CY 2000 TOXIC RELEASE INVENTORY REPORT

What is the Toxic Release Inventory?

The Toxic Release Inventory (TRI) Report[1] provides a valuable source of information about toxic chemicals that are released into the environment or transferred off-site. The Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and the Pollution Prevention Act of 1990 mandated that EPA develop and maintain a publicly accessible toxic chemical database. This database, known as the TRI, contains information on—

- What chemicals were released into the local environment during the preceding year
- The quantity of each chemical released into the air, water, and land in that year
- The quantity of chemicals transported away from the reporting facility for disposal, treatment, or recycling
- How chemical wastes were treated at the reporting facility
- The efficiency of waste treatment.

Citizens, businesses, and governments can use this information to work together to protect the quality of the land, air, and water.

EPA's original TRI database included a list of 300 reportable chemicals. EPA selected these chemicals based on the criteria that each chemical's toxicity caused serious chronic or acute human health risks, such as cancer, reproductive dysfunction, neurological disorders, and/or adverse environmental effects. EPA can add to the list of TRI reportable chemicals and can remove, or delist, chemicals, as it did with phosphoric acid in calendar year (CY) 1999. Chemicals are added and delisted through either EPA-initiated action or an independent petition process. EPA's TRI reporting program is constantly evolving through the

[1] Although the reporting period for this Annual Report to Congress covers FY 2001 (October 1, 2000 through September 30, 2001), the TRI reporting period covers CY 2000 (January 1 through December 31, 2000).

addition and removal of chemicals, chemical categories, newly regulated facilities, and new data elements.

Reporting Requirements

EPCRA requires certain manufacturing sectors to publicly report toxic chemical releases and off-site transfers to EPA and state governments. Facilities must report on both routine and accidental releases of listed toxic chemicals, the maximum amount of the listed chemical on site during the calendar year, and the amount of chemicals contained in wastes transferred off site.

Who Reports

Manufacturing facilities that have ten or more full-time employees and that meet the established thresholds for manufacturing, processing, or otherwise using reportable chemicals must report their releases, off-site transfers, and other waste management quantities. Industries that are required to report include chemical manufacturing, petroleum refining, primary metals, fabricated metals, paper, plastics, and transportation equipment. Federal facilities are required to report regardless of the industry they represent.

How Data Is Reported

Each reporting facility submits to EPA and state authorities TRI data annually using a toxic chemical release inventory form, or Form R. Facilities use Form Rs to report each chemical they manufacture, process, or otherwise use in excess of reporting thresholds. EPA checks a facility's data for reporting errors and then compiles them into a central database. Facilities must submit their Form Rs on or before July 1 each year for activities that occurred during the previous CY. TRI reported releases could have been released evenly over the course of the year or, possibly, in a single large event.

A facility may revise its estimates if new information, better data, or more accurate measurement tools become available. Facilities may update their TRI data after the reporting deadline has passed. For example, Sierra Army Depot submitted a revision to its CY 1999 TRI Report this year. The revision is explained fully in the section entitled "Revisions to Sierra's CY 1999 TRI Report." Enabling facilities to revise historical data encourages review of original data

submissions and recalculation of reportable TRI figures to more accurately reflect total releases and off-site transfers.

ORIGINAL BASELINE AND GOALS

Although Federal agencies are not regulated under EPCRA, in 1993, then-President Clinton issued Executive Order (E.O.) 12856, "Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements," which required Federal facilities to comply with TRI reporting requirements. In addition, the E.O. established a reduction goal for Federal facilities to reduce TRI releases and off-site transfers by 50 percent from the baseline year of 1994. By 1996, DoD had achieved this objective—3 years ahead of the President's goal of 1999.

Many facilities continue to reduce releases and off-site transfers below reporting thresholds, and are no longer required to report. In addition, closed facilities no longer report (Figure 37).

Figure 37
Specific Facilities Closed
1994 to 2001

ARMY	*Kansas City Ammunition Plant, Kansas*
	Longhorn Ammunition Plant, Texas (layaway status)
	Stratford Army Engine Plant, Connecticut
	Sunflower Army Ammunition Plant, Kansas
NAVY	*Naval Air Station, Alameda, California*
	Naval Shipyard, Long Beach, California
	Naval Shipyard, Philadelphia, Pennsylvania
	Naval Air Warfare Center, Trenton, New Jersey
	Hercules Corporation, McGregor, Texas (GOCO)*
	Northrop Grumman Calverton, Maryland (GOCO)*
	Northrop Grumman Bethpage, Maryland (GOCO)*
DLA	*Defense Depot Ogden, Utah*
	William Langer Jewel Bearing Plant, North Dakota (GOCO)
	DFSP Anchorage, Alaska (GOCO)*
	DFSP Cincinnati, Ohio (GOCO)*
	DFSP Escaneba, Michigan (GOCO)*
	DFSP Melville, Rhode Island (GOCO)*
	DFSP Norwalk, California (GOCO)*
	DFSP Ozol, California (GOCO)*
	DFSP Searsport, Maine (GOCO)*
	DFSP Whittier, Arkansas (GOCO)*
AIR FORCE	*Kelly Air Force Base, Texas*
	McClellan Air Force Base, California

** GOCO = Government-Owned, Contractor-Operated Facility*

Tinker AFB Among Top 10 for Reducing Toxics

Tinker Air Force Base, Oklahoma, is among the nation's top ten industrial and government agencies for eliminating toxic chemical releases. Not only is total support of America's defense systems a priority, but also protecting and enhancing the environment are top concerns at Tinker. By using aggressive and innovative technologies, Tinker has become a national leader in pollution prevention. Protecting the environment, achieving compliance objectives, and reducing waste disposal costs are Tinker's core pollution prevention principles.

EPA recognized Tinker's achievements and placed the base's CY 1999 TRI Report on the list for successful toxic reduction. Tinker is dedicated to significantly reducing its use of toxic chemicals used in weapon system maintenance and achieved an 80 percent reduction through 1998, against a 1994 baseline. Tinker continues to reduce this number further.

"Tinker's successes in the environmental arena are driven by an aggressive pollution prevention goal to reduce, as near as possible, all hazardous discharges to zero," said Albert Napoli, director of Tinker's Environmental Management Directorate. "As a result, Tinker's initiatives have succeeded in protecting the environment and preventing further pollution."

Changes to Reporting Requirements Since 1994

Since DoD began reporting TRI releases and off-site transfers in 1994, EPA has made several changes to the reporting requirements.[2] These changes have significantly affected the measurement of DoD's progress against the CY 1994 baseline. In 1995, EPA added 300 chemicals to the list of TRI reportable chemicals, doubling the original list. This modification had a noteworthy impact on DoD's reporting, particularly the addition of nitrate compounds. Treating wastewater from munitions manufacturing generates large quantities of nitrate compounds. Reducing the creation of nitrate compounds is difficult due to manufacturing process requirements.

