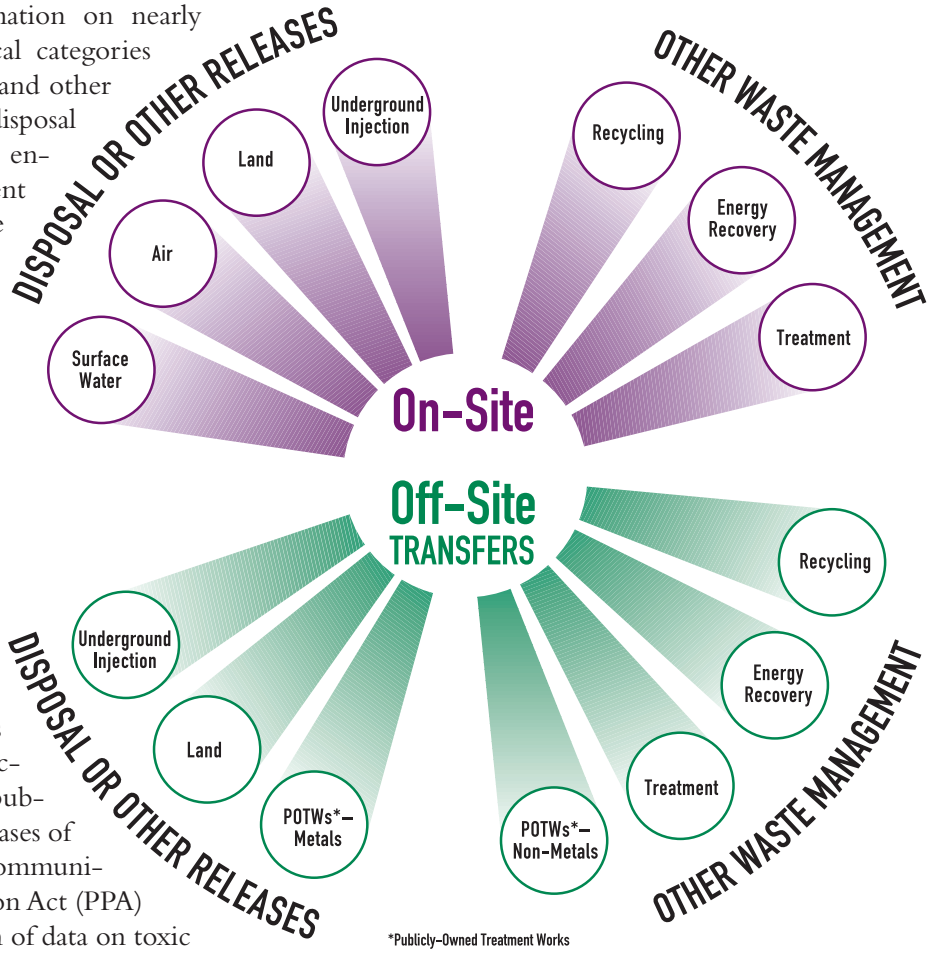
2003
Toxics Release Inventory (TRI) Public Data Release Report

EPA 260-R-05-001
May 2005

What is the Toxics Release Inventory?

The Toxics Release Inventory (TRI) is a database containing detailed information on nearly 650 chemicals and chemical categories that over 23,000 industrial and other facilities manage through disposal or other releases, recycling, energy recovery, or treatment (see Figure 1). The data are collected from industries including manufacturing, metal and coal mining, electric utilities, commercial hazardous waste treatment, and other industrial sectors.

Figure 1: Information Collected Under TRI



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 U.S. Environmental Protection Agency (EPA) maintains this information in a national database called the Toxics Release Inventory, which is available to the public via the Internet (**www.epa.gov/tri**).

What are the benefits of TRI data?

The TRI provides the public with unprecedented access to information about toxic chemical releases and other waste management activities on a local, state, regional, and national level.

TRI data help the public, government officials and industry:

- identify potential concerns and gain a better understanding of potential risks;
- identify priorities and opportunities to work with industry and government to reduce toxic chemical disposal or other releases and potential risks associated with them; and
- establish reduction targets and measure progress toward reduction goals.

