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National Priority Chemicals Trends Report (2005-2007)

Section 5
Federal Facility Trends for the Priority Chemicals (2005-2007)

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SECTION 5
FEDERAL FACILITY TRENDS FOR THE PRIORITY CHEMICALS (2005–2007)

Introduction

The primary focus of this Report is to support EPA's NPEP program by identifying the non-recycled quantities of PCs contained in wastes that are managed by disposal, energy recovery, or treatment and thus potentially might offer waste minimization opportunities. A discussion of recycled quantities of PCs is presented in Appendix C.

Facilities owned and operated by Federal agencies are required to report to TRI, regardless of their NAICS code. This section presents information at the national, EPA regional and state levels regarding PCs that Federal facilities reported to the TRI. Within each of these levels, facility data are aggregated by the associated Federal agency. For the purposes of this Report, we also included government-owned, contractor-operated facilities. Quantities of PCs reported by Federal facilities also are included in the quantities shown elsewhere in this Report (e.g., Sections 3, 4, and 6).

How Does Executive Order 13423 Relate To Priority Chemicals?

On January 24, 2007, President George W. Bush signed Executive Order (EO) 13423: *Strengthening Federal Environmental, Energy, and Transportation Management* mandating, among other goals, that each Federal agency shall "(i) reduce the quantity of toxic and hazardous chemicals and materials acquired, used, or disposed of by the agency, (ii) increase diversion of solid waste as appropriate, and (iii) maintain cost effective waste prevention and recycling programs in its facilities." The formal instructions for implementing this EO require that Federal agencies (and their contractors) comply with the requirements of the *Emergency Planning and Community Right to Know Act* (EPCRA), including reporting to TRI (see Section VIII.C of the Implementing Instructions at http://www.fedcenter.gov/programs/eo13423).

In order to achieve the goals of Section 2 of the EO, each Federal agency is required to develop goals and support actions to identify and reduce the release and use of toxic and hazardous chemicals. In identifying the list of toxic chemicals, hazardous substances, and other pollutants that may result in significant harm to human health or the environment, each Federal agency must consider a list of factors, one of which is "Existing environmental hazard lists such as priority chemicals identified by EPA's Resource Conservation Challenge and any agency-specific toxic or hazardous chemicals lists." We believe EO 13423 will improve the management of these chemicals at all facilities across the Federal community and, eventually, reduce their generation.

How Much Priority Chemicals Were Generated By Federal Facilities?

For 2007, Federal facilities reported approximately 4.5 million pounds of PCs (Exhibit 5.1). Since 2005, DOD facilities accounted for at least 76 percent of the total quantity of PCs reported by Federal facilities, including an average of 78 percent of lead and lead compounds. The total number of facilities reporting has steadily increased, ranging from 191 to 260 facilities, since 2005. We believe the increased number of reporting facilities was largely due to a policy issued by DOD in September of 2006, the "Consolidated Emergency Planning and Community Right-to-Know Act Policy for DOD Installations, Munitions Activities, and Ranges." This document clarified DOD EPCRA reporting responsibilities and likely prompted review of DOD activities, including activities covered under Section 313 of EPCRA, which had not been previously accounted for.

In 2006, the quantity of PCs increased by approximately 1.5 million pounds, followed by a decrease of approximately 800,000 pounds in 2007. Quantities of lead generated by activity at firing ranges reported by numerous DOD facilities, accounted for most of these changes in both 2006 and 2007. For example, an Army facility in Missouri reported an increase of approximately 811,000 pounds of lead for 2006 followed by a decrease of approximately 798,000 pounds for 2007. Also, for 2007, a DOE facility in Idaho showed a decrease of approximately 443,000 pounds of lead and lead compounds generated by the decommissioning and the demolition of buildings that are no longer used, as well as decreasing the lead in its on-site inventory of lead shielding. In 2007, this facility sent large quantities of lead to the Waste Isolation Pilot Plant in New Mexico for storage, pending disposal at some point in the future. For these quantities, the facility used TRI code M10 (Storage only). The facility chose the M10 code due to its inability to know exactly when the waste will be moved from storage to disposal. The lead is co-mingled with other wastes that contain transuranic radioactive contamination and therefore cannot be recycled, so disposal is the only viable management option. For the purposes of this Report, this quantity shows as a decrease because our methodology cannot at this point assign its disposal to a given year.

Exhibit 5.1. Federal Facilities Reporting Priority Chemicals (2005−2007)

TRI Reporting Year	2005	2006	2007
Total quantity of PCs (pounds)	3,810,605	5,298,239	4,488,602
Number of Federal facilities reporting PC quantity	191	201	260

Since 2005, Federal facilities have reported generating up to seven of the PCs, including five PCs for 2007 (Exhibit 5.2). For 2007, lead and lead compounds accounted for approximately 99 percent of the total quantity of PCs reported by Federal facilities.

Exhibit 5.2. Priority Chemicals Reported by Federal Facilities Nationwide (2005 −2007)

Priority Chemical	Percent of Total PC Quantity Reported by Federal Facilities (2007)	Quantity (pounds)		
		2005	2006	2007
Lead and lead compounds	98.6%	3,662,486	5,233,513	4,426,764
Naphthalene	1.3%	14,183	52,780	60,390
Mercury and mercury compounds	<0.1%	32,747	2,605	832
Polychlorinated biphenyls (PCBs)	<0.1%	53	9,341	542
Polycyclic aromatic compounds (PACs)	<0.1%	18	<1	74
Dioxin and dioxin-like compounds*	0.0%	<1	0	0
Hexachloroethane	0.0%	101,119	0	0
Total	**100.0%**	**3,810,605**	**5,298,239**	**4,488,602**

* Facilities report dioxin and dioxin-like compounds to TRI in grams, with a reporting threshold of 0.1 grams. For the purposes of this table, we converted the quantity reported as grams to pounds.

A few facilities accounted for the majority of certain PCs reported by Federal facilities in 2007 (Exhibit 5.3).

