THIRTEENTH ANNUAL
TOXIC CHEMICAL REPORT

A summary of information contained in the
Toxic Chemical Report Forms for calendar year 1999

APRIL 2001

Illinois Environmental Protection Agency
Springfield, Illinois

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PREFACE

For calendar year 1999, toxic chemical release reports showed 197.9 million pounds of releases and transfers. This reported total amount is 4.6 million pounds or about two percent less than was reported for 1998. Once again, fugitive and stack air emissions of 84.8 millions pounds exceeded all other types of releases and transfers. However, this amount was down by 6.2 million pounds (14.7 percent) compared to 1998.

The long-term downward trend of environmental releases in Illinois continues. Facility reports indicate a 48 percent decrease in normalized toxic chemical releases from 1988 to 1999, and a decrease of 5 percent from 1998 to 1999. The toxic chemical with the greatest quantity reduction in that period was toluene (17.6 million pounds or 81 percent).

All toxic release information will be continually examined and analyzed by the Illinois EPA to identify industrial categories, facilities, chemicals and geographic areas which should receive focused attention with the objective of release reduction, especially through pollution prevention efforts.

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Thomas V. Skinner, Director

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EXECUTIVE SUMMARY

Nearly 2,300 unique facilities have reported toxic chemical release information to the Illinois EPA since the reporting program mandated by federal law began in 1987. Not including 1987, an average of around 1,300 facilities have reported each year, with the actual number ranging between 1,258 and 1,477.

For calendar year 1999, 1,318 facilities submitted 4,820 individual toxic chemical release reports showing a total of 197.9 million pounds of releases and transfers. Zinc compounds had the highest reported releases and transfers, at 43.6 million pounds. The combined total of fugitive and stack air emissions topped all other environmental areas at 84.8 million pounds. Facilities in Standard Industrial Classification (SIC) Code 4911 (Electric Services - coal and/or oil fired power plants) exceeded all other industrial categories with reported releases and transfers of 41.7 million pounds.

In order to perform meaningful trend analyses of total toxic chemical releases, including offsite transfers, the Illinois EPA utilizes information reported by facilities for toxic chemicals which have been reportable in the same form for each of the years 1988-1999. This approach is called "normalizing". Offsite transfers for recycle or energy recovery, reportable for 1991 and later years, are not considered.

Total "normalized" releases and transfers have decreased 48 percent from 1988 to 1999. The toxic chemical with the greatest quantity reduction in that period was toluene (17.6 million pounds or 81 percent), which is a teratogen, reproductive toxin and fetal toxin. Facilities in the SIC category 2821 (Plastic Materials, Synthetic Resins and Nonvulcanizable Elastomers) as a group had the greatest quantity reduction (10.3 million pounds, or 71 percent).

The toxic chemical with the greatest amount of releases from 1994 through 1999 was zinc compounds, totaling 138.3 million pounds. Considering only those toxic chemicals with significant human health effects, i.e. which are known or probable human carcinogens, teratogens, fetal toxicants and/or reproductive toxicants, manganese compounds had the highest total of 39.6 million pounds.

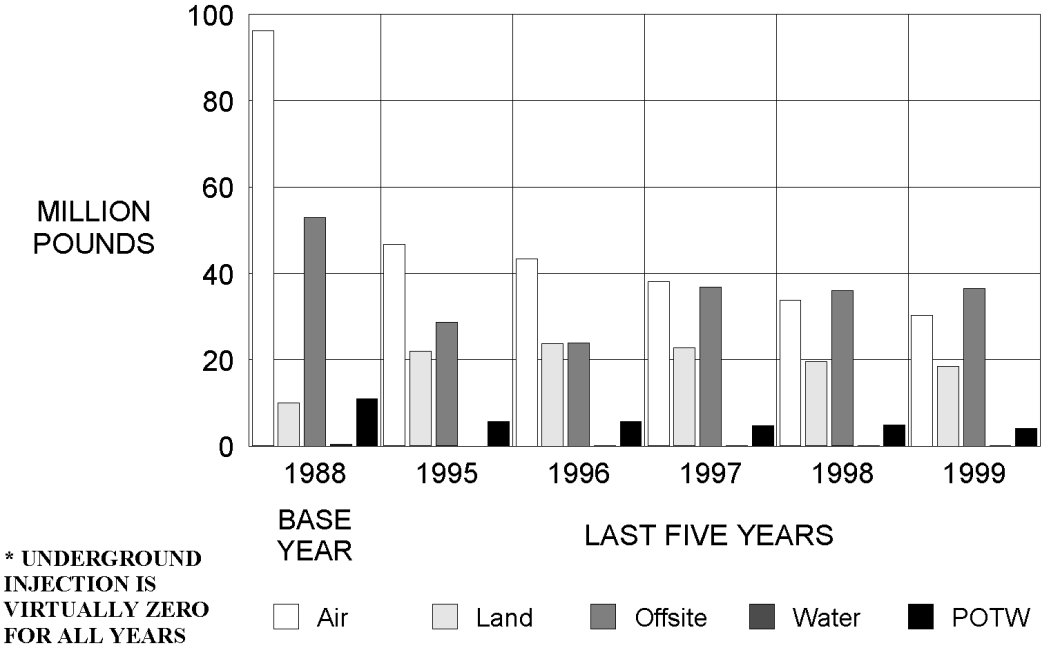
The group of facilities in SIC Code 3312 reported 166.6 million pounds of releases from 1995 through 1999, the greatest for any industrial category, and also had the highest total of 47.1 million pounds in the period for those toxic chemicals with significant human health effects.

