
Chapter 2

Toxics Release Inventory Data by Industry, 2001 and 1998-2001



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This chapter provides an overview of TRI data by industry sector. It summarizes release and other waste management data by industry for 2001, for 2000 to 2001 and for 1998 to 2001. For the definition of types of releases and other waste management activities, and for important information on factors to consider when using TRI data, see Chapter 1. In particular, the discussion in **Making Year-to-Year Comparisons of TRI Data** in Chapter 1 is important for accurate interpretation of these data because of the changes in TRI reporting requirements over time.

Box 2-1 contains an explanation of SIC codes and their use in TRI. Box 2-2 lists the TRI industries by Standard Industrial Classification (SIC) code. Tables in this chapter also present data submitted on TRI chemical forms that report more than one SIC code in the manufacturing sector. Box 2-3 explains

Box 2-1: SIC Codes and Their Use in TRI

Standard Industrial Classification (SIC) codes are used throughout the federal government to classify economic activity by industry. Facilities in the manufacturing sectors—that is, SIC codes 20 through 39—have been required to report releases since the TRI program began. Federal facilities have been required to report to TRI since 1994, regardless of their SIC code. In 1998, seven additional industries began reporting. They are metal mining, coal mining, electric utilities that combust coal and/or oil, chemical wholesale distributors, petroleum bulk terminals/bulk storage facilities, hazardous waste treatment and disposal facilities and solvent recovery facilities. See **Who Must Report?** in Chapter 1 for the SIC codes covered in these industry sectors.

On TRI Form Rs and on TRI Form A certification statements, facilities report the four-digit SIC codes that define their operations. A facility might report, for example, SIC code 2873, nitrogenous fertilizers. Industries are grouped into broader categories at the three-digit and two-digit SIC code levels. At the three-digit level the category nitrogenous fertilizers is in the agricultural chemicals group, SIC code 287, and at the two-digit level it falls into the chemicals and allied products major group, SIC code 28. Producers of nitrogenous fertilizers have been required to report to TRI since 1987. Another example is a facility that mines silver ore (SIC code 1044, in the gold and silver ores group SIC code 104, in the metal mining major group SIC code 10) which was required to report to TRI beginning in 1998. A solvent recovery facility in SIC code 7389 was also required to report beginning in 1998, although other types of economic activity in that SIC code (miscellaneous business services) do not report to TRI.

Tables in this report present data only for the SIC codes—and the economic activities within those codes—that are specifically required to report to TRI.

EPA's method for analyzing this "multiple-codes" group, as well as the "no-codes" group.

TRI DATA FOR 2001

In 2001, a total of 24,896 facilities submitted 95,513 forms, as shown in Table 2-1. The chemical manufacturing industry submitted the largest number of forms, 20,355. The fabricated metals industry ranked second, with 8,089 forms, followed by the primary metals industry, with 7,445 forms and electric utilities, with 6,634 forms. Together, these four industries submitted nearly half (44.5 percent) of the forms for 2001.

On- and Off-site Releases, 2001

On- and off-site releases totaled almost 6.16 billion pounds in 2001, and two industries, metal mining and electric utilities, reported more than half of that total. As shown in Table 2-2, metal mining facilities



Box 2-2: Standard Industrial Classification (SIC) Codes for TRI Industries

10 Metal Mining

Mining of metals ores, including copper, lead, zinc, gold, silver and nickel ores, but not including uranium, radium and vanadium ores or services related to metal mining.

12 Coal Mining

Mining of coal, including bituminous coal and lignite surface mining, bituminous coal underground mining, and anthracite mining, but not including services related to coal mining.

20 Food and kindred products

Manufacture or processing of foods and beverages for human consumption, and related products, such as manufactured ice, chewing gum, vegetable and animal fats and oils, and prepared feeds for animals and fowls.

21 Tobacco products

Manufacture of cigarettes, cigars, smoking and chewing tobacco, snuff, and reconstituted tobacco. Stemming and redrying of tobacco. Manufacture of non-tobacco cigarettes.

22 Textile mill products

Preparation of fiber and subsequent manufacture of yarn, thread, braids, twine, and cordage. Manufacture of broadwoven fabrics, narrow woven fabrics, knit fabrics, and carpets and rugs from yarn. Dyeing and finishing of fiber, yarn, fabrics, and knit apparel. Coating, waterproofing, or otherwise treating fabrics. Integrated manufacture of knit apparel and other finished articles from yarn. Manufacture of felt goods, lace goods, nonwoven fabrics, and miscellaneous textiles.

23 Apparel and other finished products made from fabrics and similar materials

Production of clothing. Fabrication of products by cutting and sewing purchased woven or knit textile fabrics and related materials, such as leather, rubberized fabrics, plastics, and furs. Manufacture of clothing by cutting and joining (e.g., by adhesives) material such as paper and nonwoven textiles.

24 Lumber and wood products, except furniture

Cutting timber and pulpwood. Also, merchant sawmills, lath mills, shingle mills, cooperage stock mills, planing mills, and plywood mills and veneer mills engaged in producing lumber and wood basic materials. Manufacture of finished articles made entirely or mainly of wood or related materials.

25 Furniture and fixtures

Manufacture of household, office, public building, and restaurant furniture, and office and store fixtures.

26 Paper and allied products

Manufacture of pulps from wood and other cellulose fibers and from rags. Manufacture of paper and paperboard. Manufacture of paper and paperboard into converted products, such as paper coated off the paper machine, paper bags, paper boxes, and envelopes. Manufacture of bags from plastic film and sheet.

27 Printing, publishing, and allied industries

Printing by one or more common processes, such as letterpress, lithography (including offset), gravure, or screen. Bookbinding, platemaking, and other services performed for the printing trade. Publishing newspapers, books, and periodicals (whether or not the establishment also prints them).

28 Chemicals and allied products

Production of basic chemicals. Manufacture of products by predominantly chemical processes. There are three general classes of products: 1) basic chemicals, such as acids, alkalis, salts, and organic chemicals; 2) chemical products to be used in further manufacture, such as synthetic fibers, plastics materials, dry colors, and pigments; 3) finished chemical products to be used for ultimate consumption, such as drugs, cosmetics, and soaps, or to be used as materials or supplies in other industries, such as paints, fertilizers, and explosives.

29 Petroleum refining and related industries

Production of gasoline, kerosene, distillate fuel oils, residual fuel oils, and lubricants, through fractionation or straight distillation of crude oil, redistillation of unfinished petroleum derivatives, cracking, or other processes. (Establishments also produce aliphatic and aromatic chemicals as byproducts.)

30 Rubber and miscellaneous plastics products

Manufacture of products, not elsewhere classified, from plastics resins and from natural, synthetic, or reclaimed rubber, gutta percha, balata, or gutta siak. Includes manufacture of tires.

31 Leather and leather products

Tanning, currying, and finishing hides and skins. Converting leather. Manufacture of finished leather and artificial leather products and some similar products made of other materials.


Box 2-2: Standard Industrial Classification (SIC) Codes for TRI Industries, *continued*
32 Stone, clay, glass, and concrete products

Manufacture of flat glass and other glass products, cement, structural clay products, pottery, concrete and gypsum products, cut stone, abrasive and asbestos products, and other products from materials taken principally from the earth in the form of stone, clay, and sand. (May include mining and quarrying activities operated by manufacturing establishments in this group.)

33 Primary metal industries

Smelting and refining ferrous and nonferrous metals from ore, pig, or scrap. Rolling, drawing, and alloying metals. Manufacture of castings and other basic metal products. Manufacture of nails, spikes, and insulated wire and cable. Includes production of coke.

34 Fabricated metal products, except machinery and transportation equipment

Fabrication of ferrous and nonferrous metal products, such as metal cans, tinware, handtools, cutlery, general hardware, non-electric heating apparatus, fabricated structural metal products, metal forgings, metal stampings, ordnance (except vehicles and guided missiles), and a variety of metal and wire products, not elsewhere classified.

35 Industrial and commercial machinery and computer equipment

Manufacture of industrial and commercial machinery and equipment and computers. Manufacture of engines and turbines; farm and garden machinery; construction, mining, and oil field machinery; elevators and conveying equipment; hoists, cranes, monorails, and industrial trucks and tractors; metalworking machinery; special industry machinery; general industrial machinery; computer and peripheral equipment and office machinery; and refrigeration and service industry machinery.

36 Electronic and other electrical equipment and components, except computer equipment

Manufacture of machinery, apparatus, and supplies for the generation, storage, transmission, transformation, and utilization of electrical energy. Manufacture of electricity distribution equipment, electrical industrial apparatus, household appliances, electrical lighting and wiring equipment, radio and television receiving equipment, communications equipment, electronic components and accessories, and other electrical equipment and supplies.

37 Transportation equipment

Manufacture of equipment for transportation of passengers and cargo by land, air, and water. Includes motor vehicles, aircraft, guided missiles and space vehicles, ships, boats, railroad equipment, and miscellaneous transportation equipment, such as motorcycles, bicycles, and snowmobiles.

38 Measuring, analyzing, and controlling instruments, photographic, medical, and optical goods; watches and clocks

Manufacture of instruments (including professional and scientific) for measuring, testing, analyzing, and controlling, and their associated sensors and accessories; optical instruments and lenses; surveying and drafting instruments; hydrological, hydrographic, meteorological, and geophysical equipment; search, detection, navigation, and guidance systems and equipment; surgical, medical, and dental instruments, equipment, and supplies; ophthalmic goods; photographic equipment and supplies; and watches and clocks.

39 Miscellaneous manufacturing industries

Manufacture of products not classified in any other major manufacturing group. Includes jewelry, silverware, and plated ware; musical instruments; dolls, toys, games, and sporting and athletic goods; pens, pencils, and artists' materials; buttons, costume novelties, and miscellaneous notions; brooms and brushes; caskets; and other miscellaneous products.

4911/4931/4939 Electric, Gas, and Sanitary Services

Electric services, limited to facilities that combust coal and/or oil for the purpose of generating electricity for distribution in commerce.

5169 Chemical Wholesale Distributors

Wholesale trade of nondurable goods of chemical and allied products.

5171 Petroleum Terminals/Bulk Storage

Wholesale trade of nondurable goods undertaken at petroleum terminals and bulk storage facilities.

4953 Refuse Systems (Hazardous Waste Treatment and Disposal Facilities)

Facilities managing hazardous waste, limited to facilities regulated under RCRA subtitle C, 42 U.S.C. section 6921 *et seq.*

7389 Business Services (Solvent Recovery Facilities)

Facilities engaged in solvent recovery, limited to facilities primarily engaged in solvents recovery services on a contract or fee basis.

Source: Executive Office of the President, Office of Management and Budget, *Standard Industrial Classification Manual*, 1987.



Box 2-3: Multiple SIC Codes and No SIC Codes

Multiple Codes 20–39. TRI facilities may report up to six four-digit Standard Industrial Classification (SIC) codes that describe their operations. If all the processes or operations that are associated with a facility's releases or other waste management of a TRI chemical can be described by one SIC code, then only one SIC code is reported on the form. If several economic activities, designated by different SIC codes, describe the specific operations at a facility that are associated with releases or other waste management of a TRI chemical, then the facility will report those SIC codes (up to six) on the form it submits for that chemical.

Industrial facilities often conduct interrelated operations. They may, for example, manufacture distinct products using common or related feedstocks. Such products may be classified in similar but separate categories in the SIC system. Thus, many forms submitted to TRI contain more than one industrial classification. When TRI data are analyzed by industry—that is, by SIC code—forms that report more than one SIC code must be categorized separately because they do not fall into the individual industry groups.

The "multiple-codes" category represents forms that report in more than one two-digit SIC code within the manufacturing sector (SIC codes 20–39). For example, a facility may refine petroleum (SIC code 29) and then use that feedstock in the manufacture of chemicals (SIC code 28); it will report on its TRI forms SIC codes in both these industries—for example, SIC codes 2911, petroleum refining, and 2869, industrial organic chemicals. On forms with more than one SIC code, any SIC code that is not within manufacturing (that is, not within the SIC code range 20 to 39) is ignored when assigning a form to an industry category. For example, a form with SIC codes 2642 (manufacture of envelopes) and 5112 (wholesale trade—stationery and office supplies) would be included in SIC code 26.

Forms that have a SIC code within the manufacturing sector as well as a SIC code within the additional industry sectors required to report to TRI beginning with the 1998 reporting year are included in the manufacturing sector SIC code if the facility reported to TRI before 1998. If the facility reported for the first time for 1998 with both manufacturing and other industry codes, it is included in the analyses in this chapter under the other industry code.

No Codes 20–39. Forms that report no SIC code required to report to TRI are included in these tables under the "No codes 20–39" category. Such forms may include, for example, submissions by federal facilities, all of which are required to report regardless of the SIC code covering their operations. This group also includes forms with no valid SIC code.

reported 2.78 billion pounds of total releases, and electric utilities reported 1.06 billion pounds. These amounts represented 45.2 percent and 17.2 percent, respectively, of all on- and off-site releases in 2001, as illustrated in Figure 2-1.

The chemical manufacturing industry ranked third for total on- and off-site releases, with 582.6 million pounds, or 9.5 percent of the total. The primary metals industry reported 558.6 million pounds, or 9.1 percent of the total for 2001.

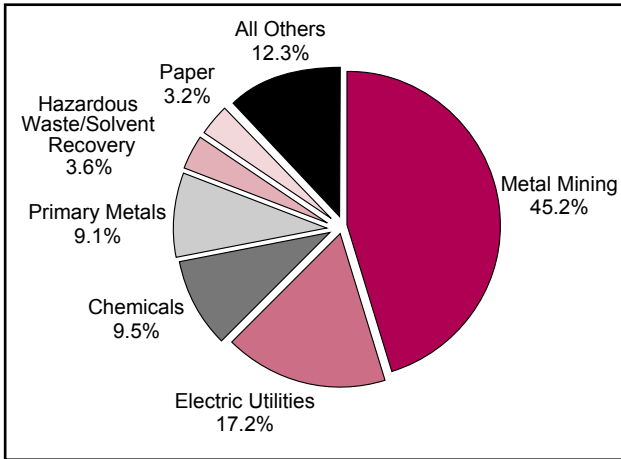
Two other industry groups reported approximately 200 million pounds each. The hazardous waste/solvent recovery facilities reported 219.9 million pounds (3.6 percent of the total releases in 2001). The paper industry had 195.7 million pounds of releases, or 3.2 percent of the total.

Other on-site land releases (that is, on-site land releases other than RCRA subtitle C landfills) accounted for over half (54.0 percent) of total releases on- and off-site in 2001. The metal mining industry ranked first for other on-site land releases, with 2.76 billion pounds or 82.9 percent of all such type of releases. (Types of on-site land releases are described in Box 1-4 in Chapter 1.)

Air emissions accounted for over one-quarter of all releases (27.3 percent). Electric utilities reported the largest air emissions in 2001, with 717.6 million pounds, or 42.7 percent of all air emissions in 2001. The chemicals industry reported the second largest air emissions, with 227.8 million pounds or 13.6 percent of the total air emissions.



Figure 2-1: TRI Total Releases by Industry, 2001



Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site releases do not include transfers to disposal sent to other TRI facilities that reported the amount as an on-site release.

Off-site releases (transfers to disposal) accounted for 577.7 million pounds or 9.4 percent of all releases on- and off-site in 2001. The primary metals industry reported the largest off-site releases (transfers to disposal), with 271.8 million pounds or 47.0 percent of all off-site releases.

Table 2-3 shows the amount of total releases on- and off-site for each industry in each state in 2001. Releases by metal mining facilities, the industry with the largest total releases, were concentrated in Nevada, Utah, Arizona and Alaska. These four states accounted for 91.3 percent of all releases reported by metal mining facilities in 2001.

Electric utilities was the industry with the second largest total releases. Electric utilities in North Carolina, Ohio and Pennsylvania reported the largest releases, with facilities in each of these three states reporting more than 75 million pounds in 2001. Almost one-quarter (23.8 percent) of all

Table 2-1: TRI Facilities and Forms, by Industry, 2001

SIC Code	Industry	Total Facilities Number	Total Forms Number	Form Rs Number	Form As Number
10	Metal Mining	89	658	639	19
12	Coal Mining	88	348	285	63
20	Food	1,688	3,611	2,296	1,315
21	Tobacco	31	67	67	0
22	Textiles	289	671	626	45
23	Apparel	16	41	39	2
24	Lumber	1,006	2,499	1,748	751
25	Furniture	282	632	605	27
26	Paper	507	3,128	3,062	66
27	Printing	231	478	445	33
28	Chemicals	3,618	20,355	17,041	3,314
29	Petroleum	542	4,299	3,952	347
30	Plastics	1,822	3,909	3,387	522
31	Leather	60	149	140	9
32	Stone/Clay/Glass	1,027	2,800	2,516	284
33	Primary Metals	1,941	7,445	6,739	706
34	Fabricated Metals	2,959	8,089	7,238	851
35	Machinery	1,143	2,881	2,522	359
36	Electrical Equip.	1,831	3,883	3,735	148
37	Transportation Equip.	1,348	4,872	4,526	346
38	Measure./Photo.	375	749	680	69
39	Miscellaneous	312	683	600	83
--	Multiple codes 20-39	1,317	4,869	4,412	457
--	No codes 20-39	348	887	802	85
491/493	Electric Utilities	732	6,634	6,458	176
5169	Chemical Wholesale Distributors	475	3,335	1,802	1,533
5171	Petroleum Bulk Terminals/Bulk Storage	596	4,779	4,135	644
7389/4953	Hazardous Waste/Solvent Recovery	223	2,762	2,721	41
	Total	24,896	95,513	83,218	12,295

Note: Facilities/forms are included in the manufacturing industry categories (SIC Codes 20-39) if they did not report a SIC code in the other industries. Forms that reported more than one 2-digit SIC code within the range 20 to 39 are assigned to the "multiple codes" category. Facilities/forms are included in the other industry categories if the facility/form has a SIC code in the other industries and no SIC code in 20-39. If the facility reported in any year prior to 1998 and the facility/form has a combination of manufacturing and other industry SIC codes, then the facility/form is included in the manufacturing industry category. If the facility reported for the first time in 1998 or later and the facility/form has a combination of manufacturing and other industry SIC codes, then the facility/form is included in the other industry category. Forms with no 2-digit SIC code are included in the "no codes 20-39" category. One facility, Phelps Dodge Miami of Claypool, AZ, that reported under SIC code 33 and SIC code 10 in 2001 and previous years has been included in SIC code 10 for the purpose of this analysis.



