

Ohio EPA

1999

**Toxic Release Inventory
Annual Report**

Ohio Environmental Protection Agency
Division of Air Pollution Control

April 2001

Executive Summary

Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) provides for the collection and public release of annual Toxic Release Inventory (TRI) reports regarding the release of toxic chemicals into the community. Since the first TRI reports were made available to the public more than ten years ago, TRI has expanded to include information on waste generation, additional reportable chemicals, and seven new industrial sectors, based on Standard Industrial Classification (SIC) Codes. This is only the second year for the seven newly added sectors.

Ohio facilities continue to make impressive strides toward reducing toxic chemicals usage, waste and releases. As of February 13, 2001, Ohio EPA received TRI reports from 1,658 facilities. Table 1 illustrates the comparison of the 1998 and 1999 TRI data for all reporting facilities, including the seven new industrial sectors, which first reported in 1998. Releases of phosphoric acid were not included in the 1998 data because it was no longer reportable in 1999.

Total releases and transfers decreased 11.65% between 1998 and 1999. Increases and decreases in releases can be attributed to many factors, including changes in production, changes in the product produced, and pollution prevention efforts made by facilities to decrease releases. Ohio EPA contacted the facilities which reported significant changes in the reported releases between 1998 and 1999 to determine the reasons for the change in releases. The results of this activity are summarized below. We invite you to use the TRI data and to contact reporting facilities directly for more information regarding their toxic releases.

Air emissions decreased by 7.69% between 1998 and 1999. Nine facilities, primarily electric generating facilities, decreased emissions more than 12 million pounds, with the largest reduction (4.2 millions pounds) from First Energy's W.H. Sammis Power Plant, located in Jefferson County. The decreases reported by First Energy were attributable to improved data collection and refinement of release calculations. Reductions by the other electric generating facilities were due to the decreased use of coal, and the varying concentration of chlorine in coal.

Table 1: Comparison of 1998 and 1999 TRI Data

Environmental Medium	Amount Released in 1998 in lbs/yr	Amount Released in 1999 in lbs/yr	Percent Change
Releases to Air	159,366,422	147,107,514	-7.69%
Releases to Water	6,260,774	6,962,904	11.21%
Deepwell Injection	28,770,469	27,645,086	-3.91%
Releases to Land On-site	93,987,971	70,273,526	-25.20%
Discharges to POTW	19,438,712	19,649,800	1.09%
Transfers Off-site for Disposal and Treatment	77,216,257	75,785,724	-1.85%
Total Releases and Transfers*	358,872,493	317,043,727	-11.65%
Energy Recovery On-site	116,972,582	124,572,485	6.50%
Energy Recovery Off-site	101,443,081	59,919,243	-40.90%
Recycling On-site	292,979,861	236,832,467	-19.20%
Recycling Off-site	188,629,364	182,513,062	-3.24%
Treatment On-site	218,179,462	265,597,062	21.73%
Number of Reporting Facilities	1,666	1,658	-0.48%

*Does not include releases which were transferred off-site to facilities which reported the same chemical under TRI.

Water releases increased by 11.21%. A.K. Steel in Coshocton reported a two million pound increase in nitrate compounds. This increase was due to the availability of sampling data, which resulted in more accurate calculations. The increase was partially offset by a reduction of over 1,000,000 pounds by five facilities led by J&L Speciality Steel Inc. in Stark County, for which the decrease was also due to improved data, Eramet Marietta, Inc. (formally Elkem, Washington), for which the decrease was due to a decrease in production, and Millennium Inorganic (Ashtabula), for which the decrease was due to a change in concentration in the raw material.

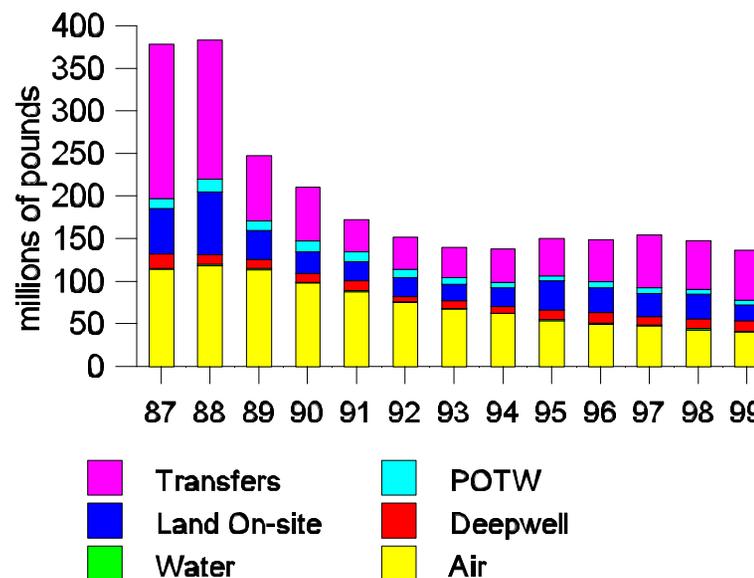
Releases to land on-site decreased by 25.2%. The facility contributing the largest reduction was EnviroSAFE Services of Ohio, a Resource Conservation and Recovery Act (RCRA) permitted disposal facility located in Lucas County, which reported a decrease of nearly 12,000,000 pounds. This was only a “313 reduction”, a reduction in the amount of waste containing TRI chemicals, as overall business was up for the year. Millennium Inorganic Chemicals, Plants I & II in Ashtabula County and GM-Powertrain in Defiance County collectively reduced releases by approximately 9,000,000 additional pounds. The reduction for the Millennium facilities was attributable to the use of materials with a manganese concentration below the de minimis level for reporting. The GM-Powertrain reduction was attributable to a change in operation in which they ceased the on-site melting and recycling of galvanized metal.

Deepwell Injection decreased 3.91% between 1998 and 1999. Vickery Environmental, located in Sandusky County, decreased by approximately 2,000,000 pounds. This reduction is the result of the types of materials handled in 1999. These materials contained less TRI chemicals, than the material handled in the prior year. This decrease was partially offset by an increase of 950,000 pounds by BP Chemicals in Allen County.

Transfers Off-site for treatment and disposal decreased 1.85% between 1998 and 1999. While over 100 facilities reported reduced off-site management, two facilities, Shell Chemical, located in Washington County, and Onyx Environmental Services (a RCRA permitted facility), located in Montgomery County, each reported decreases of more than one million pounds. Shell Chemical was able to significantly reduce the amount of waste sent off-site by using the material as a “product” which is now used by other industries.

On-site recycling decreased by 19.2%. The largest decreases were reported by American Steel Foundries located in Stark County and DuPont’s Circleville Plant in Pickaway County. Decreases were attributed to both decreases in production and improved process efficiencies, which significantly reduced quantities of TRI listed chemicals requiring recycling or treatment.

Figure 1: 1987 - 1999 TRI Trends



Energy recovery on-site increased by 6.5%. This was primarily due to a production increase by Lafarge Corporation, located in Paulding County, which reported an increase of more than 12 million pounds. Lafarge Corporation burns waste solvents in the manufacture of cement.

Off-site energy recovery increased by 7.56% with three facilities reporting an increase of one million pounds each. These are Chemtron in Lorain County, BASF in Dark County and Nova Chemicals in Washington County. Chemtron is a RCRA permitted facility.

Off-site recycling decreased 3.24% from 1998 to 1999. While nine facilities increased off-site recycling by more than one million pounds, overall off-site recycling was down slightly. Five facilities decreased off-site recycling by more than one million pounds, with PMX Industries, located in Cuyahoga County, reporting the largest decrease of almost 8 million pounds due to a plant closing.

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Appendix A: TRI Data by Chemical,
This is an alphabetic summary of releases by chemical, summarized by discharge type (air, POTW, etc.) and by number of reporting facilities. Weights are in pounds

Appendix B: County Summary,
This presents certain county "top five" chemical and facility information and multi-year county trend information for both total and normalized data. Weights are in pounds.