Currently, there are 582 individual chemicals and 30 chemical categories on the TRI reporting list. The chemicals added in 1995 are separate from the original 50 percent reduction goal established in E.O. 12856. Therefore, the 50 percent goal that DoD surpassed in CY 1996 was measured against the original list of 300 chemicals.

In April 2000, E.O. 13148, "Greening the Government through Leadership in Environmental Management," replaced E.O. 12856. This new E.O. mandated that Federal facilities continue TRI reporting and established new reduction goals. E.O. 13148 requires Federal facilities to reduce TRI releases and off-site

[2] All of EPA's changes to TRI requirements affect all TRI reporters nationwide, not just DoD.

transfers by 40 percent, measured against a CY 2001 baseline, by December 31, 2006. DoD is already well on its way to meeting the goals established in E.O. 13148 since many of the goals were part of DoD policy prior to the order.

Addition of Munitions Demilitarization Reporting Requirements

The Military Services continue to maintain a large stockpile of excess munitions. The current inventory is estimated at 400,000 tons and is growing at a rate of 40,000 tons per year. The most common disposal method in use today is open burning and open detonation (OB/OD), which is a relatively simple and cost-effective method to reduce the stockpile.

The Military Services conduct OB/OD operations to destroy excess, obsolete, or unserviceable munitions. In OB operations, munitions are destroyed by a self-sustained combustion, which is ignited by an external source, such as heat or a flame. In OD operations, explosives and munitions are destroyed through a controlled series of detonations. Both methods may generate TRI reportable releases.

Although reporting data from demilitarization activities, such as OB/OD, is not a new requirement, DoD deferred reporting until it had developed the proper measurement tools. Therefore, releases and off-site transfers from these activities were not included in the 1994 baseline. DoD began reporting releases and off-site transfers from these activities in the CY 1999 TRI Report.

Each of the Military Services conducts demilitarization activities and reports releases and off-site transfers from these activities. The Army is the largest producer of demilitarization-related releases and off-site transfers because it produces and manages most of the munitions for all the Military Services. Demilitarization activities are dependent on mission requirements, therefore, the level of demilitarization activity fluctuates with mission activity levels.

In DoD's CY 1999 TRI Report, 11 Army installations reported OB/OD releases and off-site transfers—

- Anniston Army Depot, Alabama
- Deseret Chemical Depot, Utah (reported only 13 pounds)
- Holston Army Ammunition Plant, Tennessee
- Iowa Army Ammunition Plant, Iowa

- Lake City Army Ammunition Plant, Missouri
- Letterkenny Army Depot, Pennsylvania
- McAlester Army Ammunition Plant, Oklahoma
- Radford Army Ammunition Plant, Virginia
- Red River Army Depot, Texas
- Sierra Army Depot, California
- Tooele Army Depot, Utah.

Sierra Army Depot was the single largest contributor to both the Army's and DoD's total TRI releases and off-site transfers in CY 1999, with almost 5.4 million pounds reported. Although Sierra submitted revisions to their CY 1999 TRI data (explained in more detail below), the Depot was still the largest contributor to the CY 1999 TRI total, with almost 1.2 million pounds reported.

For the CY 2000 TRI Report, 13 Army installations reported releases and off-site transfers as a result of OB/OD—

- Anniston Army Depot, Alabama
- Deseret Army Chemical Depot, Utah
- Hawthorne Army Depot, Nevada
- Holston Army Ammunition Plant, Tennessee
- Iowa Army Ammunition Plant, Iowa
- Lake City Army Ammunition Plant, Missouri
- Letterkenny Army Depot, Pennsylvania
- McAlester Army Ammunition Plant, Oklahoma
- Lone Star Army Ammunition Plant, Texas
- Radford Army Ammunition Plant, Virginia
- Red River Army Depot, Texas
- Sierra Army Depot, California
- Tooele Army Depot, Utah.

Radford Army Ammunition Plant is the largest contributor to the Army's and DoD's totals, with almost 1.8 million pounds reported. Sierra is the second largest contributor, with just over one million pounds reported.

Changes to Reporting Requirements

Once EPA determines that a particular class or group of chemicals manufactured, processed, or used is of particular concern, the Agency may lower the reporting threshold.

Lead Reporting Threshold

In 2000, EPA lowered the reporting threshold for lead from 10,000 pounds per year to 100 pounds. While the Clinton administration enacted this change, the Bush administration determined that the sound science behind the reduction would benefit human health and the environment.

DoD relies heavily on lead for use in munitions. Therefore, changes in the TRI reporting requirement for lead will substantially impact DoD's report. This new requirement does not take effect until the publication of the *FY 2002 Defense Environmental Quality Program Annual Report to Congress*. That report to Congress will cover DoD's Environmental Quality Program activities during FY 2002; the TRI report will cover activity that occurred in CY 2001.

Addition of Reporting from Ranges

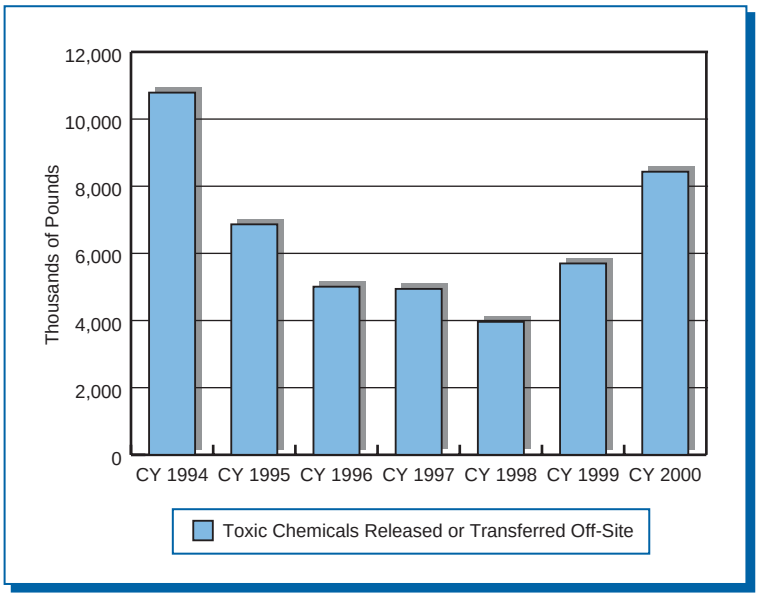
There are three major phases in the life-cycle of munitions—manufacture, use (including range activities), and demilitarization. DoD's largest TRI reporters are facilities involved in manufacturing (required to report since 1994) and demilitarization (required to report since 1999). Beginning with the CY 2001 TRI Report, DoD will begin reporting releases and off-site transfers associated with range activities. This will result in additional facilities reporting TRI releases and off-site transfers.

DoD's CY 2000 TRI Report

Calculating, reporting, and reducing TRI releases and off-site transfers is a priority at DoD facilities. By complying with TRI reporting requirements, DoD can identify the—

- Processes that produce the releases and off-site transfers of these chemicals
- Risks posed by the release or off-site transfer of TRI reportable chemicals
- Procedures or processes that require the use of these chemicals.

