

<b>LEGEND</b>	<b>M</b>	Matched Chemicals/Industries
	<b>MY</b>	Multi-year Matched Chemicals/Industries
	<b>A</b>	All Chemicals/Industries

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## LEGEND

<b>M</b>	Matched Chemicals/Industries
<b>MY</b>	Multi-year Matched Chemicals/Industries
<b>A</b>	All Chemicals/Industries

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### ■ Key Findings

- Releases decreased by 2 percent for Canadian facilities and 4 percent for US facilities from 1994 to 1995, for the matched 1994–1995 data set. Transfers increased by 25 percent for Canadian facilities and 2 percent for US facilities. This resulted in an increase in total releases and transfers of 4 percent for Canadian facilities and a 2 percent decrease for US facilities.
- Almost half of the net decrease from US facilities is attributable to facilities that did not report to TRI in 1995, which offset increases for the year caused by newly reporting facilities. For NPRI, the opposite was true. More facilities reported for 1995 than dropped out, and the net effect was an increase in total releases and transfers from this group of facilities.
- Among Canadian industries, paper products manufacturers accomplished the greatest reduction in total releases and transfers (a decrease of 4 million kg) from 1994 to 1995. The industry ranked third in 1995 for total releases and transfers, down from first for 1994. In TRI, facilities reporting multiple industry codes reported the largest reduction (a decrease of 10 million kg) from 1994 to 1995. Overall though, TRI industries showed very little change in ranking.
- The states and provinces with the largest releases and transfers were the same for 1994 and 1995 for the matched data set: Texas, Ohio and Louisiana, and Ontario, Quebec and Alberta, respectively. For total releases, the top Canadian provinces were the same, but in the United States, Ohio was fourth in both years, behind Alabama.
- Changes to NPRI reporting requirements in 1995, rather than absolute changes in releases and transfers, may be responsible for large increases reported by certain facilities. Chemical by-products generated in concentrations lower than 1 percent were not reportable in 1994, but were in 1995.

### 5.1 Introduction

PRTR data are collected annually and can be used to show how releases and transfers change from year to year. This chapter examines these changes for both NPRI and TRI and compares them for the two countries. Because some reporting requirements also changed from 1994 to 1995 in both NPRI and TRI, the set of chemicals that represents valid comparisons between these two years, because it excludes ammonia, ammonium nitrate, ammonium sulfate, nitric acid, and nitrate compounds, is smaller than in previous chapters where only the data for 1995 were being analyzed. Also, changes noted from 1994 to 1995 in this report may differ from those presented in Canada's summary report on NPRI and the United States' summary report on TRI, because the industry and chemical sets compared in their respective reports differ from the industry and chemical set used in this combined report.

Specific chemicals whose reporting requirements were altered from 1994 to 1995, as mentioned above, were ammonia, nitric acid and nitrate compounds. For the 1994-to-1995 comparison, these chemicals were omitted from the matched data set, and this is the only difference between the 1995 matched data set used in **Chapters 3 and 4** and the multi-year matched data set employed in this chapter. The industry set (manufacturing facilities only) remains the same as in **Chapters 3 and 4**.

New NPRI reporting requirements that did not add chemicals or change industrial definitions did affect reporting at some of the facilities with larger amounts of releases and transfers. In 1994, if a by-product generated in a

Table 5-1		NPRI and TRI Releases and Transfers							
MY	94-95	NPRI				TRI			
		1994	1995	Change 1994-1995		1994	1995	Change 1994-1995	
		Number	Number	Number	%	Number	Number	Number	%
Facilities		1,281	1,298	17	1.3	19,201	18,743	-458	-2.4
Forms		3,860	4,031	171	4.4	55,631	54,530	-1,101	-2.0
		kg	kg	kg	%	kg	kg	kg	
<b>Releases</b>									
Total Air Emissions		66,862,674	63,201,922	-3,660,752	-5.5	516,669,066	488,271,248	-28,397,818	-5.5
Surface Water Discharges		12,962,199	10,919,996	-2,042,203	-15.8	17,780,437	15,998,217	-1,782,220	-10.0
Underground Injection		872,126	3,236,927	2,364,801	271.2	42,849,332	52,755,525	9,906,193	23.1
On-Site Land Releases		10,390,568	11,573,758	1,183,190	11.4	125,617,755	119,787,099	-5,830,656	-4.6
<b>Matched Releases</b>		<b>91,252,202</b>	<b>89,073,779</b>	<b>-2,178,423</b>	<b>-2.4</b>	<b>702,916,591</b>	<b>676,812,089</b>	<b>-26,104,502</b>	<b>-3.7</b>
<b>Transfers</b>									
Treatment/Destruction		14,494,719	12,645,014	-1,849,705	-12.8	87,697,089	96,359,775	8,662,686	9.9
Sewage/POTWs		464,174	394,752	-69,422	-15.0	65,010,537	63,276,210	-1,734,327	-2.7
Disposal/Containment		11,808,310	20,486,822	8,678,512	73.5	114,260,621	112,728,232	-1,532,389	-1.3
<b>Matched Transfers</b>		<b>26,767,203</b>	<b>33,526,588</b>	<b>6,759,385</b>	<b>25.3</b>	<b>266,968,248</b>	<b>272,364,217</b>	<b>5,395,970</b>	<b>2.0</b>
<b>Matched Releases and Transfers</b>		<b>118,019,405</b>	<b>122,600,367</b>	<b>4,580,962</b>	<b>3.9</b>	<b>969,884,839</b>	<b>949,176,307</b>	<b>-20,708,532</b>	<b>-2.1</b>

► Does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to both NPRI and TRI.

production process was not in the raw materials list, it did not have to be reported if it composed less than one percent of the waste stream. In 1995, the release of the same by-product had to be reported regardless of its concentration in the waste stream, assuming the facility also met other reporting criteria.

## 5.2 Summary of Changes

For the matched chemical/industry data set, NPRI facilities reported total releases and transfers 4 percent higher

in 1995 than in 1994, as shown in **Table 5-1** and **Figure 5-1**. This increase came largely from transfers to disposal/containment, which showed an increase of 9 million kg or 74 percent. The second largest increase—2 million kg—came in underground injection. Overall, these changes were offset by decreases in air emissions of 4 million kg (about 6 percent) and discharges to surface waters of 2 million kg (a 16 percent decrease).

TRI manufacturing facilities reporting the matched chemicals showed

an overall decrease of 2 percent (see **Table 5-1**). This came from decreases in air emissions of 28 million kg (approximately 6 percent) and on-site land releases of 6 million kg (a 5 percent decrease). It contrasted with a 2 percent increase in transfers reported by TRI facilities, including a 10 percent increase in transfers to treatment/destruction of 9 million kg. Increases were also reported for one type of release, underground injection, with 10 million kg more in 1995 than in 1994 (a 23 percent increase).

**Figure 5-2** illustrates the relative significance of reductions in air emissions in both NPRI and TRI, as transfers have increased—to disposal/containment in NPRI and to treatment/destruction in TRI.

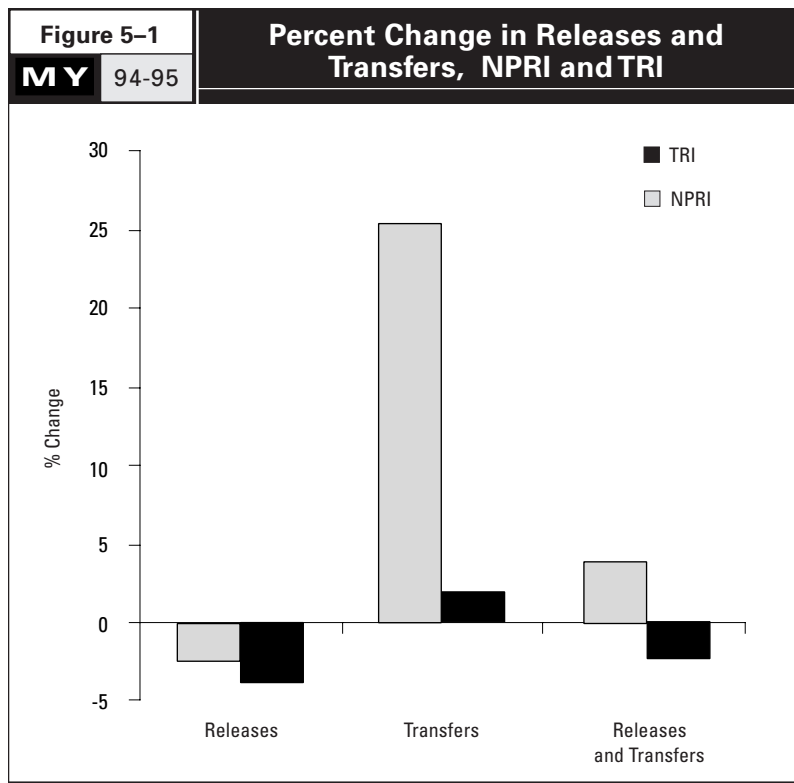
These net changes result both from individual facilities reporting increases and decreases and from facilities reporting in one year but not the other. In a multi-year analysis, facilities' reporting patterns place them in one of five categories. They may:

1. report larger amounts over time (sometimes called “increasers”),
2. report smaller amounts over time (sometimes called “decreasers”),
3. begin reporting in later years (these also contribute to overall increases in PRTR reporting),
4. file in earlier years and then stop reporting (these contribute to overall decreases), or
5. show no change over the period.

“Increasers” and newly reporting facilities (1 and 3 above) can be considered together, because both contribute to overall increases. Similarly, “decreasers” and those who stop reporting (2 and 4 above) may be summed for decreasing amounts. Alternatively, amounts submitted by facilities reporting in only one year (3 and 4 above) can be combined to show a net increase or decrease in their overall effect on PRTR quantities over time.

Thus, **Table 5-2** shows that NPRI facilities filing only in 1995 reported 2 million kg more than those that did so only in 1994. This resulted in a net increase of almost 50 percent for facilities reporting in only one year.

The majority of NPRI facilities reported in both years (1,194 facilities). More of these (499 facilities or 42 percent) reported smaller amounts in 1995 (the so-called “decreasers”), but their reductions were more than offset

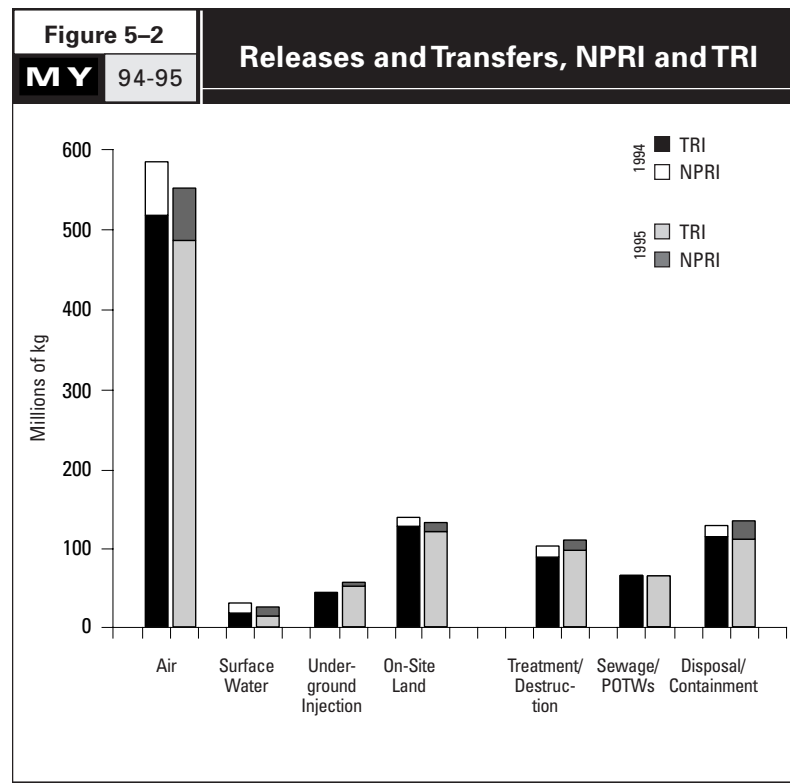


► Does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to both NPRI and TRI.

by the total increases reported by the 451 facilities reporting increases (“increasers”). Facilities reporting smaller quantities in 1995 showed a total decrease of 26 million kg, while “increasers” reported nearly 29 million kg more. In the case of the 244 facilities reporting no change in total releases and transfers, overall they represented small totals (about 2 million kg in 1994 and 1995, or less than 2 percent of the NPRI total).

For TRI, facilities that reported only in 1994 submitted forms totaling 20 million kg of releases and transfers. Those filing only in 1995 reported 11 million kg, as shown in **Table 5-3**. Therefore, almost half (44 percent) of TRI’s net decrease originated from facilities reporting in one year only.

Almost half of the TRI facilities reporting in both years reported decreases (8,276 out of 17,270 facilities, or 48 percent), and these decreases of 153 million kg were more than the amounts from facilities reporting increases, which totaled 142 million kg. As in the NPRI database, TRI facilities reporting no change from 1994 to 1995 had relatively small release and transfer amounts. There were 2,916 such facilities (17 percent of all those reporting in both years), and their releases and transfers amounted to only 2 million kg, or about 0.2 percent of the total.



► Does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to both NPRI and TRI.

Table 5-2		NPRI Releases and Transfers								
MY	94-95									
	1994					1995				
	Reported 1994 Only Number	Reported in Both Years			Total Number	Reported 1995 Only Number	Reported in Both Years			Total Number
		Decrease Number	Same Number	Increase Number			Decrease Number	Same Number	Increase Number	
	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg
Facilities	87	499	244	451	1,281	104	499	244	451	1,298
Forms	174	1,736	450	1,500	3,860	254	1,660	448	1,669	4,031
<b>Releases</b>										
Total Air Emissions	4,043,857	38,259,318	1,286,867	23,272,632	66,862,674	2,211,648	28,033,317	1,286,867	31,670,090	63,201,922
Surface Water Discharges	462	9,218,552	13,336	3,729,849	12,962,199	109,669	4,867,295	13,322	5,929,710	10,919,996
Underground Injection	0	56,021	0	816,105	872,126	0	48,285	0	3,188,642	3,236,927
On-Site Land Releases	665	6,921,416	762,977	2,705,510	10,390,568	2,451,751	4,645,860	762,977	3,713,170	11,573,758
<b>Matched Releases</b>	<b>4,054,980</b>	<b>54,542,166</b>	<b>2,064,834</b>	<b>30,590,222</b>	<b>91,252,202</b>	<b>4,782,879</b>	<b>37,653,568</b>	<b>2,064,816</b>	<b>44,572,516</b>	<b>89,073,779</b>
<b>Transfers</b>										
Treatment/Destruction	518,640	10,999,453	187,714	2,788,912	14,494,719	134,868	4,470,172	187,714	7,852,260	12,645,014
Sewage/POTWs	12,187	369,808	35,554	46,625	464,174	2	241,032	35,549	118,169	394,752
Disposal/Containment	42,416	7,156,088	72,330	4,537,476	11,808,310	2,002,032	4,423,722	72,353	13,988,715	20,486,822
<b>Matched Transfers</b>	<b>573,243</b>	<b>18,525,349</b>	<b>295,598</b>	<b>7,373,013</b>	<b>26,767,203</b>	<b>2,136,902</b>	<b>9,134,926</b>	<b>295,616</b>	<b>21,959,144</b>	<b>33,526,588</b>
<b>Matched Releases and Transfers</b>	<b>4,628,223</b>	<b>73,067,515</b>	<b>2,360,432</b>	<b>37,963,235</b>	<b>118,019,405</b>	<b>6,919,781</b>	<b>46,788,494</b>	<b>2,360,432</b>	<b>66,531,660</b>	<b>122,600,367</b>

► Does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to TRI.

Change 1994–1995							
Reported One Year Only		Reported in Both Years				Total	
Number	%	Decrease		Increase		Number	%
		Number	%	Number	%		
17	19.5	0	0.0	0	0.0	17	1.3
80	46.0	-76	-4.4	169	11.3	171	4.4
<b>kg</b>	<b>%</b>	<b>kg</b>	<b>%</b>	<b>kg</b>	<b>%</b>	<b>kg</b>	<b>%</b>
-1,832,209	-45.3	-10,226,001	-26.7	8,397,458	36.1	-3,660,752	-5.5
109,207	23,637.9	-4,351,257	-47.2	2,199,861	59.0	-2,042,203	-15.8
0	—	-7,736	-13.8	2,372,537	290.7	2,364,801	271.2
2,451,086	368,584.4	-2,275,556	-32.9	1,007,660	37.2	1,183,190	11.4
<b>727,899</b>	<b>18.0</b>	<b>-16,888,598</b>	<b>-31.0</b>	<b>13,982,294</b>	<b>45.7</b>	<b>-2,178,423</b>	<b>-2.4</b>
-383,772	-74.0	-6,529,281	-59.4	5,063,348	181.6	-1,849,705	-12.8
-12,185	-100.0	-128,776	-34.8	71,544	153.4	-69,422	-15.0
1,959,616	4,620.0	-2,732,366	-38.2	9,451,239	208.3	8,678,512	73.5
<b>1,563,659</b>	<b>272.8</b>	<b>-9,390,423</b>	<b>-50.7</b>	<b>14,586,131</b>	<b>197.8</b>	<b>6,759,385</b>	<b>25.3</b>
<b>2,291,558</b>	<b>49.5</b>	<b>-26,279,021</b>	<b>-36.0</b>	<b>28,568,425</b>	<b>75.3</b>	<b>4,580,962</b>	<b>3.9</b>

Table 5-3		TRI Releases and Transfers										
MY	94-95											
	Reported 1994 Only Number	1994				Total Number	Reported 1995 Only Number	1995				Total Number
		Reported in Both Years	Decrease Number	Same Number	Increase Number			Reported in Both Years	Decrease Number	Same Number	Increase Number	
	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	
Facilities	1,931	8,276	2,916	6,078	19,201	1,473	8,276	2,916	6,078	18,743		
Forms	3,289	28,113	4,565	19,664	55,631	2,436	26,727	4,619	20,748	54,530		
<b>Releases</b>												
Total Air Emissions	13,340,168	292,293,010	1,233,717	209,802,171	516,669,066	8,547,536	218,197,673	1,234,005	260,292,034	488,271,248		
Surface Water Discharges	226,278	9,695,984	8,523	7,849,652	17,780,437	58,997	5,997,253	8,514	9,933,453	15,998,217		
Underground Injection	2,224	15,255,714	113	27,591,281	42,849,332	2	12,781,037	113	39,974,372	52,755,525		
On-Site Land Releases	254,400	81,408,243	528,268	43,426,844	125,617,755	211,289	61,101,397	526,659	57,947,755	119,787,099		
<b>Matched Releases</b>	<b>13,823,070</b>	<b>398,652,951</b>	<b>1,770,622</b>	<b>288,669,948</b>	<b>702,916,591</b>	<b>8,817,824</b>	<b>298,077,360</b>	<b>1,769,292</b>	<b>368,147,614</b>	<b>676,812,089</b>		
<b>Transfers</b>												
Treatment/Destruction	2,836,084	61,819,518	92,058	22,949,429	87,697,089	888,034	40,572,464	93,282	54,805,995	96,359,775		
Sewage/POTWs	815,670	35,859,239	92,807	28,242,821	65,010,537	403,037	27,257,504	92,808	35,522,862	63,276,210		
Disposal/Containment	2,913,627	49,234,461	193,724	61,918,810	114,260,621	1,104,741	26,416,483	193,829	85,013,180	112,728,232		
<b>Matched Transfers</b>	<b>6,565,381</b>	<b>146,913,218</b>	<b>378,589</b>	<b>113,111,060</b>	<b>266,968,248</b>	<b>2,395,811</b>	<b>94,246,451</b>	<b>379,919</b>	<b>175,342,036</b>	<b>272,364,217</b>		
<b>Matched Releases and Transfers</b>	<b>20,388,451</b>	<b>545,566,168</b>	<b>2,149,210</b>	<b>401,781,009</b>	<b>969,884,839</b>	<b>11,213,635</b>	<b>392,323,811</b>	<b>2,149,210</b>	<b>543,489,650</b>	<b>949,176,307</b>		

► Does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to NPRI.



Change 1994–1995							
Reported One Year Only		Reported in Both Years				Total	
Number	%	Decrease		Increase		Number	%
		Number	%	Number	%		
-458	-23.7	0	0.0	0	0.0	-458	-2.4
-853	-25.9	-1,386	-4.9	1,084	5.5	-1,101	-2.0
		<b>kg</b>		<b>kg</b>		<b>kg</b>	
-4,792,632	-35.9	-74,095,337	-25.3	50,489,862	24.1	-28,397,818	-5.5
-167,281	-73.9	-3,698,732	-38.1	2,083,801	26.5	-1,782,220	-10.0
-2,222	-99.9	-2,474,677	-16.2	12,383,092	44.9	9,906,193	23.1
-43,111	-16.9	-20,306,846	-24.9	14,520,911	33.4	-5,830,656	-4.6
<b>-5,005,246</b>	<b>-36.2</b>	<b>-100,575,590</b>	<b>-25.2</b>	<b>79,477,665</b>	<b>27.5</b>	<b>-26,104,502</b>	<b>-3.7</b>
-1,948,050	-68.7	-21,247,054	-34.4	31,856,565	138.8	8,662,686	9.9
-412,634	-50.6	-8,601,735	-24.0	7,280,040	25.8	-1,734,327	-2.7
-1,808,886	-62.1	-22,817,979	-46.3	23,094,371	37.3	-1,532,389	-1.3
<b>-4,169,570</b>	<b>-63.5</b>	<b>-52,666,767</b>	<b>-35.8</b>	<b>62,230,976</b>	<b>55.0</b>	<b>5,395,970</b>	<b>2.0</b>
<b>-9,174,816</b>	<b>-45.0</b>	<b>-153,242,357</b>	<b>-28.1</b>	<b>141,708,641</b>	<b>35.3</b>	<b>-20,708,532</b>	<b>-2.1</b>

Table 5-4		North American Projections of Total Releases and Transfers, NPRI and TRI, 1994-1997					
MY	1995						
Facilities Reporting Both Years							
	Actual 1994 (kg)	Projected Change for 1995 (kg)	Projected Change Projections 1994-1995 (%)	Projected Change Projections for 1996* (kg)	Projected Change Projections 1995-1996 (%)		
NPRI	113,391,182	110,069,144	-2.9	95,407,522	-13.3		
TRI	931,572,081	900,398,260	-3.3	870,647,939	-3.3		
<b>Total</b>	<b>1,044,963,263</b>	<b>1,010,467,404</b>	<b>-3.3</b>	<b>966,055,461</b>	<b>-4.4</b>		
	Actual 1994 (kg)	Actual 1995 (kg)	Actual Change 1994-1995 (%)	Projected Projections for 1996 (kg)	Projected Change 1995-1996 (%)	Projected Projections for 1997 (kg)	Projected Change 1996-1997 (%)
NPRI	113,391,182	115,680,586	2.0	103,684,000	-10.4	97,552,524	-5.9
TRI	931,572,081	920,922,747	-1.1	898,125,883	-2.5	870,691,896	-3.1
<b>Total</b>	<b>1,044,963,263</b>	<b>1,036,603,333</b>	<b>-0.8</b>	<b>1,001,809,883</b>	<b>-3.4</b>	<b>968,244,420</b>	<b>-3.4</b>

\* One facility erroneously projecting 93 million kilograms for 1996 on 1994 TRI form was not included.

► For TRI, amounts are Sections 8.1 plus 8.7 on TRI Form R.

### 5.3 Projections for Releases and Transfers

TRI requires projections for all types of production-related waste. These projections, as well as current year amounts, are listed in a different part of the TRI reporting form (in **Section 8**) than the amounts for releases and transfers (from **Sections 5** and **6** of the TRI form) discussed elsewhere in this report. Therefore, the actual numbers for 1995 will differ somewhat. Both NPRI and TRI require estimates of future years' releases and transfers.