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 first TRI reports were filed July 1, 1988, covering releases in calendar year 1987. 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 estimated releases and transfers of toxic chemicals to U.S. EPA and to the state where the facility is located. Seven non-manufacturing industrial sectors are required to report under TRI beginning with reporting year 1998. The TRI chemical list includes approximately 650 chemicals and chemical categories.

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 and established filing fees for covered facilities to support the TRI Program. Ohio EPA's Division of Air Pollution Control coordinates the TRI Program.

Ohio EPA annually inspects approximately 100 facilities. In calendar year 2000, Ohio EPA resolved three enforcement actions against facilities which had not filed TRI reports.

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 manufacturing facilities in Standard Industrial Classification codes 20 through 39. Seven non-manufacturing industrial sectors were added on May 1, 1997: metal mining, coal mining, coal and oil-fired electricity generating facilities, commercial hazardous waste treatment facilities, chemicals and allied products (wholesale), petroleum bulk stations (wholesale), and solvent recovery services. Reports for these non-manufacturing industrial sectors were first filed July 1, 1999, covering calendar year 1998.
3. It manufactured or processed a reportable toxic chemical in quantities exceeding the thresholds established by U.S. 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 75,000 pounds for calendar year 1987, 50,000 pounds for calendar year 1988, and 25,000 pounds for calendar year 1989 and subsequent years.

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. 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 can file a certification statement or Form A instead of a full Form R.

CHEMICALS

The list of reportable toxic chemicals has evolved since the enactment of Section 313. Approximately 650 toxic chemicals and chemical categories are currently subject to reporting under Section 313. These chemicals vary widely in form (solid, liquid and gas) and in 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 the 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. The list of reportable chemicals can be obtained from Ohio EPA or U.S. EPA, and is available on the Internet at <http://www.epa.gov/tri/chemical.htm>.

Upon critical review of national data, U.S. EPA noticed an apparent under-reporting of nitrate compounds, typically generated during the treatment of nitric acid. That agency conducted a focused compliance initiative, resulting in additional 1995 through 1999 nitrate compounds reports nationally, many in Ohio. A significant portion of releases to publically owned treatment works (POTWs, the municipal sewer systems) is due to nitrate compounds and this initiative.

FEDERAL FACILITIES

President Clinton issued an executive order under which federal facilities must comply with the planning and reporting provisions of EPCRA and the Pollution Prevention Act (PPA) of 1990. Executive Order #12856 requires all federal facilities that manufacture, process or otherwise use any listed chemical above the reporting threshold to submit a toxic chemical release inventory Form R. The first reports for federal facilities were submitted July 1, 1995 for calendar year 1994.

LIMITATIONS OF THE DATA

The user of the TRI data should be aware of the limitations of the data in order to accurately interpret its significance. The TRI data has some significant limitations:

- TRI covers only certain manufacturing industries. Many non-manufacturing industries release toxic chemicals into the environment. U.S. EPA added seven additional non-manufacturing industrial sectors, which reported for the second time on July 1, 2000.
- For reporting year 1999, TRI covers approximately 650 toxic chemicals and chemical categories. The TRI data does not represent all chemicals used by all manufacturing industry.
- 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.
- 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.
- 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.
- The TRI report contains information regarding the release of chemicals, not the public's exposure to the chemicals. Some chemicals break down when exposed to the environment. Some chemicals disperse rapidly when released into the environment, eliminating their threat to public health and to the environment. Other highly toxic chemicals may not disperse when released. 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 community to chemicals. Screening risk assessments must be completed before health and environmental assessments can be made.
- The addition of non-manufacturing industrial sectors can lead to double counting of toxic releases. To calculate total releases and transfers, Ohio EPA identified transfers off-site to a facility which reported TRI releases of the same chemical, and subtracted the transfer off-site from the total releases. If the off-site location name or permit number did not match a reporting facility, the transfer off-site was included in the total releases and transfers. Inconsistent reporting of facility names can lead to double counting.
- Ohio EPA conducts extensive data quality efforts to make every attempt to ensure that the data compiled in this report accurately reflects the data reported by the facilities; however, we acknowledge the possibility of errors due to data entry or problems with the reporting software. Because the TRI data is based on estimates, facilities are encouraged to revise their reports when the estimates are improved. Revisions and corrections of these errors are entered into the Ohio TRI database on an ongoing basis.

TRI REGULATORY CHANGES

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. The following list identifies the significant changes which U.S. EPA has finalized, or has formally proposed.

Small Source Exemption: On November 28, 1994, U.S. EPA finalized an exemption for facilities which generate a small quantity of waste. 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 permitted to file a certification statement (referred to as a Form A) instead of a full Form R.

Persistent and Bioaccumulative Toxic Chemicals

On October 29, 1999, U.S. EPA published a final rule which lowered the TRI reporting threshold for persistent bioaccumulative toxic (PBT) chemicals and added PBT chemicals and PBT chemical compound categories to TRI. The following chemicals were added with a lower threshold:

benzo(g,h,i)perylene	10 pound threshold
benzo(j,k)fluorene (fluoranthene)	100 pound threshold
3-methylcholanthrene	100 pound threshold
pentachlorobenzene	10 pound threshold
tetrabromobisphenol A (TBBPA)	100 pound threshold
dioxin and dioxin-like compounds	0.1 gram threshold
vanadium and vanadium compounds	10/25k pound threshold

U.S. EPA lowered the reporting threshold for the following TRI chemicals:

10 pound threshold - chlordane, heptachlor, hexachlorobenzene, isodrin, polychlorinated biphenyls, toxaphene, mercury and mercury compounds.

100 pound threshold - aldrin, methoxychlor, pendimethalin, polycyclic aromatic compounds and trifluralin.

Chemical List Expansion: On November 28, 1994, U.S. EPA published the final rule which added 282 toxic chemicals and chemical categories to the list of reportable chemicals. Approximately 170 of these chemicals are active ingredients in pesticides. These chemicals were reportable beginning with calendar year 1995, with the first reports filed July 1, 1996.

Facility Expansion: On May 1, 1997, U.S. EPA finalized the addition of non-manufacturing industrial sectors. Seven industrial groups were added: metal mining, coal mining, coal and oil-fired electricity generating facilities, commercial hazardous waste treatment facilities, chemicals and allied products (wholesale), petroleum bulk stations (wholesale), and solvent recovery services. Reports for these facilities were filed July 1, 1999, covering calendar year 1998.

Lead and Lead Compounds: Effective January, 2001 U.S. EPA issued a final rule which lowers the TRI reporting thresholds for lead and lead compounds. Effective for the 2001 reporting year, the threshold for lead and lead compounds is lowered to 100 pounds. (The lower reporting thresholds apply to lead and all lead compounds except for lead contained in stainless steel, brass, and bronze alloys.) Lead and lead compounds, persistent bioaccumulative toxic (PBT) chemicals, are a particular concern because of their toxicity in children. The lower threshold will make more information available to communities on lead and lead compounds.

Delisted Chemicals: Methyltrichlorosilane, Dimethyltrichlorosilane and Trimethylchlorosilane (effective November, 1994) and Phosphoric Acid (effective June, 2000) have been removed the list of TRI chemicals.

OHIO EPA PROGRAMS RELATED TO TRI CHEMICALS

The availability of TRI data has increased awareness of toxic chemicals within Ohio, and has focused attention on the reduction and management of these chemicals. EPCRA does not mandate the control of toxic releases or require reduction of the releases of toxic chemical or chemical usage. There are numerous other programs within Ohio EPA that directly impact the management of TRI chemicals through the issuance of permits or through other regulatory or non-regulatory activities. Most releases reported under TRI are regulated through air, water, and/or land disposal permits. The following descriptions provide an understanding of how some of these programs contribute toward reducing TRI releases, waste generation, and the risks associated with toxic chemicals.