Exhibit 5.3. Number of Federal Facilities Reporting Each Priority Chemical by Quantity Range (2007)

Priority Chemical (Total Number of Facilities, Total PC Quantity)	Distribution of Priority Chemical Quantity													
	0–10 pounds		11–100 pounds		101–1,000 pounds		1,001–10,000 pounds		10,001–100,000 pounds		100,001–1 million pounds		> 1 million pounds	
	Number of Facilities	Percent of Total Quantity for this PC	Number of Facilities	Percent of Total Quantity for this PC	Number of Facilities	Percent of Total Quantity for this PC	Number of Facilities	Percent of Total Quantity for this PC	Number of Facilities	Percent of Total Quantity for this PC	Number of Facilities	Percent of Total Quantity for this PC	Number of Facilities	Percent of Total Quantity for this PC
Lead and lead compounds (239 facilities; 4.426,724 pounds)	13	<0.1%	10	<0.1%	74	0.7%	77	6.7%	53	43.4%	12	49.2%	0	0.0%
Naphthalene (31 facilities; 60,390 pounds)	10	0.1%	11	0.7%	7	4.5%	2	10.6%	1	84.1%	0	0.0%	0	0.0%
Mercury and mercury compounds (9 facilities; 832 pounds)	3	0.5%	3	8.2%	3	91.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Polychlorinated biphenyls (2 facilities; 542 pounds)	1	0.9%	0	0.0%	1	99.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Polycyclic aromatic compounds (1 facility, 74 pounds)	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

Shading indicates ranges in which facilities account for at least 84 cumulative percent of the total quantity for the PC.

Note: the total number of facilities shown in Exhibit 5.3 may differ from the total number of facilities shown in Exhibits 5.1 and 5.2 because numerous facilities reported more than one PC.

Where Did Federal Facilities Generate Priority Chemicals?

For 2007, 260 Federal facilities in 210 counties in 52 states and territories, reported approximately 4.5 million pounds of PCs being generated (Exhibit 5.4). Thirty-five of these facilities, in 34 counties, accounted for approximately 3.6 million pounds or 80 percent of the total quantity of PCs generated (Exhibit 5.5). An Air Force facility in Lowndes County, Georgia accounted for approximately 12 percent of the total quantity of PCs generated by Federal facilities. Compared to 2006, this facility reported an increase of approximately 507,000 pounds for 2007.

Exhibit 5.4. Location of Federal Facilities that Generated Priority Chemicals (2007)

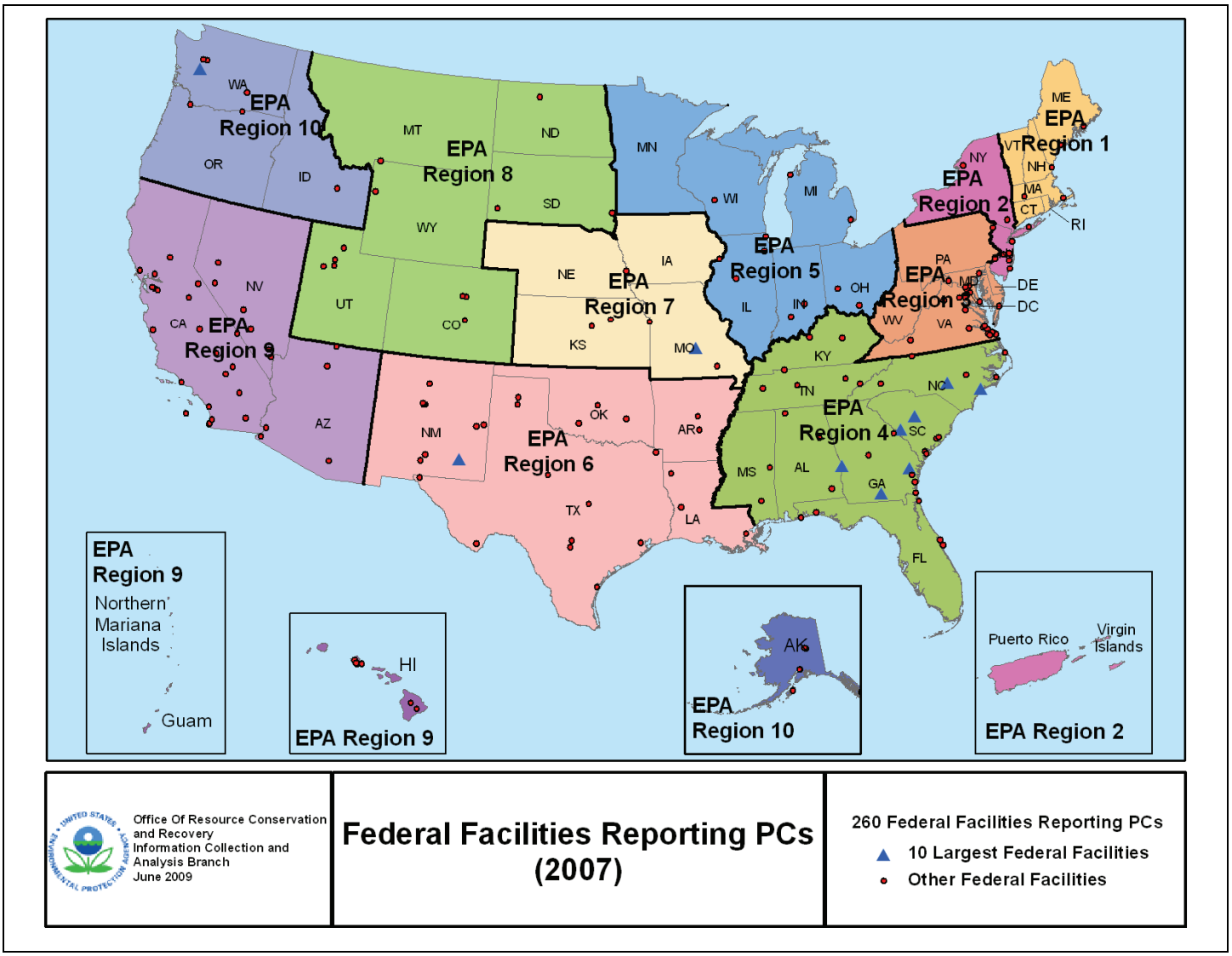

Exhibit 5.5. Priority Chemical Quantity for Counties with Federal Facilities Reporting 80 Percent of the Total Quantity (2007)