Table 2-2: TRI On-site and Off-site Releases by Industry, 2001

SIC Code	Industry	On-site Releases							Off-site Releases Transfers Off-site to Disposal Pounds	Total On- and Off-site Releases Pounds
		Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection		On-site Land Releases		Total On-site Releases Pounds		
				Class I Wells Pounds	Class II-V Wells Pounds	RCRA Subtitle C Landfills Pounds	Other On-site Land Releases Pounds			
10	Metal Mining	2,854,512	427,312	0	21,629,444	0	2,757,118,053	2,782,029,322	524,935	2,782,554,257
12	Coal Mining	768,762	760,047	14,387	149,109	0	14,414,576	16,106,880	10,830	16,117,710
20	Food	56,136,054	55,154,841	56,231	677	254	7,553,308	118,901,365	6,161,820	125,063,185
21	Tobacco	2,491,746	532,888	0	0	0	215,914	3,240,548	322,970	3,563,517
22	Textiles	5,740,423	175,447	0	0	0	295,953	6,211,823	749,261	6,961,084
23	Apparel	343,274	5	0	0	0	85	343,364	57,862	401,226
24	Lumber	30,478,706	19,931	0	0	4,092	394,721	30,897,450	518,539	31,415,989
25	Furniture	7,823,922	557	0	0	0	32	7,824,511	184,300	8,008,810
26	Paper	157,150,488	16,536,395	0	0	31,330	16,168,805	189,887,018	5,767,146	195,654,165
27	Printing	19,290,560	305	0	0	0	4,531	19,295,396	424,007	19,719,402
28	Chemicals	227,840,792	57,577,475	167,868,820	95,407	1,174,731	46,748,593	501,305,818	81,278,999	582,584,818
29	Petroleum	48,169,295	17,091,882	1,973,515	56,363	41	780,800	68,071,896	3,312,421	71,384,317
30	Plastics	77,101,109	71,092	0	0	72,149	841,059	78,085,410	10,450,023	88,535,433
31	Leather	1,207,544	124,727	0	0	0	8,596	1,340,867	1,273,813	2,614,681
32	Stone/Clay/Glass	31,265,083	162,077	0	54,431	37,180	3,863,435	35,382,207	5,078,467	40,460,674
33	Primary Metals	57,612,307	44,670,397	842,853	5	5,736,662	177,961,804	286,824,028	271,764,651	558,588,679
34	Fabricated Metals	40,447,264	1,743,317	1	2,172	110,340	511,183	42,814,277	21,204,117	64,018,394
35	Machinery	8,279,835	18,063	0	0	56,873	2,394,310	10,749,081	4,610,570	15,359,651
36	Electrical Equip.	12,721,139	2,936,994	0	0	19,017	681,803	16,358,954	7,575,105	23,934,059
37	Transportation Equip.	66,691,884	198,256	750	0	45,805	727,692	67,664,387	12,965,556	80,629,943
38	Measure./Photo.	7,166,923	1,424,454	0	0	301	13,009	8,604,688	770,558	9,375,245
39	Miscellaneous	6,764,766	36,566	0	0	14,102	1,865	6,817,299	1,616,458	8,433,757
--	Multiple codes 20-39	66,687,839	16,511,697	1,723	10	263,125	5,360,924	88,825,318	15,100,990	103,926,308
--	No codes 20-39	3,369,277	1,065,165	0	0	3,884	8,204,785	12,643,111	1,120,451	13,763,561
491/493	Electric Utilities	717,575,860	3,519,693	0	4	1,383,707	266,699,366	989,178,631	73,068,649	1,062,247,281
5169	Chemical Wholesale Distributors	1,254,310	1,856	5	0	5	1,074	1,257,500	211,020	1,468,270
5171	Petroleum Bulk Terminals/Bulk Stor.	21,164,969	11,177	0	100	26	11,215	21,187,488	153,163	21,340,651
7389/4953	Hazardous Waste/Solvent Recov.	974,414	23,498	22,678,278	0	129,266,508	15,482,910	168,425,606	51,446,405	219,872,011
	Total	1,679,373,058	220,796,115	193,436,563	21,987,723	138,220,131	3,326,460,403	5,580,273,993	577,723,085	6,157,997,078

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site releases do not include transfers to disposal sent to other TRI facilities that reported the amount as an on-site release.

Facilities/forms are included in the manufacturing industry categories (SIC Codes 20-39) if they did not report a SIC code in the other industries. Forms that reported more than one 2-digit SIC code within the range 20 to 39 are assigned to the "multiple codes" category. Facilities/forms are included in the other industry categories if the facility/form has a SIC code in the other industries and no SIC code in 20-39. If the facility reported in any year prior to 1998 and the facility/form has a combination of manufacturing and other industry SIC codes, then the facility/form is included in the manufacturing industry category. If the facility reported for the first time in 1998 or later and the facility/form has a combination of manufacturing and other industry SIC codes, then the facility/form is included in the other industry category. Forms with no 2-digit SIC code are included in the "no codes 20-39" category. One facility, Phelps Dodge Miami of Claypool, AZ, that reported under SIC code 33 and SIC code 10 in 2001 and previous years has been included in SIC code 10 for the purpose of this analysis.

releases reported by electric utilities in 2001 were in these three states. Facilities in four other states, Indiana, West Virginia, Florida and Georgia, reported about 60 million pounds each.

Chemical manufacturing facilities in Texas reported one-quarter (146.4 million pounds) of total releases by this industry sector in 2001. Louisiana facilities reported the next largest amount, 75.2 million pounds or 12.9 percent of total releases by the chemical manufacturing sector. Primary metals facilities in Indiana and Pennsylvania reported the largest releases by this sector, with over 85 million pounds in each state. These two states accounted for

almost one-third (32.3 percent) of all releases reported by the primary metals industry in 2001.

Starting in 1998, hazardous waste treatment and disposal facilities in SIC code 4953 were required to report to TRI. These facilities manage toxic chemicals in waste sent to them by other facilities. TRI chemicals in waste may be sent by one TRI facility (which reports the amounts as transfers off-site to disposal) to another TRI facility (which reports the amounts as on-site releases). Box 2-4 shows how much of the off-site transfers to disposal were also reported as on-site releases in 2001.



Table 2-3: TRI Total Releases by State by Industry, 2001

State	Total On- and Off-site Releases							
	Metal Mining	Coal Mining	Food	Tobacco	Textiles	Apparel	Lumber	Furniture
Alabama	0	233,705	3,103,521	0	72,286	0	876,364	488,517
Alaska	519,155,035	0	14,509	0	0	0	0	0
American Samoa	0	0	6,920	0	0	0	0	0
Arizona	543,252,773	0	28,022	0	0	0	60,085	13,199
Arkansas	0	0	2,664,168	0	153,593	0	769,862	273,257
California	1,447,448	0	4,390,038	0	70,348	0	720,196	155,158
Colorado	17,783,257	2,405,097	3,356,116	0	0	0	66,802	22,853
Connecticut	0	0	25,054	0	103,376	0	2,003	43,065
Delaware	1,396	0	347,828	0	0	0	0	12,714
District of Columbia	0	0	0	0	0	0	0	0
Florida	0	0	5,267,159	8,604	1,179	0	154,467	112,309
Georgia	0	0	1,997,711	151,495	338,341	0	1,914,980	238,843
Guam	0	0	0	0	0	0	0	0
Hawaii	0	0	30,369	0	0	0	0	0
Idaho	21,212,485	0	6,509,413	0	0	0	27,239	93,821
Illinois	262,294	3,244,133	11,560,047	22,132	44,557	0	117,310	215,319
Indiana	0	825,371	3,923,608	0	0	0	1,599,969	570,030
Iowa	0	0	7,852,717	0	0	0	564,692	301,049
Kansas	0	0	2,335,471	0	0	0	291,447	25,701
Kentucky	0	160,207	981,894	14,680	2,481	5	268,747	150,599
Louisiana	0	0	1,850,327	0	0	0	809,230	2,516
Maine	0	0	2,740,030	0	0	0	268,782	0
Maryland	0	184,432	269,233	0	85,952	0	19,251	0
Massachusetts	0	0	877	0	392,057	75	1,516	41,155
Michigan	0	0	1,110,187	0	17,732	42,400	1,340,354	523,007
Minnesota	0	0	3,057,135	0	5,945	0	1,286,114	55,613
Mississippi	0	0	7,146,452	0	283,903	0	2,861,482	188,166
Missouri	41,937,630	0	2,631,800	0	121	0	41,902	26,183
Montana	27,378,393	5	340,992	0	0	0	893,759	0
Nebraska	0	0	10,665,964	0	0	0	65,936	85,375
Nevada	773,433,984	0	255	0	0	0	2	0
New Hampshire	0	0	0	0	40,278	18,456	0	0
New Jersey	0	0	99,061	0	69,870	38,562	17,971	0
New Mexico	95,554,881	4,743,135	135,361	0	0	0	0	0
New York	29,557	0	3,467,972	0	12,959	0	217,243	96,532
North Carolina	0	0	9,288,592	1,049,969	1,863,413	29,564	2,768,852	1,933,191
North Dakota	0	1,166,089	869,270	0	0	0	0	0
Northern Marianas	0	0	0	0	0	0	0	0
Ohio	0	19,332	4,917,117	0	1,011,945	128,084	406,026	204,547
Oklahoma	0	0	2,232,939	0	6,465	0	188,465	0
Oregon	0	0	868,840	0	500	0	2,653,733	80,407
Pennsylvania	0	525,838	2,906,765	15,212	91,571	8,744	1,746,538	141,064
Puerto Rico	0	0	26,552	981	0	0	0	0
Rhode Island	0	0	0	0	187,910	0	2,723	10,337
South Carolina	0	0	2,127,568	0	772,267	0	1,359,171	164,159
South Dakota	6,327,907	0	2,870,380	0	0	0	73,904	0
Tennessee	30,949,179	0	1,907,199	4,790	532,654	0	412,321	411,993
Texas	50,005	0	3,074,047	0	8,508	62,362	2,247,249	10,255
Utah	703,578,972	24	385,667	0	0	0	11,919	42,967
Vermont	0	0	86,012	0	0	0	7,687	19
Virgin Islands	0	0	0	0	0	0	0	0
Virginia	0	0	2,339,004	2,288,880	316,585	0	1,160,204	939,398
Washington	199,060	0	176,390	0	48,750	0	248,636	1,953
West Virginia	0	2,609,789	141,494	6,774	0	0	1,471,348	0
Wisconsin	0	0	2,774,641	0	425,538	72,974	1,399,373	333,539
Wyoming	0	553	160,495	0	0	0	136	0
Total	2,782,554,257	16,117,710	125,063,185	3,563,517	6,961,084	401,226	31,415,989	8,008,810

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site releases do not include transfers to disposal sent to other TRI facilities that reported the amount as an on-site release.

Facilities/forms are included in the manufacturing industry categories (SIC Codes 20-39) if they did not report a SIC code in the other industries. Forms that reported more than one 2-digit SIC code within the range 20 to 39 are assigned to the "multiple codes" category. Facilities/forms are included in the other industry categories if the facility/form has a SIC code in the other industries and no SIC code in 20-39. If the facility reported in any year prior to 1998 and the facility/form has a combination of manufacturing and other industry SIC codes, then the facility/form is included in the manufacturing industry category. If the facility reported for the first time in 1998 or later and the facility/form has a combination of manufacturing and other industry SIC codes, then the facility/form is included in the other industry category. Forms with no 2-digit SIC code are included in the "no codes 20-39" category. One facility, Phelps Dodge Miami of Claypool, AZ, that reported under SIC code 33 and SIC code 10 in 2001 and previous years has been included in SIC code 10 for the purpose of this analysis.



Chapter 2 Toxics Release Inventory Data by Industry, 2001 and 1998-2001

Table 2-3: TRI Total Releases by State by Industry, 2001, *continued*

State	Total On- and Off-site Releases						
	Paper	Printing	Chemicals	Petroleum	Plastics	Leather	Stone/Clay/ Glass
Alabama	15,639,588	2,638	23,225,886	491,241	1,323,452	0	2,243,810
Alaska	0	0	1,507,766	134,256	0	0	0
American Samoa	0	0	0	0	0	0	0
Arizona	347,807	0	118,817	5,801	590,345	0	263,574
Arkansas	6,281,139	36,755	6,159,082	1,036,525	3,067,173	20,921	1,052,653
California	1,536,402	44,185	2,393,826	9,289,942	2,206,286	79,940	1,428,625
Colorado	0	0	164,246	170,859	247,503	0	192,444
Connecticut	25,053	25,114	1,036,059	251	715,423	0	20,632
Delaware	11,846	0	4,599,624	1,655,868	78,026	0	250
District of Columbia	0	0	0	0	0	0	984
Florida	13,117,190	12,566	30,859,507	8,028	3,059,628	18,450	675,625
Georgia	17,966,352	1,053,636	9,905,072	31,661	3,159,441	0	2,115,726
Guam	0	0	0	0	0	0	0
Hawaii	0	0	0	40,476	0	0	0
Idaho	17,960	0	3,573,081	0	54,084	0	29
Illinois	553,327	2,007,906	15,913,032	5,108,723	6,404,338	182,105	954,164
Indiana	1,040,454	675,874	6,387,108	1,118,554	8,771,549	0	1,127,811
Iowa	101,379	153,408	4,737,302	4,130	1,220,901	162,186	370,652
Kansas	1,222,781	13,455	9,234,480	920,072	491,864	0	1,523,947
Kentucky	3,252,903	1,473,854	11,831,988	442,091	2,466,860	13,428	1,211,141
Louisiana	19,922,421	0	75,237,938	9,718,360	473,756	0	22,001
Maine	6,533,660	50,205	4,145	0	26,185	282,351	1,009
Maryland	1,793,517	51,025	7,291,793	1,398	461,209	284,815	304,085
Massachusetts	451,472	18,905	1,212,438	89	549,485	44,385	9,998
Michigan	3,661,226	60,714	5,553,471	165,053	1,976,797	407,963	3,383,592
Minnesota	1,601,597	36,997	422,427	1,362,182	841,502	223,580	86,884
Mississippi	6,632,807	1,444,375	28,824,282	684,018	1,701,808	0	538,849
Missouri	5,957	12,967	10,856,479	42,453	1,278,505	226,033	1,305,425
Montana	1,508,089	0	92,244	474,340	0	0	26,078
Nebraska	0	25,918	598,536	0	1,020,694	0	272,850
Nevada	0	276,051	2,536,457	12,075	133,250	0	5,005
New Hampshire	160,518	0	57,537	0	582,871	28,319	1,483
New Jersey	664,282	172,645	39,730,451	3,134,036	326,969	124,758	299,690
New Mexico	0	0	30,090	341,924	8,671	0	6,588
New York	2,261,518	391,916	3,758,008	41,635	824,224	46,328	1,176,368
North Carolina	13,402,526	133,348	11,083,080	1,918	3,545,843	0	1,754,024
North Dakota	0	0	127,175	1,907,280	52,756	0	0
Northern Marianas	0	0	0	0	0	0	0
Ohio	3,550,963	125,697	31,550,890	837,395	6,269,181	0	5,707,782
Oklahoma	4,412,691	15,545	7,449,647	1,037,634	1,027,343	0	355,398
Oregon	6,006,533	795	1,204,249	52,168	573,400	0	79,666
Pennsylvania	6,944,063	1,207,239	4,252,276	3,367,264	4,001,712	184,235	2,687,863
Puerto Rico	0	0	3,890,818	376,044	117,972	18,270	1,782
Rhode Island	112,168	0	62,511	0	67,974	0	34,375
South Carolina	12,684,887	474,963	10,038,296	816	4,991,157	0	1,259,333
South Dakota	0	0	1,096	0	98,738	0	74,657
Tennessee	6,442,292	5,745,551	31,613,691	144,452	13,337,218	0	262,795
Texas	5,818,665	217,952	146,418,936	22,222,531	4,629,193	101,809	5,571,459
Utah	0	42	627,627	443,384	166,406	0	187,225
Vermont	35,024	0	33,730	0	25,087	0	8,200
Virgin Islands	0	0	0	1,035,459	0	0	0
Virginia	12,644,520	3,128,360	10,215,074	796,554	3,708,748	0	1,197,494
Washington	6,390,450	15,740	318,282	2,372,515	811,703	0	173,825
West Virginia	0	13,025	8,545,468	117,217	308,156	0	192,025
Wisconsin	10,898,141	600,035	615,963	9,994	740,047	164,804	226,654
Wyoming	0	0	6,682,833	225,648	0	0	64,145
Total	195,654,165	19,719,402	582,584,818	71,384,317	88,535,433	2,614,681	40,460,674

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site releases do not include transfers to disposal sent to other TRI facilities that reported the amount as an on-site release.

Facilities/forms are included in the manufacturing industry categories (SIC Codes 20-39) if they did not report a SIC code in the other industries. Forms that reported more than one 2-digit SIC code within the range 20 to 39 are assigned to the "multiple codes" category. Facilities/forms are included in the other industry categories if the facility/form has a SIC code in the other industries and no SIC code in 20-39. If the facility reported in any year prior to 1998 and the facility/form has a combination of manufacturing and other industry SIC codes, then the facility/form is included in the manufacturing industry category. If the facility reported for the first time in 1998 or later and the facility/form has a combination of manufacturing and other industry SIC codes, then the facility/form is included in the other industry category. Forms with no 2-digit SIC code are included in the "no codes 20-39" category. One facility, Phelps Dodge Miami of Claypool, AZ, that reported under SIC code 33 and SIC code 10 in 2001 and previous years has been included in SIC code 10 for the purpose of this analysis.



Table 2-3: TRI Total Releases by State by Industry, 2001, *continued*

State	Total On- and Off-site Releases						
	Primary Metals	Fabricated Metals	Machinery	Electrical Equip.	Transportation Equip.	Measure./Photo.	Miscellaneous
Alabama	18,188,820	1,655,660	161,303	782,248	1,692,482	388	48,446
Alaska	0	0	0	0	0	0	0
American Samoa	0	0	0	0	0	0	0
Arizona	52,441,773	366,538	3,532	213,765	285,423	6,666	151,864
Arkansas	14,892,368	943,593	215,134	1,312,154	719,943	30,156	1,851
California	837,109	1,896,039	35,588	487,191	1,689,807	95,650	1,060,641
Colorado	216,413	720,128	19,619	70,095	252,400	437,161	750
Connecticut	461,111	901,880	201,356	185,249	151,765	161,372	13,897
Delaware	27,939	1,568	0	227	753,407	754	2,282
District of Columbia	0	0	0	0	0	0	0
Florida	526,280	959,031	34,928	122,506	3,720,212	169,108	148,231
Georgia	409,145	1,211,204	531,518	757,603	4,043,789	33,617	90,773
Guam	0	0	0	0	0	0	0
Hawaii	0	85,921	0	0	0	0	0
Idaho	153,570	29,204	99	64,891	96,891	0	0
Illinois	21,617,722	4,989,589	2,794,203	801,516	2,031,293	66,863	251,633
Indiana	94,148,993	3,311,791	540,487	1,163,279	7,431,246	290,262	1,043,333
Iowa	2,356,093	992,510	787,866	1,341,569	489,565	250	225,366
Kansas	1,425,717	544,262	256,341	250,330	1,613,551	378,542	163,824
Kentucky	7,396,084	1,054,365	144,444	415,258	9,686,678	0	169,732
Louisiana	1,689,452	717,796	91,934	63,321	588,209	53,009	0
Maine	0	30,040	10,637	36,899	396,112	41	4,858
Maryland	1,354,813	513,238	25,043	10,736	557,173	255,984	4
Massachusetts	389,674	686,461	40,870	113,502	17,933	171,735	419,636
Michigan	34,000,035	1,718,722	714,642	275,550	10,066,098	30,750	402,362
Minnesota	4,200,263	1,859,322	323,049	1,003,193	1,374,220	340,024	41,962
Mississippi	696,023	1,440,565	254,462	1,127,112	629,138	21,686	247,993
Missouri	30,930,004	1,697,978	547,527	998,303	6,081,422	23,736	135,993
Montana	22,114,808	0	0	0	0	14,519	37,864
Nebraska	475,216	378,620	387,753	20,961	450,159	326,902	2
Nevada	77,872	88,514	16,819	0	3,306	1	0
New Hampshire	77,176	64,885	17,750	105,962	33,723	1,781	16,790
New Jersey	3,226,801	680,273	49,625	42,064	794,035	10,552	10,748
New Mexico	17,888	29,509	0	125,271	18,768	10,070	0
New York	2,564,003	1,365,536	215,191	2,428,518	127,490	5,109,107	297,078
North Carolina	2,978,644	2,232,927	230,759	733,262	3,040,997	123,602	46,707
North Dakota	1	520	196,007	0	34,911	0	36,806
Northern Marianas	0	0	0	0	0	0	0
Ohio	43,119,667	6,547,648	932,404	2,386,286	5,366,141	496,334	202,125
Oklahoma	1,668,767	1,266,759	305,191	75,992	559,462	0	18,993
Oregon	4,532,409	180,486	11,931	1,033,792	526,059	8,593	0
Pennsylvania	86,118,527	4,435,754	1,511,113	491,067	1,888,818	76,176	1,236,047
Puerto Rico	4,406	289,970	14,120	69,313	3,745	51,619	119,508
Rhode Island	142,688	103,564	2	59,174	80,120	2,360	13,579
South Carolina	16,268,293	1,128,427	1,055,729	1,045,677	1,057,363	332,756	445,312
South Dakota	139,610	55,245	171,139	1,359	68,582	770	21,440
Tennessee	5,797,291	2,711,898	565,510	1,205,102	4,606,041	31,552	520,366
Texas	17,670,994	5,022,158	769,321	629,940	1,953,125	11,388	185,675
Utah	46,905,481	88,261	7,396	157,393	923,784	152,924	18,619
Vermont	4,729	15,308	1,532	122,846	1,758	0	0
Virgin Islands	0	0	0	0	0	0	0
Virginia	5,328,428	2,443,274	131,694	281,316	1,971,701	3,224	338,293
Washington	1,302,890	1,525,711	21,337	57,908	1,026,701	114	82
West Virginia	2,880,800	806,531	8,916	12,880	299	21,773	10,820
Wisconsin	6,806,290	4,087,958	1,003,562	1,251,478	1,724,098	21,377	231,473
Wyoming	5,595	141,255	271	0	0	0	0
Total	558,588,679	64,018,394	15,359,651	23,934,059	80,629,943	9,375,245	8,433,757

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site releases do not include transfers to disposal sent to other TRI facilities that reported the amount as an on-site release.

