233,819
					Butyl Acrylate	000141322	294,815	323,114
					Butyl Benzyl Phthalate	000085687	227,693	232,871
					Butyraldehyde	000123728	525,676	531,407
					C I Basic Green 4	000569642	16	16
					C I. Disperse Yellow 3	002832408	364	1,233
					C I Food Red 15	000081889	2	2
X			X	X	Cadmium	007440439	17,037	107,364
		X	X	X	Cadmium Compounds		90,013	386,447
		X			Calcium Cyanamide	000156627	12,620	52,620
		X			Captan	000133062	19,252	25,762
		X			Carbaryl	000063252	9,170	15,230
		X			Carbon Disulfide	000075150	98,222,679	98,267,500
X	X	X	X		Carbon Tetrachloride	000056235	1,671,092	1,706,778
		X			Carbonyl Sulfide	000463581	18,634,864	18,634,864
		X			Catechol	000120809	27,737	117,781
		X			Chloramben	000133904	10	10
X		X		X	Chlordane	000057749	4,422	4,423
		X			Chlorine	007782505	104,888,670	106,044,139

Table B-14 (Continued)

All Chemicals Reported — 1990

Carc	Ozone Depl	HAP	33/50	HR/ER	Chemical	Cas No	Emitted To Air (lb/yr)	Emitted To All Media (lb/yr)
					Chlorine Dioxide	010049044	5,411,551	5,412,371
		X			Chloroacetic Acid	000079118	25,404	27,095
		X			Chlorobenzene	000108907	4,046,799	4,171,865
		X			Chloroethane	000075003	3,942,078	3,978,278
X		X	X		Chloroform	000067663	21,762,461	22,909,752
X		X			Chloromethane	000074873	7,373,241	7,809,253
X		X		X	Chloromethyl Methyl Ether	000107302	124	124
					Chlorophenols		4,931	179,584
		X		X	Chloroprene	000126998	175,134	175,134
					Chlorothalonil	001897456	12,454	12,463
X			X	X	Chromium	007440473	737,710	1,774,814
		X	X	X	Chromium Compounds		769,517	14,610,427
					Cobalt	007440484	36,324	51,534
		X			Cobalt Compounds		51,734	135,954
					Copper	007440508	1,261,185	12,650,108
					Copper Compounds		3,908,941	54,117,322
		X			Cresol (Mixed Isomers)	001319773	731,961	2,372,386
		X			Cumene	000098828	4,012,113	4,046,552
					Cumene Hydroperoxide	000080159	110,421	162,780
					Cupferron	000135206	485	485
		X	X		Cyanide Compounds		1,138,102	1,303,162
					Cyclohexane	000110827	17,135,545	17,521,657
					Decabromodiphenyl Oxide	001163195	64,300	73,128
		X			Di(2-Ethylhexyl) Phthalate	000117817	1,344,695	1,363,874
					Diaminotoluene (Mixed Isomers)	025376458	25,714	115,934
		X		X	Dibenzofuran	000132649	30,225	31,654
		X			Dibutyl Phthalate	000084742	108,277	218,449
					Dichlorobenzene (Mixed Isomers)	025321226	89,524	89,558
					Dichlorobromomethane	000075274	632	632
X		X	X		Dichloromethane	000075092	92,469,428	93,523,989
		X			Dichlorvos	000062737	1,310	1,310
					Dicofol	000115322	268	273
		X			Diethanolamine	000111422	383,664	617,318
					Diethyl Phthalate	000084662	96,397	98,584
		X			Diethyl Sulfate	000064675	5,493	5,538
		X			Dimethyl Phthalate	000131113	333,555	334,238
X		X			Dimethyl Sulfate	000077781	9,739	10,114
X		X			Epichlorohydrin	000106898	427,361	524,868
		X			Ethyl Acrylate	000140885	204,190	205,859
					Ethyl Chloroformate	000541413	1,822	1,822
		X			Ethylbenzene	000100414	8,604,518	8,892,077
					Ethylene	000074851	38,543,316	38,593,309
		X			Ethylene Glycol	000107211	9,375,633	11,662,056
X		X		X	Ethylene Oxide	000075218	2,447,494	2,529,727
X		X			Ethylene Thiourea	000096457	35	35
					Fluometuron	002164172	45	45
X		X			Formaldehyde	000050000	12,765,498	21,897,756
	X				Freon 113	000076131	45,208,966	45,258,386
		X			Glycol Ethers		46,898,269	47,371,703

Table B-14 (Continued)

All Chemicals Reported — 1990

Carc	Ozone Depl	HAP	33/50	HR/ER	Chemical	Cas No	Emitted To Air (lb/yr)	Emitted To All Media (lb/yr)
X		X		X	Heptachlor	000076448	3,797	3,798
X		X			Hexachloro-1,3-Butadiene	000087683	4,906	5,951
X		X		X	Hexachlorobenzene	000118741	1,468	1,720
		X			Hexachlorocyclopentadiene	000077474	84,585	84,600
X		X			Hexachloroethane	000067721	8,041	9,876
X		X		X	Hydrazine	000302012	27,859	29,701
					Hydrazine Sulfate	010034932	257	257
		X			Hydrochloric Acid	007647010	73,444,872	226 254,578
					Hydrogen Cyanide	000074908	670,575	2,271,999
		X			Hydrogen Fluoride	007664393	8,546,064	8,566,048
		X			Hydroquinone	000123319	11,387	117,667
					Isobutyraldehyde	000078842	490,278	491,223
					Isopropyl Alcohol (Manufacturing)	000067630	3,179,497	3,190,688
			X		Lead	007439921	860,573	5,572,985
		X	X		Lead Compounds		1,623,709	15,856,648
X		X			Lindane	000058899	1,549	1,804
		X			m-Cresol	000108394	7,567	7,567
		X	X		m-Xylene	000108383	1,202,284	1,204,250
		X			Maleic Anhydride	000108316	493,069	614,649
					Maneb	012427382	791	796
					Manganese	007439965	1,598,838	9,296,178
		X			Manganese Compounds		2,252,644	85,746,156
			X	X	Mercury	007439976	22,404	27,339
		X	X	X	Mercury Compounds		1,158	1,219
		X			Methanol	000067561	181,736,117	229,686,506
		X			Methoxychlor	000072435	1,602	2,362
					Methyl Acrylate	000096333	249,226	249,795
		X	X		Methyl Ethyl Ketone	000078933	121,284,483	121,451,793
		X			Methyl Hydrazine	000060344	1	1
X		X			Methyl Iodide	000074884	29 8[illegible]	34,902
		X	X		Methyl Isobutyl Ketone	000108101	27,311,372	27,445,494
		X		X	Methyl Isocyanate	000624839	14,373	14,873
		X			Methyl Methacrylate	000080626	2,116,153	2,333,742
		X			Methyl Tert-Butyl Ether	001634044	2,784,624	2,941,192
					Methylene Bromide	000074953	64,794	64,794
		X		X	Methylenebis(Phenylisocyanate)	000101688	660,906	831,544
					Molybdenum Trioxide	001313275	63,762	377,912
		X			N,N-Dimethylaniline	000121697	50,715	66,745
					n-Butyl Alcohol	000071363	32,642,953	36,358,011
					n-Dioctyl Phthalate	000117840	29,857	31,922
		X			Naphthalene	000091203	3,706,121	3,899,056
			X		Nickel	007440020	654,459	3,295,110
		X	X		Nickel Compounds		265,421	1,459,643
					Nitric Acid	007697372	4,141,489	7,691,497
					Nitrilotriacetic Acid	000139139	1,025	8,725
		X			Nitrobenzene	000098953	66,260	676,021
					Nitroglycerin	000055630	30,603	31,353
		X			o-Anisidine	000090040	1,841	2,232

Table B-14 (Continued)

All Chemicals Reported — 1990

Carc	Ozone Depl	HAP	33/50	HR/ER	Chemical	Cas No	Emitted To Air (lb/yr)	Emitted To All Media (lb/yr)
		X			o-Cresol	000095487	39,146	39,437
X		X			o-Toluidine	000095534	7,442	7,944
		X	X		o-Xylene	000095476	1,904,571	1,908,954
					p-Anisidine	000104949	15	15
					p-Cresidine	000120718	2 690	2,940
		X			p-Cresol	000106445	239,004	245,801
					p-Nitrosodiphenylamine	000156105	24	24
		X			p-Phenylenediamine	000106503	768	768
		X	X		p-Xylene	000106423	4,752 672	4,754,716
		X			Parathion	000056382	613	633
		X			Pentachlorophenol	000087865	23,206	26,974
					Peracetic Acid	000079210	5,832	5,950
		X			Phenol	000108952	7,641,485	11,847 862
		X		X	Phosgene	000075445	4,853	4,898
					Phosphoric Acid	007664382	1,602,644	74 529,921
		X			Phosphorus (Yellow Or White)	007723140	24,223	28,628
		X			Phthalic Anhydride	000085449	687,470	696,677
					Picric Acid	000088891	2	2
X		X			Polychlorinated Biphenyls	001336363	5	5
		X			Propionaldehyde	000123386	988,986	991,871
		X			Propoxur	000114261	270	275
					Propylene	000115071	21,499,910	21,501,005
		X			Propylene Oxide	000075569	1,359,996	1,554,661
X		X		X	Propyleneimine	000075558	612	612
					Pyridine	000110861	112 490	634,806
		X			Quinoline	000091225	27,690	27,905
		X			Quinone	000106514	1,602	1,607
X		X			Quintozene	000082688	271	271
					Saccharin (Manufacturing Only)	000081072	326	326
X					Safrole	000094597	5	5
					Sec-Butyl Alcohol	000078922	681 179	687 029
					Selenium	007782492	2,059	173,352
		X			Selenium Compounds		30,612	156,818
					Silver	007440224	12,346	13,111
					Silver Compounds		11,209	32,923
X		X			Styrene	000100425	31 630,955	31,860 558
		X			Styrene Oxide	000096093	2,423	2,423
					Sulfuric Acid	007664939	23 553 119	140,532,037
					Tert-Butyl Alcohol	000075650	1,567 018	2,858,122
X		X	X		Tetrachloroethylene	000127184	21,624,949	21,658 469
					Tetrachlorvinphos	000961115	754	754
					Thallium	007440280	750	755
					Thallium Compounds		255	510
X					Thiourea	000062566	2,865	8,246
					Thorium Dioxide	001314201	860	860
		X			Titanium Tetrachloride	007550450	54,360	54,360
		X	X		Toluene	000108883	233,183,332	235,140,891
		X		X	Toluene-2,4-Diisocyanate	000584849	57,312	57,317
					Toluene-2,6-Diisocyanate	000091087	25,446	25,456

Table B-14 (Continued)

All Chemicals Reported — 1990

Ozone Carc	Depl	HAP	33/50	HR/ER	Chemical	Emitted To Air Cas No	Emitted To All (lb/yr)	Media (lb/yr)
					Trichlorfon	000052686	504	510
X		X	X		Trichloroethylene	000079016	37,849,923	37,878,091
		X			Trifluralin	001582098	15,608	15,625
X		X			Urethane	000051796	4,070	4,345
					Vanadium (Fume Or Dust)	007440622	15,306	79,928
		X			Vinyl Acetate	000108054	5,556,759	6,937,369
		X			Vinyl Bromide	000593602	10,105	10,375
X		X		X	Vinyl Chloride	000075014	1,135,809	1,146,214
X		X		X	Vinylidene Chloride	000075354	303,602	304,234
		X	X		Xylene (Mixed Isomers)	001330207	139,944,280	140,536,495
					Zinc (Fume Or Dust)	007440666	2,125,503	13,249,171
					Zinc Compounds		4,729,146	96,123,958
					Zineb	012122677	260	260
							2,194,922,597	3,319,756,269

Appendix C

- Data from Basic Data Set -

TABLE C-1

Regional Hot Spots

- 1989 EPA REGIONS -

Rank	EPA Region	Total Emissions (lb/yr)	Region % Of Total TRI Emissions	Rank	Chemical	Total Emissions (lb/yr)
1	4	665,365,019	26 59	1	Methanol	92,713,166
				2	Carbon Disulfide	77,454,753
				3	Acetone	76,823,859
				4	Toluene	70,978,725
				5	Ammonia	55,357,443
				6	Methyl Ethyl Ketone	30,464,571
				7	1,1,1-Trichloroethane	30,360,462
				8	Xylene (Mixed Isomers)	30,163,529
				9	Dichloromethane	25,624,551
				10	Hydrochloric Acid	22,116,694
2	5	555,506,402	22 2	1	Toluene	78,969,391
				2	Xylene (Mixed Isomers)	58,742,864
				3	1,1,1-Trichloroethane	49,743,043
				4	Methyl Ethyl Ketone	49,493,642
				5	Acetone	44,299,458
				6	Dichloromethane	40,691,686
				7	Ammonia	25,430,361
				8	Methanol	24,905,011
				9	Glycol Ethers	18,475,774
				10	Trichloroethylene	16,875,293
3	6	389,086,008	15 55	1	Ammonia	103,147,311
				2	Ethylene	29,996,571
				3	Methanol	24,720,071
				4	Toluene	21,383,469
				5	Acetone	17,956,581
				6	Propylene	16,657,308
				7	Xylene (Mixed Isomers)	16,472,900
				8	Methyl Ethyl Ketone	12,284,107
				9	1,1,1-Trichloroethane	10,404,562
				10	Carbon Disulfide	9,936,390
4	3	219,298,500	8 76	1	Toluene	30,144,521
				2	Acetone	25,747,215
				3	Methanol	24,592,640
				4	1,1,1-Trichloroethane	14,110,644
				5	Xylene (Mixed Isomers)	13,690,686
				6	Methyl Ethyl Ketone	12,801,664
				7	Hydrochloric Acid	10,081,995
				8	Dichloromethane	9,981,965
				9	Ammonia	9,533,106
				10	Benzene	5,267,516
5	8	151,593,721	6 06	1	Chlorine	110,350,583
				2	Hydrochloric Acid	10,497,432
				3	1,1,1-Trichloroethane	5,502,853
				4	Freon 113	2,838,295
				5	Toluene	2,460,718
				6	Dichloromethane	1,990,670
				7	Xylene (Mixed Isomers)	1,967,858
				8	Sulfuric Acid	1,951,703
				9	Methanol	1,266,165
				10	Ammonium Nitrate (Solution)	1,183 000
6	7	141,290,321	5 65	1	Toluene	21,580 917
				2	Ammonia	19,912 446
				3	Xylene (Mixed Isomers)	17,555,472
				4	1,1,1-Trichloroethane	9,000 576
				5	Methyl Ethyl Ketone	8,787,355
				6	Methanol	8,297,929
				7	Dichloromethane	6,306,971
				8	Acetone	6,115,461
				9	Trichloroethylene	4,466,012
				10	Ethylene	3,828,253
7	2	127,884,290	5 11	1	Toluene	17,206,599
				2	Dichloromethane	16,735,457
				3	Acetone	13,549,732
				4	Methanol	12,202,933
				5	1,1,1-Trichloroethane	8,839,810
				6	Hydrochloric Acid	7,408 349
				7	Freon 113	6,497,384
				8	Xylene (Mixed Isomers)	5,932,496
				9	Methyl Ethyl Ketone	5,159 512
				10	Trichloroethylene	3,929,547
8	9	99,370,754	3 97	1	1,1,1-Trichloroethane	25,250,165
				2	Ammonia	9,320,576
				3	Freon 113	8,723,810
				4	Dichloromethane	7,238,779
				5	Acetone	7,039,260
				6	Methanol	5,508,366
				7	Toluene	4,641,822
				8	Tetrachloroethylene	4,304,824
				9	Methyl Ethyl Ketone	3,706,867
				10	Xylene (Mixed Isomers)	3,047,879
9	1	79,396,378	3 17	1	1,1,1-Trichloroethane	17,116,782
				2	Toluene	9,447,945
				3	Freon 113	6,834,855
				4	Dichloromethane	6,184,517
				5	Methanol	5,236,498
				6	Methyl Ethyl Ketone	4,591,212
				7	Acetone	4,122,568
				8	Sulfuric Acid	3,051,210
				9	Trichloroethylene	2,955,770
				10	Tetrachloroethylene	2,450,045
10	10	73,201,682	2 93	1	Ammonia	24,603,998
				2	Methanol	6,954,109
				3	Acetone	5,811,570
				4	Toluene	5,146,812
				5	Chloroform	3,874,240
				6	Methyl Ethyl Ketone	3,146,508
				7	1,1,1-Trichloroethane	2,416,588
				8	Freon 113	2,400,951
				9	Xylene (Mixed Isomers)	2,271,908
				10	Dichloromethane	1,737,291

TABLE C-2

State Emissions

— 1989 —

State	Rank	Chemical	Total Emissions (lb/yr)	No Of Emitters	% Of State Total
AK	1	Ammonia	18,309,250	4	92 81
	2	Hydrochloric Acid	553,500	2	2 81
	3	Methanol	334,856	3	1 70
	4	Chloroform	194,161	2	0 98
	5	Sulfuric Acid	179,000	1	0 91
	6	Xylene (Mixed Isomers)	31,708	3	0 16
	7	Toluene	29,966	3	0 15
	8	Benzene	29,105	3	0 15
	9	Acetone	22,510	1	0 11
	10	Cyclohexane	17,636	3	0 09
AL	1	Carbon Disulfide	45,472,676	3	43 26
	2	Methanol	8,157,907	50	7 76
	3	Methyl Ethyl Ketone	7,489,611	41	7 12
	4	Toluene	5,510,732	79	5 24
	5	Xylene (Mixed Isomers)	5,341,671	83	5 08
	6	Hydrochloric Acid	4,383,445	55	4 17
	7	1,1,1-Trichloroethane	3,072,711	48	2 92
	8	Chlorine	3,033,375	40	2 89
	9	Chloroform	2,817,618	10	2 68
	10	Ammonia	2,103,561	73	2 00
AR	1	Ammonia	12,714,275	67	29 31
	2	Toluene	4,345,873	83	10 02
	3	Xylene (Mixed Isomers)	3,598,735	71	8 30
	4	Methanol	3,533,410	35	8 15
	5	Acetone	3,450,257	45	7 95
	6	Methyl Ethyl Ketone	2,933,286	47	6 76
	7	Carbon Disulfide	1,930,406	3	4 45
	8	Freon 113	1,784,616	18	4 11
	9	Dichloromethane	1,773,896	28	4 09
	10	1,1,1-Trichloroethane	1,771,035	43	4 08
AS	1	Ammonia	27,750	2	100
AZ	1	Acetone	2,479,940	28	19 06
	2	Freon 113	2,022,441	47	15 55
	3	1,1,1-Trichloroethane	2,016,507	51	15 50
	4	Methanol	931,506	15	7 16
	5	Toluene	656,199	19	5 04
	6	Copper Compounds	628,416	9	4 83
	7	Methyl Ethyl Ketone	432,677	21	3 33
	8	Ammonia	424,249	25	3 26
	9	Dichloromethane	423,408	15	3 25
	10	Xylene (Mixed Isomers)	333,145	15	2 56
CA	1	1,1,1-Trichloroethane	23,181,664	502	27 28
	2	Ammonia	8,836,677	232	10 40
	3	Dichloromethane	6,772,370	123	7 97
	4	Freon 113	6,683,733	192	7 87
	5	Methanol	4,576,360	118	5 39
	6	Acetone	4,451,837	241	5 24
	7	Tetrachloroethylene	3,984,562	93	4 69
	8	Toluene	3,600,153	202	4 24
	9	Methyl Ethyl Ketone	3,221,456	188	3 79
	10	Xylene (Mixed Isomers)	2,660,034	187	3 13
CO	1	1,1,1-Trichloroethane	1,590,471	31	14 97
	2	Freon 113	1,352,654	34	12 73
	3	n-Butyl Alcohol	857,572	6	8 07
	4	Methanol	836,591	12	7 87
	5	Glycol Ethers	682,993	8	6 43
	6	Toluene	667,203	21	6 28
	7	Acetone	538,000	21	5 06
	8	Dichloromethane	503,020	14	4 73
	9	Ammonium Nitrate (Solution)	441,000	3	4 15
	10	Tetrachloroethylene	409,379	6	3 85
CT	1	1,1,1-Trichloroethane	8,310,458	155	39 14
	2	Dichloromethane	2,299,686	51	10 83
	3	Freon 113	1,858,766	48	8 75
	4	Tetrachloroethylene	1,516,313	29	7 14
	5	Toluene	1,139,226	42	5 36
	6	Methyl Ethyl Ketone	955,879	42	4 50
	7	Methanol	882,590	28	4 16
	8	Ammonia	479,211	47	2 26
	9	Acetone	417,522	25	1 97
	10	Chloroethane	373 914	2	1 76
DE	1	Xylene (Mixed Isomers)	1,840,473	6	24 69
	2	Hydrochloric Acid	819,603	16	11
	3	Carbonyl Sulfide	680,000	1	9 12
	4	Trichloroethylene	462 000	1	6 20
	5	Toluene	413,696	13	5 55
	6	Methyl Isobutyl Ketone	385,810	2	5 18
	7	Methyl Ethyl Ketone	378,242	9	5 08
	8	Acetone	352,393	10	4 73
	9	Methanol	227,537	14	3 05
	10	Vinyl Chloride	170,680	2	2 29
FL	1	Ammonia	21,249,340	72	36 08
	2	Methanol	7,559,658	39	12 83
	3	Acetone	6,226,371	106	10 57
	4	Toluene	2,648,812	53	4 50
	5	Freon 113	2,307,774	58	3 92
	6	Styrene	2,281,385	78	3 87
	7	Dichloromethane	2,213,687	34	3 76
	8	1,1,1-Trichloroethane	2,145,843	76	3 64
	9	Sulfuric Acid	1,599,811	61	2 72
	10	Cyclohexane	1,332,668	2	2 26
GA	1	Methanol	23,974,226	85	31 25
	2	Acetone	7,173,974	73	9 35
	3	Toluene	5,775,133	104	7 53
	4	Hydrochloric Acid	5,254,856	60	6 85
	5	Ammonia	3,974,259	96	5 18
	6	Xylene (Mixed Isomers)	3,913,583	115	5 10
	7	1,1,1-Trichloroethane	3,549,286	85	4 63
	8	Dichloromethane	3,290,640	53	4 29
	9	Methyl Isobutyl Ketone	2,550,916	28	3 33
	10	Methyl Ethyl Ketone	2,318,834	56	3 02
HI	1	Propylene	124,700	2	18 20
	2	Toluene	90,000	2	13 13
	3	Glycol Ethers	68,638	1	10 02
	4	n-Butyl Alcohol	59,774	1	8 72
	5	Benzene	47,100	2	6 87
	6	m-Xylene	45,430	2	6 63
	7	Dichloromethane	41,701	1	6 09
	8	1,1,1-Trichloroethane	41,694	1	6 08
	9	Cyclohexane	35,800	2	5 22
	10	o-Xylene	26,500	2	3 87
IA	1	Ammonia	9,841,037	59	22 40
	2	Toluene	7,730,072	70	17 60
	3	Xylene (Mixed Isomers)	4,017,718	87	9 15
	4	1,1,1-Trichloroethane	3,289,656	60	7 49
	5	Methyl Ethyl Ketone	2,817,187	29	6 41
	6	Methanol	2,764,894	23	6 29
	7	Acetone	2,488,728	35	5 67
	8	Tetrachloroethylene	1,414,012	13	3 22
	9	Ethylene	1,305,000	1	2 97
	10	Glycol Ethers	1,075,431	25	2 45

Table C-2 (Continued)

State Emissions — 1989

State	Rank	Chemical	Total Emissions (lb/yr)	No Of Emitters	% Of State Total
ID	1	Ammonia	1,821,752	19	34 15
	2	Methanol	739,677	6	13 86
	3	Chloroform	640,500	2	12 01
	4	Chlorine Dioxide	540,250	1	10 13
	5	Freon 113	391,049	4	7 33
	6	Acetone	263,358	7	4 94
	7	Sulfuric Acid	227,989	11	4 27
	8	Chlorine	152,503	9	2 86
	9	Formaldehyde	118,936	7	2 23
	10	Hydrogen Fluoride	91,210	4	1 71
IL	1	Toluene	16,371,789	230	16 21
	2	1,1,1-Trichloroethane	10,434,828	238	10 33
	3	Xylene (Mixed Isomers)	6,689,773	214	6 62
	4	Ammonia	6,359,266	132	6 30
	5	Methyl Ethyl Ketone	5,356,468	153	5 30
	6	Chlorine	4,693,355	52	4 65
	7	Trichloroethylene	4,430,619	104	4 39
	8	Carbon Disulfide	4,334,374	5	4 29
	9	Hydrochloric Acid	4,322,950	173	4 28
	10	Dichloromethane	4,134,132	98	4 09
IN	1	Toluene	16,167,532	192	14 49
	2	Acetone	14,298,129	123	12 82
	3	Dichloromethane	13,236,206	78	11 86
	4	1,1,1-Trichloroethane	10,685,842	148	9 58
	5	Xylene (Mixed Isomers)	9,473,480	198	8 49
	6	Trichloroethylene	6,354,134	61	5 70
	7	Methyl Ethyl Ketone	6,298,371	112	5 65
	8	Methanol	3,989,505	86	3 58
	9	Ammonia	2,833,520	69	2 54
	10	Benzene	2,617,343	16	2 35
KS	1	Ammonia	4,763,963	41	14 64
	2	Trichloroethylene	2,787,475	14	8 57
	3	Toluene	2,770,333	56	8 51
	4	Xylene (Mixed Isomers)	2,544,679	49	7 82
	5	Ethylene	2,523,253	5	7 76
	6	Methyl Ethyl Ketone	2,451,527	31	7 54
	7	Propylene	2,283,558	5	7 02
	8	Methanol	1,505,580	23	4 63
	9	Tetrachloroethylene	1,359,325	9	4 18
	10	Carbon Disulfide	1,277,205	2	3 93
KY	1	Toluene	8,979,794	74	20 10
	2	Xylene (Mixed Isomers)	5,115,714	77	11 45
	3	Methanol	4,944,187	31	11 07
	4	Ethylene	2,739,867	5	6 13
	5	Acetone	2,351,619	44	5 26
	6	1,1,1-Trichloroethane	2,118,814	47	4 74
	7	Hydrochloric Acid	1,894,502	38	4 24
	8	Glycol Ethers	1,504,874	28	3 37
	9	Dichloromethane	1,497,892	21	3 35
	10	Methyl Ethyl Ketone	1,220,360	39	2 73
LA	1	Ammonia	67,955,654	68	52 35
	2	Methanol	7,851,584	71	6 05
	3	Carbon Disulfide	5,894,610	9	4 54
	4	Ethylene	5,642,601	38	4 35
	5	Toluene	4,392,145	71	3 38
	6	Styrene	3,858,522	17	2 97
	7	Propylene	3,594,881	32	2 77
	8	Xylene (Mixed Isomers)	2,557,382	65	1 97
	9	Hydrochloric Acid	2,098,543	63	1 62
	10	Benzene	1,820,799	38	1 40
MA	1	Toluene	4,458,891	104	18 18
	2	1,1,1-Trichloroethane	4,035,792	149	16 45
	3	Freon 113	3,034,100	81	12 37
	4	Dichloromethane	2,030,674	56	8 28
	5	Methyl Ethyl Ketone	1,947,809	64	7 94
	6	Trichloroethylene	1,851,429	46	7 55
	7	Methanol	1,415,806	68	5 77
	8	Acetone	1,293,599	72	5 27
	9	Xylene (Mixed Isomers)	656,263	60	2 68
	10	Ammonia	427,747	72	1 74
MD	1	Methanol	2,833,558	17	15 56
	2	Toluene	2,215,315	36	12 17
	3	1,1,1-Trichloroethane	2,091,024	36	11 48
	4	Hydrochloric Acid	1,675,580	26	9 20
	5	Ammonia	1,642,830	33	9 02
	6	Chlorine	866,230	11	4 76
	7	Methyl Ethyl Ketone	830,726	23	4 56
	8	Xylene (Mixed Isomers)	774,682	30	4 25
	9	Dichloromethane	736,865	10	4 05
	10	Sulfuric Acid	602,785	30	3 31
ME	1	Sulfuric Acid	2,691,789	19	17 68
	2	Methanol	2,604,312	13	17 10
	3	1,1,1-Trichloroethane	1,699,604	27	11 16
	4	Chlorine	1,313,798	15	8 63
	5	Acetone	1,114,494	23	7 32
	6	Chloroform	1,106,426	7	7 27
	7	Glycol Ethers	1,047,608	5	6 88
	8	Toluene	574,827	16	3 77
	9	Chlorine Dioxide	537,049	7	3 53
	10	Xylene (Mixed Isomers)	418,986	16	2 75
MI	1	Xylene (Mixed Isomers)	17,069,038	170	16 38
	2	Dichloromethane	15,754,245	59	15 12
	3	Toluene	12,820,356	209	12 30
	4	Acetone	10,276,277	145	9 86
	5	Methyl Ethyl Ketone	7,229,357	133	6 94
	6	1,1,1-Trichloroethane	5,964,731	149	5 72
	7	Methanol	5,093,282	100	4 89
	8	Glycol Ethers	3,923,755	95	3 77
	9	n-Butyl Alcohol	3,310,887	74	3 18
	10	Methyl Isobutyl Ketone	2,880,395	78	2 76
MN	1	Methyl Ethyl Ketone	18,126,913	39	29 03
	2	Toluene	15,397,747	75	24 66
	3	Xylene (Mixed Isomers)	5,482,908	68	8 78
	4	1,1,1-Trichloroethane	2,750,250	76	4 40
	5	Methanol	2,664,499	32	4 27
	6	Freon 113	2,660,829	53	4 26
	7	Dichloromethane	2,425,221	40	3 88
	8	Acetone	2,242,932	63	3 59
	9	Glycol Ethers	1,084,991	26	1 74
	10	Cyclohexane	873,823	6	1 40
MO	1	Xylene (Mixed Isomers)	9,367,330	115	19 49
	2	Toluene	5,588,523	128	11 63
	3	Methanol	3,823,796	58	7 96
	4	1,1,1-Trichloroethane	3,545,510	98	7 38
	5	Dichloromethane	3,424,717	59	7 13
	6	Methyl Ethyl Ketone	2,970,507	79	6 18
	7	n-Butyl Alcohol	2,443,508	45	5 08
	8	Acetone	2,191,125	76	4 56
	9	Glycol Ethers	1,965,746	55	4 09
	10	Ammonia	1,887,895	61	3 93

Table C-2 (Continued)

State Emissions — 1989

State	Rank	Chemical	Total Emissions (lb/yr)	No Of Emitters	% Of State Total
MS	1	Ammonia	14,983,920	54	24 74
	2	Toluene	8,328,598	70	13 75
	3	Carbonyl Sulfide	5,681,000	2	9 38
	4	Xylene (Mixed Isomers)	5,468,260	63	9 03
	5	Methyl Ethyl Ketone	4,259,446	30	7 03
	6	Dichloromethane	3,559,027	17	5 88
	7	Methanol	2,995,629	33	4 95
	8	Trichloroethylene	2,292,964	10	3 79
	9	Acetone	1,860,676	30	3 07
	10	1,1,1-Trichloroethane	1,401,402	40	2 31
MT	1	Hydrogen Fluoride	507,765	5	20 47
	2	Xylene (Mixed Isomers)	305,164	5	12 30
	3	Propylene	223,000	4	8 99
	4	Formaldehyde	210,334	5	8 48
	5	Toluene	194,371	6	7 84
	6	Methanol	142,140	2	5 73
	7	Ammonia	94,000	4	3 79
	8	Ethylene	81,800	3	3 30
	9	Lead Compounds	81,250	2	3 28
	10	Chloroform	72,000	1	2 90
NC	1	Methanol	16,506,620	208	17 69
	2	Toluene	15,374,980	201	16 48
	3	Dichloromethane	7,838,330	56	8 40
	4	Methyl Ethyl Ketone	7,436,696	141	7 97
	5	Acetone	6,833,695	157	7 32
	6	1,1,1-Trichloroethane	6,028,998	156	6 46
	7	Ammonia	3,825,475	113	4 10
	8	Hydrochloric Acid	3,746,119	59	4 02
	9	Xylene (Mixed Isomers)	2,471,087	135	2 65
	10	n-Butyl Alcohol	2,440,457	95	2 62
ND	1	Xylene (Mixed Isomers)	261,087	5	19 58
	2	Acetone	242,916	2	18 22
	3	Toluene	152,064	3	11 40
	4	Freon 113	104,749	1	7 86
	5	Methyl Isobutyl Ketone	103,709	2	7 78
	6	1,1,1-Trichloroethane	83,287	4	6 25
	7	Styrene	64,237	4	4 82
	8	Propylene	54,704	1	4 10
	9	Methyl Ethyl Ketone	45,712	3	3 43
	10	1,2,4-Trimethylbenzene	35,828	1	2 69
NE	1	Toluene	5,491,989	26	32 74
	2	Ammonia	3,419,551	39	20 39
	3	Xylene (Mixed Isomers)	1,625,745	36	9 69
	4	Dichloromethane	1,489,057	7	8 88
	5	1,1,1-Trichloroethane	1,052,417	27	6 27
	6	Freon 113	658,827	9	3 93
	7	Methyl Ethyl Ketone	548,134	14	3 27
	8	Acetone	387,088	.14	2 31
	9	Ammonium Nitrate (Solution)	365,000	2	2 18
	10	Methyl Isobutyl Ketone	269,985	7	1 61
NH	1	Toluene	1,923,535	18	17 48
	2	1,1,1-Trichloroethane	1,602,574	42	14 56
	3	Dichloromethane	1,396,379	15	12 69
	4	Freon 113	1,251,709	31	11 37
	5	Methyl Ethyl Ketone	1,031,789	19	9 37
	6	Chlorine	690,750	2	6.28
	7	Chlorine Dioxide	640,250	1	5 82
	8	Xylene (Mixed Isomers)	426,709	12	3 88
	9	Trichloroethylene	327,677	5	2 98
	10	Acetone	271,192	14	2 46
NJ	1	Toluene	5,803,203	176	18 88
	2	Acetone	3,337,113	97	10 85
	3	Methanol	2,667,727	107	8 68
	4	Methyl Ethyl Ketone	2,610,134	108	8 49
	5	Xylene (Mixed Isomers)	2,323,274	133	7 56
	6	1,1,1-Trichloroethane	1,453,977	115	4 73
	7	Glycol Ethers	1,333,076	79	4 34
	8	n-Butyl Alcohol	1,215,061	69	3 95
	9	Freon 113	1,115,686	38	3 63
	10	Dichloromethane	1,073,034	60	3 49
NM	1	Freon 113	516,589	7	17 84
	2	Sulfuric Acid	509,500	9	17 59
	3	Copper Compounds	341,200	2	11 78
	4	Hydrochloric Acid	322,353	5	11 13
	5	Toluene	318,441	10	11
	6	1,1,1-Trichloroethane	254,728	9	8 80
	7	Acetone	179,714	8	6 21
	8	Xylene (Mixed Isomers)	126,535	6	4 37
	9	Aluminum Oxide (Fibrous Form)	73,500	3	2 54
	10	Benzene	49,759	4	1 72
NV	1	Toluene	295,470	4	43 02
	2	Acetone	107,483	4	15 65
	3	Xylene (Mixed Isomers)	54,700	3	7 96
	4	Manganese	54,050	3	7 87
	5	Methyl Ethyl Ketone	52,734	3	7 68
	6	Freon 113	17,636	1	2 57
	7	Chlorine	15,976	4	2 33
	8	Styrene	14,132	2	2 06
	9	Methyl Isobutyl Ketone	13,907	1	2 02
	10	Ammonia	10,350	2	1 51
NY	1	Dichloromethane	11,758,826	67	14 27
	2	Toluene	10,035,762	164	12 18
	3	Methanol	8,843,149	102	10 73
	4	Acetone	7,709,507	87	9 36
	5	Hydrochloric Acid	7,034,089	109	8 54
	6	1,1,1-Trichloroethane	6,936,763	165	8 42
	7	Freon 113	3,969,664	83	4 82
	8	Xylene (Mixed Isomers)	3,209,769	126	3 90
	9	Trichloroethylene	3,134,740	66	3 81
	10	Methyl Ethyl Ketone	2,465,893	89	2 99
OH	1	Xylene (Mixed Isomers)	15,536,022	246	11 53
	2	1,1,1-Trichloroethane	14,090,982	277	10 46
	3	Ammonia	13,451,442	147	9 98
	4	Toluene	12,927,853	286	9 60
	5	Acetone	12,094,628	151	8 98
	6	Methyl Ethyl Ketone	9,273,520	188	6 88
	7	Methanol	7,971,869	136	5.92
	8	Glycol Ethers	5,474,020	130	4 06
	9	n-Butyl Alcohol	3,653,716	89	2 71
	10	Dichloromethane	3,567,149	107	2 65
OK	1	Ammonia	10,522,331	27	35 68
	2	Methanol	3,321,684	17	11 26
	3	Toluene	2,438,892	40	8 27
	4	Xylene (Mixed Isomers)	1,562,536	35	5 30
	5	1,1,1-Trichloroethane	1,378,657	35	4 67
	6	Dichloromethane	1,240,684	15	4 21
	7	Methyl Ethyl Ketone	1,106,051	25	3 75
	8	Tetrachloroethylene	843,210	8	2 86
	9	Methyl Isobutyl Ketone	682,371	12	2 31
	10	Ammonium Nitrate (Solution)	647,000	3	2 19

Table C-2 (Continued)