NPRI requires projections for both total releases and total transfers, while TRI requires them for all types of production-related waste. To compare these projections, therefore, NPRI releases and transfers are totaled and the two TRI quantities, released/disposed of plus treated off-site, are totaled.

**Table 5-4** presents actual reported amounts for total releases and transfers for 1994 and 1995, along with projections made in both 1994 and 1995. The data in the table summarize only facilities that reported in both years.

As **Table 5-4** shows, in 1994 facilities projected larger reductions for 1995 than were achieved. For TRI, the projected decrease was slightly more than 3 percent, while the actual decrease was 1 percent. For NPRI, a decrease of nearly 3 percent was projected, while the actual amounts reported represented an increase of 2 percent. With the exception of the last figure, all these real or projected decreases are slightly less optimistic than were noted (**Tables 5-2** and **5-3**) in the population of all matched industries that filed in one or

both years. Some of this increase is due to the change in the requirement for NPRI facilities to report on by-products, present in any concentration, released or sent off-site for disposal.

For 1996 and 1997, facilities in both TRI and NPRI are projecting decreases. NPRI facilities have projected a decrease of 10 percent from 1995 to 1996 and a further decrease of 6 percent from 1996 to 1997. The new projected decrease for 1995 to 1996, though, is smaller than that given on 1994 forms, which was 13 percent. TRI facilities projected smaller decreases of less than 3 percent from 1995 to 1996 and just over 3 percent from 1996 to 1997, figures which are similar to projections on the 1994 forms.

### 5.4 Changes by Industry

In 1994, the pulp and paper industry ranked first for total NPRI releases and transfers in the 1994-1995 matched data set because of its large releases (see **Table 5-5**). In 1995, however, the primary metals industry ranked first, because an increase of 8 million kg of transfers gave this industry a 30 percent increase in total releases and transfers. In fact, the pulp and paper industry registered the largest absolute decreases in 1995: 3 million kg in releases and 1 million kg in transfers, for a 13 percent decrease in total releases and transfers. (**Chapter 8** further examines developments in the Canadian and US pulp and paper industries.)

The largest percentage decrease among NPRI industries was reported by the measurement/photographic instruments industry: 88 percent. However, this industry submitted very few forms (two in 1994 and only one in 1995).

For TRI, the chemical industry ranked first in both 1994 and 1995 and reported an overall increase of 1 percent.

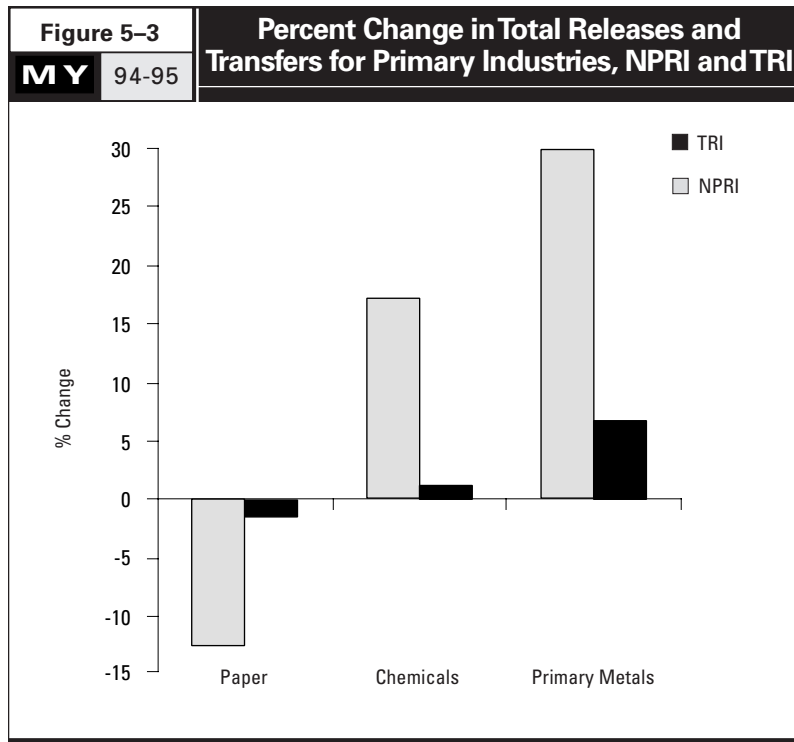
Table 5-5		NPRI Releases and Transfers, by Two-Digit US SIC Code									
MY	94-95	1994					1995				
US SIC Code	Industry	Number of Forms	Total Releases (kg)	Total Transfers (kg)	Total Releases and Transfers (kg)	Rank	Number of Forms	Total Releases (kg)	Total Transfers (kg)	Total Releases and Transfers (kg)	Rank
33	Primary Metal Industries	539	16,801,066	9,669,696	26,470,762	2	560	16,513,648	17,779,236	34,292,884	1
28	Chemicals	1,324	19,492,506	6,235,040	25,727,546	3	1,341	21,487,573	8,617,338	30,104,911	2
26	Paper Products	216	28,472,996	3,286,536	31,759,532	1	258	25,745,222	1,979,416	27,724,638	3
37	Transportation Equipment	244	6,851,309	1,470,035	8,321,344	4	293	6,963,607	889,270	7,852,877	4
30	Rubber and Plastics Products	261	6,383,889	1,180,689	7,564,578	5	270	6,196,654	972,096	7,168,750	5
29	Petroleum and Coal Products	375	5,204,831	605,716	5,810,547	6	347	4,599,531	401,117	5,000,648	6
34	Fabricated Metals Products	349	1,848,241	2,707,090	4,555,331	7	358	1,799,057	1,561,255	3,360,312	7
32	Stone/Clay/Glass Products	88	2,078,020	336,039	2,414,059	8	82	999,723	395,179	1,394,902	8
27	Printing and Publishing	44	1,361,546	217,893	1,579,439	9	39	1,119,878	172,753	1,292,631	9
24	Lumber and Wood Products	111	778,488	84,994	863,482	11	135	1,209,182	65,170	1,274,352	10
22	Textile Mill Products	21	557,644	15,276	572,920	13	19	963,400	8,004	971,404	11
35	Industrial Machinery	71	212,612	143,038	355,650	14	69	487,422	129,081	616,503	12
36	Electronic/Electrical Equipment	76	451,469	521,545	973,014	10	75	205,959	365,018	570,977	13
25	Furniture and Fixtures	23	530,200	51,091	581,291	12	30	505,376	7,793	513,169	14
39	Misc. Manufacturing Industries	25	138,076	3,377	141,453	16	76	123,788	129,000	252,788	15
23	Apparel and Other Textile Products	2	0	0	0	20	1	125,000	0	125,000	16
20	Food Products	85	27,224	228,637	255,861	15	74	10,900	47,332	58,232	17
31	Leather Products	4	50,065	10,511	60,576	17	3	17,858	6,030	23,888	18
38	Measurement/Photographic Instruments	2	12,020	0	12,020	18	1	1	1,500	1,501	19
21	Tobacco Products	0	0	0	0	19	0	0	0	0	20
	<b>Total</b>	<b>3,860</b>	<b>91,252,202</b>	<b>26,767,203</b>	<b>118,019,405</b>		<b>4,031</b>	<b>89,073,779</b>	<b>33,526,588</b>	<b>122,600,367</b>	
		Change 1994-1995					Percent Change 1994-1995				
		Number	kg	kg	kg	Rank	%	%	%	%	Rank
33	Primary Metal Industries	21	-287,418	8,109,540	7,822,122	20	3.9	-1.7	83.9	29.6	14
28	Chemicals	17	1,995,067	2,382,298	4,377,365	19	1.3	10.2	38.2	17.0	13
26	Paper Products	42	-2,727,774	-1,307,120	-4,034,894	1	19.4	-9.6	-39.8	-12.7	9
37	Transportation Equipment	49	112,298	-580,765	-468,467	5	20.1	1.6	-39.5	-5.6	11
30	Rubber and Plastics Products	9	-187,235	-208,593	-395,828	7	3.4	-2.9	-17.7	-5.2	12
29	Petroleum and Coal Products	-28	-605,300	-204,599	-809,899	4	-7.5	-11.6	-33.8	-13.9	8
34	Fabricated Metals Products	9	-49,184	-1,145,835	-1,195,019	2	2.6	-2.7	-42.3	-26.2	6
32	Stone/Clay/Glass Products	-6	-1,078,297	59,140	-1,019,157	3	-6.8	-51.9	17.6	-42.2	4
27	Printing and Publishing	-5	-241,668	-45,140	-286,808	8	-11.4	-17.7	-20.7	-18.2	7
24	Lumber and Wood Products	24	430,694	-19,824	410,870	18	21.6	55.3	-23.3	47.6	15
22	Textile Mill Products	-2	405,756	-7,272	398,484	17	-9.5	72.8	-47.6	69.6	16
35	Industrial Machinery	-2	274,810	-13,957	260,853	16	-2.8	129.3	-9.8	73.3	17
36	Electronic/Electrical Equipment	-1	-245,510	-156,527	-402,037	6	-1.3	-54.4	-30.0	-41.3	5
25	Furniture and Fixtures	7	-24,824	-43,298	-68,122	10	30.4	-4.7	-84.7	-11.7	10
39	Misc. Manufacturing Industries	51	-14,288	125,623	111,335	14	204.0	-10.3	3,720.0	78.7	18
23	Apparel and Other Textile Products	-1	125,000	0	125,000	15	-50.0	—	—	—	—
20	Food Products	-11	-16,324	-181,305	-197,629	9	-12.9	-60.0	-79.3	-77.2	2
31	Leather Products	-1	-32,207	-4,481	-36,688	11	-25.0	-64.3	-42.6	-60.6	3
38	Measurement/Photographic Instruments	-1	-12,019	1,500	-10,519	12	-50.0	-100.0	—	-87.5	1
21	Tobacco Products	0	0	0	0	13	—	—	—	—	—
	<b>Total</b>	<b>171</b>	<b>-2,178,423</b>	<b>6,759,385</b>	<b>4,580,962</b>		<b>4.4</b>	<b>-2.4</b>	<b>25.3</b>	<b>3.9</b>	

➤ Does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to TRI.

TAKING STOCK: North American Pollutant Releases and Transfers

Table 5-6		TRI Releases and Transfers, by Two-Digit US SIC Code									
MY 94-95		1994					1995				
US SIC Code	Industry	Number of Forms	Total Releases (kg)	Total Transfers (kg)	Total Releases and Transfers (kg)	Rank	Number of Forms	Total Releases (kg)	Total Transfers (kg)	Total Releases and Transfers (kg)	Rank
28	Chemicals	15,580	207,369,611	97,620,599	304,990,210	1	15,327	206,346,987	101,735,785	308,082,772	1
33	Primary Metal Industries	5,493	120,176,532	80,399,909	200,576,441	2	5,413	128,886,591	85,015,050	213,901,641	2
26	Paper Products	1,621	81,343,733	23,500,702	104,844,435	3	1,604	79,549,534	23,792,193	103,341,727	3
	Multiple Codes 20-39	4,044	58,249,456	14,310,954	72,560,410	4	3,957	48,917,103	13,744,282	62,661,385	4
30	Rubber and Plastics Products	3,146	46,664,659	7,352,230	54,016,889	5	3,037	42,650,773	6,591,439	49,242,212	5
37	Transportation Equipment	3,621	44,889,317	7,260,555	52,149,873	6	3,575	40,504,862	6,222,025	46,726,887	6
34	Fabricated Metals Products	5,993	27,335,105	9,416,790	36,751,895	7	5,859	25,638,927	9,171,396	34,810,323	7
29	Petroleum and Coal Products	2,680	19,144,742	3,627,436	22,772,178	9	2,655	18,121,779	3,841,517	21,963,296	8
25	Furniture and Fixtures	1,494	22,181,486	928,377	23,109,863	8	1,336	17,633,944	438,568	18,072,512	9
36	Electronic/Electrical Equipment	2,206	10,724,005	5,926,161	16,650,166	10	2,170	8,934,118	5,740,951	14,675,070	10
27	Printing and Publishing	398	14,674,159	223,089	14,897,249	11	376	13,676,357	191,093	13,867,449	11
24	Lumber and Wood Products	1,686	14,346,720	290,195	14,636,915	12	1,582	13,181,012	242,332	13,423,344	12
35	Industrial Machinery	2,352	9,153,312	2,395,429	11,548,740	13	2,325	7,580,069	2,483,666	10,063,735	13
32	Stone/Clay/Glass Products	1,224	4,620,775	3,010,708	7,631,483	15	1,285	5,379,595	3,192,812	8,572,407	14
22	Textile Mill Products	544	6,822,708	1,247,059	8,069,767	14	526	6,543,979	1,291,889	7,835,868	15
20	Food Products	2,155	2,597,525	4,895,991	7,493,516	17	2,141	2,290,556	4,733,319	7,023,875	16
38	Measurement/Photographic Instruments	555	5,171,238	2,436,552	7,607,790	16	554	4,953,276	1,867,446	6,820,722	17
39	Misc. Manufacturing Industries	633	5,889,998	1,196,417	7,086,415	18	616	4,797,689	1,234,970	6,032,659	18
31	Leather Products	151	1,045,924	841,500	1,887,424	19	144	738,950	793,504	1,532,454	19
23	Apparel and Other Textile Products	46	454,466	87,591	542,057	20	36	443,241	39,908	483,149	20
21	Tobacco Products	9	61,121	2	61,123	21	12	42,747	72	42,819	21
	<b>Total</b>	<b>55,631</b>	<b>702,916,591</b>	<b>266,968,248</b>	<b>969,884,839</b>		<b>54,530</b>	<b>676,812,089</b>	<b>272,364,217</b>	<b>949,176,307</b>	
		Change 1994-1995					Percent Change 1994-1995				
		Number	kg	kg	kg	Rank	%	%	%	%	Rank
28	Chemicals	-253	-1,022,624	4,115,186	3,092,562	20	-1.6	-0.5	4.2	1.0	19
33	Primary Metal Industries	-80	8,710,059	4,615,141	13,325,200	21	-1.5	7.2	5.7	6.6	20
26	Paper Products	-17	-1,794,199	291,492	-1,502,707	7	-1.0	-2.2	1.2	-1.4	18
	Multiple Codes 20-39	-87	-9,332,353	-566,672	-9,899,025	1	-2.2	-16.0	-4.0	-13.6	5
30	Rubber and Plastics Products	-109	-4,013,886	-760,791	-4,774,677	4	-3.5	-8.6	-10.3	-8.8	11
37	Transportation Equipment	-46	-4,384,456	-1,038,530	-5,422,986	2	-1.3	-9.8	-14.3	-10.4	9
34	Fabricated Metals Products	-134	-1,696,178	-245,394	-1,941,572	6	-2.2	-6.2	-2.6	-5.3	15
29	Petroleum and Coal Products	-25	-1,022,964	214,081	-808,883	12	-0.9	-5.3	5.9	-3.6	16
25	Furniture and Fixtures	-158	-4,547,541	-489,810	-5,037,351	3	-10.6	-20.5	-52.8	-21.8	2
36	Electronic/Electrical Equipment	-36	-1,789,886	-185,210	-1,975,096	5	-1.6	-16.7	-3.1	-11.9	7
27	Printing and Publishing	-22	-997,802	-31,997	-1,029,799	11	-5.5	-6.8	-14.3	-6.9	13
24	Lumber and Wood Products	-104	-1,165,708	-47,863	-1,213,571	9	-6.2	-8.1	-16.5	-8.3	12
35	Industrial Machinery	-27	-1,573,242	88,237	-1,485,005	8	-1.1	-17.2	3.7	-12.9	6
32	Stone/Clay/Glass Products	61	758,820	182,103	940,924	19	5.0	16.4	6.0	12.3	21
22	Textile Mill Products	-18	-278,729	44,830	-233,899	16	-3.3	-4.1	3.6	-2.9	17
20	Food Products	-14	-306,969	-162,672	-469,640	14	-0.6	-11.8	-3.3	-6.3	14
38	Measurement/Photographic Instruments	-1	-217,962	-569,106	-787,068	13	-0.2	-4.2	-23.4	-10.3	10
39	Misc. Manufacturing Industries	-17	-1,092,309	38,552	-1,053,756	10	-2.7	-18.5	3.2	-14.9	4
31	Leather Products	-7	-306,974	-47,996	-354,970	15	-4.6	-29.3	-5.7	-18.8	3
23	Apparel and Other Textile Products	-10	-11,225	-47,683	-58,908	17	-21.7	-2.5	-54.4	-10.9	8
21	Tobacco Products	3	-18,374	70	-18,304	18	33.3	-30.1	3,080.0	-29.9	1
	<b>Total</b>	<b>-1,101</b>	<b>-26,104,502</b>	<b>5,395,970</b>	<b>-20,708,532</b>		<b>-2.0</b>	<b>-3.7</b>	<b>2.0</b>	<b>-2.1</b>	

► Does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to NPRI.



► Does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to NPRI and TRI.

This arose from an additional 4 million kg of transfers, despite a 1 million kg decrease in releases (see **Table 5-6**). Primary metals ranked second in both years and had the largest reported increase, of 13 million kg or 7 percent. The TRI industrial category showing the largest decreases was that reporting “multiple codes”—more than one SIC code—with decreases in releases of 9 million kg. Two other industrial categories (transportation equipment and furniture) reported decreases of more than 5 million kg in total releases and transfers.

**Figure 5-3** shows the percent change in total releases and transfers for the three industrial groups (pulp and paper, chemicals and primary metals) that had the greatest releases and transfers in both Canada and the United States. They show similar changes—in

both countries, the pulp and paper industry reported decreases and the chemical and primary metals industries reported increases—although greater percentage shifts occurred in Canada in each case.

### 5.5 Facilities with Large Increases and Decreases

A few facilities accounted for the large increases evidenced in NPRI. Changes in 1995 reporting requirements for NPRI (described in **Chapter 2**) may have affected increases reported by some of facilities. Some increases are not true increases, but are due to companies reporting releases and transfers that were not previously reportable. Examples include Alcan Smelters and Chemicals in Kitimat, British Columbia, and Northwood Pulp and Timber Ltd. in Prince George,

British Columbia. Alcan reported releases of hydrogen fluoride and Northwood, releases of methanol, both for the first time in 1995, because of the change in reporting criteria to include by-products. Similarly, two facilities owned by Domtar (in Red Rock and Trenton, Ontario) appear on these tables because of the change in by-products reporting requirements. Domtar’s Red Rock methanol emissions were actually lower in 1995 because of the start-up of its secondary effluent treatment system.

(As stated in earlier chapters, it is important to note that any evaluation of the relative health and environmental impacts of these facilities must also take into account the toxicity of the chemicals released, local climatic conditions and the proximity of people and ecologically sensitive areas to the released waste streams.)

The 50 facilities with the largest increases in releases, presented in **Table 5-7**, accounted for 76 percent (14 million of 19 million kg) of the increases that came from facilities reporting in both years and those that reported in 1995 but not in 1994. Data from facilities in the latter category can represent not true increases but simply responses to changes in reporting requirements, as discussed in **Chapter 2**. Two facilities—Celanese Canada Inc. in Edmonton, Alberta, and Domtar Packaging in Red Rock, Ontario—reported increases of more than 1 million kg. At six facilities, emissions of hydrogen fluoride to air amounted to more than 70 percent of the installation’s total releases; which helped to make this the chemical with the largest increases in NPRI releases from 1994 to 1995 (see **Table 5-27**, later in this chapter).

The 50 facilities listed in **Table 5-8** accounted for 75 percent (27 million of 35 million kg) of the increases in total releases and transfers that came from

facilities reporting in both years or only in 1995. Two of the seven facilities reporting an increase of more than 1 million kg had not reported in 1994: Domtar Packaging in Red Rock, Ontario (surface water discharges of methanol) and Dominion Castings Ltd. in Hamilton, Ontario (transfers to disposal/containment of chromium and its compounds). The Co-Steel Lasco facility in Whitby, Ontario, reported 6 million kg more in total releases and transfers in 1995 than in 1994 (primarily transfers to disposal/containment of zinc compounds), the largest increase reported.

Some facilities may also appear in these tables because of one-time events not related to continuing production. For example, CXY Chemicals in Nanaimo, British Columbia, ranking third for increases in total releases and transfers, reported transfers of asbestos of almost 2,000 tonnes as part of a one-time site remediation program in 1995. Formerly the site of a chlor-alkali plant, CXY’s waste settling ponds contained asbestos from diaphragms used to separate anode and cathode compartments in electrochemical cells. Every 200 days, the diaphragms were refurbished, and the asbestos was collected in the settling ponds. In another example, the increase for Titan Steel and Wire in Surrey, British Columbia, was attributed to off-site transfers of wastes containing lead and zinc from a one-time removal of lagoon solids in 1995. In 1995, Co-Steel Lasco’s Whitby facility, referred to above, had an additional one-time transfer of electric arc furnace dust that had been stored since the early 1990s. The dust is continually generated, but is now disposed of on an on-going basis. Also, Co-Steel Lasco operates a licensed on-site waste disposal site for shredder fluff, unlike other North American steel producers or scrap processors who transfer their wastes off-site. This landfill accounts for nearly 98 percent of all releases from the facility.

Facilities reporting large reductions in total releases represent a substantial portion—84 percent (18 million of 21 million kg)—of all NPRI decreases (both by facilities reporting smaller amounts in 1995 and those that reported in 1994 but not in 1995). As shown in **Table 5–9**, five of the top 50 reported decreases of more than 1 million kg, led by Western Pulp Limited Partnership of Port Alice, British Columbia. Two of the top five were paper products manufacturers, and three reported in the primary metals industry. These two paper products facilities were among the dozen facilities whose reductions occurred largely in releases of methanol to water or air. (**Chapter 8** more closely examines the pulp and paper industry.) Two of the primary metals facilities reported sizable decreases in zinc and its compounds, the chemical with the largest NPRI decreases (see **Table 5–28** later in this chapter).

Six NPRI facilities reported decreases of more than 1 million kg in total releases and transfers from 1994 to 1995, as shown in **Table 5–10**. The Kimberly-Clark plant in New Glasgow, Nova Scotia, reported the largest decrease, nearly 3 million kg (primarily decreases in transfers to treatment of methanol). Only one of these six facilities submitted forms in 1994 but not in 1995: the HBM&S Co. Smelter in Flin Flon, Manitoba (decreases of air emissions of lead and zinc and their compounds). The 50 facilities with the largest reductions accounted for 76 percent (24 million of 31 million kg) of all decreases reported by facilities reporting in both years plus those reporting only in 1994.

