

# **U.S. EPA Toxics Release Inventory – Reporting Year 2003 Public Data Release**

## **Summary of Key Findings**

### **U.S. EPA TRI Program**

The United States (U.S.) Environmental Protection Agency (EPA) Toxics Release Inventory (TRI) program collects information on the disposal or other releases and other waste management activities for over 650 chemicals from industrial sources in all 50 states and the U.S. territories. The information has been collected annually since 1987. For 2003, the latest year for which data are available, disposal or other releases of TRI chemicals totaled almost 4.44 billion pounds from over 23,000 U.S. facilities submitting over 91,000 chemical forms.

Section 313 of the Emergency Planning and Community Right to Know Act (EPCRA) of 1986 was enacted to facilitate emergency planning, to minimize the effects of potential toxic chemical accidents, and to provide the public with information on releases of toxic chemicals in their communities. The Pollution Prevention Act (PPA) of 1990 mandates collection of data on toxic chemicals treated on-site, recycled, and combusted for energy recovery. Together, these laws require facilities in certain industries, which manufacture, process, or use toxic chemicals above specified amounts, to report annually on disposal or other releases and other waste management activities related to these chemicals.

The 2003 TRI data are now available online in a searchable, sortable format at <http://www.epa.gov/triexplorer>. We invite you to visit our web site and explore the data to learn more about toxic chemical releases and waste management activities across the U.S., by state, county or even zip code – and more!

The following information reflects the TRI data as of May 11, 2005.

### **Overview of the TRI 2003 Public Data Release**

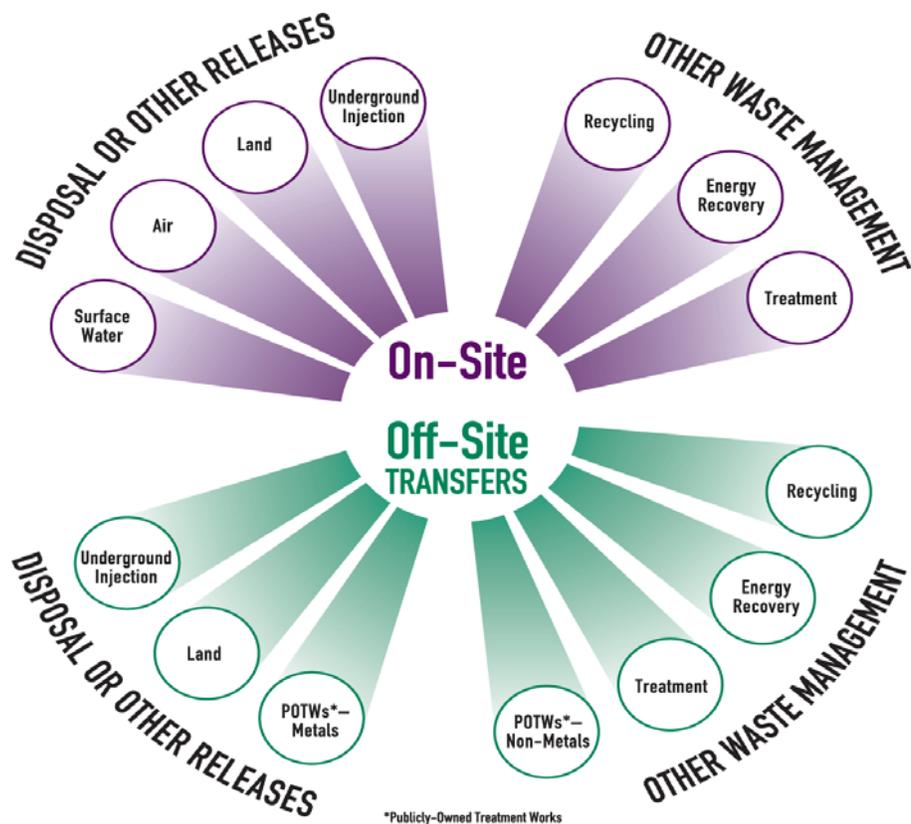
The time period covered for this year's data release is January 1, 2003, to December 31, 2003. These 2003 data were reported to EPA by July 1, 2004, and were released to the public in March 2005. Data for previous years back to 1988 are also available.

### **A TRI release to the environment includes disposal or other releases. What does this mean?**

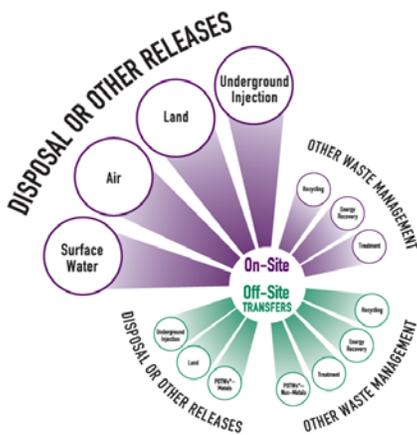
Based on the definition of release in Section 329 of the Emergency Planning and Community Right-to-Know Act (EPCRA), facilities that place TRI chemicals in on-site underground injection wells, landfills, surface impoundments, or send them off-site to other facilities for placement in underground injection wells, landfills, and/or surface impoundments are considered to have disposed or otherwise released these chemicals. Metals sent to Publicly Owned Treatment Works (POTWs) or other waste treatment facilities are also included.

Other ways facilities release TRI chemicals is by discharging them to an environmental medium on-site such as air emissions and discharges to receiving streams or water bodies.

The diagram below shows the types of data collected under the TRI program.