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Chapter 2 Toxics Release Inventory Data by Industry, 2001 and 1998-2001

Table 2-3: TRI Total Releases by State by Industry, 2001, *continued*

State	Total On- and Off-site Releases						Total
	Multiple codes 20-39	No codes 20-39	Electric Utilities	Chemical Wholesale Distributors	Petroleum Bulk Terminals/Bulk Storage	Hazardous Waste/Solvent Recovery	
Alabama	6,765,996	92,790	50,155,499	25,856	47,164	7,127,918	134,445,577
Alaska	0	748,479	485,096	2,147	25,443	0	522,072,731
American Samoa	0	0	0	0	0	0	6,920
Arizona	133,796	193,613	8,249,462	12,561	67,808	7,099	606,814,321
Arkansas	847,623	1,317	3,214,474	869	15,289	332,666	44,042,566
California	1,920,906	1,370,111	634,510	56,831	345,243	24,357,423	58,549,443
Colorado	291,738	349,080	10,165,860	3,996	65,069	44,928	37,046,413
Connecticut	1,195,590	5,220	2,623,711	5,576	89,162	1,763,375	9,755,293
Delaware	33,896	2,958	4,543,780	0	0	0	12,074,363
District of Columbia	965	17,890	40,734	0	0	0	60,573
Florida	1,270,690	393,913	62,345,582	75,986	140,197	564	123,201,939
Georgia	9,842,858	667,801	59,991,727	27,272	31,588	7,489	116,519,643
Guam	16	5,419	167,189	0	25,859	0	198,483
Hawaii	212,153	568,136	2,051,328	20	78,135	0	3,066,537
Idaho	8,401,304	1,537,490	0	1,300	58,113	33,350,894	75,181,868
Illinois	9,439,338	148,389	26,389,807	80,680	177,284	22,371,306	137,749,010
Indiana	2,199,493	504,143	60,202,833	32,495	55,596	8,593,503	205,557,782
Iowa	5,841,477	9,721	10,344,358	16,284	0	5	37,873,480
Kansas	1,876,497	163,884	8,757,189	17,620	29,706	129,907	31,666,590
Kentucky	769,957	460,401	50,996,018	29,281	29,105	273,453	93,695,654
Louisiana	2,935,253	605,702	5,711,765	35,669	17,944,644	7,347,599	145,820,901
Maine	152,118	4,114	134,015	42	37,443	0	10,712,685
Maryland	324,730	131,309	31,443,739	0	60,724	7	45,424,212
Massachusetts	429,615	1,455	5,727,725	21,475	161,148	182,050	11,085,729
Michigan	1,900,710	0	43,638,702	26,617	52,459	20,847,649	131,916,793
Minnesota	1,806,131	74,761	12,055,672	10,547	1,687	1,324,502	33,395,310
Mississippi	5,071,223	27,669	11,252,563	3,561	8,157	6	71,086,301
Missouri	2,080,910	173,708	18,750,745	47,130	56,255	531	119,889,698
Montana	0	0	12,497,345	2,786	6,956	0	65,388,178
Nebraska	1,507,435	375,447	9,443,199	14	0	568,436	26,669,417
Nevada	0	297,073	2,617,308	255	3,033	3,993,368	783,494,630
New Hampshire	147,453	0	3,377,682	357	25,631	0	4,758,653
New Jersey	205,280	82,970	7,331,756	239,295	276,785	1,213,297	58,841,777
New Mexico	0	199,453	4,590,509	4,545	11,438	5,048	105,833,149
New York	804,501	213,711	19,063,695	14,864	302,734	361	44,831,050
North Carolina	1,631,668	606,722	88,669,969	112,175	31,845	374,500	147,668,098
North Dakota	0	0	20,885,046	1,193	0	0	25,277,053
Northern Marianas	6	0	0	0	7,949	0	7,955
Ohio	3,239,503	112,489	87,321,564	141,423	75,138	49,893,950	254,563,632
Oklahoma	936,742	533,753	4,183,555	20,226	47,113	2,544,341	28,887,021
Oregon	1,473,838	0	555,850	13,936	35,723	17,683,609	37,576,517
Pennsylvania	4,336,127	82,247	76,428,642	52,203	124,950	2,621,987	207,484,044
Puerto Rico	108,779	8,919	10,412,765	3,690	25,732	61,614	15,606,599
Rhode Island	117,182	18	47,075	250	53,581	510	1,098,100
South Carolina	4,702,803	229,680	21,062,566	28,448	7,959	23,283	81,260,912
South Dakota	265,724	110,857	3,245,844	0	0	0	13,527,252
Tennessee	5,567,167	118,732	35,754,762	26,891	28,478	263,298	148,961,221
Texas	3,866,541	1,055,529	41,955,932	227,833	490,790	6,262,878	270,535,075
Utah	172,987	428,843	7,025,676	5,831	9,124	5,857,174	767,197,725
Vermont	21,071	0	0	0	0	0	363,002
Virgin Islands	0	0	1,374	0	1,785	0	1,038,618
Virginia	5,932,042	313,411	24,169,323	18,960	112,462	4,903	79,783,853
Washington	2,613,135	667,515	5,454,864	4,319	41,085	419,309	23,892,274
West Virginia	9,612	3,312	62,974,197	1,211	4,351	9	80,140,007
Wisconsin	521,732	63,406	12,791,961	13,751	12,476	17,261	46,808,527
Wyoming	0	0	10,310,740	0	255	0	17,591,926
Total	103,926,308	13,763,561	1,062,247,281	1,468,270	21,340,651	219,872,011	6,157,997,078

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site releases do not include transfers to disposal sent to other TRI facilities that reported the amount as an on-site release.

Facilities/forms are included in the manufacturing industry categories (SIC Codes 20-39) if they did not report a SIC code in the other industries. Forms that reported more than one 2-digit SIC code within the range 20 to 39 are assigned to the "multiple codes" category. Facilities/forms are included in the other industry categories if the facility/form has a SIC code in the other industries and no SIC code in 20-39. If the facility reported in any year prior to 1998 and the facility/form has a combination of manufacturing and other industry SIC codes, then the facility/form is included in the manufacturing industry category. If the facility reported for the first time in 1998 or later and the facility/form has a combination of manufacturing and other industry SIC codes, then the facility/form is included in the other industry category. Forms with no 2-digit SIC code are included in the "no codes 20-39" category. One facility, Phelps Dodge Miami of Claypool, AZ, that reported under SIC code 33 and SIC code 10 in 2001 and previous years has been included in SIC code 10 for the purpose of this analysis.



Box 2-4: Duplication of Off-site Transfers to Disposal, 2001

TRI facilities may transfer off-site chemicals in waste to other facilities for disposal. Box 1-8 in Chapter 1 explains the analysis done to avoid counting transfers by one TRI facility that are also reported as on-site releases by another facility. The off-site transfers to disposal are omitted from tables that compare or summarize on-site and off-site releases for all industries. Only the on-site releases from the other TRI facilities are included in such analyses.

The following shows the results of the analysis for 2001 and how much is omitted from tables that present total releases.

Off-site Transfer M Code	Total Transfers to Disposal Pounds	Transfers to Disposal for Matching RCRA ID Pounds	Transfers Omitted Because Duplicated in Section 5 of Recipient TRI Facility Pounds	Section 5 Checked for Recipient TRI Facilities Based on Matching Chemical or, if Metal, Metal plus Metal Category Compound
M10	6,121,927	1,623,985	0	5.5.4
M41*	189,119,202	171,707,610	65,655,120	5.5.1 A and B
M62*	7,062,658	5,288,177	3,294,044	5.5.1 A and B, 5.5.3 and 5.3
M71	23,628,466	19,214,109	7,490,783	5.4
M72	376,463,505	44,992,192	11,750,863	5.5.1 A and B, 5.5.3
M73	7,312,782	262,675	49,052	5.5.2
M79	22,370,055	6,157,888	78,990	5.5.4
M90	15,946,259	2,184,036	339,599	All Section 5
M99	4,298,166	2,636,653	169,248	All Section 5
Total	652,323,020	254,067,324	88,827,700	
Number of Form Rs	83,218	9,439	3,359	

* Includes metals and metal compounds reported under codes M40 and M61.

Waste Management Data, 2001

Quantities of TRI Chemicals in Waste

TRI facilities reported managing a total of 26.74 billion pounds of toxic chemicals in production-related waste in 2001, as shown in Table 2-4. Figure 2-2 shows percentages of the total quantities of toxic chemicals in production-related waste reported by the industries with the largest totals.

On-site recycling was the most common management method, accounting for 7.56 billion pounds of toxic chemicals in production-related waste managed in 2001. On-site treatment was the second most-common method, accounting for 6.93 billion pounds of toxic chemicals in production-related waste. Together, these two methods constituted

more than half (54.2 percent) of the quantity of toxic chemicals in production-related waste managed. On- and off-site releases accounted for 6.18 billion pounds, almost one-quarter (23.1 percent) of the toxic chemicals managed in waste.

The chemical manufacturing industry reported managing 10.69 billion pounds of toxic chemicals in production-related waste, 40.0 percent of the total in 2001. The chemical manufacturing industry also reported the largest quantities of toxic chemicals in waste managed in on-site recycling, energy recovery and treatment as well as off-site energy recovery and treatment. Over 55 percent (4.16 billion pounds) of toxic chemicals recycled on-site was reported by the chemical manufacturing industry.



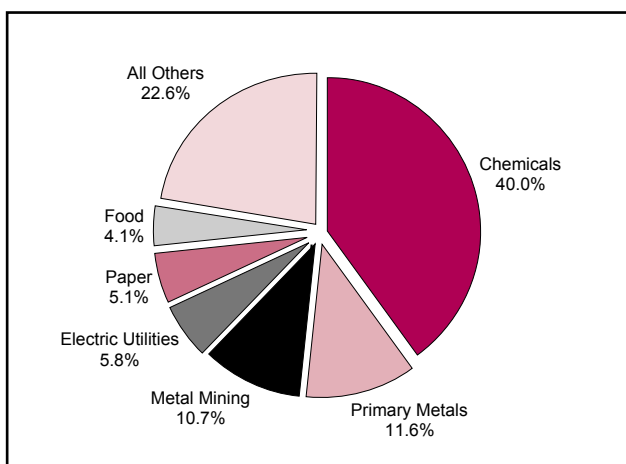
Table 2-4: Quantities of TRI Chemicals in Waste by Industry, 2001

SIC Code	Industry	Recycled		Energy Recovery		Treated		Quantity Releases On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
		On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
10	Metal Mining	32,735,928	1,263,828	0	98,030	54,832,294	6,403	2,780,689,913	2,869,626,395	714,674
12	Coal Mining	32,251	7,985	0	0	359,348	0	16,082,410	16,481,994	2,356,746
20	Food	768,924,832	2,870,076	1,182,619	156,802	154,663,793	35,273,137	127,006,561	1,090,077,820	465,658
21	Tobacco	2,817	13,677	0	0	1,439,725	600,496	3,253,265	5,309,980	0
22	Textiles	12,707,442	874,373	4,275,378	1,974,199	12,165,812	1,946,084	6,771,563	40,714,851	27,389
23	Apparel	94,870	60,241	0	82,786	1,172,336	14,963	378,264	1,803,460	0
24	Lumber	6,976,869	837,875	5,484,051	5,027,675	18,631,134	1,033,556	31,211,793	69,202,953	421,385
25	Furniture	375,035	3,477,898	62,251	1,783,425	748,891	311,095	8,300,142	15,058,736	93,634
26	Paper	64,794,501	2,934,559	174,986,780	5,624,222	887,320,219	43,334,921	195,392,896	1,374,388,098	197,728
27	Printing	205,498,797	12,411,421	548,843	3,446,972	127,016,206	1,759,923	20,011,194	370,693,356	59,373
28	Chemicals	4,159,511,539	165,873,509	1,357,077,773	406,079,947	3,657,842,228	355,033,082	586,661,036	10,688,079,114	3,949,337
29	Petroleum	95,286,627	24,168,037	282,794,445	2,622,753	389,842,342	11,069,216	72,833,689	878,617,109	729,776
30	Plastics	34,663,998	13,371,548	23,361,474	7,495,115	29,225,379	8,681,449	88,826,986	205,625,949	77,391
31	Leather	389,441	194,391	577	18,862	4,569,954	414,703	2,819,230	8,407,158	7,492
32	Stone/Clay/Glass	140,883,189	4,782,655	449,089,243	1,710,176	11,569,542	4,085,265	41,063,310	653,183,379	443,947
33	Primary Metals	1,342,465,964	676,045,362	167,015,143	3,316,752	318,408,207	21,056,802	572,405,099	3,100,713,329	37,376,955
34	Fabricated Metals	113,773,998	335,301,136	18,296,498	11,612,043	94,780,676	20,629,110	66,635,591	661,029,051	1,068,942
35	Machinery	9,212,032	95,700,300	28,694	1,600,771	4,656,719	2,851,195	16,377,983	130,427,694	269,426
36	Electrical Equip.	173,618,308	290,940,156	9,637,045	7,649,807	57,953,018	22,476,081	30,163,404	592,437,820	216,785
37	Transportation Equip.	11,158,752	114,151,281	2,609,230	10,935,477	27,426,980	13,050,299	80,710,311	260,042,330	2,254,610
38	Measure./Photo.	1,615,085	10,444,620	269,790	1,857,568	36,510,399	2,271,164	9,597,623	62,566,249	315,151
39	Miscellaneous	7,645,234	12,456,340	4,021,273	1,348,756	4,092,063	3,340,271	7,862,955	40,766,891	826,556
--	Multiple codes 20-39	225,086,802	160,309,820	137,286,267	21,285,530	277,941,861	37,706,531	106,940,404	966,557,214	948,412
--	No codes 20-39	2,636,747	3,745,287	180,654	998,403	6,615,379	1,378,008	11,956,379	27,510,857	2,034,249
491/493	Electric Utilities	2,835,782	6,962,529	1,645,552	682	488,117,685	20,469	1,061,541,493	1,561,124,192	1,752,578
5169	Chemical Wholesale Distributors	17,596,767	54,251	22	15,302,011	799,278	5,779,256	1,547,913	41,079,498	167,552
5171	Petroleum Bulk Terminals/Bulk Stor.	23,579,074	8,948,927	33,089	205,550	8,673,139	1,407,942	3,430,424	46,278,144	87,497
7389/4953	Hazardous Waste/Solvent Recov.	104,243,895	21,921,175	7,073,234	314,186,073	254,015,699	30,793,637	225,554,305	957,788,017	25,910
	Total	7,558,346,576	1,970,123,256	2,646,959,925	826,420,385	6,931,390,303	626,325,057	6,176,026,135	26,735,591,638	56,889,153

Note: Data are from Section 8 of Form R.

Facilities/forms are included in the manufacturing industry categories (SIC Codes 20-39) if they did not report a SIC code in the other industries. Forms that reported more than one 2-digit SIC code within the range 20 to 39 are assigned to the "multiple codes" category. Facilities/forms are included in the other industry categories if the facility/form has a SIC code in the other industries and no SIC code in 20-39. If the facility reported in any year prior to 1998 and the facility/form has a combination of manufacturing and other industry SIC codes, then the facility/form is included in the manufacturing industry category. If the facility reported for the first time in 1998 or later and the facility/form has a combination of manufacturing and other industry SIC codes, then the facility/form is included in the other industry category. Forms with no 2-digit SIC code are included in the "no codes 20-39" category. One facility, Phelps Dodge Miami of Claypool, AZ, that reported under SIC code 33 and SIC code 10 in 2001 and previous years has been included in SIC code 10 for the purpose of this analysis.

Figure 2-2: TRI Total Production-related Waste Managed by Industry, 2001



Note: Data are from Section 8 of Form R.

On-site treatment, the chemical industry's second most common waste management method, accounted for 52.8 percent (3.66 billion pounds) of all on-site treatment. On-site energy recovery totaled 1.36 billion pounds, or 51.3 percent of all such waste managed. The chemical manufacturing industry reported the third largest amount of toxic chemicals released on- and off-site, with 586.7 million pounds released on- and off-site in 2001.

The primary metals industry ranked second for toxic chemicals in production-related waste managed in 2001, with 3.10 billion pounds. On-site recycling accounted for 1.34 billion pounds, or 17.8 percent of the total recycled on-site—second to the chemical manufacturing industry in this waste management category. The primary metals industry reported the largest quantity of off-site recycling



(676.0 million pounds or 34.3 percent of total off-site releases).

The metal mining industry reported the third-largest quantity of toxic chemicals of production-related waste managed, 2.87 billion pounds. Nearly 97 percent of this amount (2.78 billion pounds) was released on- and off-site, the largest quantity for on- and off-site releases for all industries in 2001 and accounting for 45.0 percent of total releases by all industries.

One other industry group exceeded 1.5 billion pounds in toxic chemicals in production-related waste: electric utilities, which reported a total of 1.56 billion pounds. Of that total, 68.0 percent (1.06 billion pounds) was released on- and off-site. This represented the second-largest quantity released on- and off-site by any industry group and was 17.2

percent of the total quantity released on- and off-site in 2001.

Transfers Off-site for Further Waste Management, including Disposal

As shown in Table 2-5, a total of 4.08 billion pounds of TRI chemicals was transferred in waste for further waste management, including disposal, in 2001. The primary metals industry accounted for 25.3 percent (1.03 billion pounds) of the combined total transfers of toxic chemicals for all industries. Within the primary metals industry, 65.0 percent (670.3 million pounds) of TRI transfers came from transfers to recycling, while other transfers off-site to disposal accounted for 32.6 percent (336.5 million pounds) of the industry's total.