Pollution Prevention: Ohio EPA's Office of Pollution Prevention (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. OPP provides several services to industrial facilities. OPP provides free on-site and other types of technical assistance for pollution prevention activities. Copies of hundreds of pollution prevention documents are available upon request and electronically through the World Wide Web at <http://www.epa.state.oh.us/opp>. OPP 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. OPP provides low-interest loans (2/3rds of prime) from \$25,000 to \$150,000 to businesses and facilities with less than 500 employees on-site in conjunction with the Ohio Department of Development. OPP also provides recognition for pollution prevention

Division of Surface Water: Ohio EPA's Division of Surface Water (DSW) regulates industries which discharge toxic chemicals to Publicly Owned Treatment Works or POTWs 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. Noncomplying facilities face enforcement action by either the community or Ohio EPA.

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.

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

Division of Hazardous Waste Management: Ohio EPA's Division of Hazardous Waste Management (DHWM) regulates generators of hazardous waste and facilities which treat, store, or dispose of such waste. Ohio EPA assigns an identification number to hazardous waste handlers regulated under the Resource Conservation and Recovery Act (RCRA). Facilities using a surface impoundment to dispose of TRI chemicals may also fall under the regulations of the Clean Water Act and 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.

Division of Air Pollution Control: Ohio EPA's Division of Air Pollution Control (DAPC) regulates new sources of toxic air emissions through the 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.

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 National Ambient Air Standards are levels of air quality established by U.S. EPA to protect the public and the environment. These levels have been adopted for ozone, lead, nitrogen dioxide, sulfur dioxide, particulate matter, and carbon monoxide.

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. U.S. EPA regulates sources of air toxics by issuing maximum achievable control technology (MACT) standards for source categories of these 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.

Section 112(r) of the Clean Air Act Amendments of 1990 created a risk management planning program. The purpose of these regulations is to prevent accidental releases of regulated substances and to reduce the severity of those releases that do occur. A facility is subject to the regulation if they have any listed regulated substance above a given threshold in a single on-site process. U.S. EPA estimates that the program affects approximately 700 facilities in Ohio, many already reporting under TRI. In 1998, legislation was passed through which Ohio EPA was granted authority to administer and enforce the program. Ohio EPA received delegated authority from U.S. EPA to oversee the program in January 2000.

EXPLANATION OF TERMS

Discharge to Publicly Owned Treatment Works (POTWs) - A POTW is a wastewater treatment facility owned by a municipality or other unit of local government. Some TRI facilities generate wastewater which is transferred through pipes or sewers to a POTW. Treatment or removal of a chemical from the wastewater depends upon the nature of the chemical, as well as the treatment methods present at the POTW. Chemicals that are easily utilized as nutrients by microorganisms, or have a low solubility in water, are likely to be removed to some extent. Chemicals that are volatile and have a low solubility in water may evaporate into the atmosphere. Not all TRI chemicals can be treated or removed by a POTW. Some chemicals, such as metals, may be removed but are not destroyed, and may be disposed of in landfills or discharged into receiving waters.

Quantity Recycled Off-Site - This is the quantity of toxic chemical that was shipped for recycling, not the amount of chemical recovered at the off-site location.

Quantity Recycled On-Site - This is the quantity of toxic chemical recovered at the facility that generated it and made available for further uses.

Quantity Treated On-Site - This is the quantity of toxic chemical destroyed or converted to a chemical that is not reportable under TRI in on-site waste treatment operations.

Quantity Used for Energy Recovery - This is the quantity of toxic chemical that was combusted in some form of energy recovery device, such as a furnace or a boiler. The toxic chemical should have a heating value high enough to sustain combustion. The use of a chemical as a fuel constitutes energy recovery.

Releases to Air - Releases to air are reported as stack or fugitive emissions. Stack emissions are releases to air that occur through stacks, vents or other confined air streams. Fugitive emissions are releases that are not through a confined air stream. Fugitive emissions include evaporative losses from surface impoundments, spills, and releases from building ventilation systems.

Releases to Water - Releases to water include discharges to streams, rivers, lakes, and other bodies of water. Releases due to stormwater runoff are also reportable under TRI.

Releases to Land - Releases to land occur within the boundaries of the reporting facility. Releases to land included disposal of toxic chemicals in landfills, land treatment/application farming (in which a waste containing a listed chemical is applied to or incorporated into soil), surface impoundments (which are uncovered holding areas used to evaporate and/or settle waste materials), and other land disposal methods (such as leaks, spills, or waste piles)

Transfers Off-site for Treatment and Disposal - Waste transferred off-site for disposal is generally either released to land at an off-site facility or injected underground. Toxic chemicals transferred off-site for treatment may be treated through a variety of methods including neutralization, incineration, and physical separation. These methods result in varying degrees of destruction of the chemical.

Underground or Deepwell Injection - Underground injection is the contained release of a fluid into a subsurface well for the purpose of waste disposal. Class I wells are used to inject liquid hazardous wastes or dispose of industrial and municipal waste waters beneath the lowermost underground source of drinking water.

SUMMARY OF DATA

In 1999, 347.4 million pounds of toxic chemicals were reported as having been released to the environment and transferred off-site for treatment or disposal. The data presented for 1999, including the listings of top companies, chemicals and counties, reflects the TRI data as reported July 1, 2000. Changes to the list of reportable chemicals create difficulties in presenting historical TRI data in an accurate and understandable form.

This report presents the data in the following matter:

- Releases for chemicals which were “redefined” were modified in this report to reflect the change if it did not require a case by case evaluation. Non-aerosol forms of hydrochloric acid are no longer reportable. Therefore, only air releases of hydrochloric acid were included in the TRI data presented in this report. Ammonia was “redefined” for calendar year 1994; only 10% of aqueous ammonia is now reportable. Because this change requires a case by case evaluation, past years’ data was not modified. Ammonium nitrate was delisted for calendar year 1995. However, the ammonia portion is still reportable and the nitrate portion is reportable as nitrate compounds. Due to the change in the reporting requirement for ammonia in 1994, only ten percent of the ammonia portion of ammonium nitrate was reportable for calendar year 1995. Only ten percent of the ammonia portion of ammonium nitrate was included in the data presented in this report.
- To accurately represent trends in the toxic releases, the chemicals which were added, “redefined” or delisted, and the expansion industries were not included in the calculation of trends for the executive summary and the figures representing trends within this report. Table 2A represents the TRI data as it was reported each year. Table 2B represents the TRI data used to calculate trends. All Phase 1 expansion chemicals, delisted chemicals or “redefined” chemicals, and the expansion industries were excluded from the data in Table 2B, so that the historical trends analysis would reflect true changes in the reported releases and not reflect changes in the reporting requirements.
- Throughout this report, TRI data are referred to as “total releases and transfers.” Total releases and transfers refer to on-site releases to air, water, land; deepwell injection; discharges to POTWs; and off-site transfers for treatment and disposal only. The Pollution Prevention Act of 1990 added the reporting of transfers off-site for recycling and energy recovery. For the purpose of this report, transfers for recycling and energy recovery are grouped separately from transfers for treatment and disposal.
- The addition of hazardous waste treatment facilities, and other non-manufacturing industrial sectors has resulted in the potential to double count releases. Manufacturing facilities report transfers off-site to these non-manufacturing facilities, and, in turn, the non-manufacturing facilities report their releases to the air, water, land and transfers off-site. To calculate total releases and transfers within the state, transfers off-site by manufacturing facilities to facilities which reported the same chemical were not included in the data presented as transfers off-site or total releases and transfers. To calculate county totals, transfers off-site by manufacturing facilities to facilities located in the same county which reported the same chemical were not included in the data presented as transfers off-site or total releases and transfers.

Statewide totals of on-site releases, off-site transfers, and on-site waste management for reporting years 1987 to 1999 are provided in Table 2A and 2B. Table 2A represents the TRI data as reported by facilities, including the data for delisted, added, and modified chemicals and the expansion industrial sectors. Table 2B does not include data for: 1) chemicals that have been delisted, added or modified and 2) new industrial sectors which were added to TRI in order to allow for historical trend analysis.