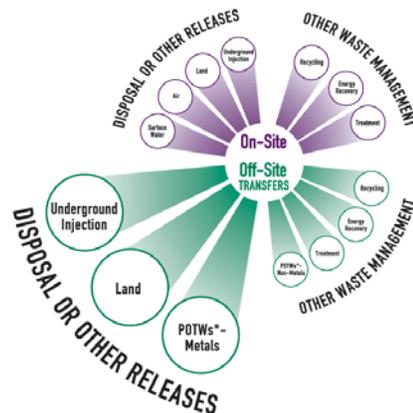


The following categories are used for presenting this information:



**On-site disposal or other releases:** On-site disposal or other releases include emissions to the air, discharges to bodies of water, disposal at the facility to land, and disposal in underground injection wells. Disposal or other releases are reported to TRI by media type. (On-site disposal or other releases are reported in Section 5 of Form R.) Some types of disposal are controlled to limit potential for human exposures and environmental contamination (such as Subtitle C landfill disposal). The TRI data can be broken down in some detail based on how the toxic chemical is managed (such as landfills or underground injection wells).

**Off-site disposal or other releases (transfers off-site to disposal or other releases):** An off-site disposal or other release is a discharge of a chemical to the environment that occurs as a result of a facility’s transferring a waste containing a TRI chemical off-site for disposal or other management (reported in Section 6 of Form R). Certain other types of transfers are also categorized as off-site disposal or other release because, except for location, the outcome of transferring the chemical off-site is the same as disposing of it or releasing it on-site. For each transfer, the amount of the chemical in the waste, type of management activity (chosen from a list of codes referred to as “M” codes) undertaken by the receiving facility, and the address of the receiving site is reported.



**Total on- and off-site disposal or other releases:** sum of on-site disposal or other releases and off-site disposal or other releases.

**Other waste management of TRI chemicals:** Information about facilities' management of TRI chemicals in production-related waste is reported in Section 8 of Form R. Data collected include amounts of the chemicals recycled, burned for energy recovery, and treated both on- and off-site. The totals from this section are the most comprehensive description of a facility’s TRI chemical management. Within this document we also present total production-related waste managed, which includes amounts of the chemicals recycled, burned for energy recovery, and treated as well as the quantity of chemicals in waste disposed of or otherwise releases on- and off-site but does not include amounts of TRI chemicals in waste due to non-production activities such as clean-up of spills and leaks or remedial actions.



**What are the time periods used for presenting TRI data?**

To ensure comparable data are used when representing data trends, several different time periods for data are presented. The data included in each time period differ because the reporting requirements have changed over time. Chemicals that have been delisted are excluded. Time periods used for the Public Data Release include:

**2001-2003:** includes all chemicals and all industries reporting for 2001, 2002 and 2003

**2000-2003:** excludes lead and lead compounds because reporting thresholds were lowered beginning with the 2001 reporting year.

**1998-2003:** excludes all Persistent, Bioaccumulative, Toxic (PBT) chemicals and vanadium and vanadium compounds. Some PBT chemicals were added and reporting thresholds were lowered for others beginning with the 2000 reporting year. The reporting definition for vanadium was changed and vanadium compounds were added to the list for 2000, however vanadium and its compounds are not classified as a PBT chemical.

**1988-2003:** excludes aluminum oxide, ammonia, hydrochloric acid, sulfuric acid, PBT chemicals, vanadium and vanadium compounds. These chemicals have had changes to reporting requirements or have been added to the TRI chemical list since 1988. Also, excludes chemicals added to the list in 1990, 1994 and 1995. Also, excludes reporting from industries added to the reporting requirements beginning with the 1998 reporting year (these industries are metal mining, coal mining, electrical utilities, chemical wholesale distributors, petroleum bulk terminals/bulk storage, hazardous waste treatment facilities and solvent recovery facilities).

### **What are other considerations in looking at the 2003 Public Data Release?**

Beginning with the 2003 Public Data Release (PDR), EPA has modified the way in which it uses the Standard Industrial Classification (SIC) code as reported by the facility for analysis purposes.

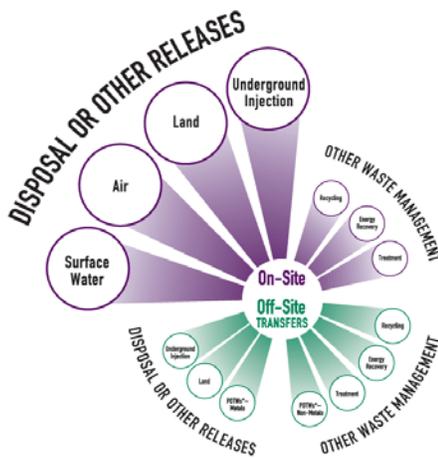
Some facilities that were reporting to the TRI prior to the 1998 facility expansion rule began to report one of the newly added SIC codes after this rule was promulgated. However, in an effort to maintain trend analysis, EPA kept those facilities in the SIC code they had reported in prior to 1998. In EPA's continuing effort to modernize its data access systems and to improve the transparency and the reproducibility of our analysis, EPA will no longer keep those facilities in their previously reported SIC codes. Instead, the primary SIC code as reported by the facility will now be used for all analysis purposes. This change results in a more accurate portrayal of the data as it is reported to TRI. EPA has applied this new logic to all data within the TRI database (i.e., applied to all trends starting with 1988 data). Therefore, data users should note that data presented in previous year's PDR documents may not be easily comparable with the data in TRI Explorer since the previous PDRs used the former SIC code methodology.

