CHAPTER 7

Low-Level Waste

7.1 Introduction

This chapter provides data on the volume and location of low-level waste (LLW) managed by the Department of Energy (DOE). The data cover the following reported volumes: inventory (storage), new generation, treatment, receipts, and disposal. Additional information on the cumulative volume and radioactivity of previously-disposed LLW (through FY 1999) is also provided (see Section 7.8 and Highlight 1 for more details). In the sections that cover inventory and new generation, the chapter provides additional information about the physical forms that comprise LLW. Throughout the chapter, the data summarize the volume of LLW managed during both the 1998 and 1999 fiscal years and provide the most current DOE projections for LLW inventories and management through FY 2070.

A summary of LLW volumes by inventory and management activity for fiscal years (FY) 1998 and 1999 is provided in Table 7-1. See Section 7.1.3 for a projection summary of LLW volumes by inventory and management activity.

Table 7-1
Summary of LLW Volumes by Inventory and Management Activity as Reported by Sites: FY 1998 and FY 1999 Actuals
(Includes all physical forms except waste water)

In cubic meters

	FY 1998 Total	FY 1999 Total
Inventory (Storage)	110,262	120,846
New Generation	29,506	34,824
Treatment	5,191	7,724
Receipts	15,093	25,765
Disposal	22,514	37,461

This chapter includes:

- The reported volumes, locations, and radioactivity of LLW-*radioactive waste* at the site, state, and DOE-wide levels. Waste water volumes are excluded from all totals except those in Section 7.7, which provides the reported LLW waste water volumes.
- Low Activity Waste (LAW) volumes (that result from the processing of high-level waste) at four sites: Hanford Site, Idaho National Engineering and Environmental Laboratory (INEEL), Savannah River Site, and West Valley Demonstration Project.

This chapter does not include:

The reported volumes of LLW-*contaminated media*[1], which are covered in Chapter 10.

7.1.1 LLW Definition and Explanation

(LLW) is defined as:

> Any radioactive waste, including accelerator-produced waste, that is not high-level radioactive waste (HLW), spent nuclear fuel (SNF), transuranic waste (TRU), byproduct material (as defined in section 11e(2) of the Atomic Energy Act of 1954), or naturally occurring radioactive material (DOE Order 435.1, issued July 1999).

Some LLW also contains alpha-emitting transuranic radionuclides in concentrations below the 100 nanocurie per gram minimum concentration established in the TRU waste definition. Hazardous constituents generally are not present in significant quantities in waste identified as LLW. LLW containing hazardous constituents above regulatory levels is classified as mixed low-level waste (MLLW, Chapter 8).

Many DOE activities have generated LLW, and consequently, LLW is present at many DOE sites. Today, most of the DOE's LLW-new generation results from the following activities:

- Processing, creating, or otherwise handling radioactive materials;
- Performing chemical conversions or separations;
- Fabricating nuclear components;
- Conducting support activities associated with both weapons production and non-weapons activities (e.g., waste water treatment and equipment maintenance);
- Pre-treating HLW;
- Managing chemical separation facilities; and
- Treating and handling TRU and MLLW.[2]

LLW contains a broad spectrum of radionuclides, including many radionuclides that are also found in HLW and TRU waste. However, the concentrations of radionuclides in LLW are typically much lower than they are in HLW. Therefore, most LLW exhibits lower levels of direct radiation and poses a less serious inhalation/ingestion hazard. A small percentage of LLW, such as irradiated reactor parts and some special-case waste, presents a greater radiation hazard, and the DOE manages this waste separately from the bulk of LLW. Some LLW containing the uranium-

Highlight 1. Why does this chapter include information about previously-disposed of LLW?

The DOE has already disposed of over 98 percent of the LLW (both LLW-radioactive waste and LLW-contaminated media) it has historically managed, leaving less than two percent in the current inventory. This is not the case for high-level waste, transuranic waste[a], or spent nuclear fuel, which have not yet been permanently disposed of and are, with only a few exceptions, still in inventory. Therefore, in order to provide the most comprehensive "picture" of LLW radioactivity, this report provides data on the cumulative amounts of previously-disposed LLW (radioactive waste and contaminated media). These LLW volume and radioactivity (curie) data provide a sound *approximation* of the total LLW radioactivity that can be generally compared to the data on radioactivity of high-level waste and transuranic waste also provided in this report.

The LLW radioactivity data account for approximately 90 percent of the volume of previously-disposed LLW (because information on the radioactivity of LLW disposed of at commercial sites was not available in all instances).

See Section 7.8 for more detailed information.

[a] This statement refers to transuranic (TRU) waste that has not been previously disposed (i.e., "buried TRU") or the relatively small amount of TRU waste that has already been disposed of at the Waste Isolation Pilot Plant.

[1] Contaminated media are materials such as soil, sediment, surface water, ground water, and others (e.g., sludge and rubble/debris that are intermixed with media) that are contaminated at levels requiring cleanup or that require further assessment to determine whether an environmental restoration action is warranted. See Chapter 10 for further information.

[2] U.S. Department of Energy, Office of Environmental Management, *Linking Legacies: Connecting the Cold War Nuclear Weapons Production Processes to Their Environmental Consequences*, DOE-EM-0319 (January 1997).

enriched uranium-235 isotope also can present criticality hazards and must be stored in geometric configurations that are considered criticality safe.[3]

Items exposed to neutron radiation or contaminated with radioactive material are considered low-level radioactive waste. Examples of LLW items include: protective shoe coverings and clothing; mops; rags; equipment and tools; medical equipment such as syringes, injection needles, and laboratory tissues; and reactor water treatment residues.

Highlight 2. About the Data in This Chapter

- The FY 2000 DOE Environmental Management (EM) Corporate Database provided the data for this chapter. The data in the EM Corporate Database are available through the Central Internet Database (CID), located at http://cid.em.doe.gov. (Please see Chapter 1 for more information on both the EM Corporate Database and the CID.)
- The data in this report are in a summary format (i.e., by site rather than by waste stream). The CID offers additional details (e.g., stream level data, or comprehensive data about a specific site or activity).
- The LLW quantity data in this report are rounded to the nearest cubic meter. Exceptions occur if the data show less than one cubic meter. In these cases, the data are rounded to one significant digit.
- The LLW quantity data in this report are presented according to various categories, i.e., by the amount in inventory, generated, treated, received, etc. When considered across these categories, the data are not necessarily mutually exclusive. In other words, a particular amount of LLW may be generated, treated, and disposed of – all during the same fiscal year. The same holds true for data on projected waste. For these reasons, this report does not provide data summaries across the different data categories that would misleadingly suggest data exclusivity.
- This chapter summarizes data on the volume and radioactivity of the cumulative amount of LLW disposed of through FY 1999. These volume and radioactivity data were compiled from a combination of sources:
  - U.S. DOE, Office of Environmental Management, *Linking Legacies: Connecting the Cold War Nuclear Weapons Production Processes to Their Environmental Consequences*, DOE-EM-0319 (January 1997);
  - U.S. DOE, Office of Environmental Management, *Current and Planned Low-Level Waste Disposal Capacity Report,* Rev. 2 (December 2000);
  - U.S. DOE Office of Environmental Management, *Integrated Data Base Report—1996: U.S. Spent Nuclear Fuel and Radioactive Waste Inventories, Projections, and Characteristics*, DOE/RW-0006, Rev. 13 (December 1997); and
  - U.S. DOE, Office of Environmental Management, *Integrated Data Base Report—1994 U.S. Spent Nuclear Fuel and Radioactive Waste Inventories, Projections, and Characteristic,* DOE/RW-0006, Rev. 11 (December 1995).

  Refer to Section 7.8 for more detailed information on LLW radioactivity.
- The number of reported LLW curies is based on the radionuclides present in the waste at the time of disposal. These estimates have not been adjusted to reflect changes in radioactivity resulting from the decay of the radionuclides since disposal.

[3] U.S. Department of Energy, Office of Environmental Management, *Linking Legacies: Connecting the Cold War Nuclear Weapons Production Processes to Their Environmental Consequences*, DOE-EM-0319 (January 1997).

DOE sites treat a significant percentage of LLW prior to disposal to stabilize the waste forms (e.g., by solidifying waste containing free liquid or particulates) or to reduce the disposal volume (e.g., by incinerating or compacting). Sites typically treat LLW on-site, but in some cases, send LLW off-site for treatment or disposal at other DOE or commercial facilities. The DOE typically stores LLW in metal drums, metal boxes, or plywood boxes. Prior to disposal, specific measures are taken to ensure appropriate LLW management, such as:

- Certifying the LLW to ensure that no MLLW or other prohibited materials (e.g., free liquids that could leak out) are present;
- Storing LLW that emits high levels of gamma radiation in heavily shielded containers; and
- Separating LLW that contains alpha-emitting radionuclides at levels at or above 10 nanocuries per gram from those that contain lower concentrations of alpha-emitters. (Because of the potential inhalation hazards, high-alpha LLW requires special procedures to limit possible inhalation hazards to workers.)

7.1.2 Organization of LLW Data

This chapter provides data on the volume of LLW in inventory and managed by the DOE. The data cover the FY 1998 and FY 1999 "actuals" as well as the projected LLW volumes through FY 2070. In the generation and inventory sections (7.2 and 7.3), the chapter provides more detailed information on physical forms of LLW. Waste water volumes are excluded from all totals except those in Section 7.7, which provides the reported LLW waste water volumes.

Finally, Section 7.8 provides summary information on the radioactivity (in number of curies) of LLW.

7.1.3 Summary of Total Projected LLW Volumes by Inventory and Management Activity: FY 2000 - FY 2070

The tables and figure in this section provide summary data on LLW projections. Table 7-2 summarizes the cumulative projected volume of LLW by management activity for FY 2000 through FY 2070. Table 7-3 provides these projections in more detail and also includes data on the projected LLW inventories. Figure 7-2 presents the total projected volumes of LLW inventories and management activities.