Chemical manufacturing accounted for the next highest share—24.7 percent (1.01 billion pounds)—

Table 2-5: TRI Transfers Off-site for Further Waste Management, including Disposal, by Industry, 2001

SIC Code	Industry	Transfers to Recycling Pounds	Transfers to Energy Recovery Pounds	Transfers to Treatment Pounds	Transfers to POTWs		Other Off-site Transfers* Pounds	Other Off-site Transfers to Disposal** Pounds	Total Transfers for Further Waste Management, including Disposal Pounds
					Metals and Metal Category Compounds Pounds	Non-metal TRI Chemicals Pounds			
10	Metal Mining	1,212,654	30	4,862	7,226	29,250	0	520,637	1,774,658
12	Coal Mining	7,985	0	0	0	0	0	10,830	18,815
20	Food	2,861,325	227,739	2,812,424	14,952	33,738,110	1,282	6,154,141	45,809,973
21	Tobacco	13,677	28,433	183,927	0	378,039	0	322,970	927,046
22	Textiles	1,108,952	2,031,127	152,464	133,026	1,278,160	0	616,962	5,320,692
23	Apparel	59,820	58,867	1,410	5	14,908	421	57,857	193,288
24	Lumber	900,965	5,117,146	759,504	565	240,337	34,150	562,171	7,614,837
25	Furniture	3,690,404	1,849,539	330,958	334	11,338	33,441	202,927	6,118,941
26	Paper	2,388,038	5,530,598	8,051,327	247,446	35,156,868	33	5,521,709	56,896,019
27	Printing	12,498,736	3,362,384	355,015	2,515	1,702,687	1,020	423,870	18,346,227
28	Chemicals	161,317,904	409,039,228	184,882,115	468,404	158,151,302	1,126,131	92,936,617	1,007,921,702
29	Petroleum	24,121,642	2,626,857	3,931,881	76,431	6,567,789	0	3,953,080	41,277,681
30	Plastics	13,284,573	7,367,768	2,037,190	57,241	6,447,740	58,777	10,427,821	39,681,111
31	Leather	195,414	19,712	23,694	279,543	592,054	0	994,270	2,104,687
32	Stone/Clay/Glass	4,661,760	1,718,870	1,308,857	52,676	2,778,697	948	5,745,652	16,267,460
33	Primary Metals	670,318,881	3,283,961	9,353,965	155,752	12,087,861	26,096	336,469,448	1,031,695,964
34	Fabricated Metals	335,240,964	11,388,884	4,350,455	289,417	17,444,620	17,775	22,311,755	391,043,870
35	Machinery	94,039,764	1,549,178	987,483	27,050	2,046,332	3,931	4,705,311	103,359,048
36	Electrical Equip.	285,928,713	7,547,140	3,149,594	80,409	20,167,528	13,552	8,224,514	325,111,451
37	Transportation Equip.	113,844,624	10,706,228	3,180,375	140,452	10,297,737	281,776	13,248,516	151,699,708
38	Measure./Photo.	10,577,208	1,822,251	1,627,394	5,582	510,065	9,444	813,302	15,365,246
39	Miscellaneous	12,463,660	1,353,671	1,055,567	5,407	1,483,005	77,000	1,659,987	18,098,297
--	Multiple codes 20-39	158,378,157	21,170,353	17,564,748	110,742	21,834,533	67,356	16,223,445	235,349,333
--	No codes 20-39	3,326,021	998,907	463,819	2,745	1,092,037	784	1,185,592	7,069,904
491/493	Electric Utilities	7,061,710	684	8,486	7,866	1,829	0	76,835,064	83,915,639
5169	Chemical Wholesale Distributors	83,062	15,221,036	5,584,784	19	42,094	0	215,648	21,146,642
5171	Petroleum Bulk Terminals/Bulk Storage	9,055,355	212,247	775,993	458	17,782	0	161,834	10,223,669
738/495	Hazardous Waste/Solvent Recovery	22,198,522	326,100,016	26,748,204	44,907	3,589,900	27,151	53,833,685	432,542,385
	Total	1,950,840,492	840,332,852	279,686,495	2,211,172	337,702,602	1,781,068	664,339,613	4,076,894,294

Note: Transfers Off-site for Further Waste Management, including Disposal are from Section 6 of Form R.

* Other Off-site Transfers are transfers reported without a valid waste management code.

** Does not include transfers to POTWs of metals and metal category compounds.



of the combined total for all industries. Of the chemical manufacturing industry's off-site transfers total, 40.6 percent (409.0 million pounds) came from transfers to energy recovery, 18.3 percent (184.9 million pounds) from transfers to treatment, and 16.0 percent (161.3 million pounds) from transfers to recycling.

The third-largest share of the total transfers off-site for further waste management, including disposal, came from the hazardous waste/solvent recycling industries, which had 10.6 percent (432.5 million pounds) of the overall total. Of the 432.5 million pounds, 75.4 percent (326.1 million pounds) came from transfers to energy recovery.

Of the 4.08 billion pounds of the toxic chemicals transferred off-site for further waste management, including disposal, 47.9 percent (1.95 billion pounds) was managed through transfers to recycling, 20.6 percent (840.3 million pounds) through transfers to energy recovery, and 16.3 percent (664.3 million pounds) through other off-site transfers to disposal. The primary metals industry accounted for 670.3 million pounds (34.4 percent) of the total pounds managed through transfers to recycling, fabricated metals for 335.2 million pounds (17.2 percent), and electrical equipment manufacturing for 285.9 million pounds (14.7 percent). In transfers to energy recovery, the second most-common management category, chemical manufacturing accounted for 409.0 million pounds (48.7 percent) and hazardous waste/solvent recovery industries for 326.1 million pounds (38.8 percent).

Projected Quantities of TRI Chemicals Managed in Waste, 2001-2003

As described in **Waste Management** in Chapter 1, on each Form R that it submits, a facility reports actual quantities of the toxic chemicals managed in waste for the current and prior year amounts and projected quantities for the next two years. Table 2-6 outlines the actual current and prior year amounts and projected quantities of TRI chemicals in waste.

In 2001, a total of 25.50 billion pounds was reported. This represented a decrease of 8.2 percent from 2000.¹

The projected totals were for 24.95 billion pounds for 2002 and 25.34 billion pounds for 2003. These projections represented a 2.2 percent decrease from 2001 to 2002 and a 1.6 percent increase from 2002 to 2003, or a net decrease of less than one percent from 2001 to 2003.

The largest net decrease from 2001 to 2003 was projected to come from the metal mining industry, which expected a decrease of 213.6 million pounds or 8.4 percent. The second largest net decrease (114.1 million pounds or 12.2 percent) was projected by the hazardous waste/solvent recovery industries. From 2000 to 2001, the chemical manufacturing industry had the largest decrease (1.70 billion pounds or 13.7 percent).

These decreases offset projected increases in the stone/clay/glass industry, which expected an increase of 128.2 million pounds or 22.6 percent, and in the fabricated metals industry, which expected an increase of 45.2 million pounds (7.0 percent) from 2001 to 2003. These projected increases came after decreases of 78.0 million pounds (12.1 percent) by the stone/clay/glass industry and 32.2 million pounds (4.7 percent) by the fabricated metals industry from 2000 to 2001.

Source Reduction, 2001

In 2001, TRI industries submitted 83,218 Form R's, 22.0 percent (18,340) of which reported source reduction activities (see Table 2-7). As noted in **Waste Management** in Chapter 1, source reduction—an activity that prevents the generation of waste—is preferred to waste management.

The furniture industry had the highest ratio of forms reporting source reduction activity (53.1 percent), followed by the leather industry (40.0 percent), and the measurement/photographic industry (35.1 percent). The industries with the lowest ratios

¹ The reporting thresholds for lead and lead compounds were lowered for 2001. The amounts reported for these chemicals have been omitted from this table because facilities reporting on lead and lead compounds for the first time in 2001 may not have reported an amount for 2000 on the 2001 TRI Form R



Table 2-6: Prior Year, Current Year and Projected Quantities of TRI Chemicals in Waste by Industry, 2000-2003

SIC Code	Industry	Total Production-related Waste Managed				Change 2000-2001 Percent	Projected Change 2001-2002 Percent	Projected Change 2002-2003 Percent	Projected Change 2001-2003 Percent
		Prior Year 2000 Pounds	Current Year 2001 Pounds	Projected 2002 Pounds	Projected 2003 Pounds				
10	Metal Mining	2,502,718,456	2,534,067,408	2,228,111,923	2,320,464,693	1.3	-12.1	4.1	-8.4
12	Coal Mining	15,572,922	15,245,126	14,666,760	13,673,156	-2.1	-3.8	-6.8	-10.3
20	Food	573,657,057	1,090,021,161	1,072,402,491	1,109,278,307	90.0	-1.6	3.4	1.8
21	Tobacco	5,318,793	5,302,516	4,740,500	4,796,458	-0.3	-10.6	1.2	-9.5
22	Textiles	43,699,669	40,681,466	40,309,030	40,701,561	-6.9	-0.9	1.0	0.0
23	Apparel	2,000,866	1,803,385	1,814,487	1,813,026	-9.9	0.6	-0.1	0.5
24	Lumber	183,728,064	69,085,194	70,471,196	71,034,142	-62.4	2.0	0.8	2.8
25	Furniture	18,244,887	14,997,035	13,901,334	12,871,398	-17.8	-7.3	-7.4	-14.2
26	Paper	1,371,162,995	1,373,899,889	1,397,295,714	1,396,720,140	0.2	1.7	0.0	1.7
27	Printing	371,054,534	370,480,920	391,250,061	397,642,259	-0.2	5.6	1.6	7.3
28	Chemicals	12,380,867,203	10,679,613,005	10,683,087,381	10,673,327,326	-13.7	0.0	-0.1	-0.1
29	Petroleum	848,089,471	878,433,051	864,633,581	845,853,308	3.6	-1.6	-2.2	-3.7
30	Plastics	216,740,969	204,339,414	194,140,205	198,886,460	-5.7	-5.0	2.4	-2.7
31	Leather	17,230,895	8,407,158	8,307,619	8,232,553	-51.2	-1.2	-0.9	-2.1
32	Stone/Clay/Glass	645,298,634	567,336,466	594,177,395	695,489,337	-12.1	4.7	17.1	22.6
33	Primary Metals	3,323,082,431	2,658,357,555	2,570,961,112	2,689,424,260	-20.0	-3.3	4.6	1.2
34	Fabricated Metals	680,535,574	648,366,435	665,389,887	693,538,592	-4.7	2.6	4.2	7.0
35	Machinery	126,409,571	127,310,768	110,752,012	100,256,319	0.7	-13.0	-9.5	-21.3
36	Electrical Equip.	397,401,207	314,410,782	285,048,035	290,383,071	-20.9	-9.3	1.9	-7.6
37	Transportation Equip.	272,554,231	253,110,688	244,127,218	247,002,448	-7.1	-3.5	1.2	-2.4
38	Measure/Photo.	71,123,896	61,995,124	64,538,066	64,701,768	-12.8	4.1	0.3	4.4
39	Miscellaneous	42,303,705	40,655,195	36,923,836	37,792,135	-3.9	-9.2	2.4	-7.0
--	Multiple codes 20-39	990,565,000	947,713,219	941,167,449	944,025,325	-4.3	-0.7	0.3	-0.4
--	No codes 20-39	21,135,108	24,095,792	20,416,225	26,778,068	14.0	-15.3	31.2	11.1
491/493	Electric Utilities	1,667,907,225	1,552,455,699	1,529,972,427	1,533,101,833	-6.9	-1.4	0.2	-1.2
5169	Chemical Wholesale Distributors	52,373,277	41,070,757	50,018,802	50,795,130	-21.6	21.8	1.6	23.7
5171	Petroleum Terminals/Bulk Storage	39,237,419	46,271,156	52,522,129	52,815,101	17.9	13.5	0.6	14.1
7389/4953	Hazardous Waste/Solvent Recovery	900,755,445	932,484,480	799,822,740	818,519,767	3.5	-14.2	2.3	-12.2
	Total	27,780,769,507	25,502,010,846	24,950,969,614	25,339,917,942	-8.2	-2.2	1.6	-0.6

Note: Does not include lead and lead compounds. Data from Section 8 of Form R for 2001.

Two facilities made errors in reporting the quantity released on- and off-site. One facility reported 6,500,022,100 pounds for 2000; the correct number is 65,000 pounds. One facility reported 4,976,250,100 pounds for 2002; the correct number is 49,762 pounds. These corrections were received too late to be included in the publicly released database, but they have been included in this table.

of reported source reduction activities were coal mining (no forms), metal mining (3.0 percent), apparel (5.1 percent), and electric utilities (7.1 percent).

Good operating practices accounted for the largest number (6,474) of source reduction activities reported. Process modifications accounted for the next largest number (3,719) while spill and leak prevention accounted for the third (2,887). The chemical manufacturing industry had the highest number of reported source reductions in every category but two—cleaning and degreasing (where fabricated metals did), and surface preparation and finishing (where transportation equipment did)—mainly because it submitted over one-fifth (20.5 percent) of the total Form R's.

TRI DATA FOR 2000-2001

Comparisons of TRI data across reporting years are made on the basis of chemicals that were reportable in all years with the same reporting definitions. This ensures that apparent increases or decreases from one year to another are not the result of changes in the list of TRI chemicals. **Making Year-to-Year Comparisons of TRI Data**, in Chapter 1, explains the issues involved in making multi-year analyses. An understanding of these year to year changes is essential for accurate interpretation of the multi-year data presented in this chapter. Comparisons of releases and other waste management data for the years from 2000 to 2001 do not include lead and lead compounds because lower reporting thresholds for these chemicals only became effective with the 2001 reporting year. Comparisons for the years 1998-2001 do not include PBT chemicals, vanadium and vanadium compounds because reporting requirements



Table 2-7: Number of Forms Reporting Source Reduction Activity, by Category and Industry, 2001

SIC Code	Industry	Total Form Rs Number	Forms Reporting Source Reduction Activity		Category of Source Reduction Activity							
			Number	Percent	Good Operating Practices Number	Inventory Control Number	Spill and Leak Prevention Number	Raw Materials Modifications Number	Process Modifications Number	Cleaning and Degreasing Number	Surface Preparation and Finishing Number	Product Modifications Number
10	Metal Mining	639	19	3.0	3	0	0	0	16	0	0	0
12	Coal Mining	285	0	0.0	0	0	0	0	0	0	0	0
20	Food	2,296	499	21.7	233	24	100	12	112	10	2	6
21	Tobacco	67	7	10.4	3	0	0	0	4	0	0	0
22	Textiles	626	121	19.3	33	13	12	20	23	7	8	5
23	Apparel	39	2	5.1	0	0	0	0	2	0	0	0
24	Lumber	1,748	491	28.1	120	4	68	60	96	14	110	19
25	Furniture	605	321	53.1	73	19	37	28	20	9	124	11
26	Paper	3,062	415	13.6	105	13	33	88	121	6	18	31
27	Printing	445	133	29.9	54	11	2	29	24	4	2	7
28	Chemicals	17,041	4,885	28.7	1,635	421	897	406	1,135	139	13	239
29	Petroleum	3,952	743	18.8	234	13	289	10	188	7	0	2
30	Plastics	3,387	1,016	30.0	306	56	79	187	182	21	126	59
31	Leather	140	56	40.0	12	6	5	16	5	3	8	1
32	Stone/Clay/Glass	2,516	499	19.8	133	57	79	73	115	4	23	15
33	Primary Metals	6,739	1,070	15.9	435	37	129	97	274	31	35	32
34	Fabricated Metals	7,238	1,803	24.9	682	168	155	146	304	148	146	54
35	Machinery	2,522	342	13.6	124	12	23	34	86	14	28	21
36	Electrical Equip.	3,735	885	23.7	310	85	71	75	211	35	46	52
37	Transportation Equip.	4,526	1,080	23.9	352	83	52	155	157	44	172	65
38	Measure/Photo.	680	239	35.1	81	25	16	28	60	7	6	16
39	Miscellaneous	600	157	26.2	47	4	10	24	39	6	22	5
--	Multiple codes 20-39	4,412	1,439	32.6	488	122	171	125	351	45	64	73
--	No codes 20-39	802	191	23.8	75	29	18	17	19	15	15	3
491/493	Electric Utilities	6,458	460	7.1	251	49	73	42	45	0	0	0
5169	Chemical Wholesale Distributors	1,802	344	19.1	166	50	101	6	15	5	0	1
5171	Petroleum Terminals/Bulk Storage	4,135	596	14.4	167	4	342	2	71	0	9	1
7389/4953	Hazardous Waste/Solvent Recovery	2,721	527	19.4	352	0	125	0	44	0	6	0
	Total	83,218	18,340	22.0	6,474	1,305	2,887	1,680	3,719	574	983	718

Note: All source reduction activities on a form are counted in the corresponding category. Totals do not equal the sum of the categories because forms may report more than one source reduction activity.

changed for these chemicals beginning with the 2000 reporting year.

On- and Off-site Releases, 2000-2001

Table 2-8 shows total forms and total releases for TRI industries for 2000 and 2001. During this period, the number of forms submitted for chemicals comparable in both years decreased from 90,659 to 86,952, a decrease of 4.1 percent. Total on- and off-site releases decreased from 6.77 billion pounds to 5.72 billion pounds, a reduction of 15.5 percent from 2000 to 2001. In this period, all the industries except measurement/photographic, petroleum terminals/bulk storage, printing, tobacco, and the group with no codes 20-39 reported declines in total on- and off-site releases.

In both 2000 and 2001, the metal mining industry reported the largest total on- and off-site releases of

all industry groups. Its reduction of 459.1 million pounds (15.8 percent) from 2000 to 2001 was the largest decline. Electric utilities reported the second-largest total releases in both 2000 and 2001 and a reduction of 98.3 million pounds or 8.5 percent.

The chemical manufacturing industry reported the third-largest total releases in both 2000 and 2001, with a reduction of 95.7 million pounds or 14.5 percent. The primary metals industry reported the fourth-largest total releases in both 2000 and 2001, with a reduction of 58.0 million pounds (10.1 percent). The hazardous waste/solvent recovery sectors reported a decrease of 82.3 million pounds (29.5 percent). Other industry sectors reported less than 200 million pounds in 2001 and reductions of less than 35 million pounds or reported increases.

Of the industries reporting increases from 2000 to 2001, petroleum terminals/bulk storage facilities



Table 2-8: TRI Forms and Total Releases by Industry, 2000-2001

SIC Code	Industry	Total Forms				Total On- and Off-site Releases				
		2000	2001	Change 2000-2001		2000	2001	Change 2000-2001		
		Number	Number	Number	Percent	Pounds	Pounds	Pounds	Pounds	
10	Metal Mining	638	580	-58	-9.1	3,049,654,386	2,447,128,330	-602,526,056	-19.8	
12	Coal Mining	264	286	22	8.3	15,628,605	14,871,577	-757,028	-4.8	
20	Food	3,553	3,544	-9	-0.3	129,638,460	125,013,901	-4,624,559	-3.6	
21	Tobacco	84	63	-21	-25.0	3,149,481	3,556,057	406,576	12.9	
22	Textiles	654	639	-15	-2.3	8,326,912	6,928,336	-1,398,576	-16.8	
23	Apparel	40	39	-1	-2.5	565,353	401,151	-164,202	-29.0	
24	Lumber	2,207	2,127	-80	-3.6	34,637,171	31,333,015	-3,304,156	-9.5	
25	Furniture	707	527	-180	-25.5	12,313,189	7,990,110	-4,323,079	-35.1	
26	Paper	2,986	2,884	-102	-3.4	227,678,878	195,186,367	-32,492,512	-14.3	
27	Printing	441	439	-2	-0.5	19,004,562	19,686,261	681,699	3.6	
28	Chemicals	20,989	19,832	-1,157	-5.5	658,268,461	562,582,951	-95,685,509	-14.5	
29	Petroleum	4,179	4,122	-57	-1.4	73,759,780	71,277,700	-2,482,079	-3.4	
30	Plastics	3,923	3,603	-320	-8.2	107,328,288	88,373,213	-18,955,075	-17.7	
31	Leather	179	149	-30	-16.8	3,643,527	2,614,681	-1,028,846	-28.2	
32	Stone/Clay/Glass	2,257	2,214	-43	-1.9	41,235,852	38,306,773	-2,929,079	-7.1	
33	Primary Metals	6,844	6,398	-446	-6.5	572,208,260	514,240,377	-57,967,882	-10.1	
34	Fabricated Metals	7,700	7,132	-568	-7.4	76,478,614	63,403,252	-13,075,362	-17.1	
35	Machinery	2,794	2,580	-214	-7.7	19,336,595	15,249,314	-4,087,281	-21.1	
36	Electrical Equip.	2,907	2,631	-276	-9.5	31,962,063	22,436,264	-9,525,800	-29.8	
37	Transportation Equip.	4,587	4,477	-110	-2.4	96,342,304	80,048,302	-16,294,002	-16.9	
38	Measure/Photo.	603	575	-28	-4.6	9,096,092	9,318,583	222,492	2.4	
39	Miscellaneous	674	611	-63	-9.3	8,862,085	8,405,244	-456,841	-5.2	
--	Multiple codes 20-39	4,662	4,349	-313	-6.7	123,533,027	102,943,811	-20,589,216	-16.7	
--	No codes 20-39	523	656	133	25.4	8,405,621	11,375,702	2,970,080	35.3	
491/493	Electric Utilities	6,052	6,077	25	0.4	1,151,208,360	1,052,934,677	-98,273,683	-8.5	
5169	Chemical Wholesale Distributors	3,464	3,323	-141	-4.1	1,523,560	1,464,031	-59,529	-3.9	
5171	Petroleum Terminals/Bulk Storage	4,133	4,504	371	9.0	3,919,473	21,334,352	17,414,879	444.3	
7389/4953	Hazardous Waste/Solvent Recovery	2,615	2,591	-24	-0.9	278,931,362	196,601,036	-82,330,326	-29.5	
	Total	90,659	86,952	-3,707	-4.1	6,766,640,322	5,715,005,370	-1,051,634,952	-15.5	

Note: Does not include lead and lead compounds. On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal category compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI facilities that reported the amount as an on-site release.

