

1994

# 1994

Toxic Release Inventory

Annual Report

---

---

## INTRODUCTION

### WHAT IS THE TOXIC RELEASE INVENTORY?

The Toxic Release Inventory, or TRI, is a publicly available database that contains specific toxic chemical release and transfer information from manufacturing facilities. This inventory was established under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA), which Congress passed to provide information to the public about the presence and release of toxic and hazardous chemicals in communities. The Pollution Prevention Act of 1990 expanded TRI to include mandatory reporting of additional waste management and pollution prevention activities.

Each year, manufacturing facilities meeting chemical use thresholds must report their estimated releases and transfers of toxic chemicals to U.S. EPA and to the state where the facility is located. The TRI list for 1994 includes over 300 chemicals and 20 chemical categories. A separate report, called a Form R, is required for each chemical the facility has manufactured, processed or otherwise used in amounts exceeding the thresholds.

TRI is a constantly changing body of information. Ohio EPA receives revisions from facilities regularly and enters these changes into Ohio EPA's database. Consequently, data retrieved from the system on different dates may show discrepancies between reports utilizing TRI data. The numerical data in this report includes submissions and revisions received by Ohio EPA before January 8, 1996. Updates to the database will begin again after this report is published.

### OHIO'S TRI PROGRAM

In 1988, the Ohio General Assembly passed the Ohio Right-to-Know Act, Substitute Senate Bill 367. This law provided for state implementation of EPCRA. Under this law, Ohio EPA is charged with the administration of Section 313 (Ohio Administrative Code 3745-100). The law gave Ohio EPA authority to enforce Section 313 with penalties up to \$25,000 per day. Finally, the law established filing fees for covered facilities to support the TRI Program. Ohio EPA's Division of Air Pollution Control coordinates the TRI Program.

### WHO MUST REPORT

A facility is required to report if it meets each of the following requirements:

1. It has 10 or more full-time employees;
2. It is included in the Standard Industrial Classification
3. codes 20 through 39;
3. It manufactured or processed a reportable toxic chemical in quantities exceeding the thresholds established by EPA for that year, or it otherwise used 10,000 pounds or more of a reportable toxic chemical for that calendar year. The threshold amounts for manufacturing and processing a toxic chemical are:

Calendar year 1987 75,000 pounds

Calendar year 1988 50,000 pounds

Calendar year 1989

and subsequent years 25,000 pounds

Facilities must submit a Form R for any listed chemical used in amounts that exceed the reporting threshold, even if the chemical is not released to the environment. Ohio facilities submitted an average of three TRI reports, or three chemicals per facility. The reporting criteria are such that only large users of toxic chemicals are obligated to file.

## **CHEMICALS**

The list of reportable toxic chemicals has evolved since the enactment of Section 313. Over 300 toxic chemicals and 20 chemical categories are currently subject to reporting under Section 313. These chemicals vary widely in form (solid, liquid and gas) and in human, animal and environmental toxicity.

The Administrator of U.S. EPA has the authority to modify the list of chemicals that must be reported. Petitions to add and delete chemicals have been submitted by industry, environmental groups, and state governors. U.S. EPA is currently evaluating chemicals which may be added or deleted from the list of reportable chemicals. Chemicals are removed from the list because they have not been shown to cause significant adverse human health or environmental effects. Chemicals which were delisted prior to July 1, 1995 were not required to be reported for calendar year 1994.

On November 30, 1993 U.S. EPA finalized the addition of 11 hydrochlorofluorocarbons (HCFCs), 21 chemicals and 2 chemical categories that were listed under the Resource Conservation and Recovery Act (RCRA). These chemicals were reportable beginning with calendar year 1994, with the reports filed July 1, 1995. On November 28, 1995, U.S. EPA published the final rule which added 286 toxic chemicals to the list of reportable chemicals. Approximately 170 of these chemicals are active ingredients in pesticides.

These chemicals will be reportable beginning with calendar year 1995, with the first reports due July 1, 1996.

Three changes to the chemical list significantly effected the releases reported for calendar year 1995. On June 30, 1995, non-aerosol forms of sulfuric acid were delisted. Air releases of sulfuric acid are reportable; however, releases to water, land, deepwell injection or transfers off-site are no longer reportable. On June 13, 1995, acetone was delisted. On June 30, 1995, ammonium sulfate was delisted, while the ammonia portion of ammonium sulfate continues to be reportable. This rulemaking formalizes policy on the reporting of ammonium sulfate which was issued in 1990. Guidance on reporting of ammonia also was issued. Facilities using ammonia may now report only 10% of the total aqueous ammonia released. This option applies to aqueous ammonia only. Tables 1 and table 2 identify the changes to the chemical list.

Table 1: Chemicals removed from the TRI list or redefined

Chemical	Effective Date	Chemical	Effective Date
Titanium Dioxide	06/20/88	Barium Sulfate	06/28/94
CI Acid Blue 9	10/07/88	Glycol Ethers (redefined)	07/05/94
Melamine	03/29/89	Hydrogen Sulfide (stayed)	08/22/94
Sodium Sulfate	06/20/89	Methyl Mercaptan (stayed)	08/22/94
Sodium Hydroxide	12/15/89	Butyl Benzyl Phthalate	02/17/95
Aluminum Oxide (non-fibrous)	12/14/90	Copper Phthalocyanine (redefined)	04/11/95
Terephthalic Acid	12/10/90	Acetone	06/13/95
CI Pigment Blue 15	05/23/91	Ammonia (redefined)	06/30/95
CI Pigment Green 7	05/23/91	Sulfuric Acid (non-aerosol)	06/30/95
CI Pigment Green 36	05/23/91	Ammonium Sulfate	06/30/95
n-Dioctyl Phthalate	10/05/93		

Table 2: Chemicals added to the TRI List

Chemical	Effective Date	Chemical	Effective Date
2,3-Dichloropropene	12/01/89	Halon 2402	8/03/90

m-Dinitrobenzene	12/01/89	Halon 1211	8/03/90
p-Dinitrobenzene	12/01/89	Halon 1301	8/03/90
o-Dinitrobenzene	12/01/89	CFC-11	8/03/90
Ally Alcohol	12/01/89	CFC-12	8/03/90
Isosafrole	12/01/89	CFC-114	8/03/90
Creosote	12/01/89	CFC-115	8/03/90
Toluene Diisocyanate	12/01/89	34 RCRA Chemicals	11/30/95
Dinitrotoluene - mixed isomers	12/01/89	286 Chemicals	11/28/95

### FORM R

Facilities report to U.S. EPA and Ohio EPA using the toxic chemical release inventory reporting form, Form R. Facilities may submit the reports using hard copy forms or on diskettes. Ohio EPA received over 50% of the reports electronically. The following information is reported on Form R:

the name and location of the facility the wastewater discharge, hazardous waste and deepwell injection permit numbers the identity of the listed toxic chemical how the chemical was used at the facility the maximum amount of chemical stored on-site the amount of toxic chemical transferred off-site for disposal, treatment, energy recovery, recycling or reuse waste treatment methods and efficiencies identification of on-site recycling or energy recovery processes amount of chemical used for energy recovery on-site and off-site amount of chemical recycled on-site and off-site amount of chemical treated on-site and off-site amount of chemical released due to remedial action or catastrophic events production ratio source reduction activities implemented during the calendar year

### COMPLIANCE

Under the Ohio Right-to-Know Act, Ohio EPA has the authority to enforce the TRI reporting requirements. Failure to comply with the reporting requirements can result in penalties of up to \$25,000 per day.

Ohio EPA annually inspects approximately 100 facilities which have not reported under the TRI reporting requirements. In calendar year 1995, Ohio EPA resolved 8 enforcement actions against facilities which had not filed TRI reports. Over \$64,000 was collected in civil penalties. In addition, administrative orders are used to incorporate pollution prevention projects into settlements when appropriate. Failure to file reports undermines the integrity of the TRI program by denying the public the right to know what is being released into the environment.