Table 7-2
Summary of Total Projected Volumes by Management Activity:
FY 2000 - FY 2070
(Includes all physical forms except waste water)

In cubic meters

New Generation	1,298,348
Treatment	763,932
Receipts	1,432,214
Disposal	1,883,045

Table 7-3
Summary of Total Projected LLW Volumes by Inventory and Management Activities: FY 2000 - FY 2070
(Includes all physical forms except waste water)

In cubic meters

	FY 2000[a]	FY 2001[a]	FY 2002[a]	FY 2003[a]	FY 2004[a]	FY 2005[a]
Inventory (Storage)	118,194	109,284	100,454	81,711	63,273	49,698
New Generation	28,197	27,039	25,972	22,032	34,304	34,239
Treatment	12,183	13,259	12,602	14,555	15,272	15,825
Receipts	26,231	30,035	50,211	75,336	82,107	70,535
Disposal	38,045	40,785	59,415	79,028	71,437	59,593

	FY 2006[a]	FY 2007[a]	FY 2008[a]	FY 2009[a]	FY 2010[a]	FY 2011-2015
Inventory (Storage)	37,413	31,055	24,936	22,941	19,711	6,880
New Generation	34,345	34,253	38,529	38,101	35,961	172,145
Treatment	15,044	14,482	13,110	10,203	11,861	54,207
Receipts	84,618	47,026	46,778	34,477	31,689	131,921
Disposal	75,335	34,916	41,050	29,829	39,858	325,241

	FY 2016-2020	FY 2021-2025	FY 2026-2030	FY 2031-2035	FY 2036-2040	FY 2041-2045
Inventory (Storage)	7,671	8,446	7,023	7,598	8,188	8,781
New Generation	89,747	82,012	76,351	69,738	67,808	67,571
Treatment	54,626	78,292	75,882	71,205	43,277	43,084
Receipts	81,426	71,405	69,158	66,889	70,630	67,255
Disposal	302,726	185,214	109,634	62,254	53,271	49,942

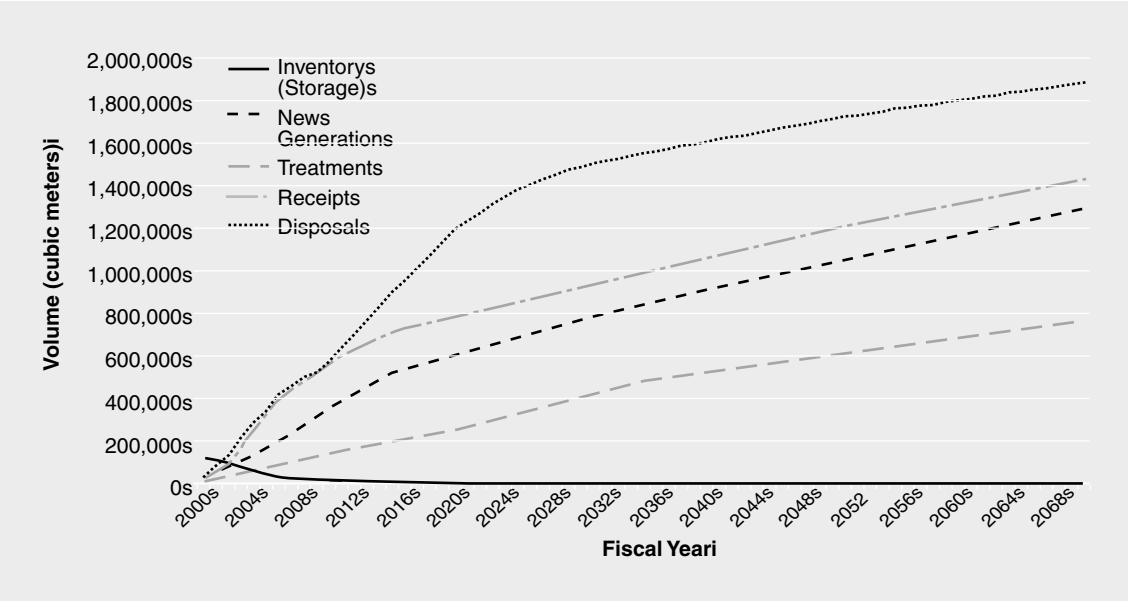
	FY 2046-2050	FY 2051-2055	FY 2056-2060	FY 2061-2065	FY 2066-2070	Non-Annual-ized[b]
Inventory (Storage)	7,241	7,836	8,431	9,026	9,561	9,561
New Generation	65,364	63,636	63,634	63,671	63,665	33
Treatment	40,063	38,748	38,690	38,720	38,741	-
Receipts	66,923	58,084	56,463	56,467	56,504	47
Disposal	52,080	44,498	42,935	42,939	42,974	47

Notes:
• Hyphens indicate volumes of zero.

[a] These data reflect the annual volume projected by sites for FY 2000 - FY 2010. All data (other than inventory data) reported for the post-FY 2010 time periods reflect the total volume projected for the specific five-year time periods. The post-FY 2010 inventory data reflect the total volume projected for the end of each five-year time period.

[b] Non-annualized volumes refer to those volumes of LLW for which the DOE could not specify when the management activity would occur.

Figure 7-1
Summary of Total Projected LLW Volume by Inventory and Management Activity: FY 2000 - FY 2070
(Includes all physical forms except waste water)



Notes:
• Annual volumes are shown through FY 2010. Volumes shown for subsequent years were calculated based on the data reported by sites for each five-year time period through FY 2070. See Table 7-3 for further information.
• Volumes (except inventory) are shown as cumulative over time.

7.2 LLW Inventory as Reported by Sites

Inventory is defined as the material that is stored at the facility or site at a given time period. This section provides data on end-of-year inventories.

7.2.1 LLW Inventory Data by Site and State

The following tables and figures detail the actual volumes of LLW in inventory as reported by DOE sites. Table 7-4 provides LLW volumes in inventory at the end of FY 1998 and FY 1999; and Table 7-5 provides the inventory volumes by state. Figure 7-2 shows the geographic distribution of LLW in the U.S. at the end of FY 1999. Figures 7-3 and 7-4 show sites' relative contributions to the total volume of LLW in inventory.

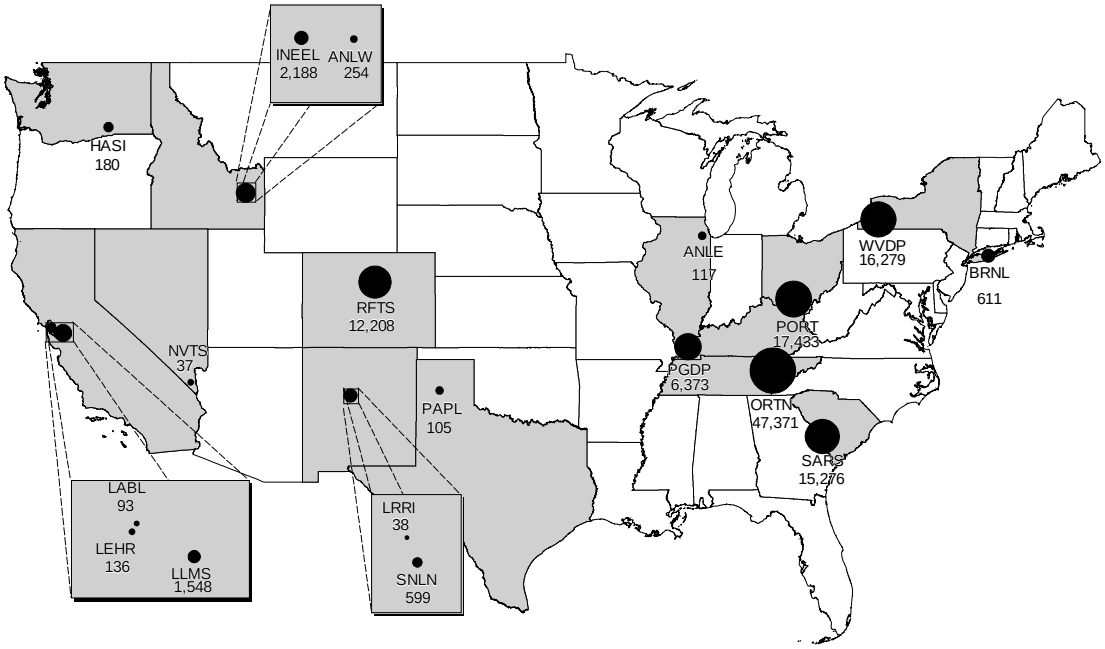
Table 7-4
Total Volume of LLW in Inventory as Reported by Sites:
FY 1998 and FY 1999 Actuals
(Includes all physical forms except waste water)

In cubic meters

State	Site	Site Code	FY 1998	%1998 Total	FY 1999	%1999 Total
CA	Laboratory for Energy-Related Health Research	LEHR	374	<1	136	<1
	Lawrence Berkeley National Laboratory	LABL	95	<1	93	<1
	Lawrence Livermore National Laboratory - Main Site	LLMS	1,237	1.1	1,548	1.3
CO	Rocky Flats Environmental Technology Site	RFTS	-	-	12,208	10.1
IA	Ames Laboratory	AMES	1	<1	-	-
ID	Argonne National Laboratory - West	ANLW	-	-	254	<1
	Idaho National Engineering and Environmental Laboratory	INEEL	7,118	6.5	2,188	1.8
IL	Argonne National Laboratory - East	ANLE	132	<1	117	<1
KY	Paducah Gaseous Diffusion Plant	PGDP	6,247	5.7	6,373	5.3
NM	Lovelace Respiratory Research Institute	LRRI	18	<1	38	<1
	Sandia National Laboratories - NM	SNLN	814	<1	599	<1
NV	Nevada Test Site	NVTS	-	-	37	<1
NY	Brookhaven National Laboratory	BRNL	800	<1	611	<1
	West Valley Demonstration Project	WVDP	16,672	15.1	16,279	13.5
OH	Miamisburg Environmental Management Project (Mound)	MEMP	1,608	1.5	-	-
	Portsmouth Gaseous Diffusion Plant	PORT	16,460	14.9	17,433	14.4
SC	Savannah River Site	SARS	17,248	15.6	15,276	12.6
TN	Oak Ridge Reservation	ORTN	41,076	37.3	47,371	39.2
TX	Pantex Plant	PAPL	183	<1	105	<1
WA	Hanford Site	HASI	180	<1	180	<1
	Total		**110,262**	**100**	**120,846**	**100**

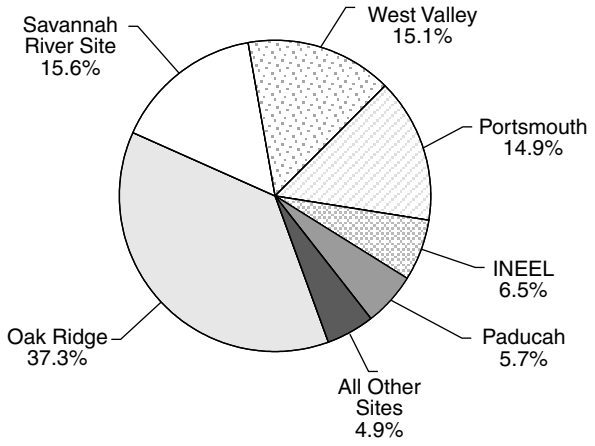
Notes:
• Hyphens indicate volumes of zero.
• Due to data rounding, the totals in this table may not equal the exact sum of the site-specific data.