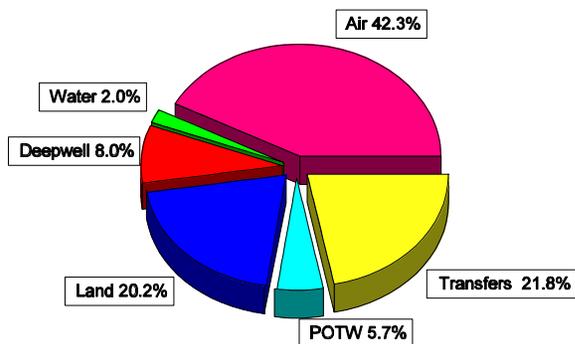
Table 2A: Summary of TRI Data in Millions of Pounds Per Year - All Data As Reported (Including All Chemicals and Facilities)

Environmental Medium	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Air	136.67	140.25	132.61	114.78	104.62	91.92	83.61	79.89	75.42	71.18	67.43	159.37	147.11
Water	7.69	4.67	5.93	5.86	5.97	4.76	4.76	1.20	5.93	6.15	6.23	6.26	6.96
Deepwell Injection	22.30	17.08	16.31	24.80	28.38	24.03	25.19	14.49	14.47	13.68	11.58	28.77	27.65
Land On-site	53.60	74.06	33.71	24.88	23.00	22.11	19.45	21.69	33.62	29.66	27.56	93.99	70.27
POTW	19.58	21.28	17.13	24.13	21.66	20.99	16.33	8.51	18.42	18.42	19.01	19.44	19.65
Transfers Off-site for Treatment & Disposal	210.18	209.71	103.47	81.01	52.70	58.25	60.19	47.04	45.79	51.02	63.35	77.22	75.79
Total Releases & Transfers	450.02	467.04	309.17	275.46	236.33	222.06	209.53	172.81	193.66	190.12	195.17	385.04	347.42
Transfers Off-Site to Facilities Report Under TRI												26.17	30.38
Adjusted Total Releases and Transfers (Does not include transfers off-site to facilities which report under TRI)												358.87	317.04
Off-Site Energy Recovery	NA	NA	NA	NA	36.15	34.38	28.26	37.22	38.02	40.74	33.06	101.44	59.92
On-Site Energy Recovery	NA	NA	NA	NA	103.43	106.84	104.32	95.23	90.44	96.34	107.66	116.97	124.57
Off-Site Recycling	NA	NA	NA	NA	151.27	188.70	205.02	228.78	221.70	194.92	189.47	188.63	182.51
On-Site Recycling	NA	NA	NA	NA	546.83	678.09	580.96	263.61	348.55	327.22	220.81	292.98	236.83
On-Site Treatment	NA	NA	NA	NA	443.45	482.26	376.81	261.34	160.02	152.00	139.39	218.18	265.60
Number of Reporting Facilities	1,372	1,586	1,750	1,774	1,738	1,741	1,745	1,718	1,672	1,621	1,603	1,666	1,658
Number of Form R's	5,525	6,344	6,518	6,558	6,344	6,230	6,165	5,767	5,172	4,940	4,672	5,347	5,232
Number of Form A's	NA	505	571	774	1,077	880							
No. of Chemicals Reported	171	177	181	182	182	185	191	184	239	231	216	311	312

**Table 2B: Summary of TRI Data in Millions of Pounds Per Year
Excluding Chemicals and SIC Codes Which Were Not Reportable in All Reporting Years**

Environmental Medium	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Air	114.26	118.52	113.61	98.48	87.59	75.56	67.70	62.13	53.89	49.82	47.71	43.39	40.72
Water	1.35	1.33	1.44	0.55	1.46	0.79	0.55	0.63	1.16	1.50	1.04	0.97	0.46
Deepwell Injection	16.87	11.51	10.96	10.54	11.70	5.99	8.64	8.21	11.78	11.57	9.42	11.40	12.28
Land On-site	53.27	74.01	33.66	24.83	22.94	22.05	19.33	21.57	33.47	29.56	27.44	29.33	19.07
POTW	11.56	14.40	11.88	13.28	11.08	9.98	8.34	6.32	6.09	7.22	7.01	5.89	5.73
Transfers Off-site for Treatment & Disposal	181.03	163.57	76.28	62.08	37.02	37.19	35.02	39.02	43.88	48.89	61.49	56.87	57.97
Total Releases & Transfers	378.34	383.33	247.83	209.76	171.79	151.56	139.58	137.88	150.27	148.55	154.10	147.85	136.23
Off-Site Energy Recovery	NA	NA	NA	NA	36.14	34.38	28.26	37.21	37.42	40.24	32.39	33.33	29.84
On-Site Energy Recovery	NA	NA	NA	NA	103.42	106.66	104.14	95.05	82.73	87.53	98.05	107.53	110.58
Off-Site Recycling	NA	NA	NA	NA	136.30	172.53	186.73	213.47	220.00	193.50	187.85	184.24	175.33
On-Site Recycling	NA	NA	NA	NA	167.76	292.90	239.76	209.22	332.54	302.21	200.31	248.93	187.29
On-Site Treatment	NA	NA	NA	NA	149.73	181.15	167.22	118.95	125.82	129.93	117.66	118.54	131.30

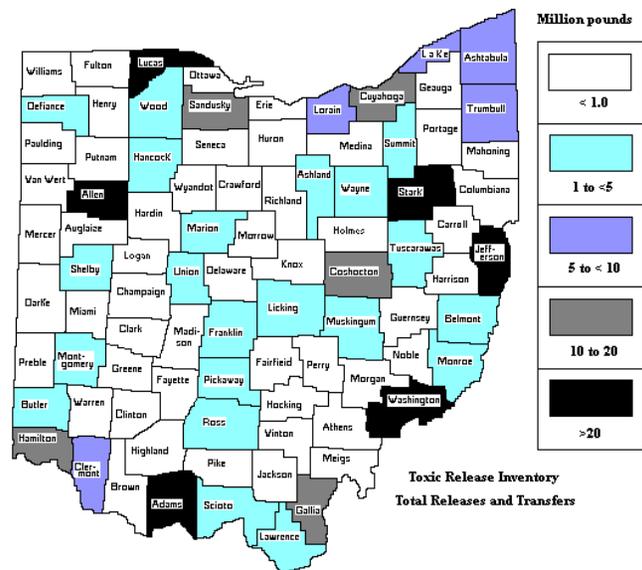
Figure 2: 1999 Toxic Releases and Transfers
all data as reported for calendar year 1999



TOTAL RELEASES AND TRANSFERS FOR 1999*

10 Top Counties

Counties	Pounds
1. Lucas	41,615,880
2. Washington	28,636,394
3. Jefferson	25,569,657
4. Stark	21,658,241
5. Allen	20,465,824
6. Adams	20,160,195
7. Hamilton	18,406,333
8. Cuyahoga	14,788,056
9. Coshocton	13,299,618
10. Sandusky	10,267,336



10 Top Chemicals

Chemical	Pounds
1. Hydrochloric Acid	67,816,658
2. Zinc & Compounds	56,634,948
3. Manganese & Compounds	23,827,691
4. Nitrate Compounds	19,579,641
5. Sulfuric Acid	16,079,477
6. Ammonia	14,208,213
7. Chromium & Compounds	11,743,827
8. Hydrogen Fluoride	10,984,302
9. Barium	8,103,341
10. Acetonitrile	7,460,541