Facilities/forms are included in the manufacturing industry categories (SIC Codes 20-39) if they did not report a SIC code in the other industries. Forms that reported more than one 2-digit SIC code within the range 20 to 39 are assigned to the "multiple codes" category. Facilities/forms are included in the other industry categories if the facility/form has a SIC code in the other industries and no SIC code in 20-39. If the facility reported in any year prior to 1998 and the facility/form has a combination of manufacturing and other industry SIC codes, then the facility/form is included in the manufacturing industry category. If the facility reported for the first time in 1998 or later and the facility/form has a combination of manufacturing and other industry SIC codes, then the facility/form is included in the other industry category. Forms with no 2-digit SIC code are included in the "no codes 20-39" category. One facility, Phelps Dodge Miami of Claypool, AZ, that reported under SIC code 33 and SIC code 10 in 2001 and previous years has been included in SIC code 10 for the purpose of this analysis.

had the highest, with an increase of 17.4 million pounds or over 400 percent. It also had an increase of 9.0 percent in the forms submitted.

Waste Management Data, 2000-2001

As shown in Table 2-9, TRI facilities reported managing 32.57 billion pounds of toxic chemicals in production-related waste in 2000 and 25.50 billion pounds in 2001. This was a decrease of 7.07 billion pounds or 21.7 percent.

The chemical manufacturing industry reported the largest absolute decrease from 2000 to 2001, from 15.74 billion pounds to 10.68 billion pounds, a reduction of 5.07 billion pounds, or 32.2 percent. The primary metals industry reported the second-

largest decrease, from 3.52 billion pounds to 2.66 billion pounds, a net decrease of 859.9 million pounds, or 24.4 percent. The third largest decrease came from the metal mining industry, which went from 3.14 billion pounds in 2000 to 2.53 billion pounds, a decrease of 607.7 million pounds, or 19.3 percent.

The multiple-codes group (forms reporting more than one two-digit SIC code within the range of 20-39) reported a decrease of 401.3 million pounds or 29.8 percent. Three other industries reported reductions of about 100 million pounds: paper with a reduction of 106.7 million pounds or 7.2 percent, lumber also with a reduction of 106.7 million pounds or 60.7 percent, and electrical equipment with a reduction of 99.3 million pounds or 24.0 percent.



Table 2-9: TRI Total Production-related Waste Managed by Industry, 2000-2001

SIC Code	Industry	Total Production-related Waste Managed			
		2000 Pounds	2001 Pounds	Change 2000-2001 Pounds	
10	Metal Mining	3,141,813,435	2,534,067,408	-607,746,027	-19.3
12	Coal Mining	16,046,973	15,245,126	-801,847	-5.0
20	Food	600,976,374	1,090,021,161	489,044,787	81.4
21	Tobacco	5,300,483	5,302,516	2,033	0.04
22	Textiles	44,165,680	40,681,466	-3,484,213	-7.9
23	Apparel	1,895,870	1,803,385	-92,485	-4.9
24	Lumber	175,743,964	69,085,194	-106,658,770	-60.7
25	Furniture	23,968,255	14,997,035	-8,971,220	-37.4
26	Paper	1,480,615,299	1,373,899,889	-106,715,410	-7.2
27	Printing	365,352,059	370,480,920	5,128,861	1.4
28	Chemicals	15,744,981,755	10,679,613,005	-5,065,368,750	-32.2
29	Petroleum	833,421,432	878,433,051	45,011,619	5.4
30	Plastics	227,142,891	204,339,414	-22,803,477	-10.0
31	Leather	18,027,427	8,407,158	-9,620,269	-53.4
32	Stone/Clay/Glass	616,841,654	567,336,466	-49,505,187	-8.0
33	Primary Metals	3,518,251,237	2,658,357,555	-859,893,682	-24.4
34	Fabricated Metals	719,077,431	648,366,435	-70,710,996	-9.8
35	Machinery	139,996,236	127,310,768	-12,685,468	-9.1
36	Electrical Equip.	413,661,945	314,410,782	-99,251,163	-24.0
37	Transportation Equip.	282,633,918	253,110,688	-29,523,230	-10.4
38	Measure/Photo.	69,304,199	61,995,124	-7,309,074	-10.5
39	Miscellaneous	42,606,974	40,655,195	-1,951,778	-4.6
--	Multiple codes 20-39	1,349,058,331	947,713,219	-401,345,111	-29.8
--	No codes 20-39	25,049,930	24,095,792	-954,138	-3.8
491/493	Electric Utilities	1,633,126,253	1,552,455,699	-80,670,554	-4.9
5169	Chemical Wholesale Distributors	23,224,057	41,070,757	17,846,700	76.8
5171	Petroleum Terminals/Bulk Storage	40,628,072	46,271,156	5,643,085	13.9
7389/4953	Hazardous Waste/Solvent Recovery	1,016,747,365	932,484,480	-84,262,885	-8.3
	Total	32,569,659,498	25,502,010,846	-7,067,648,652	-21.7

Note: Does not include lead and lead compounds. Data are from Section 8 of Form R of year indicated.

Facilities/forms are included in the manufacturing industry categories (SIC Codes 20-39) if they did not report a SIC code in the other industries. Forms that reported more than one 2-digit SIC code within the range 20 to 39 are assigned to the "multiple codes" category. Facilities/forms are included in the other industry categories if the facility/form has a SIC code in the other industries and no SIC code in 20-39. If the facility reported in any year prior to 1998 and the facility/form has a combination of manufacturing and other industry SIC codes, then the facility/form is included in the manufacturing industry category. If the facility reported for the first time in 1998 or later and the facility/form has a combination of manufacturing and other industry SIC codes, then the facility/form is included in the other industry category. Forms with no 2-digit SIC code are included in the "no codes 20-39" category. One facility, Phelps Dodge Miami of Claypool, AZ, that reported under SIC code 33 and SIC code 10 in 2001 and previous years has been included in SIC code 10 for the purpose of this analysis.

The food industry reported the largest increase from 2000 to 2001. This industry's toxic chemicals in production-related waste rose from 601.0 million pounds in to 1.09 billion pounds, an increase of 489.0 million pounds, or 81.4 percent. The petroleum refining industry reported the second-largest increase, an increase of 45.0 million pounds, from 833.4 million pounds to 878.4 million pounds, a 5.4 percent increase. Chemical wholesale distributors reported an increase of 17.8 million pounds or 76.8 percent. Two other industry groups had increases of about 5 million pounds from 2000 to 2001: petroleum terminals/bulk storage facilities, with an increase of 5.6 million pounds or 13.9 percent, and the printing industry, with an increase of 5.1 million pounds or 1.4 percent. The only other industry to report an increase was the tobacco industry with an increase of just over 2,000 pounds or less than one percent.

TRI DATA FOR 1998-2001

Comparisons of TRI data across reporting years are made on the basis of chemicals that were reportable in all years with the same reporting definitions.

Making Year-to-Year Comparisons of TRI Data, in Chapter 1, explains the issues involved in making multi-year analyses. An understanding of these year to year changes is essential for accurate interpretation of the multi-year data presented in this chapter. Comparisons of the years 1998, 2000 and 2001 require that PBT chemicals (see Chapter 3 for a discussion of these chemicals), vanadium and vanadium compounds be omitted from the data.

On- and Off-site Releases, 1998 and 2000-2001

Table 2-10 shows TRI data for the years 1998, 2000 and 2001. Between 1998 and 2001, total on- and



Table 2-10: TRI Forms and Total Releases, 1998 and 2000-2001

SIC Code	Industry	Total Forms					Total On- and Off-site Releases				
		1998 Number	2000 Number	2001 Number	Change 2000- 2001 Percent	Change 1998- 2001 Percent	1998 Pounds	2000 Pounds	2001 Pounds	Change 2000- 2001 Percent	Change 1998- 2001 Percent
10	Metal Mining	711	554	499	-9.9	-29.8	3,337,371,653	3,002,844,396	2,395,124,862	-20.2	-28.2
12	Coal Mining	179	203	216	6.4	20.7	12,980,197	14,988,396	14,153,391	-5.6	9.0
20	Food	3,201	3,241	3,229	-0.4	0.9	133,527,879	129,486,395	124,865,409	-3.6	-6.5
21	Tobacco	66	78	56	-28.2	-15.2	3,618,629	3,149,255	3,555,777	12.9	-1.7
22	Textiles	547	491	460	-6.3	-15.9	12,098,859	8,195,943	6,876,040	-16.1	-43.2
23	Apparel	43	40	39	-2.5	-9.3	602,859	565,353	401,151	-29.0	-33.5
24	Lumber	2,080	1,998	1,900	-4.9	-8.7	35,258,094	34,523,090	31,314,225	-9.3	-11.2
25	Furniture	911	701	519	-26.0	-43.0	17,296,600	12,313,189	7,990,110	-35.1	-53.8
26	Paper	2,492	2,376	2,272	-4.4	-8.8	232,742,539	227,040,367	194,644,353	-14.3	-16.4
27	Printing	462	434	430	-0.9	-6.9	22,524,872	19,004,270	19,680,796	3.6	-12.6
28	Chemicals	20,503	20,192	19,036	-5.7	-7.2	718,659,104	649,342,324	554,013,981	-14.7	-22.9
29	Petroleum	3,414	3,364	3,329	-1.0	-2.5	163,009,729	72,615,551	69,858,369	-3.8	-57.1
30	Plastics	3,758	3,771	3,451	-8.5	-8.2	112,520,726	107,114,728	88,118,503	-17.7	-21.7
31	Leather	194	170	142	-16.5	-26.8	4,835,113	3,624,907	2,614,654	-27.9	-45.9
32	Stone/Clay/Glass	1,889	1,927	1,856	-3.7	-1.7	41,373,767	40,483,175	37,803,472	-6.6	-8.6
33	Primary Metals	6,562	6,417	5,961	-7.1	-9.2	585,940,153	567,551,522	510,911,048	-10.0	-12.8
34	Fabricated Metals	7,602	7,642	7,088	-7.2	-6.8	85,672,853	76,463,103	63,394,894	-17.1	-26.0
35	Machinery	2,957	2,763	2,542	-8.0	-14.0	21,202,286	19,316,816	15,237,482	-21.1	-28.1
36	Electrical Equip.	2,885	2,782	2,516	-9.6	-12.8	30,533,296	31,798,750	22,294,684	-29.9	-27.0
37	Transportation Equip.	4,544	4,493	4,369	-2.8	-3.9	102,078,856	96,328,955	80,026,949	-16.9	-21.6
38	Measure/Photo.	611	558	533	-4.5	-12.8	12,205,485	9,080,915	9,305,836	2.5	-23.8
39	Miscellaneous	712	651	581	-10.8	-18.4	10,399,282	8,858,237	8,402,636	-5.1	-19.2
--	Multiple codes 20-39	4,483	4,391	4,087	-6.9	-8.8	124,046,116	121,519,781	101,922,488	-16.1	-17.8
--	No codes 20-39	457	474	603	27.2	31.9	6,444,366	8,401,306	11,325,679	34.8	75.7
491/493	Electric Utilities	4,125	4,070	4,066	-0.1	-1.4	1,118,019,767	1,119,578,131	1,020,869,982	-8.8	-8.7
5169	Chemical Wholesale Distributors	3,629	3,456	3,311	-4.2	-8.8	1,549,205	1,523,560	1,463,928	-3.9	-5.5
5171	Petroleum Terminals/Bulk Storage	3,753	3,526	3,825	8.5	1.9	4,504,151	3,766,217	21,316,334	466.0	373.3
7389/4953	Hazardous Waste/Solvent Recovery	2,297	2,273	2,259	-0.6	-1.7	244,247,514	275,752,420	193,268,850	-29.9	-20.9
	Total	85,067	83,036	79,175	-4.6	-6.9	7,195,263,950	6,665,231,053	5,610,755,885	-15.8	-22.0

Note: Does not include PBT chemicals, vanadium and vanadium compounds. On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI facilities that reported the amount as an on-site release.

Facilities/forms are included in the manufacturing industry categories (SIC Codes 20-39) if they did not report a SIC code in the other industries. Forms that reported more than one 2-digit SIC code within the range 20 to 39 are assigned to the "multiple codes" category. Facilities/forms are included in the other industry categories if the facility/form has a SIC code in the other industries and no SIC code in 20-39. If the facility reported in any year prior to 1998 and the facility/form has a combination of manufacturing and other industry SIC codes, then the facility/form is included in the manufacturing industry category. If the facility reported for the first time in 1998 or later and the facility/form has a combination of manufacturing and other industry SIC codes, then the facility/form is included in the other industry category. Forms with no 2-digit SIC code are included in the "no codes 20-39" category. One facility, Phelps Dodge Miami of Claypool, AZ, that reported under SIC code 33 and SIC code 10 in 2001 and previous years has been included in SIC code 10 for the purpose of this analysis.

off-site releases decreased from 7.20 billion pounds to 5.61 billion pounds, a decline of 22.0 percent. The change in the latest year, 2000 to 2001 was a decrease of 15.8 percent. Between 1998 and 2001, the number of forms for chemicals comparable in all years submitted dropped from 85,067 to 79,175, a decrease of 6.9 percent.

The metal mining industry had the largest total releases on- and off-site in all three years, 1998, 2000 and 2001. It was the industry with the largest absolute decrease, of 942.2 million pounds from 1998 to 2001. Metal mining facilities decreased total releases overall by 28.2 percent from 1998 to 2001 and by 20.2 percent in the latest time period, 2000 to 2001. The metal mining industry showed a

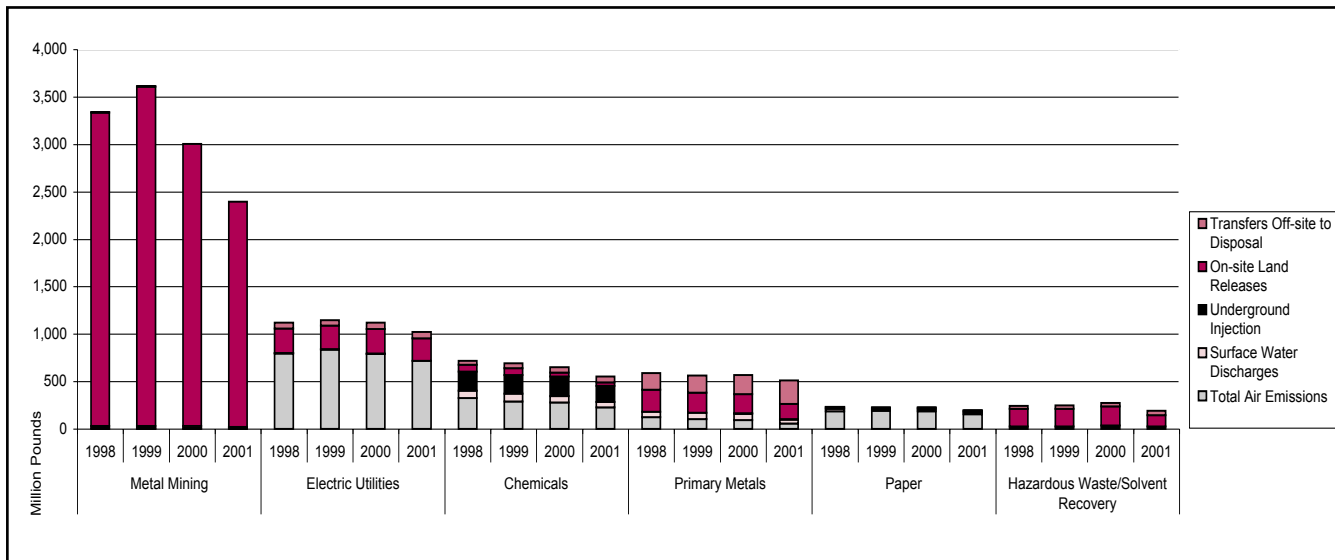
net increase from 1998 to 1999 with subsequent decreases in the next two years (see Figure 2-3).

The industry with the second-largest total releases, electric utilities, also showed a decrease from 1998 to 2001, of 8.7 percent. However, electric utilities had reported a net increase from 1998 to 2000, of 1.6 million pounds or less than one percent. The chemical manufacturing industry had the third-largest total releases on- and off-site from 1998 to 2001. It had the second-largest absolute reduction, with a decrease of 164.6 million pounds and a reduction of 22.9 percent over the period.

Three industry groups reported increases from 1998 to 2001. Releases from petroleum terminals/bulk



Figure 2-3: TRI Total On-site and Off-site Releases, Industries with Largest Total, 1998-2000



Note: Does not include PBT chemicals, vanadium and vanadium compounds. On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site releases do not include transfers to disposal sent to other TRI facilities that reported the amount as an on-site release.

storage facilities increased by 16.8 million pounds or over 373 percent. While the number of forms reported by this industry had increased overall from 1998 to 2001, by 72 or 1.9 percent, the number had decreased from 1998 to 2000 by 227 showing a subsequent increase from 2000 to 2001 of 299 forms.

The two other industry groups with increases were the group of forms reporting no SIC codes (that is, no codes required to be reported to TRI) and coal mining. The group with no SIC codes had an increase in forms of 31.9 percent and in total releases of 75.7 percent from 1998 to 2001. Coal mining facilities reported a 20.7 percent increase in forms and a 9.0 percent increase in total releases from 1998 to 2001, after having reported a decrease in total releases of 5.6 percent from 1998 to 2000.

Waste Management Data, 1998 and 2000-2001

As shown in Table 2-11, the quantity of toxic chemicals in production-related waste managed decreased from 27.54 billion pounds in 1998 to 25.36 billion pounds in 2001, a 7.9 percent decrease. However, the toxic chemicals in produc-

tion-related waste increased from 1998 to 2000, from 27.54 billion pounds to 32.42 billion pounds, resulting in an overall increase of 4.88 billion pounds or 17.7 percent, with a subsequent drop from 2000 to 2001 of 7.61 billion pounds or 21.8 percent.

The chemical manufacturing industry, with the largest amounts of toxic chemicals in production-related waste during the period from 1998 to 2001, reported a net increase from 1998 to 2001 of 3.1 percent. However, a decrease of 5.06 billion pounds in the most recent period, from 2000 to 2001, somewhat offset the large increases in prior years, a net increase of 5.39 billion pounds from 1998 to 2000 (see also Figure 2-4).

