Section 3 – The NPEP Priority Chemical Trends Analyses (1998-2001)

This section presents an update of the trends analyses for the 23 NPEP Priority Chemicals, for which data is reported to TRI, primarily relying on the data from the 1998 through 2001 TRI reporting years. We focus on these most current years of TRI data to facilitate the identification of viable potential opportunities for reducing or eliminating NPEP Priority Chemicals. Also included is information reported by facilities in all SIC codes[1] (including, as appropriate, the "new" industry sectors that were required to begin reporting to TRI in 1998) and for all NPEP Priority Chemicals reported to TRI. This update no longer segregates the NPEP Priority Chemicals into the categories "the 1991 NPEP Priority Chemicals", "the 1995 NPEP Priority Chemicals", and "the 2000 NPEP Priority Chemicals". Instead, trends for each of the NPEP Priority Chemicals is separately presented. As described in Section 1 and Appendix B, the data presented in this section was compiled using the Trends-Analysis approach which includes the following characteristics aimed at refining the NPEP Priority Chemical quantities to more accurately reflect the actual amount of NPEP Priority Chemicals associated with hazardous waste:

- The quantities of NPEP Priority Chemicals reported by facilities in certain SIC codes that would also be reported by generating facilities are eliminated from the total so as not to be double-counted.
- NPEP Priority Chemicals sent to offsite facilities that do not have a valid RCRA ID were eliminated from the total as not being associated with hazardous waste.
- Quantities of NPEP Priority Chemicals estimated to be contained in Bevill-exempt materials were removed from the total since they are not regulated under RCRA Subtitle C.

For the NPEP Priority Chemicals for which data is not reported to TRI, BR data is used to evaluate trends. In addition, BR data is used to supplement TRI data for the other NPEP Priority Chemicals – to provide further insight regarding the specific waste streams that may contain the NPEP Priority Chemicals. It should be noted that as BR data is reported every other year, the BR trends data is based on the 1997, 1999, and 2001 BR reporting years. Facilities reporting to BR list the waste codes associated with their waste streams. These waste codes were used to link waste streams to potential NPEP Priority Chemical constituents. A facility may report multiple codes for one waste stream. However, the exact quantity of each code in the waste stream is not calculated because there is insufficient data in the BR system to make such a calculation. For the purposes of this analysis, if a waste stream is reported to contain more than one waste code of concern, the quantity was divided evenly among the waste codes. More detailed waste description information is available in the BR data that may provide further insight into which specific hazardous waste streams contain the NPEP Priority Chemicals and thus assist in identifying potential opportunities in reducing or eliminating NPEP Priority Chemicals. In addition, one code could pertain to multiple NPEP Priority Chemicals and the quantity of each chemical in the waste stream cannot be discerned from the BR data. The quantity associated with a waste code that is associated with multiple chemicals was divided evenly among these chemicals. For the purposes of this analysis, the total quantity calculated represents the scenario in which this chemical accounted for 100 percent of the quantity associated with it.

[1] Although facilities can report up to six 4-digit SIC codes, only the SIC code designated as the facility's primary SIC code is used in this report.

An overview of the national, EPA Regional, State, and industry sector quantities of NPEP Priority Chemicals for the years 1998 through 2001 based on TRI data, is presented. The rest of this section presents national, regional, state, and SIC code trends, by individual NPEP Priority Chemical. Basic information regarding the NPEP Priority Chemical, including its CAS number, alternative names, general uses, and potential hazards also is presented.[2] The NPEP Priority Chemicals for which TRI data is available are presented first in alphabetical order, followed by the NPEP Priority Chemicals for which only BR data is available, also in alphabetical order.

Overview of National, EPA Regional, State, and Industry Sector Trends

As seen in Exhibit 18 below, the top five individual NPEP Priority Chemicals in 2001 were lead and lead compounds, naphthalene, polycyclic aromatic compounds, hexachloro-1,3-butadiene, and hexachlorobenzene. These five NPEP Priority Chemicals comprise about 86 percent of the total NPEP Priority Chemical quantity in 2001. Lead and lead compounds have been the largest contributor to national NPEP Priority Chemical quantities since 1991. In 2001, this NPEP Priority Chemical comprised 41 percent of the total quantity of the NPEP Priority Chemicals that were reported to TRI. Naphthalene was the second largest contributor to the national total of NPEP Priority Chemicals in 2001, accounting for approximately 10 million pounds. Between 1998 and 2001, naphthalene decreased by 4.1 million pounds—over 28 percent. Between 2000 and 2001, all of the NPEP Priority Chemicals had a decrease with the exception of four chemicals—1,2,4-trichlorobenzene, lead and lead compounds, mercury and mercury compounds, dioxins, and pentachlorobenzene.