State Emissions — 1989

State	Rank	Chemical	Total Emissions (lb/yr)	No Of Emitters	% Of State Total
OR	1	Methanol	3,883,255	32	19 68
	2	Acetone	3,029,330	46	15 36
	3	Toluene	2,451,645	40	12 43
	4	Ammonia	1,129,122	39	5 72
	5	Methyl Ethyl Ketone	980,704	26	4 97
	6	Formaldehyde	900,513	29	4 56
	7	Trichloroethylene	802,624	14	4 07
	8	1,1,1-Trichloroethane	791,696	26	4 01
	9	Freon 113	780,681	17	3 96
	10	Xylene (Mixed Isomers)	701,615	32	3 56
PA	1	Toluene	15,405,083	213	19 19
	2	1,1,1-Trichloroethane	8,742,064	186	10 89
	3	Dichloromethane	5,823,392	69	7 26
	4	Ammonia	5,036,396	130	6 28
	5	Methyl Ethyl Ketone	4,925,810	124	6 14
	6	Xylene (Mixed Isomers)	4,482,443	203	5 59
	7	Acetone	3,316,487	128	4 13
	8	Benzene	2,890,061	22	3 60
	9	Trichloroethylene	2,880,260	59	3 59
	10	Methanol	2,594,968	120	3 23
PR	1	Dichloromethane	3,903,597	23	28 69
	2	Acetone	2,503,112	29	18 40
	3	Freon 113	1,412,034	31	10 38
	4	Carbon Disulfide	1,101,000	1	8 09
	5	Toluene	1,087,634	24	7 99
	6	Methanol	691,357	28	5 08
	7	1,1,1-Trichloroethane	447,970	26	3 29
	8	Ethylene Oxide	239,992	7	1 76
	9	Formaldehyde	238,558	3	1 75
	10	Cyclohexane	207,717	4	1 53
RI	1	1,1,1-Trichloroethane	1,164,015	47	18 65
	2	Toluene	1,092,318	19	17 50
	3	Acetone	988,054	22	15 83
	4	Freon 113	465,366	22	7 46
	5	Dichloromethane	431,696	14	6 92
	6	Trichloroethylene	427,553	22	6 85
	7	Methyl Ethyl Ketone	409,710	16	6 56
	8	Tetrachloroethylene	395,016	13	6 33
	9	Xylene (Mixed Isomers)	222,696	16	3 57
	10	Ammonia	167,336	24	2 68
SC	1	Methanol	14,638,298	76	20 57
	2	Toluene	10,112,517	67	14 21
	3	Acetone	9,052,446	53	12 72
	4	1,1,1-Trichloroethane	5,391,553	75	7 58
	5	Methyl Ethyl Ketone	4,689,500	46	6 59
	6	Ammonia	2,756,317	63	3 87
	7	Xylene (Mixed Isomers)	2,740,253	64	3 85
	8	Hydrochloric Acid	2,480,324	47	3 49
	9	Dichloromethane	2,119,482	31	2 98
	10	Freon 113	1,676,234	22	2 36
SD	1	Freon 113	662,995	5	20 71
	2	Xylene (Mixed Isomers)	631,047	13	19 71
	3	Toluene	626,215	5	19 56
	4	Cyclohexane	454,623	1	14 20
	5	1,1,1-Trichloroethane	151,922	7	4 74
	6	Methyl Ethyl Ketone	119,416	6	3 73
	7	Methanol	115,669	3	3 61
	8	Formaldehyde	89,200	1	2 79
	9	Methyl Isobutyl Ketone	84,165	2	2 63
	10	Acetone	81,562	4	2 55
TN	1	Acetone	42,032,395	88	27 13
	2	Carbon Disulfide	31,979,416	5	20 64
	3	Toluene	14,248,159	120	9 20
	4	Methanol	13,936,641	66	8 99
	5	Carbonyl Sulfide	7,800,000	1	5 03
	6	1,1,1-Trichloroethane	6,651,855	89	4 29
	7	Ammonia	5,785,655	55	3 73
	8	Xylene (Mixed Isomers)	4,309,215	106	2 78
	9	Dichloromethane	3,479,685	42	2 25
	10	Hydrochloric Acid	2,420,381	48	1 56
TX	1	Ethylene	24,098,669	87	13 13
	2	Acetone	12,990,322	160	7 08
	3	Propylene	12,838,341	85	7 00
	4	Ammonia	11,952,096	210	6 51
	5	Methanol	10,003,643	192	5 45
	6	Toluene	9,888,118	247	5 39
	7	Xylene (Mixed Isomers)	8,627,712	249	4 70
	8	Cyclohexane	7,654,543	58	4 17
	9	Methyl Ethyl Ketone	6,662,826	122	3 63
	10	1,1,1-Trichloroethane	6,216,319	171	3 39
UT	1	Chlorine	110,230,301	12	84 60
	2	Hydrochloric Acid	10,441,697	19	8 01
	3	1,1,1-Trichloroethane	3,647,423	23	2 80
	4	Dichloromethane	1,487,650	7	1 14
	5	Sulfuric Acid	888,054	20	0 68
	6	Freon 113	717,897	17	0 55
	7	Toluene	528,080	19	0 41
	8	Ammonia	341,655	15	0 26
	9	Xylene (Mixed Isomers)	323,252	20	0 25
	10	Acetone	286,535	18	0 22
VA	1	Acetone	16,537,804	90	20 74
	2	Methanol	16,092,437	80	20 18
	3	Toluene	9,858,501	117	12 37
	4	Methyl Ethyl Ketone	6,139,525	77	7 70
	5	Xylene (Mixed Isomers)	5,530,010	91	6 94
	6	Hydrochloric Acid	3,792,461	38	4 76
	7	1,1,1-Trichloroethane	2,649,476	73	3 32
	8	Dichloromethane	1,738,139	36	2 18
	9	Methyl Isobutyl Ketone	1,502,767	31	1 88
	10	Ammonia	1,499,921	61	1 88
VI	1	Benzene	329,000	1	28 38
	2	Toluene	280,000	1	24 15
	3	p-Xylene	234,000	1	20 18
	4	Xylene (Mixed Isomers)	207,000	1	17 85
	5	Ethylbenzene	59,000	1	5 09
	6	Cyclohexane	28,700	1	2 48
	7	1,2,4-Trimethylbenzene	11,490	1	0 99
	8	Naphthalene	2,880	1	0 25
	9	Anthracene	2,502	1	0 22
	10	Carbon Tetrachloride	1,700	1	0 15
VT	1	1,1,1-Trichloroethane	304,239	13	26 34
	2	Toluene	259,148	9	22 44
	3	Xylene (Mixed Isomers)	118,440	7	10 26
	4	Methyl Isobutyl Ketone	73,652	4	6 38
	5	Methanol	68,180	4	5 90
	6	Methyl Ethyl Ketone	57,080	4	4 94
	7	Freon 113	55,897	3	4 84
	8	Sulfuric Acid	40,476	11	3 50
	9	Acetone	37,707	2	3 26
	10	Formaldehyde	31,077	2	2 69

Table C-2 (Continued)

State Emissions — 1989

State	Rank	Chemical	Total Emissions (lb/yr)	No Of Emitters	% Of State Total
WA	1	Ammonia	3,343,874	53	11 77
	2	Toluene	2,664,951	52	9 38
	3	Acetone	2,496,372	66	8 79
	4	Chloroform	2,372,430	12	8 35
	5	Methyl Ethyl Ketone	2,165,804	43	7 62
	6	Methanol	1,996,321	31	7 03
	7	1,1,1-Trichloroethane	1,538,922	39	5 42
	8	Xylene (Mixed Isomers)	1,527,335	47	5 38
	9	Dichloromethane	1,238,481	21	4 36
	10	Hydrogen Fluoride	1,233,572	13	4 34
WI	1	1,1,1-Trichloroethane	5,816,410	154	14
	2	Toluene	5,284,114	122	12 72
	3	Xylene (Mixed Isomers)	4,491,643	117	10 81
	4	Methyl Ethyl Ketone	3,209,013	92	7 72
	5	Glycol Ethers	2,869,410	70	6 91
	6	Methanol	2,465,381	60	5 93
	7	Acetone	1,851,206	66	4 46
	8	Dichloromethane	1,574,733	51	3 79
	9	Hydrochloric Acid	1,427,455	73	3 44
	10	Freon 113	1,345,541	32	3 24
WV	1	Acetone	5,278,423	17	15 68
	2	Methanol	2,844,140	20	8 45
	3	Toluene	2,251,926	23	6 69
	4	Benzene	1,662,419	6	4 94
	5	Dichloromethane	1,521,218	9	4 52
	6	Acrylonitrile	1,449,451	4	4 31
	7	Ethylene Glycol	1,294,916	12	3 85
	8	Hydrochloric Acid	1,260,040	24	3 74
	9	Ammonia	1,231,087	24	3 66
	10	Styrene	1,115,888	13	3 32
WY	1	Sulfuric Acid	944,763	7	25 82
	2	Ammonium Nitrate (Solution)	742,000	1	20 28
	3	Ammonia	387,479	5	10 59
	4	Toluene	292,785	5	8 00
	5	Xylene (Mixed Isomers)	213,167	7	5 83
	6	Glycol Ethers	179,000	2	4 89
	7	n-Butyl Alcohol	151,000	1	4 13
	8	Methyl Tert-Butyl Ether	138,050	2	3 77
	9	Propylene	111,114	4	3 04
	10	Benzene	78,665	4	2 15

TABLE C-3

Regional Hot Spots

— 1989 3-DIGIT ZIP CODES —

3 Digit ZIP Code	State	No Of Release Reports	No Of Facilities	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	ZIP % Of Total TRI Emissions
840	UT	151	35	123 499,332	124 926,334	4 99
775	TX	1,193	133	33 834,153	67,514 934	2 70
376	TN	166	32	18 844 269	57,433 650	2 30
703	LA	76	16	710,280	53 769,804	2 15
365	AL	166	23	48,742,819	49,583,284	1 98
377	TN	78	35	28,733,800	29 040,910	1 16
553	MN	162	59	27,664 355	28 586 651	1 14
481	MI	426	112	21,564,884	25,582,830	1 02
776	TX	246	30	9,782,964	23,726,475	0 95
707	LA	338	41	12,391,681	20,282 437	0 81
286	NC	476	143	17,024,781	20,118,360	0 80
146	NY	210	54	15,052 668	19,979,701	0 80
371	TN	148	42	16,138 146	18,667,116	0 75
996	AK	18	3	274 365	18,604,215	0 74
356	AL	203	48	15,587,429	18 566,446	0 74
606	IL	923	294	13,952,172	18,489,888	0 74
391	MS	45	21	3,933,733	18 397,399	0 74
241	VA	115	32	4,060,002	17,057,985	0 68
314	GA	84	23	14 050,378	16,612 517	0 66
706	LA	222	28	6,273,448	16,477,335	0 66
465	IN	335	118	13,067,141	16,011 799	0 64
284	NC	105	24	14,348,187	15,718,980	0 63
480	MI	328	101	13,157,202	15,197 783	0 61
723	AR	89	27	3 523,060	14,907,032	0 60
244	VA	53	20	12,518,320	13,529 729	0 54
402	KY	336	70	12,097,765	13 402,913	0 54
473	IN	198	61	9,666,107	13,354 082	0 53
381	TN	241	63	5,956,825	13,207 808	0 53
338	FL	129	50	917,884	13,193,145	0 53
440	OH	474	143	10,679,947	11 948,667	0 48
6	PR	260	94	8,139,016	11 773 975	0 47
463	IN	322	69	10,299,993	11 686,210	0 47
630	MO	253	64	9,503,760	11,537,573	0 46
490	MI	288	95	9 339,777	11,401,143	0 46
315	GA	102	24	9,219,505	11,385 406	0 46
479	IN	156	38	7 809,097	11,139 502	0 45
430	OH	181	48	7,677,373	10,988,303	0 44
700	LA	355	49	5,347 223	10,817,470	0 43
295	SC	134	41	8,218,572	10,758,335	0 43
294	SC	134	34	8,829,162	10,641,714	0 43
551	MN	217	72	8,044,051	10,557,276	0 42
756	TX	182	41	4,553,485	10,332,598	0 41
476	IN	50	8	8,987,089	10,239,282	0 41
441	OH	627	185	8 219,319	10,149 258	0 41
388	MS	87	40	9,474,791	10,083,136	0 40
604	IL	438	104	7,242,479	9,814 660	0 39
395	MS	190	24	7,984,807	9,769 310	0 39
601	IL	472	160	7,880 285	9 765 667	0 39
420	KY	150	26	5,892,935	9,741 603	0 39
494	MI	311	87	6,755,885	9,464,211	0 38
452	OH	421	121	7 237 749	9,381 114	0 37
458	OH	225	54	5 063 214	9,300,559	0 37
261	WV	124	14	7 635 272	9,261,171	0 37
296	SC	340	117	7,750,031	9 225 332	0 37
770	TX	484	125	5,721 125	9,178,320	0 37
672	KS	164	35	8 479 911	9 137 579	0 37
70	NJ	690	209	6 566,095	8,927,004	0 36
397	MS	88	25	7,971,043	8,811 871	0 35
457	OH	74	13	4 041,971	8,797 699	0 35
605	IL	180	55	7,151,592	8,743,697	0 35
278	NC	156	59	4 014,181	8,707 845	0 35
619	IL	53	16	7,356,835	8 627 872	0 34
232	VA	135	46	7,378,647	8,393 176	0 34
902	CA	432	128	6 275,302	8,365,680	0 33
299	SC	29	4	6 241,520	8,319 520	0 33
550	MN	162	33	6,921 356	8,297,600	0 33
456	OH	101	25	4,293,137	8 133,753	0 33
272	NC	309	99	6 861,209	8,113 259	0 32
317	GA	102	37	6 120,432	8 062,363	0 32
495	MI	265	67	6,379,122	7 947,211	0 32
945	CA	405	106	4 056,215	7 935,782	0 32
342	FL	30	18	798,364	7,893,699	0 32
712	LA	71	20	6 792,625	7,866 097	0 31
708	LA	136	20	4,706,483	7,643 751	0 31
292	SC	78	20	6,956,527	7,522 405	0 30
740	OK	118	32	4,045,119	7,451,540	0 30
150	PA	228	50	3,134,105	7,387,951	0 30
527	IA	111	31	3,134,438	7,346 015	0 29
297	SC	122	30	3,396,155	7,327,046	0 29
260	WV	118	28	5 830 317	7,284,755	0 29
777	TX	146	19	2,963 122	7,074,297	0 28
251	WV	68	5	2,122 550	6,908,079	0 28
768	TX	21	4	5,172 078	6 807,115	0 27
370	TN	162	53	5 829 863	6,794,212	0 27
673	KS	48	12	1 369 605	6 728 491	0 27
238	VA	107	31	4,844 069	6 719,908	0 27
467	IN	209	86	5 300,251	6 670,378	0 27
631	MO	475	133	5 735 622	6 610,252	0 26
293	SC	202	51	5,375 880	6 434,070	0 26
226	VA	68	18	5 837,103	6,339,373	0 25
610	IL	130	44	5,350,749	6,326,209	0 25
532	WI	405	112	4,586,892	6,266,003	0 25
852	AZ	197	66	2,571,184	6,260,904	0 25
245	VA	178	57	5,707 485	6,205 529	0 25
64	CT	302	99	5,208,933	6 202,987	0 25
215	MD	16	4	5 183,728	6,146,443	0 25
281	NC	234	68	5,527,722	6,131,053	0 25
374	TN	123	33	5 829,241	6,097,178	0 24
287	NC	125	40	5,053,399	6,072,304	0 24
191	PA	264	66	4,463,324	6,040 273	0 24
		22,074	5,822	953,809 593	1,394,163,565	55 72

TABLE C-4

Regional Hot Spots

— 1989 COUNTIES —

County	State	No Of Release Reports	No Of Facilities	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	County % Of Total TRI Emissions
Tooele	UT	9	5	119 265 478	119 265 728	4 77
Ascension	LA	148	17	4 568,353	62 477,679	2 50
Mobile	AL	183	30	49,433 531	50 399,718	2 01
Harris	TX	1 301	237	28,918,090	46,891 805	1 87
Sullivan	TN	109	14	6 966 709	43,146,461	1 72
Cook	IL	1 751	552	31,057 015	39,033,046	1 56
Los Angeles	CA	1 967	632	26 940 242	35,440 773	1 42
Hamblen	TN	69	21	26,448,675	26,714 640	1 07
Mc Leod	MN	30	6	25 496,692	25,782,081	1 03
Monroe	NY	248	66	15,494 023	20,558,791	0 82
Kenai Peninsula	AK	18	3	274,365	18,604,215	0 74
Brazoria	TX	233	22	8,192,620	18,572,338	0 74
Jefferson	TX	301	35	8,422 442	18,038,473	0 72
Chatham	GA	84	23	14,050,378	16,612,517	0 66
Calcasieu	LA	194	21	5,593,804	15,664,609	0 63
Wayne	MI	600	143	11,421,941	14,782,936	0 59
Mississippi	AR	48	15	3,080,502	14,458,523	0 58
Washtenaw	MI	65	19	12,934,557	14,197,992	0 57
Shelby	TN	266	72	6,192,969	13,537,600	0 54
Jefferson	KY	337	71	12,097,905	13,403,053	0 54
Yazoo	MS	2	1	3,800	12 947,936	0 52
Galveston	TX	194	16	3,356,714	12,761,642	0 51
Polk	FL	116	45	706,597	12 701,712	0 51
Giles	VA	8	1	982 204	12,423,113	0 50
Colbert	AL	59	14	9,701 843	12 184,818	0 49
Orange	TX	77	12	2,929,244	10 568,299	0 42
Cuyahoga	OH	632	188	8,320,820	10,297,759	0 41
Kanawha	WV	129	10	4,776,482	10,261,485	0 41
Catawba	NC	157	55	9,403,019	10,254,552	0 41
Oakland	MI	242	62	7,822,942	10,178,002	0 41
Ramsey	MN	195	60	7,786,738	10,176 555	0 41
Lake	IN	214	40	8 709,422	10,117 944	0 40
Alleghany	VA	16	3	9,441,999	10 042 999	0 40
Hamilton	OH	461	128	7,688,729	9,968 201	0 40
St Louis	MO	315	84	8,045,074	9,564 447	0 38
Orange	CA	560	208	5,715,742	9,365,347	0 37
Sedgwick	KS	168	37	8 480 661	9 138,829	0 37
Humphreys	TN	18	4	8,476,847	9 011,514	0 36
Washington	OH	74	13	4,041,971	8 797 699	0 35
East Baton Rouge	LA	156	22	5,710 939	8,771,344	0 35
Kent	MI	300	75	6,744,559	8,433,812	0 34
Macomb	MI	187	46	7,592,963	8,298,691	0 33
Hampton	SC	17	3	6,234,220	8,292 720	0 33
Harrison	TX	86	14	3,210,129	8,255,818	0 33
Middlesex	NJ	518	127	6,809,034	8,244,549	0 33
Kalamazoo	MI	96	22	6 785,806	8,220,275	0 33
King	WA	316	118	6,307,642	8 200,378	0 33
Niagara	NY	159	35	7,081,868	7,980,475	0 32
Marshall	KY	87	8	4,886,504	7,800,172	0 31
Posey	IN	33	2	6,601,329	7,791,732	0 31
Union	OH	40	7	4 878 463	7,707 057	0 31
Richland	SC	89	24	7,084 977	7 669,105	0 31
Milwaukee	WI	491	132	5,266 314	7,583 583	0 30
Allegheny	PA	371	80	4 517 745	7 568,335	0 30
Tippecanoe	IN	90	19	4,620,780	7 545 352	0 30
Brunswick	NC	32	4	7,369,146	7,492,078	0 30
Erie	NY	244	93	6,160,730	7,397,787	0 30
Glynn	GA	37	8	6 032,021	7,237 069	0 29
Manatee	FL	19	11	491 664	7,156 799	0 29
Barceloneta	PR	47	8	5,351,748	7,115 735	0 28
Davidson	TN	97	31	6 251,659	7,068,808	0 28
New Haven	CT	354	109	5 900 655	6 978 560	0 28
Lowndes	MS	43	9	6,321,955	6 852,461	0 27
Middlesex	MA	424	145	5,006,540	6,847 208	0 27
Brown	TX	20	3	5,098,484	6,733 521	0 27
Iberville	LA	107	12	4,764,393	6,526,055	0 26
Maricopa	AZ	354	128	3,939,380	6,443,668	0 26
Tarrant	TX	262	100	4,335 523	6,417 699	0 26
York	SC	58	18	2,795 140	6,373,767	0 25
Onondaga	NY	139	55	3,119 666	6,345,660	0 25
Ouachita	LA	33	8	5,407,555	6,313,455	0 25
Elkhart	IN	189	73	4,891,258	6,309,285	0 25
Montgomery	KS	33	7	982,927	6 296,580	0 25
Kosciusko	IN	57	16	5,552,296	6,194,419	0 25
Harrison	MS	30	7	5 954,599	6,167 790	0 25
Dallas	TX	486	156	4,969,981	6,145 675	0 25
Lancaster	PA	163	65	5 482,932	6 105,130	0 24
Hamilton	TN	128	35	5,831,292	6 099,489	0 24
Douglas	IL	22	3	5,033,463	6 078,782	0 24
Broome	NY	59	22	4,670,791	6,044 184	0 24
Montgomery	OH	198	49	4,940,095	6,009,005	0 24
St Charles	LA	95	10	1,489 726	5 969 000	0 24
Allegany	MD	11	3	4,986,428	5,918,443	0 24
Frederick	VA	34	11	5 465,099	5,854,239	0 23
New Castle	DE	175	39	5,253 968	5 828,035	0 23
San Diego	CA	202	73	4,699,022	5,821,069	0 23
Philadelphia	PA	253	64	4,277,424	5,795,504	0 23
Caldwell	NC	153	33	4,575,325	5,784,815	0 23
Hawkins	TN	21	6	3,393,719	5,777,768	0 23
Coshocton	OH	24	7	599,145	5,771,437	0 23
Salt Lake	UT	183	45	4 321,284	5,755,023	0 23
Henry	VA	93	21	5,142,277	5,725,145	0 23
Spartanburg	SC	170	39	4,812,188	5,709,704	0 23
Marion	IN	296	81	4 490,731	5,675,075	0 23
Richmond	GA	71	29	3,865,733	5 609 205	0 22
Forsyth	NC	84	32	4,857,187	5,577,867	0 22
Carter	TN	7	2	5,422 258	5,486,293	0 22
Hartford	CT	270	104	4,169,161	5 484,715	0 22
Jefferson	AL	264	73	4,758,991	5,418,849	0 22
Sebastian	AR	102	32	4,529,124	5,386,698	0 22
		20 777	5 598	835,339,094	1,235,808 782	49 39

TABLE C-5

Air Emissions By U.S. Industry

— 1989 —

2 Digit SIC Code	U S Industry	No Of Emitters	No Of Release Reports	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	Industry % Of Total TRI Emissions
		47	95	657,252	873,169	0 03
0		8	11	147,698	148,588	0 01
1		1	2	0	500	0 00
2		3	9	583,518	584,518	0 02
3		9	17	854,577	918,060	0 04
7		2	3	47,000	47,100	0 00
10		2	2	0	1,260,463	0 05
13		1	1	0	10,425	0 00
14		7	14	1,500	10,583	0 00
15		1	1	250	250	0 00
16		9	9	17,151	41,367	0 00
17		15	15	39,876	39,876	0 00
18		2	2	334,268	334,268	0 01
19		1	1	0	28,000	0 00
20	Food	1,105	1,654	10,937,545	28,598,439	1 14
21	Tobacco	17	22	1,070,545	1,725,798	0 07
22	Textiles	371	700	31,852,194	37,462,074	1 50
23	Apparel	42	89	4,150,538	4,381,856	0 18
24	Lumber	537	1,416	32,281,433	37,255,402	1 49
25	Furniture	536	1,856	55,216 227	63,961,987	2 56
26	Pulp & Paper	626	2,070	224,151,583	269,785,941	10 78
27	Printing	379	709	55,376,057	58,174,976	2 33
28	Chemicals	3,967	19,717	421,719,800	793,130,655	31 70
29	Petroleum Refining	362	2,856	44,915,917	73,472,974	2 94
30	Rubber, Plastics	1,636	3,978	161,097,931	200,229,247	8 00
31	Leather	124	334	10,193,871	13,206,920	0 53
32	Stone, Clay, Glass	563	1,537	19,722,844	26,123,954	1 04
33	Primary Metals	1,692	5,891	217,849,681	262,280,892	10 48
34	Fabricated Metals	2,877	7,371	111,749,083	144,606,396	5 78
35	Non-Elect. Machinery	1,060	2,587	49,330,854	62,068,033	2 48
36	Electrical Equipment	1,704	4,788	70,607,653	104,774,079	4 19
37	Transport. Equipment	1,278	4,582	178,359,935	225,302,351	9 00
38	Instruments	427	1,010	36,146,247	54,641,638	2 18
39	Misc. Manufacturing	390	951	21,865,925	27,567,074	1 10
42		2	2	0	1,085	0 00
43		3	11	238,920	266,420	0 01
44		2	22	28,960	318,238	0 01
45		7	23	242,902	253,270	0 01
46		1	1	8	8	0 00
47		2	4	42 100	48,450	0 00
49		7	16	4,969,886	4,987,646	0 20
50		18	32	291,274	422,772	0 02
51		40	160	377,228	831,333	0 03
52		1	3	1,250	1,250	0 00
57		1	5	1,750	3,250	0 00
73		21	31	74,022	91,875	0 00
75		3	5	65,710	65,710	0 00
76		7	11	157,519	158,019	0 01
84		2	8	62,950	65,950	0 00
87		12	55	23,880	230,583	0 01
89		2	2	430	10,763	0 00
96		1	32	5,750	10,000	0 00
97		6	20	282,982	481,244	0 02
98		1	1	1,463	1,463	0 00
99		4	19	340,519	461,834	0 02
NA		13	23	174,457	234,049	0 01
		19,957	64,786	1,768,662,913	2,501,993,075	100 00

(Note Only SICs 20-39 are required to report to TRI)

TABLE C-6

Industrial Emissions

— 1989 —

2-Digit SIC Code	No Of Emitters	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	Industry % Of Total TRI Emissions
28	3,967	421,719,800	793,130,665	31 70
26	626	224,151,583	269,785,941	10 78
33	1,692	217,849,681	262,280,892	10 48
37	1,278	178 359,935	225,302,351	9 00
30	1,636	161,097,931	200,229,247	8 00
34	2,877	111,749,083	144,606,396	5 78
36	1,704	70,607,653	104,774,079	4 19
29	362	44,915,917	73,472,974	2 94
25	536	55,216,227	63,961,987	2 56
35	1,060	49,330,854	62,068,033	2 48
27	379	55,376,057	58,174,976	2 33
38	427	36,146,247	54,641,638	2 18
22	371	31,852,194	37,462,074	1 50
24	537	32,281,433	37,255,402	1 49
20	1,105	10,937,545	28,598,439	1 14
39	390	21,865,925	27,567,074	1 10
32	563	19,722,844	26,123,954	1 04
31	124	10,193,871	13,206,920	0 53
49	7	4,969,886	4,987,646	0 20
23	42	4,150,538	4,381,856	0 18
21	17	1,070,545	1,725,798	0 07
10	2	0	1,260,463	0.05
3	9	854,577	918,060	0 04
	47	657,252	873,169	0 03
51	40	377,228	831,333	0 03
2	3	583,518	584,518	0 02
97	6	282,982	481,244	0 02
99	4	340,519	461,834	0 02
50	18	291,274	422,772	0 02
18	2	334,268	334,268	0 01
44	2	28,960	318,238	0 01
43	3	238,920	266,420	0 01
45	7	242 902	253,270	0 01
NA	13	174,457	234,049	0 01
87	12	23,880	230,583	0 01
76	7	157,519	158 019	0 01
0	8	147,698	148,588	0 01
73	21	74,022	91,875	0 00
84	2	62,950	65,950	0 00
75	3	65,710	65 710	0 00
47	2	42,100	48,450	0 00
7	2	47,000	47,100	0 00
16	9	17,151	41,367	0 00
17	15	39,876	39,876	0 00
19	1	0	28,000	0 00
89	2	430	10,763	0 00
14	7	1,500	10,583	0 00
13	1		10,425	0 00
96	1	5,750	10,000	0 00
57	1	1,750	3,250	0 00
98	1	1,463	1,463	0 00
52	1	1,250	1,250	0 00
42	2	0	1,085	0 00
1	1	0	500	0 00
15	1	250	250	0 00
46	1	8	8	0 00
	19,957	1,768,662,913	2,501,993,075	100 00

TABLE C-7

Air Emissions For The U.S. Chemical Industry

— 1989 —

4 Digit SIC Code	Total Emissions (lb/yr)	4 Digit SIC Code	Total Emissions (lb/yr)	4-Digit SIC Code	Total Emissions (lb/yr)
2800	2,211,338	2834	29 687 198	2865	22,820,883
2801	436	2835	17,538	2866	427,727
2810	1 700	2836	383 061	2869	173,358,318
2811	250	2839	94 170	2870	1,295 383
2812	24,116,075	2840	16,948	2871	31,916
2813	8,560,794	2841	1,263,711	2873	145,049,237
2815	176,310	2842	597 266	2874	26,940,745
2816	17,875,700	2843	5,116 054	2875	2,591,972
2818	9,396	2844	189 352	2879	6,791,050
2819	32,650,892	2846	2,544	2890	12,074
2821	108,733,357	2850	152,969	2891	4,886,707
2822	21,943,488	2851	22,317 332	2892	5,562,622
2823	53,853 875	2852	262,250	2893	2,722,315
2824	19,849,399	2859	265	2895	13,384,043
2830	341,006	2860	260,290	2898	25,300
2831	358,783	2861	4,139,686	2899	8,801,840
2833	23,143,049	2864	102,051		793,130,665

TABLE C-8

Top Industrial Emitters

— 1989 4-Digit SIC Codes —

Rank	SIC	Total Emissions (lb/yr)	% Of 2 Digit SIC Code	Rank	Chemical	Total Emissions (lb/yr)	% Of Total 2 Digit SIC
1	2869	173,358,318	21 86	1	Acetone	52,899,672	6 67
				2	Methanol	26,239 384	3 31
				3	Ethylene	15,800,518	1 99
				4	Propylene	6,465,567	0 82
				5	Toluene	6,148,637	0 78
				6	Chloromethane	6,125,432	0 77
				7	Ammonia	5,404,568	0 68
				8	Benzene	4,621,317	0 58
				9	Ethylene Glycol	4,484,781	0 57
				10	Hydrochloric Acid	4,060,723	0 51
2	2873	145,049,237	18 29	1	Ammonia	135,517,735	17 09
				2	Methanol	6,431,074	0 81
				3	Ammonium Nitrate (Solution)	1,774,319	0 22
				4	Propylene	384,400	0 05
				5	Nitric Acid	248,795	0 03
				6	Sulfuric Acid	157,223	0 02
				7	Acetonitrile	122,000	0 02
				8	Acrylonitrile	103,000	0 01
				9	Ethylene Glycol	94,000	0 01
				10	Hydrogen Cyanide	56,400	0 01
3	3339	127,008,798	48 42	1	Chlorine	110,179,401	42 01
				2	Hydrochloric Acid	9,000,511	3 43
				3	Ammonia	4,901,455	1 87
				4	Methyl Isobutyl Ketone	1,248,413	0 48
				5	Lead Compounds	623,927	0 24
				6	Hydrogen Fluoride	325,797	0 12
				7	Tetrachloroethylene	143,519	0 05
				8	Zinc Compounds	100,608	0 04
				9	1,1,1-Trichloroethane	95 137	0 04
				10	Methanol	86,806	0 03
4	2821	108,733,357	13 71	1	Carbon Disulfide	24,938,053	3 14
				2	Ethylene	13,236,940	1 67
				3	Methanol	8,769,900	1 11
				4	Dichloromethane	8,588,147	1 08
				5	Acetone	8,567,946	1 08
				6	Propylene	4,951,442	0 62
				7	Styrene	4,477,751	0 56
				8	Toluene	4,125,466	0 52
				9	Chlorobenzene	2,736,248	0 34
				10	Acrylonitrile	2,349,201	0 30
5	2611	85,945,112	31 86	1	Methanol	38,055,599	14 11
				2	Chloroform	13,360,095	4 95
				3	Chlorine	6,922,362	2 57
				4	Hydrochloric Acid	6,552,248	2 43
				5	Sulfuric Acid	6,377,345	2 36
				6	Acetone	6,136,405	2 27
				7	Chlorine Dioxide	4 822,386	1 79
				8	Ammonia	1,367,019	0 51
				9	Toluene	1,169,500	0 43
				10	Ammonium Sulfate (Solution)	406,000	0 15
6	3711	69,171,476	30 7	1	Xylene (Mixed Isomers)	25,220,040	11 19
				2	Glycol Ethers	7,778 347	3 45
				3	Toluene	7,141,190	3 17
				4	n-Butyl Alcohol	6,683,853	2 97
				5	Methyl Isobutyl Ketone	4,973,656	2 21
				6	Methyl Ethyl Ketone	4,279,916	1 90
				7	Methanol	3,704,126	1 64
				8	Acetone	3,450,681	1 53
				9	1,1,1-Trichloroethane	2,851,177	1 27
				10	Ethylbenzene	1,103,685	0 49
7	2911	68,257 091	92 9	1	Toluene	11,450,602	15 58
				2	Ammonia	8 318,366	11 32
				3	Propylene	8,092,688	11 01
				4	Xylene (Mixed Isomers)	6,586,051	8 96
				5	Benzene	5,849,179	7 96
				6	Ethylene	5,152,991	7 01
				7	Methyl Ethyl Ketone	5,094,696	6 93
				8	Cyclohexane	1,747,462	2 38
				9	1,2,4-Trimethylbenzene	1,674,136	2 28
				10	Ethylbenzene	1,653,957	2 25
8	2823	53,853 875	6 79	1	Carbon Disulfide	49,092,000	6 19
				2	Acetone	3,117,964	0 39
				3	Methyl Ethyl Ketone	820,828	0 10
				4	Benzene	480,733	0 06
				5	Dichloromethane	161,897	0 02
				6	Methanol	76,116	0 01
				7	Ammonia	64,750	0 01
				8	Formaldehyde	30,156	0 00
				9	Sulfuric Acid	2,450	0 00
				10	Phenol	1,773	0 00
9	2621	51 135,635	18 95	1	Methanol	17,410,572	6 45
				2	Hydrochloric Acid	12,501,509	4 63
				3	Chloroform	5,778,067	2 14
				4	Sulfuric Acid	5,574,049	2 07
				5	Acetone	2,512,663	0 93
				6	Chlorine	2,335,971	0 87
				7	Ammonia	1,126,394	0 42
				8	Chlorine Dioxide	1,058,526	0 39
				9	Dichloromethane	452,915	0 17
				10	1,1,1-Trichloroethane	428,704	0 16
10	3079	45,820 041	22 88	1	Acetone	9,499,462	4 74
				2	Methanol	8,835,451	4 41
				3	Dichloromethane	4,847,131	2 42
				4	Methyl Ethyl Ketone	3,732,220	1 86
				5	Carbon Disulfide	3,388,384	1 69
				6	Toluene	2,935,724	1 47
				7	Styrene	2,733,506	1 37
				8	Ammonia	1,972,826	0 99
				9	Xylene (Mixed Isomers)	1,667,641	0 83
				10	1,1,1-Trichloroethane	1,196,371	0 60
11	3312	41,915,089	15 98	1	Benzene	11,805,641	4 50
				2	Ammonia	5,010,668	1 91
				3	1,1,1-Trichloroethane	4,781,151	1 82
				4	Hydrochloric Acid	2,547,603	0 97
				5	Xylene (Mixed Isomers)	1,995,295	0 76
				6	Toluene	1,463,256	0 56
				7	Zinc Compounds	1,344,093	0 51
				8	Zinc (Fume Or Dust)	1,340,587	0 51
				9	Ethylene	1,215,496	0 46
				10	Trichloroethylene	1,082,792	0 41
12	2511	41,790,092	65 34	1	Toluene	12,360,922	19 33
				2	Methanol	8,731,600	13 65
				3	Xylene (Mixed Isomers)	6,130,008	9 58
				4	Methyl Ethyl Ketone	4,360,628	6 82
				5	Acetone	3,858 969	6 03
				6	n-Butyl Alcohol	2,210,364	3 46
				7	Methyl Isobutyl Ketone	1,638,602	2 56
				8	Glycol Ethers	776,062	1 21
				9	1,1,1-Trichloroethane	684,838	1 07
				10	Isopropyl Alcohol (Manufact)	460,701	0 72

Table C-8 (Continued)

Top Industrial Emitters — 1989 4-Digit SIC Codes

Rank	SIC	Total Emissions (lb/yr)	% Of 2-Digit SIC Code	Rank	Chemical	Total Emissions (lb/yr)	% Of Total 2 Digit SIC
13	3714	41,608,927	18 47	1	1,1,1-Trichloroethane	5,445,705	2 42
				2	Xylene (Mixed Isomers)	5,444,556	2 42
				3	Trichloroethylene	4,846,941	2 15
				4	Toluene	4,416,942	1 96
				5	Methyl Ethyl Ketone	3,885,462	1 72
				6	Styrene	3,758,989	1 67
				7	Freon 113	3,661,010	1 62
				8	Acetone	2,355,727	1 05
				9	Tetrachloroethylene	1,469,119	0 65
				10	Glycol Ethers	1,273,690	0 57
14	3089	40,913,834	20 43	1	Carbon Disulfide	9,597,250	4 79
				2	Acetone	8,068,724	4 03
				3	Toluene	4,417,794	2 21
				4	Styrene	3,689,355	1 84
				5	Methyl Ethyl Ketone	3,161,579	1 58
				6	Dichloromethane	2,520,290	1 26
				7	1,1,1-Trichloroethane	2,516,377	1 26
				8	Methanol	1,451,634	0 72
				9	Trichloroethylene	1,030,409	0 51
				10	Xylene (Mixed Isomers)	897,342	0 45
15	3411	38,929,936	26 92	1	Glycol Ethers	16,418,117	11 35
				2	n-Butyl Alcohol	11,620,953	8 04
				3	Xylene (Mixed Isomers)	3,924,190	2 71
				4	Methyl Ethyl Ketone	1,562,024	1 08
				5	Toluene	1,378 597	0 95
				6	Cyclohexane	892,711	0 62
				7	Methyl Isobutyl Ketone	885,452	0 61
				8	1,1,1-Trichloroethane	700,804	0 48
				9	Sulfuric Acid	528,813	0 37
				10	Trichloroethylene	266,145	0 18
16	2672	37,943,221	14 06	1	Toluene	17,343,087	6 43
				2	Methyl Ethyl Ketone	16,337,667	6 06
				3	Methanol	2,150,901	0 80
				4	Acetone	552,236	0 20
				5	Xylene (Mixed Isomers)	526,159	0 20
				6	Hydrochloric Acid	270,000	0 10
				7	1,1,1-Trichloroethane	149,401	0 06
				8	Cyclohexane	102,000	0 04
				9	Formaldehyde	99,623	0 04
				10	Naphthalene	92,750	0 03
17	2754	36,903,713	63 44	1	Toluene	31,268,282	53 75
				2	Methyl Ethyl Ketone	1,869,170	3 21
				3	Xylene (Mixed Isomers)	1,228,413	2 11
				4	1,1,1-Trichloroethane	596,817	1 03
				5	Glycol Ethers	418 002	0 72
				6	Methanol	358,046	0,62
				7	Acetone	351,719	0 60
				8	Methyl Isobutyl Ketone	281,433	0 48
				9	Cyclohexane	145,400	0 25
				10	Zinc (Fume Or Dust)	69 199	0 12
18	3861	35,402 200	64 79	1	Dichloromethane	13,227,225	24.21
				2	Acetone	7,384 039	13 51
				3	Methanol	6,453,756	11 81
				4	Toluene	2,545,852	4 66
				5	Methyl Ethyl Ketone	1,789,559	3 28
				6	1,2-Dichloropropane	620 000	1 13
				7	Freon 113	490 378	0 90
				8	Cyclohexane	391 023	0 72
				9	n-Butyl Alcohol	380,482	0 70
				10	1,1,1-Trichloroethane	299,846	0 55
19	2631	34,301,409	12 71	1	Methanol	17,374,259	6 44
				2	Hydrochloric Acid	5,586,472	2 07
				3	Acetone	4,341,380	1 61
				4	Chloroform	2,116 689	0 78
				5	Sulfuric Acid	1,650,584	0 61
				6	Chlorine	867,538	0 32
				7	Ammonia	561,626	0 21
				8	Chlorine Dioxide	510,050	0 19
				9	Toluene	377,687	0 14
				10	Methyl Ethyl Ketone	295,183	0 11
20	2819	32,650,892	4 12	1	Ammonia	9,653,027	1 22
				2	Chlorine	5,656,581	0 71
				3	Methanol	3,969,710	0 50
				4	Sulfuric Acid	1,962,691	0 25
				5	Carbon Disulfide	1,756,535	0 22
				6	Hydrochloric Acid	1,485,767	0 19
				7	Ethylene Glycol	720,317	0 09
				8	Phosphoric Acid	711,929	0 09
				9	Ethylene	677,893	0 09
				10	Toluene	624,889	0 08