TRI data are widely used across EPA programs. For example, the National Partnership for Environmental Priorities, an element of the Resource Conservation Challenge (RCC), uses TRI data to identify facilities that may present pollution prevention opportunities. EPA also uses TRI data in the Risk Screening Environmental Indicators (RSEI) tool, which provides users with additional understanding of chronic human health and potential exposures associated with TRI chemicals. You can search for other EPA programs and tools that utilize TRI data by visiting EPA's Web site at **www.epa.gov** or from EPA's publication *How are the Toxics Release Inventory Data Used?* at **www.epa.gov/tri/guide_docs/2003_datausepaper.pdf**.

What are the limitations of the TRI data?

Users of TRI data should be aware that TRI data reflect disposal or other releases and other waste management activities for chemicals, not whether (or to what degree) the public has been exposed to them. Both the toxicity of a chemical and exposure should be taken into account when using the data.

- TRI chemicals vary widely in **toxicity**, or their potential to produce toxic effects. Some high-volume releases of less toxic chemicals may appear to be more serious than lower-volume releases of highly toxic chemicals, when just the opposite may be true.
- The potential for **exposure** may be greater the longer the chemical remains unchanged in the environment. Sunlight, heat, or microorganisms may or may not decompose the chemical. Smaller releases of a persistent, highly toxic chemical may create more serious problems than larger releases of chemicals that are rapidly converted to less toxic forms.

For more detailed information on this subject refer to the *Toxics Release Inventory (TRI) and Factors to Consider When Using TRI Data* document at **www.epa.gov/tri/tridata**.

What should I know about the different types of disposal or other releases?

The TRI Program collects data on a number of different types of disposal or other releases, as well as on certain waste management and recycling practices. Disposal or other releases of chemicals into the environment occur through a range of practices that may ultimately affect the potential for human exposure to the toxic chemicals. Facility releases may include discharges to air, water, and land. Facilities limit contamination and human exposure by disposing of or otherwise releasing waste in certain ways. For example:

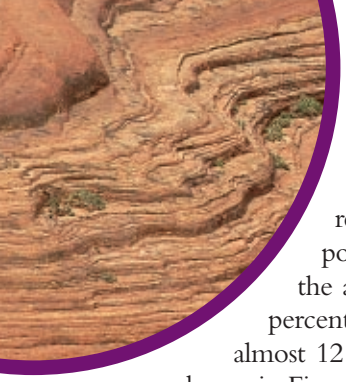
- Disposal of harmful materials to Class I Underground Injection wells located in isolated formations beneath the lowermost underground sources of drinking water, which limits potential for contamination; and
- Disposal to landfills that are designed with liners, covers, leak-detection systems, and groundwater monitoring systems also limit the potential for human exposure to the contents of the landfill.

Most disposal or other release practices are subject to a variety of regulatory requirements designed to limit environmental harm. Please refer to the *Toxics Release Inventory (TRI) and Factors to Consider When Using TRI Data* (**www.epa.gov/tri/tridata**) for more information on the differences of these data elements.

What should I know about persistent bioaccumulative toxic (PBT) chemicals?

Starting in 2000, EPA established more stringent reporting thresholds for persistent bioaccumulative toxic (PBT) chemicals originally on, or added to, the TRI chemical list. 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, are not readily destroyed, and build up or accumulate in body tissue. The TRI PBT chemicals include dioxin and dioxin-like compounds, lead and lead compounds, mercury and mercury compounds, polycyclic aromatic compounds (PACs), polychlorinated biphenyls (PCBs), and certain pesticides, among other chemicals.

For more detailed information about the Agency's multimedia strategy for priority PBT chemicals, visit EPA's Office of Prevention, Pesticides, and Toxic Substances Web site at **www.epa.gov/opptintr/pbt/pbtstrat.htm**.



What do TRI data show for reporting year (RY) 2003?

For RY 2003, 23,811 facilities, including federal facilities, reported to EPA's TRI Program. They reported 4.44 billion pounds of on-site and off-site disposal or other releases of the almost 650 toxic chemicals, as shown in Table 1. Over 88 percent of the total was disposed of or otherwise released on-site; almost 12 percent was sent off-site for disposal or other releases, as shown in Figure 2.