The use of primary SIC results in 24 of 26 covered TRI sectors experiencing less than a 5% change in the total on-site disposal or other releases. The two sectors most affected are metal mining (SIC 10) and primary metals (SIC 33). A significant shift, almost 50%, of the pounds from primary metals are re-classified as disposal or other releases from metal mining under the new method of presenting the data. This is, however, a more accurate representation of what type of activities actually produce the releases.

### **Overview of the TRI 2003 Data**

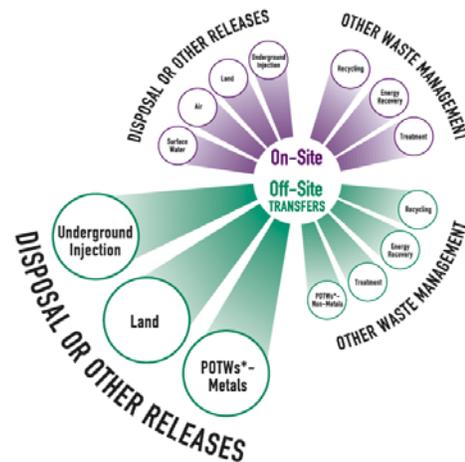
#### **What was the total reported for disposal or other releases for 2003?**

Almost 4.44 billion pounds were disposed of or otherwise released to the environment in 2003 by facilities that are required to report to EPA under EPCRA section 313. Most of the chemicals are managed on-site.



- 88% (3.92 billion pounds) was disposed of or otherwise released **on-site**, including
  - ▶ 1.59 billion pounds (40%) of air emissions
  - ▶ 817 million pounds (18%) in surface impoundments other than RCRA Subtitle C surface impoundments
  - ▶ 639 million pounds (14%) in Class I (hazardous waste) underground injection wells, RCRA Subtitle C (hazardous waste) landfills and other landfills
  - ▶ 612 million pounds (14%) of other land disposal (such as waste piles, spills or leaks)
  - ▶ 223 million pounds (5%) in surface water discharges

- 12% (518 million pounds) was sent **off-site** for disposal or other releases, including
  - ▶ 331 million pounds (7%) to underground injection wells, RCRA Subtitle C landfills and other landfills
  - ▶ 83 million pounds (2%) of metals sent for solidification and/or stabilization



*As noted above, 14% of on-site disposal or other releases, and 7% of off-site disposal or other releases were disposed of in Class I wells, RCRA Subtitle C and other landfills. These facilities may limit contamination and human exposure by disposing of or otherwise releasing waste in certain ways. For example, disposal of harmful materials in Class I Underground Injection wells located in isolated formations beneath the lowermost underground source of drinking water limits potential for contamination. Similarly, disposal to landfills that are designed with liners, covers, leak detection systems, and groundwater monitoring systems also limits the potential for human exposure and contamination.*

**What were the other waste management quantities and total production-related waste for 2003?**

TRI chemicals managed in production-related waste totaled 25.8 billion pounds in 2003.

- 36 percent (9.31 billion pounds) was recycled on- and off-site.
- 33 percent (8.53 billion pounds) was treated on- and off-site.
- 17 percent (4.54 billion pounds) was disposed of or otherwise released on- and off-site, including
  - ▶ 626 million pounds (2%) on-site disposal to Class I underground injection wells, RCRA Subtitle C landfills and other landfills

- ▶ 3.25 billion pounds (13%) other on-site disposal or other releases
- ▶ 406 million pounds (2%) off-site disposal to Class I underground injection wells, RCRA Subtitle C landfills and other landfills
- ▶ 255 million pounds (1%) other off-site disposal or other releases
- 13 percent (3.44 billion pounds) was combusted for energy recovery on- and off-site.

*The Pollution Prevention Act of 1990 (PPA) requires facilities to report information about the quantities of TRI chemicals they manage in waste, both on-and off-site, including amounts reported as recycled, burned for energy recovery, treated or disposed of or otherwise released on- or off-site.*

### How do the 2003 TRI data compare to the 2002 TRI data?

In this section, we will present both net changes from 2002 to 2003, and underlying shifts in management methods. Sometimes a specific method of handling a chemical may increase, even though the overall trend is a decrease.

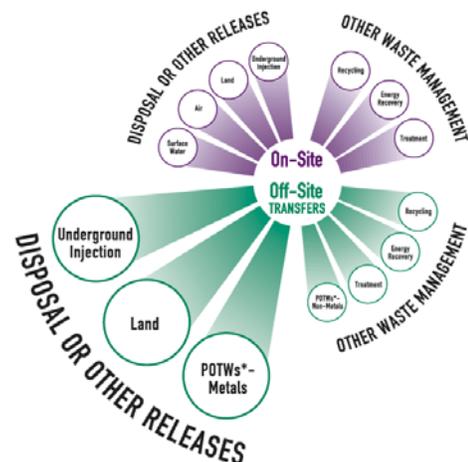
Overall, when compared to quantities reported for the previous year (2002), total disposal or other releases of TRI chemicals **decreased** by 306 million pounds or 6%.



- On-site disposal or other releases **decreased** by 310 million pounds (7%).
  - ▶ Land disposal other than landfills (such as waste piles, spills and leaks) **decreased** by 344 million pounds (36%),
  - ▶ Land treatment **decreased** by 6.2 million pounds (28%)
  - ▶ Surface water discharges **decreased** by 10 million pounds (4%),
  - ▶ Air emissions **decreased** by 48 million pounds (3%),
  - ▶ Class I underground injection wells **decreased** by 2.4 million pounds (1%),

- ▶ However, surface impoundments **increased** by 51 million pounds (7%),
- ▶ RCRA Subtitle C landfills and other landfills **increased** by 49 million pounds (13%), and
- ▶ Class II-V underground injection wells **increased** by 1.4 million pounds (7%).