Ohio EPA also examines the quality of the data reported under TRI. This data is reviewed for consistency with data reported to Ohio EPA under other environmental regulations. The accuracy of the data is also reviewed by requesting the supporting calculations from selected industry and reviewing these release

estimates with plant personnel.

## EXPLANATION OF TERMS

**"SIC Code (Standard Industrial Classification Code)"** - A two or four digit number code designated by the federal Department of Commerce which identifies an industry or industrial grouping.

**"Manufacture"** - To produce, prepare, import or compound a toxic chemical.

**"Otherwise Use"** - Any use of a toxic chemical at a facility which is not covered by the definitions of manufacture or process. This includes any activities in which a listed toxic chemical does not become incorporated into the final product. Examples of "otherwise use" include degreasers, solvents in paints which are applied to a product, chemicals used in water treatment, and coolants or refrigerants.

**"Process"** - Refers to the preparation of a listed toxic chemical, after its manufacture, for distribution in commerce. Processing is usually the intentional incorporation of a toxic chemical into a product. It includes making mixtures, repackaging, and using a toxic chemical as a feedstock, raw material or starting material for making another chemical.

**"POTW (Publicly Owned Treatment Works)"** - a wastewater treatment facility which is owned by a unit of the government.

**"Fugitive or Non-point Air Emissions"** - Releases to the air which are not conveyed through stacks, vents, ducts, pipes, or other confined air streams. Examples include equipment leaks from valves, pump seals, flanges, compressors, sampling connections, open ended lines, evaporative losses from surface impoundment and spills, and releases from building ventilation systems.

**"Stack or Point Source Air Emissions"** - Releases to the air which are conveyed through stacks, vents, ducts, pipes, or other confined air streams. Examples include storage tank emissions and emissions from control equipment.

**"Off-Site Locations"** - Locations outside the boundaries of a facility to which wastes are transported for treatment or disposal. Examples include transfers of a waste to a landfill or an incinerator.

**"Releases to Land"** - Refers to landfilling, surface impoundment, land treatment/application farming, or any other release of a toxic chemical to land within the boundaries of a facility.

**"Energy Recovery"** - Recovery of useful energy from waste.

**"Facility"** - Defined for the purposes of TRI reporting as all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person (or by any person which controls, is controlled by, or under common control with such person).

## LIMITATIONS

The TRI data has some significant limitations:

1. TRI covers only certain manufacturing industries. Many non-manufacturing industries release toxic chemicals into the environment. U.S. EPA is considering adding specific SIC codes to the scope of the reporting requirements.
2. For reporting year 1994, TRI covers approximately 300 toxic chemicals and 20 chemical categories. U.S. EPA has added 286 additional chemicals and chemical categories to the list of reportable chemicals. These additional chemicals will be reportable beginning with reports filed July 1, 1996, covering releases in calendar year 1995. The TRI data does not represent all toxic releases.
3. Releases are reported as total annual releases without reference to frequency or duration. The annual release totals alone are not sufficient to assess the health or environmental impact of the toxic chemical released.
4. The majority of releases are based on estimates. Facilities are required to base releases on monitoring data when available; otherwise, estimates are used. Estimates result in significant variability among reporting facilities.
5. High volume releases of relatively non-toxic chemicals may appear to be a more serious problem than lower volume releases of highly toxic chemicals, when just the opposite may be true. TRI data summaries must be interpreted with care.
6. The TRI report contains information regarding the release of chemicals, not the public's exposure to the chemicals. Some chemicals disperse rapidly when released into the environment, eliminating their threat to public health and to the environment, while other highly toxic chemicals may not disperse when released. Screening risk assessments must be completed before health and environmental assessments can be made.
7. Some reported releases result in no potential exposure to the public. In particular, the disposal of toxic chemicals in underground injection wells does not expose the public since the material is injected thousands of feet into the ground. Also, off-site transfers may not expose the population to chemicals.
8. Because the TRI data is based on estimates, facilities are encouraged to revise their reports when the estimates are improved. Revisions are entered into the Ohio TRI database on an ongoing basis. Likewise, revisions are submitted to U.S. EPA and the national database is updated. At any time, the two databases will not provide corresponding data due to delays in revision entry as well as data quality errors.

## FUTURE OF TRI

The TRI Program continued to grow and change during the past year and it appears that the expansion of the program will continue into coming years. U.S. EPA is making the following changes:

Chemical List Expansion: On November 30, 1993, U.S. EPA finalized the addition of 11 hydrochlorofluorocarbons (HCFCs), 21 chemicals and 2 chemical categories that were listed under the Resource Conservation and Recovery Act (RCRA). These chemicals were reportable beginning with calendar year 1994, with the first reports due July 1, 1995. On November 28, 1994, U.S. EPA published the final rule which added 286 toxic chemicals to the list of reportable chemicals. Approximately 170 of these chemicals are active ingredients in pesticides. These chemicals will be reportable beginning with calendar year 1995, with the first reports due July 1, 1996.

Federal Facility Reporting: On August 3, 1993, President Clinton signed Executive Order #12856 requiring federal facilities to comply with EPCRA, including the TRI reporting requirements, beginning in 1994.

Federal facilities are required to file TRI reports regardless of whether or not they are engaged in manufacturing. The first reports under this executive order were filed July 1, 1995

Small Source Exemption: On November 28, 1994, U.S. EPA finalized an exemption for facilities which generate a small quantity of waste. This exemption is the result of a petition submitted by the Small Business Administration to exempt low level releases. The exemption applies to facilities which generate less than five hundred pounds of a listed chemical which is released to the environment, treated, recycled, or used for energy recovery, and use less than one million pounds of the toxic chemical in a calendar year. The facility would be required to file a certification statement instead of a full Form R. This exemption is also referred to as the alternative threshold. The first certification statements will be filed July 1, 1996.

Facility Expansion: U.S. EPA is currently developing a proposed rule that would add additional industries to TRI. In an April 19, 1994 press release, U.S. EPA stated that the initial analysis indicates that industry sectors such as energy production, materials extraction and distribution, waste management and transportation have significant releases of TRI listed chemicals. U.S. EPA is currently meeting with industries to evaluate their TRI releases and assess the benefit of including these releases in TRI. U.S. EPA anticipates a proposal date of April 1996.

Materials Accounting: U.S. EPA is examining additional data elements including throughput information to measure waste management. This information would include the quantity of chemical used, the quantity remaining in the final product, and quantity remaining in the waste stream. This expansion may occur after the facility expansion.

Pollution Prevention Data Guidance: The Pollution Prevention Act of 1990 required the submission of information which can be used to evaluate waste management practices at a facility. U.S. EPA is preparing a guidance document which will assist faculties in reporting this information. The guidance document should be available for reporting year 1996.

## **POLLUTION PREVENTION**

**Pollution prevention** means the use of source reduction techniques, a secondary preference, to environmentally sound recycling. Pollution prevention avoids cross-media transfers of waste and/or pollutants and is multi-media in scope. It addresses all types of waste and environmental releases to the air, water and land.

The Ohio EPA **Office of Pollution Prevention** (OPP) was established on July 1, 1993 as part of the 1993-94 state budget bill. While the rest of Ohio EPA focuses on controlling pollution after it is generated through regulatory requirements, OPP works with companies on a voluntary, non-regulatory basis to help them modify their operating processes to generate less pollution in a cost-effective and technically feasible manner. The Office of Pollution Prevention provides the following services on an ongoing basis:

Provides free on-site and other types of technical assistance for pollution prevention activities and provided assistance to nearly 1,500 companies, individuals and/or organizations during 1995. Copies of hundreds of pollution prevention documents are available upon request and more than 50 are available electronically through the Internet [Ohio EPA Home Page](#) Provides free assistance with completing pollution prevention plans; provides assistance in identifying and implementing pollution prevention credit projects to mitigate portions of environmental enforcement penalties in conjunction with other Ohio EPA Divisions and the Ohio Attorney General's Office. Provides low-interest loans (2/3rds of prime) from \$25,000 to \$350,000 to businesses and facilities with less than 500 employees on-site in conjunction with the Ohio Department of Development. Provides recognition for pollution prevention efforts through the "Ohio Prevention First" voluntary pollution prevention planning program and the annual Governor's Awards program. Coordinates the integration of pollution prevention activities into other Ohio EPA Divisions. The Office of Pollution Prevention also coordinates a number of specific activities to help companies prevent pollution and to integrate pollution prevention concepts into the other environmental programs at Ohio EPA. Some of these activities include:

**Ohio Prevention First:** In 1993, the Governor George V. Voinovich targeted the top 100 facilities that report the most releases to the environment, and asked Ohio EPA to work with each one to develop a comprehensive pollution prevention plan. Eighty-two of the top 100 facilities are in this program (*These facilities represent 86% of the toxic releases reported in 1991*). In addition, 66 other facilities have volunteered to develop pollution plans. To date, participating companies have committed to reduce pollution by 239 million pounds by the year 2000 from 1988 levels. Facilities have also estimated that more than \$15.2 million in cost savings will be realized through these efforts. Facilities can participate at the *Leadership* level which includes preparation of a comprehensive pollution prevention plan, or at the *Partnership* level, which includes completion of one or more pollution reduction activities. A list of facilities participating in Ohio Prevention First is included in the attached table.