Figure 38
Toxic Chemicals Released or Transferred Off-Site



This analysis helps DoD develop a strategy for reducing releases and off-site transfers of TRI reportable chemicals. By reducing releases and off-site transfers of toxic chemicals, DoD minimizes its impact on the environment, benefiting Military Service members, their families, and those living near DoD facilities. This also reduces the costs of reporting, as well as transportation, labor, disposal, and other associated costs. These savings can be used for mission-critical expenditures.

In CY 2000, DoD achieved a 60 percent reduction, excluding nitrates and OB/OD operations, in its toxic chemical releases and off-site transfers from the original CY 1994 baseline. New reporting requirements for additional activities, including demilitarization, became effective in CY 1999. In CY 2000 DoD reported releases and off-site transfers of more than 8.4 million pounds, an increase of almost 32 percent from the CY 1999 TRI Report. Even though the quantity of TRI reportable chemicals released or transferred off-site increased from CY 1999 to CY 2000, DoD continued to reduce releases and off-site transfers compared to the CY 1994 baseline—achieving a 22 percent reduction after factoring in newly reportable chemicals and activities (Figure 38).

Figure 39 highlights DoD's achievements in reducing toxic chemical releases and off-site transfers since CY 1994, measured against the CY 1994 TRI baseline.

Figure 39
DoD TRI Reportable Quantities, 1994 to 2000
Assuming no changes to reporting requirements
(Pounds)

Category	1994	1995	1996	1997	1998	1999	2000	1994 - 2000 % change
On-site to Water	90,629	359,994	393,844	1,224,137	941,140	854,068	57,389	-36.68%
On-site to Air	6,981,117	4,990,877	3,452,010	2,739,503	2,129,652	7,270,039	2,237,966	-67.94%
On-site Underground Injection	390	0	0	0	0	0	0	-100.00%
On-site Land	113,714	28,945	32,164	101,335	11,800	718,089	1,022,799	799.45%
Off-site to POTW	95,377	11,104	56,219	73,970	90,689	234,108	48,983	-48.64%
Off-site Treatment	1,403,991	804,362	554,821	431,001	418,665	275,504	304,241	-78.33%
Off-site Disposal	2,109,636	672,174	518,953	291,292	406,165	476,059	677,532	-67.88%
Calculated Baseline								**-59.71%**

Figure 40
DoD TRI Reportable Quantities, 1994 to 2000
Assuming changes to reporting requirements
(Pounds)

Category	1994	1995	1996	1997	1998	1999	2000	1994 - 2000 % change
On-site to Water	90,629	359,994	393,844	1,224,137	941,140	854,068	1,740,924	1820.93%
On-site to Air	6,981,117	4,990,877	3,452,010	2,739,503	2,129,652	2,007,700	2,983,487	-57.26%
On-site Underground Injection	390	0	0	0	0	0	0	-100.00%
On-site Land	113,714	28,945	32,164	101,335	11,800	1,860,989	2,364,439	1979.29%
Off-site to POTW	95,377	11,104	56,219	73,970	90,689	234,108	337,151	253.49%
Off-site Treatment	1,403,991	804,362	554,821	431,001	418,665	275,504	323,669	-76.95%
Off-site Disposal	2,109,636	672,174	518,953	291,292	406,165	476,059	682,490	-67.65%
Calculated Baseline								**-21.89%**

This figure shows the reductions from the original reporting guidelines, assuming that no changes to the reporting requirements or additions of reportable chemicals and compounds occurred. That is, the reduction compares the amount of reportable chemicals released or transferred off-site in CY 1994 with the amounts of the same chemicals released or transferred off-site in CY 2000.

Figure 40 also illustrates DoD's total reductions in toxic chemical releases and off-site transfers measured against the CY 1994 TRI baseline. However, these measurements take into account changes in reporting requirements since CY 1994, such as yearly reporting amendments, including reporting from demilitarization activities, and changes to the chemical and chemical compound list, including the addition of nitrate compounds.

There are several reasons why TRI reportable releases and off-site transfers increased from CY 1999 to CY 2000. More facilities, particularly Army Ammunition Plants and Army Depots, reported OB/OD activity in CY 2000.

Another reason is that, as the mix of munitions that are destroyed using OB/OD changes, the OB/OD byproducts change. This occurred at Naval Surface Warfare Center (NSWC), Crane Division, Indiana. The munitions that NSWC Crane destroyed using OB/OD in CY 2000 were different than those destroyed in CY 1999. As a result, their reported TRI releases and off-site transfers increased from 9,970 pounds in CY 1999 to 263,446 pounds in CY 2000. The chemicals that increased the most were chromium, copper, lead, manganese compounds, and zinc. However, other chemical quantities, including manganese and phosphoric acid, decreased.

DoD's reductions in total TRI releases and off-site transfers since CY 1994 are primarily due to—

- An emphasis on pollution prevention
- Production changes and base closures
- Improved reporting
- More accurate accounting for material.

Since 1994, DoD's large maintenance and depot operations, primarily those engaged in overhauling and repairing aircraft, ships, and tanks, and munitions manufacturing and demilitarization, have reported the largest volumes of DoD releases and off-site transfers.

A facility is not required to report if it did not manufacture, process, or otherwise use a TRI reportable chemical in excess of its reporting threshold. In CY 2000, 81 DoD facilities reported TRI releases and off-site transfers, compared to 118 in CY 1994. Of those 81 facilities, 13 reported no releases or off-site transfers of TRI reportable chemicals, even though they were not required to report. Two facilities reported less than one pound of total TRI reportable releases or off-site transfers. While the number of reporting facilities increased from CY 1999, the increase can be attributed to—

- Increased attention to accurate reporting
- Adding munitions demilitarization reporting requirement
- An effort to provide communities with as much information as possible.

Revisions to Sierra's CY 1999 TRI Report

In the CY 1999 TRI Report, Sierra Army Depot reported releases and off-site transfers of 5.4 million pounds. However, after reviewing their calculation procedures, Sierra discovered a number of errors in its methodology. The computer program that Sierra used to calculate releases and off-site transfers used reporting or calculation requirements that conformed to Resource Conservation and Recovery Act permit requirements, but not necessarily to EPCRA TRI calculation requirements. The software program used a blanket assumption that OB/OD activities release 100 percent of all TRI chemicals present in the munitions to the environment. The program also assumed that 100 percent of the materials in the munitions' metal casings were completely vaporized, becoming a gas that was released into the air. These and other errors, such as double counting of munitions processed, resulted in a gross overstatement of Sierra's TRI data for CY 1999.