The increased quantity of some of the NPEP Priority Chemicals in 2000 may be, in part, due to the lowering of the TRI thresholds for certain chemicals in 2000, likely resulting in additional facilities reporting to TRI and an increase in reported quantities. In support of this conclusion, when only quantities for a "core" group of facilities (those that reported prior to the threshold change) were included in the GPRA-Analysis the NPEP Priority Chemical quantities for these chemicals did not increase as much in 2000 (see Section 2).

[2] The chemical information was obtained from the following websites: www.chemfinder.com, www.epa.gov/epaoswer/hazwaste/minimize/chemlist.htm, www.cdc.gov/niosh/npg/npgd0000.html, www.atsdr.cdc.gov/toxfaq.html

Exhibit 18. Total Quantity (lbs) of Each NPEP Priority Chemical Reported in 1998 – 2001

CHEMICAL NAME	1998	1999	2000	2001	% of Total PC Qty (2001)	% Change (1998-2001)
LEAD AND LEAD COMPOUNDS	28,270,659	25,620,390	27,881,953	28,817,553	41.0	1.9
NAPHTHALENE	14,341,734	13,913,681	14,297,789	10,200,605	14.5	-28.9
POLYCYCLIC AROMATIC COMPOUNDS	6,937,047	7,153,354	12,323,320	9,679,426	13.8	39.5
HEXACHLORO-1,3-BUTADIENE	4,471,095	8,764,908	9,036,216	6,482,741	9.2	45.0
HEXACHLOROBENZENE	1,764,080	5,401,730	5,935,950	5,019,151	7.1	184.5
HEXACHLOROETHANE	4,892,537	3,625,414	4,894,157	4,153,811	5.9	-15.1
1,2,4-TRICHLOROBENZENE	852,608	1,371,494	1,164,188	2,163,028	3.1	153.7
BENZO(G,H,I)PERYLENE			2,025,570	915,474	1.3	-----
CADMIUM AND CADMIUM COMPOUNDS	1,257,158	1,119,654	1,245,639	850,210	1.2	-32.4
QUINTOZENE	355,968	222,854	573,402	492,235	0.7	38.3
PENTACHLOROBENZENE			239,852	411,227	0.6	-----
ANTHRACENE	333,856	428,283	511,076	352,788	0.5	5.7
PHENANTHRENE	908,982	488,994	1,007,277	210,249	0.3	-76.9
PENDIMETHALIN	265,131	217,165	679,808	195,671	0.3	-26.2
MERCURY AND MERCURY COMPOUNDS	17,898	31,555	76,258	115,419	0.2	544.9
TRIFLURALIN	103,803	91,103	85,790	84,200	0.1	-18.9
PENTACHLOROPHENOL	160,170	211,695	74,026	62,708	0.1	-60.8
DIBENZOFURAN	117,888	118,640	90,920	60,909	0.1	-48.3
2,4,5-TRICHLOROPHENOL	23,226	26,098	32,443	20,657	0.0	-11.1
DIOXIN AND DIOXIN-LIKE COMPOUNDS			584	684	0.0	-----
LINDANE	8,272	82	62	49	0.0	-99.4
METHOXYCHLOR	0	0	20	0	0.0	-----
TOTAL PCs	**65,082,112**	**68,807,094**	**82,176,300**	**70,288,795**	**100.0**	**8.0**

Exhibit 19 shows the NPEP Priority Chemical quantities by EPA Region from 1998 to 2001. Seven of the regions had decreases in NPEP Priority Chemical quantities from 2000 to 2001. The regions with the highest quantity of NPEP Priority Chemicals for 2001 include approximately 42 percent for Region 6, 19 percent for Region 4, and 12 percent for Region 5.

Exhibit 19. NPEP Priority Chemical Quantities (lbs) by EPA Region from 1998 to 2001.