**Pollution Prevention Technical Assistance:** During 1995, the Office of Pollution Prevention has provided technical assistance to more than 1,500 companies, organizations and/or individuals. Part of this effort included 37 site visits to help Ohio companies implement pollution prevention programs. The Office has also provided the information companies need to complete pollution prevention activities through the distribution of over 24,500 pollution prevention documents throughout Ohio. Companies interested in receiving non-regulatory pollution prevention technical assistance should contact the Office of Pollution Prevention at (614) 644-3469.

**Ohio EPA Pollution Prevention Strategy:** In 1993, Ohio EPA developed a pollution prevention strategy to change the focus of Ohio EPA environmental programs from pollution control to pollution prevention. The Office of Pollution Prevention worked with each program to develop a series of recommendations on increasing pollution prevention activity. The Office of Pollution Prevention works with the other Ohio EPA

programs to revise this strategy on an annual basis and provides assistance in implementing recommendations. In 1995, the Office completed an assessment of strategy implementation activities and provided a series of training events to encourage strategy implementation.

**Pollution Prevention Loan Program:** Governor Voinovich established a \$10 million revolving loan program to provide financial assistance to small and mid-sized facilities to complete pollution prevention activities. Ohio EPA is working with the Ohio Department of Development to review over 30 loan applications that should result in more than 285 million pounds of pollution being prevented when approved.

**State of Ohio Green Lights Program:** Ohio is an active partner in the federal Green Lights program. Ohio is the first state in the midwest and one of the first large industrial states in the nation to become a partner. The state is currently in the process of converting to energy efficient lighting in its state-owned buildings that will save \$4 million in energy costs annually. Ohio is actively promoting the Green Lights partnership to large energy users throughout the state and has assisted in getting 79 Ohio companies to participate in the program. Ohio is one of the only states to expand its Green Lights promotion beyond corporations to universities, hospitals, and other non-profit institutions.

Table 3: List of Ohio Prevention First participants and level of participation. "Top 100" facilities are in **bold**.  
November 27, 1995

Company/Facility Name	County	Participation Level	Company/Facility Name	County	Participation Level
<b>ABITEC Corp.</b>	Franklin	Leadership	<b>General Electric - Euclid Lamp Plant</b>	Cuyahoga	Leadership
<b>Acustar, Inc. - Chrysler</b>	Montgomery	Leadership	General Electric - Glass Plant	Hocking	Leadership
<b>AK Steel Corp. - Armco</b>	Butler	Leadership	General Electric - Glass Plant	Trumbull	Leadership
<b>Alcoa Forged Products</b>	Cuyahoga	Leadership	General Electric - Lamp Plant	Pickaway	Leadership
<b>Amoco Performance Products</b>	Washington	Leadership	General Electric - Lamp Plant	Crawford	Leadership
<b>Amsted Ind. - Griffin Wheel Co.</b>	Franklin	Leadership	General Electric - Lamp Plant	Trumbull	Leadership
<b>Aristech Chemical</b>	Scioto	Leadership	General Electric - Lamp Plant	Portage	Leadership
Ashland Chem. - Composite Polymers	Ashtabula	Leadership	General Electric - Lamp Plant	Cuyahoga	Leadership

Ashland Chem. - Distribution, Akron	Summit	Leadership	General Electric - Medical Systems	Cuyahoga	Leadership
Ashland Chem. - Distribution, Cincinnati	Hamilton	Leadership	<b>General Electric - Plastics Plant</b>	Coshocton	Leadership
Ashland Chem. - Distribution, Columbus	Franklin	Leadership	General Electric - Quartz	Lake	Leadership
Ashland Chem. - Foundry Products	Cuyahoga	Leadership	General Electric - Quartz Plant	Licking	Leadership
Ashland Chem. - Poly. & Adhes.	Ashland	Leadership	General Electric - Superabrasives	Franklin	Leadership
<b>Ashland Chemical - Foundry Products</b>	Cuyahoga	Leadership	<b>General Extrusion, Inc.</b>	Mahoning	Leadership
<b>Avery Dennison - Building 3</b>	Lake	Partnership	<b>General Motors - BOC, Lordstown</b>	Trumbull	Leadership
<b>Avery Dennison - Building 5</b>	Lake	Partnership	General Motors - CPC Group	Richland	Leadership
<b>BASF Corp. - Resin Plant</b>	Darke	Leadership	General Motors - Delco Chassis	Montgomery	Leadership
BASF Cor. - Container Coating	Clermont	Leadership	General Motors - Delco Chassis	Montgomery	Leadership
<b>BF Goodrich - Chemical Division</b>	Lorain	Leadership	General Motors - Delco Chassis	Erie	Leadership
<b>BF Goodrich: Specialty Chemicals</b>	Summit	Leadership	General Motors - Delco Chassis	Montgomery	Leadership
<b>Borden -Columbus Coated Fabrics</b>	Franklin	Leadership	General Motors - Delco Products	Montgomery	Leadership
<b>BP America - Lima Chemicals</b>	Allen	Leadership	<b>General Motors - Delco Products</b>	Montgomery	Leadership
BP America - Lima Refinery	Allen	Leadership	General Motors - Harrison Division	Montgomery	Leadership
<b>BP America - Toledo Refinery</b>	Lucas	Leadership	General Motors - Inland Fisher Guide	Franklin	Leadership

<b>Champion International</b>	Butler	Leadership	General Motors - Inland Fisher Guide	Montgomery	Leadership
Chemcentral - Cincinnati	Butler	Leadership	General Motors - Moraine Engine	Montgomery	Leadership
Chevron Chemical	Washington	Leadership	General Motors - Packard Electric	Portage	Leadership
<b>Chrysler Corporation - Jeep</b>	Lucas	Partnership	General Motors - Packard Electric	Trumbull	Leadership
<b>Cincinnati Specialties - PMC</b>	Hamilton	Leadership	General Motors - Packard Electric	Trumbull	Leadership
<b>GRACE Davison</b>	Hamilton	Leadership	General Motors - Packard Electric	Trumbull	Leadership
<b>Degussa Carbon Black Corp.</b>	Washington	Leadership	General Motors - Powertrain	Lucas	Leadership
<b>Dupont - Electronics</b>	Pickaway	Leadership	<b>General Motors - Powertrain</b>	Defiance	Leadership
Dupont - Fort Hill Plant	Hamilton	Leadership	<b>General Motors - Truck &amp; Bus</b>	Montgomery	Leadership
<b>Elkem Metals Company</b>	Washington	Leadership	<b>Georgia-Pacific - Resins Division</b>	Franklin	Leadership
<b>Eveready Battery Company</b>	Washington	Partnership	<b>Goodyear Tire &amp; Rubber</b>	Auglaize	Leadership
<b>Excello Fabric Finishers</b>	Coshocton	Leadership	Harwick Chemical Cor.	Summit	Leadership
<b>Ford - Assembly Plant</b>	Lorain	Leadership	<b>Henkel Corporation, Emery Group</b>	Hamilton	Leadership
<b>Ford - Casting Plant</b>	Cuyahoga	Partnership	<b>Hilton Davis Co.</b>	Hamilton	Partnership
<b>Ford - Ohio Truck Plant</b>	Lorain	Leadership	<b>Honda - Auto Plant</b>	Union	Leadership
Franklin International	Franklin	Leadership	<b>Honda - Auto Plant</b>	Logan	Leadership