Facilities making large reductions may still have large releases and transfers, as reported in **Chapters 3** and **4**. (Tables in the present chapter analyze the 1994–1995 matched data set, which, as has been noted above,

Rank	Facility	City, State/Province	SIC Code		Number of Forms		Total Releases	
			Canada	US	1994	1995	1994	1995
							(kg)	(kg)
1	Celanese Canada Inc.	Edmonton, AB	37	28	10	10	1,082,810	3,497,171
2	Domtar Packaging, Red Rock Mill	Red Rock, ON	27	26	0	1	0	1,900,000
3	Sherritt Inc.	Fort Saskatchewan, AB	37	28	12	12	1,417,645	2,129,987
4	Peace River Pulp Division, Daishowa Marubeni	Peace River, AB	27	26	4	4	237,826	948,000
5	General Motors of Canada Limited, Car Plant	Oshawa, ON	32	37	12	12	1,010,482	1,550,042
6	Co-Steel Lasso	Whitby, ON	29	33	5	6	1,873,682	2,411,507
7	Alcan Smelters and Chemicals Ltd.	Kitimat, BC	29	33	2	3	22,000	437,000
8	Consoltex Inc.	Alexandria, ON	19	22	0	4	0	371,043
9	Société Canadienne de Métaux Reynolds	Baie-Comeau, QC	29	33	4	5	3,925	363,461
10	Union Carbide Canada Inc.	Red Deer, AB	37	28	5	5	318,240	653,459
11	Irving Pulp and Paper/Irving Tissue Co.	Saint John, NB	27	26	3	3	3,385,771	3,663,101
12	Recyclage D'Aluminium Quebec Inc., Philip Env'l Inc.	Becancour, QC	29	33	0	1	0	265,000
13	Weyerhaeuser Saskatchewan Ltd.	Prince Albert, SK	27	26	2	3	391,042	631,732
14	Corporation Stone-Consolidated	La Baie, QC	27	26	1	4	0	237,600
15	Malette Kraft Pulp & Power, Tembec Inc.	Smooth Rock Falls, ON	27	26	0	2	0	214,560
16	Canac Kitchens Limited, Kohler Co.	Thornhill, ON	25	24	0	17	0	213,606
17	Cami Automotive Inc.	Ingersoll, ON	32	37	9	12	177,376	389,808
18	Usine Arvida, Alcan	Jonquiere, QC	29	33	4	4	17,900	228,570
19	Tarxien Components Corporation	Concord, ON	16	30	0	5	0	204,772
20	Aluminerie De Becancour Inc.	Ville De Becancour, QC	29	33	2	3	300	204,200
21	Les Aciers Canam	Saint-Gedeon, QC	30	34	0	6	0	200,100
22	Produits Forestiers Donohue Inc.	St-Felicien, QC	27	26	4	7	123,659	307,400
23	Domtar Packaging	Trenton, ON	27	26	0	2	0	183,225
24	Recyclage Cote Nord Inc., Philip Environmental Inc.	Baie Comeau, QC	29	33	0	1	0	175,000
25	General Motors of Canada Limited, Truck Plant	Oshawa, ON	32	37	9	11	701,690	867,901
26	Canadian General-Tower Ltd.	Cambridge, ON	16	30	7	7	795,763	959,979
27	HBM&S Co., Ltd.-Metallurgical Complex	Flin Flon, MB	29	33	5	5	119	156,689
28	Northwood Pulp and Timber Limited	Prince George, BC	27	26	2	3	55,000	210,800
29	St. Thomas Assembly Plant, Ford Motor Co.	St. Thomas, ON	32	37	12	12	487,774	636,280
30	Sherritt Inc.	Redwater, AB	37	28	6	8	95,170	238,448
31	Noranda-Fonderie Horne	Rouyn Noranda, QC	29	33	12	12	514,180	648,045
32	Bauer Industries Ltd.	Waterloo, ON	19	23	2	1	0	125,000
33	Montell Canada Inc.	Corunna, ON	37	28	0	3	0	123,805
34	Sydney Steel Corporation	Sydney, NS	29	33	10	10	411,800	533,500
35	Inco Limited Copper Cliff Smelter	Copper Cliff, ON	29	33	6	6	500,970	621,640
36	Aluminerie Lauralco Inc.	Deschambault, QC	29	33	0	1	0	116,190
37	Canadian Fertilizers Limited	Medicine Hat, AB	37	28	3	3	300,119	400,187
38	Alberta-Pacific Forest Industries Inc.	Boyle, AB	27	26	4	3	25,018	122,830
39	Plastcoat	Mississauga, ON	30	34	2	3	36,800	134,200
40	Dextran Products Limited	Scarborough, ON	37	28	2	3	15,600	105,300
41	North Atlantic Refining Limited	Come by Chance, NF	36	29	12	11	14,232	101,654
42	International Wallcoverings Ltd	Brampton, ON	27	26	4	4	229,500	316,000
43	Aluminerie Alouette Inc.	Sept-Iles, QC	29	33	0	1	0	84,200
44	Novacor Chemicals Ltd.-St. Clair Site	Corunna, ON	37	28	9	9	2,075,780	2,156,690
45	Millar Western Pulp (Meadow Lake) Ltd.	Meadow Lake, SK	27	26	0	1	0	80,000
46	Bowater Mersey Paper Co. Ltd.	Brooklyn, NS	27	26	0	1	0	80,000
47	Sulconam Inc.	Montreal-East, QC	37	28	1	1	130	80,000
48	Canadian Technical Tape	Cornwall, ON	27	26	1	1	8,100	82,100
49	KI Pembroke, Inc.	Pembroke, ON	26	25	1	1	71,600	145,100
50	Novacor Chemicals-Joffre Site	Red Deer, AB	37	28	11	11	169,796	239,930
<b>Total</b>					<b>200</b>	<b>264</b>	<b>16,571,799</b>	<b>30,746,812</b>

\* Chemicals accounting for more than 70% of the increase in total releases from the facility.

► Does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to TRI.



Change 1994-1995 in Total Releases		
Rank	(kg)	Major Chemicals Reported with Increases (Primary Media with Increases)*
1	2,414,361	Methanol, methyl ethyl ketone (U/IJ)
2	1,900,000	Methanol (water)
3	712,342	Methanol (air)
4	710,174	Methanol (air)
5	539,560	Xylene, toluene (air)
6	537,825	Copper/zinc and compounds (land)
7	415,000	Hydrogen fluoride (air)
8	371,043	Toluene, isopropyl alcohol (air)
9	359,536	Hydrogen fluoride (air)
10	335,219	Ethylene glycol (air)
11	277,330	Methanol (water)
12	265,000	Aluminum (land)
13	240,690	Methanol (air)
14	237,600	Formaldehyde, methanol (water)
15	214,560	Methanol (air)
16	213,606	Toluene, xylene, methyl ethyl ketone, n-butyl alcohol (air)
17	212,432	Xylene, methyl ethyl ketone (air)
18	210,670	Hydrogen fluoride (air)
19	204,772	Methanol, xylene, methyl isobutyl ketone (air)
20	203,900	Hydrogen fluoride (air)
21	200,100	Xylene (air)
22	183,741	Manganese and compounds (land)
23	183,225	Methanol (air)
24	175,000	Aluminum (land)
25	166,211	Xylene, methyl isobutyl ketone (air)
26	164,216	Toluene, methyl ethyl ketone (air)
27	156,570	Copper/zinc and compounds (air)
28	155,800	Methanol (air)
29	148,506	Xylene, methyl isobutyl ketone (air)
30	143,278	Phosphoric acid (land)
31	133,865	Lead and compounds (air)
32	125,000	Phenol (air)
33	123,805	Propylene (air)
34	121,700	Zinc/manganese and compounds (land)
35	120,670	Nickel/copper and compounds (air)
36	116,190	Hydrogen fluoride (air)
37	100,068	Methanol (air)
38	97,812	Methanol (air)
39	97,400	Methyl ethyl ketone, xylene (air)
40	89,700	Isopropyl alcohol (air)
41	87,422	Methyl tert-butyl ether (air)
42	86,500	Methyl ethyl ketone, toluene (air)
43	84,200	Hydrogen fluoride (air)
44	80,910	Cyclohexane, toluene (air)
45	80,000	Methanol (air)
46	80,000	Methanol (air)
47	79,870	Diethanolamine (land)
48	74,000	Toluene (air)
49	73,500	Xylene (air)
50	70,134	Ethylene, propylene (air)
<b>14,175,013</b>		

covers somewhat fewer chemicals than the 1995 matched data examined in **Chapters 3 and 4.**) One example is the steelmaker, Dofasco Inc. of Hamilton, Ontario, which appears in **Table 5-10** with reductions in its off-site transfers of 765,000 kg (primarily zinc and its compounds). Dofasco notes that, since first reporting to NPRI in 1993, it has spent almost C\$20 million (US\$14 million) to reduce emissions of benzene to air and discharges of metals and particulates to surface waters. Dofasco, an integrated steel producer, processes iron ore. Its process generates non-essential materials it cannot readily recycle and that are sent to landfills. Dofasco notes that finding environmentally preferable ways to manage these materials would present a more difficult technical and economic challenge.

More TRI facilities reported increases or decreases exceeding 1 million kg than was the case in NPRI. However, as might be expected from TRI's larger number of facilities, the top 50 account for a smaller portion of increases and decreases than in NPRI.

In the category of increases, nine TRI facilities jumped by more than 1-million kg in total releases, as reported in **Table 5-11**, and the increases occurred in diverse chemicals. The largest increase—4 million kg—was reported by General Motors Powertrain in Defiance, Ohio. The top 50 facilities for increases in releases accounted for 42 percent (37 million out of 88 million kg) of all increases by facilities reporting in both years plus those reporting only in 1995. Among all 50, only two facilities reported substantial increases in acetonitrile, the chemical with the largest TRI increases from 1994 to 1995 (see **Table 5-33** later in this chapter).

**Table 5-12** shows that 18 TRI facilities reported increases in total

releases and transfers from 1994 to 1995 of over 1 million kg. The Quantum Chemical Corp. plant in La Porte, Texas, reported the largest increase, 4 million kg (primarily transfers to treatment of vinyl acetate, a chemical it did not report using in 1994). All facilities with the largest increases did report in both years. The 50 TRI facilities with the largest increases represented 38 percent (59 million out of 153 million kg) of the increases from facilities reporting in both years plus those reporting only in 1995.

Considering decreases in total TRI releases, by far the largest was that of IMC-Agrico in Mulberry, Florida—8 million kg of phosphoric acid, as shown in **Table 5-13**. The facility reported multiple SIC codes. Six other facilities, including three in the primary metals industry, reported reductions of 1 million to 2 million kg. The top 50 facilities with decreases accounted for 30 percent (34 million of 114 million kg) of the decreases of facilities reporting in both years and facilities reporting only in 1994. Twelve of the top 50 reported decreases in toluene, the chemical with the greatest decrease in TRI from 1994 to 1995 (see **Table 5-34** later in this chapter).

Fifteen TRI facilities reported decreases in total releases and transfers of over 1 million kg, as shown in **Table 5-14**. One of these was IMC-Agrico, discussed above. Two of the 15 facilities did not report in 1995: Ocean State Steel in East Providence, Rhode Island (transfers to disposal of manganese), and Autostyle Plastics in Grand Rapids, Michigan (air emissions of toluene). The 50 TRI facilities with the largest reductions represented 29 percent (50 million out of 174 million kg) of the decreases from facilities reporting in both years plus those reporting only in 1994.

Table 5-8		NPRI Facilities Showing the Largest Increases in Total Releases and Transfers						
MY 94-95								
Rank	Facility	City, State/Province	SIC Code		Number of Forms		Total Releases and Transfers	
			Canada	US	1994	1995	1994 (kg)	1995 (kg)
1	Co-Steel Lasco	Whitby, ON	29	33	5	6	2,714,982	8,442,331
2	Celanese Canada Inc.	Edmonton, AB	37	28	10	10	1,121,993	3,532,829
3	CXY Chemicals	Nanaimo, BC	37	28	1	2	205	1,988,244
4	Domtar Packaging, Red Rock Mill	Red Rock, ON	27	26	0	1	0	1,900,000
5	Stelco McMaster Ltd.	Contrecoeur, QC	29	33	4	5	7,100	1,874,430
6	Dominion Castings Ltd.	Hamilton, ON	29	33	0	3	0	1,487,191
7	Fraser Inc./Noranda Forest Inc.	Edmundston, NB	27	26	4	8	274,920	1,717,860
8	Sherritt Inc.	Fort Saskatchewan, AB	37	28	12	12	1,430,925	2,146,357
9	Peace River Pulp Division, Daishowa Marubeni	Peace River, AB	27	26	4	4	237,826	948,000
10	General Motors of Canada Limited, Car Plant	Oshawa, ON	32	37	12	12	1,017,586	1,565,754
11	Alcan Smelters and Chemicals Ltd.	Kitimat, BC	29	33	2	3	22,000	437,000
12	Titan Steel & Wire Co. Ltd.	Surrey, BC	30	33	3	3	1,280	398,565
13	Consoltex Inc.	Alexandria, ON	19	22	0	4	0	371,043
14	Union Carbide Canada Inc.	Red Deer, AB	37	28	5	5	318,240	653,459
15	Irving Pulp and Paper/Irving Tissue Co.	Saint John, NB	27	26	3	3	3,385,771	3,663,101
16	Corporation Stone-Consolidated	La Baie, QC	27	26	1	4	66,000	337,300
17	Recyclage D'Aluminium Quebec Inc., Philip Env'l Inc.	Becancour, QC	29	33	0	1	0	265,000
18	Weyerhaeuser Saskatchewan Ltd.	Prince Albert, SK	27	26	2	3	391,042	631,732
19	Courtice Steel Inc.	Cambridge, ON	29	33	4	7	122,320	359,767
20	Les Aciers Canam	Saint-Gedeon, QC	30	34	0	6	0	215,700
21	Malette Kraft Pulp & Power, Tembec Inc.	Smooth Rock Falls, ON	27	26	0	2	0	214,560
22	Cami Automotive Inc.	Ingersoll, ON	32	37	9	12	182,054	395,774
23	Canac Kitchens Limited, Kohler Co.	Thornhill, ON	25	24	0	17	0	213,606
24	Usine Arvida, Alcan	Jonquiere, QC	29	33	4	4	17,900	228,570
25	Tarxien Components Corporation	Concord, ON	16	30	0	5	0	204,772
26	Aluminerie De Becancour Inc.	Ville De Becancour, QC	29	33	2	3	9,900	213,500
27	Chemrec Inc.	Cowansville, QC	37	28	7	7	93,992	290,640
28	Société Canadienne de Métaux Reynolds	Baie-Comeau, QC	29	33	4	5	176,936	364,961
29	Kronos Canada, Inc.	Varennes, QC	37	28	6	6	488,023	675,500
30	Les Produits Chimiques Delmar Inc.	Lasalle, QC	37	28	5	5	417,800	603,800
31	Produits Forestiers Donohue Inc.	St-Felicien, QC	27	26	4	7	123,659	307,400
32	Domtar Packaging	Trenton, ON	27	26	0	2	0	183,265
33	Recyclage Cote Nord Inc., Philip Env'l Inc.	Baie Comeau, QC	29	33	0	1	0	175,000
34	General Motors of Canada Limited, Truck Plant	Oshawa, ON	32	37	9	11	706,364	873,308
35	Atlas Specialty Steels	Welland, ON	29	33	5	5	136,840	297,441
36	HBM&S Co., Ltd.-Metallurgical Complex	Flin Flon, MB	29	33	5	5	119	156,689
37	Montell Canada Inc.	Corunna, ON	37	28	0	3	0	155,885
38	St. Thomas Assembly Plant, Ford Motor Co.	St. Thomas, ON	32	37	12	12	501,293	657,177
39	Northwood Pulp and Timber Limited	Prince George, BC	27	26	2	3	55,000	210,800
40	Western Cooperative Fertilizers Ltd.	Calgary, AB	37	28	0	1	0	154,000
41	Sherritt Inc.	Redwater, AB	37	28	6	8	95,170	238,448
42	BASF Canada Inc.	Windsor, ON	37	28	7	8	241,800	376,599
43	Noranda-Fonderie Horne	Rouyn Noranda, QC	29	33	12	12	514,180	648,045
44	Freightliner of Canada Ltd	St. Thomas, ON	32	37	3	4	206,260	334,410
45	Arrow Canada Ltd.	Leamington, ON	16	30	2	7	9,250	137,180
46	Bauer Industries Ltd.	Waterloo, ON	19	23	2	1	0	125,000
47	Sydney Steel Corporation	Sydney, NS	29	33	10	10	411,800	533,500
48	Inco Limited, Copper Cliff Smelter	Copper Cliff, ON	29	33	6	6	500,970	621,640
49	Les Forges de Sorel Inc., Slater Industries	St-Joseph-de-Sorel, QC	30	34	0	3	0	120,503
50	Aluminerie Lauralco Inc.	Deschambault, QC	29	33	0	1	0	116,190
<b>Total</b>					<b>194</b>	<b>278</b>	<b>16,001,500</b>	<b>42,763,826</b>

\* Chemicals accounting for more than 70% of the increase in total releases and transfers from the facility.

► Does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to TRI.



Rank	Change 1994-1995			Major Chemicals Reported with Increases (Primary Media/Transfers with Increases)*
	Total Releases (kg)	Total Transfers (kg)	Total Releases and Transfers (kg)	
1	537,825	5,189,524	5,727,349	Zinc and compounds (transfers to disposal)
2	2,414,361	-3,525	2,410,836	Methanol, methyl ethyl ketone (UIJ)
3	39	1,988,000	1,988,039	Asbestos (transfers to disposal)
4	1,900,000	0	1,900,000	Methanol (water)
5	2,930	1,864,400	1,867,330	Zinc and compounds (transfers to treatment)
6	1,227	1,485,964	1,487,191	Chromium and compounds (transfers to disposal)
7	-101,800	1,544,740	1,442,940	Methanol (transfers to treatment)
8	712,342	3,090	715,432	Methanol (air)
9	710,174	0	710,174	Methanol (air)
10	539,560	8,608	548,168	Xylene, toluene (air)
11	415,000	0	415,000	Hydrogen fluoride (air)
12	-140	397,425	397,285	Zinc and compounds (transfers to disposal)
13	371,043	0	371,043	Toluene, isopropyl alcohol (air)
14	335,219	0	335,219	Ethylene glycol (air)
15	277,330	0	277,330	Methanol (water)
16	237,600	33,700	271,300	Formaldehyde, methanol (water)
17	265,000	0	265,000	Aluminum (land)
18	240,690	0	240,690	Methanol (air)
19	2,177	235,270	237,447	Zinc/lead and compounds (transfers to disposal)
20	200,100	15,600	215,700	Xylene (air)
21	214,560	0	214,560	Methanol (air)
22	212,432	1,288	213,720	Xylene, methyl ethyl ketone (air)
23	213,606	0	213,606	Toluene, xylene, methyl ethyl ketone, n-butyl alcohol (air)
24	210,670	0	210,670	Hydrogen fluoride (air)
25	204,772	0	204,772	Methanol, xylene, methyl isobutyl ketone (air)
26	203,900	-300	203,600	Hydrogen fluoride (air)
27	29,748	166,900	196,648	Toluene, xylene, dichloromethane, methyl ethyl ketone (transfers to treatment)
28	359,536	-171,511	188,025	Hydrogen fluoride (air)
29	-15,523	203,000	187,477	Manganese/chromium and compounds (transfers to disposal)
30	12,900	173,100	186,000	Toluene, isopropyl alcohol (transfers to treatment)
31	183,741	0	183,741	Manganese and compounds (land)
32	183,225	40	183,265	Methanol (air)
33	175,000	0	175,000	Aluminum (land)
34	166,211	733	166,944	Xylene, methyl isobutyl ketone (air)
35	-55,699	216,300	160,601	Chromium/manganese/zinc and compounds (transfers to disposal)
36	156,570	0	156,570	Copper/zinc and compounds (air)
37	123,805	32,080	155,885	Propylene (air)
38	148,506	7,378	155,884	Xylene, methyl isobutyl ketone (air)
39	155,800	0	155,800	Methanol (air)
40	0	154,000	154,000	Asbestos (transfers to disposal)
41	143,278	0	143,278	Phosphoric acid (land)
42	-4,284	139,083	134,799	Methyl ethyl ketone (transfers to treatment)
43	133,865	0	133,865	Lead and compounds (air)
44	60,460	67,690	128,150	Toluene (air, transfers to treatment)
45	36,740	91,190	127,930	Toluene, 2-methoxyethanol (transfers to treatment)
46	125,000	0	125,000	Phenol (air)
47	121,700	0	121,700	Zinc/manganese and compounds (land)
48	120,670	0	120,670	Nickel/copper and compounds (air)
49	703	119,800	120,503	Manganese/chromium and compounds (transfers to disposal, transfers to treatment)
50	116,190	0	119,190	Hydrogen fluoride (air)
	<b>12,798,759</b>	<b>13,963,567</b>	<b>26,765,326</b>	

Table 5-9		NPRI Facilities Showing the Largest Decreases in Total Releases						
MY 94-95								
Rank	Facility	City, State/Province	SIC Code		Number of Forms		Total Releases	
			Canada	US	1994	1995	1994 (kg)	1995 (kg)
1	Western Pulp Limited Partnership	Port Alice, BC	27	26	3	3	1,717,618	1,600
2	Sidbec Dosco (ISPAT) Inc.	Contrecoeur, QC	29	33	5	5	2,921,732	1,510,387
3	HBM&S Co., Ltd.-Smelter	Flin Flon, MB	29	33	5	0	1,356,367	0
4	Cartons St-Laurent Inc.	LaTuque, QC	27	26	3	4	3,561,268	2,407,638
5	Essex Aluminum Plant, Ford Motor Co.	Windsor, ON	29	33	10	9	1,113,551	53,620
6	Stora Forest Industries Ltd.	Port Hawkesbury, NS	27	26	3	4	1,091,475	187,328
7	Rexham Metallizing, Camvac Div.	Brantford, ON	27	26	5	0	814,000	0
8	Methanex Corporation	Medicine Hat, AB	37	28	4	5	4,132,490	3,353,220
9	3M Canada Inc.	Perth, ON	35	32	6	6	839,758	220,460
10	St. Anne-Nackawic Pulp Company Ltd.	Nackawic, NB	27	26	3	7	1,114,620	561,727
11	Windsor Assembly Plant, Chrysler Canada Ltd.	Windsor, ON	32	37	10	11	1,018,128	501,398
12	3M Canada Inc.	London, ON	35	32	8	8	725,384	317,282
13	Emballages Stone (Canada) Inc.	New Richmond, QC	27	26	1	0	350,000	0
14	Novacor Chemicals	Sarnia, ON	37	28	6	7	413,100	64,390
15	PaintPlas (1989) Inc.	Ajax, ON	32	30	6	0	331,830	0
16	West Hill Plant, Witco Corporation	Scarborough, ON	36	29	2	2	779,000	469,500
17	Les Papiers Perkins Ltee	Candiac, QC	27	26	2	2	1,152,050	842,660
18	Stelco Lake Erie Works	Nanticoke, ON	29	33	16	18	888,601	589,530
19	Papiers Domtar, Centre d'affaires Windsor	Windsor, QC	27	26	4	4	381,000	132,100
20	Bayer Rubber Inc.	Sarnia, ON	37	28	14	14	2,202,133	1,959,921
21	James River-Marathon, Ltd.	Marathon, ON	27	26	2	2	2,393,800	2,168,600
22	Polytech Coatings Limited	Mississauga, ON	30	34	4	0	224,488	0
23	Fonderies Canadiennes d'Acier, Atchison Casting	Montreal, QC	31	35	3	3	499,520	295,200
24	OSF Inc.	North York, ON	26	25	5	0	190,637	0
25	Pebra, Inc.	Peterborough, ON	16	30	3	4	376,825	186,999
26	Crane Valves	Brantford, ON	30	34	3	3	182,000	1,700
27	Oakville Assembly Plant, Ford Motor Co.	Oakville, ON	32	37	10	11	646,965	476,449
28	Osram Sylvania Lte	Drummondville, QC	33	36	2	0	162,860	0
29	Algoma Steel Inc.	Sault Ste. Marie, ON	29	33	15	16	1,750,732	1,598,056
30	Ethyl Canada Inc.	Corunna, ON	37	28	8	8	145,482	235
31	Navistar International Corporation Canada	Chatham, ON	32	37	5	5	193,118	63,950
32	AltaSteel Ltd.	Edmonton, AB	29	33	7	6	753,228	626,833
33	Quebecor Printing PE&E	Etobicoke, ON	28	27	3	3	448,507	330,444
34	Shell Canada Chemical Company	Corunna, ON	37	28	7	3	295,219	177,380
35	Domtar Fine Papers	Cornwall, ON	27	26	3	4	691,000	573,950
36	Industries James Maclaren Inc.	Masson-Anger, QC	27	26	1	1	192,780	80,507
37	Canadian Technical Tape	St-Laurent, QC	27	26	2	2	492,000	382,300
38	Cooper Automotive Products	Stratford, ON	32	37	1	1	106,287	447
39	Fraser Inc.	Edmundston, NB	27	26	4	8	274,920	173,120
40	Novopharm Limited	Scarborough, ON	37	28	2	2	581,230	479,720
41	Stelco Hilton Works	Hamilton, ON	29	33	16	20	346,886	247,745
42	Fasson Canada Inc.	Ajax, ON	27	26	1	1	148,500	49,400
43	AT Plastics Inc.	Edmonton, AB	37	28	4	4	248,865	149,778
44	Prince George Refinery	Prince George, BC	36	29	9	9	232,350	137,690
45	Standard Products (Canada) Ltd.	Mitchell, ON	15	30	6	5	199,903	105,984
46	Honda of Canada Inc.	Alliston, ON	32	37	10	10	334,041	240,623
47	Imperial Oil Chemical Division	Sarnia, ON	37	28	21	23	573,505	480,888
48	Celgar Pulp Company	Castlegar, BC	27	26	3	0	91,507	0
49	Foamex Canada Inc.	Montreal, QC	16	30	2	0	88,393	0
50	Fletcher Challenge Canada Ltd., Elk Falls Mill	Campbell River, BC	27	26	3	2	622,750	534,600
<b>Total</b>					<b>281</b>	<b>265</b>	<b>40,392,403</b>	<b>22,735,359</b>

\* Chemicals accounting for more than 70% of the decrease in total releases from the facility.