10 Top Facilities

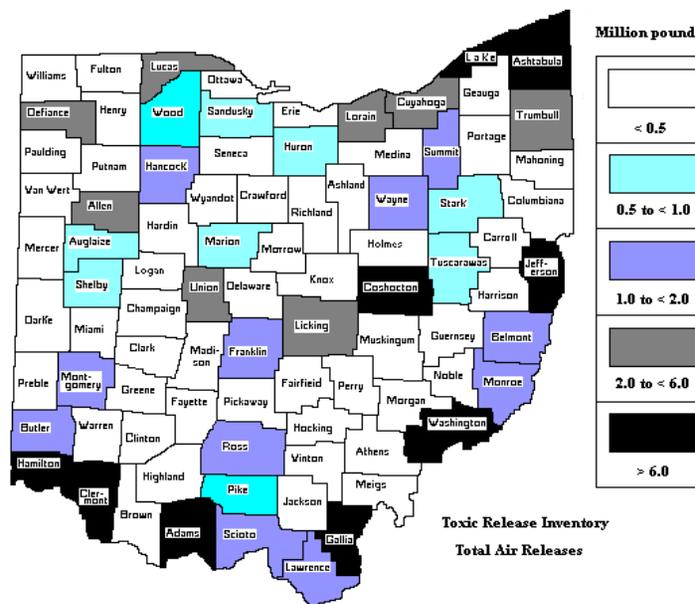
Facility - County	Pounds
1. Envirosafe Services of Ohio Inc. - Lucas	38,576,240
2. Dayton Power & Light J.M. Stuart Station - Adams	15,481,762
3. BP Chemicals Inc. - Allen	14,677,529
4. Eramet Marietta Inc. - Washington	14,537,971
5. Vickery Environmental Inc. - Sandusky	13,417,289
6. Cardinal Plant - Jefferson	10,791,479
7. First Energy - W.H. Sammis Plant - Jefferson	10,182,369
8. Envirite of Ohio - Stark	8,1358,05
9. Ohio Valley Electric - Kyger Creek Station - Gallia	8,124,105
10. AEP Muskingum River Plant - Washington	7,235,003

*Does not include transfers off-site to facilities reporting the same chemical.

AIR RELEASES FOR 1999*

10 Top Counties

Counties	Pounds
1. Jefferson	17,481,527
2. Adams	16,718,629
3. Washington	12,656,916
4. Gallia	9,574,986
5. Hamilton	7,786,494
6. Clermont	7,571,252
7. Coshocton	7,463,958
8. Ashtabula	6,784,779
9. Lake	6,419,671
10. Allen	5,663,283



10 Top Chemicals

Chemical	Pounds
1. Hydrochloric Acid	67,792,930
2. Sulfuric Acid	16,049,371
3. Ammonia	10,773,760
4. Hydrogen Fluoride	6,648,602
5. Carbonyl Sulfide	5,603,830
6. Xylene - mixed isomers	4,086,252
7. Certain Glycol Ethers	3,866,882
8. Methanol	3,733,441
9. Methyl Ethyl Ketone	2,852,041
10. Toluene	2,777,836

10 Top Facilities

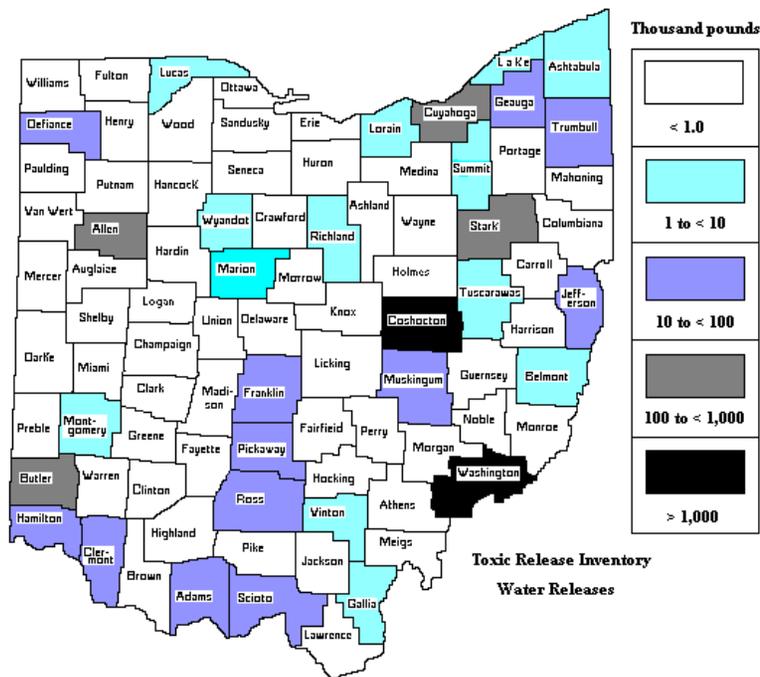
Facility - County	Pounds
1. Dayton Power & Light J.M. Stuart Station - Adams	12,825,329
2. Cardinal Plant - Jefferson	9,251,990
3. First Energy - W.H. Sammis Plant - Jefferson	7,889,882
4. Ohio Valley Electric - Kyger Creek Station - Gallia	7,217,185
5. CG&E Miami Fort Station - Hamilton	6,526,448
6. AEP Muskingum River Plant - Washington	6,299,998
7. AEP Conesville Plant - Coshocton	5,971,741
8. CG&E Beckjord Station - Clermont	5,875,820
9. First Energy - East Lake Plant - Lake	5,329,320
10. Millennium Inorganic Chemicals Inc. - Astabula	4,312,591

* All data included

RELEASES TO WATER FOR 1999*

10 Top Counties

<u>Counties</u>	<u>Pounds</u>
1. Coshocton	4,023,883
2. Washington	1,012,645
3. Stark	970,485
4. Allen	141,289
5. Butler	136,587
6. Cuyahoga	104,684
7. Hamilton	80,135
8. Jefferson	66,899
9. Scioto	64,784
10. Trumbull	59,519



10 Top Chemicals

<u>Chemical</u>	<u>Pounds</u>
1. Nitrate Compounds	5,892,912
2. Ammonia	372,861
3. Manganese & Compounds	349,316
4. Barium & Compounds	59,168
5. Formic Acid	53,401
6. Zinc & Compounds	44,708
7. Formaldehyde	34,101
8. Copper & Compounds	24,592
9. Nickel & Compounds	20,097
10. Naphthalene	17,069

10 Top Facilities

<u>Facility - County</u>	<u>Pounds</u>
1. AK Steel Corp. Coshocton Works - Coshocton	4,001,090
2. J&L Specialty Steel Inc. - Stark	669,535
3. Eramet Marietta Inc. - Washington	578,000
4. Shell Elastomers LLC - Washington	390,612
5. Massillon Stainless Inc. - Stark	250,750
6. AK Steel Corp. - Butler	134,546
7. LTV Steel Co. - Cleveland Works - Cuyahoga	102,560
8. Clark Refining & Marketing Inc. - Allen	81,350
9. PCS Nitrogen of Ohio L.P. - Allen	59,920
10. Aristech Chemical Corp. - Scioto	54,266

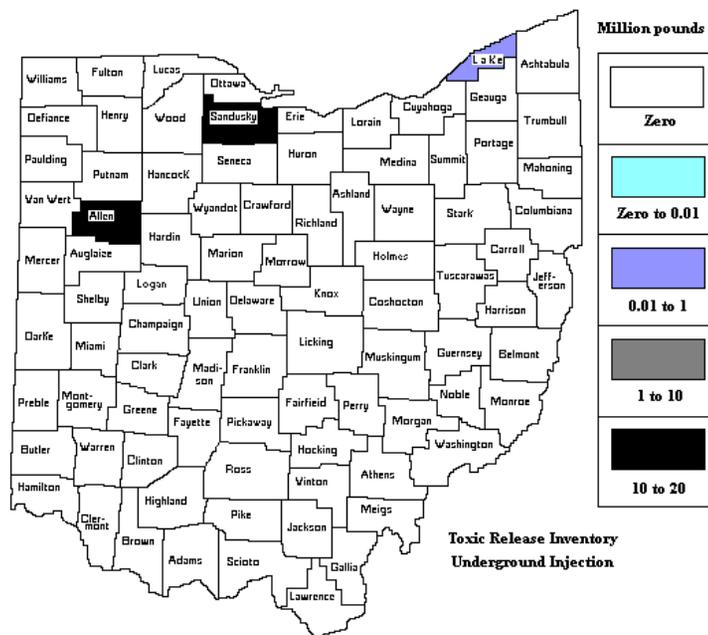
*All data included

DEEPWELL INJECTION FOR 1999*

Counties

Counties	Pounds
1. Allen	14,272,051
2. Sandusky	13,360,000
3. Lake	13,035

Note - Only three facilities currently report on-site deepwell injection.