Facilities That Reported No Releases or Off-Site Transfers

Army

- Army Aviation Missile Command, Alabama
- Fort Gordon, Georgia
- Fort McCoy, Wisconsin
- Fort Meade, Maryland
- McMillan Water Treatment Plant, Washington, DC

Navy

- Naval Surface Warfare Center, Dahlgren Division, Virginia
- Naval Air Weapons Station China Lake, California

Marine Corps

- Marine Corps Air Station Yuma, Arizona

Defense Logistics Agency

- Defense National Stockpile Center (DNSC), Curtis Bay, Maryland
- DNSC New Haven, Indiana
- DNSC Point Pleasant, West Virginia
- DNSC Sharonville, Ohio
- DNSC Warren, Ohio

Facilities That Reported Less Than One Pound of Releases or Off-Site Transfers

Army

- Fort Wainwright, Alaska (reported 0.08 lbs)

Air Force

- Hanscom Air Force Base, Massachusetts (reported 0.0008 lbs)

Sierra worked with EPA and the State of California EPA to recalculate their CY 1999 TRI reportable releases and off-site transfers and to submit a revised TRI report. The recalculation showed that Sierra released or transferred off-site less than 1.2 million pounds of TRI reportable chemicals in CY 1999, 80 percent less than originally calculated. Therefore, DoD's total reported TRI releases and off-site transfers for CY 1999 dropped from more than 9.7 million pounds to 5.7 million pounds.

In September 2001, the Army decided to discontinue large-scale OB/OD operations at Sierra, based partially on the fact that the Army no longer needs Sierra's large OB/OD capacity. The Army will continue to conduct emergency OB/OD operations to dispose of unsafe munitions at Sierra. Ending Sierra's OB/OD activities will not have an adverse impact on the Army's or DoD's demilitarization mission. The Army has excess OB/OD capabilities—other facilities can handle the conventional munitions (ammunition that is neither nuclear, biological, nor chemical) demilitarization that Sierra has performed. The Army's decision to limit Sierra to emergency OB/OD operations will significantly reduce Sierra's future TRI emissions.

Future Directions

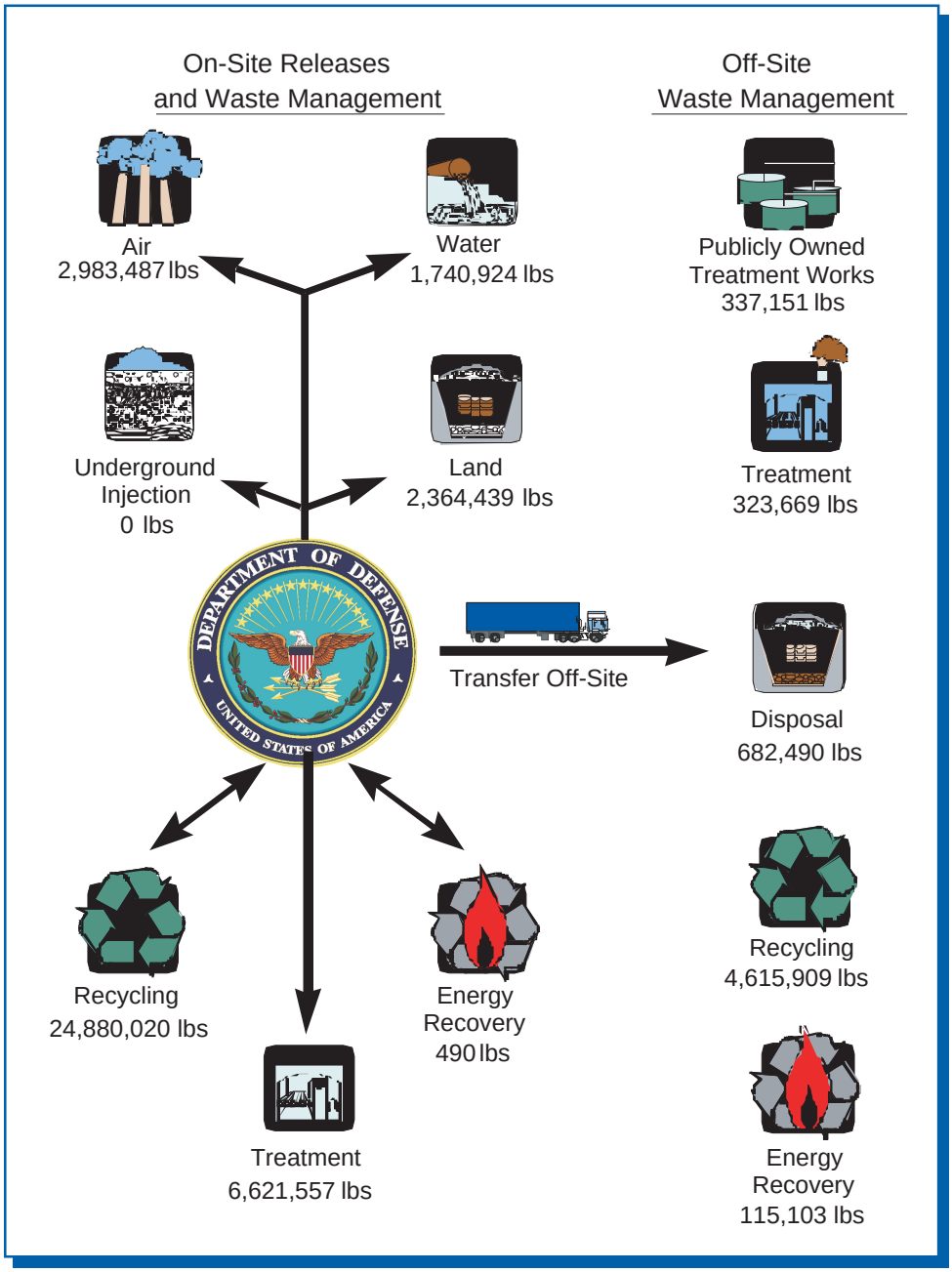
DoD has made great advances in reducing the use of toxic chemicals in munitions manufacturing. However, DoD cannot significantly reduce TRI releases and off-site transfers as a result of demilitarization because this process is necessary in the life-cycle of munitions and is required to maintain current and future mission readiness. Reducing TRI releases and off-site transfers from range operations in the near term would require reducing the amount of training, thereby negatively impacting readiness. Therefore, DoD will not apply reduction goals to munitions demilitarization and range activities. Instead, DoD will design and use munitions that reduce impacts to the environment.

Anniston Army Depot Receives Environmental Award

The Director's Award that Anniston Army Depot (ANAD) received from Alabama Department of Environmental Management recognizes facilities that go the extra mile for environmental protection. ANAD's mission involves a variety of industrial processes, such as plating, painting, degreasing, sand blasting, paint stripping, and steam cleaning, all of which generate TRI reportable chemicals. The award recognizes ANAD's pollution prevention program, of which reducing TRI releases and off-site transfers is a part.

The majority of ANAD's TRI chemical releases and off-site transfers can be attributed to the hazardous wastes from its vehicle maintenance mission. As a result of reductions in hazardous wastes, ANAD has achieved corresponding reductions in the release and off-site transfer of TRI reportable chemicals. Total TRI releases fell almost 50 percent from 1994 to 2000. Several of the chemicals previously reported in 1994 fell below the reporting threshold and subsequently were not reported in 2000.