EPA Region	State	County	Quantity (pounds)			Quantity Change	Quantity Change	Percent of Total PC Quantity Reported (2007)
			2005	2006	2007	(2005–2006)	(2006–2007)	
4	GA	Lowndes	4,214	18,057	524,673	13,843	506,616	11.7%
4	NC	Onslow	148,249	215,015	233,197	66,766	18,182	5.2%
4	NC	Cumberland	188,958	221,686	179,710	32,728	-41,976	4.0%
4	GA	Liberty	45,664	91,974	172,587	46,310	80,613	3.8%
4	SC	Aiken	223,100	212,822	166,924	-10,278	-45,899	3.7%
4	SC	Richland	100,752	175,550	145,388	74,798	-30,162	3.2%
6	NM	Eddy	93,418	114,211	142,087	20,793	27,876	3.2%
7	MO	Pulaski	124,882	936,227	137,914	811,346	-798,313	3.1%
4	GA	Chattahoochee	152,019	190,546	130,224	38,526	-60,321	2.9%
10	WA	Pierce	114,800	130,000	128,400	15,200	-1,600	2.9%
4	KY	Hardin	91,298	101,366	112,926	10,068	11,560	2.5%
6	TX	Bexar	68,264	58,374	106,962	-9,890	48,588	2.4%
9	CA	San Diego	160,565	134,731	105,920	-25,834	-28,811	2.4%
6	TX	El Paso	75,743	70,133	103,379	-5,610	33,246	2.3%
3	MD	Prince Georges	13	13	95,705	0	95,692	2.1%
10	ID	Butte	458,668	535,529	92,895	76,860	-442,633	2.1%
6	TX	Bell	96,552	75,734	91,474	-20,818	15,740	2.0%
2	NJ	Burlington	89,793	52,037	84,640	-37,756	32,603	1.9%
6	OK	Comanche	51,295	72,042	83,115	20,748	11,072	1.9%
8	CO	El Paso	57,224	50,047	76,501	-7,177	26,454	1.7%
9	CA	San Bernardino	180,600	139,458	76,441	-41,143	-63,017	1.7%
3	VA	Prince William	88,943	145,582	73,777	56,638	-71,805	1.6%
9	HI	Honolulu	33,846	89,652	69,244	55,807	-20,408	1.5%
4	MS	Forrest	65,150	136,222	64,927	71,072	-71,295	1.4%
4	SC	Beaufort	53,834	57,174	62,973	3,339	5,799	1.4%
3	VA	Portsmouth (city)	0	31,258	53,532	31,258	22,274	1.2%
9	NV	Nye	11,318	27,965	52,401	16,647	24,436	1.2%
2	NY	Jefferson	65,827	44,533	45,391	-21,294	858	1.0%
9	CA	Imperial	27,713	74,484	43,736	46,771	-30,748	1.0%
3	VA	Stafford	0	66,153	41,871	66,153	-24,282	0.9%
9	NV	Clark	30,399	69,146	39,434	38,746	-29,712	0.9%
3	VA	Nottoway	0	0	38,311	0	38,311	0.9%
		Total	**2,903,102**	**4,337,720**	**3,576,656**	**1,434,618**	**-761,064**	**79.7%**

Since 2005, DOD Army facilities have accounted for the majority of PCs reported by Federal facilities, including approximately 52 percent of the total quantity of PCs generated for 2007 (Exhibit 5.6). For 2007, DOD facilities accounted for approximately 84 percent of the PCs reported by Federal facilities.

Exhibit 5.6. Total Quantity of Priority Chemicals Reported by Federal Department or Agency (2005–2007)

Agency	SubAgency	Quantity (pounds)			Quantity Change		Percent of Total PC Quantity Reported (2007)
		2005	2006	2007	2005-2006	2006-2007	
Department of Defense	Army	1,966,952	3,056,503	2,313,845	1,089,551	-742,658	51.5%
Department of Defense	Air Force	111,721	176,870	661,272	65,149	484,402	14.7%
Department of Defense	Marine Corps	744,346	774,484	633,852	30,138	-140,631	14.1%
Department of Defense	Navy	72,838	135,034	145,373	62,195	10,340	3.2%
Department of Defense	Military Academy	16,609	11,173	19,311	-5,436	8,138	0.4%
Department of Energy	Office of Environmental Management	223,100	212,822	166,924	-10,278	-45,899	3.7%
Department of Energy	National Laboratory System	488,060	622,001	144,992	133,941	-477,009	3.2%
Department of Energy	National Nuclear Security Administration	19,067	37,412	63,247	18,345	25,835	1.4%
Department of Energy	Safeguards & Security National Training Academy	19,288	29,796	19,459	10,509	-10,337	0.4%
Department of Energy	U.S. Enrichment Corporation	2,868	13,383	975	10,515	-12,408	0.0%
Department of Energy	Office of Civilian Radioactive Waste Management	<1	0	0	<1	0	0.0%
Department of Health and Human Services	National Institutes of Health	3,515	10,059	2,155	6,544	-7,904	0.0%
Department of Homeland Security	Federal Law Enforcement Training Center	109,856	114,225	142,093	4,369	27,868	3.2%
Department of Homeland Security	Secret Service	0	0	95,700	0	95,700	2.1%
Department of Homeland Security	Coast Guard	16,106	24,414	25,984	8,308	1,570	0.6%
Department of Justice	Federal Bureau of Investigation	0	66,153	41,871	66,153	-24,282	0.9%
Department of Justice	Bureau of Prisons	0	584	1,293	584	709	0.0%
Department of Justice	Bureau of Alcohol, Tobacco, Firearms, & Explosives	170	20	30	-150	9	0.0%
Department of State	Bureau of Diplomatic Security	100	0	0	-100	0	0.0%
Department of the Interior	National Park Service	8,967	10,128	7,662	1,161	-2,465	0.2%
Department of Transportation	Federal Aviation Administration	327	958	850	631	-108	0.0%
Department of Treasury	Bureau of Engraving & Printing	1,703	858	435	-845	-423	0.0%
Department of Treasury	U.S. Mint	3,072	15	6	-3,057	-9	0.0%
Department of Veterans Affairs	Department of Veterans Affairs	36	0	0	-36	0	0.0%
National Aeronautics and Space Administration	National Aeronautics and Space Administration	1,781	1,299	1,222	-482	-78	0.0%
Tennessee Valley Authority	Tennessee Valley Authority	125	49	50	-76	1	0.0%
	Total	**3,810,605**	**5,298,239**	**4,488,602**	**1,487,634**	**-809,637**	**100.0%**

Lead and lead compounds reported by DOD and DOE facilities accounted for approximately 92 percent of the total quantity of all PCs generated by Federal facilities (Exhibit 5.7). DOD and DOE facilities also accounted for the majority of other PCs reported by Federal facilities.