TABLE C-9

National Emissions Of HAPs

— 1989 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total HAPs Emissions	Chemical % Of Total TRI Emissions
Toluene	3,970	261,960,919	14 81	10 47
Methanol	2,429	206 396,888	11 67	8 25
1,1 1-Trichloroethane	3,889	172 745 485	9 77	6 90
Xylene (Mixed Isomers)	3 532	152,001,772	8 59	6 08
Chlorine	1 253	132,643 321	7 50	5 30
Methyl Ethyl Ketone	2,480	131,116,286	7 41	5 24
Dichloromethane	1,539	122 809,412	6 94	4 91
Carbon Disulfide	78	99,983,802	5 65	4 00
Hydrochloric Acid	2,416	73,204,206	4 14	2 93
Glycol Ethers	1,637	47,977,093	2 71	1 92
Trichloroethylene	832	47,501,723	2 69	1 90
Styrene	1,319	34,102,196	1 93	1 36
Methyl Isobutyl Ketone	1,049	30,895,812	1 75	1 23
Tetrachloroethylene	663	27,006,973	1 53	1 08
Benzene	475	25,863,548	1 46	1 03
Chloroform	186	25,269,682	1 43	1 01
Carbonyl Sulfide	32	18,075 606	1 02	0 72
Ethylene Glycol	938	13,197,795	0 75	0 53
Formaldehyde	840	12,925,115	0 73	0 52
Hydrogen Fluoride	455	10,006 434	0 57	0 40
Chloromethane	83	9,707 459	0 55	0 39
Ethylbenzene	687	9,062 195	0 51	0 36
Phenol	585	9,023,094	0 51	0 36
Acetaldehyde	74	7,769 993	0 44	0 31
1,3-Butadiene	157	5,700,676	0 32	0 23
Vinyl Acetate	146	5 504 693	0 31	0 22
p-Xylene	37	4,933,722	0 28	0 20
Chloroethane	48	4,788 171	0 27	0 19
Cumene	152	4,400,247	0 25	0 18
Acrylonitrile	112	4 387 467	0 25	0 18
1 2-Dichloroethane	98	4 284 066	0 24	0 17
Chlorobenzene	61	4 051,144	0 23	0 16
Naphthalene	412	3 456 537	0 20	0 14
Carbon Tetrachloride	95	3,369 248	0 19	0 13
Ethylene Oxide	194	3 235,634	0 18	0 13
Methyl Methacrylate	234	3,149,059	0 18	0 13
Methyl Tert-Butyl Ether	105	3,008,160	0 17	0 12
Bromomethane	33	2,594,426	0 15	0 10
Propylene Oxide	123	2 050 182	0 12	0 08
Manganese Compounds	466	1,833 491	0 10	0 07
o-Xylene	69	1,808,306	0 10	0 07
1,4-Dichlorobenzene	21	1 592 229	0 09	0 06
Lead Compounds	569	1,570,821	0 09	0 06
Acetonitrile	72	1,459,180	0 08	0 06
Chromium Compounds	846	1,409,098	0 08	0 06
Vinyl Chloride	49	1,269 032	0 07	0 05
1,2-Dichloropropane	12	1,233,330	0 07	0 05
m-Xylene	53	1,200,771	0 07	0 05
1,2 4-Trichlorobenzene	49	1,151,473	0 07	0 05
Biphenyl	149	1,089 079	0 06	0 04
Di(2-Ethylhexyl) Phthalate	208	1 078 940	0 06	0 04
Propionaldehyde	15	1,077,469	0 06	0 04
Chloroprene	7	1 006,341	0 06	0 04
Cresol (Mixed Isomers)	112	897,744	0 05	0 04
1 4-Dioxane	87	821,020	0 05	0 03
1,1,2-Trichloroethane	28	786,898	0 04	0 03
Phthalic Anhydride	142	650 151	0 04	0 03
Aniline	67	504,140	0 03	0 02
Diethanolamine	222	484 958	0 03	0 02
Epichlorohydrin	76	472 548	0 03	0 02
Maleic Anhydride	166	451 062	0 03	0 02
Methylenebis(Phenylisocyanate)	296	380 213	0 02	0 02
Dimethyl Phthalate	38	363,430	0 02	0 01
Acrylic Acid	155	357,523	0 02	0 01
Nickel Compounds	396	272 689	0 02	0 01
p-Cresol	17	255 484	0 01	0 01
Dibutyl Phthalate	100	234 380	0 01	0 01
2-Nitropropane	10	225,222	0 01	0 01
Vinylidene Chloride	23	220 632	0 01	0 01
Ethyl Acrylate	107	195 685	0 01	0 01
Allyl Chloride	19	175 603	0 01	0 01
Arsenic Compounds	133	175 584	0 01	0 01
Antimony Compounds	201	166,372	0 01	0 01
1 2-Butylene Oxide	18	119,679	0 01	0 00
N N-Dimethylaniline	16	91,759	0 01	0 00
Toluene-2 4-Diisocyanate	240	90,946	0 01	0 00
Hexachlorocyclopentadiene	4	89,246	0 01	0 00
2 4-Dinitrotoluene	9	87,293	0 00	0 00
Cadmium Compounds	88	85 004	0 00	0 00
Cobalt Compounds	112	79 100	0 00	0 00
Dibenzofuran	106	64,510	0 00	0 00
Quinoline	58	64,224	0 00	0 00
o-Cresol	25	59 666	0 00	0 00
1,2-Dibromoethane	25	59,167	0 00	0 00
Titanium Tetrachloride	27	57,287	0 00	0 00
1 3-Dichloropropylene	8	50 917	0 00	0 00
4 4'-Methylenedianiline	24	47,760	0 00	0 00
Nitrobenzene	17	38,791	0 00	0 00
Asbestos (Friable)	66	38 435	0 00	0 00
1,1 2 2-Tetrachloroethane	16	35,401	0 00	0 00
Hydrazine	42	31,669	0 00	0 00
Benzyl Chloride	47	27 118	0 00	0 00
o-Toluidine	18	25 849	0 00	0 00
Acrylamide	50	25,496	0 00	0 00
Methyl Iodide	4	25,472	0 00	0 00
Benzoic Trichloride	4	25,275	0 00	0 00
Captan	20	25,222	0 00	0 00
Chloroacetic Acid	19	24,845	0 00	0 00
Hexachloroethane	17	22,342	0 00	0 00
Selenium Compounds	28	20,721	0 00	0 00
Acrolein	12	20,075	0 00	0 00
Phosphorus (Yellow Or White)	30	16,174	0 00	0 00
Methyl Isocyanate	5	14,948	0 00	0 00
Dimethyl Sulfate	26	13,817	0 00	0 00
Hydroquinone	32	13 060	0 00	0 00
Calcium Cyanamide	1	12,620	0 00	0 00
m-Cresol	14	12,601	0 00	0 00
Pentachlorophenol	43	11,123	0 00	0 00
Carbaryl	19	10,081	0 00	0 00
Diethyl Sulfate	21	8,717	0 00	0 00
Phosgene	32	8,263	0 00	0 00
4-Nitrophenol	5	7,754	0 00	0 00
2,4-D	16	7,206	0 00	0 00
Bis(2-Chloroethyl) Ether	9	4,888	0 00	0 00
Hexachlorobenzene	9	4,591	0 00	0 00
2 4-Diaminotoluene	3	4,426	0 00	0 00

Table C-9 (Continued)

National Emissions Of HAPs — 1989

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total HAPs Emissions	Chemical % Of Total TRI Emissions
p-Phenylenediamine	4	4,083	0 00	0 00
Mercury Compounds	12	4 009	0 00	0 00
Catechol	11	3,962	0 00	0 00
Trifluralin	13	3,932	0 00	0 00
Chlordane	1	3,753	0 00	0 00
Hexachloro-1,3-Butadiene	8	3,637	0 00	0 00
Urethane	2	3,450	0 00	0 00
Heptachlor	2	3,411	0 00	0 00
o-Anisidine	6	2,048	0 00	0 00
Quintozene	5	2,040	0 00	0 00
Styrene Oxide	3	2,025	0 00	0 00
Quinone	1	1,760	0 00	0 00
Parathion	7	1,595	0 00	0 00
4,4'-Methylenebis(2-Chloroaniline)	5	1,511	0 00	0 00
Dichlorvos	7	1,325	0 00	0 00
Beryllium Compounds	5	962	0 00	0 00
1 1-Dimethyl Hydrazine	3	804	0 00	0 00
Lindane	6	787	0 00	0 00
Vinyl Bromide	1	770	0.00	0 00
Ethylene Thiourea	5	764	0 00	0 00
Propyleneimine	4	540	0 00	0 00
Methoxychlor	3	536	0 00	0 00
Propoxur	3	504	0 00	0 00
3,3'-Dimethoxybenzidine	1	500	0 00	0 00
4,6-Dinitro-o-Cresol	4	271	0 00	0 00
3,3'-Dichlorobenzidine	2	254	0 00	0 00
2 4 5-Trichlorophenol	1	250	0 00	0 00
Chloromethyl Methyl Ether	3	130	0 00	0 00
2 4,6-Trichlorophenol	2	116	0 00	0 00
Methyl Hydrazine	1	73	0 00	0 00
Bis(Chloromethyl) Ether	1	3	0 00	0 00
4-Aminobiphenyl	1	1	0 00	0 00
		1,768,664,483	100 00	70 69

TABLE C-10

National Emissions of 33/50 Chemicals

— 1989 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total 33/50 Chemicals	Chemical % Of Total TRI Emissions
Toluene	3,970	261,960 919	25 78	10 47
1,1,1-Trichloroethane	3,889	172,745,485	17 01	6 90
Xylene (Mixed Isomers)	3,532	152,001,772	14 96	6 08
Methyl Ethyl Ketone	2,480	131,116,286	12 91	5 24
Dichloromethane	1,539	122,809,412	12 09	4 91
Trichloroethylene	832	47,501,723	4 68	1 90
Methyl Isobutyl Ketone	1,049	30,895,812	3 04	1 23
Tetrachloroethylene	663	27,006,973	2 66	1 08
Benzene	475	25,863,548	2 55	1 03
Chloroform	186	25,269,682	2 49	1 01
p-Xylene	37	4,933,722	0 49	0 20
Carbon Tetrachloride	95	3,369,248	0 33	0 13
o-Xylene	69	1,808,306	0 18	0 07
Lead Compounds	569	1,570,821	0 15	0 06
Chromium Compounds	846	1,409,098	0 14	0 06
m-Xylene	53	1,200,771	0 12	0 05
Chromium	819	1,139,201	0 11	0 05
Nickel	776	1 116,287	0 11	0 04
Lead	637	861,598	0 08	0 03
Cyanide Compounds	199	824 908	0 08	0 03
Nickel Compounds	396	272,689	0 03	0 01
Cadmium Compounds	88	85,004	0 01	0 00
Cadmium	57	35,267	0 00	0 00
Mercury	38	25,085	0 00	0 00
Mercury Compounds	12	4,009	0 00	0 00
		1,015,827,626	100 00	40 60

TABLE C-11

National Emissions Of High Risk/Early Reduction Chemicals

— 1989 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total High Risk/Early Reduction Chemicals	Chemical % Of Total TRI Emissions
Benzene	475	25,863,548	56 49	1 03
1 3-Butadiene	157	5,700,676	12 45	0 23
Acrylonitrile	112	4,387,467	9 58	0 18
Ethylene Oxide	194	3,235,634	7 07	0 13
Chromium Compounds	846	1,409,098	3 08	0 06
Vinyl Chloride	49	1,269,032	2 77	0 05
Chromium	819	1,139,201	2 49	0 05
Chloroprene	7	1,006,341	2 20	0 04
Methylenebis(Phenylisocyanate)	296	380,213	0 83	0 02
Acrylic Acid	155	357,523	0 78	0 01
Vinylidene Chloride	23	220,632	0 48	0 01
Arsenic Compounds	133	175,584	0 38	0 01
Toluene-2,4-Diisocyanate	240	90,946	0 20	0 00
Cadmium Compounds	88	85,004	0 19	0 00
Dibenzofuran	106	64,510	0 14	0 00
1,2-Dibromoethane	25	59,167	0 13	0 00
Arsenic	37	58,150	0 13	0 00
Asbestos (Friable)	66	38,435	0 08	0 00
1,1 2 2-Tetrachloroethane	16	35,401	0 08	0 00
Cadmium	57	35,267	0 08	0 00
Hydrazine	42	31,669	0 07	0 00
Acrylamide	50	25,496	0 06	0 00
Benzoic Trichloride	4	25,275	0 06	0 00
Mercury	38	25,085	0 06	0 00
Acrolein	12	20,075	0 04	0 00
Methyl Isocyanate	5	14,948	0 03	0 00
Phosgene	32	8,263	0 02	0 00
Bis(2-Chloroethyl) Ether	9	4,888	0 01	0 00
Hexachlorobenzene	9	4,591	0 01	0 00
Mercury Compounds	12	4,009	0 01	0 00
Chlordane	1	3,753	0 01	0 00
Heptachlor	2	3,411	0 01	0 00
Beryllium	8	2,395	0 00	0 00
Beryllium Compounds	5	962	0 00	0 00
Propyleneimine	4	540	0 00	0 00
Chloromethyl Methyl Ether	3	130	0 00	0 00
Bis(Chloromethyl) Ether	1	3	0 00	0 00
		45,787,322	100 00	1 83

TABLE C-12

National Emissions Of Carcinogens In TRI Database

— 1989 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total Carcinogens	Chemical % Of Total TRI Emissions
Dichloromethane	1,539	122,809,412	37 12	4 91
Trichloroethylene	832	47 501,723	14 36	1 90
Styrene	1,319	34,102,196	10 31	1 36
Tetrachloroethylene	663	27,006,973	8 16	1 08
Benzene	475	25,863,548	7 82	1 03
Chloroform	186	25,269,682	7 64	1 01
Formaldehyde	840	12,925,115	3 91	0 52
Chloromethane	83	9,707,459	2 93	0 39
1,3-Butadiene	157	5,700,676	1 72	0 23
Acrylonitrile	112	4,387,467	1 33	0 18
1,2-Dichloroethane	98	4,284,066	1 29	0 17
Carbon Tetrachloride	95	3 369,248	1 02	0 13
Ethylene Oxide	194	3,235,634	0 98	0 13
Vinyl Chloride	49	1,269,032	0 38	0 05
Chromium	819	1,139,201	0 34	0 05
1,1,2-Trichloroethane	28	786,898	0 24	0 03
Epichlorohydrin	76	472,548	0 14	0 02
2-Nitropropane	10	225 222	0 07	0 01
Vinylidene Chloride	23	220,632	0 07	0 01
2,4-Dinitrotoluene	9	87,293	0 03	0 00
2,6-Dinitrotoluene	6	83,914	0 03	0 00
1,2-Dibromoethane	25	59,167	0 02	0 00
Arsenic	37	58,150	0 02	0 00
Asbestos (Friable)	66	38,435	0 01	0 00
1,1,2,2-Tetrachloroethane	16	35,401	0 01	0 00
Cadmium	57	35,267	0 01	0 00
Hydrazine	42	31,669	0 01	0 00
Benzyl Chloride	47	27,118	0 01	0 00
o-Toluidine	18	25,849	0 01	0 00
Methyl Iodide	4	25,472	0 01	0 00
Hexachloroethane	17	22,342	0 01	0 00
Dimethyl Sulfate	26	13,817	0 00	0 00
Bis(2-Chloroethyl) Ether	9	4,888	0 00	0 00
Hexachlorobenzene	9	4,591	0 00	0 00
2,4-Diaminotoluene	3	4,426	0 00	0 00
Chlordane	1	3,753	0 00	0 00
Thiourea	10	3,753	0 00	0 00
Hexachloro-1,3-Butadiene	8	3,637	0 00	0 00
Urethane	2	3,450	0 00	0 00
Heptachlor	2	3,411	0 00	0 00
Beryllium	8	2,395	0 00	0 00
Quinlozene	5	2,040	0 00	0 00
4 4'-Methylenebis(2-Chloroaniline)	5	1,511	0 00	0 00
Saccharin (Manufacturing Only)	4	1,075	0 00	0 00
1,1-Dimethyl Hydrazine	3	804	0 00	0 00
Lindane	6	787	0 00	0 00
Ethylene Thiourea	5	764	0 00	0 00
Alpha-Naphthylamine	2	672	0 00	0 00
Propyleneimine	4	540	0 00	0 00
3,3'-Dichlorobenzidine	2	254	0 00	0 00
Chloromethyl Methyl Ether	3	130	0 00	0 00
2,4,6-Trichlorophenol	2	116	0 00	0 00
Bis(Chloromethyl) Ether	1	3	0 00	0 00
		330,863,626	100 00	13 22

TABLE C-13

National Emissions Of Ozone Depletors In TRI Database

— 1989 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total Ozone Depletors	Chemical % Of Total TRI Emissions
1,1,1-Trichloroethane	3,889	172 745,485	71 94	6 90
Freon 113	1,492	64,010,405	26 66	2 56
Carbon Tetrachloride	95	3,369 248	1 40	0 13
		240,125,138	100 00	9 60

TABLE C-14

All Chemicals Reported

— 1989 —

Carc	Ozone Depl	HAP	33/50	HR/ER	Chemical	Cas No	Emitted To Air (lb/yr)	Emitted To All Media (lb/yr)
	X	X	X		1,1,1-Trichloroethane	000071556	172,745,485	172,843,753
X		X		X	1,1,2,2-Tetrachloroethane	000079345	35,401	40,839
X		X			1,1,2-Trichloroethane	000079005	786,898	795,098
X		X			1,1-Dimethyl Hydrazine	000057147	804	1,054
		X			1,2,4-Trichlorobenzene	000120821	1,151,473	1,168,684
					1,2,4-Trimethylbenzene	000095636	4,862,850	4,919,245
		X			1,2-Butylene Oxide	000106887	119,679	123,818
X		X		X	1,2-Dibromoethane	000106934	59,167	63,963
					1,2-Dichlorobenzene	000095501	377,728	488,417
X		X			1,2-Dichloroethane	000107062	4,284,066	5,557,255
					1,2-Dichloroethylene	000540590	185,992	186,775
		X			1,2-Dichloropropane	000078875	1,233,330	1,244,912
X		X		X	1,3-Butadiene	000106990	5,700,676	5,860,433
					1,3-Dichlorobenzene	000541731	11,398	11,420
		X			1,3-Dichloropropylene	000542756	50,917	51,257
		X			1,4-Dichlorobenzene	000106467	1,592,229	1,599,350
		X			1,4-Dioxane	000123911	821,020	1,121,994
		X			2,4,5-Trichlorophenol	000095954	250	250
X		X			2,4,6-Trichlorophenol	000088062	116	131
		X			2,4-D	000094757	7,206	11,288
					2,4-Diaminoanisole	000615054	250	250
X		X			2,4-Diaminotoluene	000095807	4,426	4,676
					2,4-Dichlorophenol	000120832	1,553	8,220
					2,4-Dimethylphenol	000105679	1,680	27,556
					2,4-Dinitrophenol	000051285	13,652	178,216
X		X			2,4-Dinitrotoluene	000121142	87 293	167,575
X					2,6-Dinitrotoluene	000606202	83,914	102,997
					2,6-Xylidine	000087627	44	1,950
					2-Ethoxyethanol	000110805	1,655,035	1,751,155
					2-Methoxyethanol	000109864	2,690,364	2,740,904
					2-Nitrophenol	000088755	4,405	4,411
X		X			2-Nitropropane	000079469	225,222	464,922
					2-Phenylphenol	000090437	8,052	8,186
X		X			3,3'-Dichlorobenzidine	000091941	254	254
		X			3,3'-Dimethoxybenzidine	000119904	500	500
					4,4'-Diaminodiphenyl Ether	000101804	630	1,225
					4,4'-Isopropylidenediphenol	000080057	227,255	1,009,141
X		X			4,4'-Methylenebis (2-Chloroaniline)	000101144	1,511	1,511
		X			4,4'-Methylenedianiline	000101779	47,760	144,215
		X			4,6-Dinitro-o-Cresol	000534521	271	276
		X			4-Aminobiphenyl	000092671	1	10
		X			4-Nitrophenol	000100027	7,754	9,554
					5-Nitro-o-Anisidine	000099592	500	500
		X			Acetaldehyde	000075070	7,769,993	9,790,308
					Acetone	000067641	202,624,803	208,394,872
		X			Acetonitrile	000075058	1,459,180	19,585,226
		X		X	Acrolein	000107028	20,075	46,537
		X		X	Acrylamide	000079061	25,496	3,373,860

Table C-14 (Continued)

All Chemicals Reported — 1989

Carc	Ozone Depl	HAP	33/50	HR/ER	Chemical	Cas No	Emitted To Air (lb/yr)	Emitted To All Media (lb/yr)
		X		X	Acrylic Acid	000079107	357 523	19,097,983
X		X		X	Acrylonitrile	000107131	4,387,467	10,186 969
		X			Allyl Chloride	000107051	175 603	177,467
X					Alpha-Naphthylamine	000134327	672	672
					Aluminum (Fume Or Dust)	007429905	2,952,898	6,416,195
					Aluminum Oxide (Fibrous Form)	001344281	1,552,712	13,946,756
					Ammonia	007664417	251,967,698	351,422,895
					Ammonium Nitrate (Solution)	006484522	3,453,887	23,550,830
					Ammonium Sulfate (Solution)	007783202	860 261	9,373,978
		X			Aniline	000062533	504,140	3,789,074
					Anthracene	000120127	94,950	113 676
					Antimony	007440360	103,969	196,078
		X			Antimony Compounds		166,372	1,077,569
X				X	Arsenic	007440382	58,150	85,744
		X		X	Arsenic Compounds		175,584	4,227,086
X		X		X	Asbestos (Friable)	001332214	38,435	836 395
					Barium	007440393	279,226	665 242
					Barium Compounds		735,231	4,911,340
					Benzal Chloride	000098873	5,456	5,456
					Benzamide	000055210	500	1,000
X		X	X	X	Benzene	000071432	25,863,548	26,815,255
		X		X	Benzoic Trichloride	000098077	25,275	25,275
					Benzoyl Chloride	000098884	36,896	205,396
					Benzoyl Peroxide	000094360	5,074	5,074
X		X			Benzyl Chloride	000100447	27,118	28,019
X				X	Beryllium	007440417	2,395	34 289
		X		X	Beryllium Compounds		962	36,984
		X			Biphenyl	000092524	1,089,079	1,144,208
					Bis(2-Chloro-1-Methylethyl) Ether	000108601	3,359	15,359
X		X		X	Bis(2-Chloroethyl) Ether	000111444	4,888	6,440
					Bis(2-Ethylhexyl) Adipate	000103231	65,407	98,331
X		X		X	Bis(Chloromethyl) Ether	000542881	3	3
		X			Bromomethane	000074839	2,594,426	2,660,951
					Butyl Acrylate	000141322	312,076	318,940
					Butyl Benzyl Phthalate	000085687	273,922	275,537
					Butyraldehyde	000123728	1,540,346	1,552,483
					C I Basic Green 4	000569642	750	750
					C I Basic Red 1	000989388	250	250
					C I Direct Black 38	001937377	500	500
					C I Disperse Yellow 3	002832408	359	1,229
					C I Food Red 15	000081889	250	250
					C I Solvent Yellow 14	000842079	500	500
X			X	X	Cadmium	007440439	35,267	113,078
		X	X	X	Cadmium Compounds		85,004	334,379
		X			Calcium Cyanamide	000156627	12,620	16,220
		X			Captan	000133062	25,222	31,222
		X			Carbaryl	000063252	10,081	44,533
		X			Carbon Disulfide	000075150	99,983,802	100,033,224

Table C-14 (Continued)

All Chemicals Reported — 1989

Carc	Ozone Depl	HAP	33/50	HR/ER	Chemical	Cas No	Emitted To Air (lb/yr)	Emitted To All Media (lb/yr)
X	X	X	X		Carbon Tetrachloride	000056235	3,369,248	3,508,313
		X			Carbonyl Sulfide	000463581	18,075,606	18,075,606
		X			Catechol	000120809	3,962	83,914
X		X		X	Chlordane	000057749	3,753	3,757
		X			Chlorine	007782505	132,643,321	135,163 021
					Chlorine Dioxide	010049044	7,021,391	7,022,641
		X			Chloroacetic Acid	000079118	24,845	26,379
		X			Chlorobenzene	000108907	4,051,144	4,203,273
		X			Chloroethane	000075003	4,788,171	4,860,070
X		X	X		Chloroform	000067663	25,269,682	26,588,615
X		X			Chloromethane	000074873	9,707,459	9,996,108
X		X		X	Chloromethyl Methyl Ether	000107302	130	130
					Chlorophenols		4 564	142 482
		X		X	Chloroprene	000126998	1,006,341	1,164 533
					Chlorothalonil	001897456	29,497	29,750
X			X	X	Chromium	007440473	1,139,201	2,317,631
		X	X	X	Chromium Compounds		1,409,098	30,666,944
					Cobalt	007440484	48,002	91,069
		X			Cobalt Compounds		79,100	143,460
					Copper	007440508	2,255,291	7,544,114
					Copper Compounds		3,812,785	44,662,855
		X			Cresol (Mixed Isomers)	001319773	897,744	2 975,174
		X			Cumene	000098828	4,400,247	4,441,236
					Cumene Hydroperoxide	000080159	115,621	250,487
					Cupferron	000135206	1,500	1,500
			X		Cyanide Compounds		824,908	957,839
					Cyclohexane	000110827	17 684,695	18,108,716
					Decabromodiphenyl Oxide	001163195	49,957	55,752
		X			Di(2-Ethylhexyl) Phthalate	000117817	1,078,940	1,087,122
					Diaminotoluene (Mixed Isomers)	025376458	19,723	117,271
		X		X	Dibenzofuran	000132649	64,510	72,701
		X			Dibutyl Phthalate	000084742	234,380	558,902
					Dichlorobenzene (Mixed Isomers)	025321226	137,912	138,097
X		X	X		Dichloromethane	000075092	122 809,412	124,987,494
		X			Dichlorvos	000062737	1,325	1,325
					Dicofol	000115322	1,329	1,579
		X			Diethanolamine	000111422	484 958	731,739
					Diethyl Phthalate	000084662	92,610	102,010
		X			Diethyl Sulfate	000064675	8,717	8,967
		X			Dimethyl Phthalate	000131113	363,430	364,995
X		X			Dimethyl Sulfate	000077781	13,817	14,367
X		X			Epichlorohydrin	000106898	472,548	676,504
		X			Ethyl Acrylate	000140885	195,685	200,154
					Ethyl Chloroformate	000541413	8 642	8,642
		X			Ethylbenzene	000100414	9,062,195	9,227,781
					Ethylene	000074851	42,468,462	42,518,182
		X			Ethylene Glycol	000107211	13,197,795	25,154,849
X		X		X	Ethylene Oxide	000075218	3,235,634	3,295,032

Table C-14 (Continued)

All Chemicals Reported — 1989

Carc	Ozone Depl	HAP	33/50	HR/ER	Chemical	Cas No	Emitted To Air (lb/yr)	Emitted To All Media (lb/yr)
X		X			Ethylene Thiourea	000096457	764	764
					Fluometuron	002164172	540	540
X		X			Formaldehyde	000050000	12,925,115	22,341,763
	X				Freon 113	000076131	64,010,405	64,051,985
		X			Glycol Ethers		47,977,093	48,583,092
X		X		X	Heptachlor	000076448	3,411	3,413
X		X			Hexachloro-1,3-Butadiene	000087683	3,637	4,590
X		X		X	Hexachlorobenzene	000118741	4,591	5,305
		X			Hexachlorocyclopentadiene	000077474	89,246	89,252
X		X			Hexachloroethane	000067721	22,342	23,534
X		X		X	Hydrazine	000302012	31,669	33,963
					Hydrazine Sulfate	010034932	1	1
		X			Hydrochloric Acid	007647010	73,204,206	348,510,982
					Hydrogen Cyanide	000074908	771,587	4,311,595
		X			Hydrogen Fluoride	007664393	10,006,434	10,052,295
		X			Hydroquinone	000123319	13,060	114,313
					Isobutyraldehyde	000078842	559,749	561,543
					Isopropyl Alcohol (Manufacturing)	000067630	5,578,738	5,609,844
			X		Lead	007439921	861,598	5,752,274
		X	X		Lead Compounds		1,570,821	15,810,824
X		X			Lindane	000058899	787	1,037
		X			m-Cresol	000108394	12,601	12,636
		X	X		m-Xylene	000108383	1,200,771	1,209,144
		X			Maleic Anhydride	000108316	451,062	454,132
					Maneb	012427382	1,781	1,781
					Manganese	007439965	3,020,671	10,053,073
		X			Manganese Compounds		1,833,491	87,121,399
			X	X	Mercury	007439976	25,085	31,582
		X	X	X	Mercury Compounds		4,009	4,263
		X			Methanol	000067561	206,396,888	254,329,158
		X			Methoxychlor	000072435	536	1,036
					Methyl Acrylate	000096333	194,201	195,818
		X	X		Methyl Ethyl Ketone	000078933	131,116,286	131,325,040
		X		X	Methyl Hydrazine	000060344	73	73
X		X			Methyl Iodide	000074884	25,472	30,558
		X	X		Methyl Isobutyl Ketone	000108101	30,895,812	31,447,960
		X		X	Methyl Isocyanate	000624839	14,948	15,262
		X			Methyl Methacrylate	000080626	3,149,059	3,379,675
		X			Methyl Tert-Butyl Ether	001634044	3,008,160	3,066,189
					Methylene Bromide	000074953	36,364	36,364
		X		X	Methylenebis(Phenylisocyanate)	000101688	380,213	524,857
					Michler'S Ketone	000090948	144	144
					Molybdenum Trioxide	001313275	100,669	228,750
		X			N,N-Dimethylaniline	000121697	91,759	108,196
					n-Butyl Alcohol	000071363	36,603,123	39,068,682
					n-Dioctyl Phthalate	000117840	523,344	523,614
		X			Naphthalene	000091203	3,456,537	3,741,110
			X		Nickel	007440020	1,116,287	2,002,953
		X	X		Nickel Compounds		272,689	2,429,302

Table C-14 (Continued)

All Chemicals Reported — 1989

Carc	Ozone Depl	HAP	33/50	HR/ER	Chemical	Cas No	Emitted To Air (lb/yr)	Emitted To All Media (lb/yr)
					Nitric Acid	007697372	5,296,753	13,501,235
					Nitrilotriacetic Acid	000139139	2,500	12,700
		X			Nitrobenzene	000098953	38,791	596,145
					Nitroglycerin	000055630	35,807	36,557
		X			o-Anisidine	000090040	2,048	7,247
		X			o-Cresol	000095487	59,666	63,324
X		X			o-Toluidine	000095534	25,849	27,603
		X	X		o-Xylene	000095476	1,808,306	1,814,921
					p-Anisidine	000104949	4	4
					p-Cresidine	000120718	2,210	2,710
		X			p-Cresol	000106445	255,484	270,644
					p-Nitrosodiphenylamine	000156105	24	24
		X			p-Phenylenediamine	000106503	4,083	7,183
		X	X		p-Xylene	000106423	4,933,722	4,938,024
		X			Parathion	000056382	1,595	1,595
		X			Pentachlorophenol	000087865	11,123	19,448
					Peracetic Acid	000079210	9,484	9,524
		X			Phenol	000108952	9,023,094	13,062,422
		X		X	Phosgene	000075445	8,263	8,763
					Phosphoric Acid	007664382	1,933,011	35,890,952
		X			Phosphorus (Yellow Or White)	007723140	16,174	196,187
		X			Phthalic Anhydride	000085449	650,151	654,791
					Picric Acid	000088891	252	752
		X			Propionaldehyde	000123386	1,077,469	1,082,398
		X			Propoxur	000114261	504	504
					Propylene	000115071	24,198,627	24,199,830
		X			Propylene Oxide	000075569	2,050,182	2,408,000
X		X		X	Propyleneimine	000075558	540	540
					Pyridine	000110861	143,003	805,900
		X			Quinoline	000091225	64,224	67,069
		X			Quinone	000106514	1,760	1,772
X		X			Quintozene	000082688	2,040	2,290
X					Saccharin (Manufacturing Only)	000081072	1,075	1,075
					Sec-Butyl Alcohol	000078922	981,117	987,835
					Selenium	007782492	13,950	238,014
		X			Selenium Compounds		20,721	28,292
					Silver	007440224	15,282	26,555
					Silver Compounds		21,213	45,231
X		X			Styrene	000100425	34,102,196	34,348,492
		X			Styrene Oxide	000096093	2,025	2,025
					Sulfuric Acid	007664939	24,660,675	164,295,026
					Tert-Butyl Alcohol	000075650	1,459,744	2,429,047
X		X	X		Tetrachloroethylene	000127184	27,006,973	27,120,807
					Tetrachlorvinphos	000961115	500	500
					Thallium	007440280	1,000	1,500
					Thallium Compounds		256	506
X					Thiourea	000062566	3,753	11,123
					Thorium Dioxide	001314201	860	860
		X			Titanium Tetrachloride	007550450	57,287	57,287
		X	X		Toluene	000108883	261,960,919	263,167,136

Table C-14 (Continued)

All Chemicals Reported — 1989

Carc	Ozone Depl	HAP	33/50	HR/ER	Chemical	Cas No	Emitted To Air (lb/yr)	Emitted To All Media (lb/yr)
		X		X	Toluene-2,4-Diisocyanate	000584849	90,946	94,516
					Toluene-2,6-Diisocyanate	000091087	51,357	63,537
					Trichlorfon	000052686	847	848
X		X	X		Trichloroethylene	000079016	47,501,723	47,525,746
		X			Trifluralin	001582098	3,932	5,224
X		X			Urethane	000051796	3,450	3,450
					Vanadium (Fume Or Dust)	007440622	9,347	17,502
		X			Vinyl Acetate	000108054	5,504,693	6,828,896
		X			Vinyl Bromide	000593602	770	1,040
X		X		X	Vinyl Chloride	000075014	1,269,032	1,276,291
X		X		X	Vinylidene Chloride	000075354	220,632	224,583
		X	X		Xylene (Mixed Isomers)	001330207	152,001,772	152,646,551
					Zinc (Fume Or Dust)	007440666	3,529,302	19,052,034
					Zinc Compounds		4,742,696	95,686,717
					Zineb	012122677	500	500
							2,501,993,075	3,573,226,573

Appendix D

- Data from Basic Data Set -

TABLE D-1

Regional Hot Spots

— 1988 EPA REGIONS —

Rank	EPA Region	Total Emissions (lb/yr)	Region % Of Total TRI Emissions	Rank	Chemical	Total Emissions (lb/yr)
1	4	652,133,885	25 02	1	Methanol	94,637,255
				2	Acetone	75 692,429
				3	Toluene	73,561,782
				4	Carbon Disulfide	67,670,727
				5	Ammonia	45,194,518
				6	Xylene (Mixed Isomers)	29,062,164
				7	1,1,1-Trichloroethane	28,432,275
				8	Methyl Ethyl Ketone	27,658,144
				9	Dichloromethane	27,224,961
				10	Hydrochloric Acid	21,500,343
2	5	553,441,733	21 23	1	Toluene	78,490,646
				2	Xylene (Mixed Isomers)	52,881,418
				3	1,1,1-Trichloroethane	47,305,603
				4	Methyl Ethyl Ketone	46,656,380
				5	Acetone	44,235,241
				6	Dichloromethane	34,855,051
				7	Ammonia	27,750,409
				8	Methanol	25,843,471
				9	Glycol Ethers	19,558,414
				10	Trichloroethylene	16,665,650
3	6	409,689,743	15 72	1	Ammonia	107,664,241
				2	Ethylene	29,550,610
				3	Methanol	28,083,568
				4	Toluene	27,714 608
				5	Xylene (Mixed Isomers)	19,993,500
				6	Propylene	15,323,839
				7	Acetone	12,927,816
				8	Methyl Ethyl Ketone	12,420,281
				9	1,1,1-Trichloroethane	10,766,165
				10	Carbon Disulfide	9,763,186
4	3	277,038,496	10 63	1	Carbon Disulfide	35,116,931
				2	Methanol	34,461,663
				3	Toluene	34,221 901
				4	Acetone	26,794,011
				5	1,1,1-Trichloroethane	16,613,664
				6	Methyl Ethyl Ketone	14,689,970
				7	Xylene (Mixed Isomers)	13 912,900
				8	Ammonia	12,317,581
				9	Dichloromethane	11,081,451
				10	Hydrochloric Acid	9,206,041
5	2	151,907,179	5 83	1	Toluene	23,419,719
				2	Dichloromethane	20,014,417
				3	Acetone	16,372,840
				4	Methanol	14,577,599
				5	1,1,1-Trichloroethane	9,744 601
				6	Methyl Ethyl Ketone	8,087,378
				7	Freon 113	7,492,175
				8	Xylene (Mixed Isomers)	6,692,209
				9	Hydrochloric Acid	6,183,416
				10	Trichloroethylene	4,485,069
6	7	143,589,419	5 51	1	Toluene	23,292,560
				2	Xylene (Mixed Isomers)	18,489,775
				3	Ammonia	18,172,917
				4	Methyl Ethyl Ketone	8,811,930
				5	1,1,1-Trichloroethane	8,700,961
				6	Methanol	8,687,331
				7	Tetrachloroethylene	6,866 658
				8	Acetone	6,746,465
				9	Dichloromethane	6,244,763
				10	Trichloroethylene	4,638,457
7	8	142,579,669	5 47	1	Chlorine	102 408 134
				2	Hydrochloric Acid	9,271,940
				3	1,1,1-Trichloroethane	5,436,487
				4	Freon 113	2,930,769
				5	Toluene	2,578,218
				6	Dichloromethane	2,207,302
				7	Xylene (Mixed Isomers)	2,071,769
				8	Acetone	1,437,802
				9	Ammonia	1,338,571
				10	Methanol	1,254,540
8	9	107,971,558	4 14	1	1,1,1-Trichloroethane	25,889,602
				2	Freon 113	10,062,729
				3	Ammonia	9,519,741
				4	Acetone	7,901,541
				5	Dichloromethane	7,405,776
				6	Toluene	5 639,533
				7	Methanol	5,568,738
				8	Tetrachloroethylene	4,885,383
				9	Methyl Ethyl Ketone	4,229,644
				10	Xylene (Mixed Isomers)	3,068,127
9	1	90,868,669	3 49	1	1,1,1-Trichloroethane	18,876,892
				2	Toluene	11,162,157
				3	Dichloromethane	8,115,563
				4	Freon 113	7,332,435
				5	Acetone	5,220,644
				6	Methanol	5,199,251
				7	Methyl Ethyl Ketone	5,170,215
				8	Chlorine	3,549,462
				9	Trichloroethylene	3,477,945
				10	Tetrachloroethylene	3,405,479
10	10	77,422,408	2 97	1	Ammonia	26,745,610
				2	Methanol	7,783,428
				3	Acetone	5,951,425
				4	Toluene	5,222,793
				5	Methyl Ethyl Ketone	3,150,974
				6	Chloroform	3,104,021
				7	Trichloroethylene	2,278,701
				8	Xylene (Mixed Isomers)	2 175,089
				9	1,1,1-Trichloroethane	2,154,739
				10	Styrene	2,081,759