Figure 41
CY 2000 TRI Data
(assuming changes to reporting requirements)



DoD is dedicated to finding new ways to reduce TRI releases and off-site transfers from actions other than demilitarization and range operations. By focusing reduction efforts elsewhere, DoD can achieve continued TRI reductions without impacting training or mission readiness. DoD will also continue its efforts to identify and reduce the use of toxic chemicals in munitions through the acquisition process.

Total DoD TRI Data

Table 1
DoD TRI Reportable Quantities, 1994 to 2000 *(pounds released or transferred)*

Category	1994	1995	1996	1997	1998	1999	2000	1994 - 2000 % change
On-site to Water	90,629	359,994	393,844	1,224,137	941,140	854,068	1,740,924	1820.93%
On-site to Air	6,981,117	4,990,877	3,452,010	2,739,503	2,129,652	2,007,700	2,983,487	-57.26%
On-site Underground Injection	390	0	0	0	0	0	0	-100.00%
On-site Land	113,714	28,945	32,164	101,335	11,800	1,860,989	2,364,439	1979.29%
Off-site to POTW	95,377	11,104	56,219	73,970	90,689	234,108	337,151	253.49%
Off-site Treatment	1,403,991	804,362	554,821	431,001	418,665	275,504	323,669	-76.95%
Off-site Disposal	2,109,636	672,174	518,953	291,292	406,165	476,059	682,490	-67.65%
Calculated Baseline								**-21.89%**

Table 2
Change in Top 10 DoD Chemicals Released and Transferred based on 1994 baseline
(pounds released or transferred)

Name of Chemical	1994	1995	1996	1997	1998	1999	2000	1994 - 2000 % change
DICHLOROMETHANE	2,235,670	1,617,221	17,500	761,088	671,307	455,910	363,205	-83.75%
METHYL ETHYL KETONE	1,504,895	1,097,024	41,085	622,787	621,515	439,656	474,955	-68.44%
1,1,1-TRICHLOROETHANE	1,232,070	751,890	143,700	217,171	34,335	10	0	-100.00%
ETHYLENE GLYCOL	537,125	329,919	10,700	158,462	190,220	119,272	246,415	-54.12%
TOLUENE	445,350	234,517	18,000	126,245	103,489	120,103	94,616	-78.75%
PHENOL	411,988	266,784	19,400	87,281	76,791	52,144	41,434	-89.94%
ZINC COMPOUNDS	409,180	52,738	1,400	28,526	63,395	174,982	260,846	-36.25%
TETRACHLOROETHYLENE	359,039	217,682	112,000	195,572	69,838	70,815	60,265	-83.21%
HEXACHLOROETHANE	351,370	56,112	75,946	0	0	0	0	-100.00%
HYDROCHLORIC ACID	298,000	Delisted	Delisted	Delisted	Delisted	Delisted	Delisted	
TOTAL	**7,784,687**	**4,623,887**	**439,731**	**2,197,132**	**1,830,890**	**1,432,892**	**1,541,736**	**-80.20%**

Table 3
Change in Top 10 DoD Installations' Releases and and Transfers based on 1994 baseline
(pounds released or transferred)

Name of Installation	1994	1995	1996	1997	1998	1999	2000	1994 - 2000 % change
TINKER AFB	1,569,614	1,080,881	728,670	520,020	325,423	304,656	324,167	-79.35%
ROBINS AFB	776,616	578,562	334,898	403,058	368,442	322,549	237,599	-69.41%
ARMY PINE BLUFF ARSENAL	725,534	253,949	47,011	0	0	4,030	130	-99.98%
AIR FORCE PLANT 06	554,555	507,909	292,613	133,400	71,924	41,200	61,149	-88.97%
ANNISTON ARMY DEPOT	527,591	428,840	225,446	245,617	366,481	441,942	266,564	-49.48%
NORTHRUP GRUMMAN CORP	462,481	496,710	249,900	256,800	134,170	187,083	259,018	-43.99%
HILL AFB (Ogden)	367,909	263,560	294,815	234,029	250,301	251,551	357,903	-2.72%
KELLY AFB	342,871	227,663	144,014	100,850	42,500	64,010	0	-100.00%
McCLELLAN AFB	340,750	231,800	279,100	162,161	64,100	20,700	0	-100.00%
NAS JACKSONVILLE	325,648	247,896	217,041	77,000	88,676	71,415	78,812	-75.80%
TOTAL	**5,993,569**	**4,317,770**	**2,813,508**	**2,132,935**	**1,712,017**	**1,709,136**	**1,585,342**	**-73.55%**

Table 4
Top 10 CY 2000 DoD Chemicals
(pounds released or transferred)

Name of Chemical	
NITRATE COMPOUNDS	2,188,261
ALUMINUM (FUME OR DUST)	917,249
HYDROCHLORIC ACID (1995 AND AFTER "ACID AEROSOLS" ONLY)	822,815
METHYL ETHYL KETONE	474,879
COPPER	441,242
COPPER COMPOUNDS	408,421
DICHLOROMETHANE	363,205
ZINC COMPOUNDS	322,241
ETHYLENE GLYCOL	246,415
NITROGLYCERIN	159,617

Table 5
Top 10 CY 2000 DoD Installations
(pounds released or transferred)

Name of Installation	
RADFORD AAP	1,795,380
SIERRA ARMY DEPOT	1,055,587
PUGET SOUND NAVAL SHIPYARD	379,930
HILL AFB (OGDEN AIR LOGISTICS CENTER)	357,903
TINKER AFB	324,167
ANNISTON ARMY DEPOT	266,564
NSWC CRANE	263,446
VOUGHT AIRCRAFT COMPANY (NORTHROP GRUMMAN)	259,018
ROBINS AFB	237,599
HOLSTON AAP	187,254

Total Army TRI Data

Table 1
Army TRI Reportable Quantities, 1994 to 2000 *(pounds released or transferred)*

Category	1994	1995	1996	1997	1998	1999	2000	1994 - 2000 % change
On-site to Water	39,809	282,768	249,265	1,088,518	714,328	686,938	1,607,796	3938.78%
On-site to Air	954,600	659,894	421,614	358,395	578,551	837,210	1,348,422	41.26%
On-site Underground Injection	0	0	0	0	0	0	0	0.00%
On-site Land	42,396	21,627	8,238	46,430	11,135	1,829,549	2,106,847	4869.45%
Off-site to POTW	18,570	2,195	2,147	5,870	7,434	2,407	11,533	-37.89%
Off-site Treatment	468,522	579,924	228,986	183,139	145,135	62,229	54,797	-88.30%
Off-site Disposal	954,544	163,315	177,334	82,614	146,236	172,468	213,583	-77.62%
Calculated baseline								**115.58%**

Table 2
Change in Top 10 Army Chemicals Released and Transferred based on 1994 baseline
(pounds released or transferred)