Figure 7-2
LLW Volume in Inventory as Reported by Sites: FY 1999 Actuals



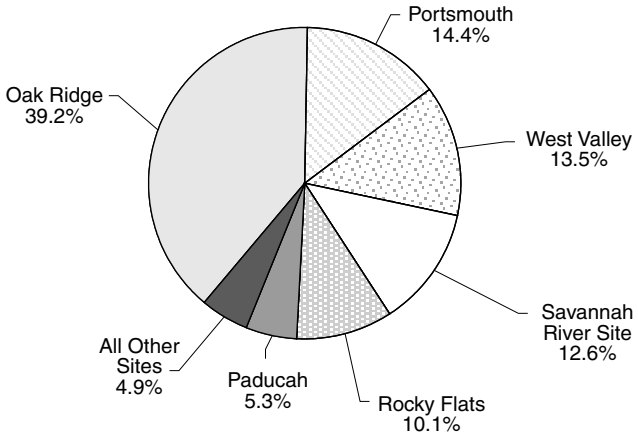
Notes:
• Volumes shown in cubic meters.
• Volumes include all physical forms except waste water.
• While the actual site volumes are labeled numerically on the map, the volume *icons* are based on a logarithmic scale to differentiate more easily between the sites' relative inventories.
• See Table 7-4 for more information.

Figure 7-3
Sites' Relative Contributions to the Volume of LLW in Inventory as Reported by Sites: FY 1998 Actuals
(Includes all physical forms except waste water)



Note:
• At the end FY 1998, the total reported volume (excluding waste water) of LLW in inventory was approximately 110,262 cubic meters. See Table 7-4 for further details.

Figure 7-4
Sites' Relative Contributions to the Volume of LLW in Inventory as Reported by Sites: FY 1999 Actuals
(Includes all physical forms except waste water)



Note:
• At the end of FY 1999, the total reported volume (excluding waste water) of LLW in inventory was approximately 120,846 cubic meters. See Table 7-4 for further details.

Table 7-5
Total Volume of LLW in Inventory by State
as Reported by Sites:
FY 1998 and FY 1999 Actuals
(Includes all physical forms except waste water)

In cubic meters

State	FY 1998	% 1998 Total	FY 1999	%1999 Total
California	1,706	1.5	1,777	1.5
Colorado	-	-	12,208	10.1
Iowa	1	<1	-	-
Idaho	7,118	6.5	2,442	2.0
Illinois	132	<1	117	<1
Kentucky	6,247	5.7	6,373	5.3
New Mexico	832	<1	637	<1
Nevada	-	-	37	<1
New York	17,472	15.8	16,890	14.0
Ohio	18,068	16.4	17,433	14.4
South Carolina	17,248	15.6	15,276	12.6
Tennessee	41,076	37.3	47,371	39.2
Texas	183	<1	105	<1
Washington	180	<1	180	<1
Total	**110,262**	**100**	**120,846**	**100**

Notes:
• Hyphens indicate volumes of zero.
• Due to data rounding, the totals in this table may not equal the exact sum of the site-specific data.

LLW Inventory Site Projection Data:

Site-specific projections (FY 2000 - FY 2070) for LLW inventory volumes follow in Table 7-6. Figure 7-5 shows projections for LLW inventories at all sites from FY 2000 through FY 2010. The DOE-wide inventory projection totals for FY 2011 through FY 2070 are shown in Figure 7-6.

Table 7-6
Total Projected LLW Inventory Volume as Reported by Sites: FY 2000 - FY 2070
(Includes all physical forms except waste water)

In cubic meters

State	Site	Site Code	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
CA	Laboratory for Energy-Related Health Research	LEHR	104	-	-	-	-
	Lawrence Berkeley National Laboratory	LABL	77	51	27	24	25
	Lawrence Livermore National Laboratory - Main Site	LLMS	1,322	1,098	874	658	458
CO	Rocky Flats Environmental Technology Site	RFTS	7,336	5,632	3,416	2,047	910
ID	Idaho National Engineering and Environmental Laboratory	INEEL	2,213	1,890	1,587	1,287	1,127
IL	Argonne National Laboratory - East	ANLE	49	-	-	-	-
KY	Paducah Gaseous Diffusion Plant	PGDP	6,702	6,973	7,093	6,814	5,915
NM	Lovelace Respiratory Research Institute	LRRI	38	38	38	38	38
	Los Alamos National Laboratory	LANL	-	9	12	12	14
	Sandia National Laboratories - NM	SNLN	499	390	286	180	74
NV	Nevada Test Site	NVTS	164	110	56	-	-
NY	Brookhaven National Laboratory	BRNL	18	-	-	-	-
	West Valley Demonstration Project	WVDP	16,729	16,872	16,572	16,272	15,972
OH	Portsmouth Gaseous Diffusion Plant	PORT	16,283	14,006	10,608	7,210	3,536
SC	Savannah River Site	SARS	12,579	9,088	8,049	6,798	5,207
TN	Oak Ridge Reservation	ORTN	53,794	52,841	51,550	40,086	29,711
TX	Pantex Plant	PAPL	105	105	105	105	105
WA	Hanford Site	HASI	180	180	180	180	180
	Total		**118,194**	**109,284**	**100,454**	**81,711**	**63,273**

State	Site	Site Code	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
CA	Laboratory for Energy-Related Health Research	LEHR	-	-	-	-	-	-
	Lawrence Berkeley National Laboratory	LABL	26	28	24	25	26	28
	Lawrence Livermore National Laboratory - Main Site	LLMS	405	405	405	405	405	405
CO	Rocky Flats Environmental Technology Site	RFTS	797	-	-	-	-	-
ID	Idaho National Engineering and Environmental Laboratory	INEEL	1,127	1,127	2,127	2,127	2,127	2,127
IL	Argonne National Laboratory - East	ANLE	-	-	-	-	-	-
KY	Paducah Gaseous Diffusion Plant	PGDP	5,856	5,569	5,454	5,459	2,893	5
NM	Lovelace Respiratory Research Institute	LRRI	38	38	38	38	38	38
	Los Alamos National Laboratory	LANL	14	-	-	-	-	-
	Sandia National Laboratories - NM	SNLN	11	-	-	-	-	-
NV	Nevada Test Site	NVTS	-	-	-	-	-	-
NY	Brookhaven National Laboratory	BRNL	-	-	-	-	-	-
	West Valley Demonstration Project	WVDP	15,972	15,502	15,032	14,562	14,092	13,622
OH	Portsmouth Gaseous Diffusion Plant	PORT	-	-	-	-	-	-
SC	Savannah River Site	SARS	3,539	1,783	562	562	1,483	1,490
TN	Oak Ridge Reservation	ORTN	21,627	12,675	7,128	1,652	1,771	1,890
TX	Pantex Plant	PAPL	105	105	105	105	105	105
WA	Hanford Site	HASI	180	180	180	-	-	-
	Total		**49,698**	**37,413**	**31,055**	**24,936**	**22,941**	**19,711**

Notes:
• Hyphens indicate volumes of zero.
• Due to data rounding, the totals in this table may not equal the exact sum of the site-specific data.
• These annual data reflect the projected inventories for FY 2000 - FY 2010.

(continued…)

Table 7-6. (cont'd) Total Projected LLW Inventory Volume as Reported by Sites: FY 2000 - FY 2070 (Includes all physical forms except waste water)

In cubic meters

State	Site	Site Code	FY 2011-2015	FY 2016-2020	FY 2021-2025	FY 2026-2030	FY 2031-2035	FY 2036-2040
CA	Laboratory for Energy-Related Health Research	LEHR	-	-	-	-	-	-
	Lawrence Berkeley National Laboratory	LABL	24	24	24	24	24	24
	Lawrence Livermore National Laboratory - Main Site	LLMS	405	405	405	405	405	405
CO	Rocky Flats Environmental Technology Site	RFTS	-	-	-	-	-	-
ID	Idaho National Engineering and Environmental Laboratory	INEEL	2,130	2,130	2,133	2,136	2,132	2,135
IL	Argonne National Laboratory - East	ANLE	-	-	-	-	-	-
KY	Paducah Gaseous Diffusion Plant	PGDP	5	5	-	-	-	-
NM	Lovelace Respiratory Research Institute	LRRI	38	38	38	38	38	38
	Los Alamos National Laboratory	LANL	-	-	-	-	-	-
	Sandia National Laboratories - NM	SNLN	-	-	-	-	-	-
NV	Nevada Test Site	NVTS	-	-	-	-	-	-
NY	Brookhaven National Laboratory	BRNL	-	-	-	-	-	-
	West Valley Demonstration Project	WVDP	-					
OH	Portsmouth Gaseous Diffusion Plant	PORT	-	-	-	-	-	-
SC	Savannah River Site	SARS	1,688	1,883	2,066	45	28	21
TN	Oak Ridge Reservation	ORTN	2,485	3,080	3,675	4,270	4,865	5,460
TX	Pantex Plant	PAPL	105	105	105	105	105	105
WA	Hanford Site	HASI	-	-	-	-	-	-
	Total		**6,880**	**7,671**	**8,446**	**7,023**	**7,598**	**8,188**