TABLE D-2

State Emissions

— 1988 —

State	Rank	Chemical	Total Emissions (lb/yr)	No Of Emitters	% Of State Total
AK	1	Ammonia	20,660,635	4	94 99
	2	Hydrochloric Acid	490,250	1	2 25
	3	Methanol	254,991	2	1 17
	4	Chloroform	180,300	1	0 83
	5	Xylene (Mixed Isomers)	32,200	3	0 15
	6	Sulfuric Acid	29,200	1	0 13
	7	Toluene	29,144	3	0 13
	8	Benzene	29,071	3	0 13
	9	Cyclohexane	18,740	3	0 09
	10	Ethylbenzene	13,975	3	0 06
AL	1	Carbon Disulfide	44,948,000	3	43 02
	2	Methyl Ethyl Ketone	7,137,478	34	6 83
	3	Methanol	6,484,155	49	6 21
	4	Xylene (Mixed Isomers)	4,971,533	73	4 76
	5	Hydrochloric Acid	4,904,351	55	4 69
	6	Toluene	4,727,058	72	4 52
	7	Chlorine	4,240,035	39	4 06
	8	Chloroform	3,054,254	11	2 92
	9	Chlorine Dioxide	3,034,379	10	2 90
	10	1,1,1-Trichloroethane	2,561,748	43	2 45
AR	1	Ammonia	14,523,735	59	30 01
	2	Toluene	4,664,579	75	9 64
	3	Methanol	3,889,788	35	8 04
	4	Xylene (Mixed Isomers)	3,730,906	72	7 71
	5	Acetone	3,527,423	47	7 29
	6	Methyl Ethyl Ketone	2,671,626	36	5 52
	7	Carbon Disulfide	2,049,570	3	4 23
	8	Freon 113	2,039,951	19	4 21
	9	Dichloromethane	1,789,437	25	3 70
	10	1,1,1-Trichloroethane	1,592,489	40	3 29
AS	1	Ammonia	29,500	2	100
AZ	1	Acetone	2,551,806	26	15 76
	2	Freon 113	2,485,998	44	15 35
	3	1,1,1-Trichloroethane	2,460,595	43	15 20
	4	Copper Compounds	1,908,690	5	11 79
	5	Ammonia	894,926	21	5 53
	6	Toluene	832,597	12	5 14
	7	Methanol	701,353	15	4 33
	8	Dichloromethane	485,791	13	3 00
	9	Methyl Ethyl Ketone	451,137	18	2 79
	10	Copper	387,040	2	2 39
CA	1	1,1,1-Trichloroethane	23,392,167	456	25 94
	2	Ammonia	8,435,859	201	9 35
	3	Freon 113	7,534,069	186	8 35
	4	Dichloromethane	6,844,190	129	7 59
	5	Acetone	5,259,960	244	5 83
	6	Methanol	4,866,885	131	5 40
	7	Tetrachloroethylene	4,612,922	103	5 11
	8	Toluene	4,479,653	223	4 97
	9	Methyl Ethyl Ketone	3,751,693	192	4 16
	10	Xylene (Mixed Isomers)	2,864,267	180	3 18
CO	1	1,1,1-Trichloroethane	1,743,775	36	14 44
	2	Freon 113	1,576,790	31	13 05
	3	Acetone	903,416	23	7 48
	4	Glycol Ethers	838,096	7	6 94
	5	n-Butyl Alcohol	810,366	7	6 71
	6	Toluene	784,535	19	6 50
	7	Methanol	770,647	13	6 38
	8	Dichloromethane	746,770	13	6 18
	9	Aluminum (Fume Or Dust)	583,357	6	4 83
	10	Tetrachloroethylene	374,927	6	3 10
CT	1	1,1,1-Trichloroethane	9,908,702	149	39 09
	2	Dichloromethane	2,809,094	50	11'08
	3	Tetrachloroethylene	2,348,032	31	9 26
	4	Freon 113	2,033,250	45	8 02
	5	Toluene	1,634,831	48	6 45
	6	Methanol	1,298,043	27	5 12
	7	Methyl Ethyl Ketone	965,168	40	3 81
	8	Acetone	425,803	29	1 68
	9	Xylene (Mixed Isomers)	409,040	35	1 61
	10	Chloroethane	407,750	2	1 61
DC	1	Copper Compounds	250	1	100
DE	1	Methanol	1,454,126	14	19 22
	2	Xylene (Mixed Isomers)	1,201,581	6	15 88
	3	Hydrochloric Acid	900,001	14	11 90
	4	Carbonyl Sulfide	840,000	1	11 10
	5	Methyl Ethyl Ketone	425,155	8	5 62
	6	Trichloroethylene	301,000	1	3 98
	7	Methyl Isobutyl Ketone	236,400	2	3 13
	8	Vinyl Chloride	176,927	3	2 34
	9	Carbon Tetrachloride	170,000	1	2 25
	10	Toluene	165,278	14	2 18
FL	1	Ammonia	10,940,681	70	21 78
	2	Acetone	8,679,725	98	17 28
	3	Methanol	6,425,844	34	12 79
	4	Dichloromethane	3,436,020	34	6 84
	5	Toluene	2,742,899	48	5 46
	6	Freon 113	2,198,136	53	4 38
	7	1,1,1-Trichloroethane	2,101,721	66	4 18
	8	Styrene	1,856,055	61	3 69
	9	Chlorine	1,656,026	32	3 30
	10	Cyclohexane	1,171,546	3	2 33
GA	1	Methanol	27,650,789	67	32 11
	2	Acetone	7,637,171	65	8 87
	3	Toluene	6,829,183	88	7 93
	4	Hydrochloric Acid	5,297,951	51	6 15
	5	Xylene (Mixed Isomers)	4,232,468	101	4 91
	6	Ammonia	3,911,347	77	4 54
	7	Dichloromethane	3,686,220	50	4 28
	8	1,1,1-Trichloroethane	3,271,889	79	3 80
	9	Trichloroethylene	2,966,079	15	3 44
	10	Methyl Isobutyl Ketone	2,681,647	29	3 11
HI	1	Ammonia	141,100	5	-16 14
	2	Propylene	111,800	2	12 79
	3	Toluene	97,400	2	11 14
	4	m-Xylene	72,700	2	8 32
	5	Dichloromethane	68,945	1	7 89
	6	Glycol Ethers	64,129	1	7 34
	7	n-Butyl Alcohol	56,629	1	6 48
	8	Benzene	40,400	2	4 62
	9	o-Xylene	37,500	2	4 29
	10	1,1,1-Trichloroethane	35,840	2	4 10
IA	1	Toluene	8,807,952	66	20 34
	2	Ammonia	6,845,792	52	15 81
	3	Xylene (Mixed Isomers)	3,814,251	83	8 81
	4	Methyl Ethyl Ketone	3,166,768	27	7 31
	5	1,1,1-Trichloroethane	3,135,719	59	7 24
	6	Tetrachloroethylene	2,827,552	16	6 53
	7	Methanol	2,779,641	23	6 42
	8	Acetone	2,555,297	34	5 90
	9	Ethylene	2,000,000	1	4 62
	10	Dichloromethane	951,414	17	2 20

Table D-2 (Continued)

State Emissions — 1988

State	Rank	Chemical	Total Emissions (lb/yr)	No Of Emitters	% Of State Total
ID	1	Ammonia	1,895,667	17	35 38
	2	Chloroform	700,000	1	13 06
	3	Methanol	636,143	6	11 87
	4	Chlorine Dioxide	540,250	1	10 08
	5	Formaldehyde	260,407	7	4 86
	6	Freon 113	252,289	3	4 71
	7	Acetone	211,956	8	3 96
	8	Sulfuric Acid	191,414	12	3 57
	9	Chlorine	153,001	11	2 86
	10	1,1,1-Trichloroethane	122,650	3	2.29
IL	1	Toluene	18,169,523	213	17
	2	1,1,1-Trichloroethane	10,509,459	226	9 83
	3	Ammonia	7,582,468	106	7 10
	4	Xylene (Mixed Isomers)	6,585,293	197	6 16
	5	Ethylene	5,415,520	15	5 07
	6	Methyl Ethyl Ketone	5,038,220	139	4.71
	7	Chlorine	4,391,243	54	4 11
	8	Dichloromethane	4,223,386	106	3 95
	9	Trichloroethylene	4,159,306	105	3 89
	10	Acetone	3,617,824	113	3 39
IN	1	Toluene	16,026,510	183	14 65
	2	Dichloromethane	13,933,992	81	12 74
	3	1,1,1-Trichloroethane	10,482,348	141	9 58
	4	Acetone	10,273,759	113	9 39
	5	Xylene (Mixed Isomers)	9,145,786	179	8 36
	6	Methyl Ethyl Ketone	7,388,014	110	6 75
	7	Trichloroethylene	5,100,863	65	4 66
	8	Methanol	3,302,760	86	3 02
	9	Benzene	3,292,165	16	3 01
	10	Carbon Disulfide	2,976,627	3	2 72
KS	1	Ammonia	5,296,601	36	16 69
	2	Toluene	3,121,419	53	9 84
	3	Tetrachloroethylene	3,074,561	7	9 69
	4	Xylene (Mixed Isomers)	2,879,182	45	9 07
	5	Trichloroethylene	2,530,285	13	7 97
	6	Methanol	2,228,337	18	7 02
	7	Methyl Ethyl Ketone	1,712,653	24	5 40
	8	Carbon Disulfide	1,385,500	2	4 37
	9	Acetone	1,154,190	28	3 64
	10	Propylene	897,648	6	2 83
KY	1	Toluene	10,219,305	67	21 32
	2	Methanol	6,607,884	32	13 78
	3	Xylene (Mixed Isomers)	5,018,432	65	10 47
	4	1,1,1-Trichloroethane	2,562,103	48	5 34
	5	Ethylene	2,459,861	5	5 13
	6	Hydrochloric Acid	2,196,650	36	4 58
	7	Acetone	2,121,527	41	4 43
	8	Glycol Ethers	1,833,386	24	3 82
	9	Dichloromethane	1,381,160	22	2 88
	10	Methyl Ethyl Ketone	1,004,818	32	2 10
LA	1	Ammonia	71,535,550	59	54 20
	2	Methanol	7,093,996	65	5 37
	3	Toluene	6,870,011	71	5 21
	4	Ethylene	5,540,190	38	4 20
	5	Carbon Disulfide	5,247,818	8	3 98
	6	Propylene	3,773,019	30	2 86
	7	Xylene (Mixed Isomers)	2,566,876	55	1 94
	8	Methyl Ethyl Ketone	2,012,907	36	1 53
	9	Hydrochloric Acid	1,948,480	53	1 48
	10	Benzene	1,810,313	38	1 37
MA	1	Toluene	4,917,993	104	18 06
	2	1 1,1-Trichloroethane	4,630,088	138	17
	3	Freon 113	3,319,147	77	12 19
	4	Dichloromethane	2,279,665	59	8 37
	5	Methyl Ethyl Ketone	2,144,178	66	7 87
	6	Trichloroethylene	2,116,074	51	7 77
	7	Acetone	1,526,689	71	5 61
	8	Methanol	1,415,501	68	5 20
	9	Xylene (Mixed Isomers)	779,034	56	2 86
	10	2-Methoxyethanol	533,211	10	1 96
MD	1	Methanol	3,153,038	16	17 54
	2	Ammonia	2,059,928	29	11 46
	3	Toluene	1,793,075	26	9 97
	4	1,1,1-Trichloroethane	1,644,290	36	9 15
	5	Hydrochloric Acid	1,396,962	26	7 77
	6	Methyl Ethyl Ketone	1,066,540	24	5 93
	7	Chlorine	1,008,258	12	5 61
	8	Dichloromethane	713,659	15	3 97
	9	Chloroform	680,000	1	3 78
	10	Chlorine Dioxide	640,034	1	3 56
ME	1	Chlorine	2,849,654	14	16 72
	2	Methanol	1,989,774	12	11 67
	3	1,1,1-Trichloroethane	1,736,434	22	10 19
	4	Chlorine Dioxide	1,653,837	7	9 70
	5	Acetone	1,536,358	22	9 01
	6	Chloroform	1,397,157	7	8 20
	7	2-Methoxyethanol	865,967	2	5 08
	8	Sulfuric Acid	656,779	19	3 85
	9	Xylene (Mixed Isomers)	652,809	16	3 83
	10	Toluene	650,434	14	3 82
MI	1	Toluene	14,952,510	188	15 25
	2	Xylene (Mixed Isomers)	13,712,129	150	13 99
	3	Acetone	10,819,803	140	11 04
	4	Dichloromethane	8,168,600	73	8.33
	5	Methyl Ethyl Ketone	7,922,942	125	8 08
	6	Methanol	5,483,234	89	5.59
	7	1,1,1-Trichloroethane	5,064,585	149	5 17
	8	Glycol Ethers	4,614,750	89	4 71
	9	Trichloroethylene	3,236,570	48	3 30
	10	n-Butyl Alcohol	2,875,713	58	2 93
MN	1	Methyl Ethyl Ketone	13,278,594	39	24 49
	2	Toluene	11,275,176	68	20 80
	3	Xylene (Mixed Isomers)	4,988,351	52	9 20
	4	Freon 113	3,412,090	49	6 29
	5	1,1,1-Trichloroethane	3,038,744	67	5 60
	6	Dichloromethane	2,691,096	40	4 96
	7	Acetone	2,638,627	52	4 87
	8	Methanol	2,303,642	26	4 25
	9	Glycol Ethers	1,246,963	25	2 30
	10	n-Butyl Alcohol	958,482	20	1 77
MO	1	Xylene (Mixed Isomers)	10,576,998	106	21 18
	2	Toluene	6,087,211	125	12 19
	3	1,1,1-Trichloroethane	3,801,918	87	7 61
	4	Dichloromethane	3,443,877	54	6 89
	5	Methyl Ethyl Ketone	3,242,472	72	6 49
	6	Methanol	3,159,647	56	6 33
	7	Glycol Ethers	2,812,957	45	5 63
	8	Acetone	2,497,292	69	5 00
	9	n-Butyl Alcohol	2,391,795	35	4 79
	10	Trichloroethylene	1,870,424	30	3 74

Table D-2 (Continued)

State Emissions — 1988

State	Rank	Chemical	Total Emissions (lb/yr)	No Of Emitters	% Of State Total
MS	1	Ammonia	16,271,827	41	27 30
	2	Toluene	7,567,434	58	12 70
	3	Carbonyl Sulfide	6,498,000	2	10 90
	4	Methyl Ethyl Ketone	5,005,205	20	8 40
	5	Xylene (Mixed Isomers)	4,463,188	56	7 49
	6	Dichloromethane	3,655,832	19	6 13
	7	Trichloroethylene	2,612,609	9	4 38
	8	Methanol	1,747,770	28	2 93
	9	1,1,1-Trichloroethane	1,291,750	32	2 17
	10	Methyl Isobutyl Ketone	1,182,594	14	1 98
MT	1	Hydrogen Fluoride	433,639	5	18 33
	2	Xylene (Mixed Isomers)	296,050	5	12 51
	3	Toluene	199,890	5	8 45
	4	Propylene	183,400	3	7 75
	5	Methanol	151,040	4	6 38
	6	Formaldehyde	126,421	4	5 34
	7	Chlorine	105,790	4	4 47
	8	Lead Compounds	84,250	2	3 56
	9	Ethylene	79,300	3	3 35
	10	Ammonia	78,650	5	3 32
NC	1	Methanol	18,703,269	188	19 31
	2	Toluene	18,327,060	187	18 92
	3	Dichloromethane	8,026,515	57	8 29
	4	Acetone	7,458,996	150	7 70
	5	Methyl Ethyl Ketone	6,349,686	136	6 56
	6	1,1,1-Trichloroethane	6,078,814	150	6 28
	7	Hydrochloric Acid	3,583,078	52	3 70
	8	Ammonia	3,324,979	103	3 43
	9	Xylene (Mixed Isomers)	2,657,280	120	2 74
	10	p-Xylene	2,197,200	2	2 27
ND	1	Methyl Ethyl Ketone	226,511	5	17 86
	2	Xylene (Mixed Isomers)	203,073	6	16 02
	3	Toluene	148,094	3	11 68
	4	Acetone	134,695	1	10 62
	5	Freon 113	99,245	1	7 83
	6	1,1,1-Trichloroethane	80,872	3	6 38
	7	Styrene	46,500	3	3 67
	8	Methyl Isobutyl Ketone	44,681	2	3 52
	9	Ammonia	40,250	2	3 17
	10	Propylene	35,281	1	2 78
NE	1	Toluene	5,275,978	24	28 34
	2	Ammonia	4,165,167	28	22 37
	3	Dichloromethane	1,417,869	6	7 62
	4	Xylene (Mixed Isomers)	1,219,344	28	6 55
	5	Freon 113	997,787	8	5 36
	6	1,1,1-Trichloroethane	984,064	26	5 29
	7	Methyl Ethyl Ketone	690,037	13	3 71
	8	Acetone	539,687	16	2 90
	9	Methanol	519,706	7	2 79
	10	Methyl Isobutyl Ketone	491,764	10	2 64
NH	1	Dichloromethane	2,279,520	15	19 07
	2	Toluene	1,905,223	21	15 94
	3	1,1,1-Trichloroethane	1,450,686	42	12 14
	4	Freon 113	1,308,103	30	10 94
	5	Methyl Ethyl Ketone	944,199	21	7 90
	6	Chlorine	690,500	2	5 78
	7	Chlorine Dioxide	640,000	1	5 35
	8	Xylene (Mixed Isomers)	496,820	12	4 16
	9	Methyl Isobutyl Ketone	473,610	6	3 96
	10	Trichloroethylene	334,646	4	2 80
NJ	1	Toluene	7,882,440	183	20 44
	2	Acetone	5,435,248	107	14 09
	3	Methyl Ethyl Ketone	4,152,677	101	10 77
	4	Methanol	2,658,257	107	6 89
	5	Xylene (Mixed Isomers)	2,497,172	116	6 47
	6	n-Butyl Alcohol	1,596,554	68	4 14
	7	1,1,1-Trichloroethane	1,508,132	111	3 91
	8	Dichloromethane	1,345,484	64	3 49
	9	Glycol Ethers	1,273,828	69	3 30
	10	Freon 113	1,173,926	38	3 04
NM	1	Sulfuric Acid	591,841	9	27 74
	2	Freon 113	331,688	6	15 55
	3	Copper Compounds	329,475	2	15 45
	4	1,1,1-Trichloroethane	322,700	7	15 13
	5	Toluene	181,575	8	8 51
	6	Acetone	106,787	7	5 01
	7	m-Xylene	41,501	1	1 95
	8	Benzene	35,784	3	1 68
	9	Methyl Ethyl Ketone	27,700	1	1 30
	10	Formaldehyde	20,335	1	0 95
NV	1	Toluene	229,883	4	33 38
	2	Chlorine	149,791	3	21 75
	3	Acetone	79,479	4	11 54
	4	Xylene (Mixed Isomers)	54,700	3	7 94
	5	Freon 113	42,662	1	6 19
	6	Methyl Ethyl Ketone	26,814	1	3 89
	7	Hydrochloric Acid	20,370	8	2 96
	8	Ammonia	18,356	2	2 67
	9	Silver	14,968	1	2 17
	10	Manganese	9,200	2	1 34
NY	1	Dichloromethane	14,999,968	70	15 60
	2	Toluene	13,548,213	163	14 09
	3	Methanol	11,165,504	99	11 61
	4	Acetone	8,383,721	91	8 72
	5	1,1,1-Trichloroethane	7,868,722	169	8 18
	6	Hydrochloric Acid	5,830,336	103	6 06
	7	Freon 113	4,844,357	81	5 04
	8	Xylene (Mixed Isomers)	3,733,808	126	3 88
	9	Trichloroethylene	3,710,267	74	3 86
	10	Methyl Ethyl Ketone	3,589,746	87	3 73
OH	1	Ammonia	15,423,842	123	11 07
	2	Acetone	14,311,045	140	10 27
	3	Toluene	13,293,096	270	9 54
	4	Xylene (Mixed Isomers)	13,219,899	236	9 49
	5	1,1,1-Trichloroethane	12,268,881	266	8 80
	6	Methyl Ethyl Ketone	9,799,267	180	7 03
	7	Methanol	8,314,645	113	5 97
	8	Glycol Ethers	5,563,155	102	3 99
	9	Hydrochloric Acid	4,596,560	161	3.30
	10	n-Butyl Alcohol	4,306,727	84	3 09
OK	1	Ammonia	9,653,541	27	27 10
	2	Toluene	3,505,819	39	9 84
	3	Methanol	3,272,368	18	9 19
	4	Nitric Acid	3,250,779	13	9 13
	5	Xylene (Mixed Isomers)	2,625,949	36	7 37
	6	1,1,1-Trichloroethane	1,691,142	41	4 75
	7	Methyl Ethyl Ketone	1,482,394	26	4 16
	8	Hydrochloric Acid	1,195,682	10	3 36
	9	Tetrachloroethylene	1,093,767	9	3 07
	10	Dichloromethane	1,015,085	12	2 85

Table D-2 (Continued)

State Emissions — 1988

State	Rank	Chemical	Total Emissions (lb/yr)	No Of Emitters	% Of State Total
OR	1	Methanol	3,765,394	27	18 02
	2	Acetone	3,225,301	40	15 44
	3	Toluene	2,357,909	41	11 29
	4	Ammonia	1,238,005	31	5 93
	5	Chlorine	1,055,850	18	5 05
	6	Trichloroethylene	986,373	12	4 72
	7	Styrene	924,211	13	4 42
	8	Methyl Ethyl Ketone	895,277	24	4 29
	9	Freon 113	745,622	15	3 57
	10	1,1,1-Trichloroethane	709,976	24	3 40
PA	1	Toluene	17,372,493	204	18 96
	2	1,1,1-Trichloroethane	11,948,334	178	13 04
	3	Ammonia	7,092,473	113	7 74
	4	Dichloromethane	6,441,277	72	7 03
	5	Methyl Ethyl Ketone	5,652,515	128	6 17
	6	Xylene (Mixed Isomers)	5,029,541	188	5 49
	7	Acetone	3,643,633	127	3 98
	8	Benzene	3,189,504	23	3 48
	9	Trichloroethylene	2,941,983	60	3 21
	10	Methanol	2,901,776	107	3 17
PR	1	Dichloromethane	3,668,965	22	23 40
	2	Acetone	2,553 871	30	16 29
	3	Toluene	1,724,066	23	11
	4	Freon 113	1,473,892	25	9 40
	5	Carbon Disulfide	1,101,100	1	7 02
	6	Methyl Tert-Butyl Ether	778,271	2	4 96
	7	Methanol	753,838	33	4 81
	8	Benzene	513 484	4	3 27
	9	1,1,1-Trichloroethane	367,497	22	2 34
	10	Methyl Ethyl Ketone	344,955	10	2 20
RI	1	Toluene	1,562,939	19	20 14
	2	Acetone	1,433,776	24	18 47
	3	1,1,1-Trichloroethane	890,105	37	11 47
	4	Methyl Ethyl Ketone	703,371	16	9 06
	5	Trichloroethylene	679,495	35	8 75
	6	Dichloromethane	548,342	15	7 06
	7	Freon 113	389,229	18	5 01
	8	Xylene (Mixed Isomers)	319,048	14	4 11
	9	Tetrachloroethylene	307,799	15	3 97
	10	Styrene	227,569	7	2 93
SC	1	Methanol	15,418,860	69	23 11
	2	Toluene	8,372,412	60	12 55
	3	Acetone	8,146,426	42	12 21
	4	1,1,1-Trichloroethane	4,977,776	61	7 46
	5	Methyl Ethyl Ketone	3,188,075	39	4 78
	6	Dichloromethane	2,688,533	32	4 03
	7	Ammonia	2,686,257	54	4 03
	8	Xylene (Mixed Isomers)	2,461,812	57	3 69
	9	Hydrochloric Acid	2,178,824	40	3 27
	10	2-Methoxyethanol	1,976,000	2	2 96
SD	1	Xylene (Mixed Isomers)	589,152	12	23 57
	2	Freon 113	527,316	5	21 09
	3	Toluene	459,958	4	18 40
	4	1,1,1-Trichloroethane	156,252	5	6 25
	5	Methanol	149,269	3	5 97
	6	Methyl Ethyl Ketone	146,603	4	5 86
	7	Ammonia	131,800	3	5 27
	8	Acetone	128,261	3	5 13
	9	Formaldehyde	89,200	1	3 57
	10	Styrene	52,238	3	2 09
TN	1	Acetone	39,420,815	77	28 12
	2	Carbon Disulfide	22,720,568	5	16 21
	3	Toluene	14,776,431	110	10 54
	4	Methanol	11,598,684	59	8 27
	5	Carbonyl Sulfide	8,500,000	1	6 06
	6	1,1,1-Trichloroethane	5,586,474	73	3 99
	7	Ammonia	4,858,248	52	3 47
	8	Xylene (Mixed Isomers)	4,331 548	99	3 09
	9	Dichloromethane	2,741,210	34	1 96
	10	Trichloroethylene	2,104,306	19	1 50
TX	1	Ethylene	23,603,963	83	12 32
	2	Methanol	13,825,728	184	7 22
	3	Toluene	12,492,624	226	6 52
	4	Ammonia	11,937,810	199	6 23
	5	Propylene	11,310,113	83	5 90
	6	Xylene (Mixed Isomers)	11,065,051	230	5 78
	7	Acetone	7,803,883	138	4 07
	8	1,1,1-Trichloroethane	6,480,182	153	3 38
	9	Benzene	6,465,129	86	3 38
	10	Methyl Ethyl Ketone	6,225,654	126	3 25
UT	1	Chlorine	102,220,100	10	84 15
	2	Hydrochloric Acid	9,247,610	17	7 61
	3	1,1,1-Trichloroethane	3,425,628	22	2 82
	4	Dichloromethane	1,460,532	8	1 20
	5	Freon 113	727,418	15	0 60
	6	Sulfuric Acid	724,949	18	0 60
	7	Ethylene Oxide	617,080	2	0 51
	8	Toluene	577,199	18	0 48
	9	Xylene (Mixed Isomers)	383,836	20	0 32
	10	Ammonia	355,179	9	0 29
VA	1	Carbon Disulfide	34,053,000	2	27 62
	2	Methanol	22,326,101	76	18 11
	3	Acetone	17,298,179	81	14 03
	4	Toluene	12,447,609	108	10 10
	5	Methyl Ethyl Ketone	6,883,313	77	5 58
	6	Xylene (Mixed Isomers)	6,079,291	82	4 93
	7	Hydrochloric Acid	3,649,752	32	2 96
	8	1,1,1-Trichloroethane	2,295,936	62	1 86
	9	Dichloromethane	2,010,524	27	1 63
	10	Chloroform	1,804,850	4	1 46
VI	1	Benzene	600,000	1	40 25
	2	p-Xylene	270,000	1	18 11
	3	Toluene	265,000	1	17 78
	4	Xylene (Mixed Isomers)	240,000	1	16 10
	5	Ethylbenzene	74,000	1	4 96
	6	Cyclohexane	24,600	1	1 65
	7	1,2,4-Trimethylbenzene	10,560	1	0 71
	8	Naphthalene	2,450	1	0 16
	9	Anthracene	2,102	1	0 14
	10	Cobalt Compounds	500	1	0 03
VT	1	Toluene	490,737	10	32 30
	2	1,1,1-Trichloroethane	260,877	14	17 17
	3	Xylene (Mixed Isomers)	184,164	8	12 12
	4	Freon 113	116,847	5	7 69
	5	Methanol	103,259	5	6 80
	6	Methyl Ethyl Ketone	90,391	6	5 95
	7	Methyl Isobutyl Ketone	80,984	5	5 33
	8	Acetone	51,917	6	3 42
	9	n-Butyl Alcohol	27,893	3	1 84
	10	Dichloromethane	16,906	2	1 11

Table D-2 (Continued)

State Emissions — 1988

State	Rank	Chemical	Total Emissions (lb/yr)	No Of Emitters	% Of State Total
WA	1	Methanol	3,126,900	31	10 63
	2	Ammonia	2,951,303	45	10 03
	3	Toluene	2,835,490	44	9 64
	4	Acetone	2,514,168	61	8 55
	5	Methyl Ethyl Ketone	2,255,697	42	7 67
	6	Hydrogen Fluoride	1,780,020	14	6 05
	7	Chloroform	1,611,980	10	5 48
	8	Xylene (Mixed Isomers)	1,528,904	39	5 20
	9	Dichloromethane	1,388,395	21	4 72
	10	1,1,1-Trichloroethane	1,322,113	33	4 49
WI	1	1,1,1-Trichloroethane	5,941,586	141	13 04
	2	Xylene (Mixed Isomers)	5,229,960	107	11 48
	3	Toluene	4,773,831	121	10 48
	4	Methanol	3,531,867	60	7 75
	5	Methyl Ethyl Ketone	3,229,343	79	7 09
	6	Glycol Ethers	2,859,223	63	6 27
	7	Acetone	2,574,183	64	5 65
	8	Hydrochloric Acid	2,300,334	68	5 05
	9	Dichloromethane	1,615,333	51	3 54
	10	n-Butyl Alcohol	1,393,770	38	3 06
WV	1	Acetone	5,401,774	17	14 76
	2	Methanol	4,626,622	21	12 64
	3	Toluene	2,443,446	24	6 68
	4	Dichloromethane	1,788,397	9	4 89
	5	Ammonia	1,679,157	27	4 59
	6	Benzene	1,540,199	5	4 21
	7	Hydrochloric Acid	1,256,145	25	3 43
	8	Chloroform	1,194,396	3	3 26
	9	Ethylene Glycol	1,163,041	12	3 18
	10	Styrene	1,018,642	9	2 78
WY	1	Ammonia	598,411	4	20 70
	2	Ammonium Nitrate (Solution)	426,722	1	14 76
	3	Toluene	408,542	5	14 13
	4	Xylene (Mixed Isomers)	364,604	7	12 61
	5	Methyl Tert-Butyl Ether	217,750	2	7 53
	6	Propylene	95,930	4	3 32
	7	1,2,4-Trimethylbenzene	94,148	3	3 26
	8	Benzene	83,597	4	2 89
	9	Phosphoric Acid	78,499	1	2 72
	10	Glycol Ethers	74,500	2	2 58

TABLE D-3

Regional Hot Spots

— 1988 3-DIGIT ZIP CODES —

3 Digit ZIP Code	State	No Of Release Reports	No Of Facilities	Hap Emissions (lb/yr)	Total Emissions (lb/yr)	ZIP % Of Total TRI Emissions
840	UT	154	37	114 570,350	115,881,488	4 45
775	TX	1,143	125	36,279,834	64,007,392	2 46
703	LA	66	14	1,418,606	56,473,822	2 17
376	TN	143	30	19,288,620	54,538,069	2 09
365	AL	163	23	48,844,932	49,687,881	1 91
226	VA	61	17	39,641,648	40,129,374	1 54
776	TX	241	26	14,164,991	26,766,399	1 03
146	NY	215	52	19,961,588	25,270,117	0 97
707	LA	337	39	12,236,944	21,406,082	0 82
244	VA	60	21	20,113,830	21,085,475	0 81
480	MI	371	100	18,237,968	20,978,288	0 80
996	AK	18	3	276,935	20,958,860	0 80
286	NC	415	127	17,779,009	20,591,196	0 79
377	TN	77	33	19,903,936	20,146,764	0 77
314	GA	78	22	17,306,213	19,619,444	0 75
606	IL	788	274	14,920,127	19,362 897	0 74
371	TN	142	38	15,991,370	19,000,092	0 73
284	NC	100	23	16,531,178	18,714,468	0 72
391	MS	34	16	3,049,386	18,665,403	0 72
553	MN	137	60	17,518,991	18,320,048	0 70
241	VA	100	26	3,979,558	17,041,405	0 65
723	AR	94	27	3,376,051	16,822,360	0 65
356	AL	184	43	14,129,186	16,681 444	0 64
706	LA	211	27	6,586,010	16,004,134	0 61
465	IN	254	94	12,847,654	15,327,031	0 59
700	LA	319	40	8,284,614	15,249,546	0 59
402	KY	299	60	13,660,771	15,080,789	0 58
481	MI	377	103	11,167,672	14,991,052	0 58
6	PR	240	81	9,430,574	13,266,284	0 51
440	OH	425	128	11,434,806	12,883,278	0 49
630	MO	226	61	10,613,249	12,877,361	0 49
458	OH	209	45	5,422,771	12,765 117	0 49
452	OH	388	114	8,197,277	12,647,686	0 49
315	GA	101	26	10,569,427	12,520,175	0 48
604	IL	418	100	6,505,152	12,004,279	0 46
463	IN	306	65	10,651,136	11,964,373	0 46
490	MI	248	87	9,708,030	11,888,821	0 46
420	KY	126	21	8,219,498	11,780,417	0 45
601	IL	414	158	8,219,047	11,586,281	0 44
381	TN	206	63	5,352,513	11,518,473	0 44
395	MS	153	21	9,675,363	11,141,724	0 43
551	MN	206	57	9,029,635	11,085,546	0 43
473	IN	187	56	6,420,665	11,020,420	0 42
70	NJ	664	213	8,115,684	10,983,882	0 42
756	TX	166	40	5,196,015	10,935,175	0 42
476	IN	49	7	10,231,228	10,891,949	0.42
261	WV	123	14	9,273,001	10,814,625	0 41
150	PA	205	47	4,749,926	10,562,357	0 41
430	OH	168	44	6,416,322	10,518,779	0 40
672	KS	147	31	9,801,662	10,374,392	0 40
441	OH	534	173	8,114 501	10 001,259	0 38
479	IN	156	40	9,029,850	9,868,296	0 38
295	SC	122	36	7,502,765	9,760,995	0 37
190	PA	211	57	7,075,882	9,579,330	0 37
494	MI	279	80	6,180,158	9,377,375	0 36
294	SC	112	30	8,124,704	9,363,488	0 36
388	MS	76	33	8,697,818	9,234,642	0 35
902	CA	395	133	6,408,825	9,195,969	0 35
299	SC	25	4	6,494,945	9,130,741	0 35
550	MN	147	29	7,010,264	8,860 521	0 34
619	IL	52	16	7,474,508	8,842,188	0 34
740	OK	93	27	4,485,330	8,736,807	0 34
232	VA	119	40	7,641,029	8,604,479	0 33
191	PA	246	63	6,905,982	8,586,811	0 33
397	MS	76	24	7,961,485	8,551,668	0 33
317	GA	94	33	6,663,441	8,543,500	0 33
768	TX	18	4	6,735,875	8,517,569	0 33
852	AZ	159	55	2,980,983	8,445,774	0 32
456	OH	91	22	5,525,396	8,398,661	0 32
770	TX	431	123	4,859,905	8,341,255	0 32
779	TX	101	13	3,201,284	8,237,163	0 32
296	SC	271	97	6,976,541	8,180,931	0 31
238	VA	95	25	5,790,741	7,998,412	0 31
945	CA	361	100	4,044,616	7,983,561	0 31
631	MO	414	127	7,234,719	7,951,595	0 31
297	SC	112	28	3,758,799	7,823,312	0 30
64	CT	291	105	6,581,455	7,725,420	0 30
681	NE	105	33	3,995,562	7,656,474	0 29
467	IN	179	73	6,778,432	7 630,580	0 29
287	NC	127	39	6,597,271	7,579,561	0 29
495	MI	231	60	6,065,747	7,563,897	0 29
777	TX	141	18	3,095,783	7,479 365	0 29
272	NC	245	83	6,480,338	7,454,921	0 29
245	VA	155	53	6,838,448	7,278,323	0 28
338	FL	118	46	1,042,863	7,096,668	0 27
527	IA	98	28	3,584,410	6,960,563	0 27
251	WV	73	5	2,033,708	6,909,486	0 27
610	IL	135	43	5,792,802	6,846,394	0 26
260	WV	107	26	5,899,671	6,827,096	0 26
729	AR	111	37	5,993,786	6,821,243	0 26
438	OH	35	11	730,628	6,817,017	0 26
215	MD	22	4	5,754,379	6,751,081	0 26
486	MI	150	27	5,905,372	6,724,163	0 26
18	MA	216	72	5,096,883	6,686,532	0 26
462	IN	261	73	4,704,043	6,578,291	0 25
370	TN	138	48	5,585,148	6,495,668	0 25
457	OH	63	12	3,596,757	6,493,644	0 25
600	IL	479	162	5,137,159	6,394,520	0 25
622	IL	102	26	5,081,398	6,353,397	0 24
544	WI	113	38	5,278,059	6,338,398	0 24
		20,441	5,513	1,009,831,401	1,450,411,718	55 64

TABLE D-4

Regional Hot Spots

— 1988 COUNTIES —

County	State	No Of Release Reports	No Of Facilities	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	County % Of Total TRI Emissions
Tooele	UT	8	4	109,868,022	109,868,272	4 21
Ascension	LA	137	15	5,614,188	51,237 547	1 97
Mobile	AL	179	27	49,711,651	50,581,837	1 94
Harris	TX	1,158	223	29,203,555	47,859,672	1 84
Sullivan	TN	103	14	9,074,646	42,806,100	1 64
Cook	IL	1,536	517	29,546,827	38,078,024	1 46
Los Angeles	CA	1,868	624	28,879,726	37,733,455	1 45
Warren	VA	27	4	34,579,400	34,639,208	1 33
Monroe	NY	245	61	20,640,798	26,091,597	1 00
Kenai Peninsula	AK	18	3	276,935	20,958,860	0 80
Brazoria	TX	232	22	10,555,741	19,938,165	0 76
Chatham	GA	78	22	17,306,213	19,619,444	0 75
Jefferson	TX	308	32	9,172,464	19,581,551	0 75
Alleghany	VA	15	3	18,228,664	19,009,264	0 73
Hamblen	TN	50	19	17,099,246	17,253,775	0 66
Mc Leod	MN	26	7	16,302,055	16,567,333	0 64
Mississippi	AR	39	13	2,888,492	16,140,137	0 62
St James	LA	46	8	440,575	15,594,639	0 60
Calcasieu	LA	186	21	5,877,986	15,242,628	0 58
Jefferson	KY	300	61	13,660 821	15,080,839	0 58
Yazoo	MS	2	1	3,800	14,370,800	0 55
Wayne	MI	529	130	11,100,822	13,899,067	0 53
Hamilton	OH	423	119	8,679,783	13,284,590	0 51
Giles	VA	7	1	999,900	12,014,901	0 46
Shelby	TN	222	69	5,683,233	11,909,741	0 46
Kanawha	WV	140	13	5,843,650	11,820,317	0 45
St Louis	MO	363	110	9,547,624	11,521,350	0 44
Colbert	AL	55	13	9,191,987	11,244,143	0 43
Lake	IN	213	42	9,931,779	11,095,184	0 43
Catawba	NC	138	51	9,924,097	10,821,531	0 42
Orange	CA	553	206	6,743,562	10,744,289	0 41
Ramsey	MN	189	51	8,817,749	10,740,798	0 41
Sedgwick	KS	149	33	9,801,662	10,374,867	0 40
Cuyahoga	OH	548	178	8,269,742	10,215 828	0 39
Orange	TX	61	10	3,957,757	10,085,761	0 39
Allegheny	PA	359	74	6,287,812	9,985,323	0 38
Marshall	KY	78	7	6,984,461	9,880,380	0 38
Middlesex	NJ	443	116	8,083,889	9,737,716	0 37
Humphreys	TN	18	4	9,147,621	9,726,988	0 37
Hampton	SC	16	3	6,483,210	9,114,210	0 35
Oakland	MI	221	52	7,448,081	8,812,980	0 34
Kalamazoo	MI	80	20	7,327,296	8,678,797	0 33
Philadelphia	PA	245	62	6,905,982	8,584,933	0 33
New Haven	CT	346	108	7,220,616	8,505,570	0 33
Brown	TX	17	3	6,664,738	8,446,432	0 32
Niagara	NY	155	37	7,084,094	8,437,803	0 32
Macomb	MI	180	43	7,635,864	8,317,747	0 32
King	WA	260	109	6,505,866	8,294,019	0 32
Harrison	TX	79	12	3,453,737	8,287,857	0 32
Allen	OH	85	16	1,535,294	8,258,674	0 32
Kent	MI	260	68	6,559,414	8,202,010	0 31
Posey	IN	33	2	7,522,188	8,073,959	0 31
East Baton Rouge	LA	165	22	5,390,476	8,066,954	0 31
Erie	NY	203	83	6,876,128	8,064,901	0 31
Galveston	TX	193	16	4,118,703	8,009,185	0 31
Broome	NY	66	20	6,091,388	7,906,256	0 30
Glynn	GA	37	7	6,668,301	7,835 955	0 30
Dallas	TX	434	146	6,689,825	7,641,812	0 29
St Charles	LA	94	9	1,446 814	7,498 889	0 29
Brunswick	NC	26	3	7,294,329	7 445,646	0 29
Middlesex	MA	378	137	5,664,778	7,327,189	0 28
Milwaukee	WI	437	124	5,228,137	7 232,918	0 28
Tarrant	TX	234	93	5,367,296	7,100,023	0 27
Onondaga	NY	121	49	3,971,182	6,989,154	0 27
York	SC	56	16	2,977,093	6,906,084	0 26
Bucks	PA	143	44	5,713,601	6,869,540	0 26
Maricopa	AZ	292	114	4,069,854	6,820,118	0 26
Harrison	MS	22	6	6,708,985	6,801,292	0 26
Coshocton	OH	26	7	684,316	6,768,908	0 26
Barceloneta	PR	44	7	4,849,289	6,715,658	0 26
Lowndes	MS	33	10	6,386,395	6,620,543	0 25
Allegany	MD	17	3	5,597,179	6,582,681	0 25
Marion	IN	263	74	4,705,489	6,580,487	0 25
Polk	FL	102	41	832,130	6,527,048	0 25
Lucas	OH	184	48	4,632,437	6,523,075	0 25
Washington	OH	63	12	3,596,757	6,493,644	0 25
New Hanover	NC	38	10	5,993,851	6,467,880	0 25
Hartford	CT	259	93	5,169,732	6,343,502	0 24
Iberville	LA	113	13	3,710,172	6,341,680	0 24
Union	OH	36	6	2,762,470	6,338,128	0 24
Richland	SC	65	17	5,776 458	6,228,201	0 24
Sebastian	AR	97	29	5,484,685	6,202 152	0 24
Kosciusko	IN	49	16	5,872,546	6,183,240	0 24
New Castle	DE	158	38	5,731,400	6,137,433	0 24
Richmond	GA	61	23	3,742,366	6,116,242	0 23
San Diego	CA	185	61	5,325,847	6,107,413	0 23
Hennepin	MN	245	113	4,299,677	6,058,531	0 23
Davidson	TN	80	28	5,155,470	5,988,055	0 23
Hamilton	TN	112	34	5,614,770	5,932,539	0 23
Forsyth	NC	89	30	4,706,825	5,805,729	0 22
Tippecanoe	IN	83	18	4,940,438	5,700,168	0 22
Franklin	OH	205	62	4,616,593	5,698,551	0 22
Salt Lake	UT	161	44	4,512,181	5,692,766	0 22
Ottawa	MI	98	27	4,125,615	5,685,000	0 22
Henry	VA	84	20	5,011,908	5,633,963	0 22
Santa Clara	CA	362	133	2,380,482	5,585,846	0 21
Grundy	IL	56	9	848,736	5,546,175	0 21
Peoria	IL	52	18	2,597,370	5,529,648	0 21
Lancaster	PA	144	63	4,763,302	5,406,367	0 21
Frederick	VA	27	10	4,999,148	5,393,406	0 21
		19,518	5,469	873,978,239	1,270,821,487	48 75