Name of Chemical	1994	1995	1996	1997	1998	1999	2000	1994 - 2000 % change
ZINC COMPOUNDS	368,971	20,008	31,171	3,426	32,998	147,123	191,085	-48.21%
HEXACHLOROETHANE	351,370	56,112	23,461	0	0	0	0	-100.00%
METHYL ETHYL KETONE	230,817	152,486	103,353	65,994	85,359	98,728	104,066	-54.91%
1,1,1-TRICHLOROETHANE	226,377	137,450	86,833	40,719	22,335	0	0	-100.00%
TRICHLOROETHYLENE	214,223	148,508	40,000	71,028	34,253	55,881	37,148	-82.66%
DICHLOROMETHANE	186,409	150,300	86,990	115,002	162,155	100,908	74,715	-59.92%
PHOSPHORIC ACID	135,990	48,410	51,177	44,783	94,434	0	0	-100.00%
ETHYLENE GLYCOL	121,059	194,648	85,073	35,039	20,366	18,794	21,899	-81.91%
CHLORINE	67,470	11,345	5,418	16,838	21,713	2,154	1,827	-97.29%
CHROMIUM COMPOUNDS	67,413	48,996	61,499	48,159	31,738	38,819	13,052	-80.64%

Table 3
Change in Top 10 Army Installations' Releases and and Transfers based on 1994 baseline
(pounds released or transferred)

Name of Installation	1994	1995	1996	1997	1998	1999	2000	1994 - 2000 % change
PINE BLUFF ARSENAL	725,534	253,949	47,011	0	0	4,030	130	-99.98%
ANNISTON ARMY DEPOT	527,591	428,840	225,446	245,617	366,481	441,942	266,564	-49.48%
LETTERKENNY ARMY DEPOT	144,485	109,693	39,621	18,968	27,804	27,852	178,200	23.33%
WATERVLIET ARSENAL	135,075	46,144	82,375	96,543	91,282	54,010	5,151	-96.19%
RED RIVER ARMY DEPOT	117,864	81,798	45,778	46,525	19,092	102,543	47,272	-59.89%
HOLSTON AAP	101,900	322,200	236,260	246,100	55,056	209,993	187,254	83.76%
LAKE CITY AAP	83,911	67,497	49,041	42,662	68,012	31,574	49,064	-41.53%
FT HOOD	57,550	45,600	686	686	61	686	686	-98.81%
STRATFORD ENG. PL.	55,441	24,501	23,701	0	0	0	0	-100.00%
ROCK ISLAND ARSENAL	52,000	14,500	0	0	0	0	0	-100.00%

Table 4
Top 10 CY 2000 Army Chemicals
(pounds released or transferred)

Name of Chemical	
NITRATE COMPOUNDS	1,823,761
ALUMINUM (FUME OR DUST)	917,247
HYDROCHLORIC ACID (1995 AND AFTER "ACID AEROSOLS" ONLY)	375,654
COPPER COMPOUNDS	322,073
COPPER	270,636
ZINC COMPOUNDS	191,085
NITROGLYCERIN	159,366
MANGANESE	120,482
METHYL ETHYL KETONE	104,066
LEAD COMPOUNDS	80,026

Table 5
Top 10 CY 2000 Army Installations
(pounds released or transferred)

Name of Installation	
RADFORD AAP	1,795,380
SIERRA ARMY DEPOT	1,055,587
HAWTHORNE NEW BOMB	503,219
ANNISTON ARMY DEPOT	266,564
HOLSTON AAP	187,254
LETTERKENNY ARMY DEPOT	178,200
SCHOFIELD BARRACKS	174,829
TOOELE ARMY DEPOT	121,340
MCALESTER AAP	89,278
LONE STAR AAP	76,000

Total Navy TRI Data

Table 1
Navy TRI Reportable Quantities, 1994 to 2000
(pounds released or transferred)

Category	1994	1995	1996	1997	1998	1999	2000	1994 - 2000 % change
On-site to Water	37,954	10,481	56,439	63,387	86,459	6,017	6,976	-81.62%
On-site to Air	1,519,995	1,175,552	836,401	561,634	570,775	333,524	436,386	-71.29%
On-site Underground Injection	390	0	0	0	0	0	0	-100.00%
On-site Land	1,008	499	23,885	54,900	0	9,510	253,793	25077.88%
Off-site to POTW	12,369	4,286	21,801	56,767	8,566	117,455	221,727	1692.61%
Off-site Treatment	558,322	71,211	82,854	93,163	137,925	103,212	116,562	-79.12%
Off-site Disposal	187,491	132,886	127,287	109,846	128,820	160,003	358,411	91.16%
Calculated baseline								**-39.86%**

Table 2
Change in Top 10 Navy Chemicals Released and Transferred based on 1994 baseline
(pounds released or transferred)

Name of Chemical	1994	1995	1996	1997	1998	1999	2000	1994 - 2000 % change
1,1,1-TRICHLOROETHANE	596,172	438,269	120,000	135,300	0	10	0	-100.00%
DICHLOROMETHANE	358,283	252,221	161,750	57,310	95,789	44,465	55,705	-84.45%
METHYL ETHYL KETONE	288,488	231,715	198,900	90,610	163,971	96,745	81,562	-71.73%
N-BUTYL ALCOHOL	184,055	131,463	137,372	126,837	157,191	117,999	87,968	-52.21%
NITRIC ACID	160,881	14,166	10,416	52,003	13,664	2,797	17	-99.99%
XYLENE (MIXED ISOMERS)	130,312	64,455	52,306	119,244	87,563	84,173	98,897	-24.11%
FREON 113	129,933	21,925	51,547	0	0	0	0	-100.00%
TOLUENE	92,078	15,352	29,959	32,800	26,500	12,260	16,810	-81.74%
PHENOL	48,068	31,949	31,490	0	9,950	0	0	-100.00%
COPPER	37,785	46,134	29,600	30,263	36,407	40,688	170,523	351.30%

Table 3
Change in Top 10 Navy Installations' Releases and and Transfers based on 1994 baseline
(pounds released or transferred)

Name of Installation	1994	1995	1996	1997	1998	1999	2000	1994 - 2000 % change
VOUGHT AIRCRAFT COMPANY (NORTHROP GRUMMAN)	462,481	496,710	249,900	256,800	134,170	187,083	259,018	-43.99%
NAS JACKSONVILLE	325,648	247,896	217,041	77,000	88,676	71,415	78,812	-75.80%
NAS ALAMEDA	227,500	0	0	0	0	0	0	-100.00%
NORFOLK NAVAL SHIPYARD	186,090	65,666	53,980	62,120	79,458	118,477	163,040	-12.39%
GRUMMAN AEROSPACE CORP BETHPAGE	184,602	0	0	0	0	0	0	-100.00%
PUGET SOUND NAVAL SHIPYARD	178,400	147,041	139,800	186,100	199,373	189,148	379,930	112.97%
NAVAL BASE NORFOLK	132,325	74,971	59,800	21,380	14,530	650	0	-100.00%
PHILADELPHIA NAVAL SHIPYARD	129,340	73,870	0	0	0	0	0	-100.00%
NAWC PATUXENT RIVER	76,174	0	0	0	0	0	0	-100.00%
NWIRP - HERCULES	73,016	0	0	0	0	0	0	-100.00%