General Electric - Aircraft Engines	Hamilton	Leadership	<b>Honda - Engine Plant</b>	Shelby	Leadership
General Electric - Austintown Products	Mahoning	Leadership	<b>Huffy Bicycles</b>	Mercer	Partnership
General Electric - Chemical Products	Cuyahoga	Leadership	ISP Fine Chemicals, Inc.	Franklin	Leadership
General Electric - Conneaut Base Plant	Ashtabula	Leadership	Laidlaw Environmental Services (WT)	Franklin	Partnership
General Electric - Dover Wire	Tuscarawas	Leadership	<b>LAMOTITE - Rexham Co.</b>	Cuyahoga	Leadership
<b>LTV Steel - Cleveland Works</b>	Cuyahoga	Leadership	<b>Schuller International</b>	Defiance	Leadership
Lubrizol Corporation	Lake	Partnership	<b>SCM Chemicals - Plant I</b>	Ashtabula	Partnership
<b>Mead Corporation - Fine Paper Division</b>	Ross	Leadership	<b>SCM Chemicals - Plant II</b>	Ashtabula	Partnership
Merrel-Dow Pharmaceuticals	Hamilton	Leadership	Senco Fastening Systems	Hamilton	Leadership
<b>Metal Beverage Container Group (Ball)</b>	Hancock	Leadership	Shell Chemical Co.	Washington	Leadership
<b>Metal Container Corporation</b>	Franklin	Leadership	<b>Sherwin-Williams - Sprayon</b>	Cuyahoga	Leadership
<b>Metal Processing Corporation</b>	Cuyahoga	Leadership	<b>Sintermet Corp.</b>	Cuyahoga	Partnership
<b>Monsanto - The Chem. Group</b>	Hamilton	Partnership	<b>Smith &amp; Nephew Perry</b>	Stark	Leadership
<b>Morgan Adhesives - MACtac</b>	Summit	Leadership	<b>Sorg Paper Co.</b>	Butler	Partnership
<b>Morton International</b>	Hamilton	Leadership	<b>Techneglas, OI-Neg TV Products</b>	Franklin	Leadership

<b>Navistar - International Trans.</b>	Clark	Leadership	<b>Dow Chemical Co.</b>	Lawrence	Leadership
<b>North Star Steel Ohio</b>	Mahoning	Leadership	<b>Lincoln Electric Co.</b>	Cuyahoga	Leadership
<b>Owens-Corning Fiberglas</b>	Licking	Partnership	<b>Scotts Co.</b>	Union	Leadership
Owens-Corning - Mt. Vernon Venture Plant	Knox	Leadership	<b>Timken Co. - Faircrest</b>	Stark	Leadership
Owens-Corning - Newark Plant	Licking	Leadership	<b>Timken Co. - Faircrest</b>	Stark	Leadership
OxyChem - Occidental Petroleum	Ashtabula	Leadership	<b>Timken Co. - Wooster</b>	Wayne	Leadership
<b>Packaging Corp. of America</b>	Wayne	Leadership	<b>Toledo Pickling &amp; Steel Sales</b>	Lucas	Leadership
Perstorp Polyols, Inc.	Lucas	Partnership	<b>UC Industries, Inc.- Technical Center</b>	Summit	Leadership
<b>Phillips Display Components</b>	Putnam	Leadership	Union Camp - Chemical Division	Tuscarawas	Leadership
<b>Phthalchem/Cychem, Inc.</b>	Hamilton	Partnership	<b>United States Enrichment Corp.</b>	Pike	Leadership
PPG - Coatings and Resin	Pickaway	Leadership	<b>USS/KOBE Steel Co.</b>	Lorain	Leadership
PPG - Coatings and Resin	Cuyahoga	Leadership	Van Waters & Rogers, Inc.	Franklin	Leadership
<b>PPG - Coatings and Resins</b>	Delaware	Leadership	<b>Walbridge Coatings</b>	Wood	Leadership
<b>Proctor &amp; Gamble</b>	Hamilton	Leadership	<b>WCI Steel, Inc</b>	Trumbull	Leadership
Proctor & Gamble - Detergent Plant	Hamilton	Leadership	<b>Wheeling-Pitts. Steel Corp.</b>	Belmont	Leadership
Proctor & Gamble - Ivorydale Plant	Hamilton	Leadership	<b>Wheeling-Pitts. Steel Corp.</b>	Jefferson	Leadership

Proctor & Gamble - Mfg. Company	Allen	Leadership	Wheeling-Pittsburgh Steel Corp.	Jefferson	Leadership
Proctor & Gamble - Sundor Brands	Hancock	Leadership	Wheeling-Pittsburgh Steel Corp.	Jefferson	Leadership
Quality Chemicals, Inc.	Montgomery	Partnership	Wheeling-Pittsburgh Steel Corp.	Mahoning	Leadership
Quantum Chemical Corp.	Lake	Leadership	<b>Whirlpool Corp.</b>	Marion	Leadership
Quantum Chemical Corp.	Licking	Leadership	<b>Whirlpool Corp. - Clyde</b>	Sandusky	Leadership

#### VOLUNTARY EFFORTS: 33/50 PROGRAM

The 33/50 Program is a voluntary pollution prevention program seeking the reduction of 17 targeted chemicals by 33% by 1992 and by 50% by 1995. The program was initiated in February 1991 by U.S. EPA, which requested that the top 600 companies releasing these chemicals institute pollution prevention measures to meet these goals. In August 1992, Governor Voinovich sent letters encouraging participation in the 33/50 Program.

There are currently 490 Ohio facilities associated with parent companies participating in the 33/50 Program. Ohio leads the nation in the total number of participating companies in the 33/50 Program and is ranked ninth based on the number of participating companies (111 parent companies) versus the number of eligible to participate (633 parent companies). Ohio facilities have reduced the releases and transfers of 33/50 chemicals by 60%, exceeding the goal of a 50% reduction, including releases and reductions from all facilities reporting the chemicals. Table 4 outlines these reductions by chemical.

Table 4: Releases of 33/50 Program Chemicals

Chemical	1988 releases (lbs/yr)	1994 releases (lbs/yr)	Percent Change
Benzene	2,024,120	478,839	-76.3%
Cadmium & Compounds	128,645	103,705	-19.4%
Carbon Tetrachloride	14,330	32,582	+127.4%
Chloroform	148,684	91,221	-38.6%
Chromium & Compounds	7,591,833	4,265,741	-43.8%
Cyanides	1,024,549	549,017	-46.4%

Dichloromethane	6,206,499	3,154,293	-49.2%
Lead & Compounds	7,270,039	2,043,127	-71.9%
Mercury & Compounds	3,696	5,274	+42.69%
Methyl Ethyl Ketone	13,448,472	6,399,740	-52.4%
Methyl Isobutyl Ketone	5,085,120	1,838,930	-63.8%
Nickel & Compounds	1,989,751	1,317,419	-33.8%
Tetrachloroethylene	3,799,889	1,565,579	-58.8%
Toluene	19,081,460	7,402,850	-61.2%
1,1,1-Trichloroethane	14,473,211	2,674,279	-81.5%
Trichloroethylene	2,723,622	1,692,939	-37.8%
Xylene (mixed isomers)	19,442,700	8,133,543	-58.2%
<b>Total Releases</b>	<b>104,456,620</b>	<b>41,749,078</b>	<b>-58.2%</b>

### THE NATIONAL PERSPECTIVE

Ohio, a leader in technology and industry, continues to represent a significant portion of the national TRI reporting industries and releases. Table 5 represents Ohio's rank in the nation for each type of release and transfer up to calendar year 1993. Because the 1994 national data was not available prior to the national data release, the national rankings for 1994 were not yet available.