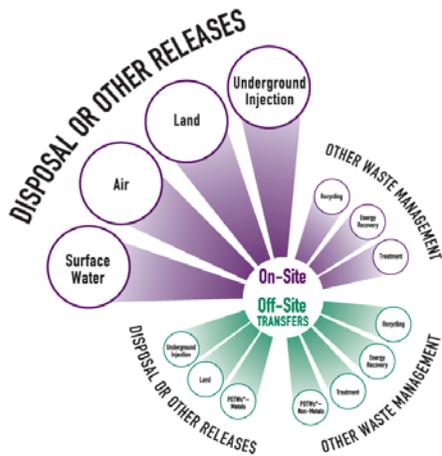
- Off-site disposal or other releases **increased** by 3.5 million pounds (less than 1%).
  - ▶ RCRA Subtitle C landfills **increased** by 13 million pounds (36%),
  - ▶ Other landfills **increased** by 43 million pounds (19%).



**What are some of the reasons for the decrease from 2002 to 2003?**

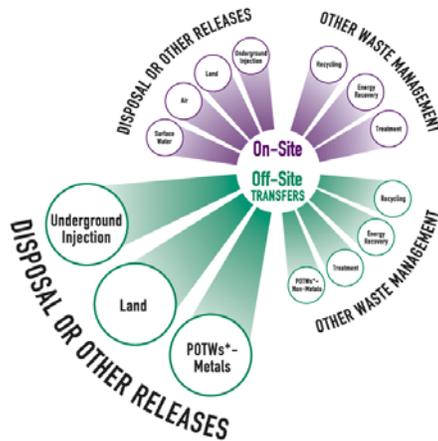
The metal mining sector had a decrease of 18% (274 million pounds) from 2002. This sector, which also had a large decrease from 2001 to 2002, may still be adjusting their reporting to conform to a court case, Barrick Goldstrike Mines, Inc. v. Whitman, (Civ. Action No. 99-958 (T.P.J.)). The decrease could also be due to decreases in mining activity or other factors.

Total disposal or other releases of TRI chemicals, without the metal mining sector (which had a decrease of 274 million pounds), **decreased** by 32 million pounds or 1%.



- On-site disposal or other releases **decreased** by 35 million pounds (1%).
  - ▶ Air emissions **decreased** by 48 million pounds (3%),
  - ▶ Other land disposal (such as waste piles, spills and leaks) **decreased** by 31 million pounds (38%), and
  - ▶ Surface water discharges **decreased** by 10 million pounds (4%).
  - ▶ However, RCRA Subtitle C landfills **increased** by 48 million pounds (39%) and
  - ▶ Other landfills **increased** by 21 million pounds (9%)

- Off-site disposal or other releases **increased** by 3.6 million pounds (7%).
  - ▶ RCRA Subtitle C landfills **increased** by 13 million pounds (36%) and
  - ▶ Other landfills **increased** by 43 million pounds (19%)

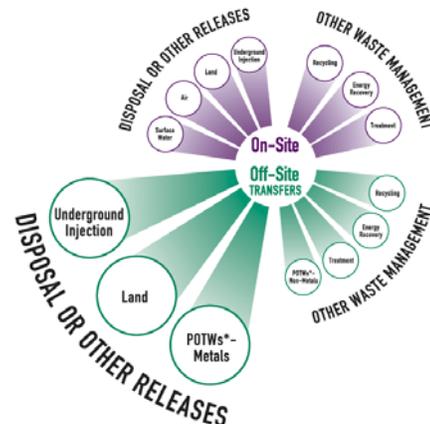


The preferred measure of environmental progress is reduction in TRI releases. To the extent that releases are still occurring, another measure of progress may be seen in changes in management practices, in a way that limits potential for human exposure and environmental contamination. We have seen a shift from 2002 to 2003 in how TRI chemical releases are managed.



- On-site disposal or other releases to Class I Underground Injection Wells, RCRA Subtitle C Landfills, and Other Landfills increased by almost 8% from 2002 to 2003. This occurred while total on-site disposal or other releases decreased by over 7%.

- Off-site disposal or other releases to Class I Underground Injection Wells, RCRA Subtitle C Landfills, and Other Landfills increased by over 20%, while the total for off-site disposal or other releases increased by less than 1%.



Overall, what this means is that from 2002 to 2003, total on- and off-site disposal or other releases decreased by over 300 million pounds (from over 4.7 billion to roughly 4.4 billion pounds). Of these total disposal or other releases, an additional 100 million pounds is being managed in wells and landfills.

Total production-related waste managed **decreased** by 2 percent (by 403 million pounds) from 2002 to 2003, although some activities did show increases.



- Recycling on-site **decreased** by 311 million pounds (4%).
- Energy recovery on-site **decreased** by 138 million pounds (5%).
- Treated on-site **increased** by 629 million pounds (9%).
- Quantity disposed of or otherwise released **decreased** by 315 million pounds (6%).

Recycling off-site **decreased** by 131 million pounds (7%)

- Energy recovery off-site **decreased** by 100 million pounds (12%)
- Treated off-site **decreased** by 37 million pounds (7%)



### **Which industry sectors reported the largest decreases in disposal or other releases, 2002-2003?**

- The metal mining sector reported the largest total disposal or other releases in 2003 (1.52 billion pounds) and the largest **decrease** in disposal or other releases from 2002: 274 million pounds (18%).
- Chemical manufacturers reported 564 million pounds of total disposal or other releases in 2003 and a **decrease** of 20 million pounds (3%).
- The primary metals sector reported 477 million pounds in 2003 and a **decrease** of 17 million pounds (3%).