Persistant bioaccumulative toxic (PBT) chemicals accounted for 464.8 million pounds or 10% of reported on- and off-site disposal or other releases in RY 2003. Of that total, lead and lead compounds accounted for 93% or 432.0 million pounds. Total disposal or other releases for mercury and mercury compounds were 7.4 million pounds and, for dioxin and dioxin-like compounds, they were 269,050 grams. PCBs accounted for 5% or 22 million pounds of the total disposal or other releases of PBT chemicals in 2003.

All federal facilities, whether operated by federal agencies or contractors (e.g. military bases), are directed to report to EPA's TRI Program. For RY 2003, a total of 295 federal facilities submitted 977 forms and reported 78.1 million pounds of total on-site and off-site disposal or other releases.

How did the TRI data change over time?

From RY 2002 to RY 2003, total disposal or other releases on- and off-site decreased by 305.9 million pounds or 6%. On-site disposal or other releases decreased by 7%, while off-site disposal or other releases increased by less than 1%. Total production-related waste managed decreased by 1.5% over the same period. While the total number of facilities reporting decreased by 4% (888 facilities) from 2002, there was also a 3% decrease in the average quantity disposed or otherwise released on- and off-site per facility.

The metal mining and primary metals sectors accounted for 29% of total disposal or other releases in 2003. If combined reporting by these two sectors is excluded, total disposal or other releases and total production-related waste managed decreased by less than 1% nationally.

Disposal or other releases of PBT chemicals increased by 11% in 2003. Disposal or other releases for lead and lead compounds increased 7% from 2002 to 2003. Without metal mining, disposal or other releases of lead and lead compounds decreased by 3%. Total disposal or other releases of mercury and mercury compounds increased by 41% (13% after accounting for a facility data error) from 2002 to 2003, although air emissions of mercury and its compounds decreased by 1%. Total disposal or other releases of dioxin and dioxin-like compounds increased by 129,433 grams from 2002 to 2003. Excluding one facility that reported an increase of 134,269 grams, total disposal or other releases of dioxin and dioxin-like compounds decreased by 4%. Disposal or other releases of PCBs increased by 20.4 million pounds from 2002 to 2003.

Federal facilities showed an overall decrease in disposal or other releases of 7.4 million pounds or 9% from 2002 to 2003. Total production-related waste managed at federal facilities decreased by 5.5 million pounds or 3%.

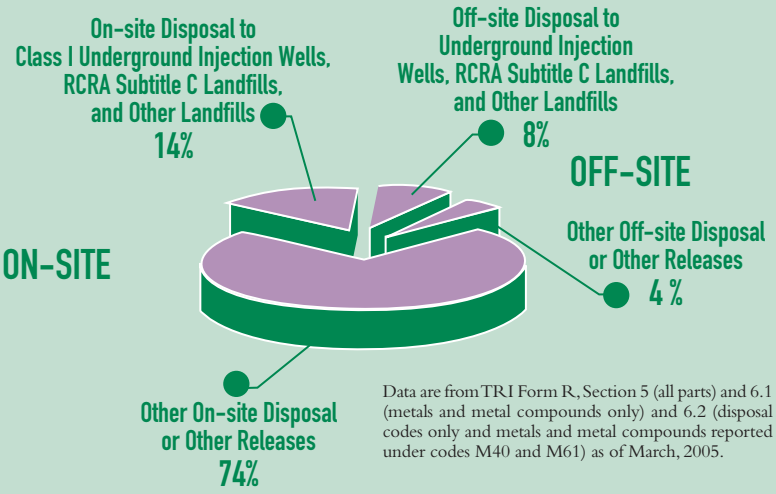
Starting in 1998, additional industries were required to report, including electric utilities, metal and coal mines, commercial hazardous waste treatment facilities and solvent recovery facilities, chemical wholesale distributors, and petroleum terminals and bulk stations. From 1998 to 2003, all TRI facilities, including those from the sectors added in 1998, have reported a 42% reduction in disposal or other releases, as shown in Figure 3.

Manufacturing facilities have been required to report to EPA's TRI Program since 1987. From 1988 to 2003, manufacturing facilities decreased their on- and off-site disposal or other releases by 59%, as shown in Figure 4.