10 Top Chemicals

Chemical	Pounds
1. Acetonitrile	7,444,000
2. Nitric Acid	6,200,000
3. Hydrogen Fluoride	4,100,000
4. Ammonia	2,333,000
5. Acrylamide	1,243,000
6. Acetamide	1,086,000
7. Zinc & Compounds	850,000
8. Cyanides	848,000
9. Chromium & Compounds	720,250
10. Acrylic Acid	526,000

Facilities

Facility - County	Pounds
1. BP Chemicals Inc. - Allen	14,272,051
2. Vickery Environmental Inc. - Sandusky	13,360,000
3. Tomen Agro Perry - Lake	13,035

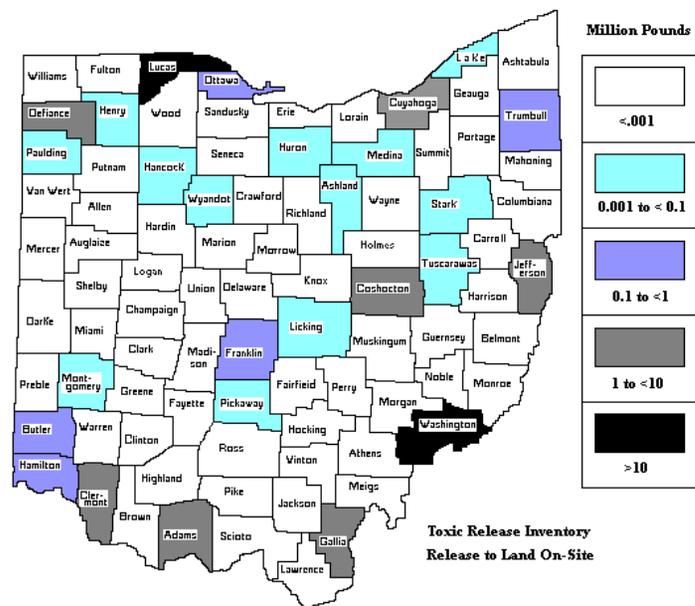
Note - Only three facilities currently report on-site deepwell injection.

* All data included

RELEASES TO LAND ON-SITE FOR 1999*

10 Top Counties

Counties	Pounds
1. Lucas	38,619,265
2. Washington	10,581,500
3. Cuyahoga	4,889,468
4. Adams	3,431,000
5. Gallia	3,363,855
6. Defiance	2,051,823
7. Clermont	1,620,085
8. Jefferson	1,502,250
9. Coshocton	1,130,420
10. Franklin	910,481



10 Top Chemicals

Chemical	Pounds
1. Zinc & Compounds	38,590,413
2. Manganese & Compounds	15,249,052
3. Barium & Compounds	5,371,485
4. Lead & Compounds	3,372,246
5. Chromium & Compounds	2,880,156
6. Copper & Compounds	1,886,933
7. Nickel & Compounds	1,084,991
8. Arsenic & Compounds	559,975
9. Cobalt & Compounds	323,343
10. Aluminum (Fume Or Dust)	210,000

10 Top Facilities

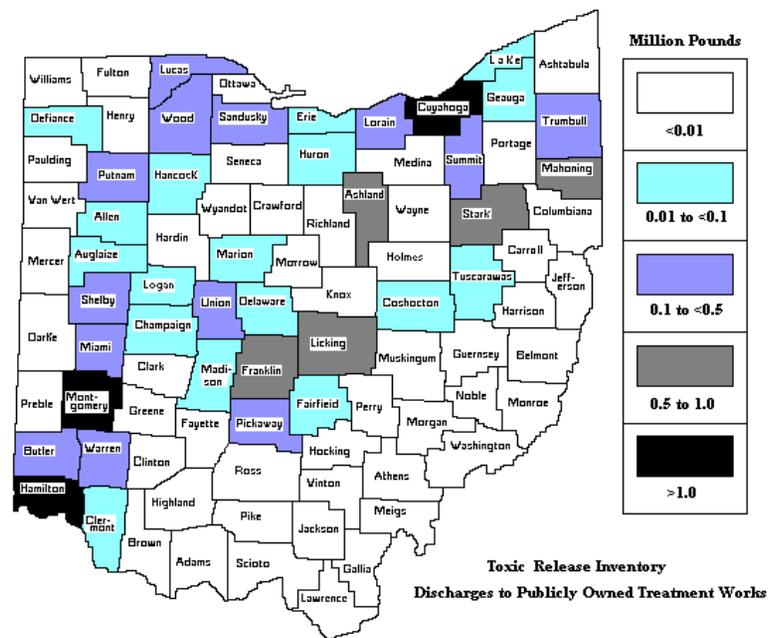
Facility - County	Pounds
1. Envirosafe Services of Ohio, Inc. - Lucas	38,573,000
2. Eramet Marietta Inc. - Washington	9,664,800
3. LTV Steel Co. - Cleveland Works - Cuyahoga	4,889,350
4. J.M. Stuart Station - Adams	2,646,000
5. American Electric Power Gavin Plant - Gallia	2,464,755
6. GM Powertrain Defiance - Defiance	1,981,100
7. Cardinal Plant - Jefferson	1,502,250
8. American Electric Power Conesville - Coshocton	1,130,420
9. Cincinnati Gas & Elec. Co./W.H. Zimmer	1,041,040
10. American Electric Power Co. Muskingum	916,700

* All data included

DISCHARGES TO POTW FOR 1999*

10 Top Counties

Counties	Pounds
1. Hamilton	9,366,841
2. Cuyahoga	1,711,082
3. Montgomery	1,405,787
4. Ashland	928,700
5. Stark	780,631
6. Licking	712,642
7. Franklin	628,708
8. Mahoning	514,186
9. Shelby	476,740
10. Warren	283,287



10 Top Chemicals

Chemical	Pounds
1. Nitrate Compounds	12,598,348
2. Methanol	3,414,717
3. Certain Glycol Ethers	889,350
4. Ammonia	674,037
5. Sodium Nitrite	557,664
6. Ethylene Glycol	334,521
7. Formaldehyde	157,925
8. Phenol	131,106
9. Barium & Compounds	99,189
10. Nitric Acid	98,846

10 Top Facilities

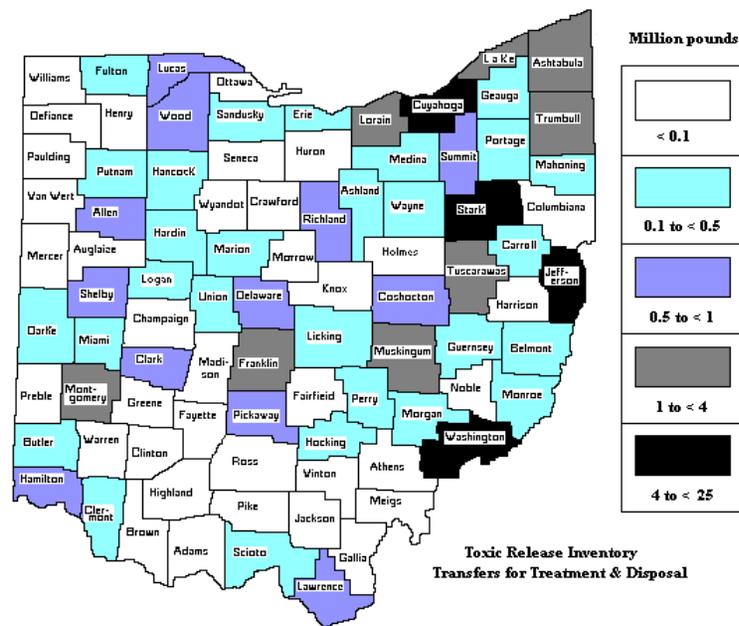
Facility - County	Pounds
1. Shepherd Chemical Co. - Hamilton	3,891,460
2. Cincinnati Specialties LLC - Hamilton	1,175,132
3. Cognis Corp. Cincinnati Plant - Hamilton	1,154,707
4. Grace Davison - Hamilton	1,027,000
5. Tremco Inc. - Ashland	920,000
6. B.F. Goodrich Hilton Davis Inc. - Hamilton	697,076
7. Anomatic Corp. - Licking	679,835
8. UCAR Graph-Tech Inc. - Cuyahoga	645,800
9. GE Co. Austintown Prods. - Mahoning	500,000
10. GMTG Moraine Assembly - Montgomery	462,536