Table 4
Top 10 CY 2000 Navy Chemicals
(pounds released or transferred)

Name of Chemical	
NITRATE COMPOUNDS	176,000
COPPER	170,523
ZINC COMPOUNDS	131,156
ETHYLENE GLYCOL	101,268
XYLENE (MIXED ISOMERS)	98,897
N-BUTYL ALCOHOL	87,968
COPPER COMPOUNDS	86,348
METHYL ETHYL KETONE	81,562
LEAD	69,195
MANGANESE COMPOUNDS	67,000

Table 5
Top 10 CY 2000 Navy Installations
(pounds released or transferred)

Name of Installation	
PUGET SOUND NAVAL SHIPYARD	379,930
NSWC CRANE	263,446
VOUGHT AIRCRAFT COMPANY (NORTHROP GRUMMAN)	259,018
NORFOLK NAVAL SHIPYARD	163,040
NAS JACKSONVILLE	78,812
ALLEGANY BALLISTICS LAB	52,652
NAS NORTH ISLAND	47,345
PEARL HARBOR NAVAL SHIPYARD	35,000
NAS CORPUS CHRISTI	29,820
NSWC PHILADELPHIA	17,009

Total Marine Corps TRI Data

Table 1
Marine Corps TRI Reportable Quantities, 1994 to 2000
(pounds released or transferred)

Category	1994	1995	1996	1997	1998	1999	2000	1994 - 2000 % change
On-site to Water	19	27	27	3,969	15	0	0	-100.00%
On-site to Air	453,652	324,937	165,625	67,386	57,203	62,387	22,446	-95.05%
On-site Underground Injection	0	0	0	0	0	0	0	0.00%
On-site Land	4,633	1,002	0	0	0	0	0	-100.00%
Off-site to POTW	61,313	2,047	1,015	4,560	209	320	170	-99.72%
Off-site Treatment	100,446	43,625	112,394	31,660	18,110	2,604	4,694	-95.33%
Off-site Disposal	468,894	124,097	36,309	10,475	31,364	9,319	632	-99.87%
Calculated baseline								**-97.43%**

Table 2
Change in Top 10 Marine Corps Chemicals Released and Transferred based on 1994 baseline *(pounds released or transferred)*

Name of Chemical	1994	1995	1996	1997	1998	1999	2000	1994 - 2000 % change
ETHYLENE GLYCOL	237,821	86,708	61,892	32,409	28,340	6,266	4,895	-97.94%
DICHLOROMETHANE	155,986	98,300	15,000	0	0	0	0	-100.00%
METHYL ETHYL KETONE	144,653	128,588	127,600	59,250	55,971	33,741	22,989	-84.11%
1,1,1-TRICHLOROETHANE	76,062	48,289	0	0	0	0	0	-100.00%
TOLUENE	68,054	53,350	37,000	8,900	6,600	10,054	0	-100.00%
XYLENE (MIXED ISOMERS)	51,535	37,416	21,400	5,600	3,800	3,243	0	-100.00%
FREON 113	28,000	27,000	0	0	0	0	0	-100.00%
GLYCOL ETHERS	28,000	47,000	20,000	0	12,500	0	0	-100.00%
CHROMIUM	25,897	0	0	0	0	0	0	-100.00%
N-BUTYL ALCOHOL	24,001	8,200	0	0	0	0	0	-100.00%

Table 3
Change in Top 10 Marine Corps Installations' Releases and and Transfers based on 1994 baseline *(pounds released or transferred)*

Name of Installation	1994	1995	1996	1997	1998	1999	2000	1994 - 2000 % change
MCLB BARSTOW	322,011	87,961	31,304	16,846	36,536	2,680	21	-99.99%
MCLB ALBANY	282,273	254,340	133,200	32,490	13,293	38,920	10,710	-96.21%
MCAS CHERRY POINT	263,370	216,673	110,091	33,664	39,472	29,391	12,484	-95.26%
MARINE CORPS BASE CAMP LEJEUNE	31,630	0	835	4,270	373	326	0	-100.00%
USMC BLOUNT ISLAND COMMAND	20,000	0	10,700	0	0	0	0	-100.00%
MCAS YUMA	1,050	1,028	0	0	0	0	0	-100.00%
MCB QUANTICO	34	36	37	37	24	0	0	-100.00%
REGION	5	0	0	0	0	0	0	-100.00%

Table 4
Top 10 CY 2000 Marine Corps Chemicals
(pounds released or transferred)

Name of Chemical	
METHYL ETHYL KETONE	22,989
ETHYLENE GLYCOL	4,895
NAPHTHALENE	15
BENZENE	10
N/A	
N/A	
N/A	
N/A	
N/A	
N/A	

Table 5
Top 10 CY 2000 Marine Corps Installations
(pounds released or transferred)

Name of Installation	
MCAS CHERRY POINT	12,484
MCLB ALBANY	10,710
MCB CAMP PENDLETON	4,694
MCLB BARSTOW	21
N/A	
N/A	
N/A	
N/A	
N/A	
N/A	

Total Air Force TRI Data

Table 1
Air Force TRI Reportable Quantities, 1994 to 2000 *(pounds released or transferred)*

Category	1994	1995	1996	1997	1998	1999	2000	1994 - 2000 % change
On-site to Water	12,847	66,718	88,113	68,263	140,337	161,113	126,152	881.96%
On-site to Air	4,025,239	2,825,393	2,023,516	1,749,888	917,578	768,909	1,172,078	-70.88%
On-site Underground Injection	0	0	0	0	0	0	0	0.00%
On-site Land	65,677	5,637	41	5	665	21,930	3,799	-94.22%
Off-site to POTW	2,725	2,576	31,256	6,773	74,480	113,926	103,721	3706.28%
Off-site Treatment	267,987	107,502	130,587	123,039	117,495	107,459	147,626	-44.91%
Off-site Disposal	495,807	249,293	178,023	88,357	99,745	134,269	109,864	-77.84%
Calculated baseline								**-65.85%**

Table 2
Change in Top 10 Air Force Chemicals Released and Transferred based on 1994 baseline
(pounds released or transferred)

Name of Chemical	1994	1995	1996	1997	1998	1999	2000	1994 - 2000 % change
DICHLOROMETHANE	1,534,992	1,116,400	704,119	588,776	413,363	310,537	232,785	-84.83%
METHYL ETHYL KETONE	840,937	584,235	507,067	406,933	316,214	210,442	266,262	-68.34%
PHENOL	363,920	234,835	92,745	87,281	66,841	52,144	41,434	-88.61%
TETRACHLOROETHYLENE	335,798	217,340	241,835	195,572	69,838	70,815	60,265	-82.05%
1,1,1-TRICHLOROETHANE	333,459	127,882	76,501	41,152	12,000	0	0	-100.00%
TOLUENE	225,563	133,460	90,287	58,658	44,753	80,528	54,432	-75.87%
ETHYLENE GLYCOL	162,300	40,916	144,009	77,534	113,384	76,670	118,353	-27.08%
CHROMIUM COMPOUNDS	151,886	56,898	52,246	49,470	35,500	33,400	43,811	-71.16%
GLYCOL ETHERS	139,390	30,193	44,076	45,396	44,100	38,330	87,222	-37.43%
MANGANESE COMPOUNDS	136,000	0	0	0	0	0	2,407	-98.23%