EPA Region	1998	1999	2000	2001	% of Total PC QTY (2001)	% Change (1998-2001)
1	391,057	409,355	667,320	462,585	0.7	18.3
2	2,906,654	3,042,654	3,436,616	3,744,823	5.3	28.8
3	7,992,653	5,346,390	4,107,139	5,947,657	8.5	-25.6
4	12,067,411	11,863,067	14,120,720	13,186,861	18.8	9.3
5	8,955,333	10,235,187	13,006,016	8,370,035	11.9	-6.5
6	23,346,466	29,601,668	36,961,250	29,756,913	42.3	27.5
7	1,812,441	2,809,586	3,095,955	2,568,072	3.7	41.7
8	756,331	824,549	1,091,391	1,037,384	1.5	37.2
9	4,047,249	1,668,998	2,018,898	2,716,721	3.9	-32.9
10	2,806,517	3,005,640	3,670,995	2,497,746	3.6	-11.0
Total	**65,082,112**	**68,807,094**	**82,176,300**	**70,288,795**	**100**	

Exhibit 20 presents the NPEP Priority Chemical quantities by State from 1998 to 2001. Four states account for approximately 50 percent of the 2001 NPEP Priority Chemicals—Louisiana (approximately 22 percent), Texas (approximately 16 percent), South Carolina (approximately 7 percent), and Tennessee (approximately 6 percent). Fourteen states had a decrease in NPEP Priority Chemical quantities from 1998-2001.

Exhibit 20. States with 99% of the NPEP Priority Chemical Quantity (lbs) for the Year 2001

State Name	1998	1999	2000	2001	% of Total PC QTY (2001)	% Change (1998-2001)
Louisiana	9,444,016	11,542,955	15,836,374	15,155,213	21.6	60.5
Texas	11,200,014	15,747,527	17,343,832	11,305,498	16.1	0.9
South Carolina	875,929	913,817	1,316,458	5,062,532	7.2	478.0
Tennessee	4,696,795	4,610,066	6,900,042	4,112,598	5.9	-12.4
Pennsylvania	7,137,083	4,789,479	3,112,604	2,998,544	4.3	-58.0
New Jersey	2,102,461	2,136,750	2,476,213	2,930,646	4.2	39.4
Indiana	1,775,100	2,692,305	2,662,382	2,758,041	3.9	55.4
Ohio	4,130,433	4,198,608	7,351,604	2,684,786	3.8	-35.0
Arkansas	2,100,962	1,991,509	3,153,689	2,590,165	3.7	23.3
California	3,990,923	1,627,129	2,004,394	2,517,485	3.6	-36.9
Illinois	2,205,435	2,462,875	2,354,294	1,836,244	2.6	-16.7
West Virginia	458,366	233,417	326,351	1,832,866	2.6	299.9
Washington	1,373,975	1,529,209	2,345,560	1,287,024	1.8	-6.3
Nebraska	704,592	371,745	1,436,129	1,231,959	1.8	74.8
Kentucky	650,457	830,768	1,219,290	1,211,085	1.7	86.2
Iowa	597,183	815,344	827,798	809,745	1.2	35.6
Alabama	2,747,896	2,886,297	2,446,429	769,577	1.1	-72.0
New York	798,986	892,424	925,492	741,996	1.1	-7.1
Oregon	870,883	837,096	803,068	735,547	1.0	-15.5
Maryland	84,216	122,727	365,140	725,623	1.0	761.6
Oklahoma	583,229	301,426	616,881	665,183	0.9	14.1
Utah	498,513	444,012	500,660	630,717	0.9	26.5
North Carolina	677,828	184,246	676,247	629,123	0.9	-7.2
Georgia	1,569,474	1,478,081	842,843	568,192	0.8	-63.8
Michigan	407,991	637,818	347,667	549,474	0.8	34.7
Mississippi	307,178	493,011	414,773	500,422	0.7	62.9
Idaho	561,659	639,335	521,460	453,887	0.6	-19.2
Missouri	410,035	1,573,956	763,836	429,726	0.6	4.8
Virginia	181,895	98,855	202,613	382,148	0.5	110.1
Florida	541,854	466,781	304,638	333,331	0.5	-38.5
Minnesota	373,087	160,928	211,818	327,666	0.5	-12.2
Wyoming	163,537	304,000	509,797	257,314	0.4	57.3
Massachusetts	188,559	207,922	311,412	240,860	0.3	27.7
Wisconsin	63,287	82,653	78,251	213,824	0.3	237.9
Colorado	76,440	56,854	63,779	135,354	0.2	77.1
Connecticut	87,952	86,038	152,101	117,926	0.2	34.1