► Does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to TRI.

<b>Change 1994–1995 in Total Releases</b>		
<b>Rank</b>	<b>(kg)</b>	<b>Major Chemicals Reported with Decreases (Primary Media with Decreases)*</b>
1	-1,716,018	Methanol (water)
2	-1,411,345	Zinc and compounds (land)
3	-1,356,367	Lead/zinc and compounds (air)
4	-1,153,630	Methanol (water)
5	-1,059,931	Styrene (air)
6	-904,147	Methanol (water)
7	-814,000	Isopropyl alcohol, methyl ethyl ketone (air)
8	-779,270	Methanol (air)
9	-619,298	Xylene, toluene (air)
10	-552,893	Chlorine, chlorine dioxide (air)
11	-516,730	Xylene, methyl ethyl ketone (air)
12	-408,102	Toluene, xylene, isopropyl alcohol (air)
13	-350,000	Methanol (air)
14	-348,710	Benzene, ethylbenzene (air)
15	-331,830	Xylene, toluene (air)
16	-309,500	Methanol (air)
17	-309,390	Xylene (air)
18	-299,071	Manganese and compounds (land)
19	-248,900	Chlorine, chlorine dioxide (air)
20	-242,212	Chloromethane (air)
21	-225,200	Methanol (water)
22	-224,488	Xylene, methyl ethyl ketone (air)
23	-204,320	Chromium and compounds (land)
24	-190,637	Toluene, methyl ethyl ketone (air)
25	-189,826	Toluene (air)
26	-180,300	Zinc/copper and compounds (air)
27	-170,516	Methyl isobutyl ketone (air)
28	-162,860	Xylene (air)
29	-152,676	Benzene, manganese and compounds (air, land)
30	-145,247	Chloroethane (air)
31	-129,168	Toluene (air)
32	-126,395	Manganese/zinc and compounds (land)
33	-118,063	Toluene (air)
34	-117,839	Propylene (air)
35	-117,050	Methanol (water)
36	-112,273	Methanol (water)
37	-109,700	Toluene (air)
38	-105,840	Asbestos (land)
39	-101,800	Methanol (land)
40	-101,510	Dichloromethane (air)
41	-99,141	Benzene (air)
42	-99,100	Toluene (air)
43	-99,087	Ethylene (air)
44	-94,660	Toluene, ethylene, propylene, xylene (air)
45	-93,919	Trichloroethylene (air)
46	-93,418	Xylene (air)
47	-92,617	Ethylene, xylene (air)
48	-91,507	Methanol (air)
49	-88,393	Dichloromethane (air)
50	-88,150	Methanol (air)
	<b>-17,657,044</b>	

Table 5-10		NPRI Facilities Showing the Largest Decreases in Total Releases and Transfers						
MY 94-95								
Rank	Facility	City, State/Province	SIC Code		Number of Forms		Total Releases and Transfers	
			Canada	US	1994	1995	1994 (kg)	1995 (kg)
1	Kimberly-Clark Nova Scotia	New Glasgow, NS	27	26	3	3	3,059,910	399,750
2	Western Pulp Limited Partnership	Port Alice, BC	27	26	3	3	1,717,618	1,600
3	Sidbec Dosco (ISPAT) Inc.	Contrecoeur, QC	29	33	5	5	2,921,732	1,510,387
4	HBM&S Co., Ltd.-Smelter	Flin Flon, MB	29	33	5	0	1,356,367	0
5	Essex Aluminum Plant, Ford Motor Co.	Windsor, ON	29	33	10	9	1,370,671	141,985
6	Cartons St-Laurent Inc.	LaTuque, QC	27	26	3	4	3,565,113	2,408,582
7	Stora Forest Industries Ltd.	Port Hawkesbury, NS	27	26	3	4	1,091,475	187,328
8	Rexham Metallizing, Camvac Div.	Brantford, ON	27	26	5	0	814,000	0
9	Slater Steels, H.S.B. Division	Hamilton, ON	29	33	6	6	2,258,377	1,455,999
10	Methanex Corporation	Medicine Hat, AB	37	28	4	5	4,156,340	3,385,200
11	Dofasco Inc.	Hamilton, ON	29	33	18	17	3,273,372	2,507,984
12	General Motors of Canada Ltd., South Stamping	Oshawa, ON	32	34	1	2	653,121	0
13	3M Canada Inc.	Perth, ON	35	32	6	6	840,033	220,841
14	St. Anne-Nackawic Pulp Company Ltd.	Nackawic, NB	27	26	3	7	1,114,620	561,727
15	Windsor Assembly Plant, Chrysler Canada Ltd.	Windsor, ON	32	37	10	11	1,028,626	510,186
16	3M Canada Inc.	London, ON	35	32	8	8	811,605	380,407
17	Baycoat	Hamilton, ON	30	34	8	0	400,448	0
18	Les Papiers Perkins Ltee	Candiac, QC	27	26	2	2	1,209,625	842,660
19	Emballages Stone (Canada) Inc.	New Richmond, QC	27	26	1	0	350,000	0
20	Bombardier Inc Groupe Materiel de Transport	La Pocatiere, QC	32	37	4	4	348,250	0
21	PaintPlas (1989) Inc.	Ajax, ON	32	30	6	0	344,030	0
22	Sunworthy Wallcoverings, Borden Co.	Brampton, ON	27	26	5	5	1,039,800	708,500
23	Novacor Chemicals	Sarnia, ON	37	28	6	7	464,037	145,922
24	West Hill Plant, Witco Corporation	Scarborough, ON	36	29	2	2	793,000	491,500
25	Stelco Lake Erie Works	Nanticoke, ON	29	33	16	18	888,601	589,530
26	Papiers Domtar, Centre d'affaires Windsor	Windsor, QC	27	26	4	4	381,000	132,100
27	Raylo Chemicals Inc.	Edmonton, AB	37	28	4	5	236,384	14
28	James River-Marathon, Ltd.	Marathon, ON	27	26	2	2	2,394,450	2,169,210
29	Polytech Coatings Limited	Mississauga, ON	30	34	4	0	224,488	0
30	Fonderies Canadiennes d'Acier, Atchison Casting	Montreal, QC	31	35	3	3	500,520	295,410
31	OSF Inc.	North York, ON	26	25	5	0	197,462	0
32	Ethyl Canada Inc.	Corunna, ON	37	28	8	8	195,082	485
33	Pebra, Inc.	Peterborough, ON	16	30	3	4	376,825	188,199
34	Crane Valves	Brantford, ON	30	34	3	3	182,000	1,700
35	Oakville Assembly Plant, Ford Motor Co.	Oakville, ON	32	37	10	11	656,675	485,699
36	Osram Sylvania Lte	Drummondville, QC	33	36	2	0	165,680	0
37	Monsanto Canada Inc.	Ville Lasalle, QC	16	30	8	8	524,025	363,206
38	CEZinc (Zinc Electrolytique du Canada Lte)	Salaberry-de-Valleyfield, QC	29	33	8	8	345,733	185,561
39	Les Produits Shell Canada Ltee.	Montreal-Est, QC	36	29	23	21	540,846	384,920
40	Algoma Steel Inc.	Sault Ste. Marie, ON	29	33	15	16	1,750,732	1,598,056
41	Rohm and Haas Canada Inc.	Morrisburg, ON	37	28	1	1	153,600	3,440
42	Bayer Rubber Inc.	Sarnia, ON	37	28	14	14	2,485,833	2,341,271
43	Shell Canada Chemical Company	Corunna, ON	37	28	7	3	313,633	177,380
44	Uniboard Canada, Div. Unires	Val-D'or, QC	37	28	2	2	188,772	55,092
45	Navistar International Corporation Canada	Chatham, ON	32	37	5	5	193,200	64,018
46	Ontario Truck, Ford Motor Co.	Oakville, ON	32	37	6	9	708,850	582,836
47	Imperial Oil Chemical Division	Sarnia, ON	37	28	21	23	680,505	555,729
48	Quebecor Printing PE&E	Etobicoke, ON	28	27	3	3	456,632	332,890
49	Apex Metals Inc.	Kitchener, ON	32	34	3	3	255,000	136,000
50	Domtar Fine Papers	Cornwall, ON	27	26	3	4	691,000	574,150
<b>Total</b>					<b>310</b>	<b>288</b>	<b>50,669,698</b>	<b>27,077,454</b>

\* Chemicals accounting for more than 70% of the decrease in total releases and transfers from the facility.

► Does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to TRI.

Rank	Change 1994–1995			Major Chemicals Reported with Decreases (Primary Media/transfers with Decreases)*
	Total Releases (kg)	Total Transfers (kg)	Total Releases and transfers (kg)	
1	6,840	-2,667,000	-2,660,160	Methanol (transfers to treatment)
2	-1,716,018	0	-1,716,018	Methanol (water)
3	-1,411,345	0	-1,411,345	Zinc and compounds (land)
4	-1,356,367	0	-1,356,367	Lead/zinc and compounds (air)
5	-1,059,931	-168,755	-1,228,686	Styrene (air)
6	-1,153,630	-2,901	-1,156,531	Methanol (water)
7	-904,147	0	-904,147	Methanol (water)
8	-814,000	0	-814,000	Isopropyl alcohol, methyl ethyl ketone (air)
9	-509	-801,869	-802,378	Manganese and compounds (transfers to treatment)
10	-779,270	8,130	-771,140	Methanol (air)
11	-28,532	-736,856	-765,388	Zinc and compounds (transfers to disposal)
12	0	-653,121	-653,121	Zinc and compounds (transfers to disposal)
13	-619,298	106	-619,192	Xylene, toluene (air)
14	-552,893	0	-552,893	Chlorine, chlorine dioxide (air)
15	-516,730	-1,710	-518,440	Xylene, methyl ethyl ketone (air)
16	-408,102	-23,096	-431,198	Toluene, xylene, isopropyl alcohol (air)
17	-110	-400,338	-400,448	Methyl ethyl ketone, toluene, xylene (transfers to treatment)
18	-309,390	-57,575	-366,965	Xylene (air)
19	-350,000	0	-350,000	Methanol (air)
20	0	-348,250	-348,250	Chromium/nickel and compounds (transfers to disposal)
21	-331,830	-12,200	-344,030	Xylene, toluene (air)
22	-50,900	-280,400	-331,300	Toluene, methyl ethyl ketone (transfers to treatment)
23	-348,710	30,595	-318,115	Benzene, ethylbenzene (air)
24	-309,500	8,000	-301,500	Methanol (air)
25	-299,071	0	-299,071	Manganese and compounds (land)
26	-248,900	0	-248,900	Chlorine, chlorine dioxide (air)
27	1	-236,371	-236,370	Dichloromethane, methanol (transfers to treatment)
28	-225,200	-40	-225,240	Methanol (water)
29	-224,488	0	-224,488	Xylene, methyl ethyl ketone (air)
30	-204,320	-790	-205,110	Chromium and compounds (land)
31	-190,637	-6,825	-197,462	Toluene, methyl ethyl ketone (air)
32	-145,247	-49,350	-194,597	Chloroethane, lead and compounds (air, transfers to disposal)
33	-189,826	1,200	-188,626	Toluene (air)
34	-180,300	0	-180,300	Zinc/copper and compounds (air)
35	-170,516	-460	-170,976	Methyl isobutyl ketone (air)
36	-162,860	-2,820	-165,680	Xylene (air)
37	-43,885	-116,934	-160,819	Methanol (transfers to treatment)
38	-13,372	-146,800	-160,172	Selenium/zinc and compounds (transfers to disposal, air)
39	-3,267	-152,659	-155,926	Phenol (transfers to treatment)
40	-152,676	0	-152,676	Benzene, manganese and compounds (air, land)
41	-10,460	-139,700	-150,160	Methyl methacrylate (transfers to treatment)
42	-242,212	97,650	-144,562	Chloromethane (air)
43	-117,839	-18,414	-136,253	Propylene (air)
44	20	-133,700	-133,680	Formaldehyde, methanol (transfers to treatment)
45	-129,168	-14	-129,182	Toluene (air)
46	50,556	-176,570	-126,014	Toluene (transfers to treatment)
47	-92,617	-32,159	-124,776	Phosphoric acid, ethylene, xylene (transfers to disposal, air)
48	-118,063	-5,679	-123,742	Toluene (air)
49	0	-119,000	-119,000	Manganese and compounds (transfers to treatment)
50	-117,050	200	-116,850	Methanol (water)
	<b>-16,245,769</b>	<b>-7,346,475</b>	<b>-23,592,244</b>	

Table 5-11		TRI Facilities Showing the Largest Increases in Total Releases					
MY	94-95						
Rank	Facility	City, State	SIC Code	Number of Forms		Total Releases	
				1994	1995	1994 (kg)	1995 (kg)
1	General Motors Powertrain	Defiance, OH	33	15	16	2,520,172	6,556,411
2	Magnesium Corp. of America	Rowley, UT	33	5	5	22,755,669	26,384,163
3	Hoechst Celanese Chemical	Pasadena, TX	28	31	20	3,343,442	6,171,388
4	U.S. Steel	Gary, IN	33	22	28	1,069,632	3,407,240
5	Arcadian Fertilizer L.P.	Geismar, LA	28	9	7	5,004,855	6,664,875
6	USS Fairfield Works	Fairfield, AL	33	8	8	200,965	1,822,918
7	DuPont	Beaumont, TX	28	25	21	1,980,810	3,467,997
8	Cyprus Miami Mining Corp.	Claypool, AZ	33	4	4	3,472,018	4,873,576
9	Huntsman Petrochemical Corp.	Port Arthur, TX	28	22	23	330,355	1,514,731
10	Weyerhaeuser Co.	Longview, WA	Mult.	13	14	1,436,025	2,409,963
11	Weyerhaeuser Co.	Valliant, OK	26	3	4	300,478	1,187,826
12	Lenzing Fibers Corp.	Lowland, TN	28	5	5	9,708,100	10,526,240
13	ICI Acrylics Inc.	Memphis, TN	Mult.	6	6	330,613	1,141,701
14	Reynolds Metals Co.	Sheffield, AL	34	12	12	563,709	1,285,787
15	Georgia-Pacific Corp.	Monticello, MS	Mult.	7	9	599,220	1,298,096
16	International Paper	Gardiner, OR	26	4	3	58,523	677,657
17	Glenbrook Nickel Co.	Riddle, OR	33	1	1	6,098	547,714
18	Northwestern Steel & Wire Co.	Sterling, IL	33	6	6	6,682,426	7,143,484
19	James River Corp.	Pennington, AL	26	11	11	261,483	721,982
20	Quebecor Printing Inc.	Dickson, TN	27	4	4	677,116	1,120,338
21	Upjohn Mfg. Co.	Arecibo, PR	28	7	7	439,909	866,984
22	General Electric Chemicals Inc.	Ottawa, IL	28	10	11	81,819	504,701
23	Sterling Chemicals Inc.	Texas City, TX	28	32	34	2,114,341	2,526,015
24	Champion International Corp.	Courtland, AL	26	13	11	432,442	814,536
25	Westinghouse Electric Corp.	Hampton, SC	30	10	10	1,957,951	2,329,429
26	Louisiana Pigment Co. L.P.	Westlake, LA	28	5	5	764,615	1,130,720
27	Phelps Dodge Hidalgo Inc.	Playas, NM	33	2	1	4,176,302	4,542,226
28	OXY Petrochemicals Inc.	Corpus Christi, TX	28	15	15	47,830	413,676
29	International Paper	Mansfield, LA	26	4	7	1,056,429	1,400,789
30	American Steel Foundries	Granite City, IL	33	3	5	195,011	528,954
31	Stone Container Corp.	Panama City, FL	26	6	7	417,988	751,395
32	Air Products & Chemicals Inc.	Pace, FL	28	8	7	112,633	443,270
33	Elf Atochem N.A. Inc.	Axis, AL	28	7	9	81,403	409,026
34	Geneva Steel	Vineyard, UT	33	20	20	80,936	408,537
35	Venture Industries Grand Blanc	Grand Blanc, MI	37	0	7	0	324,467
36	Federal Paper Board Co. Inc.	Riegelwood, NC	26	10	11	1,109,982	1,426,898
37	Citgo Petroleum Corp.	Lake Charles, LA	Mult.	27	27	736,683	1,026,187
38	Toyota Motor Mfg. USA Inc.	Georgetown, KY	37	21	25	459,320	736,553
39	CMI-Cast Parts Inc.	Cadillac, MI	33	1	2	2,055	270,340
40	Courtaulds Fibers Inc.	Axis, AL	28	5	4	15,163,605	15,426,621
41	Georgia-Pacific Corp.	Woodland, ME	26	1	2	14,739	268,528
42	Chevron Chemical Co.	Port Arthur, TX	28	0	15	0	252,655
43	Lion Oil Co.	El Dorado, AR	28	15	21	231,877	484,255
44	Cedarapids Inc.	Cedar Rapids, IA	35	7	7	44,540	296,129
45	Sid Richardson Carbon Co.	Big Spring, TX	28	0	1	0	244,161
46	Clark Refining & Marketing	Port Arthur, TX	29	0	25	0	237,331
47	Pharmacia & Upjohn Co.	Portage, MI	28	25	25	3,072,824	3,305,456
48	Chevron Products Co.	Pascagoula, MS	Mult.	27	26	527,122	758,660
49	Griffin Wheel Co.	Kansas City, KS	33	1	2	43,978	275,404
50	Clinton Laboratories	Clinton, IN	28	12	12	193,333	422,211
<b>Total</b>				<b>481</b>	<b>568</b>	<b>94,861,374</b>	<b>131,750,203</b>

\* Chemicals accounting for more than 70% of increase in total releases from the facility.

► Does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to NPRI.

<b>Change 1994–1995 in Total Releases</b>		
<b>Rank</b>	<b>(kg)</b>	<b>Major Chemicals Reported with Increases (Primary Media with Increases)*</b>
1	4,036,239	Zinc and compounds (land)
2	3,628,494	Chlorine (air)
3	2,827,946	Ethylene glycol (UIJ)
4	2,337,608	Zinc/manganese and compounds (land)
5	1,660,020	Phosphoric acid (water)
6	1,621,953	Zinc and compounds (land)
7	1,487,188	Acetonitrile (UIJ)
8	1,401,558	Copper and compounds (land)
9	1,184,376	Propylene, benzene (air)
10	973,938	Methanol (air)
11	887,348	Methanol (air)
12	818,141	Carbon disulfide (air)
13	811,088	Methanol (air)
14	722,078	Methyl ethyl ketone, toluene (air)
15	698,876	Methanol (air)
16	619,134	Methanol (air)
17	541,616	Nickel and compounds (land)
18	461,058	Manganese/chromium and compounds (land)
19	460,500	Methanol (air)
20	443,222	Toluene (air)
21	427,075	Dichloromethane (air)
22	422,883	Styrene (air)
23	411,673	Acetonitrile (UIJ)
24	382,093	Methanol (air)
25	371,478	Phenol (air)
26	366,106	Manganese and compounds (land)
27	365,924	Copper and compounds (land)
28	365,846	Propylene (air)
29	344,360	Methanol (air)
30	333,942	Aluminum (land)
31	333,407	Methanol (air)
32	330,637	Methanol (air)
33	327,623	Methyl methacrylate, ethyl acrylate (air)
34	327,601	Manganese and compounds
35	324,467	Xylene, methyl ethyl ketone (air)
36	316,916	Methanol (air)
37	289,504	Methyl ethyl ketone, toluene (air)
38	277,234	Xylene, methyl isobutyl ketone, toluene, 1,2,4-trimethylbenzene (air)
39	268,285	Aluminum oxide (land)
40	263,016	Carbon disulfide (air)
41	253,789	Methanol (air)
42	252,655	Ethylene, propylene, benzene (air)
43	252,378	Toluene, xylene, ethylene, benzene, diethanolamine, propylene (air)
44	251,590	Xylene (air)
45	244,161	Carbon disulfide (air)
46	237,331	Methyl tert-butyl ether, styrene, cyclohexane, toluene, propylene (air)
47	232,632	Methanol (UIJ)
48	231,538	p-Xylene (air)
49	231,426	Manganese and compounds (air)
50	228,878	Dichloromethane, zinc and compounds (air, land)
<b>36,888,829</b>		

Table 5-12		TRI Facilities Showing the Largest Increases in Total Releases and Transfers					
MY	94-95						
Rank	Facility	City, State	SIC Code	Number of Forms		Total Releases and Transfers	
				1994	1995	1994 (kg)	1995 (kg)
1	Quantum Chemical Corp.	La Porte, TX	28	21	22	1,061,093	5,148,907
2	General Motors Powertrain	Defiance, OH	33	15	16	2,521,440	6,558,455
3	Hoechst Celanese Chemical	Pasadena, TX	28	31	20	3,465,986	7,492,889
4	Nucor Steel	Crawfordsville, IN	33	7	7	1,328,123	5,214,733
5	Magnesium Corp. of America	Rowley, UT	33	5	5	22,755,669	26,384,163
6	Georgia-Pacific Resins Inc.	Elk Grove, CA	28	11	9	86,278	2,789,215
7	U.S. Steel	Gary, IN	33	22	28	1,151,932	3,457,326
8	Oregon Steel Mills Inc.	Portland, OR	Multiple	7	7	10,956	1,784,535
9	USS Fairfield Works	Fairfield, AL	33	8	8	200,965	1,822,918
10	Arcadian Fertilizer L.P.	Geismar, LA	28	9	7	5,066,533	6,681,240
11	ASARCO Inc.	Hayden, AZ	33	8	8	8,708,865	10,259,961
12	Cyprus Miami Mining Corp.	Claypool, AZ	33	4	4	3,472,018	4,873,576
13	Newport Steel Corp.	Wilder, KY	33	8	8	4,228	1,389,210
14	Stone Container Corp.	Panama City, FL	26	6	7	1,859,957	3,154,570
15	Electralloy Corp.	Oil City, PA	33	4	4	87,902	1,336,939
16	Ciba Geigy Corp.	Mc Intosh, AL	28	30	31	575,931	1,783,733
17	Huntsman Petrochemical Corp.	Port Arthur, TX	28	22	23	450,952	1,650,409
18	USS Clairton Works	Clairton, PA	33	14	17	100,789	1,103,418
19	Weyerhaeuser Co.	Longview, WA	Multiple	13	14	1,443,771	2,414,983
20	Weyerhaeuser Co.	Valliant, OK	26	3	4	300,478	1,187,826
21	Allegheny Ludlum Corp.	Brackenridge, PA	33	8	8	295,000	1,146,036
22	Birmingham Steel Corp.	Jackson, MS	33	5	5	1,145	841,426
23	Zeneca Specialties	Mount Pleasant, TN	28	14	14	256,776	1,079,472
24	ICI Acrylics Inc.	Memphis, TN	Multiple	6	6	377,600	1,188,510
25	Reynolds Metals Co.	Sheffield, AL	34	12	12	573,096	1,293,942
26	Georgia-Pacific Corp.	Monticello, MS	Multiple	7	9	599,220	1,298,096
27	Avesta Sheffield Plate Inc.	New Castle, IN	33	4	4	140,913	831,380
28	Parke-Davis	Holland, MI	28	12	11	1,407,587	2,080,785
29	Tennessee Eastman, Eastman Chemical Co.	Kingsport, TN	28	58	57	1,687,321	2,319,767
30	American Steel Foundries	Alliance, OH	33	5	7	652,873	1,272,043
31	International Paper	Gardiner, OR	26	4	3	58,523	677,657
32	Northwestern Steel & Wire Co.	Sterling, IL	33	6	6	6,845,801	7,455,049
33	Zinc Corp. of America	Monaca, PA	33	10	10	15,392,833	15,994,775
34	Lenzing Fibers Corp.	Lowland, TN	28	5	5	10,205,333	10,789,279
35	Glenbrook Nickel Co.	Riddle, OR	33	1	1	6,098	547,714
36	OSI Specialties Inc., Witco Corp.	Sistersville, WV	28	14	14	827,334	1,335,849
37	Regal Ware Inc.	Kewaskum, WI	34	6	6	48,076	538,862
38	American Steel Foundries	Granite City, IL	33	3	5	195,125	672,666
39	Allied-Signal Inc.	Pittsburg, KS	28	16	17	385,063	849,029
40	James River Corp.	Pennington, AL	26	11	11	261,483	721,982
41	Quebecor Printing Inc.	Dickson, TN	27	4	4	677,116	1,120,338
42	Rouge Steel Co.	Dearborn, MI	33	10	8	4,656,898	5,098,011
43	Arco Products Co.	Carson, CA	29	20	18	408,498	844,296
44	General Electric Chemicals Inc.	Ottawa, IL	28	10	11	84,998	504,701
45	Georgia-Pacific Resins Inc.	White City, OR	28	3	4	87,113	502,623
46	Essex Group Inc.	Lithonia, GA	33	3	3	168	403,263
47	Quality Chemicals Inc.	Tyrone, PA	28	5	8	16,455	417,383
48	DuPont	Circleville, OH	28	9	2	247,490	646,135
49	Hayes-Albion Corp.	Albion, MI	33	5	6	28,682	423,980
50	DuPont	Victoria, TX	28	26	26	1,224,674	1,618,116
<b>Total</b>				<b>550</b>	<b>550</b>	<b>102,303,156</b>	<b>161,002,171</b>

\* Chemicals accounting for more than 70% of increase in total releases and transfers from the facility.