Exhibit 5.7. Quantity of Individual Priority Chemicals Reported by Federal Department or Agency (2005–2007)

Priority Chemical	Federal Agency	SubAgency	Quantity (pounds)			Change in Quantity (2005–2006)	Change in Quantity (2006–2007)	Percent of Total PC Quantity Reported by Federal Facilities (2007)
			2005	2006	2007			
Hexachloroethane	Department of Defense	Army	101,119	0	0	-101,119	0	0.0%
		Hexachloroethane Total	**101,119**	**0**	**0**	**-101,119**	**0**	**0.0%**
Lead and lead compounds	Department of Defense	Air Force	107,324	169,505	656,291	62,181	486,786	14.6%
	Department of Defense	Army	1,865,205	3,056,448	2,313,258	1,191,243	-743,190	51.5%
	Department of Defense	Marine Corps	735,180	762,664	633,647	27,484	-129,016	14.1%
	Department of Defense	Military Academy	16,609	11,173	19,311	-5,436	8,138	0.4%
	Department of Defense	Navy	41,243	100,903	89,741	59,660	-11,161	2.0%
	Department of Energy	National Laboratory System	487,849	621,851	144,791	134,002	-477,060	3.2%
	Department of Energy	National Nuclear Security Administration	18,996	37,402	63,227	18,405	25,825	1.4%
	Department of Energy	Office of Environmental Management	222,276	211,023	166,712	-11,253	-44,312	3.7%
	Department of Energy	Safeguards & Security National Training Academy	19,288	29,796	19,459	10,509	-10,337	0.4%
	Department of Energy	U.S. Enrichment Corporation	2,868	4,218	975	1,350	-3,242	<0.1%
	Department of Health and Human Services	National Institutes of Health	3,442	9,828	2,155	6,386	-7,673	<0.1%
	Department of Homeland Security	Coast Guard	16,106	24,414	25,984	8,308	1,570	0.6%
	Department of Homeland Security	Federal Law Enforcement Training Center	109,856	114,225	142,093	4,369	27,868	3.2%
	Department of Homeland Security	Secret Service	0	0	95,700	0	95,700	2.1%
	Department of Justice	Bureau of Alcohol, Tobacco, Firearms, & Explosives	170	20	30	-150	9	<0.1%
	Department of Justice	Bureau of Prisons	0	584	1,293	584	709	<0.1%
	Department of Justice	Federal Bureau of Investigation	0	66,153	41,871	66,153	-24,282	0.9%
	Department of State	Bureau of Diplomatic Security	100	0	0	-100	0	0.0%
	Department of the Interior	National Park Service	8,967	10,128	7,662	1,161	-2,465	0.2%
	Department of Transportation	Federal Aviation Administration	327	958	850	631	-108	<0.1%
	Department of Treasury	Bureau of Engraving & Printing	1,703	858	435	-845	-423	<0.1%
	Department of Treasury	U.S. Mint	3,072	15	6	-3,057	-9	<0.1%
		Lead and lead compounds Total	**3,660,580**	**5,232,165**	**4,425,492**	**1,571,585**	**-806,673**	**98.6%**

Exhibit 5.7. Quantity of Individual Priority Chemicals Reported by Federal Department or Agency (2005−2007) (Continued)

Priority Chemical	Federal Agency	SubAgency	Quantity (pounds)			Change in Quantity (2005–2006)	Change in Quantity (2006–2007)	Percent of Total PC Quantity Reported by Federal Facilities (2007)
			2005	2006	2007			
Mercury and mercury compounds	Department of Defense	Army	543	54	49	-488	-5	<0.1%
	Department of Defense	Navy	31,033	551	431	-30,483	-120	<0.1%
	Department of Energy	National Laboratory System	193	95	120	-98	25	<0.1%
	Department of Energy	National Nuclear Security Administration	71	10	20	-61	10	<0.1%
	Department of Energy	Office of Environmental Management	824	1,799	212	975	-1,587	<0.1%
	Department of Health and Human Services	National Institutes of Health	47	96	0	49	-96	0.0%
	Department of Veterans Affairs	Department of Veterans Affairs	36	0	0	-36	0	0.0%
		Mercury and mercury compounds Total	**32,747**	**2,605**	**832**	**-30,142**	**-1,773**	**<0.1%**
Naphthalene	Department of Defense	Air Force	4,397	7,365	4,982	2,968	-2,383	0.1%
	Department of Defense	Army	85	0	0	-85	0	0.0%
	Department of Defense	Marine Corps	9,166	11,820	205	2,654	-11,615	<0.1%
	Department of Defense	Navy	535	33,580	55,201	33,045	21,620	1.2%
	Department of Energy	National Laboratory System	0	15	3	15	-12	<0.1%
		Naphthalene Total	**14,183**	**52,780**	**60,390**	**38,597**	**7,610**	**1.3%**
Polychlorinated biphenyls	Department of Defense	Army	0	0	537	0	537	<0.1%
	Department of Defense	Navy	27	0	0	-27	0	<0.1%
	Department of Energy	National Laboratory System	0	40	5	40	-35	<0.1%
	Department of Energy	U.S. Enrichment Corporation	0	9,166	0	9,166	-9,166	<0.1%
	Department of Health and Human Services	National Institutes of Health	26	135	0	109	-135	<0.1%
		Polychlorinated biphenyls Total	**53**	**9,341**	**542**	**9,287**	**-8,798**	**<0.1%**
Polycyclic aromatic compounds	Department of Energy	National Laboratory System	18	0	74	-18	74	<0.1%
	Department of Energy	Office of Civilian Radioactive Waste Management	<1	0	0	<1	0	<0.1%
		Polycyclic aromatic compounds Total	**18**	**0**	**74**	**-18**	**74**	**<0.1%**
		Total	**3,810,605**	**5,298,239**	**4,488,602**	**1,487,634**	**-809,637**	**100.0%**

How Did Federal Facilities Manage Their Priority Chemicals?

Exhibit 5.8 shows the national trends for how Federal facilities managed PCs from 2005–2007.

Disposal: In 2007, Federal facilities disposed of approximately 4.4 million pounds, or 98 percent of the total quantity of PCs generated; 89 percent of this total was disposed of on site.

Energy Recovery: In 2007, Federal facilities used energy recovery for approximately 58,000 pounds, or about 1 percent of the total quantity of PCs generated.

Treatment: In 2007, Federal facilities treated approximately 50,000 pounds of the PCs generated.

Exhibit 5.8. National Trends for How Federal Facilities Managed Priority Chemicals (2005–2007)

Management Method Used by Federal Facilities*	Quantity (pounds)		
	2005	2006	2007
On-site Disposal	2,992,330	4,291,025	4,013,419
Off-site Disposal	703,405	955,952	367,006
Total Disposal[12]	**3,695,734**	**5,246,977**	**4,380,424**
On-site Energy Recovery	9,158	10,489	0
Off-site Energy Recovery	4,079	39,803	58,194
Total Energy Recovery	**13,237**	**50,292**	**58,194**
On-site Treatment	432	306	741
Off-site Treatment	101,202	664	49,243
Total Treatment	**101,634**	**971**	**49,984**
Total PC Quantity	**3,810,605**	**5,298,239**	**4,488,602**

* Note: Federal facilities also recycled approximately 1.3 million pounds of PCs in 2007. See Exhibit C.4 in Appendix C for additional details on recycling by Federal facilities. Recycled quantities are not shown here because in this Report we focus on the quantities of PCs that offer the greatest opportunities for waste minimization.