### **Which industry sectors reported the largest increases in disposal or other releases, 2002-2003?**

- Hazardous waste/solvent recovery facilities reported 227 million pounds in 2003, an **increase** of 43 million pounds (20%), including an increase of 36 million pounds in on-site disposal in RCRA Subtitle C landfills.

### **Which types of facilities had the largest disposal or other releases in 2003?**

As part of the annual PDR, EPA has historically provided a list of facilities that have the largest releases of TRI chemicals to the environment. It's important to note that these facilities do not necessarily pose the greatest risk to the environment. As explained in detail in the EPA report, *Factors to Consider When Using TRI Data* (available on the TRI Web site), total quantities of TRI chemicals released or otherwise disposed of is one important factor among several that determines the potential risk that may be posed.

This year, EPA is presenting the "Top 50" facilities with largest disposal or other releases in charts that are available on the TRI Web site. It's important to note that there is a huge variation in the amounts of TRI chemicals released per facility. In 2003, the range of TRI disposal or other releases is from 0 to 487 million pounds. The average disposal or other releases of TRI chemicals per facility is about 186,000 pounds. The reason some facilities have amounts far in excess of the average are several:

- Certain industry sectors, such as mining, smelting, and the electric power industries, process large volumes of material and not surprisingly the totals for TRI chemicals are also larger than average.
- Even within a given sector, certain facilities are simply larger (in terms of economic parameters such as sales, employment, etc.) and so they process relatively large amounts of input material to produce large amounts of output material (product). And,
- Facilities differ in their relative efficiency in processing material, i.e., for a given unit of output, facilities differ in the amount of release or waste that is produced.

As one might expect, the facilities with the largest amounts are mining facilities. In fact, the top 4 facilities, which each have over 100 million pounds of total on- and off-site disposal or other releases, are all mining operations. Other facilities in the "Top 50" include a variety of industries, with total disposal or other releases ranging from over 40 million to 11 million pounds.

This year, for the first time, EPA is also presenting facility rankings taking into account the management methods used for the TRI chemicals. In addition to presenting the Top 50 facilities with largest total on- and off-site disposal or other releases, we are also presenting the Top 50 facilities with total disposal or other releases, subtracting out the totals that are managed in Class I underground injection wells, Subtitle C landfills, and other landfills. As discussed above, this second group of rankings is perhaps a better, although still imperfect, indication of the amount of TRI chemicals that may be available to the environment. In this second group of rankings, a limited number of facilities that manage TRI chemicals mostly or totally in Class I wells or landfills drop down in the rankings, or drop out of the Top 50 altogether. (The top 4 facilities mentioned above remain the top 4 facilities.)

Finally, for similar reasons, EPA has provided two sets of rankings (top 10) of US counties with the largest disposal or other releases. One set of rankings shows total disposal or other releases, and the second shows total disposal or other releases, adjusted to subtract out quantities in Class I wells and landfills. As with facilities, the very top (in this case 5) counties do not change, but there is some shifting in the second 5 to reflect that some counties are home to Class I wells or landfills, and when those totals are not counted, they are no longer among the counties with the most TRI chemical disposal or other releases.

### **Federal Facilities**

All federal facilities, whether operated by federal agencies or contractors (e.g. military bases), are required to report to EPA's TRI Program.

- For 2003, 295 federal facilities reported 78 million pounds of total on- and off-site disposal or other releases.
- Disposal or other releases by federal facilities **decreased** by 7.4 million pounds (9%) from 2002 to 2003.
- Total production-related waste managed at federal facilities **decreased** by 5.5 million pounds or 3% from 2002 to 2003.

#### **What are some of the reasons for the decrease from 2002 to 2003?**

*The Tennessee Valley Authority utilities reported a decrease in total disposal or other releases of 6.9 million pounds (8%) from 2002 to 2003, including a decrease of 6.2 million pounds in air emissions, primarily hydrochloric acid (3.3 million pounds) and sulfuric acid (2.9 million pounds).*

### **2003 Chemical Snapshots**

#### **PERSISTENT BIOACCUMULATIVE TOXIC (PBT) CHEMICALS**

2003 is the fourth year that TRI includes data, at reduced reporting thresholds, on PBT chemicals such as dioxins, mercury, and polychlorinated biphenyls (PCBs). It is the third year of TRI reporting data for lead and lead compounds at reduced thresholds.

**Why is there particular concern for PBT chemicals?**

*PBT chemicals are of particular concern not only because they are toxic, but also because they remain in the environment for long periods of time and are not readily destroyed (they persist) and build up or accumulate in body tissues (they bioaccumulate).*

**What were the total PBT disposal or other releases for 2003?**

Total disposal or other releases of PBT chemicals reported were 465 million pounds in 2003.

- 94% (435 million pounds) were disposed of or otherwise released **on-site**, including
  - ▶ 46% (213 million pounds) in other land disposal (such as waste piles, spills or leaks).
  - ▶ 29% (134 million pounds) in on-site surface impoundments other than RCRA Subtitle C surface impoundments.
- 6% (30 million pounds) were disposed of or otherwise released **off-site**.
- 18% (77 million pounds) of **on-site** disposal and other releases were to Class I wells, RCRA Subtitle C landfills and other landfills.
- 59% (18 million pounds) of **off-site** disposal and other releases were to Class I wells, RCRA Subtitle C landfills and other landfills.