State	Site	Site Code	FY 2041-2045	FY 2046-2050	FY 2051-2055	FY 2056-2060	FY 2061-2065	FY 2066-2070	Non Annual-ized[a]
CA	Laboratory for Energy-Related Health Research	LEHR	-	-	-	-	-	-	-
	Lawrence Berkeley National Laboratory	LABL	22	22	22	22	22	1	1
	Lawrence Livermore National Laboratory - Main Site	LLMS	405	405	405	405	405	405	405
CO	Rocky Flats Environmental Technology Site	RFTS	-	-	-	-	-	-	-
ID	Idaho National Engineering and Environmental Laboratory	INEEL	2,135	-	-	-	-	-	-
IL	Argonne National Laboratory - East	ANLE	-	-	-	-	-	-	-
KY	Paducah Gaseous Diffusion Plant	PGDP	-	-	-	-	-	-	-
NM	Lovelace Respiratory Research Institute	LRRI	38	38	38	38	38	-	-
	Los Alamos National Laboratory	LANL	-	-	-	-	-	-	-
	Sandia National Laboratories - NM	SNLN	-	-	-	-	-	-	-
NV	Nevada Test Site	NVTS	-	-	-	-	-	-	-
NY	Brookhaven National Laboratory	BRNL	-	-	-	-	-	-	-
	West Valley Demonstration Project	WVDP	-	-	-	-	-	-	-
OH	Portsmouth Gaseous Diffusion Plant	PORT	-	-	-	-	-	-	-
SC	Savannah River Site	SARS	20	20	20	20	20	20	20
TN	Oak Ridge Reservation	ORTN	6,055	6,650	7,245	7,840	8,435	9,030	9,030
TX	Pantex Plant	PAPL	105	105	105	105	105	105	105
WA	Hanford Site	HASI	-	-	-	-	-	-	-
	Total		**8,781**	**7,241**	**7,836**	**8,431**	**9,026**	**9,561**	**9,561**

Notes:
• Hyphens indicate volumes of zero.
• Due to data rounding, the totals in this table may not equal the exact sum of the site-specific data.
• Post-FY 2010 data reflect the projected inventory for the last year in each five-year time period.

[a] Non-annualized refers to those volumes of LLW for which DOE sites could not specify the time period during which the LLW would be in inventory.

Figure 7-5
Total Projected LLW Inventory Volume as Reported by Sites:
FY 2000 - FY 2010
(Includes all physical forms except waste water)

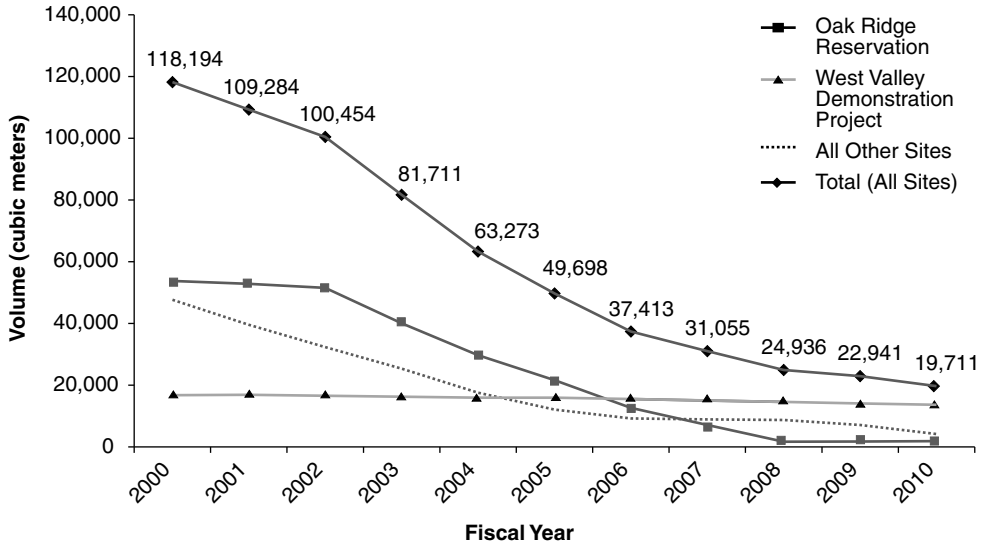
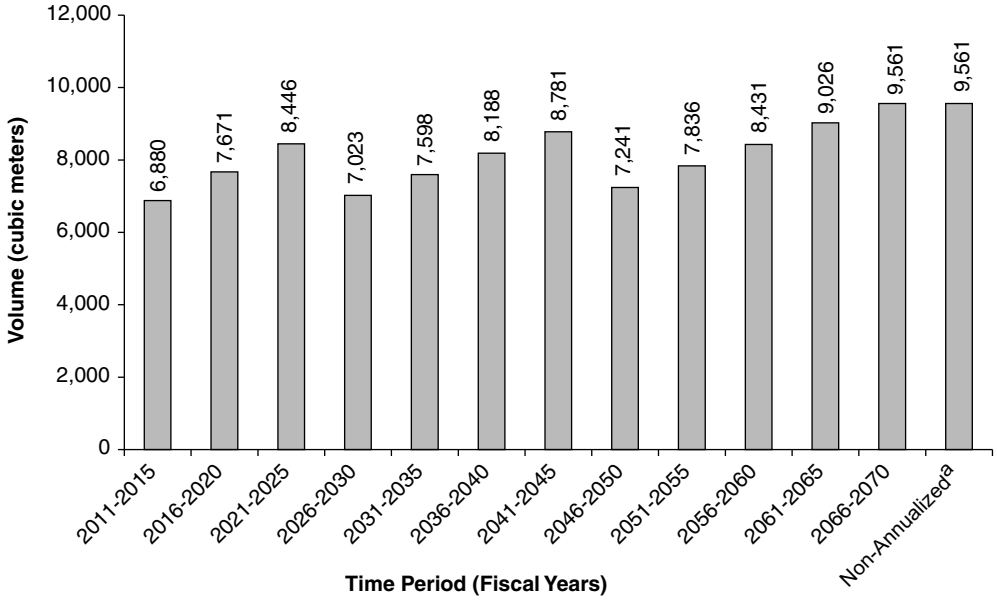


Figure 7-6
Total Projected LLW Inventory Volume as Reported by Sites:
FY 2011 - FY 2070
(Includes all physical forms except waste water)



Notes:
• The data in this figure reflect the projected inventory for the last year in each five-year time period.

[a] Non-annualized refers to those volumes of LLW for which DOE sites could not specify the time period during which the LLW would be in inventory.

7.2.2 LLW Inventory Data by Physical Form

Table 7-7 details the physical forms of LLW in inventory at the end of FY 1998 and FY 1999.

Table 7-7
Total LLW Volume in Inventory by Physical Form as Reported by Sites:
FY 1998 and FY 1999 Actuals
(Includes all physical forms except waste water)

In cubic meters

Physical Form	Form Code	FY 1998	% 1998 Total	FY 1999	% 1999 Total
Amalgamated Forms	Z1140	0.2	<1	0.2	<1
Aqueous Liquids/Slurries	L1000	196	<1	57	<1
Aqueous Slurries	L1200	1	<1	1	<1
Cement Forms	Z1110	5,175	4.7	5,173	4.3
Debris Waste	S5000	10,632	9.6	6,246	5.2
Decontaminated Metal	Z2100	20	<1	22	<1
Decontaminated Solids	Z2000	1	<1	1	<1
Final Waste Forms	Z0000	9	<1	25	<1
Heterogeneous Debris	S5400	19,230	17.4	20,070	16.6
Homogeneous Solids	S3000	1,037	<1	53	<1
Inorganic Chemicals	S3160	1,703	1.5	1,992	1.6
Inorganic Debris	S5100	2,513	2.3	2,605	2.2
Inorganic Homogeneous Solids	S3100	70	<1	33	<1
Inorganic Particulates	S3110	152	<1	1,057	<1
Inorganic Sludges	S3120	3,773	3.4	3,870	3.2
Liquids	L0000	1,335	1.2	105	<1
Macroencapsulated Forms	Z1200	-	-	1	<1
Organic Debris	S5300	4,145	3.8	3,765	3.1
Organic Homogeneous Solids	S3200	4	<1	4	<1
Organic Liquids	L2000	366	<1	272	<1
Organic Sludges	S3220	26	<1	-	-
Organically Solidified Solids	S3240	9	<1	19	<1
Reactive Metals	X7500	7	<1	-	-
Soil/Debris	S4200	876	<1	821	<1
Soil/Gravel	S4000	11,758	10.7	10,861	9.0
Solidified Homogeneous Solids	S3150	63	<1	50	<1
Solidified Inorganic Solids	S3151	1,264	1.1	1,244	1.0
Solids	S0000	45,559	41.3	50,142	41.5
Special Waste	X7000	153	<1	80	<1
Specific Waste Forms	X0000	144	<1	69	<1
Unknown/Other Matrix	U9999	37	<1	12,208	10.1
Total		**110,262**	**100**	**120,846**	**100**

Notes:
• Hyphens indicate volumes of zero.
• Due to data rounding, the totals in this table may not equal the exact sum of the form-specific data.
• Waste water totals are provided separately in Section 7.7.

7.3 LLW-New Generation as Reported by Sites

In this report, the generation data represent all new LLW generated from ongoing programmatic activities. These data do not include additional volumes that result from treatment processes[4] or volumes transferred between sites.

7.3.1 LLW-New Generation Data by Site and State

Table 7-8 provides LLW newly-generated volumes for FY 1998 and FY 1999 by site, while Table 7-9 presents these data by state. Figures 7-7 and 7-8 show sites' relative contributions to the total volume of LLW newly-generated in FY 1998 and FY 1999, respectively.