Table 5: Ohio's National Ranking

	<b>1987</b> Ranking	<b>1988</b> Ranking	<b>1989</b> Ranking	<b>1990</b> Ranking	<b>1991</b> Ranking	<b>1992</b> Ranking	<b>1993</b> Ranking
Air	2	2	3	3	3	4	4
Surface Water	11	12	9	5	4	6	4
Land On-Site	7	7	6	8	5	5	3
Underground Injection	5	4	4	6	6	7	5
POTW	8	10	7	6	2	7	7

1994

Off-Site Transfers	2	1	1	3	2	3	2
Total Releases & Transfers for Treatment & Disposal	3	3	3	3	3	4	3
Number of Reporting Facilities	2	2	2	2	2	2	2

**SUMMARY OF DATA**

In 1994, a total of 182 million pounds of toxic chemicals were reported as having been released and transferred to the environment and transferred off-site for treatment or disposal. Table 6 provides a breakdown of these quantities to each environmental media which included aerosol forms of sulfuric acid and ammonia portion of ammonium sulfate. For purposes of comparison, chemicals which are no longer reportable have been excluded from the past years' TRI data in this report as provided in Table 6A. These chemicals were acetone, sulfuric acid, ammonia, and ammonium sulfate. The policy on reporting 10% of total aqueous ammonia requires a case by case evaluation, so past years' data could not be modified.

Figure Nos. 2, 3, 4, 5, 6, 7, and 8 are based on Table 6A quantities which excluded acetone, sulfuric acid, ammonia, and ammonium sulfate.

**Table 6A:** Summary of TRI data including all reported chemical including aerosol forms of sulfuric acid, and ammonia portion of ammonium sulfate

Figure 1A using Table 6A data [A graph of 1994 Toxic Releases & Transfers](#)

Environmental Medium	1987 (lbs/yr)	1988 (lbs/yr)	1989 (lbs/yr)	1990 (lbs/yr)	1991 (lbs/yr)	1992 (lbs/yr)	1993 (lbs/yr)	1994 (lbs/yr)
Air	136,898,767	140,415,947	132,794,964	115,128,089	104,227,832	91,416,364	82,953,057	79,171,942
Water	7,830,564	4,703,438	6,071,294	5,937,495	6,036,504	4,786,150	4,795,914	1,298,996
Deepwell Injection	22,563,244	17,390,900	16,513,240	24,795,915	28,380,740	24,157,257	25,205,489	14,504,000
Land On-Site	53,625,103	74,188,123	33,815,723	24,964,762	35,350,827	23,145,479	20,305,357	22,293,270
POTW	21,094,503	22,502,869	18,114,182	24,708,758	23,509,325	22,615,015	17,486,001	9,322,499
Transfers Off-Site for Treatment & Disposal	210,522,872	210,897,355	104,343,220	81,827,589	53,259,328	58,888,834	67,008,721	56,441,420
Total Releases								

1994

Total Releases & Transfers	452,535,053	470,098,632	311,652,623	277,362,608	250,764,556	225,013,959	217,736,877	182,032,111
Off-Site Energy Recovery	NA	NA	NA	NA	36,156,089	34,325,249	28,235,363	37,153,966
On-Site Energy Recovery	NA	NA	NA	NA	103,425,121	106,844,814	104,332,408	95,251,941
Off-Site Recycling	NA	NA	NA	NA	153,479,867	188,505,926	201,890,086	243,120,811
On-Site Recycling	NA	NA	NA	NA	548,867,828	680,234,341	581,756,434	268,207,111
On-Site Treatment	NA	NA	NA	NA	453,799,344	487,757,247	382,974,573	277,046,411
No. of Reporting Facilities	1,404	1,613	1,772	1,794	1,755	1,736	1,731	1,691

**Table 6B:** Summary of data excluding all acetone, sulfuric acid, ammonia, and ammonium sulfate

Figure 1B using Table 6B data [A graph of 1994 Toxic Releases & Transfers](#)

Environmental Medium	1987 (lbs/yr)	1988 (lbs/yr)	1989 (lbs/yr)	1990 (lbs/yr)	1991 (lbs/yr)	1992 (lbs/yr)	1993 (lbs/yr)	1994 (lbs/yr)
Air	120,171,045	122,883,469	117,121,134	101,882,459	90,024,868	77,945,785	69,907,817	66,100,431
Water	3,159,400	1,444,961	1,632,320	670,335	1,538,423	815,762	586,333	656,515
Deepwell Injection	21,339,735	16,028,200	14,571,700	13,138,915	14,303,740	8,819,257	12,178,789	12,501,000
Land On-Site	53,411,878	74,148,700	33,772,434	24,917,482	35,292,575	23,077,541	20,818,880	22,200,611
POTW	13,819,957	16,121,837	13,413,095	14,094,169	13,152,183	11,896,597	9,647,444	7,287,553
Transfers Off-Site for Treatment & Disposal	192,351,403	191,888,918	88,746,047	75,691,596	48,012,580	49,676,987	54,807,523	53,795,031
Total Releases & Transfers	404,253,418	422,516,085	269,256,730	230,394,976	202,324,369	172,231,929	167,309,786	162,541,111
Off-Site Energy Recovery	NA	NA	NA	NA	36,151,124	34,325,026	28,235,354	37,153,966
On-Site Energy	NA	NA	NA	NA	103,415,121	106,659,814	104,152,408	95,071,941

Recovery								
Off-Site Recycling	NA	NA	NA	NA	141,390,322	174,642,211	189,771,118	237,162,700
On-Site Recycling	NA	NA	NA	NA	193,536,404	317,955,545	274,050,825	253,956,600
On-Site Treatment	NA	NA	NA	NA	242,528,723	267,566,648	250,453,755	206,182,600
No. of Reporting Facilities	1,329	1,534	1,698	1,718	1,688	1,665	1,668	1,638

The following tables, as well as the pie chart (Figure 1B) represent releases to the air, water, land, Publicly Owned Treatment Works (POTWs) and transfers off-site for disposal or treatment only. Transfers off-site for recycling or energy recovery are addressed at the end of this report.

Table 7: Top 10 Counties - - - - - Table 8: Top 10 Facilities

	County	Total Releases (lbs/yr)		Facility	County	Total Releases (lbs/yr)
1	Washington	22,559,474	1	Elkem Metals Co.	Washington	16,533,476
2	Allen	15,131,014	2	BP Chemicals Inc.	Allen	9,623,575
3	Cuyahoga	15,129,452	3	Wheeling-Pittsburgh Steel Mingo	Jefferson	8,337,090
4	Ashtabula	11,008,086	4	GMC Powertrain	Defiance	6,091,507
5	Hamilton	9,548,420	5	AK Steel Corp - Middletown	Butler	5,644,049
6	Jefferson	8,669,762	6	SCM Chemicals Plant I	Ashtabula	5,523,315
7	Butler	7,253,101	7	SCM Chemicals Plant II	Ashtabula	4,644,700
8	Defiance	7,200,841	8	Armco Advanced Materials	Muskingum	4,324,233
9	Franklin	6,444,713	9	Arcadian Ohio LP	Allen	4,024,010
10	Lucas	5,428,531	10	LTV Steel - Cleveland	Cuyahoga	2,735,488

Table 9: Top 10 Chemicals

	Chemical	Total Toxic Releases (lbs/yr)
1	Manganese & Compounds	25,751,011
2	Zinc & Compounds	18,114,806
3	Ammonia	16,489,622
4	Hydrochloric Acid	13,377,168
5	Methanol	10,378,834
6	Xylene (mixed isomers)	8,133,543
7	Toluene	7,402,850
8	Methyl Ethyl Ketone	6,399,740
9	Glycol Ethers	6,205,240
10	Nitric Acid	5,058,111

Figure 2 [A graph of Toxic Trends - Total Releases & Transfers](#)

**RELEASES TO AIR**

Facilities filing TRI forms reported total air emissions of 79 million pounds in 1994. The air emissions resulted in 43.6% of the total toxic releases and transfers for 1994. The reported air emissions can be divided into 2 categories: stack and fugitive emissions. Stack or point source emissions are releases to the air from a discrete source, such as a smokestack or vent. Fugitive or non-point air emissions are releases to the air that are not conveyed from ducts, stacks, or pipes. In 1994, Ohio facilities reported 23 million pounds of fugitive air emissions and 56 million pounds of stack or point source air emissions.