► Does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported



Rank	Change 1994-1995			Major Chemicals Reported with Increases (Primary Media/Transfers with Increases)*
	Total Releases (kg)	Total Transfers (kg)	Total Releases and Transfers (kg)	
1	13,944	4,073,870	4,087,815	Vinyl acetate (transfers to treatment)
2	4,036,239	776	4,037,015	Zinc and compounds (land)
3	2,827,946	1,198,957	4,026,902	Ethylene glycol (UIJ)
4	-13,399	3,900,009	3,886,610	Zinc and compounds (transfers to disposal)
5	3,628,494	0	3,628,494	Chlorine (air)
6	-88	2,703,024	2,702,937	Xylene (transfers to treatment)
7	2,337,608	-32,214	2,305,395	Zinc/manganese and compounds (land)
8	-3,178	1,776,758	1,773,580	Zinc and compounds (transfers to treatment)
9	1,621,953	0	1,621,953	Zinc and compounds (land)
10	1,660,020	-45,313	1,614,707	Phosphoric acid (water)
11	183,337	1,367,758	1,551,095	Lead/copper and compounds (transfers to treatment)
12	1,401,558	0	1,401,558	Copper and compounds (land)
13	39	1,384,943	1,384,983	Zinc and compounds (transfers to treatment)
14	333,407	961,205	1,294,612	Methanol (transfers to sewage)
15	62,963	1,186,074	1,249,038	Chromium and compounds (transfers to disposal)
16	-93,624	1,301,426	1,207,802	Methanol (transfers to treatment)
17	1,184,376	15,081	1,199,457	Propylene, benzene (air)
18	88,258	914,371	1,002,629	Ethylene (transfers to treatment)
19	973,938	-2,726	971,212	Methanol (air)
20	887,348	0	887,348	Methanol (air)
21	3,918	847,118	851,036	Nickel/lead and compounds (transfers to disposal)
22	53	840,229	840,282	Lead/manganese and compounds (transfers to disposal)
23	10,036	812,661	822,697	Methanol, toluene (transfers to treatment)
24	811,088	-179	810,910	Methanol (air)
25	722,078	-1,231	720,847	Methyl ethyl ketone, toluene, xylene (air)
26	698,876	0	698,876	Methanol (air)
27	0	690,466	690,466	Chromium and compounds (transfers to treatment)
28	-1,165,809	1,839,007	673,198	Toluene (transfers to treatment)
29	117,642	514,805	632,447	Xylene, acetonitrile (transfers to treatment)
30	37,293	581,878	619,170	Chromium and compounds (transfers to disposal)
31	619,134	0	619,134	Methanol (air)
32	461,058	148,190	609,247	Manganese/zinc and compounds (land)
33	-2,377	604,318	601,941	Zinc and compounds (transfers to disposal)
34	818,141	-234,195	583,946	Carbon disulfide (air)
35	541,616	0	541,616	Nickel and compounds (land)
36	27,927	480,587	508,514	Methanol (transfers to treatment)
37	0	490,786	490,786	Aluminum oxide (transfers to disposal)
38	333,942	143,599	477,541	Aluminum (land)
39	-15,551	479,517	463,966	Manganese and compounds (transfers to disposal)
40	460,500	0	460,500	Methanol (air)
41	443,222	0	443,222	Toluene (air)
42	1,849	439,264	441,113	Zinc and compounds (transfers to disposal)
43	62,399	373,399	435,798	Diethanolamine (transfers to sewage)
44	422,883	-3,179	419,703	Styrene (air)
45	185,019	230,491	415,510	Phenol, methanol (transfers to sewage, air)
46	-6	403,100	403,094	Copper and compounds (transfers to disposal)
47	4,987	395,940	400,927	Methanol, chlorobenzene (transfers to treatment)
48	-160,072	558,717	398,645	Ethylene glycol (transfers to treatment)
49	191,599	203,698	395,298	Manganese and compounds (transfers to disposal)
50	13,777	379,665	393,442	Cresol (transfers to treatment)
	<b>26,776,363</b>	<b>31,922,651</b>	<b>58,699,014</b>	

Table 5-13		TRI Facilities Showing the Largest Decreases in Total Releases					
MY 94-95							
Rank	Facility	City, State	SIC Code	Number of Forms		Total Releases	
				1994	1995	1994 (kg)	1995 (kg)
1	IMC-Agrico Co.	Mulberry, FL	Mult.	1	1	11,383,220	3,673,469
2	Kennecott Utah Copper	Magna, UT	33	10	10	4,675,111	2,675,193
3	ASARCO Inc.	East Helena, MT	33	9	9	19,773,343	17,914,440
4	PCS Phosphate Co. Inc.	Aurora, NC	28	5	5	5,650,798	4,471,009
5	General Motors Powertrain	Saginaw, MI	33	14	12	2,347,585	1,180,950
6	Louisiana-Pacific Corp.	Samoa, CA	26	5	4	1,832,222	701,680
7	Autostyle Plastics Inc.	Grand Rapids, MI	30	6	0	1,124,628	0
8	IMC-Agrico Co.	St. James, LA	28	6	6	3,183,463	2,310,048
9	U.S. Agri-Chemicals Corp.	Fort Meade, FL	28	2	2	1,212,853	376,412
10	American Synthetic Rubber, Michelin Corp.	Louisville, KY	28	6	6	1,343,892	727,995
11	Chevron Port Arthur Dist.	Port Arthur, TX	29	28	3	593,893	26,540
12	IMC-Agrico Co.	Uncle Sam, LA	28	2	2	1,440,361	879,994
13	Boeing Wichita	Wichita, KS	Mult.	28	26	940,905	409,372
14	Quantum Chemical Co.	Clinton, IA	28	12	12	1,657,601	1,137,721
15	Cabot Corp.	Tuscola, IL	28	1	5	1,598,904	1,081,180
16	Doe Run Co.	Herculaneum, MO	33	8	9	4,190,190	3,676,471
17	Mobil Mining & Minerals Co.	Pasadena, TX	28	2	2	503,765	139
18	3M Co.	Bedford Park, IL	26	11	10	707,891	250,771
19	Tenneco Packaging	Tomahawk, WI	26	3	2	647,077	194,686
20	General Motors Truck & Bus Group	Flint, MI	37	14	12	830,353	395,595
21	Avery Dennison	Painesville, OH	26	4	4	548,546	132,599
22	General Motors MLCG Detroit/Hamtramck	Detroit, MI	37	16	16	777,096	362,828
23	Pfizer Inc.	Groton, CT	28	17	19	1,153,169	739,402
24	American Tape Co.	Marysville, MI	26	2	2	1,718,124	1,325,292
25	Cabot Corp.	Ville Platte, LA	28	3	3	1,999,161	1,614,127
26	R. J. Reynolds Tobacco Co.	Winston-Salem, NC	Mult.	6	0	382,800	0
27	International Paper	Pineville, LA	26	6	5	1,003,192	626,424
28	Steelcase Inc.	Grand Rapids, MI	25	10	8	874,510	500,299
29	Ringier America Inc.	Evans, GA	27	3	3	646,765	281,150
30	Merck & Co. Inc.	Elkton, VA	28	11	6	384,748	20,268
31	IMC-Agrico Co.	Mulberry, FL	28	1	1	1,768,707	1,405,896
32	Phillips Puerto Rico Core Inc.	Guayama, PR	29	17	13	618,379	258,697
33	ASARCO Inc.	Annapolis, MO	33	6	6	3,311,609	2,959,545
34	Goodyear Tire & Rubber Co.	Lincoln, NE	30	4	5	1,399,079	1,054,509
35	Exxon Chemical Americas	Baytown, TX	28	26	31	803,215	459,343
36	Wheeling-Pittsburgh Steel Corp	Follansbee, WV	33	13	14	1,036,885	700,372
37	Columbus Coated Fabrics	Columbus, OH	Mult.	8	8	506,150	172,183
38	General Motors NAO Mid-Lux Car Div.	Doraville, GA	37	13	11	457,327	127,930
39	Brunswick Corp.	Fond Du Lac, WI	35	12	12	441,133	118,847
40	3M Co.	Decatur, AL	Mult.	21	20	492,434	172,884
41	Chrysler Corp.	Fenton, MO	37	18	20	424,710	111,867
42	Basis Petroleum Inc.	Houston, TX	29	21	22	852,686	540,889
43	Hoechst Celanese	Bay City, TX	28	17	17	891,608	580,063
44	Columbian Chemicals Co.	El Dorado, AR	28	1	1	319,194	19,501
45	Ford Motor Co.	Hazelwood, MO	37	16	15	1,109,411	818,655
46	Bristol-Myers Squibb Co.	East Syracuse, NY	28	9	9	582,046	292,762
47	Mobil Chemical Co.	Beaumont, TX	28	19	22	1,509,026	1,220,267
48	Champion International Corp.	Cantonment, FL	26	12	10	1,246,214	962,435
49	Hoechst Celanese Polyester	Wilmington, NC	28	11	11	682,199	398,815
50	Lyondell-Citgo Refining Co.	Houston, TX	29	28	32	825,514	547,261
<b>Total</b>				<b>524</b>	<b>484</b>	<b>94,403,693</b>	<b>60,608,772</b>

\* Chemicals accounting for more than 70% of the decrease in total releases from the facility.

► Does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to NPRI.

<b>Change 1994–1995 in Total Releases</b>		
<b>Rank</b>	<b>(kg)</b>	<b>Major Chemicals Reported with Decreases (Primary Media with Decreases)*</b>
1	-7,709,751	Phosphoric acid (land)
2	-1,999,918	Copper/zinc and compounds (land)
3	-1,858,903	Zinc and compounds (land)
4	-1,179,789	Phosphoric acid (land)
5	-1,166,635	Zinc/manganese and compounds (land)
6	-1,130,542	Methanol (water)
7	-1,124,628	Toluene (air)
8	-873,415	Phosphoric acid (water)
9	-836,441	Phosphoric acid (land)
10	-615,897	Toluene (air)
11	-567,353	Benzene, methyl tert-butyl ether, toluene, propylene, ethylene (air)
12	-560,366	Phosphoric acid (water)
13	-531,533	Trichloroethylene, tetrachloroethylene, naphthalene (air)
14	-519,880	Propylene (air)
15	-517,725	Chlorine (air)
16	-513,719	Zinc/lead and compounds (land)
17	-503,626	Phosphoric acid (water)
18	-457,120	Xylene, cyclohexane (air)
19	-452,390	Methanol, zinc and compounds (air, land)
20	-434,758	Xylene, n-butyl alcohol, 1,2,4-trimethylbenzene (air)
21	-415,948	Toluene (air)
22	-414,268	Xylene, toluene, methanol (air)
23	-413,767	Methanol (water)
24	-392,832	Toluene (air)
25	-385,034	Carbon disulfide (air)
26	-382,800	Methyl ethyl ketone (air)
27	-376,768	Methanol (air)
28	-374,211	Xylene, toluene, ethylbenzene (air)
29	-365,615	Toluene (air)
30	-364,481	Xylene, chloromethane, methanol (air)
31	-362,812	Phosphoric acid (land)
32	-359,683	Toluene, xylene, cyclohexane (air)
33	-352,063	Zinc and compounds (land)
34	-344,571	Toluene (air)
35	-343,872	Chloromethane, ethylene (air)
36	-336,513	Ethylene, benzene (air)
37	-333,967	Methyl ethyl ketone (air)
38	-329,397	Xylene (air)
39	-322,286	Toluene, methyl ethyl ketone (air)
40	-319,551	Methanol (air)
41	-312,843	Xylene, n-butyl alcohol, ethylbenzene (air)
42	-311,797	Propylene (air)
43	-311,545	Vinyl acetate, propionaldehyde, acetaldehyde (air, U I J)
44	-299,693	Carbon disulfide (air)
45	-290,756	Toluene (air)
46	-289,284	Methyl isobutyl ketone (air)
47	-288,759	Propylene (air)
48	-283,779	Methanol, acetaldehyde (air)
49	-283,384	Methanol, p-xylene (air)
50	-278,254	Xylene (air)
	<b>-33,794,921</b>	

Table 5-14		TRI Facilities Showing the Largest Decreases in Total Releases and Transfers					
MY 94-95							
Rank	Facility	City, State	SIC Code	Number of Forms		Total Releases and Transfers	
				1994	1995	1994 (kg)	1995 (kg)
1	IMC-Agrico Co.	Mulberry, FL	Multiple	1	1	11,383,220	3,673,469
2	Imco Recycling of Loudon	Loudon, TN	33	1	4	3,412,209	67,669
3	Kennecott Utah Copper	Magna, UT	33	10	10	5,088,313	2,845,238
4	ASARCO Inc.	East Helena, MT	33	9	9	19,773,379	17,914,620
5	Laclede Steel Co.	Alton, IL	33	8	12	1,849,566	159,198
6	Hoffmann-La Roche Inc.	Nutley, NJ	28	6	8	2,068,220	422,899
7	Ocean State Steel Inc.	East Providence, RI	33	1	0	1,472,163	0
8	Cookson Pigments Inc.	Newark, NJ	28	9	7	1,582,524	227,372
9	Revere Smelting & Refining	Middletown, NY	33	6	6	1,334,980	20,390
10	Biocraft Labs. Inc.	Mexico, MO	28	4	4	2,114,912	870,626
11	PCS Phosphate Co. Inc.	Aurora, NC	28	5	5	5,650,798	4,471,009
12	General Motors Powertrain	Saginaw, MI	33	14	12	2,348,846	1,182,596
13	Louisiana-Pacific Corp.	Samoa, CA	26	5	4	1,832,222	701,680
14	Autostyle Plastics Inc.	Grand Rapids, MI	30	6	0	1,124,628	0
15	Strick Corp.	Danville, PA	37	2	1	1,025,974	1,614
16	Gaston Copper Recycling Corp.	Gaston, SC	33	7	7	1,136,261	158,939
17	ASARCO Inc.	Omaha, NE	33	6	6	2,346,327	1,407,647
18	IMC-Agrico Co.	St. James, LA	28	6	6	3,183,463	2,310,048
19	U.S. Agri-Chemicals Corp.	Fort Meade, FL	28	2	2	1,212,853	376,412
20	Dextrex Corp.	Detroit, MI	28	3	3	772,371	9,903
21	Mallinckrodt Chemical Inc.	Saint Louis, MO	28	16	16	2,977,742	2,240,636
22	Doe Run Co.	Boss, MO	33	5	4	792,083	89,520
23	115th Street Corp., PMC Inc.	Chicago, IL	28	11	11	1,155,031	492,653
24	Enichem Elastomers Americas	Baytown, TX	28	3	3	668,923	8,780
25	Rohm & Haas Co.	Philadelphia, PA	28	25	8	874,137	233,907
26	American Synthetic Rubber, Michelin Corp.	Louisville, KY	28	6	6	1,346,105	728,013
27	USS Mon Valley Works	Braddock, PA	33	5	6	1,683,527	1,068,496
28	Chevron Port Arthur Dist.	Port Arthur, TX	29	28	3	666,557	52,481
29	Boeing Wichita	Wichita, KS	Multiple	28	26	1,057,580	466,104
30	American National Rubber	Cheektowaga, NY	30	1	1	591,787	6,249
31	DuPont	Leland, NC	28	19	19	5,352,385	4,776,109
32	Steelcase Inc.	Grand Rapids, MI	25	10	8	1,072,356	500,759
33	IMC-Agrico Co.	Uncle Sam, LA	28	2	2	1,440,361	879,994
34	Murray Inc.	Lawrenceburg, TN	Multiple	9	9	767,847	227,514
35	Hoffmann-La Roche Inc.	Freeport, TX	28	3	3	1,149,472	614,692
36	Simpson Pasadena Paper Co.	Pasadena, TX	26	9	7	4,854,099	4,331,900
37	Cabot Corp.	Tuscola, IL	28	1	5	1,598,904	1,081,180
38	Quantum Chemical Co.	Clinton, IA	28	12	12	1,660,957	1,145,996
39	Doe Run Co.	Herculeaneum, MO	33	8	9	4,190,644	3,676,925
40	Mobil Mining & Minerals Co.	Pasadena, TX	28	2	2	503,765	139
41	Ferro Corp.	Hammond, IN	28	10	11	642,142	141,779
42	Ford Motor Co.	Brook Park, OH	33	13	12	1,417,559	932,365
43	3M Co.	Bedford Park, IL	26	11	10	730,678	275,471
44	Tenneco Packaging	Tomahawk, WI	26	3	2	647,077	194,686
45	Lilly Industrial Center	Indianapolis, IN	28	3	0	437,100	0
46	Lyondell-Citgo Refining Co.	Houston, TX	29	28	32	1,251,002	817,996
47	General Motors Truck & Bus Group	Flint, MI	37	14	12	842,245	411,185
48	Amoco Corp.	Wood River, IL	28	11	8	498,052	74,478
49	Avery Dennison	Painesville, OH	26	4	4	551,052	134,917
50	DuPont	Deepwater, NJ	28	41	40	1,341,376	928,010
<b>Total</b>				<b>452</b>	<b>398</b>	<b>113,475,774</b>	<b>63,354,266</b>

\* Chemicals accounting for more than 70% of the decrease in total releases and transfers from the facility.

► Does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to NPRI.

Rank	Change 1994–1995			Major Chemicals Reported with Decreases (Primary Media/Transfers with Decreases)*
	Total Releases (kg)	Total Transfers (kg)	Total Releases and Transfers (kg)	
1	-7,709,751	0	-7,709,751	Phosphoric acid (land)
2	-481	-3,344,059	-3,344,540	Aluminum (transfers to disposal)
3	-1,999,918	-243,156	-2,243,075	Copper/zinc/lead and compounds (land)
4	-1,858,903	144	-1,858,759	Zinc and compounds (land)
5	-26,343	-1,664,025	-1,690,368	Zinc and compounds (transfers to treatment)
6	-16,149	-1,629,172	-1,645,321	Methanol (transfers to treatment, sewage)
7	-45	-1,472,118	-1,472,163	Manganese and compounds (transfers to disposal)
8	-2,575	-1,352,578	-1,355,152	Methanol (transfers to sewage)
9	119	-1,314,709	-1,314,590	Lead and compounds (transfers to disposal)
10	1,220	-1,245,505	-1,244,285	Toluene (transfers to treatment)
11	-1,179,789	0	-1,179,789	Phosphoric acid (land)
12	-1,166,635	385	-1,166,250	Zinc and compounds (land)
13	-1,130,542	0	-1,130,542	Methanol (water)
14	-1,124,628	0	-1,124,628	Toluene (air)
15	499	-1,024,859	-1,024,360	Manganese and compounds (transfers to disposal)
16	-8,536	-968,786	-977,322	Copper and compounds (transfers to disposal)
17	-6,109	-932,571	-938,680	Zinc and compounds (transfers to disposal)
18	-873,415	0	-873,415	Phosphoric acid (water)
19	-836,441	0	-836,441	Phosphoric acid (land)
20	0	-762,468	-762,468	Trichloroethylene (transfers to treatment)
21	15,126	-752,232	-737,107	1,1,2-Trichloroethane (transfers to treatment)
22	-3,650	-698,912	-702,562	Lead/zinc and compounds (transfers to treatment)
23	-5,897	-656,481	-662,378	p-Cresol, aniline (transfers to sewage)
24	7,746	-667,889	-660,143	Cyclohexane (transfers to treatment)
25	-25,391	-614,839	-640,229	Methanol, methyl ethyl ketone, xylene, methyl isobutyl ketone (transfers to treatment)
26	-615,897	-2,195	-618,092	Toluene (air)
27	43,555	-658,586	-615,031	Zinc and compounds (transfers to disposal)
28	-567,353	-46,723	-614,077	Benzene, methyl tert-butyl ether, toluene, propylene, ethylene (air)
29	-531,533	-59,943	-591,476	Trichloroethylene, tetrachloroethylene, methyl ethyl ketone, naphthalene (air)
30	0	-585,538	-585,538	Zinc and compounds (transfers to disposal)
31	-263,289	-312,986	-576,276	Ethylene glycol, methanol (transfers to treatment, air)
32	-374,211	-197,386	-571,597	Xylene, toluene, ethylbenzene (air)
33	-560,366	0	-560,366	Phosphoric acid (water)
34	-162,118	-378,215	-540,333	Nickel and compounds, xylene (transfers to disposal, air)
35	2,938	-537,718	-534,780	Methanol (transfers to treatment)
36	-139,755	-382,444	-522,199	Methanol (transfers to sewage)
37	-517,725	0	-517,725	Chlorine (air)
38	-519,880	4,919	-514,961	Propylene (air)
39	-513,719	0	-513,719	Zinc/lead and compounds (land)
40	-503,626	0	-503,626	Phosphoric acid (water)
41	-248,426	-251,937	-500,363	1,2-Dichloroethane, n-butyl alcohol (air, transfers to sewage)
42	6,203	-491,397	-485,194	Manganese and compounds (transfers to disposal)
43	-457,120	1,912	-455,208	Xylene, cyclohexane (air)
44	-452,390	0	-452,390	Methanol, zinc and compounds (air, land)
45	-20,025	-417,075	-437,100	Methanol (transfers to treatment)
46	-278,254	-154,753	-433,006	Xylene, asbestos (air, transfers to disposal)
47	-434,758	3,698	-431,060	Xylene, n-butyl alcohol, 1,2,4-trimethylbenzene (air)
48	-8,902	-414,672	-423,574	Methanol, zinc and compounds (transfers to sewage, disposal)
49	-415,948	-186	-416,134	Toluene (air)
50	-30,440	-382,925	-413,365	Lead and compounds, 1,2-dichlorobenzene (transfers to treatment)
	<b>-25,513,527</b>	<b>-24,607,981</b>	<b>-50,121,508</b>	

Table 5-15		NPRI and TRI Releases and Transfers of ARET Chemicals							
MY	94-95	NPRI				TRI			
		1994 Number	1995 Number	Change 1994-1995 Number %	1994 Number	1995 Number	Change 1994-1995 Number %		
		kg	kg	kg %	kg	kg	kg %		
Facilities		819	832	13 1.6	11,968	11,722	-246 -2.1		
Forms		1,554	1,631	77 5.0	23,290	22,960	-330 -1.4		
Total Air Emissions		13,059,278	10,570,502	-2,488,776 -19.1	92,802,523	85,403,388	-7,399,135 -8.0		
Surface Water Discharges		582,672	637,554	54,882 9.4	1,759,541	1,399,222	-360,319 -20.5		
Underground Injection		106,097	202,322	96,225 90.7	13,045,425	14,154,152	1,108,727 8.5		
On-Site Land Releases		7,388,297	6,873,173	-515,124 -7.0	74,368,485	77,697,111	3,328,626 4.5		
<b>Matched Releases</b>		<b>21,195,540</b>	<b>18,331,920</b>	<b>-2,863,620 -13.5</b>	<b>181,975,973</b>	<b>178,653,873</b>	<b>-3,322,101 -1.8</b>		
Treatment/Destruction		3,970,584	5,104,594	1,134,010 28.6	28,476,121	30,708,883	2,232,762 7.8		
Sewage/POTWs		90,846	69,725	-21,121 -23.2	5,544,121	5,415,463	-128,658 -2.3		
Disposal/Containment		7,909,300	16,632,231	8,722,931 110.3	79,937,053	83,916,680	3,979,627 5.0		
<b>Matched Transfers</b>		<b>11,970,730</b>	<b>21,806,550</b>	<b>9,835,820 82.2</b>	<b>113,957,295</b>	<b>120,041,026</b>	<b>6,083,731 5.3</b>		
<b>Matched Releases and Transfers</b>		<b>33,166,270</b>	<b>40,138,470</b>	<b>6,972,200 21.0</b>	<b>295,933,268</b>	<b>298,694,898</b>	<b>2,761,630 0.9</b>		

## 5.6 Voluntary Reduction Programs

Both the United States and Canada have programs designed to encourage industry to achieve voluntary reductions of selected chemicals. The US effort was called the 33/50 Program (based on the call for a 33 percent reduction to be achieved by 1991 and a 50 percent reduction by 1995, based on amounts of releases and transfers reported to TRI in 1988) and encompassed 17 chemicals. The Canadian program is called ARET (Accelerated Reduction/Elimination of Toxics). This program set its reduction goals of 90 percent for persistent, bioaccumulative and toxic substances released on-site to air, water and soil,

and 50 percent for other toxic substances by the year 2000, from the base year 1993. ARET goals are not specifically tied to NPRI reporting categories, and of its 117 target substances, 49 are on the NPRI list.