As noted earlier, these facilities may limit contamination and human exposure by disposing of or otherwise releasing waste in certain ways. PBT chemicals are managed in these facilities to a greater extent than TRI chemicals in general.

Type of TRI Chemical	Percentage of Chemical Totals Disposed of or Otherwise Released in Class I Underground Injection Wells, RCRA Subtitle C Landfills, and Other Landfills	
	On-site	Off-site
All TRI Chemicals	14%	7%
TRI PBT Chemicals	18%	59%

**What were the top PBT chemicals disposed of or otherwise released in 2003?**

- 93% (432 million pounds) of total disposal or other releases of PBT chemicals in 2003 was accounted for by lead and lead compounds.
- 5% (22 million pounds) was accounted for by PCBs in 2003.
- 2% (7.4 million pounds) of total disposal or other releases of PBT chemicals in 2003 was accounted for by mercury and mercury compounds.
- 269,037 **grams** (approximately 593 pounds) of total disposal or other releases of PBT chemicals in 2003 was accounted for by dioxin and dioxin-like compounds.

**How do the 2003 PBT data compare to the 2002 PBT data?**

Overall, when compared to quantities reported for the previous year (2002), total disposal or other releases of persistent bioaccumulative and toxic (PBT) chemicals **increased** by 50 million pounds or 11% from 2002 to 2003.

- Lead and lead compounds increased by 27 million pounds (7%)
- Polychlorinated biphenyls increased by 20 million pounds from 2 million pounds in 2002, including one hazardous waste facility that reported an increase of 16 million pounds in disposal in on-site RCRA Subtitle C landfills.

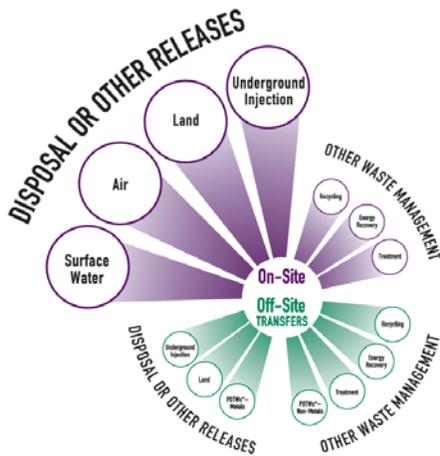
## LEAD AND LEAD COMPOUNDS

The reporting threshold for lead and lead compounds was lowered beginning with the 2001 reporting year so this is the third year of reporting under the lowered threshold.

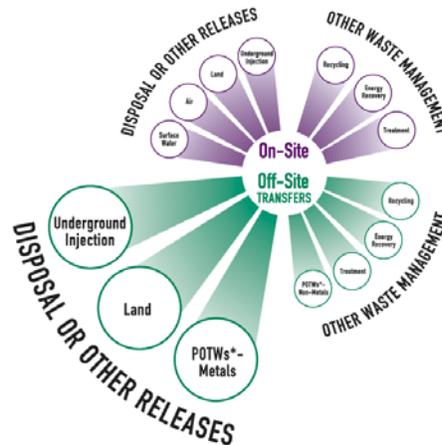
### What were the total reported disposal or other releases of lead and lead compounds for 2003?

Total disposal or other releases of lead and lead compounds were 432 million pounds for 2003.

- 94% (404 million pounds) was disposed of or otherwise released **on-site**, including:
  - ▶ 207 million pounds (48%) of other land disposal (such as waste piles, spills or leaks);
  - ▶ 132 million pounds (31%) to surface impoundments, other than RCRA Subtitle C surface impoundments; and
  - ▶ 1.3 million pounds (0.3%) of air emissions.



- 6% (28 million pounds) were **off-site** disposal or other releases



### How do the 2003 data compare to 2002 and 2001 (the first year of reporting under the lower threshold) for lead and lead compounds?

From 2002 to 2003 disposal or other releases for lead and lead compounds **increased** by 26.7 million pounds or 7%.

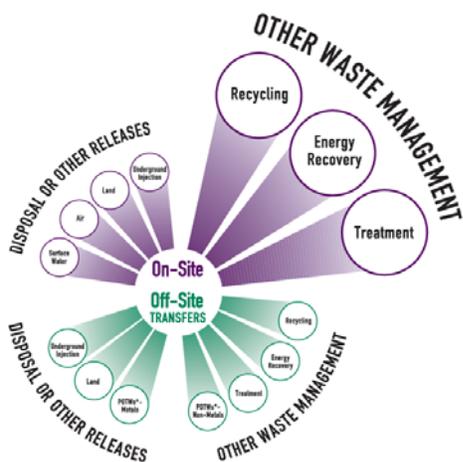
- The metal mining sector accounted for 80% of the total disposal or other releases in 2003 and an **increase** of 9% from 2002 to 2003.
- Without the metal mining sector, total on- and off-site disposal or other releases **decreased** by 3% from 2002 to 2003.
- Some industry sectors reported **decreases**, including:
  - ▶ Primary metals facilities, with a **decrease** of 1% from 2002 to 2003; and
  - ▶ Electric utilities, with a **decrease** of 4% from 2002 to 2003.

Lead and lead compounds disposal or other releases **increased** by 1.9 million pounds or 0.4% from **2001 to 2003**.