Toxics Release Inventory, 2003

23,811 TRI facilities reported 4.44 billion pounds of on- and off-site disposal or other releases for RY 2003

Figure 2: Distribution of TRI Disposal or Other Releases, 2003

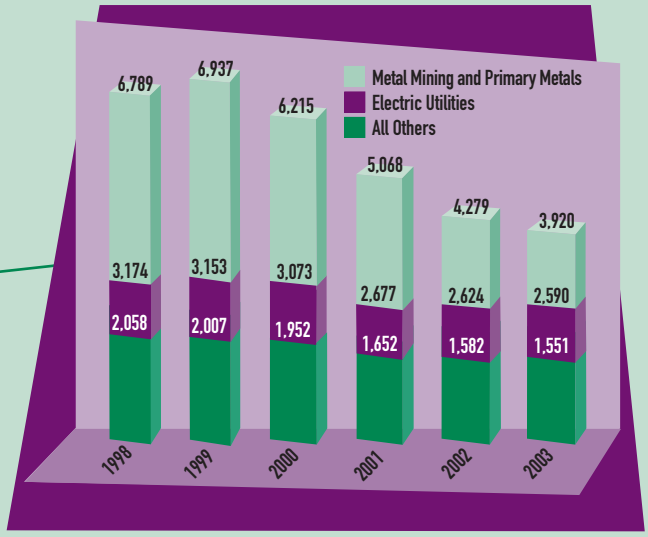


Data are from TRI Form R, Section 5 (all parts) and 6.1 (metals and metal compounds only) and 6.2 (disposal codes only and metals and metal compounds reported under codes M40 and M61) as of March, 2005.

What do TRI data show over a longer period of time?

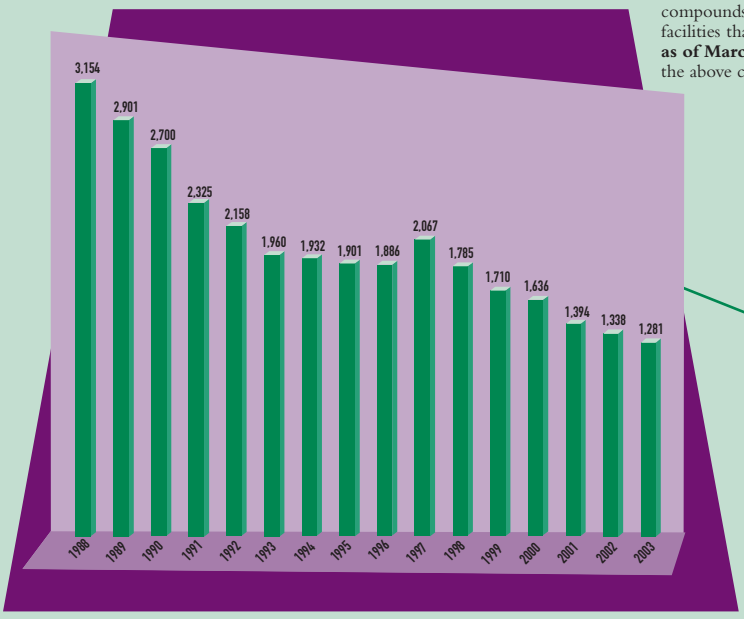
Total on- and off-site disposal or other releases from all facilities decreased by 42% from 1998-2003.

Figure 3: Total On- and Off-site Disposal or Other Releases, 1998-2003



Data are from TRI Form R, Sections 5 (all parts) and 6.1 (metals and metal compounds only) and 6.2 (Disposal codes only and metals and metal compounds reported under codes M40 and M61). Does not include PBT chemicals, vanadium and vanadium compounds. Does not include transfers to disposal or other releases sent to other TRI facilities that reported the amounts as on-site disposal or other releases. **Data shown as of March 2005.** Metal mining and primary metal operations are shown together on the above chart because several facilities have combined operations.

Figure 4: Total On- and Off-site Disposal or Other Releases, 1988-2003



Total on-and off-site disposal or other releases of the original chemicals from the original types of manufacturing facilities decreased by 59% from 1988-2003.