Facilities located in ZIP Code 61832 in Danville (Vermilion County) reported the highest total of air emissions from 1995 through 1999, totaling 19.4 million pounds. Considering only those toxic chemicals with significant human health effects, facilities located in ZIP Code 61832 also reported the highest total of 19.2 million pounds.

CURRENT AND PAST YEAR HIGHLIGHTS

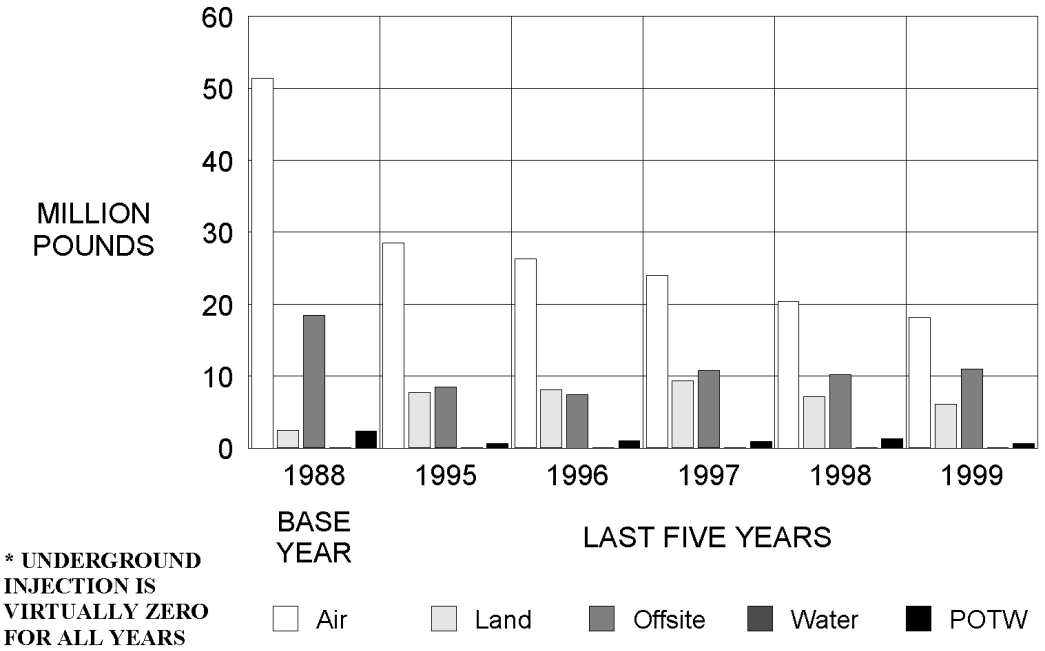
MEDIA	1999	1998	DIFFERENCE %
Air	84.9	91.0	-7
Other Off-site Transfers	47.8	46.4	3
On-site Land	45.8	48.9	-6
Off-site Transfers to POTW	13.0	9.8	33
Water	6.4	6.4	0
Total	197.9	202.5	-2

TOTAL RELEASES AND TRANSFERS - ALL CHEMICALS



*** UNDERGROUND INJECTION IS VIRTUALLY ZERO FOR ALL YEARS**

TOTAL RELEASES AND TRANSFERS - CHEMICALS WITH SIGNIFICANT HUMAN HEALTH EFFECTS



*** UNDERGROUND INJECTION IS VIRTUALLY ZERO FOR ALL YEARS**

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INTRODUCTION

EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT

Congress adopted Title III as part of the Superfund Amendments and Reauthorization Act of 1986 (SARA). Title III is known as the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA). EPCRA established programs to provide the public with important information on the hazardous chemicals in their communities, as well as providing emergency planning and notification requirements which help protect the public in the event of a release of hazardous chemicals.