* All data included

TRANSFERS OFF-SITE FOR 1999*

10 Top Counties

<u>Counties</u>	<u>Pounds</u>
1. Stark	24,241,742
2. Jefferson	6,518,981
3. Cuyahoga	6,085,095
4. Washington	4,385,333
5. Trumbull	3,439,831
6. Muskingum	3,041,912
7. Lorain	2,476,592
8. Ashtabula	2,074,549
9. Tuscarawas	2,023,260
10. Montgomery	1,851,854



10 Top Chemicals

<u>Chemical</u>	<u>Pounds</u>
1. Zinc & Compounds	20,352,439
2. Chromium & Compounds	10,185,794
3. Manganese & Compounds	9,050,463
4. Nitric Acid	4,248,521
5. Nickel & Compounds	3,659,460
6. Lead & Compounds	3,450,284
7. Barium & Compounds	2,698,808
8. Methanol	2,480,806
9. Copper & Compounds	1,604,550
10. Aluminum (Fume Or Dust)	1,422,822

10 Top Facilities

<u>Facility - County</u>	<u>Pounds</u>
1. Envirote of Ohio Inc. - Stark	7,932,975
2. American Steel Foundries - Stark	6,273,000
3. Timken Co. Faircrest Steel - Stark	4,353,450
4. Wheeling-Pittsburgh Steel Corp. - Mingo - Jefferson	3,913,494
5. CSC Ltd. - Trumbull	3,214,355
6. Eveready Battery Co. - Washington	3,035,804
7. AK Steel Corp. - Zanesville Works - Muskingum	2,635,390
8. FirstEnergy - W.H. Sammis Plant - Jefferson	2,280,200
9. Timken Co. Harrison Steel - Stark	2,122,100
10. Chemtron Corp. - Lorain	1,498,045

* All data included

RELEASES BY INDUSTRY

Table 3 presents the TRI releases and transfers by industrial group or Standard Industrial Classification (SIC) codes. Facilities report their SIC codes on the Form R.

Manufacturing facilities in SIC codes 20 through 39 were required to report under TRI through 1999. U.S. EPA recently added seven additional SIC codes, which reported for reporting year 1999. In addition, federal facilities are required to report to TRI under a presidential executive order. Federal facilities may fall in a variety of SIC codes, both within and outside of the manufacturing SIC code range. Federal facilities which fall outside of SIC codes 20 through 30 are grouped as "other" in Table 4.

In analyzing releases by manufacturing industry, trends remain fairly constant. The industry groups with the largest quantities of TRI releases and transfers for treatment and disposal in 1999 were SIC code 49 - electric, gas and sanitary services (162.7 million pounds) and SIC code 33 - primary metals (71 million pounds). The following table represents the industrial categories and their reported releases and transfers under TRI.

The new industrial sectors accounted for nearly 50 percent of the releases and transfers reported. SIC code 49 includes both electric services (coal and oil fired electric generating facilities) and sanitary services (hazardous waste treatment facilities subject to RCRA Subtitle C). The electric generating facilities accounted for releases and transfers of 102.1 million pounds, and the hazardous waste treatment facilities accounted for 60.7 million pounds of releases and transfers.

Figure 3: Releases and Transfers by Industrial Sector

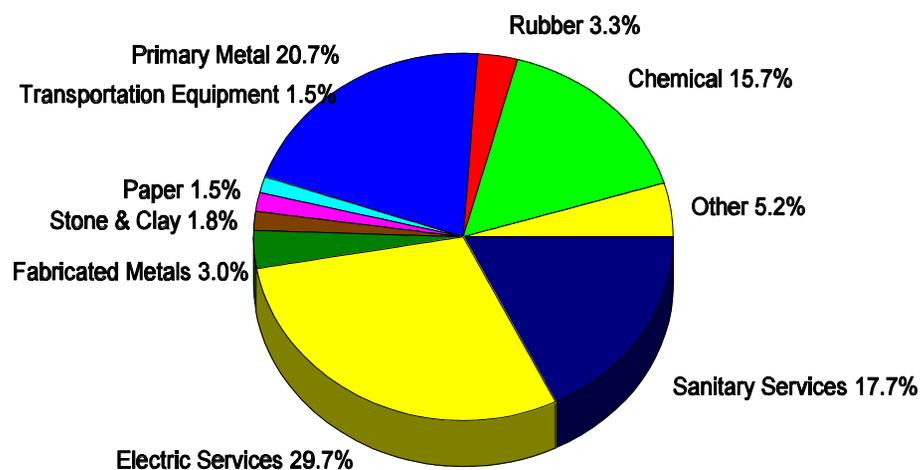


Table 3: Releases and Transfers by SIC Code

SIC Code	Industry Group	No. of Reporting Facilities	No. of Form Rs and Form As	On-Site Releases (Air, Water, Land On-site, and Deepwell Injection)	Discharges to POTW & Transfers Off-site for Treatment & Disposal	Transfers Off-site for Energy Recovery & Recycling	On-Site Recycling, Treatment, and Energy Recovery
12	Coal Mining	5	61	4,642	0	0	10,450
20	Food & Kindred Products	51	95	2,303,949	315,115	87,081	1241,782
22	Textile Mill Products	11	39	1,001,478	406,833	858,513	5,262,216
23	Apparel	3	10	213,480	74,856	30,750	1,035,173
24	Lumber & Wood Products	21	65	419,852	95,350	681,762	2,033,255
25	Furniture & Fixtures	8	16	252,115	204,951	1,180	800
26	Paper & Allied Products	29	108	4,605,705	436,422	1,721,474	25,847,268
27	Printing & Publishing	12	16	134,387	7,930	43,758	385,155
28	Chemicals & Allied Products	285	1363	31,310,417	22,662,464	40,786,874	147,160,782
29	Petroleum Refining	25	113	654,657	605,899	3,623,596	22,127,243
30	Rubber & Miscellaneous Plastics	211	482	7,341,855	3,835,727	2,821,607	6,041,556
32	Stone, Clay, Glass & Concrete	77	206	4,320,855	2,021,622	1,706,783	154,006,508
33	Primary Metal Industries	230	806	36,027,455	35,049,231	80,987,495	70,192,027
34	Fabricated Metal Products	271	693	4,929,409	5,524,745	21,190,051	21,124,741
35	Industrial Machinery	99	240	772,857	776,324	8,006,129	1,745,835
36	Electronic Equipment	68	171	1,469,333	3,404,924	21,756,755	10,080,773
37	Transportation Equipment	127	505	5,148,669	351,0602	25,054,784	12,430,357
38	Instruments and Medical Goods	11	23	69,789	302,295	1,440,290	1,666,649
39	Miscellaneous Manufacturing	13	56	398,634	755,875	53,855	733,700
49	Electric, Gas & Sanitary Services	36	519	150,069,761	12,724,164	17,613,718	112,955,279
51	Wholesale Trade - Chemical and Petroleum Products	54	458	207,004	991,707	8,830,670	23,262,398
73	Business Services	8	62	234,047	1,728,488	5,133,320	9,157,988
-	Other	3	4	98,680	0	1,860	79

MANAGEMENT OF TRI CHEMICALS IN WASTE

The Pollution Prevention Act (PPA) of 1990 required facilities to report information about the quantities of TRI chemicals in waste, managed both on-site and off-site. The PPA established a hierarchy of waste management options in which source reduction is the preferred approach to managing waste. Source reduction is defined as a means of preventing waste from being generated. In situations where source reduction cannot be implemented, the preferred management techniques in order of preference are recycling, energy recovery, and treatment.