Exhibit 21 presents the NPEP Priority Chemical quantities by industry sector from 1998 to 2001. Four industry sectors account for approximately 50 percent of the 2001 NPEP Priority Chemicals—2812 (26 percent), 3312 (11 percent), 3624 (7 percent), and 2819 (7 percent).

Exhibit 21. Industry Sectors with 98% of the NPEP Priority Chemical Quantity (lbs) for 2001

PRIMARY SIC CODE	SIC DESCRIPTION	1998	1999	2000	2001	% of Total PC Qty (2001)	% Change (1998-2001)
2812	Alkalies and chlorine	11,196,051	18,731,088	20,277,630	18,225,297	25.9	62.8
3312	Blast Furnaces and steel mills	7,912,023	7,641,062	8,563,616	7,622,116	10.8	-3.7
3624	Carbon and graphite products	5,095,217	4,658,564	7,699,773	4,672,889	6.6	-8.3
2819	Industrial inorganic chemicals,nec	2,505,263	3,135,206	4,504,117	4,667,866	6.6	86.3
3691	Storage batteries	1,205,361	974,237	406,709	3,521,664	5.0	192.2
3341	Secondary nonferrous metals	7,168,593	5,715,851	6,390,891	3,166,779	4.5	-55.8
2869	Industrial organic chemicals, nec	3,189,332	2,527,343	3,481,308	2,308,641	3.3	-27.6
2911	Petroleum refining	5,338,615	4,626,963	6,183,415	2,142,449	3.0	-59.9
2879	Pesticides and agricultural chemicals	1,068,567	652,449	1,605,365	2,115,942	3.0	98.0
3334	Primary Aluminum	1,405,376	1,801,669	3,068,901	1,901,587	2.7	35.3
9711	National security	62,969	73,543	155,755	1,860,774	2.6	2,855.1
3479	Metal coating and allied services	1,138,387	1,469,532	1,741,319	1,590,730	2.3	39.7
3369	Nonferrous foundries, nec	89,450	43,077	1,536	1,202,683	1.7	1,244.5
3229	Pressed and blown glass,nec	2,493,230	1,663,862	5,142,344	1,097,752	1.6	-56.0
2865	Cyclic crudes and intermediates	2,642,330	2,432,428	1,502,993	1,033,379	1.5	-60.9
3321	Gray and ductile iron foundries	71,497	114,284	368,759	1,021,980	1.5	1,329.4
2895	Carbon black	0	0	866,860	693,882	1.0	-----
2491	Wood Preserving	162,635	178,669	343,707	635,450	0.9	290.7
2062	Cane sugar refining	0	0	276,647	632,319	0.9	-----
9511	Air, water, and solid waste mgmt.	60,964	92,065	361,111	623,097	0.9	922.1
2821	Plastics materials and resins	1,353,725	941,452	838,183	566,283	0.8	-58.2
2822	Synthetic Rubber	42	653,490	618,465	483,410	0.7	1,150,875.2
3641	Electric lamps	315,677	315,318	309,590	407,728	0.6	29.2
3315	Steel wire and related products	897,610	1,119,538	749,639	398,415	0.6	-55.6
3357	Nonferrous wire drawing/insulating	634,814	972,438	440,072	331,510	0.5	-47.8
2992	Lubricating oils and greases	751	317	356,955	330,078	0.5	43,851.8
2262	Finishing plants, man-made	110,200	140,000	370,000	301,060	0.4	173.2
3679	Electronic components, nec	100,300	117,109	87,761	286,134	0.4	185.3
4925	Gas production and/or distribution	542,854	837,562	627,903	277,917	0.4	-48.8
3671	Electron tubes	437,771	546,699	336,523	265,820	0.4	-39.3
3366	Copper foundries	241,167	212,363	330,898	229,213	0.3	-5.0
2816	Inorganic pigments	232,049	161,530	147,718	224,305	0.3	-3.3
8733	Noncommercial research organiz.	25,882	101,037	194	205,737	0.3	694.9