TABLE D-5

Air Emissions By U.S. Industry

— 1988 —

2 Digit SIC Code	U S Industry	No Of Emitters	No Of Release Reports	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	Industry % Of Total TRI Emissions
		50	97	1,493,056	1,675,147	0 06
0		21	49	235,986	403,921	0 02
1		1	2	0	500	0 00
2		1	1	0	1,405	0 00
2		4	6	630,327	696,327	0 03
3		9	12	584,441	814,147	0 03
6		1	1	3	3	0 00
6		1	1	818	818	0 00
7		1	1	48,011	48,011	0 00
10		1	1	0	1,061,192	0 04
12		1	6	101,700	104,200	0 00
13		1	1	83,300	83,300	0 00
14		7	13	500	224,894	0 01
16		2	2	11,989	11,989	0 00
17		4	6	44,300	84,300	0 00
18		3	9	348,774	388,330	0 01
19		1	1	0	25,000	0 00
20	Food	960	1,399	7,225,204	22,350,401	0 86
21	Tobacco	19	40	1,173,552	1,817,354	0 07
22	Textiles	320	589	39,088,693	43,684,491	1 68
23	Apparel	38	66	1,369,400	1,665,803	0 06
24	Lumber	507	1,321	28,983,286	33,142,943	1 27
25	Furniture	490	1,733	55,982,415	64,818,870	2 49
26	Pulp & Paper	595	1,952	225,084,584	270,398,044	10 37
27	Printing	339	621	61,232,186	64,998,394	2 49
28	Chemicals	3,729	17,676	478,456,946	854,587,986	32 79
29	Petroleum Refining	334	2,623	51,796,460	75,530,418	2 90
30	Rubber, Plastics	1,437	3,404	154,291,452	192,919,849	7 40
31	Leather	121	328	10,271,508	14,850,396	0 57
32	Stone, Clay, Glass	497	1,254	21,351,025	28,603,514	1 10
33	Primary Metals	1,518	5,073	209,395,306	253,267,435	9 72
34	Fabricated Metals	2,664	6,629	112,359,513	142,788,595	5 48
35	Non-Elect Machinery	994	2,301	56,034,135	70,091,651	2 69
36	Electrical Equipment	1,630	4,517	93,874,770	127,625,211	4 90
37	Transport Equipment	1,173	4,296	182,815,299	236,353,758	9 07
38	Instruments	378	937	39,924,633	58 384,902	2 24
39	Misc Manufacturing	384	862	26,853,075	32 306,637	1 24
42		2	2	0	2,100	0 00
43		3	4	42,562	43 062	0.00
44		2	19	41,610	325 610	0 01
45		5	15	108,344	118 512	0 00
46		1	1	8	8	0 00
47		1	1	46,500	46,500	0 00
48		3	3	750	750	0 00
49		10	20	3,633,669	3,683,379	0 14
50		15	23	151,757	199,968	0 01
51		52	193	538,397	1,063 098	0 04
52		1	1	250	250	0 00
55		1	1	0	1 872	0 00
57		1	3	750	2,250	0 00
58		1	5	-1,031	1,233	0 00
65		1	1	20 000	20,000	0 00
73		25	54	208,910	370,965	0 01
75		1	2	45,367	45,367	0 00
76		5	13	83,003	110 078	0 00
78		1	1	34,199	34,199	0 00
79		1	2	82,781	83,531	0 00
80		2	2	8,300	8,300	0 00
82		2	2	17 967	17,967	0 00
84		1	6	92,000	95,000	0 00
86		2	12	42,998	65,632	0 00
87		6	37	27,492	523,169	0 02
88		1	2	41,300	41,300	0 00
89		3	12	16,199	16,208	0 00
96		1	5	500	1,750	0 00
97		7	21	535,561	806,277	0 03
98		1	4	14,819	16,246	0 00
99		8	19	850,655	1,232,219	0 05
CO		2	2	0	34,420	0 00
NA		14	18	1,774,877	1,821,403	0 07
		18,418	58,337	1,869,609,203	2,606,642,759	100 00

(Note Only SICs 20-39 are required to report to TRI)

TABLE D-6

Industrial Emissions

— 1988 —

2 Digit SIC Code	No Of Emitters	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	Industry % Of Total TRI Emissions
28	3,729	478,456 946	854,587,986	32 79
26	595	225,084 584	270,398,044	10 37
33	1,518	209,395,306	253 267,435	9 72
37	1,173	182,815,299	236,353,758	9 07
30	1,437	154,291,452	192,919,849	7 40
34	2,664	112,359,513	142,788,595	5 48
36	1,630	93,874,770	127 625,211	4 90
29	334	51,796,460	75,530,418	2 90
35	994	56,034,135	70,091,651	2 69
27	339	61,232,186	64,998,394	2 49
25	490	55,982,415	64,816,870	2 49
38	378	39,924,633	58,384,902	2 24
22	320	39,088,693	43,684,491	1 68
24	507	28,983,286	33,142,943	1 27
39	384	26,853,075	32,306,637	1 24
32	497	21,351,025	28,603,514	1 10
20	960	7,225,204	22,350,401	0 86
31	121	10,271,508	14,850,396	0 57
49	10	3,633,669	3,683,379	0 14
NA	14	1,774,877	1,821,403	0 07
21	19	1,173,552	1,817,354	0 07
	50	1,493,056	1,675.147	0 06
23	38	1,369,400	1,665 803	0 06
99	8	850,655	1,232,219	0 05
51	52	538,397	1,063,098	0 04
10	1	0	1,061,192	0 04
3	9	584,441	814,147	0 03
97	7	535,561	806,277	0 03
2	4	630,327	696,327	0 03
87	6	27 492	523,169	0 02
0	21	235,986	403,921	0 02
18	3	348,774	388,330	0 01
73	25	208 910	370,965	0 01
44	2	41,610	325,610	0 01
14	7	500	224,894	0 01
50	15	151,757	199,968	0 01
45	5	108,344	118,512	0 00
76	5	83,003	110,078	0 00
12	1	101 700	104,200	0 00
84	1	92,000	95 000	0 00
17	4	44,300	84,300	0 00
79	1	82,781	83,531	0 00
13	1	83,300	83,300	0.00
86	2	42,998	65,632	0 00
7	1	48,011	48,011	0 00
47	1	46,500	46,500	0 00
75	1	45,367	45,367	0 00
43	3	42,562	43,062	0 00
88	1	41,300	41,300	0 00
C0	2	0	34,420	0 00
78	1	34,199	34,199	0 00
19	1	0	25,000	0 00
65	1	20,000	20,000	0 00
82	2	17,967	17,967	0 00
98	1	14,819	16,246	0 00
89	3	16,199	16,208	0 00
16	2	11,989	11,989	0 00
80	2	8,300	8,300	0 00
57	1	750	2,250	0 00
42	2	0	2,100	0 00
55	1	0	1,872	0 00
96	1	500	1,750	0 00
2	1	0	1,405	0 00
58	1	1,031	1,233	0 00
'6	1	818	818	0 00
48	3	750	750	0 00
1	1	0	500	0 00
52	1	250	250	0 00
46	1	8	8	0 00
6	1	3	3	0 00
	18,418	1,869,609,203	2,606,642,759	100 00

TABLE D-7

Air Emissions For The U.S. Chemical Industry

— 1988 —

4 Digit SIC Code	Total Emissions (lb/yr)	4 Digit SIC Code	Total Emissions (lb/yr)	4 Digit SIC Code	Total Emissions (lb/yr)	4 Digit SIC Code	Total Emissions (lb/yr)
800	5,447,588	2824	16,837,546	2844	193,942	2871	29 792
2810	69,439	2830	312,388	2846	2,210	2873	159,132,268
2812	27,869,604	2831	579,511	2850	104,386	2874	12,031,270
2813	8,437,048	2832	2,147,642	2851	25 972,903	2875	3,654,896
2814	1,500	2833	23,272 573	2857	7,450	2879	9,613,063
2815	179,411	2834	29,514,654	2859	261	2889	119
2816	20,407,659	2835	95,193	2860	141,135	2890	55 862
2818	11,000	2836	33,670	2861	5,218,945	2891	4,728,881
2819	39,879,083	2837	526	2864	280,811	2892	6 006,273
2820	97,206	2840	18,651	2865	30,875,250	2893	1,529 659
2821	101,363,368	2841	875,116	2866	753,882	2895	13,215 691
2822	22,648,216	2842	881,738	2869	179,381,453	2898	38,741
2823	87,327,427	2843	6,710,609	2870	1,505,556	2899	5,094 921
							854,587,986

TABLE D-8

Top Industrial Emitters

—1988 4-DIGIT SIC CODES —

Rank	SIC	Total Emissions (lb/yr)	% Of 2 Digit SIC Code	Rank	Chemical	Total Emissions (lb/yr)	% Of Total 2 Digit SIC
1	2869	179 381,453	20 99	1	Acetone	50 289,650	5 88
				2	Methanol	28 100,935	3 29
				3	Ethylene	16 520 787	1 93
				4	Toluene	6 870,401	0 80
				5	Chloromethane	6,365,690	0 74
				6	Ammonia	6,245 262	0 73
				7	Propylene	5 215,010	0 61
				8	Ethylene Glycol	4,627,869	0 54
				9	Benzene	4,301,205	0 50
				10	Hydrochloric Acid	3 983,256	0 47
2	2873	159,132 268	18 62	1	Ammonia	142,355 441	16 66
				2	Methanol	7,196,576	0 84
				3	Nitric Acid	3,835,677	0 45
				4	Propylene	2,707,400	0 32
				5	Ammonium Nitrate (Solution)	1,942 128	0 23
				6	Acetonitrile	241,000	0 03
				7	Sulfuric Acid	204,594	0 02
				8	Acrylonitrile	191 000	0 02
				9	Hydrogen Cyanide	132 400	0 02
				10	Ethylene Glycol	94 250	0 01
3	3339	115,557,844	45 63	1	Chlorine	102 165,751	40 34
				2	Hydrochloric Acid	7 731,376	3 05
				3	Ammonia	1 857 631	0 73
				4	Methyl Isobutyl Ketone	1,745,035	0 69
				5	Hydrogen Fluoride	545,785	0 22
				6	Lead Compounds	536,386	0 21
				7	Tetrachloroethylene	275,725	0 11
				8	1 1,1-Trichloroethane	174,847	0 07
				9	Zinc Compounds	118,577	0 05
				10	Lead	101,250	0 04
4	2821	101 363,368	11 86	1	Carbon Disulfide	16,658,318	1 95
				2	Ethylene	15 601 809	1 83
				3	Dichloromethane	9 336,923	1 09
				4	Methanol	9 200,960	1 08
				5	Propylene	4,588,254	0 54
				6	Styrene	4 488,242	0 53
				7	Toluene	4 254 783	0 50
				8	Chlorobenzene	2 712 769	0 32
				9	Acetone	2,695 195	0 32
				10	Chloroethane	2,137 800	0 25
5	2611	88 574 443	32 76	1	Methanol	37,295 846	13 79
				2	Chlorine	12,322 575	4 56
				3	Chloroform	11,091,636	4 10
				4	Chlorine Dioxide	8,813,232	3 26
				5	Acetone	7 036 307	2 60
				6	Hydrochloric Acid	6,582,874	2 43
				7	Sulfuric Acid	2,355,077	0 87
				8	Toluene	1,254 500	0 46
				9	Ammonia	991,496	0 37
				10	Xylene (Mixed Isomers)	365,500	0 14
6	2823	87,327,427	10 22	1	Carbon Disulfide	81 851,000	9 58
				2	Acetone	3,463,675	0 41
				3	Methyl Ethyl Ketone	661,126	0 08
				4	Benzene	562,982	0 07
				5	Carbonyl Sulfide	410,000	0 05
				6	Dichloromethane	168 434	0 02
				7	Ammonia	100,000	0 01
				8	Methanol	66,322	0 01
				9	Formaldehyde	31,211	0 00
				10	Vinyl Acetate	2 936	0 00
7	3079	71 505 551	37 06	1	Acetone	18 415,183	9 55
				2	Methanol	10 548 393	5 47
				3	Dichloromethane	8 771 651	4 55
				4	Methyl Ethyl Ketone	8 251 654	4 28
				5	Toluene	5 020 505	2 50
				6	Styrene	3 133 366	1 62
				7	1 1 1-Trichloroethane	2,763 836	1 43
				8	2-Methoxyethanol	2 442 523	1 27
				9	Carbon Disulfide	2 287,750	1 19
				10	Ammonia	1,835 203	0 95
8	2911	71 225 233	94 3	1	Toluene	13 558,439	17 95
				2	Ammonia	8 668,680	11 48
				3	Benzene	7,420 850	9 82
				4	Methyl Ethyl Ketone	7 007 585	9 28
				5	Xylene (Mixed Isomers)	6,646,468	8 80
				6	Propylene	5 744 626	7 61
				7	Ethylene	3,466 610	4 59
				8	Cyclohexane	2,211 425	2 93
				9	Methyl Tert-Butyl Ether	1,982 123	2 62
				10	Ethylbenzene	1 790,698	2 37
9	3711	68 315 256	28 9	1	Xylene (Mixed Isomers)	26,168,010	11 07
				2	Glycol Ethers	8 474,423	3 59
				3	n-Butyl Alcohol	6 763,266	2 86
				4	Methyl Ethyl Ketone	5,970,716	2 53
				5	Toluene	5,819 611	2 46
				6	Methanol	3,750 372	1 59
				7	Acetone	2 689,139	1 14
				8	Methyl Isobutyl Ketone	2 617 516	1 11
				9	1,1,1-Trichloroethane	2,543 696	1 08
				10	Dichloromethane	1,751 057	0 74
10	2621	54 756 547	20 25	1	Methanol	19,060 069	7 05
				2	Hydrochloric Acid	13,312 889	4 92
				3	Chloroform	5 899,670	2 18
				4	Chlorine	3,861 763	1 43
				5	Acetone	3,267 341	1 21
				6	Chlorine Dioxide	2 470,504	0 91
				7	Sulfuric Acid	2,196,957	0 81
				8	Ammonia	805,708	0 30
				9	Nitric Acid	736 750	0 27
				10	Xylene (Mixed Isomers)	547 875	0 20
11	3312	46 701 619	18 44	1	Benzene	13,219,148	5 22
				2	Ammonia	6,780,324	2 68
				3	1 1,1-Trichloroethane	4,910,859	1 94
				4	Hydrochloric Acid	3,044,882	1 20
				5	Zinc Compounds	2,532,509	1 00
				6	Toluene	2,010,537	0 79
				7	Xylene (Mixed Isomers)	1 572,821	0 62
				8	Zinc (Fume Or Dust)	1,398,736	0 55
				9	Manganese Compounds	1 149 769	0 45
				10	Naphthalene	1,103,290	0 44
12	2511	41 656,475	64 27	1	Toluene	12,757,917	19 68
				2	Methanol	9,072,028	14
				3	Xylene (Mixed Isomers)	5,902,095	9 11
				4	Methyl Ethyl Ketone	4,551,578	7 02
				5	Acetone	3,939,136	6 08
				6	n-Butyl Alcohol	1,977,450	3 05
				7	Methyl Isobutyl Ketone	1,345,334	2 08
				8	Glycol Ethers	524,978	0 81
				9	1,1,1-Trichloroethane	516 294	0 80
				10	Di(2-Ethylhexyl) Phthalate	386,037	0 60

Table D-8 (Continued)

Top Industrial Emitters — 1988 4-Digit SIC Codes

Rank	SIC	Total Emissions (lb/yr)	% Of 2-Digit SIC Code	Rank	Chemical	Total Emissions (lb/yr)	% Of Total 2-Digit SIC
13	2631	41,573,638	15 37	1	Methanol	22,987,118	8 50
				2	Hydrochloric Acid	6,000,025	2 22
				3	Acetone	4,172,686	1 54
				4	Chloroform	2,268,087	0 84
				5	Chlorine	2,173,400	0 80
				6	Sulfuric Acid	1,244,733	0 46
				7	Chlorine Dioxide	1,064,000	0 39
				8	Ammonia	498,035	0 18
				9	Toluene	472,087	0 17
				10	Formaldehyde	268,897	0 10
14	2754	40,345,920	62 07	1	Toluene	31,923,212	49 11
				2	Methyl Ethyl Ketone	2,486,693	3 83
				3	Zinc Compounds	1,718,067	2 64
				4	Xylene (Mixed Isomers)	1,099,565	1 69
				5	Glycol Ethers	886,493	1 36
				6	Methyl Isobutyl Ketone	633,090	0 97
				7	Methanol	456,681	0 70
				8	Acetone	294,520	0 45
				9	Cyclohexane	160,000	0 25
				10	Isopropyl Alcohol (Manufact)	156,785	0 24
15	2819	39,879,083	4 67	1	Ammonia	9,086,000	1 06
				2	Methanol	8,346 473	0 98
				3	Chlorine	4,653,446	0 54
				4	Sulfuric Acid	2,924,446	0 34
				5	Carbon Disulfide	1,877,290	0 22
				6	Toluene	1,836,116	0 21
				7	Hydrochloric Acid	1,328,653	0 16
				8	Hydrogen Fluoride	1,142 462	0 13
				9	Ethylene Glycol	899,837	0 11
				10	Phosphoric Acid	649,911	0 08
16	3714	37,650,645	15 93	1	Freon 113	5 111 961	2 16
				2	1,1,1-Trichloroethane	5,048,871	2 14
				3	Xylene (Mixed Isomers)	4,147,695	1 75
				4	Methyl Ethyl Ketone	3,913,059	1 66
				5	Toluene	3,788,574	1 60
				6	Trichloroethylene	3 168,428	1 34
				7	Acetone	2,813,385	1 19
				8	Tetrachloroethylene	2,123,440	0 90
				9	Glycol Ethers	1,889,477	0 80
				10	Methyl Isobutyl Ketone	1,105,295	0 47
17	3679	37 085,520	29 06	1	Methyl Ethyl Ketone	12,070,604	9 46
				2	Toluene	5,424,311	4 25
				3	Freon 113	4,221,542	3 31
				4	Dichloromethane	4,026,877	3 16
				5	1,1,1-Trichloroethane	3,385,510	2 65
				6	Acetone	3,165,419	2 48
				7	Glycol Ethers	927,978	0 73
				8	Tetrachloroethylene	742 403	0 58
				9	Methanol	636,538	0 50
				10	2-Methoxyethanol	623,145	0 49
18	3861	37,011,485	63.39	1	Dichloromethane	12,830,975	21 98
				2	Methanol	8,241,886	14 12
				3	Acetone	7,862 380	13 47
				4	Toluene	1 972 098	3 38
				5	Methyl Ethyl Ketone	1,327 780	2 27
				6	Hydrochloric Acid	702,093	1 20
				7	1,1,1-Trichloroethane	576,449	0 99
				8	Xylene (Mixed Isomers)	541,580	0 93
				9	n-Butyl Alcohol	415,798	0 71
				10	Freon 113	379,740	0 65
19	3411	36,259,334	25 39	1	Glycol Ethers	14,682 401	10 28
				2	n-Butyl Alcohol	11,760,990	8 24
				3	Xylene (Mixed Isomers)	3,995,577	2 80
				4	Methyl Ethyl Ketone	1,512,558	1 06
				5	Toluene	1,225,593	0 86
				6	Methyl Isobutyl Ketone	802,723	0 56
				7	1,1,1-Trichloroethane	681,440	0 48
				8	Cyclohexane	556 804	0 39
				9	Dimethyl Phthalate	338,000	0 24
				10	Trichloroethylene	244,237	0 17
20	2641	34,986,968	12 94	1	Toluene	21,914,139	8 10
				2	Methyl Ethyl Ketone	4,019,265	1 49
				3	Methanol	3,595,386	1 33
				4	Acetone	2,221,014	0 82
				5	Xylene (Mixed Isomers)	1,012 326	0 37
				6	2-Ethoxyethanol	367,279	0 14
				7	Freon 113	340,480	0 13
				8	Methyl Isobutyl Ketone	324,970	0 12
				9	n-Butyl Alcohol	152,734	0 06
				10	1,1,1-Trichloroethane	137,508	0 05

TABLE D-9

National Emissions Of Hazardous Air Pollutants

— 1988 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total HAPs Emissions	Chemical % Of Total TRI Emissions
Toluene	3,766	285 303,917	15 26	10 95
Methanol	2,283	226,096,844	12 09	8 67
1,1,1-Trichloroethane	3,630	173,920,989	9 30	6 67
Xylene (Mixed Isomers)	3,240	151,187,866	8 09	5 80
Chlorine	1,244	133,751,760	7 15	5 13
Methyl Ethyl Ketone	2,373	131,808,179	7 05	5 06
Dichloromethane	1,577	125,849,987	6 73	4 83
Carbon Disulfide	79	123,893,704	6 63	4 75
Hydrochloric Acid	2,253	69,264,605	3 70	2 66
Trichloroethylene	892	52,645,060	2 82	2 02
Glycol Ethers	1,354	47,937,703	2 56	1 84
Tetrachloroethylene	683	35,555,545	1 90	1 36
Styrene	1,140	32,460,559	1 74	1 25
Methyl Isobutyl Ketone	970	31,435,711	1 68	1 21
Benzene	459	30,226,580	1 62	1 16
Chloroform	164	23,871,504	1 28	0 92
Carbonyl Sulfide	30	20,183,072	1 08	0 77
Ethylene Glycol	858	13,569,932	0 73	0 52
Hydrogen Fluoride	423	12,114,046	0 65	0 46
Formaldehyde	724	11,891,313	0 64	0 46
Chloromethane	77	11,290,415	0 60	0 43
Phenol	530	10,363,219	0 55	0 40
Ethylbenzene	526	7,011,058	0 38	0 27
1,3-Butadiene	145	6,654,123	0 36	0 26
Acetaldehyde	64	6,588,209	0 35	0 25
p-Xylene	46	6,003,302	0 32	0 23
Vinyl Acetate	141	5,908,341	0 32	0 23
Naphthalene	373	5,086,028	0 27	0 20
Cumene	114	4,829,829	0 26	0 19
Ethylene Oxide	193	4,762,901	0 25	0 18
Chloroethane	48	4,619,442	0 25	0 18
Chlorobenzene	64	4,569,513	0 24	0 18
1,2-Dichloroethane	100	4,524,929	0 24	0 17
Acrylonitrile	100	4,195,667	0 22	0 16
Carbon Tetrachloride	87	3,715,421	0 20	0 14
Methyl Methacrylate	206	3,427,572	0 18	0 13
Propylene Oxide	124	3,250,269	0 17	0 12
Methyl Tert-Butyl Ether	86	2,896,781	0 15	0 11
m-Xylene	66	2,194,146	0 12	0 08
o-Xylene	63	2,064,641	0 11	0 08
Acetonitrile	66	2,061,891	0 11	0 08
Bromomethane	33	1,941,462	0 10	0 07
1,4-Dichlorobenzene	18	1,891,419	0 10	0 07
1,1,2-Trichloroethane	29	1,741,342	0 09	0 07
Manganese Compounds	358	1,669,121	0 09	0 06
1,2,4-Trichlorobenzene	47	1,533,291	0 08	0 06
Lead Compounds	489	1,518,309	0 08	0 06
Vinyl Chloride	47	1,436,427	0 08	0 06
1 2-Dichloropropane	12	1,365,844	0 07	0 05
Propionaldehyde	14	1,296,839	0 07	0 05
Chloroprene	12	1,218,426	0 07	0 05
Biphenyl	150	1,210,272	0 06	0 05
Di(2-Ethylhexyl) Phthalate	180	1,120,956	0 06	0 04
Cyanide Compounds	210	907,726	0 05	0 03
Acrylic Acid	139	799,178	0 04	0 03
Chromium Compounds	713	791,922	0 04	0 03
Cresol (Mixed Isomers)	91	769,284	0 04	0 03
Aniline	60	726,473	0 04	0 03
Maleic Anhydride	154	653,952	0 03	0 03
p-Cresol	15	640,703	0 03	0 02
Diethanolamine	200	637,182	0 03	0 02
1,4-Dioxane	66	601,244	0 03	0 02
Dimethyl Phthalate	38	534,806	0 03	0 02
Phthalic Anhydride	142	521,899	0 03	0 02
Epichlorohydrin	70	465,268	0 02	0 02
2-Nitropropane	12	389,385	0 02	0 01
Vinylidene Chloride	21	296,353	0 02	0 01
Methoxychlor	10	272,881	0 01	0 01
Arsenic Compounds	123	267,252	0 01	0 01
Nickel Compounds	321	254,761	0 01	0 01
Ethyl Acrylate	102	251,823	0 01	0 01
Methylenebis(Phenylisocyanate)	228	247,319	0 01	0 01
Toluene-2,4-Diisocyanate	228	196,977	0 01	0 01
Dibutyl Phthalate	81	193,473	0 01	0 01
Antimony Compounds	148	165,520	0 01	0 01
Allyl Chloride	20	149,469	0 01	0 01
Urethane	6	145,373	0 01	0 01
4,4'-Methylenedianiline	22	130,151	0 01	0 00
p-Phenylenediamine	5	113,890	0 01	0 00
Cadmium Compounds	65	100,487	0 01	0 00
1 2-Butylene Oxide	16	99,931	0 01	0 00
N,N-Dimethylaniline	19	98,905	0 01	0 00
2,4-Dinitrotoluene	9	93,257	0 00	0 00
o-Cresol	28	89,797	0 00	0 00
Titanium Tetrachloride	27	78,668	0 00	0 00
Dibenzofuran	99	71,054	0 00	0 00
1,2-Dibromoethane	28	63,327	0 00	0 00
Cobalt Compounds	85	56,621	0 00	0 00
1,3-Dichloropropylene	8	54,590	0 00	0 00
Quinoline	34	49,350	0 00	0 00
Heptachlor	2	49 055	0 00	0 00
Asbestos (Friable)	65	47,615	0 00	0 00
o-Toluidine	16	46,922	0 00	0 00
1,1,2,2-Tetrachloroethane	13	43,855	0 00	0 00
Benzyl Chloride	45	43,329	0 00	0 00
Nitrobenzene	17	40,373	0 00	0 00
Acrolein	12	33,652	0 00	0 00
Hydrazine	34	29,004	0 00	0 00
Chloroacetic Acid	18	26,319	0 00	0 00
Acrylamide	43	26,019	0 00	0 00
Benzoic Trichloride	4	24,963	0 00	0 00
Phosgene	30	21,603	0 00	0 00
Hexachloroethane	17	19,187	0 00	0 00
Phosphorus (Yellow Or White)	24	19,153	0 00	0 00
m-Cresol	13	18,432	0 00	0 00
Captan	16	14,869	0 00	0 00
Hexachlorocyclopentadiene	4	14,718	0 00	0 00
Selenium Compounds	12	14,506	0 00	0 00
Pentachlorophenol	41	14,029	0 00	0 00
Calcium Cyanamide	1	12,600	0 00	0 00
Quinone	1	11,300	0 00	0 00
Dimethyl Sulfate	21	10,796	0 00	0 00

Table D-9 (Continued)

National Emissions Of HAPs — 1988

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total HAPs Emissions	Chemical % Of Total TRI Emissions
Diethyl Sulfate	18	10,627	0 00	0 00
Hydroquinone	21	10,334	0 00	0 00
Methyl Isocyanate	3	10,175	0 00	0 00
Methyl Iodide	3	8,944	0 00	0 00
Carbaryl	16	7,923	0 00	0 00
4-Nitrophenol	6	7,855	0 00	0 00
2,4-D	15	7,020	0 00	0 00
Hexachlorobenzene	8	4,994	0 00	0 00
Vinyl Bromide	2	4,950	0 00	0 00
Bis(2-Chloroethyl) Ether	6	4,922	0 00	0 00
1,1-Dimethyl Hydrazine	4	4,323	0 00	0 00
Catechol	10	3,589	0 00	0 00
Trifluralin	11	3,277	0 00	0 00
Parathion	10	3,265	0 00	0 00
2,4-Diaminotoluene	2	2,988	0 00	0 00
Methyl Hydrazine	3	2,927	0 00	0 00
Hexachloro-1,3-Buladiene	8	2,556	0 00	0 00
Mercury Compounds	7	2,366	0 00	0 00
Styrene Oxide	3	2,314	0 00	0 00
o-Anisidine	4	2,293	0 00	0 00
Chloramben	1	1,418	0 00	0 00
Quintozene	4	1,064	0 00	0 00
Dichlorvos	6	1,050	0 00	0 00
Beryllium Compounds	4	862	0 00	0 00
4 4'-Methylenebis(2-Chloroaniline)	2	750	0 00	0 00
Chlordane	2	575	0 00	0 00
Ethylene Thiourea	2	500	0 00	0 00
Ethyleneimine	1	500	0 00	0 00
Propyleneimine	1	500	0 00	0 00
4,6-Dinitro-o-Cresol	6	274	0 00	0 00
Lindane	2	258	0 00	0 00
3 3'-Dichlorobenzidine	2	255	0 00	0 00
2,4,6-Trichlorophenol	1	250	0 00	0 00
Propoxur	1	250	0 00	0 00
Chloromethyl Methyl Ether	2	122	0 00	0 00
2,4,5-Trichlorophenol	1	91	0 00	0 00
4-Aminobiphenyl	1	10	0 00	0 00
Bis(Chloromethyl) Ether	1	1	0 00	0 00
		1,869,609,203	100 00	71 72

TABLE D-10

National Emissions Of 33/50 Chemicals

— 1988 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total 33/50 Chemicals	Chemical % Of Total TRI Emissions
Toluene	3,766	285,303,917	26 88	10 95
1,1,1 Trichloroethane	3,630	173,920,989	16 38	6 67
Xylene (mixed isomers)	3,240	151,187,866	14 24	5 80
Methyl Ethyl Ketone	2,373	131,808,179	12 42	5 06
Dichloromethane	1,577	125,849,987	11 86	4 83
Methyl Isobutyl Ketone	970	31,435,711	2 96	1 21
Trichloroethylene	892	52,645,060	4 96	2 02
Chromium Compounds	713	791,922	0 07	0 03
Tetrachloroethylene	683	35,555,545	3 35	1 36
Chromium	659	547,745	0 05	0 02
Nickel	590	421,570	0 04	0 02
Lead	559	1,168,231	0 11	0 04
Lead Compounds	489	1,518,309	0 14	0 06
Benzene	459	30,226 580	2 85	1 16
Nickel Compounds	321	254,761	0 02	0 01
Cyanide Compounds	210	907,726	0 09	0 03
Chloroform	164	23,871,504	2 25	0 92
Carbon Tetrachloride	87	3,715,421	0 35	0 14
m-Xylene	66	2,194,146	0 21	0 08
Cadmium Compounds	65	100,487	0 01	0 00
o-Xylene	63	2,064,641	0 19	0 08
p-Xylene	46	6,003,302	0 57	0 23
Cadmium	45	21,925	0 00	0 00
Mercury	27	23,395	0 00	0 00
Mercury Compounds	7	2,366	0 00	0 00
		1,061,541,285	100 00	40 72

TABLE D-11

National Emissions Of High Risk/Early Reduction Chemicals

— 1988 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total High Risk/Early Reduction Chemicals	Chemical % Of Total TRI Emissions
Benzene	459	30,226,580	57 87	1 16
1,3-Butadiene	145	6,654,123	12 74	0 26
Ethylene Oxide	193	4,762,901	9 12	0 18
Acrylonitrile	100	4,195,667	8 03	0 16
Vinyl Chloride	47	1,436,427	2 75	0 06
Chloroprene	12	1,218,426	2 33	0 05
Acrylic Acid	139	799,178	1 53	0 03
Chromium Compounds	713	791,922	1 52	0 03
Chromium	659	547,745	1 05	0 02
Vinylidene Chloride	21	296,353	0 57	0 01
Arsenic Compounds	123	267,252	0 51	0 01
Methylenebis(Phenylisocyanate)	228	247,319	0 47	0 01
Toluene-2,4-Diisocyanate	228	196,977	0 38	0 01
Cadmium Compounds	65	100,487	0 19	0 00
Dibenzofuran	99	71,054	0 14	0 00
1,2-Dibromoethane	28	63,327	0 12	0 00
Heptachlor	2	49,055	0 09	0 00
Asbestos (Friable)	65	47,615	0 09	0 00
1,1,2,2-Tetrachloroethane	13	43,855	0 08	0 00
Acrolein	12	33,652	0 06	0 00
Hydrazine	34	29,004	0 06	0 00
Acrylamide	43	26,019	0 05	0 00
Benzoic Trichloride	4	24,963	0 05	0 00
Mercury	27	23,395	0 05	0 00
Cadmium	45	21,925	0 04	0 00
Phosgene	30	21,603	0 04	0 00
Methyl Isocyanate	3	10,175	0 02	0 00
Arsenic	39	8,437	0 02	0 00
Hexachlorobenzene	8	4,994	0 01	0 00
Bis(2-Chloroethyl) Ether	6	4,922	0 01	0 00
Beryllium	7	3,763	0 01	0 00
Mercury Compounds	7	2,366	0 00	0 00
Beryllium Compounds	4	862	0 00	0 00
Chlordane	2	575	0 00	0 00
Propyleneimine	1	500	0 00	0 00
Chloromethyl Methyl Ether	2	122	0 00	0 00
Bis(Chloromethyl) Ether	1	1	0 00	0 00
		52,233,541	100 00	2 01

TABLE D-12

National Emissions Of Carcinogens In TRI Database

— 1988 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total Carcinogens	Chemical % Of Total TRI Emissions
Dichloromethane	1 577	125 849 987	35 63	4 83
Trichloroethylene	892	52 645 060	14 90	2 02
Tetrachloroethylene	683	35,555 545	10 07	1 36
Styrene	1,140	32 460 559	9 19	1 25
Benzene	459	30,226 580	8 56	1 16
Chloroform	164	23,871 504	6 76	0 92
Formaldehyde	724	11,891,313	3 37	0 46
Chloromethane	77	11 290,415	3 20	0 43
1,3-Buladiene	145	6,654,123	1 88	0 26
Ethylene Oxide	193	4,762,901	1 35	0 18
1,2-Dichloroethane	100	4,524,929	1 28	0 17
Acrylonitrile	100	4 195,667	1 19	0 16
Carbon Tetrachloride	87	3 715,421	1 05	0 14
1 1,2-Trichloroethane	29	1,741,342	0 49	0 07
Vinyl Chloride	47	1,436,427	0 41	0 06
Chromium	659	547,745	0 16	0 02
Epichlorohydrin	70	465 268	0 13	0 02
2-Nitropropane	12	389,385	0 11	0 01
Vinylidene Chloride	21	296,353	0 08	0 01
Urethane	6	145,373	0 04	0 01
2,4-Dinitrotoluene	9	93,257	0 03	0 00
2 6-Dinitrotoluene	6	87,597	0 02	0 00
1 2-Dibromoethane	28	63,327	0 02	0 00
Heptachlor	2	49,055	0 01	0 00
o-Toluidine	16	46 922	0 01	0 00
1,1,2,2-Tetrachloroethane	13	43,855	0 01	0 00
Benzyl Chloride	45	43 329	0 01	0 00
Hydrazine	34	29 004	0 01	0 00
Cadmium	45	21,925	0 01	0 00
Hexachloroethane	17	19,187	0 01	0 00
Dimethyl Sulfate	21	10,796	0 00	0 00
Methyl Iodide	3	8 944	0 00	0 00
Arsenic	39	8 437	0 00	0 00
Hexachlorobenzene	8	4,994	0 00	0 00
Bis(2-Chloroethyl) Ether	6	4,922	0 00	0 00
1 1-Dimethyl Hydrazine	4	4 323	0 00	0 00
Beryllium	7	3 763	0 00	0 00
2,4-Diaminotoluene	2	2,988	0 00	0 00
Hexachloro-1,3-Buladiene	8	2,556	0 00	0 00
Thiourea	5	2 004	0 00	0 00
Quintozene	4	1 064	0 00	0 00
Alpha-Naphthylamine	2	590	0 00	0 00
Chlordane	2	575	0 00	0 00
Ethylene Thiourea	2	500	0 00	0 00
Ethyleneimine	1	500	0 00	0 00
Propyleneimine	1	500	0 00	0 00
Safrole	1	500	0 00	0 00
Lindane	2	258	0 00	0 00
3,3'-Dichlorobenzidine	2	255	0 00	0 00
2 4 6-Trichlorophenol	1	250	0 00	0 00
Chloromethyl Methyl Ether	2	122	0 00	0 00
Bis(Chloromethyl) Ether	1	1	0 00	0 00
		353,222 197	100 00	13 55

TABLE D-13

National Emissions Of Ozone Depletors In TRI Database

— 1988 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total Ozone Depletors	Chemical % Of Total TRI Emissions
1,1,1-Trichloroethane	3,630	173 920 989	70 66	6 67
Freon 113	1,372	68,514,249	27 83	2 63
Carbon Tetrachloride	87	3,715 421	1 51	0 14
		246,150,659	100 00	9 44