### 5.6.1 Accelerated Reduction/Elimination of Toxics (ARET)

The 49 chemicals co-listed by NPRI and ARET are also covered by TRI (see the box on the next page). Of the 17 33/50 chemicals, 16 are listed on both databases (1,1,1-trichloroethane is reportable in TRI but not in NPRI). All but four of the 33/50 chemicals—carbon tetrachloride, methyl ethyl ketone,

toluene, and xylenes—are on the ARET chemical list.

Discussions leading to the ARET program began in late 1990 among corporate executives and leading environmentalists to improve environmental decision-making by organizations. The ARET Stakeholders Committee was formed by the Canadian federal environment minister to establish criteria for defining toxicity, to compile a list of target substances based on these criteria, and to establish a means for encouraging industry to reduce environmental releases of the target substances. It identified criteria for persistence, bioaccumulation and toxicity and prepared a list of 117 chemicals meeting

one or more of the criteria. The “ARET Challenge,” issued in March 1994, calls for industry to make voluntary reductions of 90 percent by the year 2000 of the target substances that meet all three criteria and 50 percent during the same time period for the other target substances. Reductions are measured against the 1993 base year.

Progress in reducing the 49 ARET chemicals reportable to NPRI is shown in **Table 5-15**. The goal of the ARET program is reduction in environmental releases to the air, water and soil (not including landfills). **Table 5-15** shows that reductions in total on-site releases of 14 percent were reported from 1994 to 1995; in the same period, air emissions

## ARET AND 33/50 CHEMICALS ON BOTH NPRI AND TRI LISTS

## ARET CHEMICALS ON BOTH NPRI AND TRI LISTS\*

50-00-0	Formaldehyde
56-23-5	Carbon tetrachloride
62-53-3	Aniline
62-56-6	Thiourea
67-66-3	Chloroform
71-43-2	Benzene
75-07-0	Acetaldehyde
75-09-2	Dichloromethane
75-21-8	Ethylene oxide
77-47-4	Hexachlorocyclopentadiene
79-01-6	Trichloroethylene
79-06-1	Acrylamide
79-46-9	2-Nitropropane
86-30-6	N-Nitrosodiphenylamine
91-22-5	Quinoline
96-45-7	Ethylene thiourea
100-44-7	Benzyl chloride
101-14-4	4,4'-Methylenebis(2-chloroaniline)
106-46-7	1,4-Dichlorobenzene
106-89-8	Epichlorohydrin
106-99-0	1,3-Butadiene
107-06-2	1,2-Dichloroethane
107-13-1	Acrylonitrile
108-10-1	Methyl isobutyl ketone
108-95-2	Phenol
117-81-7	Di(2-ethylhexyl) phthalate
120-12-7	Anthracene
120-83-2	2,4-Dichlorophenol
121-14-2	2,4-Dinitrotoluene
123-91-1	1,4-Dioxane
127-18-4	Tetrachloroethylene
302-01-2	Hydrazine
534-52-1	4,6-Dinitro-o-cresol

606-20-2	2,6-Dinitrotoluene
1332-21-4	Asbestos (friable)
10049-04-4	Chlorine dioxide
26471-62-5	Toluenediisocyanate (mixed isomers)
—	Arsenic (and its compounds)
—	Cadmium (and its compounds)
—	Chromium (and its compounds)
—	Cobalt (and its compounds)
—	Copper (and its compounds)
—	Cyanide compounds
—	Lead (and its compounds)
—	Mercury (and its compounds)
—	Nickel (and its compounds)
—	Silver (and its compounds)
—	Zinc (and its compounds)

## 33/50 CHEMICALS ON BOTH NPRI AND TRI LISTS

56-23-5	Carbon tetrachloride
67-66-3	Chloroform
71-43-2	Benzene
75-09-2	Dichloromethane
78-93-3	Methyl ethyl ketone
79-01-6	Trichloroethylene
108-10-1	Methyl isobutyl ketone
108-88-3	Toluene
127-18-4	Tetrachloroethylene
—	Cadmium (and its compounds)
—	Chromium (and its compounds)
—	Cyanide compounds
—	Lead (and its compounds)
—	Mercury (and its compounds)
—	Nickel (and its compounds)
—	Xylenes

were reduced by 19 percent. TRI facilities reporting the ARET chemicals reported reductions of 2 percent in on-site releases, with air emissions reduced 8 percent in the same time period. For both NPRI and TRI facilities, off-site transfers of these chemicals increased from 1994 to 1995.

A few facilities accounted for the majority of the reported decreases. Two NPRI facilities (HBM & S Co. Ltd. and Sidbec Dosco—see **Table 5-16**) had apparent reductions of over 1 million kg in ARET chemicals. The one achieved these reductions to on-site landfills and the other, which had reported over 1 million kg of releases to air in 1994, had no reported releases of those chemicals for 1995. (Nor did the facility report transfers in 1995.)

Four TRI facilities reported reductions of more than 1 million kg in on-site releases (also metal compounds); another eight reported reductions of more than 1 million kg in off-site transfers of ARET chemicals (see **Tables 5-16** and **5-17**). On the other hand, just as few reported large increases in these chemicals. **Table 5-18** shows the one NPRI and 10 TRI facilities reporting more than 500,000 kg of increases in total releases, and **Table 5-19** shows the four NPRI and 17 TRI facilities with more than 1 million kg of increases in total releases and transfers.

► Tetraethyl lead is listed as an ARET chemical separately from lead and lead compounds. It is included in lead and lead compounds in NPRI.



Table 5-16		NPRI and TRI Facilities Showing the Largest Decreases in Total Releases of ARET Chemicals									
MY	94-95	City, State/Province		SIC Code		Number of Forms		Total Releases		Change 1994-1995 in Total Releases (kg)	Major Chemicals Reported with Decreases (Primary Media with Decreases)*
		Canada	US	1994	1995	1994	1995	(kg)	(kg)		
<b>NPRI Facilities</b>											
		HBM&S Co. Ltd.-Smelter	Flin Flon, MB	29	33	5	0	1,356,367	0	-1,356,367	Lead/zinc and compounds (air)
		Sidbec Dosco (ISPAT) Inc.	Contrecoeur, QC	29	33	4	4	2,625,732	1,335,277	-1,290,455	Zinc and compounds (land)
		<b>Total</b>				<b>9</b>	<b>4</b>	<b>3,982,099</b>	<b>1,335,277</b>	<b>-2,646,822</b>	
<b>TRI Facilities</b>											
		Kennecott Utah Copper	Magna, UT		33	8	8	20,110,615	15,777,800	-4,332,815	Lead/zinc and compounds (land)
		ASARCO Inc.	East Helena, MT		33	7	7	40,722,168	37,088,415	-3,633,753	Zinc and compounds (land)
		General Motors Powertrain	Saginaw, MI		33	10	8	3,835,685	2,002,100	-1,833,585	Zinc and compounds (land)
		Doe Run Co.	Herculaneum, MO		33	8	8	9,239,368	8,106,261	-1,133,107	Lead/zinc and compounds (land)
		<b>Total</b>						<b>63,907,836</b>	<b>52,974,576</b>	<b>-10,933,260</b>	

\* Chemical accounting for more than 70% of the decrease in total releases from the facility.

Table 5-17		NPRI and TRI Facilities Showing the Largest Decreases in Total Releases and Transfers of ARET Chemicals											
MY	94-95	City, State/Province		SIC Code		Number of Forms		Total Releases and Transfers		Change 1994-1995			Major Chemicals Reported with Decreases (Primary Media/Transfer with Decreases)*
		Canada	US	1994	1995	1994	1995	Total Releases (kg)	1994	Total Transfers (kg)	Total Releases and Transfers (kg)		
<b>NPRI Facilities</b>													
		HBM&S Co. Ltd.-Smelter	Flin Flon, MB	29	33	5	0	1,356,367	0	-1,356,367	0	-1,356,367	Lead/zinc and compounds (air)
		Sidbec Dosco (ISPAT) Inc.	Contrecoeur, QC	29	33	4	4	2,625,732	1,335,277	-1,290,455	0	-1,290,455	Zinc and compounds (land)
		<b>Total</b>				<b>9</b>	<b>4</b>	<b>3,982,099</b>	<b>1,335,277</b>	<b>-2,646,822</b>	<b>0</b>	<b>-2,646,822</b>	
<b>TRI Facilities</b>													
		Kennecott Utah Copper	Magna, UT		33	8	8	11,017,025	6,152,000	-4,332,815	-532,210	-4,865,025	Copper/zinc/lead and compounds (land)
		Laclede Steel Co.	Alton, IL		33	4	7	3,989,535	267,356	4,958	-3,727,137	-3,722,179	Zinc and compounds (transfers to treatment)
		ASARCO Inc.	East Helena, MT		33	7	7	40,722,218	37,088,810	-3,633,753	345	-3,633,408	Zinc and compounds (land)
		Revere Smelting & Refining	Middletown, NY		33	5	5	2,925,766	43,157	257	-2,882,866	-2,882,609	Lead and compounds (transfers to disposal)
		Gaston Copper Recyc. Corp.	Gaston, SC		33	6	6	2,478,373	346,868	-17,932	-2,113,573	-2,131,505	Copper/lead and compounds (transfers to disposal)
		ASARCO Inc.	Omaha, NE		33	4	4	4,334,490	2,416,964	-9,560	-1,907,966	-1,917,526	Zinc and compounds (transfers to disposal)
		General Motors Powertrain	Saginaw, MI		33	10	8	3,837,600	2,005,441	-1,833,585	1,426	-1,832,159	Zinc and compounds (land)
		Dextrex Corp.	Detroit, MI		28	3	3	1,703,078	21,836	0	-1,681,242	-1,681,242	Trichloroethylene (transfers to treatment)
		Doe Run Co.	Boss, MO		33	4	3	1,699,108	180,269	-7,759	-1,511,080	-1,518,839	Lead/zinc and compounds (transfers to disposal)
		American National Rubber	Cheektowaga, NY		30	1	1	1,304,890	13,778	0	-1,291,112	-1,291,112	Zinc and compounds (transfers to disposal)
		Doe Run Co.	Herculaneum, MO		33	8	8	9,240,369	8,107,262	-1,133,107	0	-1,133,107	Zinc/lead and compounds (land)
		USS Mon Valley Works	Braddock, PA		33	4	4	3,148,932	2,089,914	79,364	-1,138,382	-1,059,018	Zinc and compounds (transfers to disposal)
		<b>Total</b>				<b>64</b>	<b>64</b>	<b>86,401,384</b>	<b>58,733,655</b>	<b>-10,883,932</b>	<b>-16,783,797</b>	<b>-27,667,729</b>	

\* Chemical accounting for more than 70% of the decrease in total releases and transfers from the facility.



Table 5-18		NPRI and TRI Facilities Showing the Largest Increases in Total Releases of ARET Chemicals							
M Y	94-95	SIC Code		Number of Forms		Total Releases		Change 1994-1995 in Total Releases (kg)	Major Chemicals Reported with Increases (Primary Media with Increases)*
		Canada	US	1994	1995	1994 (kg)	1995 (kg)		
<b>NPRI Facility</b>									
Co-Steel Lasco	Whitby, ON	29	33	4	5	1,872,582	2,410,763	538,181	Copper/zinc and compounds (land)
<b>TRI Facilities</b>									
General Motors Powertrain	Defiance, OH		33	8	8	4,405,145	12,896,885	8,491,740	Zinc and compounds (land)
U.S. Steel	Gary, IN		33	8	10	1,166,820	4,831,512	3,664,692	Zinc and compounds (land)
Cyprus Miami Mining Corp.	Claypool, AZ		33	4	4	7,655,800	10,746,236	3,090,436	Copper and compounds (land)
USS Fairfield Works	Fairfield, AL		33	5	4	105,314	3,169,195	3,063,881	Zinc and compounds (land)
Glenbrook Nickel Co.	Riddle, OR		33	2	2	26,892	2,415,420	2,388,528	Nickel and compounds (land)
Shell Oil Co.	Deer Park, TX		Mult.	11	12	1,089,041	2,090,514	1,001,473	Phenol (UIJ)
Phelps Dodge Hidalgo Inc.	Playas, NM		33	1	1	9,207,995	10,015,608	807,613	Copper and compounds (land)
Granite City Steel	Granite City, IL		33	9	8	3,840,195	4,633,507	793,312	Zinc and compounds (land)
Upjohn Mfg. Co.	Arecibo, PR		28	2	2	551,250	1,302,100	750,850	Dichloromethane (air)
Westinghouse Electric Corp.	Hampton, SC		30	2	2	29,181	657,390	628,209	Phenol (air)
<b>Total</b>				<b>52</b>	<b>53</b>	<b>28,077,633</b>	<b>52,758,367</b>	<b>24,680,734</b>	

\* Chemical accounting for more than 70% of the increase in total releases from the facility.

Table 5-19		NPRI and TRI Facilities Showing the Largest Increases in Total Releases and Transfers of ARET Chemicals									
M Y	94-95	SIC Code		Number of Forms		Total Releases and Transfers		Change 1994-1995			Major Chemicals Reported with Increases (Primary Media/Transfer with Increases)*
		Canada	US	1994	1995	1994	1995	Total Releases	Total Transfers	Total Releases and Transfers	
City, State/Province						(kg)	(kg)	(kg)	(kg)	(kg)	
<b>NPRI Facilities</b>											
Co-Steel Lasco	Whitby, ON	29	33	4	5	2,654,882	8,146,583	538,181	4,953,520	5,491,701	Zinc and compounds (transfers to disposal)
CXY Chemicals	Nanaimo, BC	37	28	0	1	0	1,988,000	0	1,988,000	1,988,000	Asbestos (transfers to disposal)
Stelco McMaster Lte	Contrecoeur, QC	29	33	3	4	6,400	1,707,300	2,500	1,698,400	1,700,900	Zinc and compounds (transfers to treatment)
Dominion Castings Ltd.	Hamilton, ON	29	33	0	1	0	1,401,905	1,127	1,400,778	1,401,905	Chromium and compounds (transfers to disposal)
<b>Total</b>				<b>7</b>	<b>11</b>	<b>2,661,282</b>	<b>13,243,788</b>	<b>541,808</b>	<b>10,040,698</b>	<b>10,582,506</b>	
<b>TRI Facilities</b>											
General Motors Powertrain	Defiance, OH		33	8	8	4,407,695	12,900,821	8,491,740	1,386	8,493,126	Zinc and compounds (land)
Nucor Steel	Crawfordsville, IN		33	5	5	2,770,361	10,759,638	-28,169	8,017,446	7,989,277	Zinc and compounds (transfers to disposal)
U.S. Steel	Gary, IN		33	8	10	1,271,290	4,933,051	3,664,692	-2,931	3,661,761	Zinc and compounds (land)
Oregon Steel Mills Inc.	Portland, OR		Mult.	5	5	20,708	3,374,144	-9,081	3,362,517	3,353,436	Zinc and compounds (transfers to treatment)
ASARCO Inc.	Hayden, AZ		33	7	7	18,569,234	21,920,034	464,946	2,885,854	3,350,800	Lead and compounds (transfers to treatment)
Cyprus Miami Mining Corp.	Claypool, AZ		33	4	4	7,655,800	10,746,236	3,090,436	0	3,090,436	Copper and compounds (land)
USS Fairfield Works	Fairfield, AL		33	5	4	105,314	3,169,195	3,063,881	0	3,063,881	Zinc and compounds (land)
Electralloy Corp.	Oil City, PA		33	3	3	161,083	2,914,766	137,867	2,615,816	2,753,683	Chromium and compounds (transfers to disposal)
Newport Steel Corp.	Wilders, KY		33	6	6	7,300	2,640,708	208	2,633,200	2,633,408	Zinc and compounds (transfers to treatment)
Glenbrook Nickel Co.	Riddle, OR		33	2	2	26,892	2,415,420	2,388,528	0	2,388,528	Nickel and compounds (land)
Allegheny Ludlum Corp.	Brackenridge, PA		33	5	5	552,665	2,353,555	6,095	1,794,795	1,800,890	Nickel/lead and compounds (transfers to disposal)
Avesta Sheffield Plate Inc.	New Castle, IN		33	2	2	126,852	1,766,314	0	1,639,462	1,639,462	Chromium and compounds (transfers to treatment)
Zinc Corp. of America	Monaca, PA		33	8	8	30,600,153	32,007,126	-5,243	1,412,216	1,406,973	Zinc and compounds (transfers to disposal)
Quantum Chemical Corp.	La Porte, TX		28	7	7	144,074	1,527,285	615	1,382,596	1,383,211	Zinc and compounds (transfers to treatment)
Birmingham Steel Corp.	Jackson, MS		33	4	4	2,292	1,335,015	88	1,332,635	1,332,723	Lead and compounds (transfers to disposal)
American Steel Foundries	Alliance, OH		33	3	5	1,397,250	2,707,500	82,230	1,228,020	1,310,250	Chromium and compounds (transfers to disposal)
Shell Oil Co.	Deer Park, TX		Mult.	11	12	1,998,809	3,017,559	1,001,473	17,277	1,018,750	Phenol (UIJ)
<b>Total</b>				<b>93</b>	<b>97</b>	<b>69,817,772</b>	<b>120,488,367</b>	<b>22,350,306</b>	<b>28,320,289</b>	<b>50,670,595</b>	

\* Chemical accounting for more than 70% of the increase in total releases and transfers from the facility.

Table 5-20		NPRI and TRI Releases and Transfers of 33/50 Chemicals							
MY	94-95	NPRI				TRI			
		1994	1995	Change 1994-1995		1994	1995	Change 1994-1995	
		Number	Number	Number	%	Number	Number	Number	%
Forms		1,255	1,284	29	2.3	21,417	20,549	-868	-4.1
		kg	kg	kg	%	kg	kg	kg	%
Total Air Emissions		27,955,441	24,652,873	-3,302,568	-11.8	234,722,129	204,739,327	-29,982,802	-12.8
Surface Water Discharges		120,482	116,944	-3,538	-2.9	559,131	439,638	-119,493	-21.4
Underground Injection		341,050	983,756	642,706	188.4	3,172,252	3,576,863	404,611	12.8
On-Site Land Releases		1,707,550	1,549,528	-158,022	-9.3	17,803,755	17,858,404	54,649	0.3
<b>Matched Releases</b>		<b>30,178,941</b>	<b>27,353,849</b>	<b>-2,825,092</b>	<b>-9.4</b>	<b>256,257,267</b>	<b>226,614,232</b>	<b>-29,643,035</b>	<b>-11.6</b>
Treatment/Destruction		5,542,768	4,516,086	-1,026,682	-18.5	33,417,622	34,980,263	1,562,641	4.7
Sewage/POTWs		74,569	15,476	-59,093	-79.2	2,262,866	2,259,049	-3,816	-0.2
Disposal/Containment		1,651,466	3,826,060	2,174,594	131.7	23,985,788	24,493,191	507,404	2.1
<b>Matched Transfers</b>		<b>7,268,803</b>	<b>8,357,622</b>	<b>1,088,819</b>	<b>15.0</b>	<b>59,666,276</b>	<b>61,732,504</b>	<b>2,066,228</b>	<b>3.5</b>
<b>Matched Releases and Transfers</b>		<b>37,447,744</b>	<b>35,711,471</b>	<b>-1,736,273</b>	<b>-4.6</b>	<b>315,923,542</b>	<b>288,346,736</b>	<b>-27,576,807</b>	<b>-8.7</b>

### 5.6.2 The 33/50 Program

The 33/50 Program, established by the US EPA in 1991, is also a call for voluntary reductions by industry. The 17 substances subject to the program are TRI chemicals chosen for their high toxicity and the large volume of their reported releases and transfers. The goals of the program were a 33 percent reduction in total releases and transfers by 1992 and a 50 percent reduction by 1995, from a base level of 1988 TRI reporting. The 33/50 Program achieved its goals by 1994, one year early. **Table 5-20** shows that further reductions of 27 million kg, or 9 percent, were achieved from 1994 to 1995. This occurred, despite a nearly 4 percent increase in off-site transfers, because of

large reductions in on-site releases, particularly air emissions. NPRI facilities reporting the same chemicals achieved similar reductions in on-site releases, but increased their transfers of these chemicals by 15 percent, for an overall reduction in total releases and transfers of 5 percent.

As a further examination of the reductions in total releases and transfers achieved over and above the stated goals of the 33/50 Program, **Table 5-21** shows reductions of 6 million kg from seven facilities, each of which reported greater than 500,000 kg in reductions from 1994 to 1995. This amounts to over 2 million kg in on-site releases and over 3 million kg in off-site transfers. Three NPRI facilities also reported

decreases of more than 500,000 kg of 33/50 chemicals from 1994 to 1995. All these reductions were in on-site releases to air; they totaled more than 1.5 million kg.

**Table 5-22** shows that from 1994 to 1995, many of the increases reported by the 10 facilities showing increases greater than 500,000 kg were in transfers. These increases totaled 9 million kg in off-site transfers and nearly 1.5 million kg in on-site releases. The one NPRI facility with an increase of more than 500,000 kg of any of the 33/50 chemicals reported an additional 650,000 kg over 1994 levels of methyl ethyl ketone sent to on-site underground injection.