Data are from TRI Form, Sections 5 (all parts) and 6.1 (metals and metal compounds only) and 6.2 (Disposal codes only and metals and metal compounds reported under codes M40 and M61). Does not include delisted chemicals, chemicals added in 1990, 1994 and 1995, aluminum oxide, ammonia, hydrochloric acid, PBT chemicals, sulfuric acid, vanadium and vanadium compounds. For the years 1998 and after, does not include industries, other than manufacturing industries, that are required to report for 1998 and later years only. **Data shown as of March 2005.**

Note: The 2003 Public Data Release (PDR) uses the primary SIC code reported by the facility for all analysis purposes for all reporting years. As a result, previous years' analyses may not be directly compared to data as currently displayed here and in TRI Explorer. Please see the *Summary of Key Findings* document for additional information (**www.epa.gov/tri**).

TABLE 1: TRI ON-SITE AND OFF-SITE DISPOSAL OR OTHER RELEASES, 2003

	POUNDS
ON-SITE DISPOSAL TO CLASS I UNDERGROUND INJECTION WELLS, RCRA SUBTITLE C LANDFILLS, AND OTHER LANDFILLS	639,080,339
Class I Wells	200,402,228
RCRA Subtitle C Landfills	170,794,270
Other On-site Landfills	267,883,840
OTHER ON-SITE DISPOSAL OR OTHER RELEASES	3,281,608,191
Fugitive Air Emissions	205,095,324
Point Source Air Emissions	1,381,295,231
Surface Water Discharges	222,628,110
Class II-V Wells	21,968,824
Land Treatment	15,675,243
RCRA Subtitle C Surface Impoundments	5,542,266
Other Surface Impoundments	817,040,382
Other Land Disposal	612,362,811
TOTAL ON-SITE DISPOSAL OR OTHER RELEASES	3,920,688,530
OFF-SITE DISPOSAL TO CLASS I UNDERGROUND INJECTION WELLS, RCRA SUBTITLE C LANDFILLS, AND OTHER LANDFILLS	331,408,856
Class I Wells	10,306,569
RCRA Subtitle C Landfills	50,298,924
Other Landfills	270,803,363
OTHER OFF-SITE DISPOSAL OR OTHER RELEASES	186,622,431
Storage Only	5,674,497
Solidification/Stabilization (Metals and Metal Compounds Only)	83,170,051
Wastewater Treatment (Excluding POTWs) (Metals and Metal Compounds Only)	2,218,133
Transfers to POTWs (Metals and Metal Category Compounds Only)	1,888,476
Class II-V Wells	260,492
RCRA Subtitle C Surface Impoundments	300,843
Other Surface Impoundments	4,849,779
Land Treatment	9,288,780
Other Land Disposal	31,789,491
Other Off-site Management	15,963,360
Transfers to Waste Broker for Disposal	26,133,138
Unknown	5,085,389
TOTAL OFF-SITE DISPOSAL OR OTHER RELEASES	518,031,287
TOTAL ON-SITE AND OFF-SITE DISPOSAL OR OTHER RELEASES	4,438,719,817

Note: Data are from TRI Form, Sections 5 (all parts) and 6.1 (metals and metal compounds only) and 6.2 (Disposal codes only and metals and metal compounds reported under codes M40 and M61) as of March 2005. Off-site disposal or other releases transferred to other TRI facilities reporting such transfers as on-site disposal or other releases are not included.

These 23,811 facilities reported 25.8 billion pounds of TRI chemicals in waste managed during 2003. Over 36% was recycled, 33% was treated, 18% was disposed of or otherwise released on- and off-site, and 13% was used for energy recovery, as shown in Table 2.

TABLE 2: QUANTITIES OF TRI CHEMICALS IN WASTE BY WASTE MANAGEMENT ACTIVITY, 2003

WASTE MANAGEMENT ACTIVITY	POUNDS	PERCENT
QUANTITY RECYCLED	9,313,378,392	36.1
Quantity Recycled On-site	7,446,284,759	28.8
Quantity Recycled Off-site	1,867,093,633	7.2
QUANTITY USED FOR ENERGY RECOVERY	3,439,714,945	13.3
Quantity Used for Energy Recovery On-site	2,734,292,811	10.6
Quantity Used for Energy Recovery Off-site	705,422,134	2.7
QUANTITY TREATED	8,529,377,256	33.0
Quantity Treated On-site	8,003,315,384	31.0
Quantity Treated Off-site	526,061,872	2.0
TOTAL QUANTITY DISPOSED OF OR OTHERWISE RELEASED	4,541,862,224	17.6
TOTAL PRODUCTION-RELATED WASTE MANAGED	25,824,332,817	100.0
Non-production-related Waste Managed	30,506,478	

Note: Data are from TRI Form R, Section 8, as of March 2005.