TABLE D-14

All Chemicals Reported

— 1988 —

Carc	Ozone Depl	HAP	33/50	HR/ER	Chemical	Cas No	Emitted To Air (lb/yr)	Emitted To All Media (lb/yr)
	X	X	X		1 1,1-Trichloroethane	000071556	173 920,989	174,149 092
X		X		X	1,1,2,2-Tetrachloroethane	000079345	43,855	44,698
X		X			1,1,2-Trichloroethane	000079005	1 741,342	1,746,734
X		X			1,1-Dimethyl Hydrazine	000057147	4 323	4 333
		X			1,2,4-Trichlorobenzene	000120821	1,533,291	1,575,400
					1,2,4-Trimethylbenzene	000095636	3,874,664	3 953,504
		X			1,2-Butylene Oxide	000106887	99,931	103,681
X		X		X	1,2-Dibromoethane	000106934	63,327	71,479
					1,2-Dichlorobenzene	000095501	454,451	498,544
X		X			1,2-Dichloroethane	000107062	4,524,929	6,019,696
					1,2-Dichloroethylene	000540590	104,748	104,844
		X			1,2-Dichloropropane	000078875	1,365,844	1,393,029
X		X		X	1,3-Butadiene	000106990	6,654,123	7,075,694
					1,3-Dichlorobenzene	000541731	15,282	16,563
		X			1,3-Dichloropropylene	000542756	54,590	54,840
		X			1,4-Dichlorobenzene	000106467	1,891,419	1,902,872
		X			1,4-Dioxane	000123911	601,244	810,256
		X			2,4,5-Trichlorophenol	000095954	91	91
X		X			2,4,6-Trichlorophenol	000088062	250	300
		X			2,4-D	000094757	7,020	11,358
X		X			2,4-Diaminotoluene	000095807	2,988	3,238
					2,4-Dichlorophenol	000120832	1 403	1,512
					2,4-Dimethylphenol	000105679	10,788	35,495
					2,4-Dinitrophenol	000051285	20,825	120,534
X		X			2,4-Dinitrotoluene	000121142	93,257	223,381
X					2,6-Dinitrotoluene	000606202	87 597	115,554
					2,6-Xylidine	000087627	337	1,874
					2-Ethoxyethanol	000110805	2,324,353	2,444,559
					2-Methoxyethanol	000109864	5,880 880	5,922,157
					2-Nitrophenol	000088755	33,689	33,692
X		X			2-Nitropropane	000079469	389,385	650,685
					2-Phenylphenol	000090437	10,630	11,110
X		X			3,3'-Dichlorobenzidine	000091941	255	255
					4,4'-Diaminodiphenyl Ether	000101804	216	382
					4,4'-Isopropylidenediphenol	000080057	224,896	769,911
		X			4,4'-Methylenebis (2-Chloroaniline)	000101144	750	750
					4,4'-Methylenebis (N,N-Dimethyl)	000101611	250	7,250
		X			4,4'-Methylenedianiline	000101779	130,151	593 290
		X			4 6-Dinitro-o-Cresol	000534521	274	278
		X			4-Aminobiphenyl	000092671	10	14
		X			4-Nitrophenol	000100027	7,855	14,162
		X			Acetaldehyde	000075070	6,588 209	9,082,051
					Acetone	000067641	203,280,215	207,754,171
		X			Acetonitrile	000075058	2,061,891	18,844,914
		X		X	Acrolein	000107028	33,652	103,102
		X		X	Acrylamide	000079061	26,019	908,899
		X		X	Acrylic Acid	000079107	799,178	23,071,284
X		X		X	Acrylonitrile	000107131	4,195,667	8,766,154
		X			Allyl Chloride	000107051	149,469	150,349

Table D-14(Continued)

All Chemicals Reported — 1988

Carc	Ozone Depl	HAP	33/50	HR/ER	Chemical	Cas No	Emitted To Air (lb/yr)	Emitted To All Media (lb/yr)
X					Alpha-Naphthylamine	000134327	590	691
					Aluminum (Fume Or Dust)	007429905	3,439,740	6,331,400
					Ammonia	007664417	252,273,912	328,537,542
					Ammonium Nitrate (Solution)	006484522	2,901,807	43,448,063
					Ammonium Sulfate (Solution)	007783202	720,826	3,731,229
		X			Aniline	000062533	726,473	4,330,882
					Anthracene	000120127	202,113	216,101
					Antimony	007440360	69,206	211,862
		X			Antimony Compounds		165,520	1,975,356
X				X	Arsenic	007440382	8,437	22,424
		X		X	Arsenic Compounds		267,252	5,245,917
		X		X	Asbestos (Friable)	001332214	47,615	8,966,069
					Barium	007440393	265,811	598,289
					Barium Compounds		993,367	6,254,677
					Benzal Chloride	000098873	5,258	5,258
					Benzamide	000055210	500	1,000
X		X	X	X	Benzene	000071432	30,226,580	31,213,435
		X			Benzoic Trichloride	000098077	24,963	24,963
				X	Benzoyl Chloride	000098884	33,014	163,014
					Benzoyl Peroxide	000094360	6,294	7,544
X		X			Benzyl Chloride	000100447	43,329	44,219
X				X	Beryllium	007440417	3,763	41,087
		X		X	Beryllium Compounds		862	12,879
		X			Biphenyl	000092524	1,210,272	1,429,263
					Bis (2-Chloro-1-Methylethyl) Ether	000108601	1,140	31,140
X		X		X	Bis(2-Chloroethyl) Ether	000111444	4,922	6,273
					Bis(2-Ethylhexyl) Adipate	000103231	74,442	84,732
X		X		X	Bis(Chloromethyl) Ether	000542881	1	1
		X			Bromomethane	000074839	1,941,462	1,943,008
					Butyl Acrylate	000141322	411,653	415,793
					Butyl Benzyl Phthalate	000085687	291,248	295,142
					Butyraldehyde	000123728	2,257,110	2,262,950
					C I Basic Green 4	000569642	750	750
					C I Disperse Yellow 3	002832408	398	700
					C I Food Red 15	000081889	250	250
					C I Solvent Yellow 3	000097563	250	250
X			X	X	Cadmium	007440439	21,925	96,146
		X	X	X	Cadmium Compounds		100,487	398,162
		X			Calcium Cyanamide	000156627	12,600	78,600
		X			Captan	000133062	14,869	21,719
		X			Carbaryl	000063252	7,923	8,923
		X			Carbon Disulfide	000075150	123,893,704	123,981,667
X	X	X	X		Carbon Tetrachloride	000056235	3,715,421	3,843,901
		X			Carbonyl Sulfide	000463581	20,183,072	20,183,072
		X			Catechol	000120809	3,589	29,559
		X			Chloramben	000133904	1,418	1,668
X		X		X	Chlordane	000057749	575	4,841
		X			Chlorine	007782505	133,751,760	140,136,041
					Chlorine Dioxide	010049044	13,402,987	13,405,337

Table D-14 (Continued)

All Chemicals Reported — 1988

Carc	Ozone Depl	HAP	33/50	HR/ER	Chemical	Cas No	Emitted To Air (lb/yr)	Emitted To All Media (lb/yr)
		X			Chloroacetic Acid	000079118	26,319	26,929
		X			Chlorobenzene	000108907	4,569,513	4,756,451
		X			Chloroethane	000075003	4,619,442	4,648,400
X		X	X		Chloroform	000067663	23,871,504	25,064,706
X		X			Chloromethane	000074873	11,290,415	11,571,650
X		X		X	Chloromethyl Methyl Ether	000107302	122	122
					Chlorophenols		2,573	74,399
		X		X	Chloroprene	000126998	1,218,426	1,287,505
					Chlorothalonil	001897456	28,476	28,726
X			X	X	Chromium	007440473	547,745	8,705,510
		X	X	X	Chromium Compounds		791,922	29,409,219
					Cobalt	007440484	34,012	94,228
		X			Cobalt Compounds		56,621	88,417
					Copper	007440508	1,726,112	7,801,219
					Copper Compounds		4,363,446	47,021,736
		X			Cresol (Mixed Isomers)	001319773	769,284	2,581,810
		X			Cumene	000098828	4,829,829	4,871,286
					Cumene Hydroperoxide	000080159	192,523	564,807
					Cupferron	000135206	920	920
		X	X		Cyanide Compounds		907,726	1,011,868
					Cyclohexane	000110827	13,133,864	13,528,159
					Decabromodiphenyl Oxide	001163195	29,604	32,146
		X			Di(2-Ethylhexyl) Phthalate	000117817	1,120,956	1,130,742
					Diaminotoluene (Mixed Isomers)	025376458	21,097	198,679
		X		X	Dibenzofuran	000132649	71,054	82,493
		X			Dibutyl Phthalate	000084742	193,473	562,749
					Dichlorobenzene (Mixed Isomers)	025321226	163,684	163,724
X		X	X		Dichloromethane	000075092	125,849,987	127,836,050
		X			Dichlorvos	000062737	1,050	1,050
					Dicofol	000115322	1,343	1,343
		X			Diethanolamine	000111422	637,182	942,273
					Diethyl Phthalate	000084662	97,707	108,707
		X			Diethyl Sulfate	000064675	10,627	10,877
		X			Dimethyl Phthalate	000131113	534,806	539,535
X		X			Dimethyl Sulfate	000077781	10,796	11,456
X		X			Epichlorohydrin	000106898	465,268	540,559
		X			Ethyl Acrylate	000140885	251,823	253,299
					Ethyl Chloroformate	000541413	13,903	13,903
		X			Ethylbenzene	000100414	7,011,058	7,301,269
					Ethylene	000074851	43,233,377	43,279,044
		X			Ethylene Glycol	000107211	13,569,932	23,096,141
X		X		X	Ethylene Oxide	000075218	4,762,901	4,873,577
X		X			Ethylene Thiourea	000096457	500	500
X		X			Ethyleneimine	000151564	500	500
					Fluometuron	002164172	500	500
X		X			Formaldehyde	000050000	11,891,313	22,999,438
	X				Freon 113	000076131	68,514,249	68,580,392
		X			Glycol Ethers		47,937,703	48,589,613
X		X		X	Heptachlor	000076448	49,055	49,057

Table D-14 (Continued)

All Chemicals Reported — 1988

Carc	Ozone Depl	HAP	33/50	HR/ER	Chemical	Cas No	Emitted To Air (lb/yr)	Emitted To All Media (lb/yr)
X		X			Hexachloro-1,3-Butadiene	000087683	2,556	2,929
X		X		X	Hexachlorobenzene	000118741	4,994	5,408
		X			Hexachlorocyclopentadiene	000077474	14,718	16 855
X		X			Hexachloroethane	000067721	19,187	19,719
X		X		X	Hydrazine	000302012	29,004	31,161
					Hydrazine Sulfate	010034932	1,172	1,172
		X			Hydrochloric Acid	007647010	69,264,605	470,624,493
					Hydrogen Cyanide	000074908	1,392,777	3,134,438
		X			Hydrogen Fluoride	007664393	12,114,046	12,312,112
		X			Hydroquinone	000123319	10,334	148,294
					Isobutyraldehyde	000078842	809,260	810,094
					Isopropyl Alcohol (Manufacturing)	000067630	1,935,267	1,937,121
			X		Lead	007439921	1,168,231	6,532,544
		X	X		Lead Compounds		1,518,309	21,619,966
X		X			Lindane	000058899	258	258
		X			m-Cresol	000108394	18,432	19,170
		X	X		m-Xylene	000108383	2,194,146	2,214,757
		X			Maleic Anhydride	000108316	653,952	906,532
					Maneb	012427382	2,265	2,515
					Manganese	007439965	1,791,163	20,519,087
		X			Manganese Compounds		1,669,121	88,836,711
			X	X	Mercury	007439976	23,395	37,737
		X	X	X	Mercury Compounds		2,366	2,366
		X			Methanol	000067561	226,096,844	279,542,921
		X			Methoxychlor	000072435	272,881	273,381
					Methyl Acrylate	000096333	429,335	461,153
		X	X		Methyl Ethyl Ketone	000078933	131,808,179	132,155,176
		X			Methyl Hydrazine	000060344	2,927	2,928
X		X			Methyl Iodide	000074884	8,944	9,199
		X	X		Methyl Isobutyl Ketone	000108101	31,435,711	32,346,212
		X		X	Methyl Isocyanate	000624839	10,175	10,239
		X			Methyl Methacrylate	000080626	3,427,572	3,790,996
		X			Methyl Tert-Butyl Ether	001634044	2,896,781	2,933,050
					Methylene Bromide	000074953	57,723	57,723
		X		X	Methylenebis(Phenylisocyanate)	000101688	247,319	319,256
					Michler'S Ketone	000090948	1,100	1,100
					Molybdenum Trioxide	001313275	103,019	257,330
		X			N,N-Dimethylaniline	000121697	98,905	119,122
					n-Butyl Alcohol	000071363	37,365,557	40,593,763
					n-Dioctyl Phthalate	000117840	69,532	70,052
		X			Naphthalene	000091203	5,086,028	5,259,533
			X		Nickel	007440020	421,570	1,139,907
		X	X		Nickel Compounds		254,761	1,925,509
					Nitric Acid	007697372	8,576,460	14,046,538
					Nitrilotriacetic Acid	000139139	2,500	12,700
		X			Nitrobenzene	000098953	40,373	862,579
					Nitroglycerin	000055630	51,383	58,370
		X			o-Anisidine	000090040	2,293	2,828
		X			o-Cresol	000095487	89,797	91,913

Table D-14 (Continued)

All Chemicals Reported — 1988

Carc	Ozone Depl	HAP	33/50	HR/ER	Chemical	Cas No	Emitted To Air (lb/yr)	Emitted To All Media (lb/yr)
X		X			o-Toluidine	000095534	46,922	54,098
		X	X		o-Xylene	000095476	2,064,641	2,090,138
					p-Anisidine	000104949	10	10
					p-Cresidine	000120718	7,080	8,080
		X			p-Cresol	000106445	640,703	651,994
					p-Nitrosodiphenylamine	000156105	15	15
		X			p-Phenylenediamine	000106503	113,890	119,432
		X	X		p-Xylene	000106423	6,003,302	6,055,728
		X			Parathion	000056382	3,265	4,265
		X			Pentachlorophenol	000087865	14,029	38,419
					Peracetic Acid	000079210	5,453	5,508
		X			Phenol	000108952	10,363,219	15,455,310
		X		X	Phosgene	000075445	21,603	22,103
					Phosphoric Acid	007664382	1,951,706	36,189,144
		X			Phosphorus (Yellow Or White)	007723140	19,153	201,009
		X			Phthalic Anhydride	000085449	521,899	523,434
					Picric Acid	000088891	252	753
					Polybrominated Biphenyls		250	250
		X			Propionaldehyde	000123386	1,296,839	1,298,925
		X			Propoxur	000114261	250	250
					Propylene	000115071	24,039,040	24,049,043
		X			Propylene Oxide	000075569	3,250,269	4,488,182
X		X		X	Propyleneimine	000075558	500	500
					Pyridine	000110861	215,199	710,257
		X			Quinoline	000091225	49,350	50,748
		X			Quinone	000106514	11,300	11,440
X		X			Quintozene	000082688	1,064	1,064
					Saccharin (Manufacturing Only)	000081072	750	750
X					Safrole	000094597	500	500
					Sec-Butyl Alcohol	000078922	1,088,053	1,212,944
					Selenium	007782492	16,282	144,704
		X			Selenium Compounds		14,506	63,656
					Silver	007440224	47,999	88,809
					Silver Compounds		15,656	34,221
X		X			Styrene	000100425	32,460,559	32,755,596
		X			Styrene Oxide	000096093	2,314	2,314
					Sulfuric Acid	007664939	16,914,787	166,641,036
					Tert-Butyl Alcohol	000075650	1,575,457	2,265,812
X		X	X		Tetrachloroethylene	000127184	35,555,545	35,756,720
					Tetrachlorvinphos	000961115	251	251
					Thallium Compounds		253	503
					Thioacetamide	000062555	500	500
X					Thiourea	000062566	2,004	25,394
					Thorium Dioxide	001314201	1,580	1,580
		X			Titanium Tetrachloride	007550450	78,668	80,068
		X	X		Toluene	000108883	285,303,917	287,709,754
		X		X	Toluene-2,4-Diisocyanate	000584849	196,977	198,017
					Toluene-2,6-Diisocyanate	000091087	491,937	492,447
					Trichlorfon	000052686	253	253
X		X	X		Trichloroethylene	000079016	52,645,060	52,672,070

Table D-14 (Continued)

All Chemicals Reported — 1988

Carc	Ozone Depl	HAP	33/50	HR/ER	Chemical	Cas No	Emitted To Air (lb/yr)	Emitted To All Media (lb/yr)
		X			Trifluralin	001582098	3,277	3,878
X		X			Urethane	000051796	145,373	145,373
					Vanadium (Fume Or Dust)	007440622	17,664	109,664
		X			Vinyl Acetate	000108054	5,908,341	8,047,110
		X			Vinyl Bromide	000593602	4,950	5,350
X		X		X	Vinyl Chloride	000075014	1,436,427	1,442,940
X		X		x	Vinylidene Chloride	000075354	296,353	300,414
		X	X		Xylene (Mixed Isomers)	001330207	151,187,866	151,877,550
					Zinc (Fume Or Dust)	007440666	3,394,558	21,742,041
					Zinc Compounds		7,225,958	119,280,910
					Zineb	012122677	1,250	1,250
							2,606,642,759	3,864,760,884

Appendix E

- Data from Basic Data Set -

TABLE E-1

Regional Hot Spots

— 1987 EPA REGIONS —

Rank	EPA Region	Total Emissions (lb/yr)	Region % Of Total TRI Emissions	Rank	Chemical	Total Emissions (lb/yr)
1	4	665,126,546	24 16	1	Methanol	87,309,009
				2	Toluene	74,835,664
				3	Acetone	67,861,734
				4	Carbon Disulfide	66,097,381
				5	Ammonia	56 415,788
				6	Methyl Ethyl Ketone	30,251,939
				7	Xylene (Mixed Isomers)	29,006,177
				8	1,1,1-Trichloroethane	24,982,620
				9	Dichloromethane	24,492,296
				10	Hydrochloric Acid	22,220,252
2	5	584,526,605	21 23	1	Toluene	83,911,566
				2	Methyl Ethyl Ketone	58 867,923
				3	Xylene (Mixed Isomers)	55,717,879
				4	1,1,1-Trichloroethane	44,713,520
				5	Acetone	42,382,116
				6	Dichloromethane	38,581,624
				7	Ammonia	31,599,346
				8	Methanol	26,233,649
				9	Trichloroethylene	17,610,352
				10	Glycol Ethers	17,597,132
3	6	492,164,503	17 88	1	Ammonia	121,802,475
				2	Ethylene	47,508,946
				3	Aluminum (Fume Or Dust)	33 585 153
				4	Propylene	28,756,931
				5	Toluene	28 063,953
				6	Methanol	27,571 820
				7	Acetone	18,448,251
				8	Xylene (Mixed Isomers)	16,479,648
				9	Methyl Ethyl Ketone	12,891,208
				10	1,1,1-Trichloroethane	9,597,982
4	3	306,424,076	11 13	1	Carbon Disulfide	50,448,918
				2	Toluene	35,146,033
				3	Methanol	31,911,110
				4	Acetone	23 874,705
				5	Methyl Ethyl Ketone	16,871,094
				6	1,1,1-Trichloroethane	15,696,552
				7	Dichloromethane	14,265,647
				8	Ammonia	13,350,880
				9	Hydrochloric Acid	12,585,788
				10	Xylene (Mixed Isomers)	12,273,350
5	2	158,459,472	5 76	1	Toluene	22,969,883
				2	Dichloromethane	20,885,521
				3	Acetone	16,546,948
				4	Methanol	14,966,967
				5	1,1,1-Trichloroethane	9,960,553
				6	Methyl Ethyl Ketone	8,608,196
				7	Xylene (Mixed Isomers)	7,850,823
				8	Freon 113	6,587,029
				9	Hydrochloric Acid	6,211,914
				10	Trichloroethylene	4,575,969
6	7	132,308,699	4 81	1	Toluene	18 280,371
				2	Ammonia	16,786,366
				3	Xylene (Mixed Isomers)	16 242 482
				4	Methyl Ethyl Ketone	9,296,207
				5	1,1,1-Trichloroethane	8,427,767
				6	Methanol	7,710,845
				7	Dichloromethane	6,206,383
				8	Acetone	6,037,989
				9	Trichloroethylene	5,533 837
				10	Glycol Ethers	3,983 776
7	8	109,693,895	3 98	1	Chlorine	68,499,623
				2	Hydrochloric Acid	9,906,613
				3	Aluminum (Fume Or Dust)	7,017,973
				4	1,1,1-Trichloroethane	3,831,680
				5	Toluene	2 416 585
				6	Xylene (Mixed Isomers)	2,323,150
				7	Freon 113	2,154,877
				8	Dichloromethane	1,781,837
				9	Acetone	1,267,911
				10	Ammonia	1,144,301
8	9	108,421,610	3 94	1	1,1,1-Trichloroethane	22,983,146
				2	Freon 113	9,618,502
				3	Acetone	8,802,529
				4	Ammonia	8,331,251
				5	Dichloromethane	6,877,109
				6	Toluene	6,086,280
				7	Tetrachloroethylene	5,758,271
				8	Methyl Ethyl Ketone	5,758,268
				9	Methanol	4,765,579
				10	Xylene (Mixed Isomers)	3,100 362
9	1	98,141,784	3 57	1	1,1,1-Trichloroethane	19,964,782
				2	Toluene	11,540,039
				3	Dichloromethane	9,721,961
				4	Freon 113	6,643,761
				5	Methyl Ethyl Ketone	5,951,902
				6	Methanol	5,914,721
				7	Acetone	5,326,644
				8	Tetrachloroethylene	4,244,872
				9	Trichloroethylene	3,650,539
				10	Chlorine	3,332,952
10	10	97,466,442	3 54	1	Ammonia	35,373,243
				2	Aluminum (Fume Or Dust)	11,669,092
				3	Methanol	7,728,858
				4	Acetone	4,833,894
				5	Toluene	4,601,998
				6	Chloroform	2,943,569
				7	Methyl Ethyl Ketone	2,910,394
				8	1,1,1-Trichloroethane	2,711,622
				9	Formaldehyde	2,600,559
				10	Trichloroethylene	2,508,232

TABLE E-2

State Emissions

— 1987 —

State	Rank	Chemical	Total Emissions (lb/yr)	No Of Emitters	% Of State Total
AK	1	Ammonia	30,182,121	4	95 70
	2	Hydrochloric Acid	730,000	1	2 31
	3	Methanol	292,845	2	0 93
	4	Chloroform	173,600	1	0 55
	5	Toluene	27,929	4	0 09
	6	Xylene (Mixed Isomers)	27,621	4	0.09
	7	Benzene	26,647	4	0 08
	8	1,1,1-Trichloroethane	18,000	1	0 06
	9	Cyclohexane	17,941	3	0 06
	10	Ethylbenzene	13,366	4	0 04
AL	1	Carbon Disulfide	43,737,000	2	42 73
	2	Methyl Ethyl Ketone	6,171,306	26	6 03
	3	Chlorine	4,419,768	36	4 32
	4	Xylene (Mixed Isomers)	4,344,324	57	4 24
	5	Toluene	4,300,443	52	4 20
	6	Methanol	4,197,936	40	4 10
	7	Hydrochloric Acid	3,767,943	48	3 68
	8	Ammonia	3,360,709	58	3 28
	9	Chloroform	2,852,502	9	2 79
	10	Chlorine Dioxide	2,801,154	10	2 74
AR	1	Ammonia	15,476,673	50	29 18
	2	Toluene	5,251,650	57	9 90
	3	Methanol	4,048,299	28	7 63
	4	Xylene (Mixed Isomers)	3,634,698	66	6 85
	5	Aluminum (Fume Or Dust)	3,267,432	17	6 16
	6	Acetone	3,225,244	40	6 08
	7	Methyl Ethyl Ketone	2,952,570	41	5 57
	8	Dichloromethane	2,157,902	19	4 07
	9	Carbon Disulfide	1,836,891	3	3 46
	10	Freon 113	1,529,077	16	2 88
AS	1	Ammonia	27,750	2	100
AZ	1	Acetone	3,166,158	23	17 92
	2	1,1,1-Trichloroethane	2,679,078	43	15 17
	3	Freon 113	2,234,414	40	12 65
	4	Copper Compounds	1,967,930	4	11 14
	5	Styrene	741,260	9	4 20
	6	Methanol	705,685	12	3 99
	7	Copper	657,290	3	3 72
	8	Ammonia	633,991	13	3 59
	9	Dichloromethane	622,646	14	3 52
	10	Methyl Ethyl Ketone	614,513	21	3 48
CA	1	1,1,1-Trichloroethane	20,265,948	389	22 77
	2	Ammonia	7,376,210	160	8 29
	3	Freon 113	7,360,837	145	8 27
	4	Dichloromethane	6,249,613	123	7 02
	5	Acetone	5,566,721	218	6 26
	6	Tetrachloroethylene	5,293,329	92	5 95
	7	Toluene	5,257,738	190	5 91
	8	Methyl Ethyl Ketone	5,108,254	192	5 74
	9	Methanol	4,059,144	105	4.56
	10	Xylene (Mixed Isomers)	2,789,419	156	3 13
CO	1	1,1,1-Trichloroethane	1,558,119	27	14 73
	2	Freon 113	1,302,266	24	12 31
	3	Aluminum (Fume Or Dust)	1,044,830	12	9 88
	4	Dichloromethane	775,387	14	7 33
	5	Methanol	724,572	11	6 85
	6	Acetone	692,489	19	6 55
	7	Toluene	540,562	17	5 11
	8	Glycol Ethers	539,619	4	5 10
	9	Ammonium Nitrate (Solution)	529,200	3	5 00
	10	n-Butyl Alcohol	500,098	6	4 73
CT	1	1,1,1-Trichloroethane	11,116,549	139	39 86
	2	Tetrachloroethylene	3,125,359	32	11 21
	3	Dichloromethane	2,749,958	46	9 86
	4	Toluene	1,644,952	39	5 90
	5	Freon 113	1,583,513	35	5 68
	6	Methanol	1,502,660	29	5 39
	7	Methyl Ethyl Ketone	832,256	37	2 98
	8	Acetone	742,557	25	2 66
	9	Chloroethane	563,148	2	2 02
	10	Xylene (Mixed Isomers)	476,273	31	1 71
DE	1	Methanol	1,678,218	12	18 33
	2	Xylene (Mixed Isomers)	1,014,367	5	11 08
	3	Methyl Ethyl Ketone	943,477	10	10 30
	4	Hydrochloric Acid	899,898	12	9 83
	5	Carbonyl Sulfide	827,000	1	9 03
	6	Urethane	419,450	1	4 58
	7	Toluene	388,258	14	4 24
	8	Trichloroethylene	277,180	2	3 03
	9	Methyl Isobutyl Ketone	212,000	1	2 32
	10	Glycol Ethers	196,750	2	2 15
FL	1	Ammonia	15,527,543	66	30 44
	2	Ammonium Sulfate (Solution)	5,800,000	1	11 37
	3	Acetone	4,984,447	63	9 77
	4	Methanol	3,889,377	23	7 63
	5	Freon 113	2,646,998	43	5 19
	6	Styrene	2,481,292	41	4 86
	7	Toluene	2,026,802	38	3 97
	8	1,1,1-Trichloroethane	1,935,806	51	3 80
	9	Chlorine	1,636,946	31	3 21
	10	Dichloromethane	1,439,066	32	2 82
GA	1	Methanol	32,838,572	54	35 26
	2	Hydrochloric Acid	8,200,415	49	8 80
	3	Toluene	7,337,385	77	7 88
	4	Acetone	6,984,923	52	7 50
	5	Ammonia	4,467,519	73	4 80
	6	Xylene (Mixed Isomers)	4,297,930	86	4 61
	7	Dichloromethane	3,865,677	50	4 15
	8	Trichloroethylene	2,926,425	15	3 14
	9	Methyl Ethyl Ketone	2,865,927	54	3 08
	10	Methyl Isobutyl Ketone	2,694,838	23	2 89
HI	1	Ammonia	255,700	5	26 45
	2	Aluminum (Fume Or Dust)	150,610	2	15 58
	3	Toluene	97,000	2	10 04
	4	Glycol Ethers	61,445	1	6 36
	5	n-Butyl Alcohol	60,325	1	6 24
	6	Xylene (Mixed Isomers)	50,000	1	5.17
	7	Benzene	40,100	2	4 15
	8	1,1,1-Trichloroethane	38,120	2	3 94
	9	m-Xylene	34,000	1	3 52
	10	Propylene	34,000	2	3 52
IA	1	Toluene	8,640,094	59	21 42
	2	Ammonia	5,912,942	44	14 66
	3	Xylene (Mixed Isomers)	3,502,156	67	8 68
	4	Methyl Ethyl Ketone	3,206,734	28	7 95
	5	1,1,1-Trichloroethane	3,039,530	55	7 54
	6	Tetrachloroethylene	2,823,554	12	7 00
	7	Methanol	2,303,372	17	5 71
	8	Acetone	1,990,787	32	4 94
	9	Ethylene	1,560,000	1	3 87
	10	Dichloromethane	1,090,945	18	2 70

Table E-2 (Continued)

State Emissions — 1987

State	Rank	Chemical	Total Emissions (lb/yr)	No Of Emitters	% Of State Total
ID	1	Ammonia	1,608,156	21	31 90
	2	Chloroform	710,000	1	14 08
	3	Chlorine Dioxide	590,700	1	11 72
	4	Zinc Compounds	359,027	2	7 12
	5	Methanol	332,530	4	6 60
	6	Sulfuric Acid	220,698	10	4 38
	7	Freon 113	210,720	3	4 18
	8	Chlorine	123,505	8	2 45
	9	Isopropyl Alcohol (Manufacturing)	115,085	4	2 28
	10	Cadmium Compounds	109,340	2	2 17
IL	1	Toluene	19,665,886	199	18 52
	2	1,1,1-Trichloroethane	10,976,637	191	10 34
	3	Ammonia	8,410,664	93	7 92
	4	Xylene (Mixed Isomers)	6,470,373	154	6 09
	5	Methyl Ethyl Ketone	5,509,691	130	5 19
	6	Ethylene	5,456,509	14	5 14
	7	Chlorine	4,980,561	48	4 69
	8	Trichloroethylene	4,381,783	96	4 13
	9	Methanol	3,609,488	102	3 40
	10	Dichloromethane	3,347,402	88	3 15
IN	1	Dichloromethane	16,904,178	78	14 55
	2	Toluene	16,033,508	149	13 80
	3	Acetone	10,205,870	93	8 79
	4	1,1,1-Trichloroethane	9,409,478	106	8 10
	5	Xylene (Mixed Isomers)	9,303,193	160	8 01
	6	Methyl Ethyl Ketone	8,075,292	104	6 95
	7	Trichloroethylene	6,629,884	65	5 71
	8	Aluminum (Fume Or Dust)	5,122,839	61	4 41
	9	Benzene	4,429,161	12	3 81
	10	Carbon Disulfide	3,564,075	2	3 07
KS	1	Ammonia	5,153,475	33	18 37
	2	Trichloroethylene	3,267,523	11	11 65
	3	Methanol	2,169,260	19	7 73
	4	Xylene (Mixed Isomers)	2,104,768	41	7 50
	5	Toluene	1,908,132	42	6 80
	6	Methyl Ethyl Ketone	1,731,891	25	6 17
	7	Carbon Disulfide	1,561,509	2	5 57
	8	Acetone	1,276,665	28	4 55
	9	Aluminum (Fume Or Dust)	1,145,166	10	4 08
	10	1,1,1-Trichloroethane	811,381	24	2 89
KY	1	Toluene	8,251,424	60	15 29
	2	Aluminum (Fume Or Dust)	7,299,591	45	13 53
	3	Methanol	6,385,438	27	11 83
	4	Xylene (Mixed Isomers)	5,084,958	54	9 42
	5	1,1,1-Trichloroethane	2,752,774	41	5 10
	6	Hydrochloric Acid	2,412,788	33	4 47
	7	Ethylene	2,300,946	4	4 26
	8	Acetone	2,041,999	38	3 78
	9	Glycol Ethers	1,863,350	19	3 45
	10	Dichloromethane	1,229,099	20	2 28
LA	1	Ammonia	77,026,391	59	51 75
	2	Methanol	9,736,176	53	6 54
	3	Toluene	6,722,029	62	4 52
	4	Ethylene	6,387,127	36	4 29
	5	Propylene	5,006,785	28	3 36
	6	Carbon Disulfide	4,485,591	9	3 01
	7	Aluminum (Fume Or Dust)	3,956,555	26	2 66
	8	Methyl Ethyl Ketone	2,621,987	29	1 76
	9	1,2-Dichloroethane	2,324,486	20	1 56
	10	Xylene (Mixed Isomers)	2,139,167	49	1 44
MA	1	Toluene	5,672,161	96	17 55
	2	1,1,1-Trichloroethane	4,167,659	139	12 90
	3	Freon 113	3 322,273	69	10 28
	4	Dichloromethane	2 980,085	60	9 22
	5	Methyl Ethyl Ketone	2,754 952	63	8 52
	6	Trichloroethylene	2,269 084	55	7 02
	7	Acetone	1,998,682	65	6 18
	8	Methanol	1,913,175	68	5 92
	9	2-Methoxyethanol	1,161,014	9	3 59
	10	1,1,2-Trichloroethane	845,657	2	2 62
MD	1	Ammonia	3,604,099	25	17 54
	2	Toluene	2,020,931	27	9 84
	3	Aluminum (Fume Or Dust)	1 748,678	10	8 51
	4	1,1,1-Trichloroethane	1,725,489	28	8 40
	5	Hydrochloric Acid	1,522 452	19	7 41
	6	Methyl Ethyl Ketone	1,491,725	21	7 26
	7	Chlorine	1,109,185	9	5 40
	8	Xylene (Mixed Isomers)	989,662	21	4 82
	9	Chloroform	680,000	1	3 31
	10	Chlorine Dioxide	650 250	1	3 17
ME	1	Chlorine	2,633 323	13	16 27
	2	1,1,1-Trichloroethane	2,211,866	21	13 66
	3	Methanol	1,996,225	10	12 33
	4	Chlorine Dioxide	1,923,954	7	11 89
	5	Chloroform	1,673,560	7	10 34
	6	Acetone	954,481	17	5 90
	7	Xylene (Mixed Isomers)	784,169	12	4 84
	8	Toluene	641,406	13	3 96
	9	2-Methoxyethanol	604,311	3	3 73
	10	Glycol Ethers	459,250	3	2 84
MI	1	Toluene	20,130,708	185	16 81
	2	Xylene (Mixed Isomers)	17,245,186	156	14 40
	3	Methyl Ethyl Ketone	14,436,620	125	12 05
	4	Acetone	12,129,692	127	10 13
	5	Dichloromethane	9,052,027	71	7 56
	6	Glycol Ethers	5 477,931	69	4 57
	7	1,1,1-Trichloroethane	5,264,363	128	4 40
	8	Methanol	5,148,467	79	4 30
	9	Chlorine	3,923,671	37	3 28
	10	n-Butyl Alcohol	2,676,368	53	2 23
MN	1	Methyl Ethyl Ketone	12,259,855	37	24 43
	2	Toluene	10,578,935	52	21 08
	3	Xylene (Mixed Isomers)	4,320,498	49	8 61
	4	1 1,1-Trichloroethane	3,106,603	58	6 19
	5	Freon 113	2,858,492	43	5 70
	6	Methanol	2,418,612	30	4 82
	7	Dichloromethane	2,331,161	38	4 65
	8	Acetone	1,625,934	34	3 24
	9	Trichloroethylene	1,058,060	25	2 11
	10	n-Butyl Alcohol	1,035,479	19	2 06
MO	1	Xylene (Mixed Isomers)	9,307,966	90	18 82
	2	Toluene	5,289,780	114	10 69
	3	Methyl Ethyl Ketone	3,760,525	72	7 60
	4	1,1,1-Trichloroethane	3,595,732	78	7 27
	5	Glycol Ethers	3,157,397	41	6 38
	6	Methanol	2,992,782	50	6 05
	7	Dichloromethane	2,941,894	44	5 95
	8	Acetone	2,330,966	60	4 71
	9	Ammonia	2,066,941	48	4 18
	10	n-Butyl Alcohol	2,043,411	36	4 13

Table E-2 (Continued)

State Emissions — 1987

State	Rank	Chemical	Total Emissions (lb/yr)	No Of Emitters	% Of State Total
MS	1	Ammonia	15,400 739	37	26 19
	2	Toluene	8,688,005	49	14 77
	3	Carbonyl Sulfide	7,589,000	2	12 90
	4	Methyl Ethyl Ketone	6,172 615	21	10 50
	5	Xylene (Mixed Isomers)	3,698,443	41	6 29
	6	Dichloromethane	3,128,629	14	5 32
	7	Trichloroethylene	2,223,859	8	3 78
	8	1,1,1-Trichloroethane	1,429,897	32	2 43
	9	Methanol	1,385,569	20	2 36
	10	Chlorine	929,271	19	1 58
MT	1	Aluminum (Fume Or Dust)	2,949,927	7	51 98
	2	Hydrogen Fluoride	370,155	5	6 52
	3	Xylene (Mixed Isomers)	359,470	4	6 33
	4	Formaldehyde	324,200	4	5 71
	5	Toluene	267,250	6	4 71
	6	Propylene	215,400	3	3 80
	7	Methanol	181,250	3	3 19
	8	Ethylene	98,760	3	1 74
	9	Ammonia	94,000	3	1 66
	10	Lead Compounds	86,501	3	1 52
NC	1	Toluene	23,650,176	176	23 12
	2	Methanol	15,261,417	169	14 92
	3	Methyl Ethyl Ketone	7,541,046	128	7 37
	4	Dichloromethane	7,381,545	51	7 22
	5	Ammonia	7,280,251	74	7 12
	6	1,1,1-Trichloroethane	5,369,002	128	5 25
	7	Acetone	4,991,675	117	4 88
	8	Hydrochloric Acid	3,687,516	58	3 60
	9	Xylene (Mixed Isomers)	2,525,701	114	2 47
	10	Chloroform	2,414,986	5	2 36
ND	1	Aluminum (Fume Or Dust)	890,000	1	53 42
	2	Xylene (Mixed Isomers)	216,618	7	13
	3	Toluene	113,268	2	6 80
	4	1,1,1-Trichloroethane	94,445	4	5 67
	5	Ammonia	60,500	3	3 63
	6	Freon 113	53,587	1	3 22
	7	Methyl Ethyl Ketone	33,481	4	2 01
	8	Tetrachloroethylene	32,000	1	1 92
	9	Methanol	22,506	5	1 35
	10	Benzene	22,000	1	1 32
NE	1	Ammonia	3,653,008	26	25 26
	2	Toluene	2,442,365	22	16 89
	3	Dichloromethane	1,705,269	8	11 79
	4	Xylene (Mixed Isomers)	1,327,592	27	9 18
	5	1,1,1-Trichloroethane	981,124	25	6 78
	6	Freon 113	872,891	6	6 04
	7	Methyl Ethyl Ketone	597,057	14	4 13
	8	Acetone	439,571	11	3 04
	9	Ammonium Nitrate (Solution)	390,000	2	2 70
	10	Methyl Isobutyl Ketone	282,408	5	1 95
NH	1	Dichloromethane	3,162,981	17	25 12
	2	Toluene	1,597,081	19	12 68
	3	1,1,1-Trichloroethane	1,419,479	39	11 27
	4	Freon 113	1,104,651	23	8 77
	5	Methyl Ethyl Ketone	916,746	18	7 28
	6	Chlorine	690,500	2	5 48
	7	Chlorine Dioxide	640,000	1	5 08
	8	Xylene (Mixed Isomers)	538,825	12	4 28
	9	Acetone	444,495	12	3 53
	10	2-Methoxyethanol	383,900	1	3 05
NJ	1	Toluene	9,414,246	176	21 50
	2	Acetone	6,583,417	108	15 03
	3	Methyl Ethyl Ketone	4,325,825	105	9 88
	4	Xylene (Mixed Isomers)	2,661,027	120	6 08
	5	Methanol	2,630,952	107	6 01
	6	Dichloromethane	2,084,889	69	4 76
	7	1,1,1-Trichloroethane	1,384,337	111	3 16
	8	n-Butyl Alcohol	1,370,359	62	3 13
	9	Methyl Isobutyl Ketone	1,248,684	51	2 85
	10	Freon 113	1,174,668	35	2 68
NM	1	Sulfuric Acid	993,900	5	25 49
	2	Freon 113	628,231	7	16 11
	3	Toluene	570,273	7	14 63
	4	Copper Compounds	485,559	2	12 45
	5	Xylene (Mixed Isomers)	378,315	5	9 70
	6	1,1,1-Trichloroethane	267,944	5	6 87
	7	Acetone	125,647	6	3 22
	8	Benzene	121,951	4	3 13
	9	Ethylbenzene	97,899	4	2 51
	10	Hydrochloric Acid	59,518	5	1 53
NV	1	Toluene	256,435	3	33 20
	2	Chlorine	182,003	4	23 56
	3	Acetone	69,650	4	9 02
	4	Xylene (Mixed Isomers)	53,200	1	6 89
	5	Ammonia	37,600	1	4 87
	6	Hydrochloric Acid	37,075	6	4 80
	7	Methyl Ethyl Ketone	35,521	4	4 60
	8	Styrene	33,611	3	4 35
	9	Freon 113	23,251	1	3 01
	10	Manganese	9,100	2	1 18
NY	1	Dichloromethane	17,067,609	64	17 04
	2	Methanol	11,315,852	91	11 30
	3	Toluene	11,024,054	156	11
	4	Acetone	8,741,346	70	8 73
	5	1,1,1-Trichloroethane	8,140,663	152	8 13
	6	Hydrochloric Acid	5,751,844	95	5 74
	7	Xylene (Mixed Isomers)	4,611,965	107	4 60
	8	Freon 113	4,095,527	61	4 09
	9	Methyl Ethyl Ketone	3,996,142	93	3 99
	10	Trichloroethylene	3,976,192	64	3 97
OH	1	Ammonia	15,850,083	117	11 11
	2	Methyl Ethyl Ketone	14,171,797	174	9 93
	3	Acetone	13,180,094	126	9 24
	4	Xylene (Mixed Isomers)	13,162,166	214	9 22
	5	Toluene	12,220,854	239	8 56
	6	1,1,1-Trichloroethane	10,650,038	235	7 46
	7	Methanol	8,190,822	114	5 74
	8	Glycol Ethers	5,299,395	78	3 71
	9	Dichloromethane	4,929,787	114	3 45
	10	Hydrochloric Acid	4,200,073	159	2 94
OK	1	Ammonia	14,543,647	26	39 14
	2	Toluene	4,078,768	33	10 98
	3	Methanol	3,302,898	13	8 89
	4	Xylene (Mixed Isomers)	2,192,492	27	5 90
	5	Methyl Ethyl Ketone	1,875,978	18	5 05
	6	Hydrogen Fluoride	1,352,694	8	3 64
	7	Tetrachloroethylene	1,203,448	10	3 24
	8	1,1,1-Trichloroethane	957,871	30	2 58
	9	Methyl Isobutyl Ketone	912,354	8	2 46
	10	Aluminum (Fume Or Dust)	897,185	19	2 41