Some highlights concerning how Federal facilities managed individual PCs in 2007, using disposal, energy recovery, and treatment, (Exhibit 5.9):

Disposal: Federal facilities used disposal as the primary management method for two (lead and lead compounds, mercury and mercury compounds) of the five PCs.

Energy Recovery: For non-recycled PCs, Federal facilities primarily used energy recovery for naphthalene.

Treatment: Federal facilities only treated small quantities of naphthalene and polychlorinated biphenyls.

Exhibit 5.9. Management of Individual Priority Chemicals by Federal Facilities (2007)

Priority Chemical	Quantity (pounds)			
	Total PC Quantity	Disposal	Energy Recovery	Treatment
Lead and lead compounds	4,426,764	4,378,764	0	48,000
Naphthalene	60,390	826	58,131	1,433
Mercury and mercury compounds	832	832	0	0
Polychlorinated biphenyls (PCBs)	542	0	0	542
Polycyclic aromatic compounds (PACs)	74	2	63	9
Total	**4,488,602**	**4,380,424**	**58,194**	**49,984**

Exhibits 5.10 and 5.11 show how facilities in each Federal agency managed PCs in 2007.

[12] Disposal quantities used in this Report refer to quantities of chemicals reported as released to the land for the purpose of TRI reporting (see Sections 5 and 6 of TRI Form R). It is important to note that there are differences between the TRI and the Resource Conservation and Recovery Act (RCRA) definitions of disposal. For example, much of the lead (in munitions) reported to TRI by DOD facilities as being land disposed is not considered as disposal under RCRA. Under the RCRA Military Munitions Rule, munitions shot or discharged into the ground does not constitute disposal, but rather is the intended use.

Exhibit 5.10. Management of Priority Chemicals by Federal Department or Agency (2007)

Federal Agency	SubAgency	Priority Chemical	Quantity (pounds)			
			Total PC Quantity	Disposal	Energy Recovery	Treatment
Department of Defense	Air Force	Lead and lead compounds	656,291	656,291	0	0
	Air Force	Naphthalene	4,982	781	4,168	33
	Army	Lead and lead compounds	2,313,258	2,313,258	0	0
	Army	Mercury and mercury compounds	49	49	0	0
	Army	Polychlorinated biphenyls (PCBs)	537	0	0	537
	Marine Corps	Lead and lead compounds	633,647	633,647	0	0
	Marine Corps	Naphthalene	205	4	108	93
	Military Academy	Lead and lead compounds	19,311	19,311	0	0
	Navy	Lead and lead compounds	89,741	89,741	0	0
	Navy	Mercury and mercury compounds	431	431	0	0
	Navy	Naphthalene	55,201	41	53,853	1,307
Department of Energy	National Laboratory System	Lead and lead compounds	144,791	144,791	0	0
	National Laboratory System	Mercury and mercury compounds	120	120	0	0
	National Laboratory System	Naphthalene	3	1	2	0
	National Laboratory System	Polychlorinated biphenyls (PCBs)	5	0	0	5
	National Laboratory System	Polycyclic aromatic compounds (PACs)	74	2	63	9
	National Nuclear Security Administration	Lead and lead compounds	63,227	63,227	0	0
	National Nuclear Security Administration	Mercury and mercury compounds	20	20	0	0
	Office of Environmental Management	Lead and lead compounds	166,712	166,712	0	0
	Office of Environmental Management	Mercury and mercury compounds	212	212	0	0
	Safeguards & Security National Training Academy	Lead and lead compounds	19,459	19,459	0	0
	U.S. Enrichment Corporation	Lead and lead compounds	975	975	0	0
Department of Health and Human Services	National Institutes of Health	Lead and lead compounds	2,155	2,155	0	0
Department of Homeland Security	Coast Guard	Lead and lead compounds	25,984	25,984	0	0
	Federal Law Enforcement Training Center	Lead and lead compounds	142,093	142,093	0	0
	Secret Service	Lead and lead compounds	95,700	47,700	0	48,000
Department of Justice	Bureau of Alcohol, Tobacco, Firearms, & Explosives	Lead and lead compounds	30	30	0	0
	Bureau of Prisons	Lead and lead compounds	1,293	1,293	0	0
	Federal Bureau of Investigation	Lead and lead compounds	41,871	41,871	0	0
Department of the Interior	National Park Service	Lead and lead compounds	7,662	7,662	0	0
Department of Transportation	Federal Aviation Administration	Lead and lead compounds	850	850	0	0

Exhibit 5.10. Management of Priority Chemicals by Federal Department or Agency (2007) (Continued)

Federal Agency	SubAgency	Priority Chemical	Quantity (pounds)			
			Total PC Quantity	Disposal	Energy Recovery	Treatment
Department of Treasury	Bureau of Engraving & Printing	Lead and lead compounds	435	435	0	0
	U.S. Mint	Lead and lead compounds	6	6	0	0
National Aeronautics and Space Administration	National Aeronautics and Space Administration	Lead and lead compounds	1,222	1,222	0	0
Tennessee Valley Authority	Tennessee Valley Authority	Lead and lead compounds	50	50	0	0
		Total	**4,488,602**	**4,380,424**	**58,194**	**49,984**

Exhibit 5.11. Management Methods Used by Federal Departments and Agencies, by Priority Chemical (2007)

Priority Chemical	EPA Region	State	Federal Agency	SubAgency	Quantity (pounds)		
					Disposal	Energy Recovery	Treatment
Lead and lead compounds	1	CT	Department of Defense	Marine Corps	2,822	0	0
	1	MA	Department of Defense	Air Force	104	0	0
	1	MA	Department of Defense	Army	14,025	0	0
	1	ME	Department of Defense	Army	426	0	0
	1	ME	Department of Defense	Navy	351	0	0
	1	ME	Department of the Interior	National Park Service	665	0	0
	1	RI	Department of Defense	Army	1,923	0	0
	1	VT	Department of Defense	Army	6,750	0	0
	2	NJ	Department of Defense	Air Force	254	0	0
	2	NJ	Department of Defense	Army	84,387	0	0
	2	NJ	Department of Defense	Navy	795	0	0
	2	NJ	Department of Homeland Security	Coast Guard	2,214	0	0
	2	NJ	Department of Justice	Bureau of Prisons	1,052	0	0
	2	NJ	Department of Transportation	Federal Aviation Administration	850	0	0
	2	NY	Department of Defense	Air Force	225	0	0
	2	NY	Department of Defense	Army	45,391	0	0
	2	NY	Department of Defense	Military Academy	19,311	0	0
	2	NY	Department of Energy	National Laboratory System	21,075	0	0
	3	DC	Department of Treasury	Bureau of Engraving & Printing	435	0	0
	3	MD	Department of Defense	Army	4,084	0	0
	3	MD	Department of Defense	Navy	11,887	0	0
	3	MD	Department of Health and Human Services	National Institutes of Health	2,155	0	0
	3	MD	Department of Homeland Security	Federal Law Enforcement Training Center	5	0	0