The primary metals industry had the second-largest quantity of toxic chemicals in production-related waste in 2001 as opposed to the metal mining industry, which held this position in 1998. Both of these industries reported decreases from 1998 to 2001. The primary metals industry had a net decrease of 430.3 million pounds or 14.0 percent from 1998 to 2001, and the metal mining industry had a net decrease of 1.13 billion pounds or 31.2



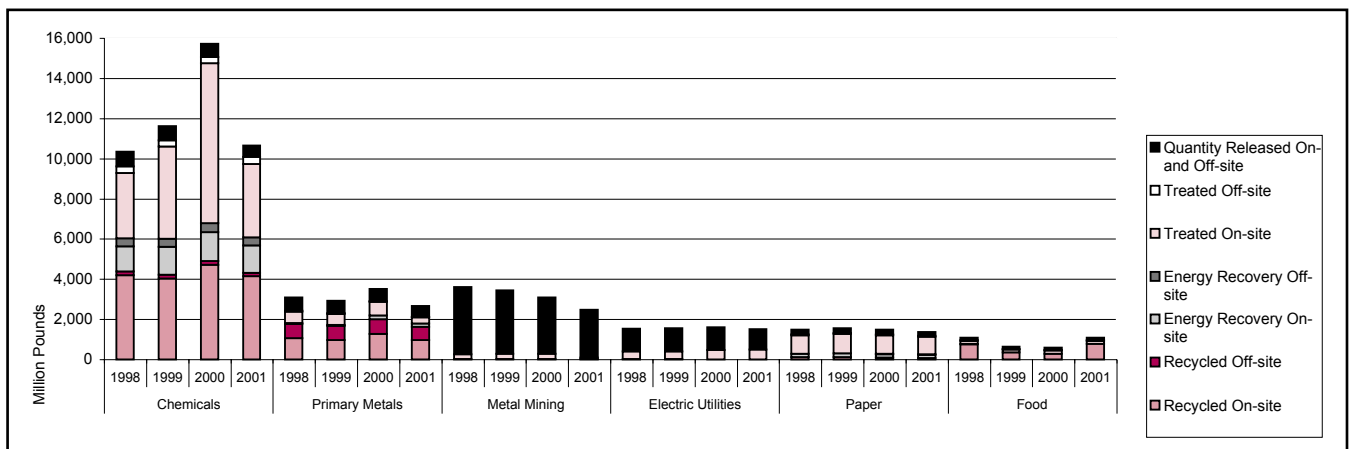
Table 2-11: TRI Total Production-related Waste Managed by Industry, 1998 and 2000-2001

SIC Code	Industry	Total Production-related Waste Managed						
		1998 Pounds	2000 Pounds	2001 Pounds	Change 2000-2001		Change 1998-2001	
					Pounds	Percent	Pounds	Pounds
10	Metal Mining	3,608,733,220	3,098,143,455	2,481,786,246	-616,357,209	-19.9	-1,126,946,974	-31.2
12	Coal Mining	13,478,476	15,407,259	14,527,210	-880,049	-5.7	1,048,734	7.8
20	Food	1,089,073,581	600,427,195	1,088,676,460	488,249,265	81.3	-397,121	-0.04
21	Tobacco	5,907,399	5,300,257	5,302,236	1,979	0.04	-605,163	-10.2
22	Textiles	49,293,935	44,062,732	40,578,139	-3,484,593	-7.9	-8,715,796	-17.7
23	Apparel	1,920,919	1,895,870	1,803,385	-92,485	-4.9	-117,534	-6.1
24	Lumber	63,493,916	175,413,059	68,470,249	-106,942,811	-61.0	4,976,333	7.8
25	Furniture	32,957,866	23,968,255	14,997,034	-8,971,221	-37.4	-17,960,832	-54.5
26	Paper	1,476,450,418	1,479,788,509	1,373,244,775	-106,543,734	-7.2	-103,205,643	-7.0
27	Printing	300,646,333	365,351,767	370,475,455	5,123,688	1.4	69,829,122	23.2
28	Chemicals	10,336,213,842	15,724,070,676	10,660,684,644	-5,063,386,032	-32.2	324,470,802	3.1
29	Petroleum	1,053,354,400	830,433,364	874,957,447	44,524,083	5.4	-178,396,953	-16.9
30	Plastics	260,807,868	225,897,970	203,876,026	-22,021,944	-9.7	-56,931,842	-21.8
31	Leather	10,760,483	17,972,644	8,406,552	-9,566,092	-53.2	-2,353,931	-21.9
32	Stone/Clay/Glass	696,976,031	616,620,095	566,829,148	-49,790,947	-8.1	-130,146,883	-18.7
33	Primary Metals	3,081,686,210	3,509,833,346	2,651,415,299	-858,418,048	-24.5	-430,270,911	-14.0
34	Fabricated Metals	708,983,457	719,061,580	648,357,622	-70,703,959	-9.8	-60,625,836	-8.6
35	Machinery	148,537,242	139,943,299	127,291,913	-12,651,386	-9.0	-21,245,328	-14.3
36	Electrical Equip.	410,723,885	405,106,370	309,059,826	-96,046,544	-23.7	-101,664,059	-24.8
37	Transportation Equip.	302,423,453	282,620,688	253,088,358	-29,532,330	-10.4	-49,335,095	-16.3
38	Measure/Photo.	75,104,565	69,278,227	61,971,990	-7,306,236	-10.5	-13,132,575	-17.5
9	Miscellaneous	50,848,238	42,595,503	40,644,907	-1,950,597	-4.6	-10,203,331	-20.1
--	Multiple codes 20-39	1,074,551,644	1,343,644,331	943,612,660	-400,031,672	-29.8	-130,938,984	-12.2
--	No codes 20-39	30,712,834	24,814,899	23,947,941	-866,957	-3.5	-6,764,893	-22.0
491/493	Electric Utilities	1,519,915,995	1,595,650,886	1,514,644,820	-81,006,066	-5.1	-5,271,175	-0.3
5169	Chemical Wholesale Distributors	56,299,586	23,224,055	41,070,584	17,846,529	76.8	-15,229,003	-27.0
5171	Petroleum Terminals/Bulk Storage	60,872,217	40,463,314	46,250,475	5,787,161	14.3	-14,621,742	-24.0
7389/4953	Hazardous Waste/Solvent Recovery	1,021,510,214	998,367,491	922,569,642	-75,797,850	-7.6	-98,940,572	-9.7
	Total	27,542,238,226	32,419,357,097	25,358,541,041	-7,060,816,055	-21.8	-2,183,697,185	-7.9

Note: Does not include PBT chemicals, vanadium and vanadium compounds. Data are from Section 8 of Form R of year indicated.

Facilities/forms are included in the manufacturing industry categories (SIC Codes 20-39) if they did not report a SIC code in the other industries. Forms that reported more than one 2-digit SIC code within the range 20 to 39 are assigned to the "multiple codes" category. Facilities/forms are included in the other industry categories if the facility/form has a SIC code in the other industries and no SIC code in 20-39. If the facility reported in any year prior to 1998 and the facility/form has a combination of manufacturing and other industry SIC codes, then the facility/form is included in the manufacturing industry category. If the facility reported for the first time in 1998 or later and the facility/form has a combination of manufacturing and other industry SIC codes, then the facility/form is included in the other industry category. Forms with no 2-digit SIC code are included in the "no codes 20-39" category. One facility, Phelps Dodge Miami of Claypool, AZ, that reported under SIC code 33 and SIC code 10 in 2001 and previous years has been included in SIC code 10 for the purpose of this analysis.

Figure 2-4: TRI Total Production-related Waste Managed, Industries with the Largest Total, 1998-2001



Note: Does not include PBT chemicals, vanadium and vanadium compounds. Data are from Section 8 of Form R of the year indicated.



percent. Electric utilities reported the third-largest quantity of toxic chemicals in production-related waste during the time period 1998-2001, with a decrease of 5.3 million pounds or less than one percent. However, electric utilities reported a net increase from 1998 to 2000 (of 75.7 million pounds) offset by a net decrease of 81.0 million pounds or 5.1 percent from 2000 to 2001.

Two other industries reported over 1 billion pounds of toxic chemicals in production-related waste in 2001: paper and food. The paper industry reported a 7.0 percent decrease from 1998 to 2001. The food industry had a net decrease of less than one percent from 1998 to 2001, with an increase of 488.2 million pounds or 81.3 percent in the latest time period 2000 to 2001.

Aside from the chemical manufacturing industry, three other industries reported increases from 1998 to 2001. They were printing, lumber and coal mining. The printing industry reported an increase of 23.2 percent, or 69.8 million pounds, from 1998 to

2001. The lumber and coal mining industries both reported an increase of 7.8 percent. For lumber facilities, this represented an increase of 5.0 million pounds and, for coal mining facilities, an increase of 1.0 million pounds.

Economic Overview, by Industry, Multi-Year Comparisons

As shown in Table 2-12, both overall production at manufacturing facilities and production at electric utilities expanded from 1998 to 2000 but contracted from 2000 to 2001. For coal mining and metal mining, however, production contracted from 1998 to 2001, although from 2000 to 2001 coal mining production did increase.

The only industry groups that showed increases in production over 1998 were computer and electronic products with an increase of 52.0 percent, the chemical manufacturing industry with an increase of 4.3 percent and miscellaneous manufacturing with an increase of less than one percent.

Table 2-12: Industrial Production Indexes by Industry, 1998-2001

NAICS Code	Industry (NAICS)	1998	1999	2000	2001	SIC Code	Industry (SIC)
	Manufacturing	100.0	106.1	108.0	100.8		
	Durable manufacturing	100.0	108.1	113.2	103.2		
321	Wood products	100.0	101.1	92.3	92.0	24	Lumber
327	Nonmetallic mineral products	100.0	99.3	98.7	98.5	32	Stone/Clay/Glass
331	Primary metals	100.0	104.2	93.4	78.4	33	Primary Metals
332	Fabricated metal products	100.0	103.1	102.0	94.8	34	Fabricated Metals
333	Machinery	100.0	101.7	104.8	85.2	35	Machinery
334	Computer and electronic products	100.0	132.2	169.5	152.0	36 and 38	Electrical Equip./Measure/Photo.
335	Electrical equipment, appliance, and components	100.0	104.4	106.9	94.6	36	Electrical Equip.
3361-3	Motor vehicles and parts	100.0	103.7	94.6	96.8	37	Transportation Equip.
3364-9	Aerospace and miscellaneous transportation equipment	100.0	87.5	85.2	79.1	37	Transportation Equip.
337	Furniture and related products	100.0	104.2	103.9	94.5	25	Furniture
339	Miscellaneous	100.0	102.6	106.5	100.5	38 and 39	Measure/Photo./Miscellaneous
	Nondurable manufacturing	100.0	103.2	101.1	97.4		
311,312	Food, beverage, and tobacco	100.0	101.1	100.7	98.5	20 and 21	Food/Tobacco
313,314	Textiles and products	100.0	102.8	95.6	83.0	22	Textiles
315,316	Apparel and leather goods	100.0	96.0	89.8	79.3	23 and 31	Apparel/Leather
322	Paper	100.0	101.9	95.7	89.8	26	Paper
323	Printing and related support activities	100.0	100.2	98.6	93.0	27	Printing
324	Petroleum and coal products	100.0	100.8	100.0	98.7	29	Petroleum
325	Chemicals	100.0	107.3	106.4	104.3	28	Chemicals
326	Plastics and rubber products	100.0	105.9	102.5	97.9	30	Plastics
	Mining						
2121	Coal mining	100.0	99.97	94.7	97.4	12	Coal Mining
2122	Metal ore mining	100.0	93.2	95.6	81.6	10	Metal Mining
	Electric and gas utilities						
2211	Electric power generation, transmission and distribution	100.0	102.5	108.7	101.0	491/493	Electric Utilities

Note: Production from Board of Governors of the Federal Reserve System, Industrial Production and Capacity Utilization, Statistical Release G17, Table 2a (<http://www.federalreserve.gov/releases/G17>) and is based on North American Industrial Classification System (NAICS).



Several industry groups showed declines in production over 1998. Those with the largest declines were primary metals, aerospace and miscellaneous transportation equipment, and apparel and leather goods, each with a decline of over 20 percent from 1998 to 2001.

Some industries only showed declines in the most recent period, 2000 to 2001, after having increased from 1998 to 2000. They were machinery, electrical equipment and miscellaneous manufacturing.

Table 2-12 presents production indexes for each industrial sector from 1998 to 2001. During this period, production increased by 0.8 percent for U.S. manufacturing as a whole, by 1.0 percent for electric utilities but decreased for coal mining and metal mining. These data are based on the North American Industrial Classification System (NAICS), a system to classify facilities into indus-

try sectors adopted by the three North American countries (the US, Canada and Mexico) in 1997. It replaces the US Standard Industrial Classification System (SIC) used currently by TRI. Table 2-12 shows the equivalent SIC codes categories. More information on the correspondence between these two systems can be found at <http://www.census.gov/epcd/naics/nsic2ndx.htm#S3>.

Table 2-13 compares the change in production in the TRI industries since 1998 with the change in the quantities of TRI chemicals released on- and off-site and in production-related waste managed. As shown in Table 2-13, the quantity released on- and off-site steadily decreased while the quantity of toxic chemicals in production-related waste increased from 1998 to 1999 and from 1999 to 2000 before decreasing from 2000 to 2001.

Table 2-13: Percentage Change in Industrial Production and in TRI Quantities in Waste, 1998-2001

SIC Code	Industry	Industrial Production				TRI Quantity Released On- and Off-site				TRI Total Production-related Waste			
		Percent Change				Percent Change				Percent Change			
		1998-1999	1999-2000	2000-2001	1998-2001	1998-1999	1999-2000	2000-2001	1998-2001	1998-1999	1999-2000	2000-2001	1998-2001
10	Metal Mining	-6.8	2.4	-14.1	-18.4	-5.6	-10.9	-14.6	-28.2	-4.9	-9.7	-19.9	-31.2
12	Coal Mining	0.0	-5.2	2.6	-2.6	-19.6	44.3	-5.8	9.2	-19.1	41.4	-5.7	7.8
20	Food	NA	NA	NA	NA	0.0	0.4	-4.8	-4.4	-40.8	-6.9	81.3	-0.04
21	Tobacco	NA	NA	NA	NA	-12.2	-1.7	3.2	-11.0	-14.4	4.9	0.0	-10.2
22	Textiles	2.8	-7.2	-12.6	-17.0	-21.4	-11.3	-18.9	-43.5	-12.0	1.5	-7.9	-17.7
23	Apparel	NA	NA	NA	NA	-9.8	-0.8	-31.5	-38.7	-5.7	4.7	-4.9	-6.1
24	Lumber	1.1	-8.8	-0.3	-8.0	2.8	-3.6	-9.3	-10.1	-4.1	187.9	-61.0	7.8
25	Furniture	4.2	-0.4	-9.4	-5.5	-16.8	-14.3	-32.9	-52.1	-14.0	-15.4	-37.4	-54.5
26	Paper	1.9	-6.2	-5.9	-10.2	-1.1	-0.9	-14.5	-16.2	5.0	-4.5	-7.2	-7.0
27	Printing	0.2	-1.6	-5.6	-7.0	-6.2	-8.6	3.5	-11.2	5.7	14.9	1.4	23.2
28	Chemicals	7.3	-0.9	-2.1	4.3	-3.0	-5.1	-13.6	-20.4	12.4	35.4	-32.2	3.1
29	Petroleum	0.8	-0.9	-1.3	-1.3	-4.5	-1.7	-2.9	-8.8	-4.7	-17.3	5.4	-16.9
30	Plastics	5.9	-3.5	-4.5	-2.1	-0.3	-6.6	-15.1	-21.0	-4.5	-9.3	-9.7	-21.8
31	Leather	NA	NA	NA	NA	-10.2	-12.5	-27.1	-42.8	34.7	24.0	-53.2	-21.9
32	Stone/Clay/Glass	-0.7	-0.6	-0.2	-1.5	-3.8	3.6	-8.2	-8.5	10.1	-19.6	-8.1	-18.7
33	Primary Metals	4.2	-10.7	-15.1	-21.6	-4.4	-4.2	-13.2	-20.5	-4.9	19.8	-24.5	-14.0
34	Fabricated Metals	3.1	-1.1	-7.1	-5.2	-1.9	-2.6	-16.5	-20.2	3.5	-2.0	-9.8	-8.6
35	Machinery	1.7	3.0	-19.5	-14.8	-21.4	19.1	-16.1	-21.5	-4.9	-0.9	-9.0	-14.3
36	Electrical Equip.	NA	NA	NA	NA	3.6	-7.4	-23.2	-26.4	-6.6	5.6	-23.7	-24.8
37	Transportation Equip.	NA	NA	NA	NA	-0.3	-8.3	-15.9	-23.1	3.8	-9.9	-10.4	-16.3
38	Measure/Photo.	2.6	4.0	-6.0	NA	-8.3	-12.6	0.3	-19.6	-3.8	-4.1	-10.5	-17.5
39	Miscellaneous	NA	NA	NA	NA	-8.7	-11.3	-13.7	-30.2	-4.3	-12.5	-4.6	-20.1
--	No codes 20-39	NA	NA	NA	NA	-7.7	-6.3	45.3	25.7	-11.1	-9.1	-3.5	-22.0
--	Multiple codes 20-39	NA	NA	NA	NA	2.2	-4.3	-16.3	-18.1	-2.3	27.9	-29.8	-12.2
491/493	Electric Utilities	2.5	6.2	-7.6	1.0	2.8	-2.5	-8.7	-8.5	2.4	2.6	-5.1	-0.3
5169	Chemical Wholesale Distributors	NA	NA	NA	NA	-17.0	5.4	0.8	-11.8	-25.2	-44.8	76.8	-27.0
5171	Petroleum Terminals/Bulk Storage	NA	NA	NA	NA	-71.5	-7.2	-11.1	-76.5	-18.6	-18.4	14.3	-24.0
7389/4953	Hazardous Waste/Solvent Recovery	NA	NA	NA	NA	-0.2	15.2	-29.6	-19.1	-5.1	3.0	-7.6	-9.7
	Total	NA	NA	NA	NA	-3.3	-6.1	-13.6	-21.6	1.9	15.5	-21.8	-7.9

Note: Production from Board of Governors of the Federal Reserve System, Industrial Production and Capacity Utilization, Statistical Release G17, Table 2a (<http://www.federalreserve.gov/releases/G17>) and is based on North American Industrial Classification System (NAICS). TRI Quantities from TRI Form R, Section 8 of year indicated and based on US Standard Industrial Classification system (SIC).

NA: not available.



Because the industrial production data in Table 2-13 are based on NAICS codes, data are not available for all of the TRI industry categories. However, for those with corresponding data, some industries showed larger percentage decreases in total releases on- and off-site or in the quantity of toxic chemicals in production-related waste than in industrial production. The furniture, plastics, stone/clay/glass, petroleum refining, and fabricated metals industries all had percentage decreases in total releases and the quantity of toxic chemicals in production-related waste larger than their percentage decrease in industrial production. On the other hand, the primary metals, machinery, paper had smaller percentage decreases in the quantity of toxic chemicals in production-related waste than in industrial production from 1998 to 2001. The primary metals industry had the largest percentage reduction in industrial production, with a decline of 21.6 percent from 1998 to 2001. This industry reduced total releases by 20.5 percent and the quantity of toxic chemicals in production-related waste by 14.0 percent.

The two industries with an increase in industrial production from 1998 to 2001 were chemical manufacturing and electric utilities. The chemical manufacturing industry showed an increase of 4.3 percent in industrial production from 1998 to 2001 and an increase of 3.1 percent in the quantity of toxic chemicals in production-related waste. Its total releases on- and off-site decreased by 20.4 percent during that same time period. Electric utilities reported overall decreases, of 8.5 percent in total releases and less than one percent in the quantity of toxic chemicals in production-related waste from 1998 to 2001, while showing an increase of 1.0 percent in industrial production.