The TRI data can be used to analyze trends in total quantities of TRI chemicals in waste to determine if facilities are reducing the amount of waste generated. As reported under TRI, waste falls under one of four categories based upon its final disposition. The first category is releases on-site, which includes releases to air, water, deepwell injection, and land on-site. The second category is discharges to POTWs and transfers off-site for treatment and disposal. The third category is transfers off-site for recycling and energy recovery, and includes waste recycled or used as fuel. The fourth category is waste management on-site, which includes on-site treatment, recycling, and energy recovery. The following figures provide the relative percentages of the total amount of waste generated in these four categories. As illustrated by the pie chart, the majority of waste generated never leaves the facility, but is managed on-site through treatment, recycling, or energy recovery. The on-site waste management data, when combined with the amounts released on-site and transferred off-site, is important in understanding the overall annual amount of waste which is generated at a facility.

Figure 4: Management of Total Waste

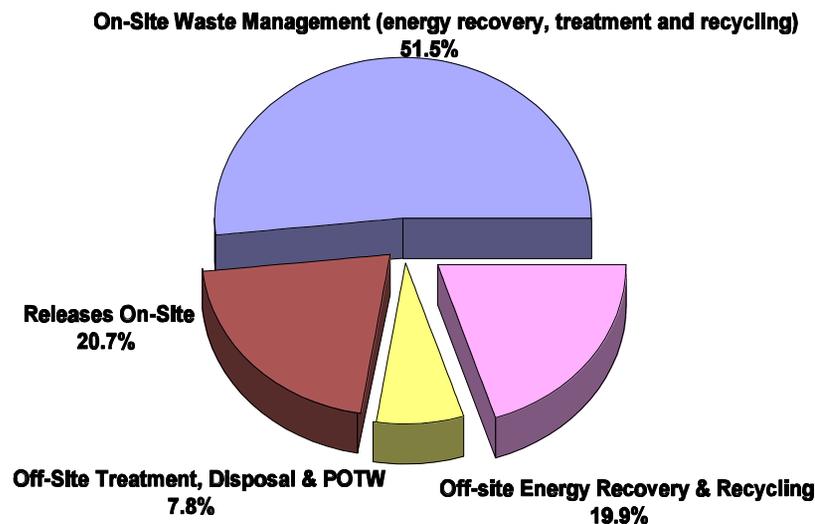
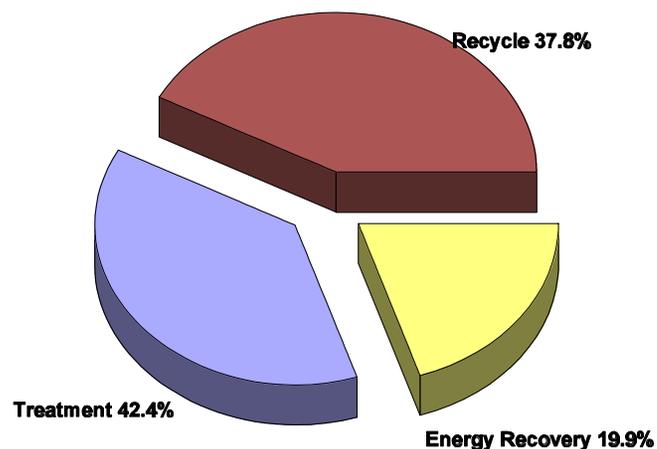


Figure 5: On-Site Waste Management



Over 300 facilities implemented source reduction activities during calendar year 1999. Source reduction means any activity which: (1) reduces the amount of any chemical entering any waste stream or released into the environment prior to recycling, treatment, or disposal; and (2) reduces the hazard to public health and the environment associated with the release(s) of such substances. Source reduction includes equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training, or inventory control. This continued level of source reduction by the reporting facilities demonstrates their commitment to continue to reduce toxic releases beyond environmental regulations.

Facilities also report their production ratios or an activity index for the current reporting year as compared to the prior reporting year. This ratio is to demonstrate the relative use of a particular toxic chemical. This ratio or index must be based on some variable of production or activity which reflects the toxic chemical usage. A ratio of 1.1 would indicate a 10% increase in production related to the reported chemicals. In 1999, 45% of the TRI facilities reported an increase in production. Table 4 represents the changes in production reported by facilities covered by TRI.

Table 4: Changes in Production from 1998 to 1999

Changes in Production (production ratio)	% of Reporting Industry
Production increased more than 30%	10
Production increased between 20% - 30%	6
Production increased between 10% - 20%	13
Production increased less than 10%	16
No change in production	11
Production decreased less than 10%	13
Production decreased between 10% - 20%	12
Production decreased between 20% - 30%	4
Production decreased more than 30%	6
Not reported	9

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 national ranking for each type of release. Because the complete 1999 national data was not available prior to the drafting of this report, the national ranking for 1999 was not yet available. Tables 6 and 7 identify the top ranked states for 1998 TRI data based on US EPA's national TRI report.

Table 5: Ohio's National Rank

Environmental Medium	1996	1997	1998
Air	5	4	1
Water	7	9	14
Land On-Site	4	3	7
Deepwell Injection	4	4	3
Number of Reporting Facilities	1	1	1

Table 6: Top States for Number of Reporting Facilities

Number of Reporting Facilities in 1998		
Rank	State	Number of Facilities
1.	Ohio	1,682
2.	California	1,499
3.	Pennsylvania	1,389
4.	Texas	1,381
5.	Illinois	1,344

Table 7: Top States for Releases

Releases to Air in 1998			Releases to Water in 1998			Releases to Land On-Site in 1998			Deepwell Injection in 1998		
Rank	State	Emissions in pounds	Rank	State	Releases in pounds	Rank	State	Releases in pounds	Rank	State	Injection in pounds
1.	Ohio	159,320,947	1.	Pennsylvania	46,127,006	1.	Nevada	1,266,957,467	1.	Texas	921,411,824
2.	Texas	119,694,651	2.	Louisiana	37,233,226	2.	Arizona	1,058,532,077	2.	Louisiana	53,375,389
3.	Tennessee	104,821,484	3.	Texas	25,206,597	3.	Utah	507,128,243	3.	Ohio	31,170,724
4.	Pennsylvania	97,797,258	4.	Mississippi	11,388,138	4.	Alaska	274,960,499	4.	Alaska	29,024,256
5.	Indiana	97,393,652	5.	New York	8,047,687	5.	New Mexico	251,818,888	5.	Florida	27,473,112
			14.	Ohio	6,168,169	7.	Ohio	90,380,125			

ADDITIONAL INFORMATION

Ohio EPA's Division of Air Pollution Control (DAPC) has the primary responsibility in Ohio for collecting, processing, and distributing information submitted under TRI. Additional information not contained in this report is available to the public through the TRI Program located in DAPC.

- Access to hard copy reports - The reports submitted by facilities are available for review at Ohio EPA's office located at 122 South Front Street in Columbus from 8:00 a.m. to 5:00 p.m. Photocopies are also available.
- Information requests by telephone - TRI staff can take requests by phone to provide information on individual facilities. TRI information can be supplied by fax or by mail as either a hard copy or on a computer disk. Data searches and summaries can also be performed on the data. Call the TRI staff at (614) 644-2270 during business hours.
- Information through the Internet - The TRI staff maintains a TRI web site on Ohio EPA's web page. The complete Ohio database and an electronic version of this report can be accessed through the web page. The TRI data can be found at the following Internet address: www.epa.state.oh.us/dapc/tri/tri.html .
- 1998 Toxic Release Inventory Public Data Release - U.S. EPA's most recent annual TRI report is available. It covers information nationwide and provides a good perspective on how Ohio compares to other states. This report may be obtained by contacting U.S. EPA's hotline at 1-800-535-0202.
- TRI Explorer is a recently added feature to facilitate the use and analysis of TRI data. Data may be queried and sorted for years 1988 through 1998 by a variety of reports (chemical, facility, trends, geography and industry). TRI Explorer is available at the following Internet address: <http://www.epa.gov/triexplorer/>.

Questions or comments regarding TRI are welcome. Please direct questions, comments, or requests to:

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