Exhibit 5.11. Management Methods Used by Federal Departments and Agencies, by Priority Chemical (2007) (Continued)

Priority Chemical	EPA Region	State	Federal Agency	SubAgency	Quantity (pounds)		
					Disposal	Energy Recovery	Treatment
Lead and lead compounds (continued)	3	MD	Department of Homeland Security	Secret Service	47,700	0	48,000
	3	PA	Department of Defense	Army	22,487	0	0
	3	PA	Department of Defense	Navy	0	0	0
	3	PA	Department of Justice	Bureau of Prisons	241	0	0
	3	PA	Department of the Interior	National Park Service	202	0	0
	3	PA	Department of Treasury	U.S. Mint	0	0	0
	3	VA	Department of Defense	Army	90,923	0	0
	3	VA	Department of Defense	Marine Corps	73,777	0	0
	3	VA	Department of Defense	Navy	26,707	0	0
	3	VA	Department of Homeland Security	Coast Guard	1,012	0	0
	3	VA	Department of Justice	Federal Bureau of Investigation	41,871	0	0
	3	VA	Department of the Interior	National Park Service	375	0	0
	3	VA	National Aeronautics and Space Administration	National Aeronautics and Space Administration	0	0	0
	3	WV	Department of Defense	Navy	424	0	0
	3	WV	Department of Justice	Bureau of Alcohol, Tobacco, Firearms, & Explosives	30	0	0
	4	AL	Department of Defense	Army	26,021	0	0
	4	AL	Tennessee Valley Authority	Tennessee Valley Authority	50	0	0
	4	FL	Department of Defense	Air Force	23,728	0	0
	4	FL	Department of Defense	Navy	6,462	0	0
	4	FL	National Aeronautics and Space Administration	National Aeronautics and Space Administration	1,222	0	0
	4	GA	Department of Defense	Air Force	525,215	0	0
	4	GA	Department of Defense	Army	309,702	0	0
	4	GA	Department of Defense	Marine Corps	939	0	0
	4	GA	Department of Homeland Security	Federal Law Enforcement Training Center	1	0	0
	4	KY	Department of Defense	Army	119,761	0	0
	4	KY	Department of Energy	U.S. Enrichment Corporation	554	0	0
	4	MS	Department of Defense	Army	69,588	0	0
	4	NC	Department of Defense	Air Force	1,102	0	0
	4	NC	Department of Defense	Army	182,385	0	0
	4	NC	Department of Defense	Marine Corps	246,010	0	0
	4	NC	Department of the Interior	National Park Service	797	0	0
	4	SC	Department of Defense	Air Force	363	0	0
	4	SC	Department of Defense	Army	145,025	0	0

Exhibit 5.11. Management Methods Used by Federal Departments and Agencies, by Priority Chemical (2007) (Continued)

Priority Chemical	EPA Region	State	Federal Agency	SubAgency	Quantity (pounds)		
					Disposal	Energy Recovery	Treatment
Lead and lead compounds (continued)	4	SC	Department of Defense	Marine Corps	62,973	0	0
	4	SC	Department of Defense	Navy	8,441	0	0
	4	SC	Department of Energy	Office of Environmental Management	166,712	0	0
	4	TN	Department of Defense	Air Force	14,782	0	0
	4	TN	Department of Defense	Army	2,834	0	0
	4	TN	Department of Energy	National Nuclear Security Administration	6,703	0	0
	4	TN	Department of the Interior	National Park Service	633	0	0
	5	IL	Department of Defense	Air Force	437	0	0
	5	IL	Department of Defense	Army	1,109	0	0
	5	IL	Department of Energy	National Laboratory System	5,473	0	0
	5	IN	Department of Defense	Air Force	435	0	0
	5	IN	Department of Defense	Army	34,189	0	0
	5	IN	Department of Defense	Navy	2,116	0	0
	5	MI	Department of Defense	Air Force	637	0	0
	5	MI	Department of the Interior	National Park Service	450	0	0
	5	MN	Department of Defense	Army	19,692	0	0
	5	OH	Department of Defense	Air Force	361	0	0
	5	OH	Department of Energy	U.S. Enrichment Corporation	421	0	0
	5	WI	Department of Defense	Army	32,873	0	0
	6	AR	Department of Defense	Air Force	625	0	0
	6	AR	Department of Defense	Army	48,367	0	0
	6	LA	Department of Defense	Air Force	1	0	0
	6	LA	Department of Defense	Army	33,339	0	0
	6	NM	Department of Defense	Air Force	4,179	0	0
	6	NM	Department of Defense	Army	1,392	0	0
	6	NM	Department of Energy	National Laboratory System	10,889	0	0
	6	NM	Department of Energy	Safeguards & Security National Training Academy	19,459	0	0
	6	NM	Department of Homeland Security	Federal Law Enforcement Training Center	142,087	0	0
	6	OK	Department of Defense	Air Force	8	0	0
	6	OK	Department of Defense	Army	100,765	0	0
	6	TX	Department of Defense	Air Force	12,860	0	0
	6	TX	Department of Defense	Army	309,159	0	0
	6	TX	Department of Defense	Navy	2,842	0	0

Exhibit 5.11. Management Methods Used by Federal Departments and Agencies, by Priority Chemical (2007) (Continued)