What other information is available on the Public Data Release?

EPA has also developed an electronic report (eReport) for the 2003 Public Data Release. This report offers detailed information on the 2003 Public Data Release and is available on the TRI Web site. The eReport includes:

- a summary of key findings which provides a detailed look at the 2003 data;
- a TRI Data in Context section which provides trend information and additional ways to view and interpret TRI data; and
- additional tables and charts which provide a look at the top chemicals, industries, and facilities for 2003.

To access this report and other information on the TRI Program, please visit our Web site at: **www.epa.gov/tri**.

How can I access TRI data?

TRI Explorer: It's On-line! It's Easy! It's Your Right to Know!

TRI Explorer provides fast and easy access to the TRI data and can answer your questions about a chemical, facility, geographic area, or industry sector. Find out what chemicals are released to the air by facilities in your state in 2003, what facilities reported in your ZIP code, or what progress has been made in reducing TRI chemicals since 1988. TRI Explorer provides customized reports on these and many other topics from the TRI data. Users of TRI data can also customize maps of states or counties within a state to their preferences. Each report can be quickly and easily sorted by total disposal or other releases, by fugitive air emissions, by surface water discharges, by disposal to RCRA Subtitle C landfills, etc. Electronic fact sheets with 2003 data are also available for each state. Visit the TRI Explorer home page to begin creating your own report on TRI data at **www.epa.gov/triexplorer**.

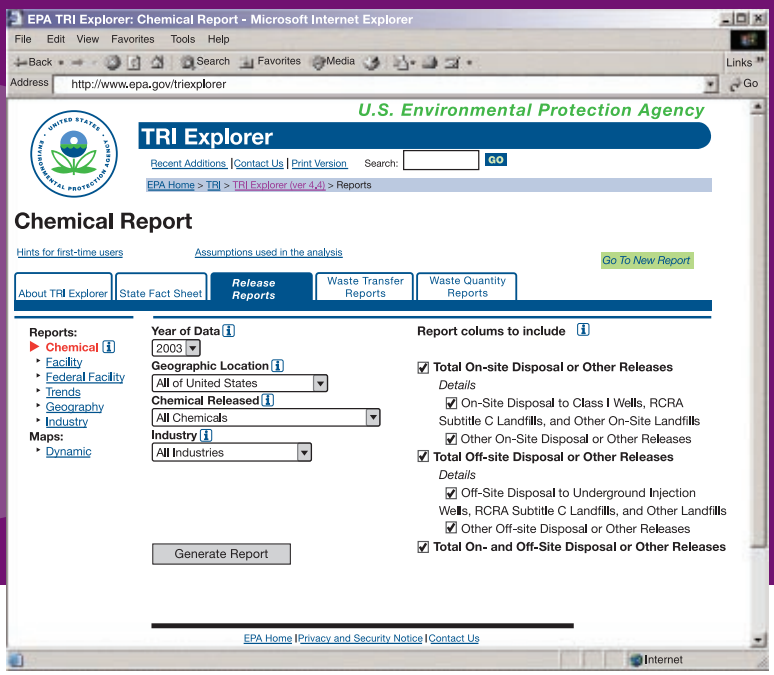
Customize reports,

research data

quickly and easily

from your own computer:

www.epa.gov/triexplorer



Where can I find contact information?

There are three other options for finding more detailed information:

- You can find out more information about the TRI program by contacting the toll-free Emergency Planning and Community Right-to-Know (EPCRA) Call Center at 1-800-424-9346, or
- You can seek assistance in accessing and using TRI data by contacting the TRI User Support Service 202-566-0250 or e-mailing your questions to **tri.us@epa.gov**, or
- You can find your state or regional TRI coordinator by visiting EPA's TRI Web site at **www.epa.gov/tri**.