Table 10: Top 10 Counties - - - - - Table 11: Top 10 Facilities

	County	Air Releases (lbs/yr)		Facility	County	Air Releases (lbs/yr)
1	Washington	7,739,183	1	Elkem Metal Co.	Washington	5,106,676
2	Allen	5,379,436	2	Arcadian Ohio LP	Allen	3,987,100
				SCM Chemicals Plant		

1994

3	Cuyahoga	4,366,584		3	SCM Chemicals Plant II	Ashtabula	2,539,269
4	Ashtabula	4,359,621		4	Honda of America	Union	2,340,226
5	Union	3,835,003		5	Stone Container Corp.	Coshocton	1,548,858
6	Lucas	3,795,768		6	Ford Motor Corp -Lorain Assembly	Lorain	1,430,765
7	Lorain	3,628,612		7	Chrysler Corp - Jeep Parkway	Lucas	1,354,155
8	Lake	2,866,407		8	SCM Chemicals Plant I	Ashtabula	1,323,315
9	Franklin	2,815,408		9	Owens Corning Fiberglas	Licking	1,268,077
10	Hamilton	2,634,289		10	Ford Motor - Ohio Assembly	Lorain	1,244,154

Table 12: Top 10 Chemicals

	Chemical	Air Releases (lbs/yr)
1	Ammonia	11,716,016
2	Xylene (mixed isomers)	7,240,005
3	Toluene	6,928,672
4	Methyl Ethyl Ketone	5,605,877
5	Methanol	5,210,261
6	Glycol Ethers	5,179,244
7	Carbonyl Sulfide	4,000,000
8	Hydrochloric Acid	2,719,746
9	Dichloromethane	2,524,221
10	n-Butyl Alcohol	2,371,620

Figure 3 [A graph of Toxic Trends - Total Air Releases](#)

## Air Pollution Control in Ohio

Ohio EPA's Division of Air Pollution Control (DAPC) regulates new sources of toxic air emissions through an air permitting program. Each potential new source of air toxics undergoes a technical evaluation through which each toxic chemical's potential threat to human health and the environment is reviewed.

Currently, the TRI data is used by DAPC to: (1) help focus efforts in ambient air monitoring evaluation, (2) help determine county-wide levels of toxics for county-wide air pollution studies, and (3) help provide base-line data for non-routine (explosion or fire) air pollution episodes. The TRI data is used to estimate the release volumes of particular industries when evaluating proposed new source regulations or process modifications. Also, the TRI database is used to evaluate the compliance of industries with recently adopted rules concerning toxic releases.

The TRI data may also help identify sources that will be required to report under Section 112(r), the Emergency Preparedness and Response Program, required by the Clean Air Act of 1990. Facilities storing reportable chemicals in quantities exceeding threshold amounts must file emergency response risk management plans. These plans will address the storing and handling of reportable chemicals, as well as response or contingency plans should accidental releases occur.

Six TRI chemicals are currently regulated under U.S. EPA's National Emission Standards for Hazardous Air Pollutants (NESHAP). They are benzene, asbestos, inorganic arsenic, vinyl chloride, beryllium and mercury. U.S. EPA creates NESHAP emission standards for air pollutants which may pose a serious health hazard on a national level, but are not covered by the National Ambient Air Quality Standards.

The Clean Air Act Amendments of 1990 requires U.S. EPA to regulate 189 additional air toxic chemicals, 173 of which are on the TRI list. The TRI data will be used by U.S. EPA to prioritize sources of air toxics that should be regulated. As these regulations are developed and implemented, the TRI data will be used to monitor the reduction of air toxics in Ohio.

U.S. EPA intends to regulate sources of air toxics by issuing MACT (maximum achievable control technology) standards for source categories of air toxics. U.S. EPA was mandated to issue MACT standards for 40 source categories by November 1992, with all categories covered in 10 years. A facility may gain a 6 year extension from the MACT standard if it decreased its emissions by 90% (95% for particulates) prior to the proposal of the MACT standard.

For additional information regarding the air toxics program, contact Paul Koval, Supervisor, Air Toxics Unit, Division of Air Pollution Control, Ohio EPA (614) 644-2270.

## **DISCHARGES TO WATER**

The TRI reports include toxic chemicals discharged by facilities to surface waters, such as rivers, lakes, ponds, and streams. Facilities discharged 1.3 million pounds of toxic chemicals into Ohio's water bodies in 1995. Releases to surface waters represent 0.7% of all toxic chemicals released by Ohio facilities.

Table 13: Top 10 Counties - - - - - Table 14: Top 10 Facilities

	County	Water Releases (lbs/yr)			Facility	County	Water Releases (lbs/yr)
1	Washington	558,232		1	Elkem Metals Co.	Washington	544,000
2	Hamilton	217,540		2	Monsanto Co.	Hamilton	191,898
3	Ross	120,360		3	Mead Fine Paper Div.	Ross	120,360
4	Jefferson	88,298		4	Wheeling-Pittsburgh Steel Mingo Junction	Jefferson	72,043
5	Allen	40,820		5	Arcadian Ohio LP	Allen	36,910
6	Butler	40,173		6	Du Pont Circleville Plant	Pickaway	36,439
7	Pickaway	38,819		7	South Point Ethanol	Lawrence	33,119
8	Lawrence	33,251		8	BP Oil - Toledo Refinery	Lucas	20,780
9	Trumbull	22,191		9	Vigoro Industries	Hamilton	20,000
10	Lucas	21,206		10	Crystal Tissue Co.	Butler	19,327

Table 15: Top 10 Chemicals

	Chemical	Water Releases (lbs/yr)
1	Ammonia	642,197
2	Methanol	306,403
3	Manganese & Compounds	136,161
4	Ethylene Glycol	49,127
5	Formaldehyde	36,397
6	Ammonium Nitrate Solution	22,247
7	Chloride	18,812
8	Zinc & Compounds	17,138
9	Diethanolamine	14,006

10	Nickel & Compounds	6,682
----	--------------------	-------

Figure 4 [A graph of Toxic Trends - Total Discharges to Surface Water](#)

**WATER POLLUTION CONTROL**

Ohio EPA's Division of Surface Water (DSW) regulates surface water discharges in Ohio primarily through the issuance of National Pollutant Discharge Elimination System (NPDES) permits. Of the approximately 400 pollutants regulated by NPDES permits, 126 have been designated as priority pollutants under the Clean Water Act. Approximately 80 of these are TRI chemicals. The DSW uses the TRI data in the development of water quality based effluent limits in the NPDES permits. When evaluating a facility, TRI data is screened to determine if pollutants that are present may have the potential to cause an environmental hazard. Such pollutants will be further evaluated for possible inclusion in the permit. The TRI data can be used to confirm the presence of pollutants of concern when reviewing water quality monitoring data or could potentially flag a parameter that had not been previously monitored.

**UNDERGROUND INJECTION**

Some facilities dispose of liquid chemical waste by injecting waste into underground wells. Although only reported by 4 facilities in Ohio, underground injection accounted for 8% (14.5 million pounds) of the total TRI releases and transfers. There are additional facilities that dispose of waste via underground injection. However, these facilities are not required to report under TRI. Deepwell injection decreased 42% between 1993 and 1994, primarily due to the change in the reporting requirements for ammonia.