Several industries reported increases in the quantity of toxic chemicals in production-related waste from 1998 to 2001 but had a decrease in industrial production during that same time period. These industries included lumber, printing, and coal mining. While lumber and printing did report increases in the quantity of toxic chemicals in production-related waste, at the same time they had percentage decreases in the quantity released on- and off-site

greater than the percentage decrease in industrial production.

TRI DATA FOR FEDERAL FACILITIES, 2001

Federally owned facilities that are operated by federal agencies or contractors are required to report to TRI, regardless of SIC code pursuant to Executive Order 13148. Tables in this chapter list the federal agencies that have facilities reporting to TRI. Department of Defense (DOD) data are presented for DOD as a whole and for each defense agency. In addition, Environmental Protection Agency (EPA) data are presented for EPA as a whole and for EPA Fund-Lead Superfund sites separately from other EPA facilities.

In 2001, a total of 283 federal facilities submitted 935 TRI forms; as shown in Table 2-14. Of these, 172 facilities were owned or operated by the Department of Defense (DOD), 26 by the Tennessee Valley Authority (TVA), and 23 by the Department of Energy (DOE).

DOD agencies submitted 525 forms. These DOD submissions included 260 reports by Army facilities, 112 reports by Air Force facilities and 82 reports by Navy facilities. TVA facilities submitted 243 forms and DOE facilities submitted 54 forms.

On- and Off-site Releases, 2001

Table 2-14 also shows that federal facilities reported a total of 79.0 million pounds of on- and off-site releases in 2001. The bulk of the releases, 77.3 million pounds, occurred on-site. Off-site releases totaled 1.8 million pounds.

Tennessee Valley Authority facilities reported 61.4 million pounds of on- and off-site releases. This amount represented 77.7 percent of all releases by all federal facilities. It included the largest amounts in air emissions and other on-site land releases (that is, on-site land releases to other than RCRA subtitle C landfills). TVA's releases included 41.3 million pounds of air emissions and 18.7 million pounds of other on-site land releases.



Table 2-14: TRI On-site and Off-site Releases by Agency, 2001: Federal Facilities

Federal Agency	Total Facilities Number	Total Forms Number	On-site Releases						Total On-site Releases Pounds	Off-site Releases Transfers Off-site to Disposal Pounds	Total On- and Off-site Releases Pounds
			Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection		On-site Land Releases				
					Class I Wells Pounds	Class II-V Wells Pounds	RCRA Subtitle C Landfills Pounds	Other On-site Land Releases Pounds			
Department of Defense	172	525	2,964,552	4,024,363	0	0	0	5,869,743	12,858,658	928,474	13,787,132
Air Force	35	112	910,939	110,405	0	0	0	1,014,977	2,036,321	109,065	2,145,387
Army	78	260	1,596,769	3,527,879	0	0	0	3,767,221	8,891,869	438,393	9,330,262
Army Corps of Engineers	2	7	0	13,287	0	0	0	4,600	17,887	0	17,887
Defense Logistics	1	5	869	0	0	0	0	0	869	0	869
Defense Stockpile	3	4	0	0	0	0	0	0	0	0	0
Marines	21	51	132,814	338,784	0	0	0	675,534	1,147,131	3,059	1,150,190
Military Academy	2	4	254	0	0	0	0	32,914	33,168	0	33,168
Navy	30	82	322,907	34,008	0	0	0	374,497	731,412	377,957	1,109,369
Department of Energy	23	54	215,239	86,425	0	0	3,880	227,470	533,013	258,872	791,886
Department of Interior	13	14	751	5,225	0	0	0	23,508	29,484	0	29,484
Department of State	1	1	0	250	0	0	0	0	250	0	250
Department of Transportation	9	19	227	2	0	0	0	6,222	6,451	2,527	8,978
Department of Treasury	14	28	148	0	0	0	0	142,796	142,944	29,016	171,960
Department of Veterans Affairs	3	4	3,686	750	0	0	0	0	4,436	0	4,436
Environmental Protection Agency	7	18	5900	64911	0	0	0	1,750,613	1821424	1	1,821,425
Environmental Protection Agency	3	8	0	0	0	0	0	0	0	0	0
EPA Fund-Lead Superfund Sites	4	10	5,900	64,911	0	0	0	1,750,613	1,821,424	1	1,821,425
National Aeronautics and Space Administration	8	15	73,334	0	0	0	4	4,632	77,969	1,825	79,794
Tennessee Valley Authority	26	243	41,275,091	909,336	0	0	0	18,652,015	60,836,442	545,953	61,382,396
US Department of Agriculture	5	7	1	0	0	0	0	450,768	450,769	250	451,019
US Enrichment Corporation	1	6	497,743	73	0	0	0	570	498,386	0	498,386
US General Services Administration	1	1	0	0	0	0	0	0	0	3	3
Total for Federal Facilities	283	935	45,036,673	5,091,334	0	0	3,884	27,128,337	77,260,228	1,766,920	79,027,148

Note: On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site releases do not include transfers to disposal sent to other TRI facilities that reported the amount as an on-site release.

Together, the Department of Defense agencies reported 13.8 million pounds of total releases, including 3.0 million pounds of air emissions, 5.9 million pounds of other on-site land releases (that is, on-site land releases to other than RCRA subtitle C landfills), and 4.0 million pounds of surface water discharges. These DOD facilities also reported almost 928,500 pounds transferred off-site for disposal. Total releases from DOD facilities represented 17.4 percent of all releases by all federal facilities.

Within the DOD, Army releases of 9.3 million pounds consisted of on-site land releases of 3.8 million pounds, surface water discharges of 3.5 million pounds and air emissions of 1.6 million pounds. The Air Force's total of 2.1 million pounds consisted of on-site land releases of 1.0 million pounds and air emissions of 910,900 pounds. The Navy reported 1.1 million pounds of total releases with 322,900 pounds of air emissions and 378,000 pounds of off-site transfers to disposal.

The EPA Fund-Lead Superfund sites reported 1.8 million pounds, primarily as on-site land releases. Over 64,900 pounds were reported as surface water discharges. The on-site land releases were a result of clean-up activities at large, abandoned mining sites.

Waste Management Data, 2001

Quantities of TRI Chemicals in Waste

Federal facilities reported managing 218.5 million pounds of TRI chemicals in production-related waste in 2001, as shown in Table 2-15. The largest quantities of toxic chemicals in waste reported by federal facilities were on- and off-site releases (77.2 million pounds) and on-site treatment (57.4 million pounds). They also reported 44.4 million pounds recycled off-site and 38.7 million pounds recycled on-site.

Tennessee Valley Authority (TVA) facilities accounted for 108.7 million pounds of toxic chemicals in production-related waste managed, or 49.8 percent of the total for all federal facilities in 2001.



Table 2-15: Quantities of TRI Chemicals in Waste by Agency, 2001: Federal Facilities

Federal Agency	Recycled		Energy Recovery		Treated		Quantity Released On- and Off-site Pounds	Total Production-related Waste Managed Pounds	Non-production-related Waste Managed Pounds
	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds			
Department of Defense	38,316,217	3,151,303	88,816	75,900	8,272,951	601,886	13,698,800	64,205,874	187,256
Air Force	24,210	207,501	0	21,585	1,610,394	261,641	2,231,785	4,357,116	42
Army	37,858,376	2,495,004	0	18,025	5,732,319	160,443	9,282,701	55,546,868	131,987
Army Corps of Engineers	0	1,877	0	0	0	371	17,887	20,135	0
Defense Logistics	296,688	0	0	0	0	0	869	297,557	0
Defense Stockpile	0	0	0	0	0	0	0	0	0
Marines	13,733	119,839	88,816	3,900	569,049	7,339	1,106,639	1,909,315	1,614
Military Academy	0	8,770	0	0	0	0	33,168	41,938	0
Navy	123,210	318,313	0	32,390	361,189	172,093	1,025,750	2,032,945	53,613
Department of Energy	258,586	1,200,942	0	36	710,576	10,731	800,181	2,981,052	36,928
Department of Interior	0	0	0	0	0	0	8,545	8,545	0
Department of State	0	3,705	0	0	64,296	0	256	68,257	0
Department of Transportation	0	16,630	0	0	0	21	10,629	27,280	1,539
Department of Treasury	30	39,216,689	0	0	40	0	157,577	39,374,336	19
Department of Veterans Affairs	0	0	0	0	0	0	3,986	3,986	0
Environmental Protection Agency	0	0	0	0	0	318	0	318	1833306
Environmental Protection Agency EPA Fund-Lead Superfund Sites	0	0	0	0	0	318	0	318	0
National Aeronautics and Space Administration	113,300	40,351	0	18,840	1,830,768	6,686	79,784	2,089,729	1
Tennessee Valley Authority	0	785,084	0	0	46,473,700	0	61,428,662	108,687,446	0
US Department of Agriculture	0	31	0	0	0	0	493,170	493,201	0
US Enrichment Corporation	0	0	0	0	23,100	0	498,366	521,466	0
US General Services Administration	0	4,500	0	0	0	0	3	4,503	0
Total for Federal Facilities	38,688,133	44,419,236	88,816	94,776	57,375,431	619,642	77,179,959	218,465,992	2,059,050

Note: Data are from Section 8 of Form R.

TVA facilities reported 61.4 million pounds released on- and off-site, 79.6 percent of the total quantity released on- and off-site by federal facilities. TVA facilities also reported 46.5 million pounds treated on-site, 81.0 percent of the total treated on-site by federal facilities.

Department of Defense facilities reported the second-largest quantity of toxic chemicals in production-related waste, 64.2 million pounds or 29.4 percent of the total for all federal facilities in 2001. The Army reported a total of 55.5 million pounds with 37.9 million pounds recycled on-site, 9.3 million pounds released on- and off-site, 5.7 million pounds treated on-site and 2.5 million pounds recycled off-site.

The Department of Treasury ranked third among federal agencies for total quantity of toxic chemicals in production-related waste, with 39.4 million pounds, or 18.0 percent of the total for all federal facilities in 2001. Most (39.2 million pounds) of this amount was reported as recycled off-site.

Transfers Off-site for Further Waste Management, including Disposal

Table 2-16 summarizes reporting by federal facilities of transfers off-site for further waste management, including disposal. These transfers totaled 46.2 million pounds in 2001. Much of this amount (43.6 million pounds or 94.4 percent) was transferred off-site to recycling; the category of other off-site transfers to disposal accounted for 1.8 million pounds.

Treasury Department facilities reported the largest total transfers off-site for further waste management, including disposal, in 2001. Over 99.9 percent of the 39.3 million pounds of toxic chemicals transferred by the Treasury Department was sent off-site to recycling.

The Department of Defense facilities reported 4.4 million pounds of chemicals in waste sent off-site for further waste management, including disposal, in 2001. Over 2.7 million pounds of this was sent off-site for recycling, primarily by Army facilities.

In 2001, Tennessee Valley Authority facilities reported 1.3 million pounds sent off-site for further



Table 2-16: TRI Transfers Off-site for Further Waste Management, including Disposal, by Agency, 2001: Federal Facilities

Federal Agency	Transfers to			Transfers to POTWs		Other Off-site Transfers* Pounds	Other Off-site Disposal** Pounds	Total Transfers for Further Waste Management, including Disposal Pounds
	Recycling Pounds	Energy Recovery Pounds	Treatment Pounds	Metals and Metal Category	Non-metal TRI Chemicals			
				Pounds	Pounds			
Department of Defense	2,742,420	76,395	373,465	2,069	217,958	0	987,173	4,399,481
Air Force	207,767	22,033	113,825	564	211,050	0	124,638	679,877
Army	2,085,849	18,021	113,866	715	6,329	0	438,265	2,663,045
Army Corps of Engineers	1,877	0	0	0	371	0	0	2,248
Defense Logistics	0	0	0	0	0	0	0	0
Defense Stockpile	0	0	0	0	0	0	0	0
Marines	119,839	3,900	7,291	0	48	0	46,435	177,513
Military Academy	8,770	0	0	0	0	0	0	8,770
Navy	318,319	32,441	138,483	790	160	0	377,835	868,027
Department of Energy	789,046	36	5,032	28	5,640	0	265,956	1,065,739
Department of Interior	0	0	0	0	0	0	0	0
Department of State	3,705	0	0	0	0	0	0	3,705
Department of Transportation	16,631	0	0	0	0	0	3,682	20,312
Department of Treasury	39,226,123	0	0	1,034	0	0	28,115	39,255,273
Department of Veterans Affairs	0	0	0	0	0	0	0	0
Environmental Protection Agency	63	0	58,284	0	0	0	1	58,348
Environmental Protection Agency	63	0	255	0	0	0	0	318
EPA Fund-Lead Superfund Sites	0	0	58,029	0	0	0	1	58,030
National Aeronautics and Space Administration	40,351	18,940	6,657	0	0	0	1,858	67,806
Tennessee Valley Authority	786,759	2	0	0	0	0	546,743	1,333,504
US Department of Agriculture	31	0	0	0	0	0	250	281
US Enrichment Corporation	0	0	0	0	0	0	0	0
US General Services Administration	4,500	0	0	0	0	0	3	4,503
Total for Federal Facilities	43,609,629	95,373	443,438	3,132	223,598	0	1,833,782	46,208,951

Note: Transfers Off-site for Further Waste Management, including Disposal are from Section 6 of Form R.

* Other Off-site Transfers are transfers reported without a valid waste management code.

** Does not include transfers to POTWs of metals and metal category compounds.

waste management, including disposal. These transfers included almost 786,800 pounds sent off-site for recycling and 546,700 pounds were other transfers sent off-site for disposal. Department of Energy facilities reported 1.1 million pounds sent off-site for further waste management, including disposal, with most of it sent off-site for recycling.

Projected Quantities of TRI Chemicals Managed in Waste, 2001-2003

As Table 2-17 shows, the quantity of toxic chemicals in production-related waste for federal facilities is projected to decrease by 5.0 percent between 2001 and 2003, with the largest decline, 4.5 percent, taking place in 2001. As described in **Waste Management** in Chapter 1, on each Form R that it submits, a facility reports actual waste management quantities for the current and prior years and projected quantities for the next two years. The reported change in the quantity of toxic chemicals in

production-related waste from 2000 to 2001 was an increase of 3.6 percent.

Tennessee Valley Authority facilities, the agency with the largest quantity of toxic chemicals in production-related waste in 2001, projected almost no reductions. These facilities reported a reduction of 11.0 percent from 2000 to 2001.

Department of Defense facilities, which reported the second largest quantity of toxic chemicals in production-related waste of all federal agencies, projected a decrease of 6.5 percent from 2001 to 2003, after a reported increase of 52.0 percent from 2000 to 2001. This included projected reductions of 16.9 percent by Navy facilities and close to 8 percent by Air Force and Army facilities. Other DOD agencies, however, projected increases, including a 23.2 percent increase by the Military Academy and over 350 percent by Defense Logistics. All DOD agencies showed increases from 2000 to 2001 except for Defense Logistics, which reported a 67.4 percent decrease.



Table 2-17: Prior Year, Current Year and Projected Quantities of TRI Chemicals in Waste by Agency, 2000-2003: Federal Facilities

Federal Agency	Total Production-related Waste Managed				Change 2000-2001 Percent	Projected Change 2001-2002 Percent	Projected Change 2002-2003 Percent	Projected Change 2001-2003 Percent
	Prior Year 2000 Pounds	Current Year 2001 Pounds	Projected 2002 Pounds	Projected 2003 Pounds				
Department of Defense	40,459,317	61,513,201	58,458,386	57,499,312	52.0	-5.0	-1.6	-6.5
Air Force	2,526,110	4,181,779	3,907,670	3,838,145	65.5	-6.6	-1.8	-8.2
Army	35,190,307	53,844,023	50,145,707	49,390,052	53.0	-6.9	-1.5	-8.3
Army Corps of Engineers	14,498	20,135	20,102	20,102	38.9	-0.2	0.0	-0.2
Defense Logistics	911,931	297,557	1,367,895	1,367,895	-67.4	359.7	0.0	359.7
Defense Stockpile	0	0	0	0	--	--	--	--
Marines	161,160	1,428,786	1,424,621	1,422,309	786.6	-0.3	-0.2	-0.5
Military Academy	12,059	34,094	44,000	42,000	182.7	29.1	-4.5	23.2
Navy	1,643,252	1,706,827	1,548,391	1,418,809	3.9	-9.3	-8.4	-16.9
Department of Energy	2,376,000	1,797,943	1,103,390	1,093,493	-24.3	-38.6	-0.9	-39.2
Department of Interior	5,879	4,938	5,122	5,130	-16.0	3.7	0.2	3.9
Department of State	61,729	68,257	68,254	68,254	10.6	-0.004	0.0	-0.004
Department of Transportation	196	0	0	0	-100.0	-100.0	--	-100.0
Department of Treasury	40,644,003	39,185,603	35,574,972	35,572,317	-3.6	-9.2	-0.01	-9.2
Department of Veterans Affairs	4,178	3,986	4,050	4,050	-4.6	1.6	0.0	1.6
Environmental Protection Agency	357	318	15	4	-11.0	-95.3	-73.0	-98.7
Environmental Protection Agency	357	318	15	4	-11.0	-95.3	-73.0	-98.7
EPA Fund-Lead Superfund Sites	0	0	0	0	--	--	--	--
National Aeronautics and Space Administration	243,587	2,084,671	211,211	208,369	755.8	-89.9	-1.3	-90.0
Tennessee Valley Authority	121,294,791	107,916,004	107,890,455	107,882,946	-11.0	-0.02	-0.01	-0.03
US Department of Agriculture	544,313	491,933	400,943	426,400	-9.6	-18.5	6.3	-13.3
US Enrichment Corporation	543,224	520,896	209,020	209,020	-4.1	-59.9	0.0	-59.9
Total for Federal Facilities	206,177,574	213,587,750	203,925,818	202,969,295	3.6	-4.5	-0.5	-5.0

Note: Does not include lead and lead compounds. Data from Section 8 of Form R for 2001.

Treasury Department facilities, with the third largest quantity of toxic chemicals in production-related waste, expected a decrease of 9.2 percent from 2001 to 2003, after reporting a decrease of 3.6 percent from 2000 to 2001. The Department of Energy facilities expected to decrease its quantity of toxic chemicals in production-related waste from 2001 to 2003, by 39.2 percent, after reporting a 24.3 percent decrease from 2000 to 2001.

Source Reduction, 2001

In 2001, federal facilities filed 191 forms reporting source reduction activity (see Table 2-18). As noted in **Waste Management** in Chapter 1, source reduction—activity that prevents the generation of waste—is the preferred waste management option.

Department of Defense facilities reported source reduction activity on 119 forms, 23.1 percent of their total Form Rs. Of the DOD agencies, Air Force facilities reported source reduction activities on 39.3 percent of their Form Rs, Navy facilities on 32.5 percent of their Form Rs, Army facilities on 17.7 percent, Army Corps of Engineers facilities on 14.3 percent, and Marines facilities on 9.8 percent.

Tennessee Valley Authority facilities reported source reduction activity on 30 forms, 12.6 percent of their Form Rs. Department of Energy facilities reported such activity on 15.1 percent of their 53 Form Rs, and Department of Treasury facilities on 22.2 percent of their 27 Form Rs.

The most frequently reported source reduction activity (identified on 54 forms, including 42 filed by the Department of Defense facilities) was good operating practices. Raw materials modifications came next, with 49 forms (including 30 by Tennessee Valley Authority facilities and 13 by Department of Defense facilities). Process modifications followed with 21 forms, and then inventory control with 20 forms and cleaning and degreasing with 17 forms. Most forms for these types of source reduction activities were from Department of Defense facilities.

TRI DATA FOR FEDERAL FACILITIES, 2000-2001

Comparisons of TRI data across reporting years are made on the basis of chemicals that were reportable in all years with the same reporting definitions.