- The metal mining sector had an **increase** of 3% from 2001 to 2003.
  - ▶ One metal mining facility reported 38% of the total 2003 disposal or other releases (mostly on-site) and accounted for an increase of 33 million pounds from 2001 to 2003.
- Without the metal mining sector total disposal or other releases of lead and lead compounds **decreased** by 9% from 2001 to 2003.
- Some industry sectors reported **decreases**, including:
  - ▶ Primary metals facilities, with a **decrease** of 36% from 2001 to 2003; and
  - ▶ Electric utilities, with a **decrease** of 7% from 2001 to 2003.
- Facilities reporting zero disposal or other releases represented about 18% of all facilities (1,504 facilities) reporting lead and lead compounds in 2003 and about 20% in 2001 (1,751 facilities).

### What were the other waste management quantities and total production-related waste managed for lead and lead compounds for 2003?

Total production-related waste managed for lead and lead compounds was 1.2 billion pounds for 2003. Most of the lead waste was recycled.



- 64% (791 million pounds) was recycled, mostly recycling **on-site** (561 million pounds).
  - ▶ 404 million pounds was recycled on-site by primary metals facilities, and
- 36% (438 million pounds) was the quantity managed as **on-site** disposal or other releases.
  - ▶ Metal mining had 348 million pounds mainly as on-site disposal or releases other than to landfills or underground injection.

- 153 million pounds were recycled **off-site** by electronic/electrical equipment manufacturers.



Total production-related waste managed for lead and lead compounds **increased** by 2% (21 million pounds) from 2002 to 2003, but had an overall **decrease** of 3% (43 million pounds) from 2001 to 2003.

- Recycling **decreased** by 1% from 2002 to 2003 and by 5% from 2001 to 2003.

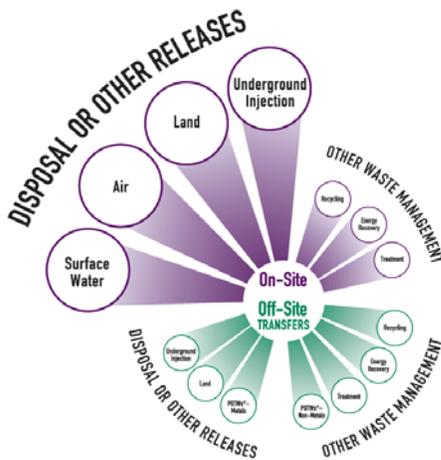
- Quantity disposed of or otherwise released **increased** by 7% from 2002 to 2003 and by 1% from 2001 to 2003, including
  - Lead and lead compounds from primary metals which **increased** by 11% from 2002-2003 and by 8% from 2001 to 2003.
  - Lead and lead compounds from metal mining which **increased** by 9% from 2002 to 2003 and by 3% from 2001 to 2003.
  - Lead and lead compounds from electronic/electrical equipment which **decreased** by 13% from 2002 to 2003 and by 25% from 2001 to 2003.

## MERCURY AND MERCURY COMPOUNDS

The reporting threshold for mercury and mercury compounds was lowered to 10 pounds beginning with reporting year 2000, so this is the fourth year of reporting under the lowered threshold.

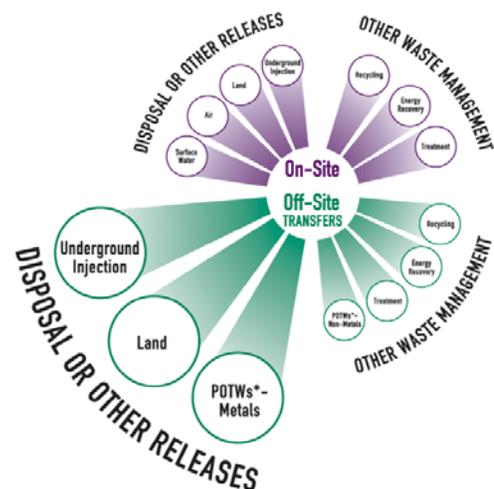
### What were the total mercury and mercury compounds disposal or other releases for 2003?

Total disposal or other releases of mercury and mercury compounds were 7.4 million pounds in 2003.



- 97% (7.2 million pounds) were **on-site** disposal or other releases, including
  - 5.3 million pounds (72%) of other land disposal (such as waste piles, spills or leaks)
  - 1.5 million pounds (20%) of surface impoundments, other than RCRA Subtitle C surface impoundments
  - 142,808 pounds (3%) of air emissions

- 3% (196,131 pounds) were **off-site** disposal or other releases.
- Two metal mining facilities accounted for 80% (5.9 million pounds) of the total on- and off-site disposal or other releases of mercury and mercury compounds for 2003.
  - These facilities reported disposal or other releases mainly to on-site surface impoundments and on-site landfills other than RCRA Subtitle C landfills.



### Which industry sectors reported the largest disposal or other releases of mercury and mercury compounds in 2003?

- The metal mining industry reported the largest disposal or other releases of mercury and mercury compounds (91% of the total mercury and mercury compounds disposal or other releases).
  - ▶ Electric utilities reported the largest air emissions of any industry sector, with 64% of all air emissions of mercury and mercury compounds.
- Hazardous waste/solvent recovery facilities reported the largest off-site disposal or other releases (off-site transfers to disposal) of mercury and mercury compounds with 74% of all off-site disposal or other releases.

### How do the 2003 data compare to data for 2002 and 2000 for mercury and mercury compounds?

From **2002 to 2003**, disposal or other releases for mercury and mercury compounds **increased** by 41% (2.1 million pounds).

- Total on-site disposal or other releases **increased** by 42% (2.1 million pounds), including
  - ▶ **increase** of 5.3 million pounds in other land disposal (waste piles, spills and leaks)
  - ▶ **decrease** of 1,216 pounds (1%) in air emissions.
- Total off-site disposal or other releases **increased** by 17% (28,925 pounds).