Table E-2 (Continued)

State Emissions — 1987

State	Rank	Chemical	Total Emissions (lb/yr)	No Of Emitters	% Of State Total
OR	1	Methanol	2,965,333	28	13 78
	2	Acetone	2,605,018	30	12 10
	3	Formaldehyde	2,448,725	28	11 38
	4	Toluene	2,299,263	33	10 68
	5	Trichloroethylene	1,100,338	13	5 11
	6	Ammonia	1,093,573	25	5 08
	7	Aluminum (Fume Or Dust)	999,405	6	4 64
	8	Methyl Ethyl Ketone	813,232	18	3 78
	9	Chlorine	780,660	17	3 63
	10	Freon 113	718,552	15	3 34
PA	1	Toluene	15,800,174	189	16 86
	2	1,1,1-Trichloroethane	10,040,763	160	10 72
	3	Dichloromethane	8,084,944	65	8 63
	4	Methyl Ethyl Ketone	6,553,449	113	6 99
	5	Ammonia	6,419,669	101	6 85
	6	Xylene (Mixed Isomers)	5,085,288	172	5 43
	7	Hydrochloric Acid	4,915,873	98	5 25
	8	Ammonium Nitrate (Solution)	4,834,450	4	5 16
	9	Methanol	2,978,369	98	3 18
	10	Acetone	2,849,922	108	3 04
PR	1	Toluene	2,151,583	19	16 93
	2	Dichloromethane	1,733,023	21	13 63
	3	Freon 113	1,316,834	22	10 36
	4	Acetone	1,222,185	27	9 62
	5	Carbon Disulfide	1,101,100	1	8 66
	6	Methanol	1,019,463	29	8 02
	7	Benzene	697,785	3	5 49
	8	Cyclohexane	508,977	5	4 00
	9	1,1,1-Trichloroethane	435,303	23	3 42
	10	Methyl Ethyl Ketone	286,229	9	2 25
RI	1	Toluene	1,703,924	20	21 62
	2	Acetone	1,150,879	19	14 60
	3	Methyl Ethyl Ketone	1,141,389	13	14 48
	4	1,1,1-Trichloroethane	784,258	37	9 95
	5	Dichloromethane	626,573	13	7 95
	6	Trichloroethylene	576,417	35	7 31
	7	Tetrachloroethylene	464,990	19	5 90
	8	Freon 113	275,662	13	3 50
	9	Xylene (Mixed Isomers)	265,284	14	3 37
	10	Methanol	180,923	14	2 30
SC	1	Methanol	17,216,556	68	26 02
	2	Toluene	7,444,646	57	11 25
	3	Acetone	6,285,758	38	9 50
	4	1,1,1-Trichloroethane	4,786,005	61	7 23
	5	Xylene (Mixed Isomers)	2,866,137	59	4 33
	6	Methyl Ethyl Ketone	2,818,824	36	4 26
	7	Ammonia	2,583,511	43	3 90
	8	Dichloromethane	2,444,091	28	3 69
	9	2-Methoxyethanol	1,972,633	3	2 98
	10	Hydrochloric Acid	1,879,795	40	2 84
SD	1	Xylene (Mixed Isomers)	702,367	7	27 94
	2	Toluene	452,348	5	17 99
	3	Freon 113	410,722	3	16 34
	4	Ammonia	188,861	2	7 51
	5	Methyl Ethyl Ketone	158,718	5	6 31
	6	Methanol	134,585	2	5 35
	7	Acetone	106,555	3	4 24
	8	1,1,1-Trichloroethane	89,689	4	3 57
	9	Formaldehyde	89,200	1	3 55
	10	Styrene	51,510	2	2 05
TN	1	Acetone	40,768,160	69	29 67
	2	Carbon Disulfide	22,355,826	6	16 27
	3	Toluene	13,136,783	104	9 56
	4	Carbonyl Sulfide	10,000,000	1	7 28
	5	Ammonia	7,032,768	46	5 12
	6	Methanol	6,134,144	46	4 46
	7	Xylene (Mixed Isomers)	5,354,482	90	3 90
	8	1,1,1-Trichloroethane	4,369,889	70	3 18
	9	Dichloromethane	3,169,202	38	2 31
	10	Methyl Ethyl Ketone	2,664,130	59	1 94
TX	1	Ethylene	40,702,396	74	16 33
	2	Aluminum (Fume Or Dust)	25,462,541	60	10 22
	3	Propylene	23,495,755	80	9 43
	4	Ammonia	14,753,559	167	5 92
	5	Acetone	13,398,926	127	5 38
	6	Toluene	11,441,233	204	4 59
	7	Methanol	10,481,077	156	4 21
	8	Xylene (Mixed Isomers)	8,134,976	189	3 26
	9	1,1,1-Trichloroethane	6,357,772	141	2 55
	10	Benzene	6,011,719	80	2 41
UT	1	Chlorine	68,349,200	12	79 18
	2	Hydrochloric Acid	9,844,750	15	11 40
	3	1,1,1-Trichloroethane	2,059,427	22	2 39
	4	Aluminum (Fume Or Dust)	1,695,050	10	1 96
	5	Dichloromethane	966,300	5	1 12
	6	Toluene	533,879	15	0 62
	7	Xylene (Mixed Isomers)	496,011	16	0 57
	8	Acetone	456,317	16	0 53
	9	Freon 113	388,302	13	0 45
	10	Sulfuric Acid	325,669	12	0 38
VA	1	Carbon Disulfide	49,481,000	2	35 02
	2	Methanol	20,300,838	63	14 37
	3	Acetone	15,519,310	66	10 98
	4	Toluene	13,852,123	94	9 80
	5	Methyl Ethyl Ketone	7,420,157	68	5 25
	6	Dichloromethane	4,201,952	28	2 97
	7	Hydrochloric Acid	4,112,853	30	2 91
	8	Xylene (Mixed Isomers)	3,887,252	77	2 75
	9	1,1,1-Trichloroethane	2,904,231	57	2 06
	10	Chloroform	2,583,500	4	1 83
VI	1	Benzene	700,000	1	39 46
	2	Xylene (Mixed Isomers)	400,000	1	22 55
	3	Toluene	380,000	1	21 42
	4	p-Xylene	151,000	1	8 51
	5	Ethylbenzene	79,000	1	4 45
	6	1,2,4-Trimethylbenzene	27,500	1	1 55
	7	Cyclohexane	26,600	1	1 50
	8	Naphthalene	3,150	1	0 18
	9	Anthracene	2,603	1	0 15
	10	Methanol	700	1	0 04
VT	1	Toluene	280,515	7	22.08
	2	1,1,1-Trichloroethane	264,971	13	20 86
	3	Freon 113	192,412	5	15 15
	4	Xylene (Mixed Isomers)	134,211	7	10 56
	5	Methyl Ethyl Ketone	95,909	4	7 55
	6	Methyl Isobutyl Ketone	61,430	3	4 84
	7	Methanol	38,247	3	3 01
	8	Acetone	35,550	5	2 80
	9	Tetrachloroethylene	33,209	3	2 61
	10	Sodium Hydroxide	27,000	4	2 13

Table E-2 (Continued)
State Emissions — 1987

State	Rank	Chemical	Total Emissions (lb/yr)	No Of Emitters	% Of State Total
WA	1	Aluminum (Fume Or Dust)	10,669,687	21	27 11
	2	Methanol	4,138,150	27	10 51
	3	Ammonia	2,489,393	51	6 32
	4	Toluene	2,274,806	41	5 78
	5	Acetone	2,122,731	57	5 39
	6	Methyl Ethyl Ketone	2,095,617	36	5 32
	7	1,1,1-Trichloroethane	2,081,903	39	5 29
	8	Chloroform	1,421,569	9	3.61
	9	Dichloromethane	1,411,687	24	3 59
	10	Trichloroethylene	1,396,894	16	3 55
WI	1	1,1,1-Trichloroethane	5,306,401	120	10 71
	2	Toluene	5,281,675	99	10 66
	3	Xylene (Mixed Isomers)	5,216,463	97	10 53
	4	Methyl Ethyl Ketone	4,414,668	70	8 91
	5	Methanol	3,700,430	44	7 47
	6	Ammonia	2,935,083	76	5.93
	7	Hydrochloric Acid	2,750,788	65	5 55
	8	Acetone	2,563,408	51	5 17
	9	Dichloromethane	2,017,069	44	4 07
	10	Glycol Ethers	1,887,154	37	3 81
WV	1	Methanol	6,467,598	18	15 50
	2	Acetone	4,956,513	13	11 88
	3	Toluene	3,084,547	31	7 39
	4	Propylene	2,228,290	3	5 34
	5	Ammonia	1,501,938	20	3 60
	6	Benzene	1,463,213	6	3 51
	7	Aluminum (Fume Or Dust)	1,321,670	13	3 17
	8	Chloromethane	1,302,356	5	3 12
	9	Xylene (Mixed Isomers)	1,296,781	22	3 11
	10	Acrylonitrile	1,210,538	4	2 90
WY	1	Ammonia	639,307	3	21 75
	2	Toluene	509,278	5	17 33
	3	Aluminum (Fume Or Dust)	421,919	4	14 35
	4	Xylene (Mixed Isomers)	374,157	6	12 73
	5	Propylene	167,000	3	5 68
	6	1,2,4-Trimethylbenzene	115,000	2	3 91
	7	Benzene	97,084	4	3 30
	8	Methyl Ethyl Ketone	83,997	2	2 86
	9	Ethylbenzene	77,202	3	2 63
	10	n-Butyl Alcohol	60,000	1	2 04

TABLE E-3

Regional Hot Spots

— 1987 3-DIGIT ZIP CODES —

3 Digit ZIP Code	State	No Of Release Reports	No Of Facilities	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	ZIP % Of Total TRI Emissions
840	UT	127	30	79,693,562	80,404,209	2 92
775	TX	1,076	114	37 447,395	75,638,519	2 75
226	VA	45	12	53,864,892	54,112,601	1 97
376	TN	129	27	17,509,812	53,276,986	1 94
365	AL	165	21	47,688,861	48,562,188	1 76
703	LA	48	11	2,843,110	44,101,738	1 60
700	LA	280	35	7,073,563	32,340,914	1 17
996	AK	18	3	348,025	30,551,825	1 11
797	TX	70	14	2,126,028	29,039,058	1 05
776	TX	237	26	10,555,268	27,844,287	1 01
480	MI	387	106	24,133,692	26,516,990	0 96
146	NY	197	47	21,079,005	26,235,492	0 95
707	LA	337	36	12,961,101	22,374,031	0 81
244	VA	50	17	20,896,673	21,947,671	0 80
286	NC	363	118	19,925,968	21,843,602	0 79
779	TX	95	13	2,893,857	21,295,388	0 77
706	LA	215	25	7,680,927	20,034,371	0 73
377	TN	64	24	19,402,905	19,715,264	0 72
356	AL	165	39	15,290,163	19,249,498	0 70
314	GA	68	20	17,199,190	19,194,300	0 70
606	IL	786	253	13,776,120	18,083,940	0 66
371	TN	131	37	16,047,046	18,060,263	0 66
553	MN	129	48	16,991,955	17,729,995	0 64
391	MS	33	12	2,879,568	17,668,662	0 64
284	NC	115	25	15,208,939	17,369,639	0 63
723	AR	77	18	3,035,909	17,327,282	0 63
315	GA	84	20	14,826,112	16,690,151	0 61
481	MI	348	95	9,441,349	16,247,565	0 59
241	VA	90	28	4,143,659	15,942,393	0 58
490	MI	242	87	12,705,255	15,546,995	0 56
476	IN	36	7	11,958,070	14,864,720	0 54
338	FL	101	43	2,072,994	14,255,431	0 52
440	OH	400	115	12,513,300	14,150,497	0 51
381	TN	200	67	5,648,928	13,841,458	0 50
604	IL	388	100	6,913,182	13,669,887	0.50
261	WV	144	18	11,077,280	13,420,370	0 49
232	VA	118	40	11,798,489	13,284,854	0 48
190	PA	206	51	8,768,233	13,247,767	0 48
458	OH	230	47	5,008,260	13,224,521	0 48
465	IN	242	96	11,489,046	13,195,514	0 48
70	NJ	693	204	9,245,446	12,971,144	0 47
463	IN	289	68	10,823,397	12,902,918	0 47
402	KY	286	57	11,174,823	12,822,573	0 47
756	TX	136	35	4,679,895	12,664,227	0 46
452	OH	385	97	8,316,589	11,939,778	0 43
420	KY	137	20	8,713,272	11,878,007	0 43
479	IN	130	35	10,305,483	11,835,462	0 43
397	MS	76	25	11,211,743	11,752,787	0 43
473	IN	150	51	7,957,190	11,485,201	0 42
150	PA	165	40	3,891,549	10,889,791	0 40
601	IL	395	148	8,706,905	10,850,026	0 39
630	MO	187	55	8,977,413	10,709,048	0 39
299	SC	19	3	8,939,581	10,551,331	0 38
986	WA	120	28	6,008,001	10,328,592	0 38
551	MN	178	46	7,947,874	10,324,872	0 38
6	PR	240	76	7,572,000	10,098,133	0 37
395	MS	136	25	9,068,803	9,846,078	0 36
485	MI	72	13	7,894,360	9,730,136	0 35
212	MD	321	76	5,531,984	9,581,052	0 35
765	TX	39	11	1,420,609	9,542,697	0 35
301	GA	139	47	7,923,733	9,438,965	0 34
494	MI	263	75	6,345,616	9,336,555	0 34
441	OH	520	153	7,051,033	9,150,519	0 33
605	IL	147	45	7,699,009	9,071,900	0 33
770	TX	388	104	5,930,264	9,046,126	0 33
486	MI	146	20	8,242,470	9,031,737	0 33
740	OK	92	28	5,070,798	9,029,950	0 33
294	SC	127	33	7,713,358	9,028,678	0 33
852	AZ	156	54	3,343,562	9,004,824	0 33
708	LA	147	18	5,478,948	8,966,935	0 33
631	MO	380	121	7,828,008	8,960,808	0 33
295	SC	125	37	6,911,726	8,932,350	0 32
482	MI	296	67	6,630,488	8,917,265	0 32
388	MS	74	30	8,200,442	8,838,615	0 32
945	CA	356	97	4,718,839	8,817,143	0 32
430	OH	137	37	4,045,256	8,774,822	0 32
238	VA	94	26	6,287,825	8,751 954	0 32
317	GA	90	28	6,485,685	8,663,928	0 31
619	IL	32	12	7,496,108	8,610,248	0 31
287	NC	109	39	7,093,065	8,517,941	0 31
902	CA	356	118	5,790,674	8,352,769	0.30
729	AR	102	35	7,712,112	8,308,127	0 30
737	OK	8	3	1,818,920	8,299,297	0 30
544	WI	110	40	6,544,893	8,240,515	0 30
296	SC	284	98	6,204,386	8,136,185	0 30
260	WV	94	23	6,095,127	8,019,239	0 29
436	OH	170	39	6,936,401	7,930,498	0 29
64	CT	292	93	6,859,837	7,929,973	0 29
278	NC	126	47	2,363,124	7,798,053	0 28
320	FL	43	12	644,217	7,777,893	0 28
550	MN	118	21	6,174,508	7,769,766	0 28
768	TX	20	3	5,753,456	7,704,075	0 28
271	NC	80	30	6,381,311	7,658,934	0 28
681	NE	81	26	3,695,978	7,631,111	0 28
672	KS	137	33	7,162,720	7,562,456	0 27
88	NJ	396	109	5,099,208	7,496,769	0 27
790	TX	104	20	3,800,369	7,397,302	0 27
245	VA	141	46	6,733,295	7,392,671	0 27
18	MA	231	75	5,548,094	7,254,675	0 26
456	OH	96	21	4,666,947	7,162,106	0 26
		19,197	5,021	1,011,786,418	1,559,518,366	56 65

TABLE E-4

Regional Hot Spots

— 1987 COUNTIES —

County	State	No Of Release Reports	No Of Facilities	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	County % Of Total TRI Emissions
Tooele	UT	7	3	76,990,850	76,990,850	2 80
Ascension	LA	137	14	7,138,666	53,192,833	1 93
Warren	VA	16	2	51,049,650	51,098,900	1 86
Harris	TX	1,083	195	31,423,089	51,013,127	1 85
Mobile	AL	179	25	48,860,435	50,131,309	1 82
Sullivan	TN	87	10	8,824,570	42,157,825	1 53
Los Angeles	CA	1,733	590	27,847,064	37,142,886	1 35
Cook	IL	1,455	485	28,941,283	36,451,718	1 32
Kenai Peninsula	AK	18	3	348,025	30,551,825	1 11
Ector	TX	39	6	1,314,626	27,426,263	1 00
Monroe	NY	225	57	21,879,315	27,147,265	0 99
Jefferson	TX	321	32	9,245,670	23,474,705	0 85
Brazoria	TX	192	16	9,081,338	22,300,923	0 81
Chatham	GA	68	20	17,199,190	19,194,300	0 70
Calcasieu	LA	192	20	6,686,739	18,805,514	0 68
Calhoun	TX	64	7	1,731,973	18,123,053	0 66
Alleghany	VA	19	4	17,081,669	17,845,769	0 65
Mississippi	AR	42	12	2,980,128	17,257,687	0 63
St James	LA	45	8	1,062,259	17,252,819	0 63
Hamblen	TN	36	17	16,728,883	16,793,737	0 61
Wayne	MI	499	126	10,726,251	16,670,453	0 61
Mc Leod	MN	22	7	15,339 507	15,591,355	0 57
Lake	IN	201	45	11,620,055	15,235,907	0 55
Calawba	NC	130	45	13,371,583	13,989 761	0 51
Shelby	TN	209	72	5,741,962	13,982,251	0 51
Polk	FL	92	38	1,749,446	13,664,486	0 50
Galveston	TX	179	13	3,883,304	13,426,072	0 49
Yazoo	MS	2	1	3,800	13,253,300	0 48
Oakland	MI	232	56	10,905,140	13,079,686	0 48
Glynn	GA	36	6	11,867,322	12,969,176	0 47
Jefferson	KY	286	57	11,174,823	12,822,573	0 47
Colbert	AL	48	11	9,486,995	12,593,374	0 46
Hamilton	OH	402	99	8,781,633	12,575,144	0 46
Middlesex	NJ	464	122	9,313,497	11,788,121	0 43
Orange	TX	68	11	4,747,308	11,341,190	0 41
Giles	VA	8	1	1,191,803	11,221,804	0 41
Orange	CA	470	180	7,244,052	11 206,148	0 41
East Baton Rouge	LA	165	20	7,299,798	11,136,085	0 40
Kanawha	WV	131	11	5,713,245	11,132,186	0 40
Humphreys	TN	14	3	10,646,027	10,927,552	0 40
Macomb	MI	175	44	10,313,245	10,888,013	0 40
St Charles	LA	93	9	2,257,264	10,863,662	0 39
Marshall	KY	82	7	7,913,593	10,532,165	0 38
Hampton	SC	12	2	8,929,680	10,529,680	0 38
Harrison	TX	65	10	3,296,943	10,437,865	0 38
Ramsey	MN	163	40	7,909,734	10 226,316	0 37
Broome	NY	58	17	8,373,661	10,167,909	0 37
Kalamazoo	MI	67	15	8,579,962	10,071,262	0 37
Genesee	MI	75	15	7,901,572	9,737,348	0 35
Erie	NY	200	78	7,525,755	9,674,472	0 35
Cuyahoga	OH	534	158	7,152,893	9,253,134	0 34
Allen	OH	89	18	1,520,390	9,218,528	0 33
Middlesex	MA	396	134	6,856,970	9,101,977	0 33
Lowndes	MS	35	11	8,569,356	8,802 069	0 32
St Louis	MO	267	81	7,355,017	8,729,814	0 32
New Haven	CT	328	99	7,404,156	8,720,692	0 32
Forsyth	NC	89	32	7,200,253	8,653,482	0 31
Brunswick	NC	26	3	8,440,950	8,574,525	0 31
Bucks	PA	136	38	5,929,538	8,506,454	0 31
Lucas	OH	182	46	7,207,226	8,469,703	0 31
Milam	TX	8	1	741,250	8 375,650	0 30
Garfield	OK	8	3	1,818 920	8,299,297	0 30
Posey	IN	16	1	7,899,400	8,238,850	0 30
Hartford	CT	253	88	6,864,947	8,108,635	0 29
Sebastian	AR	86	27	7,396,112	7,948,975	0 29
Maricopa	AZ	257	101	4,883,181	7,793,041	0 28
New Castle	DE	149	39	7,276,035	7,776,545	0 28
Brown	TX	20	3	5,753,456	7,704,075	0 28
Floyd	GA	35	11	6,581,285	7,639,156	0 28
King	WA	256	111	6,296,312	7,587,198	0 28
Sedgwick	KS	139	35	7,162,720	7,562,986	0 27
Cowlitz	WA	48	8	4,954,204	7,558,962	0 27
Tarrant	TX	222	83	5,642,331	7,550,315	0 27
Tippecanoe	IN	67	17	5,944,578	7,383,347	0 27
Baltimore City	MD	199	45	3,511,184	7,255,866	0 26
Wood	WI	43	11	5,796,792	7,120,483	0 26
Milwaukee	WI	412	129	4,900,059	6,930,497	0 25
Niagara	NY	164	35	5,750,905	6,923,468	0 25
Delaware	PA	88	19	5,085,648	6,862,493	0 25
Dallas	TX	374	135	5,825,083	6,735,076	0 24
Harrison	MS	27	8	6,581,027	6,696,602	0 24
Marion	IN	274	75	5,149,299	6 693,604	0 24
Onondaga	NY	115	41	3,376,038	6,481,477	0 24
Warrick	IN	12	2	3,901,850	6,464,960	0 23
Santa Clara	CA	365	128	2,713,714	6,348,176	0 23
Coshocton	OH	25	5	473,900	6,331,900	0.23
Union	OH	23	6	2,000,193	6,304,443	0 23
Allegheny	PA	333	73	4,785,630	6,291,277	0 23
Philadelphia	PA	215	52	5,056,358	6,268,450	0 23
Washington	PA	48	15	497,851	6,235,231	0 23
Grundy	IL	54	10	989,921	6,157,569	0 22
Richmond	GA	70	24	3,520,460	6,092,402	0 22
Iberville	LA	111	10	3,831,291	6,069,746	0 22
Franklin	OH	190	57	5,055,120	6,030,017	0 22
Washington	OH	56	12	3,446,612	6,002,728	0 22
Nassau	FL	4	1	95,250	5,909,250	0 21
Henderson	KY	12	6	133,466	5,885,389	0 21
Kent	MI	232	62	5,050,799	5,878,607	0 21
Lorain	OH	131	32	5,389,720	5,852,275	0.21
Union	NJ	279	68	4,117,139	5,757,957	0 21
		18,108	4,896	864,111,171	1,379,225,977	50 10

TABLE E-5

Air Emissions By U.S. Industry

— 1987 —

2 Digit SIC Code	U S Industry	No Of Emitters	No Of Release Reports	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	Industry % Of Total TRI Emissions
		105	216	3,945,108	4,634,434	0 17
0		8	15	73,466	84,379	0 00
1		1	1	250	250	0 00
1		1	1	0	50,000	0 00
3		2	4	0	2,500	0 00
6		1	1	0	250	0 00
7		1	1	41,000	41,000	0 00
8		1	2	170	170	0 00
9		1	1	20	20	0 00
10		3	3	0 00	2,700	0 00
11		1	1	19,000	19,000	0 00
12		2	6	35,990	37,540	0 00
13		4	8	22,752	47,908	0 00
14		7	13	30	231,614	0 01
16		2	2	159,940	159,940	0 01
18		3	7	164,679	178,218	0 01
20	Food	853	1,278	6,188,596	21,128,105	0 77
21	Tobacco	24	42	4,495,887	6,768,722	0 25
22	Textiles	323	577	41,973,249	46,050,449	1 67
23	Apparel	35	51	2,573,651	2,753,619	0 10
24	Lumber	484	1,228	25,919,430	29,259,256	1 06
25	Furniture	426	1,412	50,038,326	56,978,226	2 07
26	Pulp & Paper	569	1,880	219,974,582	268,281,645	9 75
27	Printing	309	538	62,098,491	63,330,437	2 30
28	Chemicals	3,517	16,324	517,955,861	986,334,064	35 83
29	Petroleum Refining	305	2,593	58,704,688	105,111,872	3 82
30	Rubber, Plastics	1,253	2,839	145,659,763	180,609,219	6 56
31	Leather	118	341	11 208,672	14,847,725	0 54
32	Stone, Clay, Glass	545	1,349	22,350,131	32,320,624	1 17
33	Primary Metals	1,414	4,792	176,779,405	267,773,799	9 73
34	Fabricated Metals	2,458	6,296	105,680,827	135,399,921	4 92
35	Non-Elect Machinery	882	2,034	47,456,040	60,023,399	2 18
36	Electrical Equipment	1,519	4,258	94,290,600	128,165,761	4 66
37	Transport Equipment	1,023	3,932	194,285,098	240,892,720	8 75
38	Instruments	338	847	46,197,297	61,074,605	2 22
39	Misc Manufacturing	341	770	23,534,343	28,824,848	1 05
41		1	1	0	13,909	0 00
42		3	3	5	755	0 00
43		3	5	76,602	76,852	0 00
44		1	1	0 00	250	0 00
45		7	13	106,288	381,288	0 01
46		1	1	8	8	0 00
47		11	18	58,453	75,468	0 00
48		1	5	750	1,750	0 00
49		11	39	3,973,523	5,746,810	0 21
50		16	22	88,946	123 910	0 00
51		71	301	978,547	1,214,120	0 04
52		2	2	36,130	36,130	0 00
54		3	4	32,007	54,307	0 00
55		1	1	24,377	24,377	0 00
56		1	2	0	2,167	0 00
57		1	3	750	2,250	0 00
58		2	2	500	1 800	0 00
61		1	1	11,400	11,400	0 00
65		1	1	15,000	15,000	0 00
66		1	1	0	12,000	0 00
67		3	3	44,398	44,898	0 00
71		1	1	2,996	2,996	0 00
72		2	3	0	24,697	0 00
73		25	83	133,469	164,963	0 01
75		2	2	50,833	50,833	0 00
76		4	14	17,512	75,249	0 00
78		1	1	49,000	49,000	0 00
79		2	11	84,958	85,736	0 00
80		2	2	7,300	8,800	0 00
82		1	1	599	599	0 00
83		2	2	8,017	13,343	0 00
85		3	4	276,500	312,250	0 01
87		2	30	15,900	602,650	0 02
89		3	8	44,300	45,300	0 00
91		1	1	3,500	3 500	0 00
95		1	2	500	500	0 00
96		2	6	15,500	16,250	0 00
97		4	10	83,365	98,715	0 00
98		1	4	26,500	40,560	0 00
99		9	28	711,519	748,188	0 03
C1		2	2	0	17,112	0 00
K0		1	1	0	219,000	0 01
NA		24	41	782,551	895,003	0 03
		17,116	54,349	1,869,589,845	2,752,733,632	100 00

(Note Only SICs 20-39 are required to report to TRI)

TABLE E-6

Industrial Emissions

— 1987 —

2 Digit SIC Code	No Of Emitters	HAP Emissions (lb/yr)	Total Emissions (lb/yr)	Industry % Of Total TRI Emissions
28	3,517	517,955,861	986,334 064	35 83
26	569	219,974,582	268,281,645	9 75
33	1,414	176,779,405	267,773,799	9 73
37	1,023	194,285,098	240,892,720	8 75
30	1 253	145,659,763	180,609,219	6 56
34	2,458	105,680,827	135,399,921	4 92
36	1,519	94,290,600	128,165,761	4 66
29	305	58 704,688	105,111,872	3 82
27	309	62,098,491	63,330,437	2 30
38	338	46,197,297	61,074,605	2 22
35	882	47,456,040	60,023,399	2 18
25	426	50,038,326	56,978,226	2 07
22	323	41,973,249	46,050,449	1 67
32	545	22,350,131	32,320,624	1 17
24	484	25,919,430	29,259,256	1 06
39	341	23,534,343	28,824,848	1 05
20	853	6,188,596	21,128,105	0 77
31	118	11,208,672	14,847,725	0 54
21	24	4,495,887	6,768,722	0 25
49	11	3,973,523	5,746,810	0 21
	105	3,945,108	4,634,434	0 17
23	35	2,573,651	2,753,619	0 10
51	71	978,547	1,214,120	0 04
NA	24	782,551	895,003	0 03
99	9	711,519	748,188	0 03
87	2	15,900	602,650	0 02
45	7	106,288	381 288	0 01
85	3	276,500	312,250	0 01
14	7	30	231,614	0 01
K0	1	0	219 000	0 01
18	3	164,679	178,218	0 01
73	25	133,469	164,963	0 01
16	2	159,940	159,940	0 01
50	16	88,946	123,910	0 00
97	4	83,365	98,715	0 00
79	2	84,958	85,736	0 00
0	8	73,466	84,379	0 00
43	3	76,602	76,852	0 00
47	11	58,453	75,468	0 00
76	4	17,512	75,249	0 00
54	3	32,007	54,307	0 00
75	2	50,833	50,833	0 00
1	1	0	50,000	0 00
78	1	49,000	49,000	0 00
13	4	22 752	47,908	0 00
89	3	44,300	45,300	0 00
67	3	44,398	44,898	0 00
7	1	41,000	41,000	0 00
98	1	26,500	40,560	0 00
12	2	35,990	37,540	0 00
52	2	36,130	36,130	0 00
72	2	0	24,697	0 00
55	1	24,377	24 377	0 00
11	1	19,000	19,000	0 00
C1	2	0	17 112	0 00
96	2	15,500	16,250	0 00
65	1	15,000	15,000	0 00
41	1	0	13,909	0 00
83	2	8,017	13,343	0 00
66	1	0	12,000	0 00
61	1	11,400	11,400	0 00
80	2	7,300	8,800	0 00
91	1	3,500	3,500	0 00
71	1	2,996	2,996	0 00
10	3	-0	2,700	0 00
3	2	0	2,500	0 00
57	1	750	2,250	0 00
56	1	0	2,167	0 00
58	2	500	1,800	0 00
48	1	750	1,750	0 00
42	3	5	755	0 00
82	1	599	599	0 00
95	1	500	500	0 00
6	1	0	250	0 00
1	1	250	250	0 00
44	1	0	250	0 00
8	1	170	170	0 00
9	1	20	20	0 00
46	1	8	8	0 00
	17,116	1,869,589,845	2,752,733,632	100 00

TABLE E-7

Air Emissions For The U.S. Chemical Industry

— 1987 —

4 Digit SIC Code	Total Emissions (lb/yr)	4 Digit SIC Code	Total Emissions (lb/yr)	4-Digit SIC Code	Total Emissions (lb/yr)	4-Digit SIC Code	Total Emissions (lb/yr)	4 Digit SIC Code	Total Emissions (lb/yr)	4-Digit SIC Code	Total Emissions (lb/yr)	4-Digit SIC Code	Total Emissions (lb/yr)
28	158,901	2818	85,963	283	141,674	284	4,700	2858	1,250	2873	180,745,494	2893	2 064 398
2800	9,227,079	2819	58,764,259	2830	481,618	2840	25,352	286	5,000	2874	19,769,369	2895	11,287,567
2801	715	282.	479,270	2831	1,983,537	2841	837,758	2860	106,559	2875	4,401,156	2898	77,917
2802	3,434	2820	156,848	2832	519 033	2842	491,290	2861	4,956 490	2878	500	2899	4,802,148
2805	35,650	2821	140,064,943	2833	17,918,542	2843	7,593,384	2865	32,589,959	2879	13,580,866		986,334,064
2810	1,513	2822	21,454,022	2834	40,207,929	2844	241,924	2866	672,931	2889	500		
2812	21,854,218	2823	102,156,702	2835	120,520	285	76,353	2867	7 659	289	73,103		
2813	8,987,209	2824	17,402,646	2836	9,944	2850	82,164	2868	4,300	2890	62,248		
2815	226,897	2828	1,056	2837	526	2851	25,153,791	2869	197,709,781	2891	4,992,791		
2816	22,881,404	2829	72,000	2839	229,000	2852	1,500	2870	1,471,720	2892	6,815,080		

TABLE E-8

Top Industrial Emitters

— 1987 4-DIGIT SIC CODES —

Rank	SIC	Total Emissions (lb/yr)	% Of 2-Digit SIC Code	Rank	Chemical	Total Emissions (lb/yr)	% Of Total 2 Digit SIC
1	2869	197,709,781	20 04	1	Acetone	50,041,563	5 07
				2	Methanol	26,322,642	2 67
				3	Ethylene	18,777,666	1 90
				4	Ammonia	11 515,363	1 17
				5	Propylene	10,153,219	1 03
				6	Chloromethane	7,927,388	0 80
				7	Toluene	6,615,353	0 67
				8	Benzene	5,834,880	0 59
				9	Ethylene Glycol	4,872,614	0 49
				10	Hydrochloric Acid	4,506,855	0 46
2	2873	180,745,494	18 32	1	Ammonia	159,828,796	16 20
				2	Methanol	9,247,121	0 94
				3	Ammonium Nitrate (Solution)	6,055,900	0 61
				4	Propylene	3,312,000	0 34
				5	Nitric Acid	547,450	0 06
				6	Sulfuric Acid	294,466	0 03
				7	Acetonitrile	249,300	0 03
				8	Acrylonitrile	165,000	0 02
				9	Acrylic Acid	160,000	0 02
				10	Hydrogen Cyanide	152,400	0 02
3	2821	140,064,943	14 2	1	Ethylene	32,103,301	3 25
				2	Carbon Disulfide	16,358,650	1 66
				3	Propylene	14,365,315	1 46
				4	Dichloromethane	12,545,969	1 27
				5	Methanol	10,838,970	1 10
				6	Acetone	8,924,197	0 90
				7	Toluene	5,718,987	0 58
				8	Styrene	4,818,265	0 49
				9	Chlorobenzene	2,581,234	0 26
				10	1,3-Butadiene	2,499,716	0 25
4	3079	108,153,975	59 88	1	Acetone	19,505,899	10 80
				2	Dichloromethane	15,985,519	8 85
				3	Methanol	12,274,666	6 80
				4	Carbon Disulfide	11,563,725	6 40
				5	Methyl Ethyl Ketone	10,192,177	5 64
				6	1,1,1-Trichloroethane	7,950,605	4 40
				7	Styrene	5,913,805	3 27
				8	Toluene	5,170,321	2 86
				9	2-Methoxyethanol	3,751,355	2 08
				10	Xylene (Mixed Isomers)	2,920,850	1 62
5	2823	102,156,702	10 36	1	Carbon Disulfide	96,776,000	9 81
				2	Acetone	2,680,612	0 27
				3	Chlorine	1,600,500	0 16
				4	Methyl Ethyl Ketone	319,591	0 03
				5	Benzene	236,000	0 02
				6	Ammonia	200,000	0 02
				7	Dichloromethane	145,671	0 01
				8	Methanol	104,717	0 01
				9	Formaldehyde	60,300	0 01
				10	Vinyl Acetate	6,255	0 00
6	2911	95,243,502	90 61	1	Aluminum (Fume Or Dust)	16,892,406	16 07
				2	Toluene	15,101,790	14 37
				3	Ammonia	12,993,527	12 36
				4	Xylene (Mixed Isomers)	7,773,756	7 40
				5	Benzene	7,546,215	7 18
				6	Propylene	5,554,706	5 28
				7	Methyl Ethyl Ketone	5,244,661	4 99
				8	Ethylene	2,936,605	2 79
				9	Cyclohexane	2,575 366	2 45
				10	Ethylbenzene	2,007,157	1 91
7	3711	85,315 599	35 42	1	Xylene (Mixed Isomers)	24,019,775	9 97
				2	Methyl Ethyl Ketone	18,096,433	7 51
				3	Toluene	11,859,125	4 92
				4	Glycol Ethers	9,208,078	3 82
				5	n-Butyl Alcohol	5,182,218	2 15
				6	Acetone	4,483,403	1 86
				7	Methanol	2,994,292	1 24
				8	Methyl Isobutyl Ketone	2,323 295	0 96
				9	1,1,1-Trichloroethane	2,130,966	0 88
				10	Dichloromethane	1,941,284	0 81
8	2611	84,697,366	31 57	1	Methanol	31,369,292	11 69
				2	Chlorine	12,648,742	4 71
				3	Chloroform	8,797,499	3 28
				4	Hydrochloric Acid	8,377,238	3 12
				5	Chlorine Dioxide	8,059,441	3 00
				6	Ammonium Sulfate (Solution)	5,800,000	2 16
				7	Acetone	5,055,654	1 88
				8	Sulfuric Acid	1,576,481	0 59
				9	Ammonia	747,880	0 28
				10	Sodium Hydroxide	544,834	0 20
9	3339	83,513,443	31 19	1	Chlorine	68,129,251	25 44
				2	Hydrochloric Acid	9,190,762	3 43
				3	Ammonia	2,352,295	0 88
				4	Methyl Isobutyl Ketone	1,653,732	0 62
				5	Hydrogen Fluoride	972,432	0 36
				6	Freon 113	332,042	0 12
				7	Tetrachloroethylene	244,734	0 09
				8	Lead Compounds	203,800	0 08
				9	1,1,1-Trichloroethane	142,496	0 05
				10	Zinc Compounds	74,100	0 03
10	2819	58 764,259	5 96	1	Aluminum (Fume Or Dust)	16,492,956	1 67
				2	Ammonia	11,041,969	1 12
				3	Methanol	8,051,516	0 82
				4	Chlorine	5,524,339	0 56
				5	Sulfuric Acid	2,816,565	0 29
				6	Sodium Hydroxide	2,556,594	0 26
				7	Hydrochloric Acid	1,952,438	0 20
				8	Carbon Disulfide	1,827,677	0 19
				9	1,1,1-Trichloroethane	782,017	0 08
				10	Phosphoric Acid	699,901	0 07
11	2621	51,231 833	19 1	1	Hydrochloric Acid	13,680,081	5 10
				2	Methanol	11,478,110	4 28
				3	Chloroform	5,927,793	2 21
				4	Chlorine	5,385,780	2 01
				5	Chlorine Dioxide	2,825,944	1 05
				6	Ammonia	2,696,672	1 01
				7	Acetone	2,441,534	0 91
				8	Toluene	1,590,991	0 59
				9	Sulfuric Acid	1,366,459	0 51
				10	Aluminum (Fume Or Dust)	680,104	0 25
12	3312	49,987,449	18 67	1	Benzene	13,017,860	4 86
				2	Ammonia	6,915,147	2 58
				3	1,1,1-Trichloroethane	4,888,989	1 83
				4	Aluminum (Fume Or Dust)	3,981,025	1 49
				5	Zinc Compounds	3,600,843	1 34
				6	Hydrochloric Acid	2,453,953	0 92
				7	Toluene	2,120,012	0 79
				8	Zinc (Fume Or Dust)	1,886,765	0 70
				9	Manganese Compounds	1,545,836	0 58
				10	Xylene (Mixed Isomers)	1,386,554	0 52