Table 7-8
Total Volume of LLW Newly-Generated as Reported by Sites:
FY 1998 and FY 1999 Actuals
(Includes all physical forms except waste water)

In cubic meters

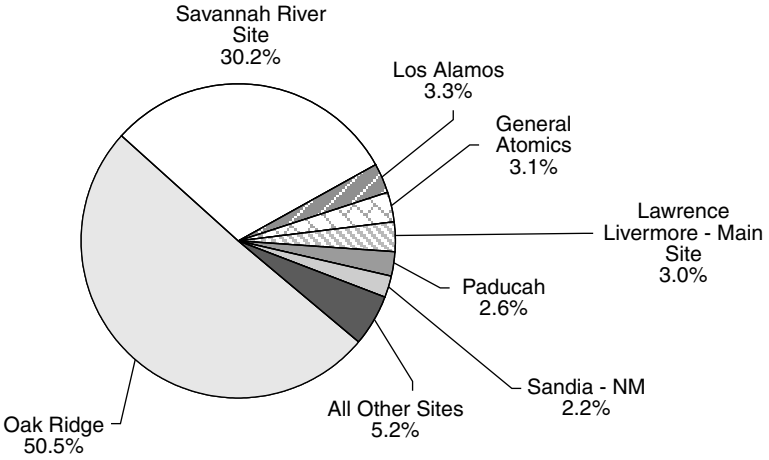
State	Site	Site Code	FY 1998	% 1998 Total	FY 1999	% 1999 Total
CA	General Atomics	GEAT	900	3.1	1,637	4.7
	Lawrence Berkeley National Laboratory	LABL	63	<1	34	<1
	Lawrence Livermore National Laboratory - Main Site	LLMS	885	3.0	1,205	3.5
	Stanford Linear Accelerator Center	SLAC	16	<1	17	<1
CO	Rocky Flats Environmental Technology Site	RFTS	-	-	3,447	9.9
IA	Ames Laboratory	AMES	1	<1	1	<1
ID	Argonne National Laboratory - West	ANLW	-	-	787	2.3
	Idaho National Engineering and Environmental Laboratory	INEEL	-	-	2,971	8.5
IL	Argonne National Laboratory - East	ANLE	259	<1	261	<1
	Fermi National Accelerator Laboratory	FNAL	133	<1	80	<1
KY	Paducah Gaseous Diffusion Plant	PGDP	765	2.6	658	1.9
NJ	Princeton Plasma Physics Laboratory	PPPL	130	<1	70	<1
NM	Lovelace Respiratory Research Institute	LRRI	32	<1	15	<1
	Los Alamos National Laboratory	LANL	961	3.3	1,489	4.3
	Sandia National Laboratories - NM	SNLN	649	2.2	78	<1
NV	Nevada Test Site	NVTS	-	-	37	<1
NY	Brookhaven National Laboratory	BRNL	302	1.0	284	<1
	West Valley Demonstration Project	WVDP	403	1.4	616	1.8
SC	Savannah River Site	SARS	8,900	30.2	8,285	23.8
TN	Oak Ridge Reservation	ORTN	14,911	50.5	9,417	27.0
TX	Pantex Plant	PAPL	195	<1	169	<1
WA	Hanford Site[a]	HASI	-	-	3,267	9.4
	Total		**29,506**	**100**	**34,824**	**100**

Notes:
• Hyphens indicate volumes of zero.
• Due to data rounding, the totals in this table may not equal the exact sum of the site-specific data.

[a] In FY 1998, there was no LLW-radioactive waste newly-generated at Hanford, but there was a large volume (288,800 cubic meters) of newly-generated LLW-contaminated media. See Chapter 10 for further details.

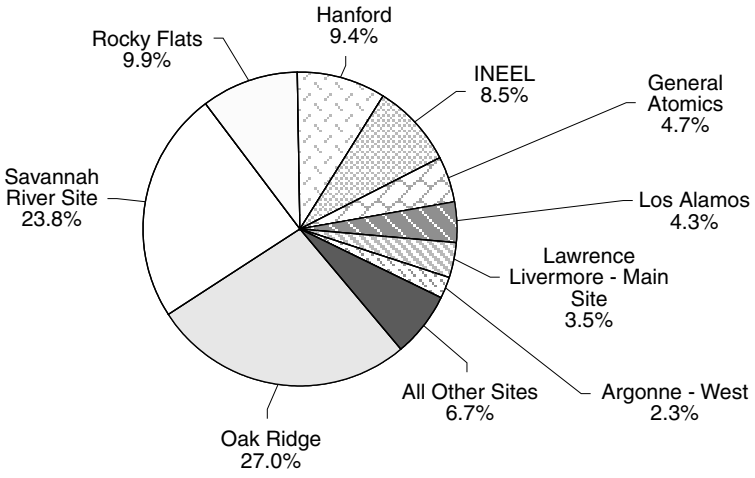
[4] The term in the FY 2000 EM Corporate Database for waste that results from treatment processes is "process outputs."

Figure 7-7
Sites' Relative Contributions to the Volume of Newly-Generated LLW as Reported by Sites: FY 1998 Actuals
(Includes all physical forms except waste water)



Notes:
• The total reported volume (excluding waste water) of LLW newly-generated in FY 1998 was approximately 29,506 cubic meters. See Table 7-8 for further details.
• Percentages may not add to exactly 100% due to rounding.

Figure 7-8
Sites' Relative Contributions to the Volume of Newly-Generated LLW as Reported by Sites: FY 1999 Actuals
(Includes all physical forms except waste water)



Notes:
• The total reported volume (excluding waste water) of LLW newly-generated in FY 1999 was approximately 34,824 cubic meters. See Table 7-8 for further details.
• Percentages may not add to exactly 100% due to rounding.

Table 7-9
Total Volume of LLW Newly-Generated by State as Reported by Sites:
FY 1998 and FY 1999 Actuals
(Includes all physical forms except waste water)

In cubic meters

State	FY 1998	% 1998 Total	FY 1999	% 1999 Total
California	1,864	6.3	2,893	8.3
Colorado	-	-	3,447	9.9
Iowa	1	<1	1	<1
Idaho	-	-	3,758	10.8
Illinois	392	1.3	341	1.0
Kentucky	765	2.6	658	1.9
New Jersey	130	<1	70	<1
New Mexico	1,642	5.6	1,582	4.5
Nevada	-	-	37	<1
New York	705	2.4	900	2.6
South Carolina	8,900	30.2	8,285	23.8
Tennessee	14,911	50.5	9,417	27.0
Texas	195	<1	169	<1
Washington	-	-	3,267	9.4
Total	**29,506**	**100**	**34,824**	**100**

Notes:
• Hyphens indicate volumes of zero.
• Due to data rounding, the totals in this table may not equal the exact sum of the site-specific data.

LLW-New Generation Site Projection Data:

The following tables and figures provide data on the projected LLW-new generation volumes for FY 2000 - FY 2070. Table 7-10 shows site-specific projections for the entire time period (FY 2000 - FY 2070), and indicates the last year each site plans to generate LLW. Table 7-11 provides these projections in more detail. Figure 7-9 shows projections for LLW-new generation volumes at all sites from FY 2000 through FY 2010. The DOE-wide new generation projection totals for FY 2011 through FY 2070 are shown in Figure 7-10.

Table 7-10
Summary of Total Projected LLW-New Generation Volume as Reported by Sites: FY 2000 - FY 2070
(Includes all physical forms except waste water)

In cubic meters

State	Site	Site Code	Total All Years	% Total	Last FY/Time Period Projected
CA	Lawrence Berkeley National Laboratory	LABL	2,393	<1	2066-2070[a]
	Lawrence Livermore National Laboratory - Main Site	LLMS	21,726	1.7	2066-2070
	Stanford Linear Accelerator Center	SLAC	789	<1	2046-2050
CO	Rocky Flats Environmental Technology Site	RFTS	3,221	<1	2006
IA	Ames Laboratory	AMES	285	<1	2066-2070
ID	Argonne National Laboratory - West	ANLW	2,494	<1	2009
	Idaho National Engineering and Environmental Laboratory	INEEL	45,097	3.5	2046-2050
IL	Argonne National Laboratory - East	ANLE	16,542	1.3	2066-2070
	Fermi National Accelerator Laboratory	FNAL	1,752	<1	2046-2050
KY	Paducah Gaseous Diffusion Plant	PGDP	3,262	<1	2021-2025
MO	Kansas City Plant	KSCP	24	<1	2006
NJ	Princeton Plasma Physics Laboratory	PPPL	8,877	<1	2066-2070
NM	Lovelace Research Respiratory Institute	LRRI	4,320	<1	2066-2070
	Los Alamos National Laboratory	LANL	105,705	8.1	2066-2070
	Sandia National Laboratories - NM	SNLN	5,566	<1	2066-2070
NV	Nevada Test Site	NVTS	506	<1	2003
NY	Brookhaven National Laboratory	BRNL	20,200	1.6	2066-2070
	West Valley Demonstration Project	WVDP	143,093	11.0	2011-2015
OH	Portsmouth Gaseous Diffusion Plant	PORT	609	<1	2004
SC	Savannah River Site	SARS	176,719	13.6	2066-2070
TN	Oak Ridge Reservation	ORTN	666,954	51.4	2066-2070
WA	Hanford Site	HASI	68,213	5.3	2046-2050
	Total		**1,298,348**	**100**	

Notes:
• Due to data rounding, the totals in this table may not equal the exact sum of the site-specific data.

[a] This site also reported non-annualized volumes.

Table 7-11
Total Projected LLW-New Generation Volume as Reported by Sites:
FY 2000 - FY 2070
(Includes all physical forms except waste water)

In cubic meters

State	Site	Site Code	FY 2000[a]	FY 2001-2005	FY 2006-2010	FY 2011-2015	FY 2016-2020
CA	Lawrence Berkeley National Laboratory	LABL	34	168	168	169	169
	Lawrence Livermore National Laboratory - Main Site	LLMS	306	1,530	1,530	1,530	1,530
	Stanford Linear Accelerator Center	SLAC	17	84	84	84	84
CO	Rocky Flats Environmental Technology Site	RFTS	758	2,173	290	-	-
IA	Ames Laboratory	AMES	5	20	20	20	20
ID	Argonne National Laboratory - West	ANLW	845	1,445	205	-	-
	Idaho National Engineering and Environmental Laboratory	INEEL	3,131	8,029	8,601	8,121	7,543
IL	Argonne National Laboratory - East	ANLE	252	1,208	1,186	1,158	1,158
	Fermi National Accelerator Laboratory	FNAL	62	311	311	311	311
KY	Paducah Gaseous Diffusion Plant	PGDP	329	2,810	53	25	25
MO	Kansas City Plant	KSCP	-	-	24	-	-
NJ	Princeton Plasma Physics Laboratory	PPPL	438	1,938	501	500	500
NM	Lovelace Respiratory Research Institute	LRRI	60	300	300	300	300
	Los Alamos National Laboratory	LANL	1,489	7,444	7,444	7,444	7,444
	Sandia National Laboratories - NM	SNLN	86	400	391	391	391
NV	Nevada Test Site	NVTS	127	379	-	-	-
NY	Brookhaven National Laboratory	BRNL	285	1,423	1,423	1,423	1,423
	West Valley Demonstration Project	WVDP	875	27,678	63,650	50,890	-
OH	Portsmouth Gaseous Diffusion Plant	PORT	-	609	-	-	-
SC	Savannah River Site	SARS	8,764	25,297	20,108	37,259	17,957
TN	Oak Ridge Reservation	ORTN	8,709	49,085	47,014	46,850	46,848
WA	Hanford Site	HASI	1,625	11,254	27,886	15,671	4,045
	Total		**28,197**	**143,586**	**181,188**	**172,145**	**89,747**

Notes:
• Hyphens indicate volumes of zero.
• Due to data rounding, the totals in this table may not equal the exact sum of the site-specific data.