## 5.7 Geographic Change

The Canadian provinces with the largest releases—and the largest releases and transfers—for the matched data set were Ontario, Quebec and Alberta in both 1994 and 1995 (see **Tables 5–23** and **5–24**). Quebec and Alberta had increases in both releases and transfers. Ontario's 2 million kg decrease in releases was offset by a larger increase in transfers, due in part to one facility's reporting of 5.7 million kg more in 1995, as shown in **Table 5–8**, above. Ontario was also the only province in which fewer facilities reported in 1995 than in 1994. The net increase from Ontario facilities amounted to less than 2 percent, while the increase from facilities located in Quebec was nearly 9 percent and from those in Alberta nearly 31 percent. The province of Nova Scotia reported the largest reduction because of the 3 million kg decrease of one facility, as shown in **Table 5–10**, above.

The change in NPRI reporting requirements relating to by-products, described in **Chapter 2**, may affect these geographical changes from 1994 to 1995. Also, as noted earlier, analyses of year-to-year changes in both Canada's summary report on NPRI and that of the United States on TRI may differ from findings in this chapter because the industry and chemical sets analyzed in their respective reports are different from that used here.

For TRI, the three states with the largest releases in both 1994 and 1995 were Texas, Louisiana and Alabama (see **Table 5–25**). For total releases and transfers, however, the top states were Texas, Ohio and Louisiana, and all three reported larger amounts in 1995 (see **Table 5–26**). Differences in the relative amounts released or transferred caused

a number of states to rank quite differently on **Tables 5–25** and **5–26**. Fourteenth for releases, for example, Pennsylvania ranked fourth for total releases and transfers.

Increases in total releases and transfers from 1994 to 1995 amounted to about 6 percent for Texas and Ohio and about 7 percent for Louisiana. Two facilities in Texas reported increases that were among the largest in TRI, as shown in **Table 5–12**, above. Michigan, the fourth-ranked state for 1994, reported 5 million kg less in 1995 (a 9 percent decrease) and dropped to sixth place.

The state with the largest absolute decrease in total releases and transfers was Florida. Even though 14 more facilities reported from Florida in 1995 than in 1994, the state showed a 22 percent net decrease—7 million kg. As shown in **Table 5–14** above, this was due to one facility (IMC-Agrico) reporting a decrease of nearly 8 million kg in releases. Rhode Island had the largest percentage decrease reported (51 percent). Again, this represents the influence of one facility, which reported only in 1994 (see **Table 5–14**).

As shown in **Maps 5–1** and **5–2**, somewhat different geographic patterns appear for the changes in total releases versus total releases and transfers. **Map 5–1** shows that larger percentage increases in total releases occurred primarily in the western half of the continent, but larger decreases also were found on the West Coast, as well as in parts of the eastern half of the continent. For total releases and transfers, however, **Map 5–2** shows a greater concentration of the large-percentage increases in the West Coast provinces and states and in the far northeast, with larger decreases in mid-continent.

Table 5–23		NPRI Releases, by Province (Ordered by Total Releases)			
MY	94-95	Total Releases		Change 1994–1995	
Province	1994 (kg)	1995 (kg)	kg	%	
Ontario	44,446,445	42,045,989	-2,400,456	-5.4	
Quebec	18,253,317	18,417,316	163,999	0.9	
Alberta	10,906,911	14,517,124	3,610,213	33.1	
British Columbia	6,771,359	5,147,645	-1,623,714	-24.0	
New Brunswick	5,181,793	4,785,863	-395,930	-7.6	
Nova Scotia	2,403,484	1,630,226	-773,258	-32.2	
Manitoba	2,629,811	1,441,968	-1,187,843	-45.2	
Saskatchewan	628,471	972,364	343,893	54.7	
Newfoundland	15,122	102,264	87,142	576.3	
Prince Edward Island	15,489	13,020	-2,469	-15.9	
<b>Total</b>	<b>91,252,202</b>	<b>89,073,779</b>	<b>-2,178,423</b>	<b>-2.4</b>	

► Does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to TRI.

Table 5-24		NPRI Releases and Transfers, by Province											
MY 94-95													
Province	1994						1995						
	Number of Facilities	Number of Forms	Total Releases (kg)	Total Transfers (kg)	Total Releases and Transfers (kg)	Rank	Number of Facilities	Number of Forms	Total Releases (kg)	Total Transfers (kg)	Total Releases and Transfers (kg)	Rank	
Ontario	732	2,253	44,446,445	17,721,423	62,167,868	1	714	2,303	42,045,989	21,086,183	63,132,172	1	
Quebec	301	832	18,253,317	4,676,614	22,929,931	2	324	892	18,417,316	6,534,369	24,951,685	2	
Alberta	84	303	10,906,911	1,191,393	12,098,304	3	88	332	14,517,124	1,268,874	15,785,998	3	
British Columbia	75	224	6,771,359	178,539	6,949,898	4	74	222	5,147,645	2,662,832	7,810,477	4	
New Brunswick	17	45	5,181,793	1,480	5,183,273	5	20	60	4,785,863	1,558,583	6,344,446	5	
Manitoba	33	79	2,629,811	217,073	2,846,884	7	36	86	1,441,968	301,145	1,743,113	6	
Nova Scotia	19	65	2,403,484	2,756,780	5,160,264	6	22	72	1,630,226	107,917	1,738,143	7	
Saskatchewan	15	39	628,471	22,301	650,772	8	15	44	972,364	6,257	978,621	8	
Newfoundland	3	17	15,122	0	15,122	10	3	17	102,264	28	102,292	9	
Prince Edward Island	2	3	15,489	1,600	17,089	9	2	3	13,020	400	13,420	10	
<b>Total</b>	<b>1,281</b>	<b>3,860</b>	<b>91,252,202</b>	<b>26,767,203</b>	<b>118,019,405</b>		<b>1,298</b>	<b>4,031</b>	<b>89,073,779</b>	<b>33,526,588</b>	<b>122,600,367</b>		
	Change 1994-1995						Percent Change 1994-1995						
	Number	Number	kg	kg	kg	Rank	%	%	%	%	%	Rank	
Ontario	-18	50	-2,400,456	3,364,760	964,304	7	-2.5	2.2	-5.4	19.0	1.6	4	
Quebec	23	60	163,999	1,857,755	2,021,754	9	7.6	7.2	0.9	39.7	8.8	5	
Alberta	4	29	3,610,213	77,481	3,687,694	10	4.8	9.6	33.1	6.5	30.5	8	
British Columbia	-1	-2	-1,623,714	2,484,293	860,579	6	-1.3	-0.9	-24.0	1,391.5	12.4	6	
New Brunswick	3	15	-395,930	1,557,103	1,161,173	8	17.6	33.3	-7.6	105,209.7	22.4	7	
Manitoba	3	7	-1,187,843	84,072	-1,103,771	2	9.1	8.9	-45.2	38.7	-38.8	2	
Nova Scotia	3	7	-773,258	-2,648,863	-3,422,121	1	15.8	10.8	-32.2	-96.1	-66.3	1	
Saskatchewan	0	5	343,893	-16,044	327,849	5	0.0	12.8	54.7	-71.9	50.4	9	
Newfoundland	0	0	87,142	28	87,170	4	0.0	0.0	576.3	—	576.4	10	
Prince Edward Island	0	0	-2,469	-1,200	-3,669	3	0.0	0.0	-15.9	-75.0	-21.5	3	
<b>Total</b>	<b>17</b>	<b>171</b>	<b>-2,178,423</b>	<b>6,759,385</b>	<b>4,580,962</b>		<b>1.3</b>	<b>4.4</b>	<b>-2.4</b>	<b>25.3</b>	<b>3.9</b>		

► Does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to TRI.

Table 5-25		TRI Releases, by State (Ordered by Total Releases)			
MY	94-95	Total Releases		Change 1994-1995	
State	1994 (kg)	1995 (kg)	kg	%	
Texas	74,809,849	75,632,867	823,018	1.1	
Louisiana	48,115,270	51,431,278	3,316,007	6.9	
Alabama	36,878,795	38,980,776	2,101,981	5.7	
Ohio	35,546,514	37,848,227	2,301,713	6.5	
Tennessee	36,228,947	37,472,097	1,243,150	3.4	
Utah	29,043,277	30,521,185	1,477,908	5.1	
North Carolina	33,607,775	30,054,289	-3,553,486	-10.6	
Illinois	30,882,286	29,135,439	-1,746,847	-5.7	
Indiana	26,362,402	26,171,593	-190,809	-0.7	
Michigan	28,704,101	22,542,143	-6,161,958	-21.5	
Florida	30,808,473	22,090,673	-8,717,800	-28.3	
Montana	21,018,982	19,325,797	-1,693,185	-8.1	
South Carolina	17,963,840	18,777,490	813,650	4.5	
Pennsylvania	18,671,365	17,125,611	-1,545,754	-8.3	
Virginia	18,361,077	17,079,066	-1,282,011	-7.0	
Missouri	18,578,215	16,946,349	-1,631,866	-8.8	
Mississippi	17,241,192	16,267,240	-973,952	-5.6	
Georgia	16,902,911	15,211,287	-1,691,624	-10.0	
Arizona	13,426,423	15,015,727	1,589,303	11.8	
Kentucky	12,292,671	11,566,868	-725,803	-5.9	
New York	12,004,386	10,348,889	-1,655,497	-13.8	
Arkansas	11,834,775	9,869,597	-1,965,177	-16.6	
Wisconsin	11,396,273	9,756,571	-1,639,702	-14.4	
Washington	7,791,766	8,520,216	728,451	9.3	
Iowa	8,945,597	8,286,117	-659,481	-7.4	
New Mexico	7,719,921	8,076,253	356,332	4.6	
Oregon	6,945,966	7,861,186	915,220	13.2	
California	8,047,203	7,021,959	-1,025,244	-12.7	
Minnesota	8,134,867	6,995,782	-1,139,085	-14.0	
West Virginia	7,298,750	6,463,614	-835,136	-11.4	
Kansas	6,826,025	6,332,830	-493,195	-7.2	
Oklahoma	4,727,735	5,154,010	426,275	9.0	
New Jersey	4,969,122	4,426,177	-542,945	-10.9	
Maryland	3,892,011	3,640,107	-251,903	-6.5	
Puerto Rico	3,790,222	3,437,253	-352,969	-9.3	
Nebraska	3,421,363	3,097,034	-324,329	-9.5	
Connecticut	3,784,070	2,980,862	-803,208	-21.2	
Massachusetts	3,350,770	2,813,141	-537,628	-16.0	
Maine	2,475,854	2,531,831	55,977	2.3	
Nevada	1,352,709	1,429,379	76,670	5.7	
Idaho	1,061,319	1,181,105	119,785	11.3	
Colorado	1,211,522	1,119,955	-91,567	-7.6	
Delaware	1,493,342	1,112,455	-380,887	-25.5	
Rhode Island	1,224,771	1,085,941	-138,830	-11.3	
New Hampshire	926,070	769,811	-156,259	-16.9	
Alaska	490,420	760,595	270,176	55.1	
South Dakota	772,909	742,440	-30,469	-3.9	
Virgin Islands	428,148	524,038	95,889	22.4	
North Dakota	394,369	499,198	104,829	26.6	
Wyoming	305,247	404,400	99,152	32.5	
Vermont	270,194	228,934	-41,260	-15.3	
Hawaii	184,532	144,408	-40,124	-21.7	
American Samoa	0	0	0	—	
District of Columbia	0	0	0	—	
<b>Total</b>	<b>702,916,591</b>	<b>676,812,089</b>	<b>-26,104,502</b>	<b>-3.7</b>	

► Does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to NPRI.

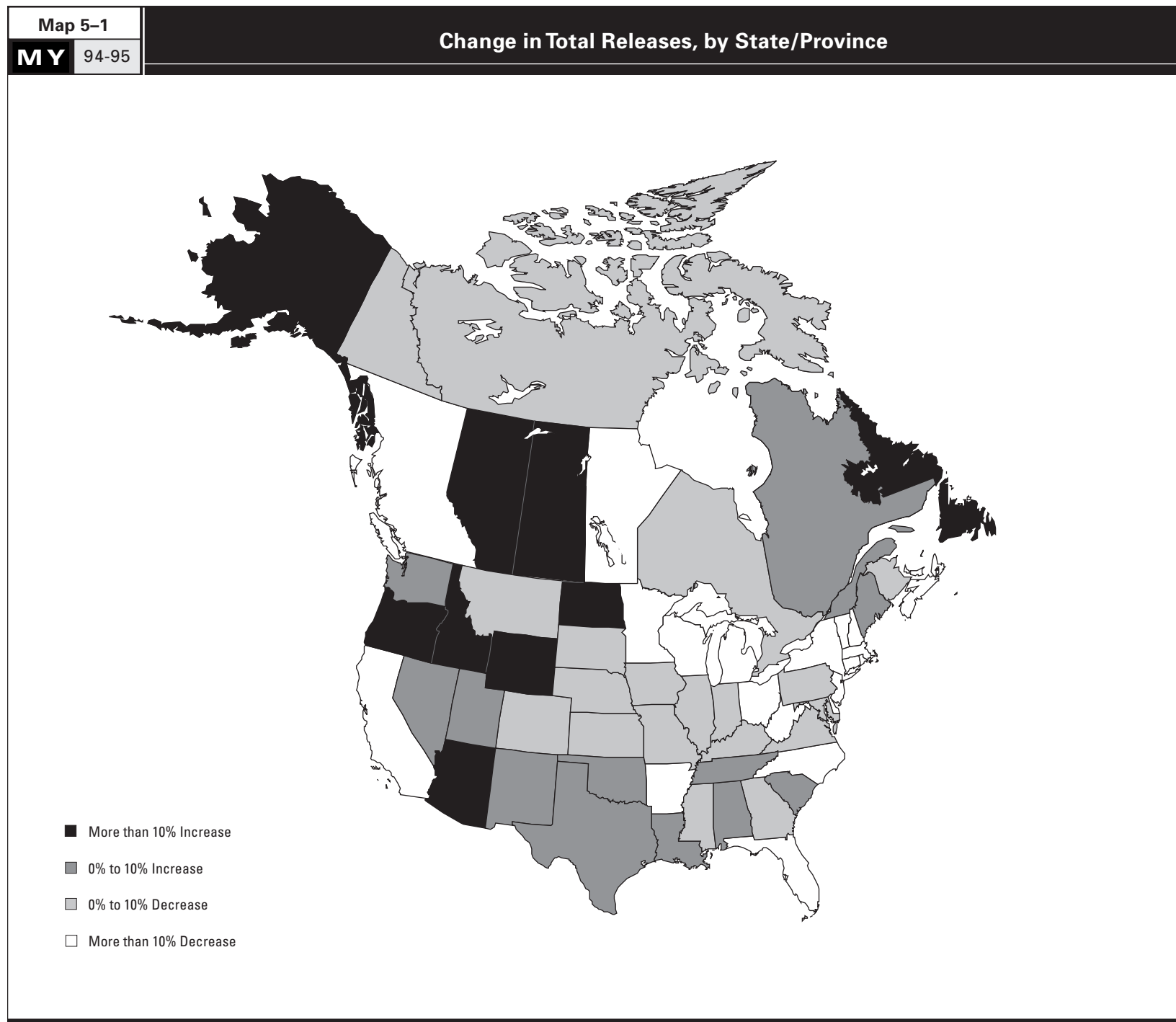
Table 5-26		TRI Releases and Transfers, by State											
MY 94-95		1994						1995					
State	Number of Facilities	Number of Forms	Total Releases (kg)	Total Transfers (kg)	Total Releases and Transfers (kg)	Rank	Number of Facilities	Number of Forms	Total Releases (kg)	Total Transfers (kg)	Total Releases and Transfers (kg)	Rank	
Texas	1,023	4,313	74,809,849	23,506,737	98,316,586	1	1,027	4,333	75,632,867	28,801,098	104,433,966	1	
Ohio	1,497	4,366	35,546,514	18,038,973	53,585,487	2	1,439	4,202	37,848,227	19,147,478	56,995,704	2	
Louisiana	266	1,530	48,115,270	2,992,286	51,107,556	3	266	1,555	51,431,278	3,450,249	54,881,527	3	
Pennsylvania	1,100	3,139	18,671,365	31,348,992	50,020,357	5	1,082	3,112	17,125,611	33,390,768	50,516,379	4	
Alabama	453	1,463	36,878,795	6,924,112	43,802,907	8	449	1,448	38,980,776	7,980,151	46,960,927	5	
Michigan	817	2,596	28,704,101	21,463,596	50,167,698	4	780	2,462	22,542,143	22,933,229	45,475,372	6	
Tennessee	587	1,629	36,228,947	10,674,342	46,903,289	7	572	1,608	37,472,097	7,281,262	44,753,358	7	
Illinois	1,180	3,539	30,882,286	16,138,651	47,020,937	6	1,143	3,447	29,135,439	12,832,347	41,967,786	8	
Indiana	925	2,707	26,362,402	11,781,499	38,143,901	10	902	2,624	26,171,593	15,250,390	41,421,983	9	
North Carolina	776	2,096	33,607,775	7,000,909	40,608,683	9	742	2,009	30,054,289	6,771,063	36,825,351	10	
Utah	134	405	29,043,277	1,104,070	30,147,347	12	122	369	30,521,185	511,057	31,032,242	11	
Florida	425	930	30,808,473	2,861,270	33,669,743	11	439	955	22,090,673	4,227,298	26,317,971	12	
South Carolina	435	1,377	17,963,840	5,360,094	23,323,934	15	448	1,409	18,777,490	4,638,578	23,416,068	13	
Missouri	508	1,407	18,578,215	9,204,380	27,782,595	13	492	1,384	16,946,349	5,974,005	22,920,354	14	
Virginia	395	1,136	18,361,077	5,020,373	23,381,450	14	386	1,105	17,079,066	5,063,587	22,142,653	15	
Montana	18	110	21,018,982	14,340	21,033,322	17	21	115	19,325,797	24,647	19,350,444	16	
Wisconsin	763	1,945	11,396,273	9,812,340	21,208,612	16	759	1,964	9,756,571	9,089,912	18,846,483	17	
California	1,135	2,748	8,047,203	8,279,266	16,326,468	22	1,094	2,669	7,021,959	11,714,921	18,736,880	18	
Mississippi	277	844	17,241,192	1,702,380	18,943,572	21	268	824	16,267,240	2,340,549	18,607,789	19	
Georgia	602	1,609	16,902,911	2,511,346	19,414,257	20	605	1,580	15,211,287	2,985,045	18,196,332	20	
Arizona	140	306	13,426,423	967,925	14,394,348	24	145	303	15,015,727	2,555,117	17,570,843	21	
Kentucky	364	1,212	12,292,671	3,613,562	15,906,234	23	365	1,181	11,566,868	5,153,797	16,720,666	22	
New York	637	1,649	12,004,386	8,015,112	20,019,499	19	604	1,563	10,348,889	5,811,238	16,160,127	23	
New Jersey	556	1,747	4,969,122	15,862,956	20,832,079	18	516	1,613	4,426,177	11,693,727	16,119,904	24	
Oregon	219	532	6,945,966	4,523,631	11,469,597	28	219	536	7,861,186	6,311,667	14,172,854	25	
Iowa	355	911	8,945,597	4,255,351	13,200,949	25	347	879	8,286,117	4,659,532	12,945,649	26	
Arkansas	349	997	11,834,775	1,348,258	13,183,033	26	328	953	9,869,597	1,299,429	11,169,026	27	
West Virginia	134	531	7,298,750	3,598,806	10,897,556	29	126	516	6,463,614	3,952,911	10,416,525	28	
Minnesota	430	1,009	8,134,867	3,387,732	11,522,599	27	429	1,005	6,995,782	3,022,587	10,018,369	29	
Washington	254	670	7,791,766	490,072	8,281,838	31	246	637	8,520,216	456,117	8,976,333	30	
New Mexico	35	112	7,719,921	195,365	7,915,286	32	32	108	8,076,253	127,045	8,203,298	31	
Kansas	247	727	6,826,025	1,474,920	8,300,945	30	244	722	6,332,830	1,798,436	8,131,266	32	
Massachusetts	441	1,024	3,350,770	4,331,024	7,681,794	33	419	1,002	2,813,141	4,344,441	7,157,582	33	
Puerto Rico	134	353	3,790,222	3,791,682	7,581,904	34	135	361	3,437,253	3,572,850	7,010,103	34	
Oklahoma	249	668	4,727,735	1,544,809	6,272,544	36	241	671	5,154,010	1,793,944	6,947,954	35	
Connecticut	302	721	3,784,070	2,807,047	6,591,117	35	281	694	2,980,862	3,236,438	6,217,300	36	
Maryland	154	440	3,892,011	2,290,697	6,182,707	38	160	441	3,640,107	2,344,384	5,984,492	37	
Nebraska	134	336	3,421,363	2,773,725	6,195,088	37	138	350	3,097,034	1,733,258	4,830,292	38	
Maine	83	219	2,475,854	530,258	3,006,112	41	75	219	2,531,831	778,378	3,310,209	39	
Delaware	59	178	1,493,342	1,715,344	3,208,686	39	61	180	1,112,455	1,471,557	2,584,012	40	
Colorado	143	330	1,211,522	954,083	2,165,605	42	145	334	1,119,955	652,992	1,772,947	41	
Rhode Island	127	275	1,224,771	1,955,959	3,180,730	40	126	280	1,085,941	481,902	1,567,843	42	
Nevada	33	65	1,352,709	37,318	1,390,028	43	31	61	1,429,379	28,192	1,457,571	43	
Idaho	50	101	1,061,319	85,489	1,146,809	45	47	110	1,181,105	62,805	1,243,909	44	
New Hampshire	90	203	926,070	235,498	1,161,568	44	86	199	769,811	201,156	970,967	45	
South Dakota	63	115	772,909	71,059	843,968	46	66	119	742,440	86,114	828,554	46	
Alaska	8	27	490,420	29	490,449	48	8	28	760,595	2,748	763,344	47	
Virgin Islands	3	20	428,148	187,739	615,888	47	2	21	524,038	86,684	610,722	48	
North Dakota	31	57	394,369	58,352	452,721	49	27	64	499,198	27,739	526,937	49	
Wyoming	19	99	305,247	4,260	309,507	51	18	105	404,400	4,237	408,637	50	
Vermont	28	62	270,194	107,351	377,545	50	28	59	228,934	127,897	356,831	51	
Hawaii	12	44	184,532	12,873	197,405	52	11	41	144,408	77,259	221,667	52	
District of Columbia	1	1	0	2	2	53	1	1	0	2	2	53	
American Samoa	1	1	0	0	0	54	0	0	0	0	0	54	
<b>Total</b>	<b>19,201</b>	<b>55,631</b>	<b>702,916,591</b>	<b>266,968,248</b>	<b>969,884,839</b>		<b>18,743</b>	<b>54,530</b>	<b>676,812,089</b>	<b>272,364,217</b>	<b>949,176,307</b>		

► Does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to NPRI.