Table 3
Change in Top 10 Air Force Installations' Releases and and Transfers based on 1994 baseline
(pounds released or transferred)

Name of Installation	1994	1995	1996	1997	1998	1999	2000	1994 - 2000 % change
TINKER AFB	1,569,614	1,080,881	728,670	520,020	325,423	304,656	324,167	-79.35%
ROBINS AFB	776,616	578,562	334,898	403,058	368,442	322,549	237,599	-69.41%
AIR FORCE PLANT 06 (LOCKHEED MARTIN)	554,555	507,909	292,613	133,400	71,924	41,200	61,149	-88.97%
HILL AFB (OGDEN AIR LOGISTICS CENTER)	367,909	263,560	294,815	234,029	250,301	251,551	357,903	-2.72%
KELLY AFB	342,871	227,663	144,014	100,850	42,500	64,010	0	-100.00%
McCLELLAN AFB	340,750	231,800	279,100	162,161	64,100	20,700	0	-100.00%
ARNOLD AFB	154,096	125,833	131,966	93,992	94,779	60,570	51,300	-66.71%
EDWARDS AFB	132,062	0	0	0	0	22,009	0	-100.00%
AIR FORCE PLANT 44 (HUGHES MISSILE SYS)	123,430	35,502	18,800	3,100	0	0	8,700	-92.95%
AIR FORCE PLANT 03 (ROCKWELL INTERNATIONAL)	123,413	37,355	46,026	0	0	0	0	-100.00%

Table 4
Top 10 CY 2000 Air Force Chemicals
(pounds released or transferred)

Name of Chemical	
HYDROCHLORIC ACID (1995 AND AFTER "ACID AEROSOLS" ONLY)	447,161
METHYL ETHYL KETONE	266,262
DICHLOROMETHANE	232,785
NITRATE COMPOUNDS	188,500
ETHYLENE GLYCOL	118,353
CERTAIN GLYCOL ETHERS	87,222
TETRACHLOROETHYLENE	60,265
TOLUENE	54,432
CHROMIUM COMPOUNDS	43,811
PHENOL	41,434

Table 5
Top 10 CY 2000 Air Force Installations
(pounds released or transferred)

Name of Installation	
EIELSON AFB	383,199
HILL AFB (OGDEN AIR LOGISTICS CENTER)	357,903
TINKER AFB	324,167
ROBINS AFB	237,599
AIR FORCE PLANT 04	102,080
WRIGHT-PATTERSON	92,010
AIR FORCE PLANT 06 (LOCKHEED MARTIN)	61,149
ARNOLD AFB	51,300
HOLLOMAN AFB	37,000
AIR FORCE PLANT 44 (HUGHES MISSILE SYS)	8,700

Total DLA TRI Data

Table 1
DLA TRI Reportable Quantities, 1994 to 2000 *(pounds released or transferred)*

Category	1994	1995	1996	1997	1998	1999	2000	1994 - 2000 % change
On-site to Water	0	0	0	0	0	0	0	0.00%
On-site to Air	27,631	5,101	4,854	2,200	5,545	5,670	4,156	-79.48%
On-site Underground Injection	0	0	0	0	0	0	0	0.00%
On-site Land	0	180	0	0	0	0	0	0.00%
Off-site to POTW	400	0	0	0	0	0	0	-100.00%
Off-site Treatment	8,714	2,100	0	0	0	0	0	-100.00%
Off-site Disposal	2,900	2,583	0	0	0	0	0	-100.00%
Calculated baseline								**-85.70%**

Table 2
Change in Top 10 DLA Chemicals Released and Transferred based on 1994 baseline
(pounds released or transferred)

Name of Chemical	1994	1995	1996	1997	1998	1999	2000	1994 - 2000 % change
TOLUENE	10,890	0	0	0	0	0	0	-100.00%
CYCLOHEXANE	8,037	0	0	0	0	0	0	-100.00%
BENZENE	6,353	0	0	0	0	0	0	-100.00%
NAPHTHALENE	2,919	0	0	0	0	0	0	-100.00%
METHANOL	2,908	0	0	0	0	0	0	-100.00%
XYLENE (MIXED ISOMERS)	2,648	0	0	0	0	0	0	-100.00%
BROMOTRIFLUOROMETHANE	1,372	3,685	645	800	3,448	2,980	1,838	33.97%
BROMOCHLORODIFLUOROMETHANE	960	707	1,687	800	1,525	1,474	923	-3.85%
ETHYLBENZENE	494	0	0	0	0	0	0	-100.00%
DICHLORODIFLUOROMETHANE	100	485	1,513	500	226	915	789	689.00%

Table 3
Change in Top 10 DLA Installations' Releases and and Transfers based on 1994 baseline
(pounds released or transferred)

Name of Installation	1994	1995	1996	1997	1998	1999	2000	1994 - 2000 % change
GRAND FORK FUEL SUPPORT POINT	10,872	0	0	0	0	0	0	-100.00%
WM LANGER JEWEL BEARING PLANT	5,867	0	0	0	0	0	0	100.00%
VERONA FUEL SUPPORT POINT	5,516	0	0	0	0	0	0	-100.00%
CHARLESTON FUEL SUPPORT POINT	4,274	0	0	0	0	0	0	-100.00%
ESCANABA FUEL SUPPORT POINT	2,819	0	0	0	0	0	0	-100.00%
DEFENSE GENERAL SUPPLY CENTER - RICHMOND	2,432	5,101	4,854	2,200	5,545	5,670	4,156	70.89%
SEARSPORT FUEL SUPPORT POINT	1,780	0	0	0	0	0	0	-100.00%
SAN PEDRO FUEL SUPPORT POINT	1,200	0	0	0	0	0	0	-100.00%
FUEL SUPPORT POINT TAMPA	1,175	0	0	0	0	0	0	-100.00%
MELVILLE FUEL SUPPORT POINT	1,035	0	0	0	0	0	0	-100.00%

Table 4
Top 10 CY 2000 DLA Chemicals
(pounds released or transferred)

Name of Chemical	
BROMOTRIFLUOROMETHANE	1,838
BROMOCHLORODIFLUOROMETHANE	923
DICHLORODIFLUOROMETHANE (CFC-12)	789
DICHLOROTETRAFLUOROETHANE	316
TRICHLOROFLUOROMETHANE	290
N/A	
N/A	
N/A	
N/A	
N/A	

Table 5
Top 10 CY 2000 DLA Installations
(pounds released or transferred)

Name of Installation	
DEFENSE GENERAL SUPPLY CENTER - RICHMOND	4,156
N/A	
N/A	
N/A	
N/A	
N/A	
N/A	
N/A	
N/A	
N/A	