[a] These annual data reflect the total volume projected by sites for FY 2000. All post-FY 2000 data reflect the total summary volume projected for the specific five-year time period.

(continued…)

Table 7-11 (cont'd)
Total Projected LLW-New Generation Volume as Reported by Sites:
FY 2000 - FY 2070
(Includes all physical forms except waste water)

In cubic meters

State	Site	Site Code	FY 2021-2025	FY 2026-2030	FY 2031-2035	FY 2036-2040	FY 2041-2045	FY 2046-2050
CA	Lawrence Berkeley National Laboratory	LABL	169	169	169	169	169	162
	Lawrence Livermore National Laboratory - Main Site	LLMS	1,530	1,530	1,530	1,530	1,530	1,530
	Stanford Linear Accelerator Center	SLAC	84	84	84	84	84	17
CO	Rocky Flats Environmental Technology Site	RFTS	-	-	-	-	-	-
IA	Ames Laboratory	AMES	20	20	20	20	20	20
ID	Argonne National Laboratory - West	ANLW	-	-	-	-	-	-
	Idaho National Engineering and Environmental Laboratory	INEEL	1,662	1,662	1,504	1,662	1,504	1,679
IL	Argonne National Laboratory - East	ANLE	1,158	1,158	1,158	1,158	1,158	1,158
	Fermi National Accelerator Laboratory	FNAL	311	125	-	-	-	8
KY	Paducah Gaseous Diffusion Plant	PGDP	20	-	-	-	-	-
MO	Kansas City Plant	KSCP	-	-	-	-	-	-
NJ	Princeton Plasma Physics Laboratory	PPPL	500	500	500	500	500	500
NM	Lovelace Respiratory Research Institute	LRRI	300	300	300	300	300	300
	Los Alamos National Laboratory	LANL	7,444	7,444	7,444	7,444	7,444	7,444
	Sandia National Laboratories - NM	SNLN	391	391	391	391	391	391
NV	Nevada Test Site	NVTS	-	-	-	-	-	-
NY	Brookhaven National Laboratory	BRNL	1,423	1,423	1,423	1,423	1,423	1,423
	West Valley Demonstration Project	WVDP	-	-	-	-	-	-
OH	Portsmouth Gaseous Diffusion Plant	PORT	-	-	-	-	-	-
SC	Savannah River Site	SARS	17,308	12,133	6,363	6,105	6,101	3,865
TN	Oak Ridge Reservation	ORTN	46,844	46,843	46,848	46,844	46,844	46,847
WA	Hanford Site	HASI	2,849	2,570	2,006	180	105	21
	Total		**82,012**	**76,351**	**69,738**	**67,808**	**67,571**	**65,364**

Notes:
• Hyphens indicate volumes of zero.
• Due to data rounding, the totals in this table may not equal the exact sum of the site-specific data.
• All post-FY 2000 data reflect the total summary volume projected for the specific five-year time period.

(continued…)

Table 7-11 (cont'd)
Total Projected LLW-New Generation Volume as Reported by Sites:
FY 2000 - FY 2070
(Includes all physical forms except waste water)

In cubic meters

State	Site	Site Code	FY 2051-2055	FY 2056-2060	FY 2061-2065	FY 2066-2070	Non-Annualized[b]	Site Total
CA	Lawrence Berkeley National Laboratory	LABL	162	162	162	162	33	**2,393**
	Lawrence Livermore National Laboratory - Main Site	LLMS	1,530	1,530	1,530	1,530	-	**21,726**
	Stanford Linear Accelerator Center	SLAC	-	-	-	-	-	**789**
CO	Rocky Flats Environmental Technology Site	RFTS	-	-	-	-	-	**3,221**
IA	Ames Laboratory	AMES	20	20	20	20	-	**285**
ID	Argonne National Laboratory - West	ANLW	-	-	-	-	-	**2,494**
	Idaho National Engineering and Environmental Laboratory	INEEL	-	-	-	-	-	**45,097**
IL	Argonne National Laboratory - East	ANLE	1,158	1,158	1,158	1,158	-	**16,542**
	Fermi National Accelerator Laboratory	FNAL	-	-	-	-	-	**1,752**
KY	Paducah Gaseous Diffusion Plant	PGDP	-	-	-	-	-	**3,262**
MO	Kansas City Plant	KSCP	-	-	-	-	-	**24**
NJ	Princeton Plasma Physics Laboratory	PPPL	500	500	500	500	-	**8,877**
NM	Lovelace Respiratory Research Institute	LRRI	300	300	330	330	-	**4,320**
	Los Alamos National Laboratory	LANL	7,444	7,444	7,444	7,444	-	**105,705**
	Sandia National Laboratories - NM	SNLN	391	391	391	391	-	**5,566**
NV	Nevada Test Site	NVTS	-	-	-	-	-	**506**
NY	Brookhaven National Laboratory	BRNL	1,423	1,423	1,423	1,423	-	**20,200**
	West Valley Demonstration Project	WVDP	-	-	-	-	-	**143,093**
OH	Portsmouth Gaseous Diffusion Plant	PORT	-	-	-	-	-	**609**
SC	Savannah River Site	SARS	3,865	3,865	3,865	3,865	-	**176,719**
TN	Oak Ridge Reservation	ORTN	46,844	46,842	46,849	46,843	-	**666,954**
WA	Hanford Site	HASI	-	-	-	-	-	**68,213**
	Total		**63,636**	**63,634**	**63,671**	**63,665**	**33**	**1,298,348**

Notes:
• Hyphens indicate volumes of zero.
• Due to data rounding, the totals in this table may not equal the exact sum of the site-specific data.
• All post-FY 2000 data reflect the total summary volume projected for the specific five-year time period.

[b] Non-annualized refers to those volumes of LLW for which the DOE sites could not specify the time period during which LLW new-generation would occur.

Figure 7-9
Total Projected LLW-New Generation Volume as Reported by Sites:
FY 2000 - FY 2010
(Includes all physical forms except waste water)

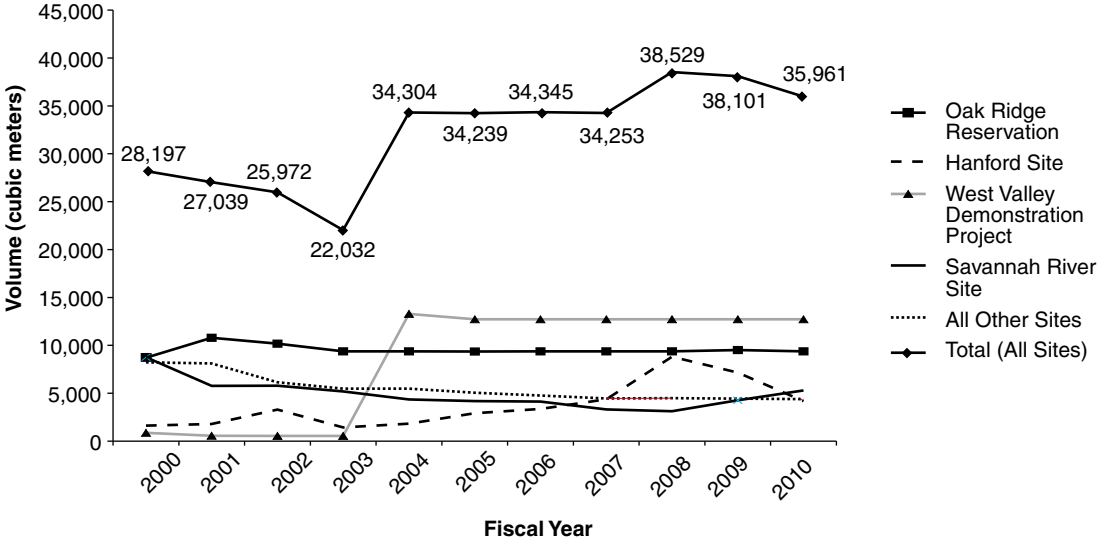
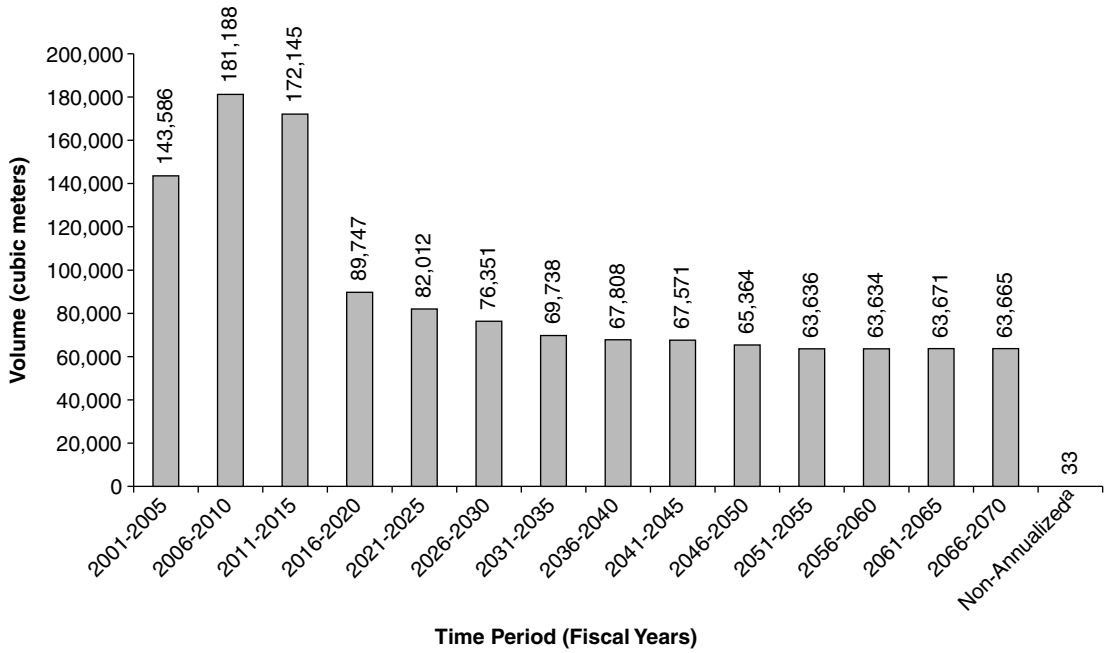


Figure 7-10
Total Projected LLW-New Generation Volume as Reported by Sites:
FY 2001 - FY 2070
(Includes all physical forms except waste water)



Note:
[a] Non-annualized refers to those volumes of LLW for which the DOE sites could not specify the time period during which LLW new-generation would occur.