Table 16: Top Counties - - - - - Table 17: Top Facilities

	County	Underground Injection (lbs/yr)		Facility	County	Underground Injection (lbs/yr)
1	Allen	9,190,100	1	BP Chemicals	Allen	9,190,100
2	Butler	4,110,000	2	AK Steel Middletown	Butler	4,110,000
3	Scioto	1,176,894	3	Aristech Chemicals	Scioto	1,176,894
4	Lake	27,007	4	Zeneca Inc. Perry Plant	Lake	27,007

Table 18: Top 10 Chemicals

Chemical	Underground Injection (lbs/yr)
----------	--------------------------------

1	Hydrochloric Acid	4,110,000
2	Acetonitrile	3,500,000
3	Ammonia	2,003,000
4	Acrylaide	1,300,000
5	Acrylonitrile	810,000
6	Methanol	502,000
7	Cyanides	450,000
8	Acrylic Acid	410,000
9	Acetamide	398,000
10	Phenol	210,000

Figure 5 [A graph of Toxic Trends - Deepwell Injection](#)

Underground Injection Control In Ohio

Ohio EPA's Division of Drinking and Ground Water (DDGW) regulates facilities which use underground injection in Ohio. All underground injection wells are permitted individually and routinely monitored by Ohio EPA. These permits include stringent requirements for monitoring pressures, volumes injected, and mechanical integrity of the wells.

**RELEASES TO LAND ON-SITE**

Facilities dispose of solid and liquid chemical waste on-site by either depositing or burying waste. These facilities reported over 22.1 million pounds of toxic chemicals released to land on-site. The methods of disposal include: (1) landfills; (2) surface impoundments (ponds where liquid wastes are left to evaporate); (3) land treatment, land application or farming; and (4) other disposal which includes leaks and spills.

Table 19: Top 10 Counties Table 20: Top 10 Facilities

	County	Land On-site (lbs/yr)		Facility	County	Land On-Site (lbs/yr)
1	Washington	10,808,000	1	Elkem Metals Co.	Washington	10,808,000
2	Defiance	5,443,550	2	GMC Powertrain	Defiance	5,384,450
				UTV Steel		

3	Cuyahoga	2,029,499	3	LTV Steel Cleveland Works	Cuyahoga	2,029,499
4	Franklin	1,521,435	4	Griffin Wheel	Franklin	1,315,000
5	Butler	762,280	5	AK Steel Middletown	Butler	761,030
6	Trumbull	579,876	6	WCI Steel	Trumbull	578,780
7	Ottawa	305,644	7	Brush Wellman	Ottawa	305,640
8	Lucas	220,160	8	Unitcast, Inc.	Lucas	219,186
9	Allen	207,002	9	Whemco Ohio Foundry Div.	Allen	207,000
10	Licking	147,887	10	ASC Trim Columbus	Franklin	180,000

Table 21: Top 10 Chemicals

	Chemical	Land On-Site (lbs/yr)
1	Manganese & Compounds	14,931,850
2	Zinc & Compounds	5,095,683
3	Chromium & Compounds	943,325
4	Copper & Compounds	319,882
5	Methylenebis (phenylisocyanate)	237,100
6	Lead & Compounds	147,103
7	Nickel & Compounds	131,468
8	Formaldehyde	111,898
9	Ammonia	92,654
10	Bis (2-ethylhexel) adipate	86,000

Figure 6 [\*A graph of Toxic Trends - Total Releases to land-On-site\*](#)

Regulating Land Disposal In Ohio

Ohio EPA's Division of Hazardous Waste Management (DHWM) regulates generators of hazardous waste and facilities which treat, store, or dispose of such waste in landfills and surface impoundments. Ohio EPA assigns an identification number to every waste generating facility regulated under the Resource Conservation and Recovery Act (RCRA). Facilities using surface impoundment to dispose of TRI chemicals may also fall under the regulations of the Clean Water Act and may be regulated by the Division of Surface Water. Not all TRI chemicals are considered hazardous under RCRA. Some discharges to land may be considered solid waste, which is not regulated as hazardous. Large quantity generators and facilities that have a permit to treat, store, or dispose of RCRA-regulated waste must submit an Annual Hazardous Waste Report to DHWM. Contact DHWM's Data Management Section at (614) 644-2977 for more information about this report.

**DISCHARGES TO PUBLIC WASTEWATER TREATMENT SYSTEMS**

In 1994, facilities reported 9.3 million pounds of toxic discharges to Publicly Owned Treatment Works (POTWs) or public sewage treatment plants. Any reported discharge to a POTW must be interpreted carefully. The discharge leaves the facilities as part of a wastewater stream, but it is not released directly to surface waters. Some toxic chemicals are passed through the POTW to a receiving stream. Depending on the chemical, POTWs are capable of removing as little as 30% or more than 99% of the chemical pollutant from a wastestream. In some cases, chemicals are transferred to other segments of the environment in the form of air emissions or sewage sludge.

Table 22: Top 10 Counties - - - - - Table 23: Top 10 Facilities

	County	Discharge to POTWs (lbs/yr)		Facility	County	Discharge to POTWs (lbs/yr)
1	Hamilton	5,547,423	1	Cincinnati Specialities (PMC)	Hamilton	1,843,010
2	Franklin	745,420	2	Hilton Davis	Hamilton	1,706,980
3	Montgomery	420,000	3	Henkel Corp. Emery Group	Hamilton	681,880
4	Summit	380,260	4	Proctor & Gamble	Hamilton	627,298
5	Cuyahoga	359,870	5	ABITEC Corp.	Franklin	622,296
6	Butler	280,767	6	Phthalchem Inc.	Hamilton	320,500
7	Lucas	175,002	7	Delphi Harrison Thermal Sys.	Montgomery	246,108

1994

8	Putnam	128,800	8	PPG Industries Inc.	Summit	225,115
9	Trumbull	128,346	9	AK Steel Middletown	Butler	167,314
10	Sandusky	123,352	10	Morton Intl. Inc.	Hamilton	153,342

Table 24: Top 10 Chemicals

	Chemical	Discharge to POTWs (lbs/yr)
1	Methanol	3,857,129
2	Ammonia	1,924,639
3	Glycol Ethers	792,275
4	Ammonium Nitrate	620,868
5	Phosphoric Acid	336,860
6	Allyl Alcohol	225,000
7	Ethylene Glycol	215,925
8	Formaldehyde	209,734
9	Phenol	178,430
10	Manganese & Compounds	103,898

Figure 7 [\*A graph of Toxic Trends - Total Discharges to POTW\*](#)

Regulating Discharges to POTW's in Ohio

Ohio EPA's Division of Surface Water (DSW) regulates industries which discharge toxic chemicals to POTW's through its pretreatment program. These industries are regulated by the community if the community has a state approved pretreatment program, otherwise, Ohio EPA directly regulates these industries. In either case, significant industrial facilities are issued permits which contain discharge limitations as well as requirements for monitoring the waste streams. Non-complying facilities face enforcement action by either the community or Ohio EPA.

The pretreatment program uses TRI data when developing indirect discharge permits. The data is screened to determine if additional pollutants need to be evaluated for possible inclusion in the permit.

### TRANSFERS TO OFF-SITE LOCATIONS

Ohio facilities sent over 56 million pounds of toxic chemicals off-site in 1994. The fate of chemicals transferred to off-site facilities varies. The chemicals may be deposited in landfills, injected into underground wells, or treated to reduce the toxicity before being released to the environment. Therefore, the amount of chemicals transferred to off-site locations does not directly indicate the amount or type of chemical eventually released to the environment. Chemicals transferred off-site for recycling or reuse were reported for the first time on the 1991 TRI form. Recycle and reuse includes the off-site recovery of TRI chemicals, including solvents. In addition, the processing of TRI chemicals to be used as fuels were reported on the 1991 TRI form. For comparison with previous data, the following tables contain transfers off-site for treatment and disposal only. The additional information on recycling and energy recovery are covered in the next sections.