Table E-8 (Continued)

Top Industrial Emitters — 1987 4-Digit SIC Codes

Rank	SIC	Total Emissions (lb/yr)	% Of 2 Digit SIC Code	Rank	Chemical	Total Emissions (lb/yr)	% Of Total 2 Digit SIC
13	3334	48,098,819	17 96	1	Aluminum (Fume Or Dust)	38,823,156	14 50
				2	Hydrogen Fluoride	5,943 362	2 22
				3	Chlorine	960,555	0 36
				4	Methyl Ethyl Ketone	726,500	0 27
				5	Toluene	485,000	0 18
				6	1,1,1-Trichloroethane	356,158	0 13
				7	Ammonia	200,000	0 07
				8	Methyl Isobutyl Ketone	199,500	0 07
				9	Xylene (Mixed Isomers)	121,500	0 05
				10	n-Butyl Alcohol	92,400	0 03
14	2754	43,356,977	68 46	1	Toluene	37,315,958	58 92
				2	Methyl Ethyl Ketone	2 575,263	4 07
				3	Xylene (Mixed Isomers)	1 168,018	1 84
				4	Glycol Ethers	1 005,156	1 59
				5	Methanol	520,476	0 82
				6	1,1,1-Trichloroethane	230,647	0 36
				7	2-Ethoxyethanol	162,760	0 26
				8	Acetone	150,570	0 24
				9	Methyl Isobutyl Ketone	66,726	0 11
				10	Ethylbenzene	37,055	0 06
15	2834	40,207,929	4 08	1	Dichloromethane	18,546,989	1.88
				2	Acetone	6,819,137	0 69
				3	Methanol	5,713,797	0 58
				4	Toluene	2,935,738	0 30
				5	Methyl Isobutyl Ketone	1,526,670	0 15
				6	Xylene (Mixed Isomers)	875,179	0 09
				7	Acetonitrile	659,231	0 07
				8	Chloromethane	525,300	0 05
				9	n-Butyl Alcohol	330,130	0 03
				10	Cyclohexane	263,723	0 03
16	3861	40,015,487	65 52	1	Dichloromethane	16,691,426	27 33
				2	Methanol	8,854,103	14 50
				3	Acetone	6,252,554	10 24
				4	Toluene	1,271,088	2 08
				5	Methyl Ethyl Ketone	1,183,432	1 94
				6	Ethylene Glycol	912,379	1 49
				7	Xylene (Mixed Isomers)	670,520	1 10
				8	1,1,1-Trichloroethane	635,330	1 04
				9	Hydrochloric Acid	556,108	0 91
				10	n-Butyl Alcohol	371,851	0 61
17	2641	39,835,213	14 85	1	Toluene	21,648,738	8 07
				2	Methanol	5,117,577	1 91
				3	Methyl Ethyl Ketone	3,471,665	1 29
				4	Hydrochloric Acid	2,466,778	0 92
				5	Acetone	1,932,211	0 72
				6	Xylene (Mixed Isomers)	1,805,782	0 67
				7	Chloroform	810,000	0 30
				8	n-Butyl Alcohol	390,650	0 15
				9	Ammonia	320,523	0 12
				10	Methyl Isobutyl Ketone	305,815	0 11
18	3714	37,307,592	15 49	1	Xylene (Mixed Isomers)	6,203,469	2 58
				2	Trichloroethylene	5,030,495	2 09
				3	1,1,1-Trichloroethane	4,560,023	1 89
				4	Toluene	4 181,689	1 74
				5	Methyl Ethyl Ketone	3,991,538	1 66
				6	Acetone	3,118,801	1 29
				7	Freon 113	2,529,016	1 05
				8	Tetrachloroethylene	1 268,174	0 53
				9	Dichloromethane	1,155,508	0 48
				10	Glycol Ethers	811,340	0 34
19	2631	36,025,347	13 43	1	Methanol	18,841,108	7 02
				2	Acetone	3,580,140	1 33
				3	Chloroform	3,162,250	1 18
				4	Hydrochloric Acid	3,029,834	1 13
				5	Chlorine	2,222,351	0 83
				6	Chlorine Dioxide	1,453,850	0 54
				7	Toluene	1,434,589	0 53
				8	Sulfuric Acid	680,760	0 25
				9	Methyl Ethyl Ketone	568,759	0 21
				10	Ammonia	380,090	0 14
20	3679	35,703,426	27 86	1	Methyl Ethyl Ketone	11,096,169	8 66
				2	Toluene	5,071,063	3 96
				3	Dichloromethane	5,015,085	3 91
				4	Acetone	3,428,042	2 67
				5	Freon 113	3,193,778	2 49
				6	1,1,1-Trichloroethane	2,882,260	2 25
				7	2-Methoxyethanol	1,452,695	1 13
				8	1,1,2-Trichloroethane	814,852	0 64
				9	Tetrachloroethylene	633,753	0 49
				10	Methanol	477,852	0 37

TABLE E-9

National Emissions of HAPs

— 1987 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total HAPs Emissions	Chemical % Of Total TRI Emissions
Toluene	3,370	287,852,372	15 40	10 46
Methanol	2,006	215,232,880	11 51	7 82
1,1 1-Trichloroethane	3 235	162,870,224	8 71	5 92
Methyl Ethyl Ketone	2,230	152,253,887	8 14	5 53
Xylene (Mixed Isomers)	2,878	147,727,850	7 90	5 37
Carbon Disulfide	75	135,392,401	7 24	4 92
Dichloromethane	1,474	131,093,612	7 01	4 76
Chlorine	1,210	107,179,298	5 73	3 89
Hydrochloric Acid	2,088	72,783,444	3 89	2 64
Trichloroethylene	888	53,740,241	2 87	1 95
Glycol Ethers	995	41,994,951	2 25	1 53
Tetrachloroethylene	651	32,701,045	1 75	1 19
Styrene	923	32,076,780	1 72	1 17
Benzene	460	31,203 577	1 67	1 13
Methyl Isobutyl Ketone	778	29,595,348	1 58	1 08
Chloroform	157	24,674,317	1 32	0 90
Carbonyl Sulfide	24	22,487,005	1 20	0 82
Ethylene Glycol	746	15,428,233	0 83	0 56
Formaldehyde	686	13,455,716	0 72	0 49
Chloromethane	79	13,134,398	0 70	0 48
Hydrogen Fluoride	377	11,753,891	0 63	0 43
1,3-Butadiene	140	9,413,317	0 50	0 34
Phenol	474	8,165,985	0 44	0 30
p-Xylene	52	7,437,936	0 40	0 27
Vinyl Acetate	140	6,860,626	0 37	0 25
Ethylbenzene	426	6,513,347	0 35	0 24
1,2-Dichloroethane	112	6,368,587	0 34	0 23
Acetaldehyde	54	6,363,086	0 34	0 23
Acrylonitrile	95	5,387,496	0 29	0 20
Ethylene Oxide	190	5,184,403	0 28	0 19
Naphthalene	347	4,591,734	0 25	0 17
Chlorobenzene	68	4,577,763	0 24	0 17
Chloroethane	42	4,400,509	0 24	0 16
Carbon Tetrachloride	87	4,378,209	0 23	0 16
o-Xylene	90	3,680,212	0 20	0 13
Methyl Methacrylate	183	3,636,833	0 19	0 13
Propylene Oxide	119	3,606,194	0 19	0 13
Cumene	94	3,396,957	0 18	0 12
m-Xylene	67	2,995,819	0 16	0 11
Dimethyl Phthalate	47	2,347,449	0 13	0 09
Methyl Tert-Butyl Ether	77	2,326,574	0 12	0 08
Bromomethane	22	2,191,755	0 12	0 08
1,1,2-Trichloroethane	51	2,139,959	0 11	0 08
Manganese Compounds	270	1,974,094	0 11	0 07
Vinyl Chloride	46	1,794,472	0 10	0 07
Acetonitrile	61	1,766,266	0 09	0 06
Di(2-Ethylhexyl) Phthalate	186	1,625,907	0 09	0 06
Biphenyl	151	1,586,032	0 08	0 06
1,2,4-Trichlorobenzene	49	1,388,982	0 07	0 05
1,4-Dichlorobenzene	18	1,244,833	0 07	0 05
Lead Compounds	384	1,158,164	0 06	0 04
Propionaldehyde	14	1,111,191	0 06	0 04
Chloroprene	12	1,064,028	0 06	0 04
1,2-Dichloropropane	12	1,017,620	0 05	0 04
Maleic Anhydride	135	918,611	0.05	0 03
Methylenebis(Phenylisocyanate)	151	834,270	0 04	0 03
Acrylic Acid	127	831,599	0 04	0 03
Cresol (Mixed Isomers)	87	797,542	0 04	0 03
Urethane	7	797,000	0 04	0 03
Toluene-2 4-Diisocyanate	207	788,742	0 04	0 03
Chromium Compounds	546	775,139	0 04	0 03
Aniline	51	676,574	0 04	0 02
Phthalic Anhydride	135	597,648	0 03	0 02
Diethanolamine	176	490,090	0 03	0 02
Vinylidene Chloride	21	466,859	0 02	0 02
2-Nitropropane	13	466,252	0 02	0 02
Epichlorohydrin	67	423,522	0 02	0 02
1,4-Dioxane	51	375,436	0 02	0 01
Dibutyl Phthalate	73	349,201	0 02	0 01
Nickel Compounds	251	306,365	0 02	0 01
Methyl Isocyanate	5	286,544	0 02	0 01
Arsenic Compounds	105	284,221	0 02	0 01
Ethyl Acrylate	95	262,675	0 01	0 01
Allyl Chloride	17	177,776	0 01	0 01
Titanium Tetrachloride	26	169,165	0 01	0 01
Cadmium Compounds	52	163,918	0 01	0 01
N,N-Dimethylaniline	17	129,829	0 01	0 00
1,1,2,2-Tetrachloroethane	16	126,289	0 01	0 00
p-Phenylenediamine	6	117,362	0 01	0 00
Nitrobenzene	15	115,893	0 01	0 00
Antimony Compounds	100	111,064	0 01	0 00
4 4'-Methylenedianiline	17	101,811	0 01	0 00
2 4-Dinitrotoluene	10	99,498	0 01	0 00
p-Cresol	15	86,584	0 00	0 00
Phosgene	30	83,640	0 00	0 00
Dibenzofuran	98	76,545	0 00	0 00
1,2-Butylene Oxide	11	66,050	0 00	0 00
1,2-Dibromoethane	34	65,669	0 00	0 00
o-Cresol	24	57,382	0 00	0 00
Hexachlorocyclopentadiene	3	55,779	0 00	0 00
o-Toluidine	11	54,254	0 00	0 00
Vinyl Bromide	2	53,700	0 00	0 00
Asbestos (Friable)	60	51,461	0 00	0 00
Cobalt Compounds	72	49,681	0 00	0 00
Benzyl Chloride	39	48,832	0 00	0 00
Acrolein	13	48,710	0.00	0 00
Acrylamide	35	35,694	0 00	0 00
1,3-Dichloropropylene	5	34,070	0 00	0 00
Hydroquinone	22	30,968	0 00	0 00
Hydrazine	37	29,041	0 00	0 00
Chloroacetic Acid	19	28,612	0 00	0 00
Quinoline	32	27,405	0 00	0 00
Captan	17	27,365	0 00	0 00
Phosphorus (Yellow Or White)	22	26,252	0 00	0 00
Benzoic Trichloride	5	24,010	0 00	0 00
m-Cresol	12	20,450	0 00	0 00
Pentachlorophenol	45	16,740	0 00	0 00
Calcium Cyanamide	1	12,750	0 00	0 00
Dimethyl Sulfate	19	10,836	0 00	0 00
Diethyl Sulfate	15	10,829	0 00	0 00
Heptachlor	1	8,178	0 00	0 00
Chlordane	3	7,158	0 00	0 00
Carbaryl	13	6,944	0 00	0 00
Bis(2-Chloroethyl) Ether	5	6,627	0 00	0 00

Table E-9 (Continued)

National Emissions Of HAPs — 1987

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total HAPs Emissions	Chemical % Of Total TRI Emissions
Hexachloroethane	15	5,656	0 00	0 00
4-Nitrophenol	5	5,452	0 00	0 00
2,4-D	14	5,366	0 00	0 00
Selenium Compounds	6	5 153	0 00	0 00
o-Anisidine	4	3,603	0 00	0 00
Hexachloro-1,3-Butadiene	7	3,580	0 00	0 00
2,4-Diaminotoluene	2	3,417	0 00	0 00
Hexachlorobenzene	8	3,339	0 00	0 00
Trifluralin	8	2,842	0 00	0 00
Parathion	7	2,358	0 00	0 00
Mercury Compounds	5	2,336	0 00	0 00
Acetamide	1	1,742	0 00	0 00
Methyl Hydrazine	3	1,683	0 00	0 00
Catechol	3	1 491	0 00	0 00
Dichlorvos	5	1,491	0 00	0 00
4,6-Dinitro-o-Cresol	5	1,066	0 00	0 00
Quinone	2	1,053	0 00	0 00
Styrene Oxide	2	1,023	0 00	0 00
1 1-Dimethyl Hydrazine	2	1,020	0 00	0 00
3 3'-Dichlorobenzidine	6	1,007	0 00	0 00
Lindane	3	811	0 00	0 00
Polychlorinated Biphenyls	4	751	0 00	0 00
Beryllium Compounds	6	504	0 00	0 00
Chloramben	1	500	0 00	0 00
Methyl Iodide	1	500	0 00	0 00
Propyleneimine	1	500	0 00	0 00
Chloromethyl Methyl Ether	3	351	0 00	0 00
4,4'-Methylenebis(2-Chloroaniline)	1	300	0 00	0 00
Chlorobenzilate	2	269	0.00	0 00
Quintozene	2	254	0 00	0 00
Methoxychlor	3	252	0 00	0 00
2-Chloroacetophenone	1	250	0 00	0 00
1 1-Dichloroethylene	1	52	0 00	0 00
Propoxur	2	2	0 00	0 00
4-Aminobiphenyl	1	1	0 00	0 00
Bis(Chloromethyl) Ether	1	1	0 00	0 00
		1,869,589,845	100 0	67 92

TABLE E-10

National Emissions Of 33/50 Chemicals

— 1987 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total 33/50 Chemicals	Chemical % Of Total TRI Emissions
Toluene	3,370	287,852,372	26 69	10 46
1,1,1-Trichloroethane	3,235	162,870,224	15 10	5 92
Methyl Ethyl Ketone	2,230	152,253,887	14 12	5 53
Xylene (Mixed Isomers)	2,878	147,727,850	13 70	5 37
Dichloromethane	1,474	131,093,612	12 16	4 76
Trichloroethylene	888	53,740,241	4 98	1 95
Tetrachloroethylene	651	32,701,045	3 03	1 19
Benzene	460	31,203,577	2 89	1 13
Methyl Isobutyl Ketone	778	29,595,348	2 74	1 08
Chloroform	157	24,674,317	2 29	0 90
Carbon Tetrachloride	87	4,378,209	0 41	0 16
Lead	472	1,469,218	0 14	0 05
Cyanide Compounds	205	1,419,188	0 13	0 05
Lead Compounds	384	1,158,164	0 11	0 04
Chromium Compounds	546	775,139	0 07	0 03
Nickel	464	419,585	0 04	0 02
Chromium	558	407 195	0 04	0 01
Nickel Compounds	251	306,265	0 03	0 01
o-Xylene	90	3,680,212	0 34	0 13
m-Xylene	67	2,995,819	0 28	0 11
Cadmium Compounds	52	163,918	0 02	0 01
p-Xylene	52	7,437,936	0 69	0 27
Mercury	29	23,409	0 00	0 00
Cadmium	42	14,119	0 00	0 00
Mercury Compounds	5	2,336	0 00	0 00
		1,078,363,185	100 00	39 18

TABLE E-11

National Emissions Of High Risk/Early Reduction Chemicals

— 1987 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total High Risk/Early Reduction Chemicals	Chemical % Of Total TRI Emissions
Benzene	460	31,203,577	52 42	1 13
1,3-Butadiene	140	9,413,317	15 81	0 34
Acrylonitrile	95	5,387,496	9 05	0 20
Ethylene Oxide	190	5,184,403	8 71	0 19
Vinyl Chloride	46	1,794,472	3 02	0 07
Chloroprene	12	1,064,028	1 79	0 04
Methylenebis(Phenylisocyanate)	151	834,270	1 40	0 03
Acrylic Acid	127	831,599	1 40	0 03
Toluene-2,4-Diisocyanate	207	788,742	1 31	0 03
Chromium Compounds	546	775,139	1 30	0 03
Vinylidene Chloride	21	466,859	0 78	0 02
Chromium	558	407,195	0 68	0 01
Methyl Isocyanate	5	286,544	0 48	0 01
Arsenic Compounds	105	284,221	0 48	0 01
Cadmium Compounds	52	163,918	0 28	0 01
1,1,2,2-Tetrachloroethane	16	126,289	0 21	0 00
Phosgene	30	83,640	0 14	0 00
Dibenzofuran	98	76,545	0 13	0 00
1,2-Dibromoethane	34	65,669	0 11	0 00
Asbestos (Friable)	60	51,461	0 09	0 00
Acrolein	13	48,710	0 08	0 00
Acrylamide	35	35,694	0 06	0 00
Hydrazine	37	29,041	0 05	0 00
Arsenic	42	27,431	0 05	0 00
Benzoic Trichloride	5	24,010	0 04	0 00
Mercury	29	23,409	0 04	0 00
Cadmium	42	14,119	0 02	0 00
Heptachlor	1	8,178	0 01	0 00
Chlordane	3	7,158	0 01	0 00
Bis(2-Chloroethyl) Ether	5	6,627	0 01	0 00
Hexachlorobenzene	8	3,339	0 01	0 00
Beryllium	5	2,501	0 00	0 00
Mercury Compounds	5	2,336	0 00	0 00
Beryllium Compounds	6	504	0 00	0 00
Propyleneimine	1	500	0 00	0 00
Chloromethyl Methyl Ether	3	351	0 00	0 00
Bis(Chloromethyl) Ether	1	1	0 00	0 00
		59,523,293	100 0	2 16

TABLE E-12

National Emissions Of Carcinogens In TRI Database

— 1987 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total Carcinogens	Chemical % Of Total TRI Emissions
Dichloromethane	1,474	131,093,612	35 43	4 76
Trichloroethylene	888	53 740,241	14 52	1 95
Tetrachloroethylene	651	32,701,045	8 84	1 19
Styrene	923	32,076,780	8 67	1 17
Benzene	460	31,203,577	8 43	1 13
Chloroform	157	24,674,317	6 67	0 90
Formaldehyde	686	13,455,716	3 64	0 49
Chloromethane	79	13,134,398	3 55	0 48
1,3-Butadiene	140	9,413,317	2 54	0 34
1,2-Dichloroethane	112	6,368,587	1 72	0 23
Acrylonitrile	95	5,387,496	1 46	0 20
Ethylene Oxide	190	5,184,403	1 40	0 19
Carbon Tetrachloride	87	4,378,209	1 18	0 16
1,1,2-Trichloroethane	51	2,139,959	0 58	0 08
Vinyl Chloride	46	1,794,472	0 48	0 07
Urethane	7	797,000	0 22	0 03
Vinylidene Chloride	21	466,859	0 13	0 02
2-Nitropropane	13	466,252	0.13	0 02
Epichlorohydrin	67	423,522	0 11	0 02
Chromium	558	407,195	0 11	0 01
1,1,2,2-Tetrachloroethane	16	126,289	0 03	0 00
2,4-Dinitrotoluene	10	99,498	0 03	0 00
2,6-Dinitrotoluene	6	86,906	0 02	0 00
1,2-Dibromoethane	34	65,669	0 02	0 00
o-Toluidine	11	54,254	0 01	0 00
Asbestos (Friable)	60	51,461	0 01	0 00
Benzyl Chloride	39	48,832	0 01	0 00
Alpha-Naphthylamine	3	30,577	0 01	0 00
Hydrazine	37	29,041	0 01	0 00
Arsenic	42	27,431	0 01	0 00
Cadmium	42	14,119	0 00	0 00
Dimethyl Sulfate	19	10,836	0 00	0 00
Heptachlor	1	8,178	0 00	0 00
Chlordane	3	7,158	0 00	0 00
Bis(2-Chloroethyl) Ether	5	6,627	0 00	0 00
Thiourea	7	6,020	0 00	0 00
Hexachloroethane	15	5,656	0 00	0 00
Hexachloro-1,3-Butadiene	7	3,580	0 00	0 00
2,4-Diaminotoluene	2	3,417	0 00	0 00
Hexachlorobenzene	8	3,339	0 00	0 00
Beryllium	5	2,501	0 00	0 00
1,1-Dimethyl Hydrazine	2	1,020	0 00	0 00
3,3'-Dichlorobenzidine	6	1,007	0 00	0 00
Lindane	3	811	0 00	0 00
Polychlorinated Biphenyls	4	751	0 00	0 00
Saccharin (Manufacturing Only)	2	750	0 00	0 00
Methyl Iodide	1	500	0 00	0 00
Propyleneimine	1	500	0 00	0 00
Safrole	1	500	0 00	0 00
Chloromethyl Methyl Ether	3	351	0 00	0 00
4,4'-Methylenebis(2-Chloroaniline)	1	300	0 00	0 00
Chlorobenzilate	2	269	0 00	0 00
Quintozene	2	254	0 00	0 00
1,1-Dichloroethylene	1	52	0 00	0 00
Bis(Chloromethyl) Ether	1	1	0 00	0 00
		370,005,412	100 00	13 44

TABLE E-13

National Emissions Of Ozone Depletors In TRI Database

— 1987 —

Chemical	No Of Emitters	Total Emissions (lb/yr)	% Of Total Ozone Depletors	Chemical % Of Total TRI Emissions
1,1,1-Trichloroethane	3,235	162,870,224	72 65	5 92
Freon 113	1,107	56,946,595	25 4	2 07
Carbon Tetrachloride	87	4,378,209	1 95	0 16
		224,195,028	100 00	8 14

TABLE E-14

All Chemicals Reported

— 1987 —

Carc	Ozone Depl	HAP	33/50	HR/ER	Chemical	Cas No	Lb/yr Emitted To Air	Lb/yr Emitted To All Media
	X	X	X		1,1,1-Trichloroethane	000071556	162,870,224	163,082,237
X		X		X	1,1,2,2-Tetrachloroethane	000079345	126,289	134,350
X		X			1,1,2-Trichloroethane	000079005	2,139,959	2,151,987
X		X			1,1-Dichloroethylene	000075354	52	52
X		X			1,1-Dimethyl Hydrazine	000057147	1,020	1,020
		X			1,2,4-Trichlorobenzene	000120821	1,388,982	1,512,364
					1,2,4-Trimethylbenzene	000095636	4,429,484	4,475,694
		X			1,2-Butylene Oxide	000106887	66,050	66,800
X		X		X	1,2-Dibromoethane	000106934	65,669	68,349
					1,2-Dichlorobenzene	000095501	627,925	688,444
X		X			1,2-Dichloroethane	000107062	6,368,587	7,604,780
					1,2-Dichloroethylene	000540590	132,392	133,096
		X			1,2-Dichloropropane	000078875	1,017,620	1,057,775
X		X		X	1,3-Butadiene	000106990	9,413,317	9,850,211
					1,3-Dichlorobenzene	000541731	51,017	52,569
		X			1,3-Dichloropropylene	000542756	34,070	35,120
		X			1,4-Dichlorobenzene	000106467	1,244,833	1,276,130
		X			1,4-Dioxane	000123911	375,436	556,960
		X			2,4-D	000094757	5,366	6,266
					2,4-Diaminoanisole Sulfate	039156417	500	750
X		X			2,4-Diaminotoluene	000095807	3,417	3,667
					2,4-Dichlorophenol	000120832	2,321	2,821
					2,4-Dimethylphenol	000105679	1,432	46,092
					2,4-Dinitrophenol	000051285	32,600	120,700
X		X			2,4-Dinitrotoluene	000121142	99,498	311,529
X					2,6-Dinitrotoluene	000606202	86,906	138,458
					2,6-Xylidine	000087627	7,450	7,450
		X			2-Chloroacetophenone	000532274	250	1,906
					2-Ethoxyethanol	000110805	2,610,283	2,798,167
					2-Methoxyethanol	000109864	8,301,787	8,340,870
					2-Nitrophenol	000088755	33,149	33,149
X		X			2-Nitropropane	000079469	466,252	637,853
					2-Phenoxyethanol		500	500
					2-Phenylphenol	000090437	3,026	3,280
X		X			3,3'-Dichlorobenzidine	000091941	1,007	1,257
					4,4'-Diaminodiphenyl Ether	000101804	560	893
					4,4'-Isopropylidenediphenol	000080057	293,140	956,627
X		X			4,4'-Methylenebis(2-Chloroanil	000101144	300	300
					4,4'-Methylenebis(N N-Dimethyl	000101611	18,173	18,173
		X			4,4'-Methylenedianiline	000101779	101,811	559,405
		X			4,6-Dinitro-o-Cresol	000534521	1,066	1,068
		X			4-Aminobiphenyl	000092671	1	7
		X			4-Nitrophenol	000100027	5,452	12,502
		X			Acetaldehyde	000075070	6,363,086	8,110,943
		X			Acetamide	000060355	1,742	1,742
					Acetone	000067641	195,382,721	199,914,367
		X			Acetonitrile	000075058	1,766,266	17,395,684
		X		X	Acrolein	000107028	48,710	156,172
		X		X	Acrylamide	000079061	35,694	958,484
		X		X	Acrylic Acid	000079107	831,599	27,950,478

Table E-14 (Continued)

All Chemicals Reported — 1987

Carc	Ozone Depl	HAP	33/50	HR/ER	Chemical	Cas No	Emitted To Air (lb/yr)	Emitted To All Media (lb/yr)
X		X		X	Acrylonitrile	000107131	5,387,496	9,635,421
		X			Allyl Chloride	000107051	177,776	227,582
X					Alpha-Naphthylamine	000134327	30,577	30,577
					Aluminum (Fume Or Dust)	007429905	90,852,286	1,311,504,672
					Ammonia	007664417	289,662,920	368,616,760
					Ammonium Nitrate (Solution)	006484522	6,834,718	49,725,630
					Ammonium Sulfate (Solution)	007783202	6,470,413	23,394,634
		X			Aniline	000062533	676,574	1,982,099
					Anthracene	000120127	151,994	170,735
					Antimony	007440360	43,543	219,915
		X			Antimony Compounds		111,064	2,115,850
X				X	Arsenic	007440382	27,431	99,808
		X		X	Arsenic Compounds		284,221	24,822,418
X		X		X	Asbestos (Friable)	001332214	51,461	1,529,791
					Barium	007440393	114,889	1,568,465
					Barium Compounds		1,133,332	10,365,248
					Benzal Chloride	000098873	4,634	4,634
X		X	X	X	Benzene	000071432	31,203,577	32,395,082
		X		X	Benzoic Trichloride	000098077	24,010	24,010
					Benzoyl Chloride	000098884	37,357	167,357
					Benzoyl Peroxide	000094360	5,492	7,242
X		X			Benzyl Chloride	000100447	48,832	51,552
X				X	Beryllium	007440417	2,501	31,121
		X		X	Beryllium Compounds		504	514
		X			Biphenyl	000092524	1,586,032	1,753,297
					Bis (2-Chloro-1-Methylethyl) Ether	000108601	724	724
X		X		X	Bis(2-Chloroethyl) Ether	000111444	6,627	6,789
					Bis(2-Ethylhexyl) Adipate	000103231	111,953	114,104
X		X		X	Bis(Chloromethyl) Ether	000542881	1	1
		X			Bromomethane	000074839	2,191,755	2,193,955
					Butyl Acrylate	000141322	689,940	693,322
					Butyl Benzyl Phthalate	000085687	275,776	276,526
					Butyraldehyde	000123728	2,432,099	2,452,404
					C I. Basic Green 4	000569642	2	2
					C I. Solvent Yellow 14	000842079	4	4
X			X	X	Cadmium	007440439	14,119	112,150
		X	X	X	Cadmium Compounds		163,918	545,957
		X			Calcium Cyanamide	000156627	12,750	13,000
		X			Captan	000133062	27,365	33,965
		X			Carbaryl	000063252	6,944	10,568
		X			Carbon Disulfide	000075150	135,392,401	135,422,421
X	X	X	X		Carbon Tetrachloride	000056235	4,378,209	4,602,326
		X			Carbonyl Sulfide	000463581	22,487,005	22,487,005
		X			Catechol	000120809	1,491	58,781
		X			Chloramben	000133904	500	500
X		X		X	Chlordane	000057749	7,158	26,987
		X			Chlorine	007782505	107,179,298	114,644,868
					Chlorine Dioxide	010049044	12,998,539	13,069,694
		X			Chloroacetic Acid	000079118	28,612	58,848

Table E-14 (Continued)

All Chemicals Reported — 1987

Carc	Ozone Depl	HAP	33/50	HR/ER	Chemical	Cas No	Emitted To Air (lb/yr)	Emitted To All Media (lb/yr)
		X			Chlorobenzene	000108907	4,577,763	4,715,888
X		X			Chlorobenzilate	000510156	269	269
		X			Chloroethane	000075003	4,400,509	4,403,975
X		X	X		Chloroform	000067663	24,674,317	25,997,905
X		X			Chloromethane	000074873	13,134,398	13,379,506
X		X		X	Chloromethyl Methyl Ether	000107302	351	351
					Chlorophenols		1,066	11,465
		X		X	Chloroprene	000126998	1,064,028	1,112,505
					Chlorothalonil	001897456	21,081	21,321
X			X	X	Chromium	007440473	407,195	2,843,430
		X	X	X	Chromium Compounds		775,139	19,881,416
					Cobalt	007440484	31,815	57,643
		X			Cobalt Compounds		49,681	114,914
					Copper	007440508	2,645,718	137,098,132
					Copper Compounds		3,372,953	33,601,752
		X			Cresol (Mixed Isomers)	001319773	797,542	4,071,488
		X			Cumene	000098828	3,396,957	3,408,821
					Cumene Hydroperoxide	000080159	220,947	284,723
					Cupferron	000135206	830	830
			X		Cyanide Compounds		1,419,188	1,523,629
					Cyclohexane	000110827	12,111,673	12,521,421
					Decabromodiphenyl Oxide	001163195	155,091	156,167
		X			Di(2-Ethylhexyl) Phthalate	000117817	1,625,907	1,636,938
					Diaminotoluene (Mixed Isomers)	025376458	49,159	79,502
		X		X	Dibenzofuran	000132649	76,545	101,498
		X			Dibutyl Phthalate	000084742	349,201	641,955
					Dichlorobenzene (Mixed Isomers)	025321226	71,709	137,637
					Dichlorobromomethane	000075274	250	250
X		X	X		Dichloromethane	000075092	131,093,612	132,423,723
		X			Dichlorvos	000062737	1,491	1,491
		X			Diethanolamine	000111422	490,090	614,486
					Diethyl Phthalate	000084662	191,953	192,673
		X			Diethyl Sulfate	000064675	10,829	11,579
		X			Dimethyl Phthalate	000131113	2,347,449	2,353,381
X		X			Dimethyl Sulfate	000077781	10,836	17,516
X		X			Epichlorohydrin	000106898	423,522	508,663
		X			Ethyl Acrylate	000140885	262,675	286,538
					Ethyl Chloroformate	000541413	11,730	11,730
		X			Ethylbenzene	000100414	6,513,347	6,660,307
					Ethylene	000074851	60,011,146	60,027,032
		X			Ethylene Glycol	000107211	15,428,233	21,951,378
X		X		X	Ethylene Oxide	000075218	5,184,403	6,414,959
					Fluometuron	002164172	2,111	2,111
X		X			Formaldehyde	000050000	13,455,716	21,801,329
	X				Freon 113	000076131	56,948,595	56,995,795
		X			Glycol Ethers		41,994,951	42,332,632
X		X		X	Heptachlor	000076448	8,178	8,180
X		X			Hexachloro-1,3-Butadiene	000087683	3,580	3,840
X		X		X	Hexachlorobenzene	000118741	3,339	3,867

Table E-14 (Continued)

All Chemicals Reported — 1987

Carc	Ozone Depl	HAP	33/50	HR/ER	Chemical	Cas No	Emitted To Air (lb/yr)	Emitted To All Media (lb/yr)
		X			Hexachlorocyclopentadiene	000077474	55,779	65,724
X		X			Hexachloroethane	000067721	5,656	6,362
X		X		X	Hydrazine	000302012	29,041	61 597
		X			Hydrochloric Acid	007647010	72,783,444	500,918,788
					Hydrogen Cyanide	000074908	642,340	1,701,347
		X			Hydrogen Fluoride	007664393	11,753,891	12,352,986
		X			Hydroquinone	000123319	30,968	47,787
					Isobutyraldehyde	000078842	1,321,567	1,322,356
					Isopropyl Alcohol (Manufacturing)	000067630	2,003,603	2,006,775
			X		Lead	007439921	1,469 218	20,758,687
		X	X		Lead Compounds		1,158,164	11,396 696
X		X			Lindane	000058899	811	811
		X			m-Cresol	000108394	0,450	20,700
		X	X		m-Xylene	000108383	2,995,819	3,040,289
		X			Maleic Anhydride	000108316	918,611	939,161
					Maneb	012427382	35 930	35,930
					Manganese	007439965	882,570	13,124,443
		X			Manganese Compounds		1,974,094	33,607,289
			X	X	Mercury	007439976	23,409	53 787
		X	X	X	Mercury Compounds		2,336	2,338
		X			Methanol	000067561	215,232,880	278,198,247
		X			Methoxychlor	000072435	252	502
					Methyl Acrylate	000096333	435,489	437,566
		X	X		Methyl Ethyl Ketone	000078933	152,253,887	152 421,441
		X			Methyl Hydrazine	000060344	1,683	1,683
X		X			Methyl Iodide	000074884	500	555
		X	X		Methyl Isobutyl Ketone	000108101	29,595,348	30,859,054
		X		X	Methyl Isocyanate	000624839	286,544	286,544
		X			Methyl Methacrylate	000080626	3,636,833	3,899,788
		X			Methyl Tert-Butyl Ether	001634044	2 326,574	2,429,226
					Methylene Bromide	000074953	38,955	39,205
		X		X	Methylenebis (Phenylisocyanate)	000101688	834,270	845,315
					Michler'S Ketone	000090948	400	400
					Molybdenum Trioxide	001313275	104,316	196,735
		X			N,N-Dimethylaniline	000121697	129,829	147,692
					n-Butyl Alcohol	000071363	32,572,937	35,565,346
					n-Dioctyl Phthalate	000117840	32,455	33,975
					n-Nitrosodi-n-Propylamine	000621647	2,700	2,700
		X			Naphthalene	000091203	4,591,734	4,792,254
			X		Nickel	007440020	419,585	1,133,943
		X	X		Nickel Compounds		306,365	4,329,551
					Nitric Acid	007697372	4,467,114	11,665,104
					Nitrilotriacetic Acid	000139139	1,752	11,952
		X			Nitrobenzene	000098953	115,893	693,469
					Nitroglycerin	000055630	49,246	66,065
		X			o-Anisidine	000090040	3,603	4,460
		X			o-Cresol	000095487	57,382	61,303
X		X			o-Toluidine	000095534	54,254	55,852

Table E-14 (Continued)

All Chemicals Reported — 1987

Carc	Ozone Depl	HAP	33/50	HR/ER	Chemical	Cas No	Emitted To Air (lb/yr)	Emitted To All Media (lb/yr)
		X	X		o-Xylene	000095476	3,680,212	3,702,947
					p-Cresidine	000120718	2,528	4,376
		X			p-Cresol	000106445	86,584	200,484
					p-Nitrosodiphenylamine	000156105	250	250
		X			p-Phenylenediamine	000106503	117,362	131,418
		X	X		p-Xylene	000106423	7,437,936	7,450,927
		X			Parathion	000056382	2,358	2,858
		X			Pentachlorophenol	000087865	16,740	92,839
					Peracetic Acid	000079210	8,500	8,523
		X			Phenol	000108952	8,165,985	16,422,193
		X		X	Phosgene	000075445	83,640	84,140
					Phosphoric Acid	007664382	1,644,719	48,977,547
		X			Phosphorus (Yellow Or White)	007723140	26,252	212,002
		X			Phthalic Anhydride	000085449	597,648	600,758
					Picric Acid	000088891	750	1,750
X		X			Polychlorinated Biphenyls	001336363	751	751
		X			Propionaldehyde	000123386	1,111,191	1,115,024
		X			Propoxur	000114261	2	2
					Propylene	000115071	38,906,600	38,908,036
		X			Propylene Oxide	000075569	3,606,194	4,131,846
X		X		X	Propyleneimine	000075558	500	500
					Pyridine	000110861	298,438	633,474
		X			Quinoline	000091225	27,405	28,263
		X			Quinone	000106514	1,053	1,163
X		X			Quintozene	000082688	254	254
X					Saccharin (Manufacturing Only)	000081072	750	750
X					Safrole	000094597	500	500
					Sec-Butyl Alcohol	000078922	906,268	1,024,322
					Selenium	007782492	4,527	12,054
		X			Selenium Compounds		5,153	10,233
					Silver	007440224	12,767	15,705
					Silver Compounds		11,507	30,658
					Sodium Hydroxide	001310732	7,164,466	137,443,792
X		X			Styrene	000100425	32,076,780	32,472,409
		X			Styrene Oxide	000096093	1,023	1,802
					Sulfuric Acid	007664939	15,654,427	173,863,305
					Tert-Butyl Alcohol	000075650	1,467,630	1,992,090
X		X	X		Tetrachloroethylene	000127184	32,701,045	33,220,495
					Tetrachlorvinphos	000961115	10,415	10,415
					Thallium	007440280	54,411	54,411
					Thallium Compounds		250	250
X					Thiourea	000062566	6,020	28,010
					Thorium Dioxide	001314201	1,580	1,580
		X			Titanium Tetrachloride	007550450	169,165	169,940
		X	X		Toluene	000108883	287,852,372	291,286,873
		X		X	Toluene-2,4-Diisocyanate	000584849	788,742	789,992
					Toluene-2,6-Diisocyanate	000091087	382,825	385,025
					Trichlorfon	000052686	9,953	9,953
X		X	X		Trichloroethylene	000079016	53,740,241	53,843,534
		X			Trifluralin	001582098	2,842	3,099
X		X			Urethane	000051796	797,000	797,935

Table E-14 (Continued)

All Chemicals Reported — 1987

Carc	Ozone Depl	HAP	33/50	HR/ER	Chemical	Cas No	Emitted To Air (lb/yr)	Emitted To All Media (lb/yr)
					Vanadium (Fume Or Dust)	007440622	20,659	75,931
					Vanadium Compounds		43	43
		X			Vinyl Acetate	000108054	6,860,626	8,982,710
		X			Vinyl Bromide	000593602	53,700	53,700
X		X		X	Vinyl Chloride	000075014	1,794,472	1,800,833
X		X		X	Vinylidene Chloride	000075354	466,859	478,483
		X	X		Xylene (Mixed Isomers)	001330207	147,727,850	148,883,806
					Zinc (Fume Or Dust)	007440666	4,586,670	48,723,716
					Zinc Compounds		5,898,128	92,594,855
					Zineb	012122677	750	750
							2,752,733,632	5,500,357,418