7.3.2 LLW-New Generation Data by Physical Form

Table 7-12 details the physical forms of the LLW newly-generated in FY 1998 and FY 1999.

Table 7-12
Total Volume of LLW Newly-Generated by Physical Form as Reported by Sites: FY 1998 and FY 1999 Actuals
(Includes all physical forms except waste water)

In cubic meters

Physical Form	Form Code	FY 1998	% 1998 Total	FY 1999	% 1999 Total
Aqueous Liquids/Slurries	L1000	90	<1	3	<1
Aqueous Slurries	L1200	1	<1	1	<1
Debris Waste	S5000	1,103	3.7	8,150	23.4
Decontaminated Solids	Z2000	267	<1	144	<1
Explosives/Propellants	X7600	-	-	4	<1
Final Waste Forms	Z0000	-	-	6	<1
Heterogeneous Debris	S5400	1,365	4.6	1,143	3.3
Homogeneous Solids	S3000	11	<1	45	<1
Inorganic Chemicals	S3160	256	<1	422	<1
Inorganic Debris	S5100	75	<1	91	<1
Inorganic Homogeneous Solids	S3100	101	<1	103	<1
Inorganic Particulates	S3110	83	<1	9	<1
Inorganic Sludges	S3120	185	<1	50	<1
Liquids	L0000	2,869	9.7	2,961	8.5
Organic Debris	S5300	308	1.0	481	1.4
Organic Homogeneous Solids	S3200	67	<1	43	<1
Organic Liquids	L2000	106	<1	170	<1
Organically Solidified Solids	S3240	32	<1	15	<1
Soil/Debris	S4200	876	3.0	728	2.1
Soil/Gravel	S4000	766	2.6	1,113	3.2
Solidified Homogeneous Solids	S3150	43	<1	1	<1
Solidified Inorganic Solids	S3151	5	<1	-	-
Solids	S0000	20,880	70.8	15,687	45.0
Special Waste	X7000	-	-	0.4	<1
Specific Waste Forms	X0000	16	<1	7	<1
Unknown/Other Matrix	U9999	-	-	3,447	9.9
Total		**29,506**	**100**	**34,824**	**100**

Notes:
• Hyphens indicate volumes of zero.
• Due to data rounding, the totals in this table may not equal the exact sum of the form-specific data.
• Waste water totals are provided separately in Section 7.7.

7.4 LLW Treatment as Reported by Sites

Treatment is defined as any method, technique, or process designed to change the physical or chemical character of waste to render the waste less hazardous; make the waste safer to transport, store, or dispose; or reduce the volume of waste.

DOE sites treat LLW both at DOE sites ("on-site") and, occasionally, at commercial facilities or other DOE sites ("off-site"). The treatment data in this chapter show the total amounts of LLW treated both on- and off-site. No amount of LLW reported in this chapter was (or is projected to be) treated both on-site and off-site in the same time period (which would appear as "double counting" in the tables).

To be acceptable for disposal, waste forms generally must be solid and structurally stable, and of minimal volume. Treatment can stabilize the waste through solidification and/or by reducing the waste volume through incineration, compaction, and/or shredding. Incineration reduces the volume of waste, but produces radioactive gas and ash, which may require further treatment. Compaction involves compressing the solid waste. Shredding reduces the volume of waste by cutting the waste into smaller pieces, thereby transforming the waste into a more workable form for both compaction and incineration.

7.4.1 LLW Treatment Data by Site and State

Tables 7-13 and 7-14 detail the total volumes of LLW treated in FY 1998 and FY 1999 by site and by state, respectively. Figures 7-11 and 7-12 show the sites' relative contributions to the total volume of LLW treated in FY 1998 and FY 1999.

Table 7-13
Total Volume of LLW Treated as Reported by Sites:
FY 1998 and FY 1999 Actuals
(Includes all physical forms except waste water)

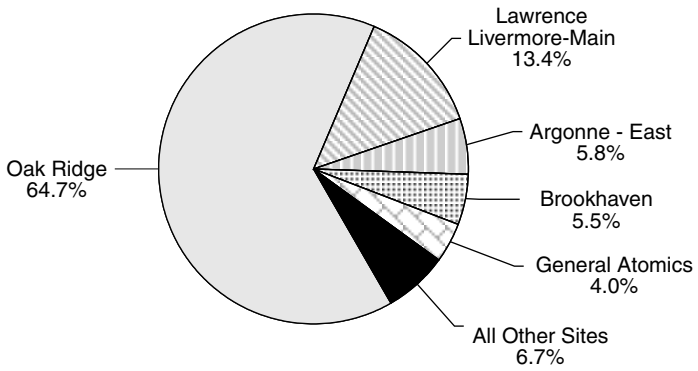
In cubic meters

State	Site	Site Code	FY 1998	%1998 Total	FY 1999	%1999 Total
CA	General Atomics	GEAT	210	4.0	-	-
	Lawrence Berkeley National Laboratory[a]	LBNL	29	<1	3	<1
	Lawrence Livermore National Laboratory - Main Site[a]	LLMS	693	13.4	227	2.9
ID	Idaho National Engineering and Environmental Laboratory	INEEL	-	-	2,417	31.3
IL	Argonne National Laboratory - East	ANLE	301	5.8	281	3.6
KY	Paducah Gaseous Diffusion Plant[a]	PGDP	29	<1	7	<1
NJ	Princeton Plasma Physics Laboratory	PPPL	50	1.0	40	<1
NM	Lovelace Respiratory Research Institute	LRRI	73	1.4	-	-
	Los Alamos National Laboratory	LANL	96	1.9	328	4.2
	Sandia National Laboratories - NM	SNLN	-	-	77	1.0
NY	Brookhaven National Laboratory[a]	BRNL	284	5.5	395	5.1
SC	Savannah River Site	SARS	-	-	1,837	23.8
TN	Oak Ridge Reservation[a]	ORTN	3,358	64.7	2,074	26.8
TX	Pantex Plant	PAPL	68	1.3	39	<1
	Total		**5,191**	**100**	**7,724**	**100**

Notes:
• Hyphens indicate volumes of zero.
• Due to data rounding, the totals in this table may not equal the exact sum of the site-specific data.
• No amount of LLW was treated both on-site and off-site in the same time period.

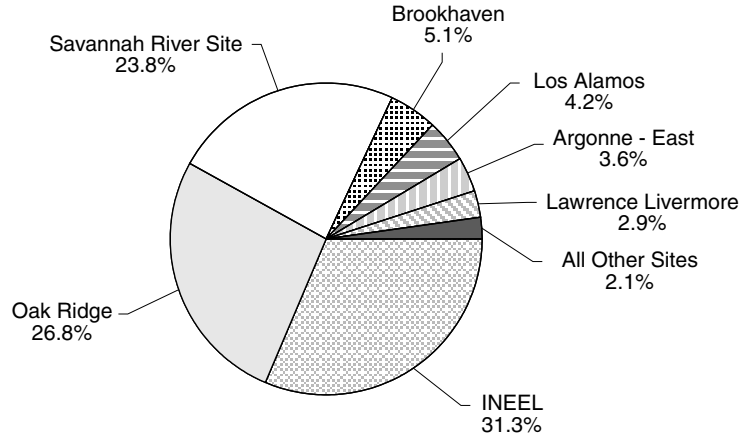
[a] These sites conducted off-site treatment for some or all of their LLW.

Figure 7-11
Sites' Relative Contributions to the Volume of LLW Treated as Reported by Sites: FY 1998 Actuals
(Includes all physical forms except waste water)



Notes:
• The total reported volume (excluding waste water) of LLW treated in FY 1998 was approximately 5,191 cubic meters. See Table 7-13 for further details.
• Percentages may not add to exactly 100% due to rounding.

Figure 7-12
Sites' Relative Contributions to the Volume of LLW Treated as Reported by Sites: FY 1999 Actuals
(Includes all physical forms except waste water)



Notes:
• The total reported volume (excluding waste water) of LLW treated in FY 1999 was approximately 7,724 cubic meters. See Table 7-13 for further details.
• Percentages may not add to exactly 100% due to rounding.

Table 7-14
Total Volume of LLW Treated by State as Reported by Sites:
FY 1998 and FY 1999 Actuals
(Includes all physical forms except waste water)

In cubic meters

State	FY 1998	%1998 Total	FY 1999	%1999 Total
California	932	18	230	3.0
Idaho	-	-	2,417	31.3
Illinois	301	5.8	281	3.6
Kentucky	29	<1	7	<1
New Jersey	50	1.0	40	<1
New Mexico	169	3.3	405	5.2
New York	284	5.5	395	5.1
South Carolina	-	-	1,837	23.8
Tennessee	3,358	64.7	2,074	26.8
Texas	68	1.3	39	<1
Total	**5,191**	**100**	**7,724**	**100**

Notes:
• Hyphens indicate volumes of zero.
• Due to data rounding, the totals in this table may not equal the exact sum of the site-specific data.