#### **What caused the 41% increase in disposal or other releases of mercury and mercury compounds?**

*The preceding percentage was not adjusted to account for a facility reporting error. After adjusting for this facility's error, total disposal or other releases show an increase of 13% from 2002 to 2003. However, the TRI data available to the public through TRI Explorer will show total disposal or other releases of mercury and mercury compounds from 2002 to 2003 as 41% (2.1 million pounds) because this facility error has not been corrected in the TRI data at this time.*

*Without reporting by the two largest facilities (which excludes the facility reporting error mentioned above), disposal or other releases of mercury and mercury compounds decreased by 6% (101,491 pounds).*

- While electric utilities reported the largest air emissions of any industry sector, there was no appreciable change in air emissions of mercury and mercury compounds from electric utilities from 2002 to 2003.

From **2000 to 2003** (over four years), disposal or other releases for mercury and mercury compounds **increased** by 98% (3.7 million pounds).

- Total on-site disposal or other releases **increased** by 108% (3.7 million pounds)

- ▶ Two metal mining facilities reported a combined **increase** of 3.8 million pounds from 2000 to 2003.
- ▶ Without reporting by these facilities, disposal or other releases of mercury and mercury compounds **decreased** by 6% (94,358 pounds) from 2000 to 2003.
- On-site air emissions of mercury and mercury compounds **decreased** by 18,219 pounds (11%) from 2000 to 2003.

### What were the other waste management quantities and the total production-related waste managed for mercury and mercury compounds for 2003?

Total production-related waste managed for mercury and mercury compounds was 5.15 million pounds for 2003. Most of the mercury waste was recycled.

- 25% (1.3 million pounds) was recycled, mostly recycling **on-site** (1.1 million pounds).

### DIOXIN AND DIOXIN-LIKE COMPOUNDS

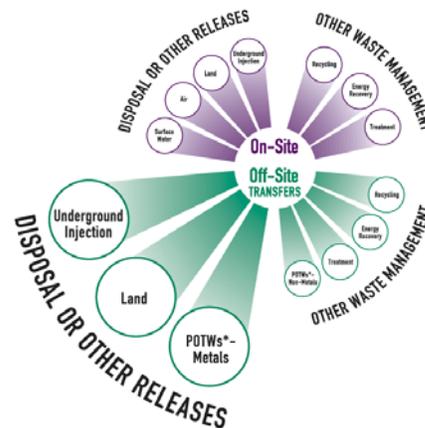
Dioxin and dioxin-like compounds were added to the TRI list for reporting year 2000 at a lowered reporting threshold of 0.1 grams. Please note: data for dioxin and dioxin-like compounds are reported in grams.

### What were the total dioxin and dioxin-like compounds disposal or other releases for 2003?

Total disposal or other releases for dioxin and dioxin-like compounds were 269,037 grams (approximately 593 pounds) in 2003.



- 26% (69,661 grams) were **on-site** disposal or other releases, including
  - ▶ 1% (3,212 grams) of air emissions



- 74% (199,376 grams) were **off-site** disposal or other releases, including
  - ▶ One facility reported 138,972 grams, mainly as disposal in landfills other than RCRA Subtitle C landfills, due to transferring waste such as telephone poles.

## How do the 2003 data compare to data for 2002 and 2000 for dioxins and dioxin-like compounds?

- From **2002 to 2003**, total disposal or other releases of dioxin and dioxin-like compounds **increased** by 129,433 grams (93%).
  - ▶ One facility reported an increase of 134,269 grams from 2002 to 2003 due to transferring waste such as telephone poles.
  - ▶ Without reporting by this one facility with a large increase, total disposal or other releases **decreased** by 4% (4835 grams) from 2002 to 2003.
    - On-site disposal or other releases **increased** by 30% (15,794 grams). One facility reported an increase of 13,721 grams from 2002 to 2003.
    - Off-site disposal or other releases **decreased** by 25% (20,629 grams).
  - ▶ On-site air emissions **increased** by 390 grams (14%) from 2002 to 2003.
- From **2000 to 2003**, total disposal or other releases of dioxin and dioxin-like compounds **increased** by 170,027 grams (172%).
  - ▶ One facility reported an increase of 138,967 grams from 2000 to 2003 due to transferring waste such as telephone poles
  - ▶ Without reporting by this one facility with a large increase, total disposal or other releases **increased** by 31% (31,060 grams) from 2000 to 2003.
  - ▶ On-site air emissions **decreased** by 537 grams (14%) from 2000 to 2003.

## Looking at TRI data over the years

### TRI DATA, 1998-2003

Over the six years from 1998 to 2003, total on- and off-site disposal or other releases of TRI chemicals **decreased** by 42 percent (by 2.87 billion pounds).

- The metal mining sector reported an overall **decrease** of 2.13 million pounds.
- Without the metal mining sectors, total disposal or other releases **decreased** by 20 percent (by 739 million pounds).

Total production-related waste managed **decreased** by 13% (3.56 billion pounds) from 1998 to 2003.

- Quantity disposed of or otherwise released **decreased** by 42% (2.86 billion pounds)
- Recycling on- and off-site **decreased** by 8% (707 million pounds)
- Energy recovery on- and off-site **decreased** by 5% (188 million pounds)
- Treatment on- and off-site **increased** by 2% (188 million pounds)

### TRI DATA, 1988-2003

Over the sixteen years from 1988 to 2003, total on- and off-site disposal or other releases of TRI chemicals **decreased** by 59 percent (by 1.87 billion pounds), looking at trends in the industries and chemicals that have been consistently reported since that time.