Priority Chemical	EPA Region	State	Federal Agency	SubAgency	Quantity (pounds)		
					Disposal	Energy Recovery	Treatment
Lead and lead compounds (continued)	6	TX	Department of Energy	National Nuclear Security Administration	5,534	0	0
	6	TX	Department of the Interior	National Park Service	664	0	0
	7	IA	Department of Defense	Air Force	858	0	0
	7	IA	Department of Defense	Army	6,831	0	0
	7	KS	Department of Defense	Air Force	2,238	0	0
	7	KS	Department of Defense	Army	26,721	0	0
	7	MO	Department of Defense	Army	158,170	0	0
	7	MO	Department of Energy	National Nuclear Security Administration	23	0	0
	7	MO	Department of the Interior	National Park Service	110	0	0
	7	NE	Department of Defense	Air Force	4,961	0	0
	8	CO	Department of Defense	Air Force	5,107	0	0
	8	CO	Department of Defense	Army	76,501	0	0
	8	CO	Department of Treasury	U.S. Mint	6	0	0
	8	MT	Department of Defense	Air Force	4,673	0	0
	8	ND	Department of Defense	Air Force	4,404	0	0
	8	SD	Department of the Interior	National Park Service	245	0	0
	8	UT	Department of Defense	Air Force	529	0	0
	8	UT	Department of Defense	Army	29,123	0	0
	8	WY	Department of the Interior	National Park Service	1,087	0	0
	9	AZ	Department of Defense	Air Force	8	0	0
	9	AZ	Department of Defense	Army	5,285	0	0
	9	AZ	Department of Defense	Marine Corps	16,314	0	0
	9	AZ	Department of the Interior	National Park Service	1,369	0	0
	9	CA	Department of Defense	Air Force	2,195	0	0
	9	CA	Department of Defense	Army	51,114	0	0
	9	CA	Department of Defense	Marine Corps	206,802	0	0
	9	CA	Department of Defense	Navy	7,921	0	0
	9	CA	Department of Energy	National Laboratory System	13,103	0	0
	9	CA	Department of Homeland Security	Coast Guard	14,062	0	0
	9	CA	Department of the Interior	National Park Service	813	0	0
	9	HI	Department of Defense	Army	52,747	0	0
	9	HI	Department of Defense	Marine Corps	24,010	0	0
	9	HI	Department of Defense	Navy	2,893	0	0

Exhibit 5.11. Management Methods Used by Federal Departments and Agencies, by Priority Chemical (2007) (Continued)

Priority Chemical	EPA Region	State	Federal Agency	SubAgency	Quantity (pounds)		
					Disposal	Energy Recovery	Treatment
Lead and lead compounds (continued)	9	HI	Department of the Interior	National Park Service	128	0	0
	9	NV	Department of Defense	Air Force	39,310	0	0
	9	NV	Department of Defense	Army	5,742	0	0
	9	NV	Department of Defense	Navy	5,968	0	0
	9	NV	Department of Energy	National Laboratory System	1,433	0	0
	9	NV	Department of Energy	National Nuclear Security Administration	50,968	0	0
	9	NV	Department of the Interior	National Park Service	124	0	0
	10	AK	Department of Defense	Air Force	5,207	0	0
	10	AK	Department of Defense	Army	40,092	0	0
	10	AK	Department of Homeland Security	Coast Guard	2,864	0	0
	10	ID	Department of Energy	National Laboratory System	92,819	0	0
	10	OR	Department of Defense	Air Force	1,490	0	0
	10	OR	Department of Defense	Army	535	0	0
	10	WA	Department of Defense	Army	153,800	0	0
	10	WA	Department of Defense	Navy	12,934	0	0
	10	WA	Department of Homeland Security	Coast Guard	5,832	0	0
	9	NV	Department of the Interior	National Park Service	124	0	0
Mercury and mercury compounds	2	NY	Department of Energy	National Laboratory System	118	0	0
	3	VA	Department of Defense	Army	28	0	0
	4	SC	Department of Energy	Office of Environmental Management	212	0	0
	4	TN	Department of Energy	National Nuclear Security Administration	20	0	0
	5	IL	Department of Defense	Navy	2	0	0
	6	AR	Department of Defense	Army	1	0	0
	9	CA	Department of Defense	Navy	429	0	0
	9	CA	Department of Energy	National Laboratory System	2	0	0
	10	AK	Department of Defense	Army	20	0	0

Exhibit 5.11. Management Methods Used by Federal Departments and Agencies, by Priority Chemical (2007) (Continued)

Priority Chemical	EPA Region	State	Federal Agency	SubAgency	Quantity (pounds)		
					Disposal	Energy Recovery	Treatment
Naphthalene	1	MA	Department of Defense	Air Force	0	5	0
	3	VA	Department of Defense	Air Force	0	447	0
	3	VA	Department of Defense	Navy	0	49,999	1,179
	4	GA	Department of Defense	Navy	0	3	0
	4	MS	Department of Defense	Navy	0	35	0
	4	NC	Department of Defense	Air Force	77	722	0
	4	NC	Department of Defense	Marine Corps	1	0	0
	4	SC	Department of Defense	Air Force	10	23	0
	5	OH	Department of Defense	Air Force	0	2,480	0
	6	LA	Department of Defense	Navy	0	30	4
	6	NM	Department of Defense	Air Force	244	0	0
	6	TX	Department of Defense	Air Force	0	174	3
	6	TX	Department of Defense	Navy	8	0	0
	8	CO	Department of Defense	Air Force	1	0	0
	8	ND	Department of Defense	Air Force	1	67	1
	8	SD	Department of Defense	Air Force	1	0	1
	8	UT	Department of Defense	Air Force	86	0	0
	9	CA	Department of Defense	Air Force	4	0	3
	9	CA	Department of Defense	Marine Corps	3	108	93
	9	CA	Department of Defense	Navy	33	3,785	124
	9	HI	Department of Defense	Air Force	48	0	25
	10	AK	Department of Defense	Air Force	250	250	0
	10	ID	Department of Energy	National Laboratory System	1	2	0
	10	OR	Department of Defense	Air Force	17	0	0
	10	WA	Department of Defense	Air Force	42	0	0
Polychlorinated biphenyls	2	NY	Department of Energy	National Laboratory System	0	0	5
	6	AR	Department of Defense	Army	0	0	537
Polycyclic aromatic compounds	10	ID	Department of Energy	National Laboratory System	2	63	9
				Total	**4,380,424**	**58,194**	**49,984**

Data Derived From Hazardous Waste Biennial Reports for Federal Facilities

In this section, we present data about PCs contained in hazardous wastes generated by Federal facilities, derived from information submitted by Federal facilities in Biennial Reports under RCRA. We derived these data by applying a methodology to estimate the quantity of PCs contained in BR waste streams. The estimates of PCs contained in hazardous wastes supplement the data reported to TRI, providing a broader perspective regarding the Federal facilities that generate and manage wastes that contain PCs. We estimate quantities of PCs that are contained in both generated and managed hazardous waste streams. The focus of this methodology is primary generation activities that includes waste streams generated from a production process, service activity, or routine/periodic cleanup, where potential opportunities for direct waste minimization (e.g., source reduction, recycling) are the greatest. For one or more reasons, estimated quantities of PCs in managed waste associated with primary generation activities may differ from the estimated quantities of PCs in generated wastes associated with primary generation activities. Please see Section 2.2 of the PC BR Measurement Methodology document for a discussion of potential reasons for these differences.