LLW Treatment Site Projection Data:

The following tables and figures provide data on the projected LLW treatment volumes for FY 2000 - FY 2070. A site summary of projected treatment volumes is presented in Table 7-15. Table 7-16 provides these data in more detail. Figure 7-13 shows the annual projected LLW treatment volumes for FY 2000 - FY 2010, and Figure 7-14 shows the DOE-wide treatment projections by time period through FY 2070.

Table 7-15
Summary of Total Projected LLW Treatment Volume as Reported by Sites:
FY 2000 - FY 2070
(Includes all physical forms except waste water)

In cubic meters

State	Site	Site Code	Total All Years	% Total	Last FY/Time Period Projected
CA	Lawrence Berkeley National Laboratory[a]	LABL	172	<1	2066-2070
	Lawrence Livermore National Laboratory - Main Site	LLMS	16,590	2.2	2066-2070
ID	Idaho National Engineering and Environmental Laboratory[a]	INEEL	127,980	16.8	2051-2055
IL	Argonne National Laboratory - East	ANLE	16,641	2.2	2066-2070
KY	Paducah Gaseous Diffusion Plant[a]	PGDP	482	<1	2007
NJ	Princeton Plasma Physics Laboratory	PPPL	6,238	<1	2066-2070
NM	Lovelace Respiratory Research Institute	LRRI	4,339	<1	2066-2070
	Los Alamos National Laboratory[a]	LANL	23,288	3.0	2066-2070
	Sandia National Laboratories - NM	SNLN	3,416	<1	2066-2070
NY	Brookhaven National Laboratory[a]	BRNL	22,294	2.9	2066-2070
SC	Savannah River Site[a]	SARS	98,601	12.9	2066-2070
TN	Oak Ridge Reservation[a]	ORTN	443,711	58.1	2066-2070
WA	Hanford Site[a]	HASI	180	<1	2008
	Total		**763,932**	**100**	

Notes:
• Hyphens indicate volumes of zero.
• Due to data rounding, the totals in this table may not equal the exact sum of the site-specific data.
• No amount of LLW was treated both on-site and off-site in the same time period.

[a] These sites conducted off-site treatment for some or all of their LLW.

Table 7-16
Total Projected LLW Treatment Volume as Reported by Sites:
FY 2000 - FY 2070
(Includes all physical forms except waste water)

In cubic meters

State	Site	Site Code	FY 2000[a]	FY 2001-2005	FY 2006-2010	FY 2011-2015	FY 2016-2020
CA	Lawrence Berkeley National Laboratory[b]	LABL	2	12	12	12	12
	Lawrence Livermore National Laboratory - Main Site[b]	LLMS	435	1,985	1,090	1,090	1,090
ID	Idaho National Engineering and Environmental Laboratory[b]	INEEL	1,877	6,590	6,900	6,646	7,064
IL	Argonne National Laboratory - East	ANLE	322	1,237	1,186	1,158	1,158
KY	Paducah Gaseous Diffusion Plant[b]	PGDP	-	62	420	-	-
NJ	Princeton Plasma Physics Laboratory	PPPL	148	890	400	400	400
NM	Lovelace Respiratory Research Institute	LRRI	60	300	300	300	300
	Los Alamos National Laboratory[b]	LANL	328	1,640	1,640	1,640	1,640
	Sandia National Laboratories - NM	SNLN	51	245	240	240	240
NY	Brookhaven National Laboratory[b]	BRNL	314	1,570	1,570	1,570	1,570
SC	Savannah River Site[b]	SARS	7,166	18,110	12,443	10,731	10,731
TN	Oak Ridge Reservation[b]	NVTS	1,480	38,872	38,319	30,420	30,420
WA	Hanford Site[b]	HASI	-	-	180	-	-
	Total		**12,183**	**71,513**	**64,700**	**54,207**	**54,626**

State	Site	Site Code	FY 2021-2025	FY 2026-2030	FY 2031-2035	FY 2036-2040	FY 2041-2045
CA	Lawrence Berkeley National Laboratory[b]	LABL	12	12	12	12	12
	Lawrence Livermore National Laboratory - Main Site[b]	LLMS	1,090	1,090	1,090	1,090	1,090
ID	Idaho National Engineering and Environmental Laboratory[b]	INEEL	30,730	30,721	30,586	2,815	2,621
IL	Argonne National Laboratory - East	ANLE	1,158	1,158	1,158	1,158	1,158
KY	Paducah Gaseous Diffusion Plant[b]	PGDP	-	-	-	-	-
NJ	Princeton Plasma Physics Laboratory	PPPL	400	400	400	400	400
NM	Lovelace Respiratory Research Institute	LRRI	300	300	300	300	300
	Los Alamos National Laboratory[b]	LANL	1,640	1,640	1,640	1,640	1,640
	Sandia National Laboratories - NM	SNLN	240	240	240	240	240
NY	Brookhaven National Laboratory[b]	BRNL	1,570	1,570	1,570	1,570	1,570
SC	Savannah River Site[b]	SARS	10,732	8,331	3,789	3,633	3,633
TN	Oak Ridge Reservation[b]	ORTN	30,420	30,420	30,420	30,420	30,420
WA	Hanford Site[b]	HASI	-	-	-	-	-
	Total		**78,292**	**75,882**	**71,205**	**43,277**	**43,084**

Notes:
• Hyphens indicate volumes of zero.
• Due to data rounding, the totals in this table may not equal the exact sum of the site-specific data.

[a] These annual data reflect the total volume projected by sites for FY 2000. All post-FY 2000 data reflect the total summary volume projected for the specific five-year time period.
[b] These sites expect to conduct off-site treatment for some or all of their LLW.

(continued…)

Table 7-16 (cont'd)
Total Projected LLW Treatment Volume as Reported by Sites:
FY 2000 - FY 2070
(Includes all physical forms except waste water)

In cubic meters

State	Site	Site Code	FY 2046-2050	FY 2051-2055	FY 2056-2060	FY 2061-2065	FY 2066-2070	Site Total
CA	Lawrence Berkeley National Laboratory[b]	LABL	12	12	12	12	14	**172**
	Lawrence Livermore National Laboratory - Main Site[b]	LLMS	1,090	1,090	1,090	1,090	1,090	**16,590**
ID	Idaho National Engineering and Environmental Laboratory[b]	INEEL	1,372	58	-	-	-	**127,980**
IL	Argonne National Laboratory - East	ANLE	1,158	1,158	1,158	1,158	1,158	**16,641**
KY	Paducah Gaseous Diffusion Plant[b]	PGDP	-	-	-	-	-	**482**
NJ	Princeton Plasma Physics Laboratory	PPPL	400	400	400	400	400	**6,238**
NM	Lovelace Respiratory Research Institute	LRRI	300	300	300	330	349	**4,339**
	Los Alamos National Laboratory[b]	LANL	1,640	1,640	1,640	1,640	1,640	**23,288**
	Sandia National Laboratories - NM	SNLN	240	240	240	240	240	**3,416**
NY	Brookhaven National Laboratory[b]	BRNL	1,570	1,570	1,570	1,570	1,570	**22,294**
SC	Savannah River Site[b]	SARS	1,861	1,860	1,860	1,860	1,860	**98,601**
TN	Oak Ridge Reservation[b]	ORTN	30,420	30,420	30,420	30,420	30,420	**443,711**
WA	Hanford Site[b]	HASI	-	-	-	-	-	**180**
	Total		**40,063**	**38,748**	**38,690**	**38,720**	**38,741**	**763,932**

Notes:
• Hyphens indicate volumes of zero.
• Due to data rounding, the totals in this table may not equal the exact sum of the site-specific data.
• Post FY 2000 data reflect the total summary volumes projected for each specified five-year time period.

[b] These sites expect to conduct off-site treatment for some or all of their LLW.

Figure 7-13
Total Projected LLW Treatment Volume as Reported by Sites: FY 2000 - FY 2010
(Includes all physical forms except waste water)

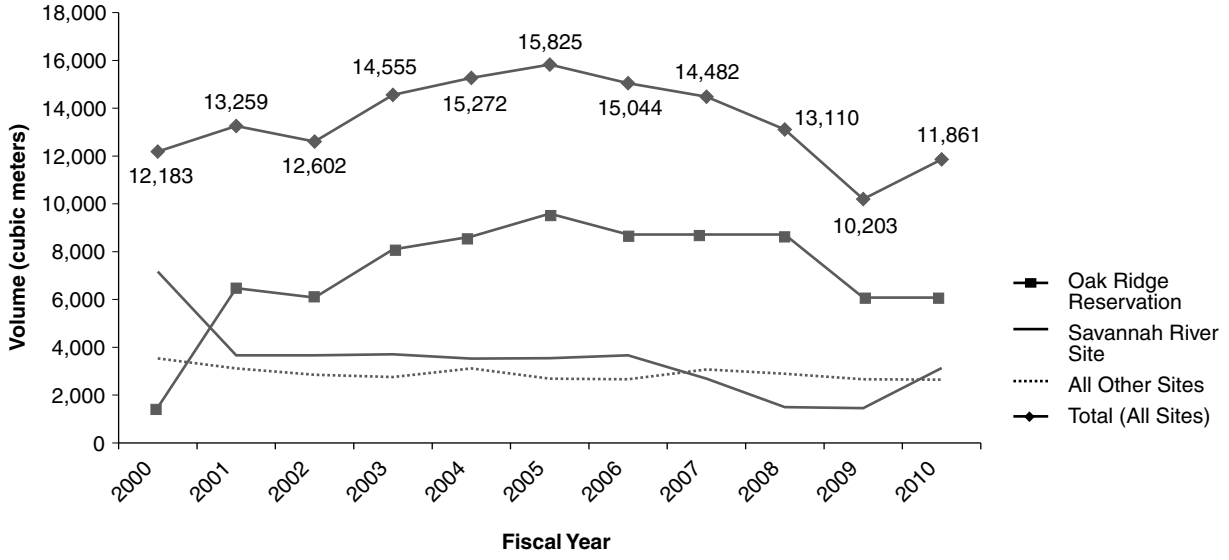


Figure 7-14
Total Projected LLW Treatment Volume as Reported by Sites:
FY 2001 - FY 2070
(Includes all physical forms except waste water)