Table 25: Top 10 Counties Table 26: Top 10 Facilities

	County	Transfers Off-site (lbs/yr)		Facility	County	Transfers Off-site (lbs/yr)
1	Cuyahoga	8,359,769	1	Wheeling-Pittsburgh Steel - Mingo	Jefferson	8,162,822
2	Jefferson	8,248,151	2	Armco Advanced Materials	Muskingum	4,270,693
3	Ashtabula	6,553,987	3	SCM Chemicals Plant I	Ashtabula	4,200,000
4	Muskingum	4,809,033	4	Eveready Battery Co.	Washington	2,500,000
5	Stark	3,425,273	5	SCM Chemicals Plant II	Ashtabula	2,099,431
6	Washington	3,395,443	6	Ford Motor Co. Casting Plant	Cuyahoga	2,063,851
7	Franklin	1,361,222	7	American Steel Foundries	Stark	1,425,070
8	Lorain	1,237,939	8	Chemical Solvents Inc. Denison	Cuyahoga	1,032,131
9	Lucas	1,216,395	9	Occidental Chemical Corp.	Hardin	919,618
				Iron Recycling of		

10	Shelby	1,176,028	10	metal recycling of Ohio	Tuscarawas	912,890
----	--------	-----------	----	-------------------------	------------	---------

Table 27: Top 10 Chemicals

	Chemical	Transfers Off-site (lbs/yr)
1	Zinc & Compounds	12,333,890
2	Manganese & Compounds	9,621,908
3	Hydrochloric Acid	6,453,181
4	Nitric Acid	4,737,677
5	Chromium & Compounds	3,148,276
6	Sulfuric Acid	2,524,420
7	Lead & Compounds	1,811,382
8	Aluminum (Fume & Dust)	1,312,972
9	Phenol	1,165,837
10	Nickel & Compounds	1,108,907

Figure 8 [\*A graph of Toxic Trends - Total Transfers Off-Site\*](#)

### Regulating Transfers Off-site in Ohio

Ohio EPA's Division of Hazardous Waste Management and Division of Solid and Infectious Waste Management regulate facilities which generate and receive waste. Resource Conservation and Recovery Act (RCRA) regulations cover hazardous waste, however, not all TRI chemicals are considered hazardous. Some facilities are "Small Quantity Generators" which are not required to file reports under RCRA, but are required to file reports under TRI.

### Transfers off-site for Recycling/Reuse

If a waste cannot be prevented through source reduction, the Pollution Prevention Act established recycling or reuse as the most desired alternatives. Over 243 million pounds of toxic chemicals were transferred off-site to be recycled or reused during 1994. Recycling or reuse can include solvent recovery, metals recovery and acid regeneration. The amount of toxic chemical reported as transferred off-site for recycling is the amount sent from the facility to be recycled. This amount does not reflect the quantity of toxic chemical recovered through the recycling process. Table 28 lists the top 10 toxic chemicals reported as being recycled off-site.

### Transfers Off-Site for Energy Recovery

A toxic chemical which is combustible and has a heating value high enough to sustain combustion, may be used in a combustion unit that is integrated into an energy recovery system, such as an industrial furnace, industrial kiln, or boiler. This use of the chemical as a fuel constitutes energy recovery. Approximately 37 million pounds of toxic chemicals were transferred off-site for energy recovery. Table 29 lists the toxic chemicals which were reported as being used in the greatest quantities as fuel for energy recovery.

Table 28: Top 10 Chemicals Recycled Off-Site - - - - - Table 29: Top 10 Chemicals Used for Energy Recovery

	Chemical	Recycled Off-Site (lbs/yr)		Chemical	Transfer Off-site Energy Recovery (lbs/yr)
1	Copper & Compounds	66,341,979	1	Xylene (mixed isomers)	13,735,987
2	Chromium & Compounds	40,411,631	2	Toluene	5,521,227
3	Zinc & Compounds	33,740,188	3	Methyl Ethyl Ketone	4,522,815
4	Manganese & Compounds	32,804,967	4	Methanol	1,967,251
5	Nickel & Compounds	19,205,059	5	Methyl Isobutyl Ketone	1,913,102
6	Lead & Compounds	14,550,703	6	Glycol Ethers	1,722,241
7	Hydrochloric Acid	9,933,263	7	Ethylbenzene	1,016,098
8	Sulfuric Acid	5,715,183	8	n-Butyl Alcohol	954,330
9	Xylene (mixed isomers)	4,245,730	9	Phenol	804,874
10	Methyl Ethyl Ketone	2,741,481	10	Styrene	746,779

### Source Reduction

Approximately 462 facilities implemented source reduction activities during calendar year 1994. Source reduction means any practice which : (1) reduces the amount of any chemical entering any waste stream or released into the environment (including fugitive emissions) prior to recycling, treatment, or disposal; and (2) reduces the hazards to public health and the environment associated with the releases of such substances.

Source reduction includes equipment or technology modifications, process or procedure modifications, reformulations or redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training or inventory control. It does not include any practice which alters the physical, chemical, or biological characteristics or the volume of a pollutant through a process or activity which itself is not integral to and necessary for the production of a product or the providing of a service. Methods used to identify source reduction activities include internal pollution prevention audits, external pollution prevention audits, state or federal government technical assistance programs, employee recommendations, team management, and trade association or industry technical assistance programs.

### **On-Site Activities**

In addition to source reduction activities, Ohio facilities recycled 268 million pounds of toxic chemicals on-site, burned 95 million pounds of toxic chemicals on-site for energy recovery, and treated 277 million pounds of toxic chemicals on-site.

### **One-Time Releases**

Facilities reported one-time releases as the total quantity of toxic chemicals released directly into the environment or sent off-site for recycling, waste treatment, energy recovery or disposal during the reporting year due to: (1) remedial actions; (2) catastrophic events such as earthquakes, fires or floods; or (3) one-time events not associated with normal production processes. The purpose of this requirement is to separate releases associated with normal or routine production operations from those that are not. This requirement also separates the quantities that are more likely to be reduced or eliminated by process-oriented source reduction activities from those releases that are largely unpredictable and are less amenable to such source reduction activities. For example, spills that occur as a routine part of production can be reduced by improved handling procedures. These spills are not included in this section. A total loss of containment resulting from a tank rupture caused by a tornado would be included in the quantity reported in this section.

Although one-time releases are not associated with the production process, in many cases, these releases are authorized by the Ohio EPA. A facility would contact Ohio EPA when conducting a remedial action to clean up the environmental contamination resulting from past practices. Approximately 89 Ohio facilities reported releases due to remedial actions, catastrophic events or one-time events not associated with production processes. Approximately 0.7% of the toxic releases reported under TRI are the result of one-time releases.

The one-time releases reported by Shell Chemical in Belpre Ohio accounted for 54% of the one-time releases reported, or approximately 726,000 pounds of toxic chemicals. This reported one-time release was a direct result of the May 27, 1994 explosion and fire at the Belpre facility. These one-time releases accounted for over 35% of Shell's total 1994 TRI releases.

### Production Ratio

Facilities are required to provide a current reporting year production to prior year production ratio or similar activity index. This is to demonstrate the relative use of the particular toxic chemical; whether recycled, used for energy recovery, treated, or disposed. This ratio or index may vary for different chemicals used within a facility. This ratio or index must be based on some variable of production or activity rather than on the toxic chemicals or material usage. Indexes based on chemical usage may reflect source reduction rather than changes in business activity. Approximately 63% of the facilities reported an increase in production during 1994. Approximately 9% of the businesses did not report a ratio. Table 30 represents the change in production reported by facilities covered by TRI.

Table 30: Production Ratio

Changes in Production	% of Reporting Industry
Production increased more than 30%	15%
Production increased between 20%-30%	10%
Production increased between 10%-20%	16%
Production increased by less than 10%	22%
No change in production	7%
Production decreased by less than 10%	11%
Production decreased between 10% - 20%	6%
Production decreased between 20%-30%	3%
Production decreased more than 30%	1%

### Summary of Data: Counties and Chemicals

Appendix A and B represent the total toxic releases by county and by chemical. Additional information and specialized reports may be obtained by contacting the Ohio EPA.

### PUBLIC ACCESS

Ohio EPA makes TRI data available to the public through the TRI Program within the Division of Air Pollution Control. The public can make appointments to review the data by calling (614) 644-4830. Copies of the data and computerized summaries are available by writing Ohio EPA, DAPC/TRI, Lazarus Government Center, 122 South Front Street, Columbus, Ohio 43215.

 [\*Back to TRI home page\*](#)