As previously discussed in Section 1, we caution readers against making casual one-to-one comparisons between the TRI and BR data. The differences between these two reporting systems can cause significant variation in the number of reporting facilities and quantities of PCs reported/estimated to be contained in hazardous wastes.

Based on applying our methodology to the 2007 BR data, we estimate that 407 Federal facilities reported hazardous wastes containing approximately 2.4 million pounds of PCs. Mercury and lead accounted for approximately 98 percent of the PCs in the hazardous waste streams Exhibit 5.12).

Exhibit 5.12. Estimated Quantity of Priority Chemicals Contained in Primary Generation Hazardous Waste Reported by Federal Facilities (2007)

Priority Chemical	Number of Facilities	Priority Chemical Quantity (pounds)			Percent of Total Quantity
		Wastewaters	Non-wastewaters	Total Quantity	
Mercury	293	279	1,472,910	1,473,189	62.4%
Lead	373	13,208	830,026	843,234	35.7%
Cadmium	306	167	29,480	29,647	1.3%
Pentachlorophenol	14	0	15,974	15,974	0.7%
Phenanthrene	3	<1	11	11	<0.1%
Pyrene	3	<1	4	4	<0.1%
Hexachlorobenzene	9	<1	4	4	<0.1%
Hexachloroethane	6	0	1	1	<0.1%
Total		**13,654**	**2,348,408**	**2,362,062**	**99.9%**

In 2007, Federal facilities generated hazardous waste containing PCs in 259 counties within 53 states and territories. A Federal facility in Calhoun County, Alabama (EPA Region 4) generated an estimated 85 percent of the mercury and 57 percent of the lead, accounting for approximately 73 percent of the total quantity of PCs contained in hazardous wastes reported by Federal facilities (Exhibit 5.13).

Exhibit 5.13. States and Counties in Which Federal Facilities Generated 95 Percent of Priority Chemicals Contained in Primary Generation Hazardous Waste, by Priority Chemical (2007)

EPA Region	State	County	Priority Chemical	Estimated Quantity of This PC Contained in Hazardous Wastes (pounds)	Percent of Total Quantity of This PC Contained in Hazardous Wastes Reported by Federal Facilities	Percent of Total Quantity of PCs Contained in Hazardous Wastes Reported by Federal Facilities
4	AL	Calhoun	Mercury	1,252,423	85.0%	53.0%
4	AL	Calhoun	Lead	478,136	56.7%	20.2%
3	VA	Portsmouth City	Mercury	133,110	9.0%	5.6%
3	VA	Portsmouth City	Lead	58,732	7.0%	2.5%
10	WA	Kitsap	Lead	58,290	6.9%	2.5%
3	VA	Radford City	Mercury	51,542	3.5%	2.2%
6	TX	Bowie	Lead	32,870	3.9%	1.4%
4	GA	Dougherty	Lead	22,547	2.7%	1.0%
4	AL	Calhoun	Cadmium	21,722	73.3%	0.9%
7	MO	Jackson	Lead	17,357	2.1%	0.7%
3	VA	Radford City	Lead	17,066	2.0%	0.7%
9	CA	San Bernardino	Pentachlorophenol	15,791	98.9%	0.7%
9	CA	Solano	Lead	14,296	1.7%	0.6%
6	AR	Jefferson	Lead	11,863	1.4%	0.5%
2	NY	Albany	Lead	11,358	1.3%	0.5%
5	IN	Martin	Lead	11,021	1.3%	0.5%
6	OK	Oklahoma	Lead	10,875	1.3%	0.5%
4	GA	Houston	Lead	9,320	1.1%	0.4%
9	CA	San Diego	Lead	8,779	1.0%	0.4%
			Total	**2,237,098**	**NA**	**94.7%**

Exhibit 5.14 shows how Federal facilities reported managing hazardous wastes that contain PCs. Federal facilities did not specify the management method for hazardous wastes containing an estimated 1.4 million pounds of PCs. Otherwise, for example, Federal facilities incinerated hazardous wastes containing an estimated 419,000 pounds of PCs, used stabilization/chemical fixation for hazardous wastes containing an estimated 229,000 pounds of PCs, and disposed of approximately 120,000 pounds in landfills or surface impoundments. See Appendix E for a full list of the BR management codes and their descriptions.

Exhibit 5.14. Methods Used by Federal Facilities to Manage Hazardous Wastes Containing Priority Chemicals (2007)

Management Method Group	Management Method Code Description	Quantity of PCs Managed (2007)	Percent of Total Estimated Quantity of PCs
NA	NA	1,422,625	59.8%
	NA Total	**1,422,625**	**59.8%**
Destruction or Treatment Prior to Disposal at Another Site	Incineration	419,377	17.6%
	Stabilization or chemical fixation prior to disposal at another site	229,177	9.6%
	Other treatment	13,844	0.6%
	Macro-encapsulation prior to disposal at another site	10,504	0.4%
	Other chemical precipitation with or without pre-treatment	88	<0.1%
	Neutralization only	34	<0.1%
	Biological treatment with or without precipitation	7	<0.1%
	Chemical reduction with or without precipitation	3	<0.1%
	Phase separation	1	<0.1%
	Evaporation	1	<0.1%
	Chemical oxidation	<1	<0.1%
	Wet air oxidation	<1	<0.1%
	Settling or clarification	<1	<0.1%
	Absorption	<1	<0.1%
	Cyanide destruction with or without precipitation	<1	<0.1%
	Destruction or Treatment Prior to Disposal at Another Site Total	**673,034**	**28.3%**
Disposal	Landfill or surface impoundment that will be closed as landfill	119,838	5.0%
	Deepwell or underground injection	11,889	0.5%
	Land treatment or application	2,633	0.1%
	Discharge to sewer/POTW or NPDES	538	<0.1%
	Disposal Total	**134,898**	**5.7%**
Transfer Off Site	Storage, bulking, and/or transfer off site	130,406	5.5%
	Transfer Off Site Total	**130,406**	**5.5%**
Reclamation and Recovery	Fuel blending prior to energy recovery at another site	12,489	0.5%
	Metals recovery	3,150	0.1%
	Other recovery or reclamation for reuse	2,165	0.1%
	Energy recovery at this site	1,984	0.1%
	Solvents recovery	129	<0.1%
	Reclamation and Recovery Total	**19,918**	**0.8%**
	Grand Total	**2,380,881**	**100.0%**