Table 2-18: Number of Forms Reporting Source Reduction Activity, by Category and Agency, 2001: Federal Facilities

Federal Agency	Forms Reporting Source Reduction Activity		Category of Source Reduction Activity								
	Total Form Rs Number	Percent of All Form Rs Percent	Good Operating Practices	Inventories Control	Spill and Leak Prevention	Raw Materials Modifications	Process Modifications	Cleaning and Degreasing	Surface Preparation and Finishing	Product Modifications	
			Number	Number	Number	Number	Number	Number	Number	Number	
Department of Defense	515	119	23.1	42	16	5	13	14	15	11	3
Air Force	107	42	39.3	7	1	0	9	6	11	8	0
Army	260	46	17.7	29	6	4	0	4	1	1	1
Army Corps of Engineers	7	1	14.3	1	0	0	0	0	0	0	0
Defense Logistics	5	0	0.0	0	0	0	0	0	0	0	0
Defense Stockpile	4	0	0.0	0	0	0	0	0	0	0	0
Marines	51	5	9.8	1	1	0	0	0	1	2	0
Military Academy	4	0	0.0	0	0	0	0	0	0	0	0
Navy	77	25	32.5	4	8	1	4	4	2	0	2
Department of Energy	53	8	15.1	3	1	1	2	1	0	0	0
Department of Interior	13	3	23.1	0	0	1	1	0	0	0	1
Department of State	1	0	0.0	0	0	0	0	0	0	0	0
Department of Transportation	11	5	45.5	0	0	2	1	2	0	0	0
Department of Treasury	27	6	22.2	1	0	1	2	2	0	0	0
Department of Veterans Affairs	2	0	0.0	0	0	0	0	0	0	0	0
Environmental Protection Agency	16	3	18.8	3	0	0	0	0	0	0	0
Environmental Protection Agency	6	0	0.0	0	0	0	0	0	0	0	0
EPA Fund-Lead Superfund Sites	10	3	30.0	3	0	0	0	0	0	0	0
National Aeronautics and Space Administration	14	8	57.1	2	0	0	0	2	2	2	0
Tennessee Valley Authority	238	30	12.6	0	0	0	30	0	0	0	0
US Department of Agriculture	7	9	128.6	3	3	3	0	0	0	0	0
US Enrichment Corporation	5	0	0.0	0	0	0	0	0	0	0	0
US General Services Administration	1	0	0.0	0	0	0	0	0	0	0	0
Total for Federal Facilities	903	191	21.2	54	20	13	49	21	17	13	4

Note: All source reduction activities on a form are counted in the corresponding category. Totals do not equal the sum of the categories because forms may report more than one source reduction activity.

This ensures that apparent increases or decreases from one year to another are not the result of changes in the list of TRI chemicals. **Making Year-to-Year Comparisons of TRI Data**, in Chapter 1, explains the issues involved in making multi-year analyses. An understanding of these year to year changes is essential for accurate interpretation of the multi-year data presented in this chapter. Comparisons of the years 2000 and 2001 require that lead and lead compounds (see Chapter 3 for a discussion of these chemicals) be omitted from the data because lower reporting thresholds for these chemicals only became effective with the 2001 reporting year.

On- and Off-site Releases, 2000-2001

Table 2-19 summarizes changes in on- and off-site releases reported by federal facilities between 2000 and 2001. Total releases declined 7.6 percent, a decrease of 6.3 million pounds, primarily due to the net decrease reported by Tennessee Valley Authority facilities.

Tennessee Valley Authority (TVA) facilities reported the largest decrease in on- and off-site releases of any federal agency. TVA facilities reported a decrease of 10.3 million pounds from 2000 to 2001, which represented a decrease of 14.5 percent. Department of Energy facilities reported the second largest decrease with almost 266,700 pounds or 35.7 percent. Defense Logistics, an agency of the Department of Defense, reported a decrease of 79.1 percent from 2000 to 2001. This agency reported these reductions for CFCs and Halons, which are ozone depleters subject to reductions under the Montreal Protocol, an international convention on the reduction and elimination of ozone depleters.

Most other federal agencies reported increases. Army facilities, an agency of the Department of Defense, reported the largest increase with 2.2 million pounds, or a 37.0 percent increase. EPA Fund-Lead Superfund Sites also reported a net increase, of almost 719,000 pounds or a 65.4 percent increase from 2000 to 2001. These releases are related to clean-up activities at hazardous waste sites and may



Table 2-19: TRI Forms and Total Releases by Agency, 2000-2001: Federal Facilities

Federal Agency	Total Forms				Total On- and Off-site Releases			
	2000	2001	Change 2000-2001		2000	2001	Change 2000-2001	
	Number	Number	Number	Percent	Pounds	Pounds	Pounds	Pounds
Department of Defense	271	380	109	40.2	8,122,805	11,751,865	3,629,061	44.7
Air Force	58	87	29	50.0	1,390,392	2,027,824	637,431	45.8
Army	135	189	54	40.0	5,841,450	8,002,810	2,161,361	37.0
Army Corps of Engineers	8	7	-1	-12.5	13,055	17,887	4,832	37.0
Defense Logistics	5	5	0	0.0	4,156	869	-3,287	-79.1
Defense Stockpile	6	4	-2	-33.3	0	0	0	--
Marines	9	31	22	244.4	23,068	714,177	691,109	2996.0
Military Academy	1	2	1	100.0	2,169	25,324	23,155	1067.5
Navy	49	55	6	12.2	848,514	962,974	114,460	13.5
Department of Energy	77	35	-42	-54.5	746,359	479,703	-266,656	-35.7
Department of Interior	5	4	-1	-20.0	16,446	5,915	-10,531	-64.0
Department of State	1	1	0	0.0	250	250	0	0.0
Department of Transportation	10	10	0	0.0	68	0	-68	-99.9
Department of Treasury	14	15	1	7.1	50,770	64,394	13,624	26.8
Department of Veterans Affairs	4	4	0	0.0	4,653	4,436	-217	-4.7
Environmental Protection Agency	11	17	6	54.5	1,099,177	1,818,158	718,981	65.4
Environmental Protection Agency	7	8	1	14.3	0	0	0	--
EPA Fund-Lead Superfund Sites	4	9	5	125.0	1,099,177	1,818,158	718,981	65.4
National Aeronautics and Space Administration	11	10	-1	-9.1	100,028	75,151	-24,877	-24.9
Tennessee Valley Authority	216	226	10	4.6	70,872,123	60,607,159	-10,264,964	-14.5
US Department of Agriculture	5	6	1	20.0	496,271	449,781	-46,490	-9.4
US Enrichment Corporation	7	5	-2	-28.6	507,233	497,793	-9,440	-1.9
Total for Federal Facilities	632	713	81	12.8	82,016,183	75,754,605	-6,261,578	-7.6

Note: Does not include lead and lead compounds. On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal category compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI facilities that reported the amount as an on-site release.

vary from year to year. Air Force facilities reported the third largest increase with 637,400 pounds, a 45.8 percent increase.

Quantities of TRI Chemicals in Waste, 2000-2001

Table 2-20 shows changes between 2000 and 2001 in the quantities of toxic chemicals in production-related waste managed as reported by federal facilities. The quantities of toxic chemicals in production-related waste managed by federal facilities rose 1.4 percent, from 210.5 million pounds to 213.6 million pounds, primarily due to the net increase reported by Army facilities. Army, an agency of the Department of Defense, reported the largest increase, of 16.0 million pounds (42.1 percent) from 2000 to 2001.

Facilities of the National Aeronautics and Space Administration reported the second largest increase in the quantity of toxic chemicals in production-related waste of all federal agencies, with an increase of 1.8 million pounds (an increase of over 600 percent) from 2000 to 2001. Marines, an agency of the Department of Defense, reported the

third largest increase, with an increase of 1.3 million pounds up from 130,300 pounds in 2000; and Air Force, also a DOD agency, reported an increase of 1.3 million pounds or 44.7 percent.

The Tennessee Valley Authority (TVA) reported the largest decreases in the quantity of toxic chemicals in production-related waste from 2000 to 2001. These facilities reported a net decrease of 12.1 million pounds or 10.1 percent. Department of Energy facilities reported the second largest decreases from 2000 to 2001 in the quantity of toxic chemicals in production-related waste, with a decrease of 2.8 million pounds or 61.1 percent. The third largest decrease was reported by Department of Treasury facilities, with a decrease of 1.4 million pounds or 3.5 percent.

TRI DATA FOR FEDERAL FACILITIES, 1998-2001

Comparisons of TRI data across reporting years are made on the basis of chemicals that were reportable in all years with the same reporting definitions. **Making Year-to-Year Comparisons of TRI Data**, in Chapter 1, explains the issues involved in making



Table 2-20: TRI Total Production-related Waste Managed by Agency, 2000-2001: Federal Facilities

Federal Facilities	Total Production-related Waste Managed			
	2000 Pounds	2001 Pounds	Change 2000-2001	
			Pounds	Percent
Department of Defense	43,833,030	61,513,201	17,680,172	40.3
Air Force	2,889,152	4,181,779	1,292,626	44.7
Army	37,890,889	53,844,023	15,953,134	42.1
Army Corps of Engineers	14,498	20,135	5,637	38.9
Defense Logistics	911,931	297,557	-614,374	-67.4
Defense Stockpile	0	0	0	-
Marines	130,299	1,428,786	1,298,487	996.5
Military Academy	12,059	34,094	22,035	182.7
Navy	1,984,201	1,706,827	-277,373	-14.0
Department of Energy	4,616,144	1,797,943	-2,818,201	-61.1
Department of Interior	24,569	4,938	-19,631	-79.9
Department of State	61,729	68,257	6,528	10.6
Department of Transportation	196	0	-196	-100.0
Department of Treasury	40,624,254	39,185,603	-1,438,651	-3.5
Department of Veterans Affairs	4,178	3,986	-192	-4.6
Environmental Protection Agency	325	318	-7	-2.2
Environmental Protection Agency	325	318	-7	-2.2
EPA Fund-Lead Superfund Sites	0	0	0	-
National Aeronautics and Space Administration	290,950	2,084,671	1,793,721	616.5
Tennessee Valley Authority	120,029,680	107,916,004	-12,113,676	-10.1
US Department of Agriculture	495,858	491,933	-3,925	-0.8
US Enrichment Corporation	555,355	520,896	-34,459	-6.2
Total for Federal Facilities	210,536,268	213,587,750	3,051,482	1.4

Note: Does not include lead and lead compounds. Data are from Section 8 of Form R of year indicated.

multi-year analyses. An understanding of these year to year changes is essential for accurate interpretation of the multi-year data presented in this chapter. Comparisons of the years 1998, 2000 and 2001 require that PBT chemicals (see Chapter 3 for a discussion of these chemicals), vanadium and vanadium compounds be omitted from the data.

On- and Off-site Releases, 1998 and 2000-2001

Table 2-21 shows total number of forms and total releases on- and off-site as reported by federal facilities for the years 1998, 2000 and 2001. Between 1998 and 2001, total on- and off-site releases increased from 64.1 million pounds to 73.2 million pounds, a rise of 14.3 percent. The change in the latest year, 2000 to 2001 was a decrease of 8.3 percent. Between 1998 and 2001, the number of forms submitted by federal facilities rose from 480 to 612, an increase of 27.5 percent.

Tennessee Valley Authority facilities had the largest total releases on- and off-site in all three of the years 1998, 2000 and 2001. This agency reported an increase from 58.7 million pounds in 1998 to 68.7 million pounds in 2000 followed by a decline of 15.4 percent to 58.1 million pounds in 2001. The

overall net change from 1998 to 2001 was a decrease of 1.1 percent.

The Department of Defense agencies reported an overall increase from 3.4 million pounds in 1998 to 11.7 million pounds in 2001, which represented an increase of over 200 percent. Army facilities reported increases from 1.5 million pounds in 1998 to 8.0 million pounds in 2001, and Air Force facilities reported increases from 1.2 million pounds in 1998 to 2.0 million pounds in 2001. Navy facilities reported increases from 622,400 pounds in 1998 to 929,600 pounds in 2001. The DOD's Defense Logistics showed a decrease of 84.3 percent from 1998 to 2001.

Other agencies reporting decreases included the US Department of Agriculture, Department of Energy and the National Aeronautics and Space Administration. The US Department of Agriculture facilities reported a decrease of 22.6 percent from 1998 to 2001. Department of Energy facilities reported a decrease of 14.0 percent and the National Aeronautics and Space Administration facilities had a net decrease of 74.9 percent.



Table 2-21: TRI Forms and Total Releases by Agency, 1998 and 2000-2001: Federal Facilities

Federal Agency	Total Forms					Total On- and Off-site Releases				
	1998 Number	2000 Number	2001 Number	Change 2000- 2001 Percent	Change 1998- 2001 Percent	1998 Pounds	2000 Pounds	2001 Pounds	Change 2000- 2001 Percent	Change 1998- 2001 Percent
Department of Defense	208	250	353	41.2	69.7	3,399,689	8,122,542	11,718,238	44.3	244.7
Air Force	55	51	80	56.9	45.5	1,198,509	1,390,353	2,027,803	45.8	69.2
Army	82	124	176	41.9	114.6	1,473,853	5,841,240	8,002,531	37.0	443.0
Army Corps of Engineers	4	8	7	-12.5	75.0	11,506	13,055	17,887	37.0	55.5
Defense Logistics	5	5	5	0.0	0.0	5,545	4,156	869	-79.1	-84.3
Defense Stockpile	0	6	4	-33.3	--	0	0	0	--	--
Marines	18	9	31	244.4	72.2	87,831	23,068	714,177	2996.0	713.1
Military Academy	0	1	2	100.0	--	0	2,169	25,324	1067.5	--
Navy	44	46	48	4.3	9.1	622,445	848,501	929,647	9.6	49.4
Department of Energy	50	57	27	-52.6	-46.0	555,916	742,449	478,066	-35.6	-14.0
Department of Interior	3	5	4	-20.0	33.3	5,221	16,446	5,915	-64.0	13.3
Department of State	0	1	1	0.0	--	0	250	250	0.0	--
Department of Transportation	9	8	8	0.0	-11.1	0	0	0	--	--
Department of Treasury	12	14	15	7.1	25.0	22,570	50,770	64,394	26.8	185.3
Department of Veterans Affairs	3	3	3	0.0	0.0	1,000	1,000	1,000	0.0	0.0
Environmental Protection Agency	2	6	10	66.7	400.0	0	1,099,177	1,818,158	65.4	--
Environmental Protection Agency	2	2	2	0.0	0.0	0	0	0	--	--
EPA Fund-Lead Superfund Sites	0	4	8	100.0	--	0	1,099,177	1,818,158	65.4	--
National Aeronautics and Space Administration	25	11	10	-9.1	-60.0	299,133	100,028	75,151	-24.9	-74.9
Tennessee Valley Authority	156	161	170	5.6	9.0	58,686,250	68,657,230	58,067,445	-15.4	-1.1
US Department of Agriculture	4	5	6	20.0	50.0	580,790	496,271	449,781	-9.4	-22.6
US Enrichment Corporation	8	6	5	-16.7	-37.5	469,092	507,222	497,793	-1.9	6.1
Total for Federal Facilities	480	527	612	16.1	27.5	64,019,661	79,793,385	73,176,191	-8.3	14.3

Note: Does not include PBT chemicals, vanadium and vanadium compounds. On-site Releases are from Section 5 of Form R. Off-site Releases are from Section 6 (transfers off-site to disposal) of Form R. Off-site Releases include metals and metal category compounds transferred off-site for solidification/stabilization and for wastewater treatment, including to POTWs. Off-site Releases do not include transfers to disposal sent to other TRI facilities that reported the amount as an on-site release.

Waste Management Data, 1998 and 2000-2001

As shown in Table 2-22, the quantity of toxic chemicals in production-related waste managed by federal facilities increased from 153.7 million pounds in 1998 to 211.0 million pounds in 2001, an increase of 57.2 million pounds or 37.2 percent. In the most recent time period, 2000 to 2001, the quantity of toxic chemicals in production-related waste increased by 1.3 percent.

The federal facilities with the largest increase in the quantity of toxic chemicals in production-related waste were the Department of Defense's Army facilities, which reported an increase of 33.9 million pounds from 1998 to 2001. This included an increase of 16.0 million pounds from 2000 to 2001. Department of Treasury facilities reported the second largest increase, with an increase of 24.4 million pounds from 1998 to 2001. However, this agency did report a net decrease from 2000 to 2001, of 1.4 million pounds of 3.5 percent.

Other federal agencies reporting increases included Air Force, Marines, and the National Aeronautics and Space Administration. DOD's Air Force facilities reported an increase of 2.5 million pounds, an increase of 147 percent. DOD's Marines facilities had an increase of 1.1 million pounds or 364 percent. The National Aeronautics and Space Administration's facilities increase was 1.3 million pounds or 156 percent.

Federal agencies reporting decreases from 1998 to 2001 included the Tennessee Valley Authority, the Department of Energy and Department of Defense's Defense Logistics. Tennessee Valley Authority facilities reported a decrease of 2.9 million pounds from 1998 to 2001, with a decrease of 12.5 million pounds from 2000 to 2001. Department of Energy facilities had a decrease of 2.4 million pounds or 57.2 percent from 1998 to 2001, and Defense Logistics facilities had a decrease of 1.0 million pounds or 77.2 percent.



Chapter 2 Toxics Release Inventory Data by Industry, 2001 and 1998-2001

Table 2-22: TRI Total Production-related Waste Managed by Agency, 1998 and 2000-2001: Federal Facilities

Federal Agency	Total Production-related Waste Managed						
	1998	2000	2001	Change 2000-2001		Change 1998-2001	
	Pounds	Pounds	Pounds	Pounds	Percent	Pounds	Pounds
Department of Defense	24,626,321	43,832,489	61,479,392	17,646,903	40.3	36,853,071	149.6
Air Force	1,692,687	2,889,113	4,181,758	1,292,645	44.7	2,489,071	147.0
Army	19,967,011	37,890,532	53,843,587	15,953,055	42.1	33,876,576	169.7
Army Corps of Engineers	17,510	14,498	20,135	5,637	38.9	2,625	15.0
Defense Logistics	1,305,830	911,931	297,557	-614,374	-67.4	-1,008,273	-77.2
Defense Stockpile	0	0	0	0	--	0	--
Marines	308,076	130,299	1,428,786	1,298,487	996.5	1,120,710	363.8
Military Academy	0	12,059	34,094	22,035	182.7	34,094	--
Navy	1,335,207	1,984,057	1,673,475	-310,582	-15.7	338,268	25.3
Department of Energy	4,133,670	4,602,010	1,768,567	-2,833,443	-61.6	-2,365,103	-57.2
Department of Interior	5,130	24,569	4,938	-19,631	-79.9	-192	-3.7
Department of State	0	61,729	68,257	6,528	10.6	68,257	--
Department of Transportation	0	0	0	0	--	0	--
Department of Treasury	14,828,948	40,624,254	39,185,603	-1,438,651	-3.5	24,356,655	164.3
Department of Veterans Affairs	825	525	550	25	4.8	-275	-33.3
Environmental Protection Agency	0	0	0	0	--	0	--
Environmental Protection Agency	0	0	0	0	--	0	--
EPA Fund-Lead Superfund Sites	0	0	0	0	--	0	--
National Aeronautics and Space Administration	814,600	290,950	2,084,671	1,793,721	616.5	1,270,071	155.9
Tennessee Valley Authority	108,233,323	117,826,564	105,374,019	-12,452,545	-10.6	-2,859,304	-2.6
US Department of Agriculture	580,550	495,858	491,933	-3,925	-0.8	-88,617	-15.3
US Enrichment Corporation	517,796	555,344	520,896	-34,448	-6.2	3,100	0.6
Total for Federal Facilities	153,741,163	208,314,292	210,978,826	2,664,533	1.3	57,237,663	37.2

Note: Does not include PBT chemicals, vanadium and vanadium compounds. Data are from Section 8 of Form R of year indicated.