PRIMARY SIC CODE	SIC DESCRIPTION	1998	1999	2000	2001	% of Total PC Qty (2001)	% Change (1998-2001)
2999	Petroleum and coal products, nec	57,319	57,612	116,945	192,056	0.3	235.1
3471	Plating and polishing	170,551	185,055	79,237	179,969	0.3	5.5
3674	Semiconductors and related devices	74,423	109,621	127,187	175,706	0.2	136.1
3714	Motor vehicle parts/accessories	245,353	146,278	216,199	174,238	0.2	-29.0
3482	Small arms ammunition	49,185	62,636	99,930	173,154	0.2	252.0
3672	Printed circuit boards	113,384	130,647	16,275	170,191	0.2	50.1
3295	Minerals, ground or treated	45,169	82,514	46,472	169,501	0.2	275.3
2899	Chemical preparations, nec	381,012	218,520	163,474	161,563	0.2	-57.6
5171	Petroleum bulk stations/terminals	25,768	6,668	203,637	144,132	0.2	459.3
3499	Fabricated metal products, nec	63,989	51,353	94,169	139,560	0.2	118.1
2874	Phosphatic fertilizers	0	0	280	130,693	0.2	-----
3743	Railroad equipment	9,100	409	400	130,412	0.2	1,333.1
3325	Steel foundries, nec	61,261	88,601	72,130	129,359	0.2	111.2
3011	Tires and inner tubes	102,790	65,496	98,525	129,279	0.2	25.8
2082	Malt beverages	0	0	3,435	118,241	0.2	-----
2843	Surface active agents	55,910	111,049	118,447	115,829	0.2	107.2
2851	Paints and allied products	206,949	268,414	121,155	103,014	0.1	-50.2
2899	Chemical preparations, nec	381,012	218,520	163,474	161,563	0.2	-57.6
2611	Pulp mills	5,175	7,438	35,792	88,023	0.1	1,600.9
2621	Paper mills	61,900	125,400	95,082	86,061	0.1	39.0
3468	Crowns and closures	36,910	39,175	37,429	80,877	0.1	119.1
3231	Products of purchased glass	108,334	119,647	28,071	78,705	0.1	-27.3
2631	Paperboard mills	612	0	74,352	78,449	0.1	12,718.5
9229	Public order and safety, nec	84,684	95,554	72,299	75,704	0.1	-10.6
3711	Motor vehicles and car bodies	62,639	51,408	54,909	75,252	0.1	20.1
2824	Organic fibers, noncellulosic	54,867	60,000	52,541	73,108	0.1	33.2
2493	Reconstituted wood products	75,114	38,591	63,358	70,504	0.1	-6.1
3087	Custom compound purchased resins	45,425	38,796	126,436	65,039	0.1	43.2
2875	Fertilizers, mixing only	21,639	36,784	30,278	60,460	0.1	179.4
3399	Primary metal products,nec	3,135,081	2,322,588	14,590	54,607	0.1	-98.3
3313	Electrometallurgical products	54,613	36,654	34,924	53,489	0.1	-2.1
2022	Cheese, natural and processed	0	0	58,666	51,654	0.1	-----
9999	All Other Miscellaneous Manufacturing	0	0	52	46,135	0.1	-----
2834	Pharmaceutical preparations	3,090	0	33,450	45,372	0.1	1,368.3
3316	Cold finishing of steel shapes	440,727	23,106	34,445	44,945	0.1	-89.8
3661	Telephone and telegraph apparatus	1,824	27,823	32,691	44,441	0.1	2,336.5
2861	Gum and wood chemicals	13,550	25,589	19,635	43,082	0.1	217.9
3356	Nonferrous rolling and drawing,nec	29,408	10,048	35,124	39,737	0.1	35.1
3069	Fabricated rubber products, nec	10,259	12,250	11,335	37,960	0.1	270.0
3423	Hand and edge tools, nec	40,000	38,037	45,298	37,256	0.1	-6.9
3317	Steel pipe and tubes	109,532	206,118	35,095	36,324	0.1	-66.8