Chapter 5: 1994 and 1995 Canada and US Data Compared (Based on Matched Chemical/Industry Data Set)

State	Change 1994–1995					Percent Change 1994–1995					Rank	
	Number of Facilities	Number of Forms	Total Releases (kg)	Total Transfers (kg)	Total Releases and Transfers (kg)	Rank	Number of Facilities	Number of Forms	Total Releases (%)	Total Transfers (%)		Total Releases and Transfers (%)
Texas	4	20	823,018	5,294,361	6,117,380	54	0.4	0.5	1.1	22.5	6.2	38
Ohio	-58	-164	2,301,713	1,108,505	3,410,218	52	-3.9	-3.8	6.5	6.1	6.4	39
Louisiana	0	25	3,316,007	457,963	3,773,971	53	0.0	1.6	6.9	15.3	7.4	41
Pennsylvania	-18	-27	-1,545,754	2,041,776	496,021	42	-1.6	-0.9	-8.3	6.5	1.0	33
Alabama	-4	-15	2,101,981	1,056,039	3,158,020	49	-0.9	-1.0	5.7	15.3	7.2	40
Michigan	-37	-134	-6,161,958	1,469,632	-4,692,326	5	-4.5	-5.2	-21.5	6.8	-9.4	14
Tennessee	-15	-21	1,243,150	-3,393,080	-2,149,931	9	-2.6	-1.3	3.4	-31.8	-4.6	23
Illinois	-37	-92	-1,746,847	-3,306,304	-5,053,151	2	-3.1	-2.6	-5.7	-20.5	-10.7	13
Indiana	-23	-83	-190,809	3,468,892	3,278,083	51	-2.5	-3.1	-0.7	29.4	8.6	44
North Carolina	-34	-87	-3,553,486	-229,846	-3,783,332	7	-4.4	-4.2	-10.6	-3.3	-9.3	15
Utah	-12	-36	1,477,908	-593,013	884,895	46	-9.0	-8.9	5.1	-53.7	2.9	34
Florida	14	25	-8,717,800	1,366,029	-7,351,771	1	3.3	2.7	-28.3	47.7	-21.8	4
South Carolina	13	32	813,650	-721,516	92,134	36	3.0	2.3	4.5	-13.5	0.4	32
Missouri	-16	-23	-1,631,866	-3,230,374	-4,862,240	3	-3.1	-1.6	-8.8	-35.1	-17.5	8
Virginia	-9	-31	-1,282,011	43,215	-1,238,797	15	-2.7	-2.7	-7.0	0.9	-5.3	22
Montana	3	5	-1,693,185	10,307	-1,682,878	11	16.7	4.5	-8.1	71.9	-8.0	16
Wisconsin	-4	19	-1,639,702	-722,427	-2,362,129	8	-0.5	1.0	-14.4	-7.4	-11.1	12
California	-41	-79	-1,025,244	3,435,655	2,410,411	47	-3.6	-2.9	-12.7	41.5	14.8	48
Mississippi	-9	-20	-973,952	638,169	-335,783	23	-3.2	-2.4	-5.6	37.5	-1.8	29
Georgia	3	-29	-1,691,624	473,699	-1,217,925	16	0.5	-1.8	-10.0	18.9	-6.3	19
Arizona	5	-3	1,589,303	1,587,192	3,176,495	50	3.6	-1.0	11.8	164.0	22.1	50
Kentucky	1	-31	-725,803	1,540,235	814,432	45	0.3	-2.6	-5.9	42.6	5.1	37
New York	-33	-86	-1,655,497	-2,203,874	-3,859,371	6	-5.2	-5.2	-13.8	-27.5	-19.3	6
New Jersey	-40	-134	-542,945	-4,169,229	-4,712,175	4	-7.2	-7.7	-10.9	-26.3	-22.6	2
Oregon	0	4	915,220	1,788,036	2,703,257	48	0.0	0.8	13.2	39.5	23.6	51
Iowa	-8	-32	-659,481	404,181	-255,300	24	-2.3	-3.5	-7.4	9.5	-1.9	27
Arkansas	-21	-44	-1,965,177	-48,829	-2,014,007	10	-6.0	-4.4	-16.6	-3.6	-15.3	10
West Virginia	-8	-15	-835,136	354,105	-481,031	20	-6.0	-2.8	-11.4	9.8	-4.4	24
Minnesota	-1	-4	-1,139,085	-365,145	-1,504,230	13	-0.2	-0.4	-14.0	-10.8	-13.1	11
Washington	-8	-33	728,451	-33,956	694,495	44	-3.1	-4.9	9.3	-6.9	8.4	42
New Mexico	-3	-4	356,332	-68,319	288,013	40	-8.6	-3.6	4.6	-35.0	3.6	35
Kansas	-3	-5	-493,195	323,516	-169,679	27	-1.2	-0.7	-7.2	21.9	-2.0	26
Massachusetts	-22	-22	-537,628	13,417	-524,211	19	-5.0	-2.1	-16.0	0.3	-6.8	18
Puerto Rico	1	8	-352,969	-218,832	-571,800	18	0.7	2.3	-9.3	-5.8	-7.5	17
Oklahoma	-8	3	426,275	249,135	675,410	43	-3.2	0.4	9.0	16.1	10.8	46
Connecticut	-21	-27	-803,208	429,391	-373,817	22	-7.0	-3.7	-21.2	15.3	-5.7	20
Maryland	6	1	-251,903	53,688	-198,216	25	3.9	0.2	-6.5	2.3	-3.2	25
Nebraska	4	14	-324,329	-1,040,468	-1,364,796	14	3.0	4.2	-9.5	-37.5	-22.0	3
Maine	-8	0	55,977	248,120	304,098	41	-9.6	0.0	2.3	46.8	10.1	45
Delaware	2	2	-380,887	-243,786	-624,673	17	3.4	1.1	-25.5	-14.2	-19.5	5
Colorado	2	4	-91,567	-301,091	-392,658	21	1.4	1.2	-7.6	-31.6	-18.1	7
Rhode Island	-1	5	-138,830	-1,474,057	-1,612,888	12	-0.8	1.8	-11.3	-75.4	-50.7	1
Nevada	-2	-4	76,670	-9,127	67,543	34	-6.1	-6.2	5.7	-24.5	4.9	36
Idaho	-3	9	119,785	-22,685	97,101	37	-6.0	8.9	11.3	-26.5	8.5	43
New Hampshire	-4	-4	-156,259	-34,342	-190,601	26	-4.4	-2.0	-16.9	-14.6	-16.4	9
South Dakota	3	4	-30,469	15,055	-15,414	29	4.8	3.5	-3.9	21.2	-1.8	28
Alaska	0	1	270,176	2,719	272,894	39	0.0	3.7	55.1	9,223.1	55.6	53
Virgin Islands	-1	1	95,889	-101,055	-5,166	30	-33.3	5.0	22.4	-53.8	-0.8	30
North Dakota	-4	7	104,829	-30,613	74,216	35	-12.9	12.3	26.6	-52.5	16.4	49
Wyoming	-1	6	99,152	-23	99,130	38	-5.3	6.1	32.5	-0.5	32.0	52
Vermont	0	-3	-41,260	20,546	-20,714	28	0.0	-4.8	-15.3	19.1	-5.5	21
Hawaii	-1	-3	-40,124	64,385	24,262	33	-8.3	-6.8	-21.7	500.1	12.3	47
District of Columbia	0	0	0	0	0	32	0.0	0.0	—	0.0	0.0	31
American Samoa	-1	-1	0	0	0	31	-100.0	-100.0	—	—	—	—
	<b>-458</b>	<b>-1,101</b>	<b>-26,104,502</b>	<b>5,395,970</b>	<b>-20,708,532</b>		<b>-2.4</b>	<b>-2.0</b>	<b>-3.7</b>	<b>2.0</b>	<b>-2.1</b>	

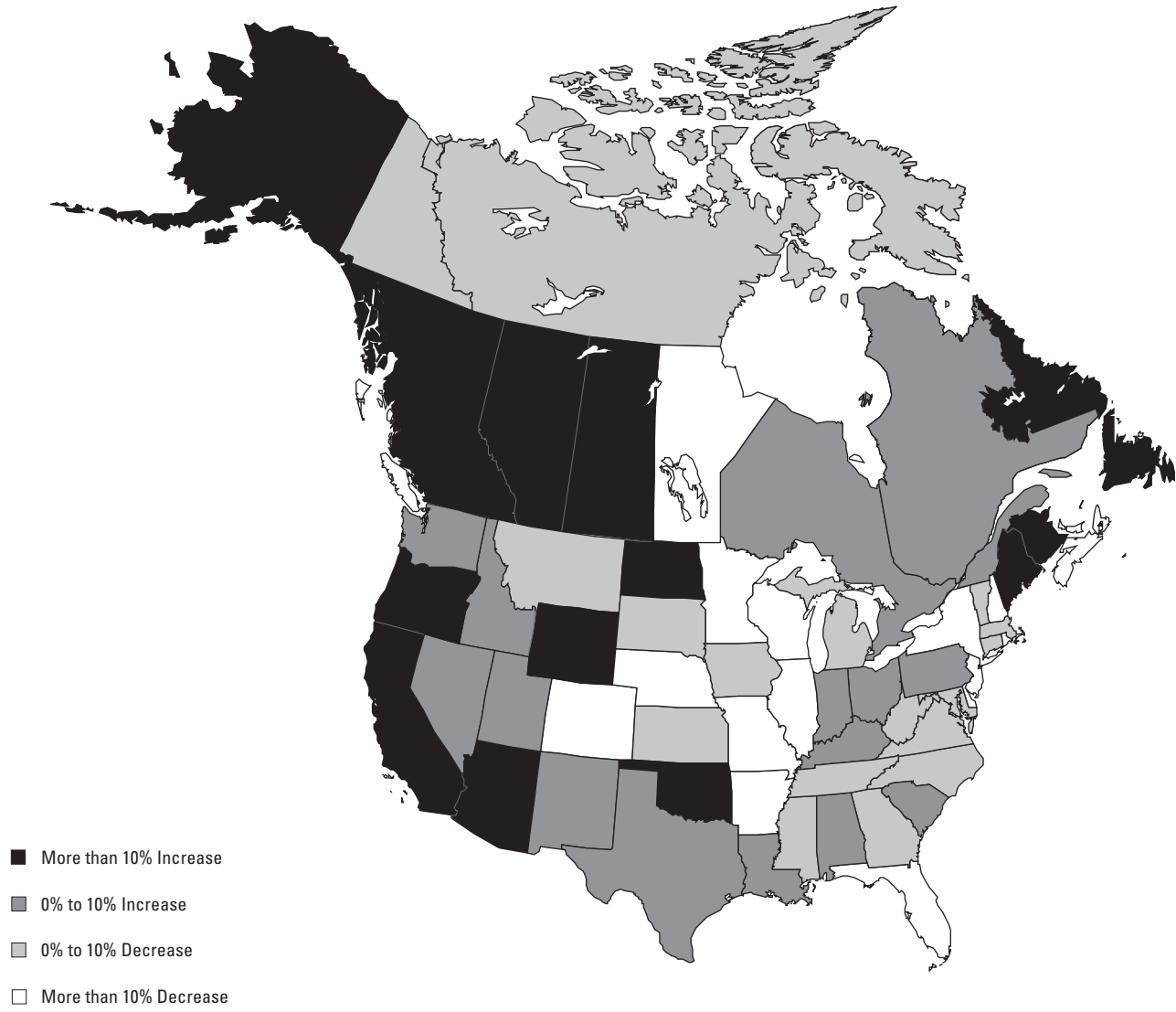


➤ Does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to both NPRI and TRI.

Map 5-2

**MY** 94-95

Change in Total Releases and Transfers, by State/Province



➤ Does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to both NPRI and TRI.

## 5.8 Changes by Chemical

NPRI releases decreased by 2 percent from 1994 to 1995. **Table 5-27** shows the 10 chemicals with the largest increase in releases, **Table 5-28**, the 10 chemicals with the largest decreases. Two chemicals (hydrogen fluoride and aluminum) increased by more than 1 million kg, while three (zinc and its compounds, toluene and styrene) had decreases of more than 1 million kg. None of these tabulations of the top 10 chemicals for releases and transfers (**Tables 5-27** through **5-30**) include ammonia, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and any chemicals not reported to TRI.

NPRI transfers increased by 25 percent from 1994 to 1995. One chemical, zinc and its compounds, increased by 6 million kg, with two others (asbestos, and chromium and its compounds) also exhibiting increases of more than 1 million kg (see **Table 5-29**). Only one chemical, methanol, decreased by more than 1 million kg (see **Table 5-30**).

Changes in 1995 reporting requirements for NPRI (described in **Chapter 2**) may affect some of these reported increases.

The increase in transfers brought about NPRI's 4 percent overall increase in total releases and transfers. Chemicals playing the largest role in this change were zinc and its compounds (a 4 million kg increase in total releases and transfers) and asbestos (nearly 3 million kg; see **Table 5-31**). Three other chemicals (hydrogen fluoride, chromium and its compounds, and aluminum) showed increases in total releases and transfers of more than 1 million kg. There were also three chemicals with decreases of more than 1 million kg (toluene, styrene and methanol), as shown in **Table 5-32**.

Releases from TRI facilities decreased by 4 percent from 1994 to 1995. **Tables 5-33** and **5-34** show the 10 chemicals with the largest increases and decreases from 1994 to 1995. The chemical with the largest increase was acetonitrile with 5 million kg. Two chemicals, toluene and phosphoric acid, had decreases of 11 million kg each. As earlier, none of these tabulations of the top 10 chemicals for releases and transfers (**Tables 5-31** through **5-36**) include ammonia, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and any chemicals not reported to NPRI.

TRI transfers increased by 2 percent from 1994 to 1995. The chemical with the largest increase—nearly 7 million kg—was zinc and its compounds (see **Table 5-35**). Three other chemicals (vinyl acetate, xylene, and chromium and its compounds) had increases greater than 2 million kg. Three (methanol, aluminum, and manganese and its compounds) had decreases of greater than 1 million kg (see **Table 5-36**).

Total releases and transfers from TRI facilities decreased by 2 percent from 1994 to 1995. While zinc and its compounds had the largest increase, of nearly 9 million kg, phosphoric acid and toluene both had decreases of more than 11 million kg (see **Tables 5-37** and **5-38**).

The chemicals with the largest changes from 1994 to 1995 under NPRI and TRI were not in general the same. One exception is zinc and its compounds, which had the largest increases in transfers and, hence, in total releases and transfers in both countries. Toluene registered high in decreases in both countries. In the NPRI database, toluene had the second largest decreases in both releases and transfers and, hence, was

the chemical with the largest overall decrease. For TRI, toluene had the second largest decrease in total releases and transfers because of its large decreases in releases.

Many of the large increases or decreases for a single chemical in both TRI and NPRI are due to reporting from one facility. **Tables 5-7** through **5-14**, above, indicate the relevant facilities.

Table 5-27		The 10 Chemicals with the Largest Increases in NPRI Releases	
MY	94-95		
CAS Number	Chemical	Change 1994-1995	
		kg	%
7664-39-3	Hydrogen fluoride	1,670,750	6,553.2
7429-90-5	Aluminum (fume or dust)	1,169,381	2,072.8
78-93-3	Methyl ethyl ketone	373,863	8.6
67-56-1	Methanol	311,672	1.0
—	Manganese (and its compounds)	271,344	9.1
67-66-3	Chloroform	238,411	138,611.0
108-95-2	Phenol	222,609	108.2
—	Copper (and its compounds)	198,202	12.7
7440-62-2	Vanadium (fume or dust)	196,841	1,709.9
107-21-1	Ethylene glycol	171,303	44.8

Table 5-28		The 10 Chemicals with the Largest Decreases in NPRI Releases	
MY	94-95		
CAS Number	Chemical	Change 1994-1995	
		kg	%
—	Zinc (and its compounds)	-1,401,952	-24.5
108-88-3	Toluene	-1,065,597	-14.4
100-42-5	Styrene	-1,049,256	-59.0
1330-20-7	Xylene (mixed isomers)	-890,615	-10.5
7782-50-5	Chlorine	-772,888	-38.1
10049-04-4	Chlorine dioxide	-673,219	-38.8
71-43-2	Benzene	-653,560	-26.7
—	Lead (and its compounds)	-436,926	-24.5
74-87-3	Chloromethane	-206,054	-17.5
108-10-1	Methyl isobutyl ketone	-194,082	-22.3

Table 5-29		The 10 Chemicals with the Largest Increases in NPRI Transfers	
MY	94-95		
CAS Number	Chemical	Change 1994-1995	
		kg	%
—	Zinc (and its compounds)	5,711,650	87.8
1332-21-4	Asbestos (friable)	2,606,268	403.6
—	Chromium (and its compounds)	1,514,129	142.1
—	Lead (and its compounds)	717,152	57.2
108-05-4	Vinyl acetate	128,429	27.6
107-21-1	Ethylene glycol	92,234	38.6
95-63-6	1,2,4-Trimethylbenzene	65,994	127.3
67-63-0	Isopropyl alcohol (manufacturing)	65,030	9.0
109-86-4	2-Methoxyethanol	31,779	1,498.3
107-13-1	Acrylonitrile	15,149	80.0

Table 5-30		The 10 Chemicals with the Largest Decreases in NPRI Transfers	
MY	94-95		
CAS Number	Chemical	Change 1994-1995	
		kg	%
67-56-1	Methanol	-1,423,035	-40.5
108-88-3	Toluene	-570,956	-30.1
—	Manganese (and its compounds)	-539,213	-14.2
78-93-3	Methyl ethyl ketone	-185,955	-30.6
80-62-6	Methyl methacrylate	-180,181	-68.4
108-95-2	Phenol	-158,574	-40.5
—	Nickel (and its compounds)	-140,172	-28.2
7429-90-5	Aluminum (fume or dust)	-132,433	-50.9
75-09-2	Dichloromethane	-113,766	-62.8
7664-38-2	Phosphoric acid	-111,508	-19.2

Table 5-31		The 10 Chemicals with the Largest Increases in NPRI Total Releases and Transfers	
MY	94-95		
CAS Number	Chemical	Change 1994-1995	
		kg	%
—	Zinc (and its compounds)	4,309,698	35.2
1332-21-4	Asbestos (friable)	2,610,978	302.1
7664-39-3	Hydrogen fluoride	1,668,700	4,989.4
—	Chromium (and its compounds)	1,377,142	73.9
7429-90-5	Aluminum (fume or dust)	1,036,948	327.7
—	Lead (and its compounds)	280,226	9.2
107-21-1	Ethylene glycol	263,537	42.4
108-05-4	Vinyl acetate	248,360	42.1
67-66-3	Chloroform	241,821	134,345.0
7440-62-2	Vanadium (fume or dust)	196,003	1,315.3

► Calculation of top chemicals does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to TRI.

Table 5-32		The 10 Chemicals with the Largest Decreases in NPRI Total Releases and Transfers	
MY	94-95		
CAS Number	Chemical	Change 1994-1995	
		kg	%
108-88-3	Toluene	-1,636,553	-17.6
100-42-5	Styrene	-1,129,127	-54.0
67-56-1	Methanol	-1,111,363	-3.3
1330-20-7	Xylene (mixed isomers)	-975,988	-9.9
7782-50-5	Chlorine	-784,888	-38.4
10049-04-4	Chlorine dioxide	-673,219	-38.8
71-43-2	Benzene	-649,541	-25.3
—	Manganese (and its compounds)	-267,869	-4.0
108-10-1	Methyl isobutyl ketone	-259,470	-25.9
74-87-3	Chloromethane	-206,054	-17.5

► Calculation of top chemicals does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to TRI.

Table 5-33		The 10 Chemicals with the Largest Increases in TRI Releases	
MY	94-95		
CAS Number	Chemical	Change 1994-1995	
		kg	%
75-05-8	Acetonitrile	4,830,964	58.5
7782-50-5	Chlorine	2,638,517	9.6
107-21-1	Ethylene glycol	2,211,710	30.9
—	Zinc (and its compounds)	1,953,608	4.7
—	Copper (and its compounds)	1,609,165	8.5
—	Manganese (and its compounds)	1,489,543	6.5
7664-39-3	Hydrogen fluoride	1,042,900	27.9
79-10-7	Acrylic acid	652,077	20.7
75-07-0	Acetaldehyde	627,010	10.6
100-42-5	Styrene	612,329	3.3

► Calculation of top chemicals does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to NPRI.

Table 5-34		The 10 Chemicals with the Largest Decreases in TRI Releases	
MY	94-95		
CAS Number	Chemical	Change 1994-1995	
		kg	%
108-88-3	Toluene	-10,787,001	-14.0
7664-38-2	Phosphoric acid	-10,619,193	-28.9
1330-20-7	Xylene (mixed isomers)	-6,602,074	-13.3
78-93-3	Methyl ethyl ketone	-4,611,915	-12.8
75-09-2	Dichloromethane	-2,906,000	-10.3
79-01-6	Trichloroethylene	-2,249,638	-16.4
108-10-1	Methyl isobutyl ketone	-1,782,162	-15.4
71-36-3	n-Butyl alcohol	-1,122,159	-8.2
100-41-4	Ethylbenzene	-942,143	-16.4
127-18-4	Tetrachloroethylene	-438,137	-9.5

► Calculation of top chemicals does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to NPRI.

Table 5-35		The 10 Chemicals with the Largest Increases in TRI Transfers	
MY	94-95		
CAS Number	Chemical	Change 1994-1995	
		kg	%
—	Zinc (and its compounds)	6,638,139	14.1
108-05-4	Vinyl acetate	3,485,195	514.1
1330-20-7	Xylene (mixed isomers)	2,787,342	60.2
—	Chromium (and its compounds)	2,146,955	21.7
107-21-1	Ethylene glycol	980,425	6.3
74-85-1	Ethylene	948,689	7913.5
1344-28-1	Aluminum oxide (fibrous forms)	652,201	95.5
117-81-7	Di(2-ethylhexyl) phthalate	468,191	46.4
108-95-2	Phenol	403,956	11.9
75-07-0	Acetaldehyde	381,336	94.2

► Calculation of top chemicals does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to NPRI.

Table 5-36		The 10 Chemicals with the Largest Decreases in TRI Transfers	
MY	94-95		
CAS Number	Chemical	Change 1994-1995	
		kg	%
67-56-1	Methanol	-2,885,371	-4.9
7429-90-5	Aluminum (fume or dust)	-2,835,584	-49.2
—	Manganese (and its compounds)	-1,440,688	-7.4
—	Copper (and its compounds)	-899,418	-7.5
79-01-6	Trichloroethylene	-792,780	-61.5
79-00-5	1,1,2-Trichloroethane	-657,282	-30.8
7664-38-2	Phosphoric acid	-641,957	-16.8
110-82-7	Cyclohexane	-584,448	-52.4
—	Antimony (and its compounds)	-443,759	-19.1
—	Cobalt (and its compounds)	-442,259	-62.6

► Calculation of top chemicals does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to NPRI.



Table 5-37		The 10 Chemicals with the Largest Increases in TRI Total Releases and Transfers	
MY	94-95		
CAS Number	Chemical	Change 1994-1995	
		kg	%
—	Zinc (and its compounds)	8,591,747	9.7
75-05-8	Acetonitrile	4,935,361	47.1
108-05-4	Vinyl acetate	3,414,549	120.8
107-21-1	Ethylene glycol	3,192,135	14.1
7782-50-5	Chlorine	2,451,148	8.8
—	Chromium (and its compounds)	2,086,190	10.2
7664-39-3	Hydrogen fluoride	1,132,807	21.0
75-07-0	Acetaldehyde	1,008,346	16.0
1344-28-1	Aluminum oxide (fibrous forms)	960,765	131.5
108-95-2	Phenol	917,528	10.6

► Calculation of top chemicals does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to NPRI.

Table 5-38		The 10 Chemicals with the Largest Decreases in TRI Total Releases and Transfers	
MY	94-95		
CAS Number	Chemical	Change 1994-1995	
		kg	%
7664-38-2	Phosphoric acid	-11,261,150	-27.8
108-88-3	Toluene	-11,124,541	-12.7
78-93-3	Methyl ethyl ketone	-4,804,561	-12.3
1330-20-7	Xylene (mixed isomers)	-3,814,732	-7.0
75-09-2	Dichloromethane	-3,274,999	-9.7
79-01-6	Trichloroethylene	-3,042,418	-20.3
67-56-1	Methanol	-2,678,868	-1.6
7429-90-5	Aluminum (fume or dust)	-2,480,211	-34.6
108-10-1	Methyl isobutyl ketone	-1,844,278	-14.7
71-36-3	n-Butyl alcohol	-1,366,351	-8.8

► Calculation of top chemicals does not include ammonia, ammonium nitrate, ammonium sulfate, hydrochloric acid, nitric acid, nitrate compounds, sulfuric acid, and chemicals not reported to NPRI.