SECTION 313 (Annual Toxic Chemical Release Reporting)

Section 313 of EPCRA requires annual reports to be filed by certain companies which release any of over 600 listed toxic chemicals and compounds to the environment. This reporting covers routine releases that occur as a result of normal business operations within a calendar year, and non-routine or accidental releases.

In 1987, the Illinois General Assembly amended the Illinois Environmental Protection Act to provide for a coordinated state implementation of Section 313. This amendment also established an orderly procedure for the public to access this information. Under the Act, the Illinois Environmental Protection Agency (IEPA) is charged with the administration of Section 313 which requires industry to report annually to the U.S. EPA and state governments via the toxic chemical release form (Form R).

Form R includes all routine and non-routine releases of toxic chemicals to the air, water and land, as well as transfers of wastes to off-site treatment, storage and disposal facilities. The information reported is not necessarily derived from actual monitoring or measurements, but may be estimated from published emission factors, material balance calculations, or engineering calculations.

Form R information reported to the Illinois EPA is entered into a computer data base known as the Illinois Toxic Chemical Inventory (TCI), as required by the Illinois Environmental Protection Act.

SUMMARY OF FORM R

A complete copy of Form R is enclosed as Appendix A. In general, the information to be provided by the reporting facility can be summarized as follows:

- The name, location and type of business
- Whether the chemical is manufactured, processed, or otherwise used and the general categories of use of the chemical
- An estimate of the maximum amounts of the toxic chemical present at the facility at any time during the preceding year
- Waste treatment/disposal methods and efficiency of methods for each wastestream
- Quantity of the chemical entering each environmental medium (air, water, land) annually
- Source reduction and recycling activities for the toxic chemical
- A certification by a senior official that the report is complete and accurate

EXPLANATION OF TERMS

In order to better understand the form and references made to the information reported, selected terms have been defined as follows:

"**SIC Code**" - Standard Industrial Classification (SIC) Code - A two, three or four digit number code designated by the federal Office of Management and Budget in its "SIC Manual" which identifies an industry or industrial grouping. For example, the two-digit code "28" refers to the major group, "Chemicals and Allied Products," the three-digit code "281" refers to the industry group, "Industrial Inorganic Chemicals," and the

four-digit code "2812" refers to the specific industry, "Alkalies and Chlorine." The four-digit code identifies a specific facility rather than company.

"**Publicly Owned Treatment Works (POTW)**" - A wastewater treatment facility which is owned by a unit of government or a public utility company.

"**Off-Site Locations**" - Locations outside the boundaries of a facility to which wastes are transported for treatment or disposal.

"**Chemical Abstracts Service Registry Number (CAS #)**" - A numeric designation assigned by the American Chemical Society's Chemical Abstracts Service which uniquely identifies a chemical or chemical compound.

"**Fugitive or non-point air emissions**" - Releases to the air that are not conveyed through stacks, vents, pipes, ducts or any other confined air stream. Examples include leakage from valves, pump seals, flanges, compressors, sampling connections, open ended lines, evaporative losses from surface impoundments and production lines, and releases from building ventilation systems.

"**Stack or point air emissions**" - Releases to the air which are conveyed through stacks, vents, ducts, pipes or other confined air streams, and includes storage tank emissions and air releases from control equipment.

"**Wastestream**" - An ongoing generation of waste which results from an industrial process or originates in an industrial area and which can be consistently described by the same physical and chemical characteristics.

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

FACILITIES COVERED

Facilities subject to reporting under Section 313 are those that have 10 or more full-time employees, that are in certain SIC major groups and industries, and that manufactured, processed or otherwise used a listed toxic chemical or chemical category in excess of specified threshold quantities.

The thresholds for reporting are different for users and manufacturers or processors of chemicals. For 1989 and subsequent reporting years, facilities using listed toxic chemicals in quantities over 10,000 pounds and facilities manufacturing or processing these chemicals in excess of 25,000 pounds are required to submit a Form R to both the Illinois EPA and the U.S. EPA by July 1 of the following year.

From 1987 through 1997, facilities in the SIC Manufacturing Division, including major groups 20 through 39, were required to report. Beginning with 1998, facilities in major group 10 (except facility codes 1011, 1081 and 1094), major group 12 (except facility code 1241) , facility codes 4911, 4931 and 4939 in major group 49 (limited to facilities which combust coal and/or oil for the purpose of generating power for distribution in commerce), facility code 4953 (limited to facilities regulated under RCRA Subtitle C), facility codes 5169, 5171 and 7389 (limited to facilities primarily involved in solvent recovery services on a contract fee basis), were also required to report.

COMPLIANCE

In order to manage and process all of the data being supplied by industry under Section 313, the Illinois EPA developed a system of quality control. Obvious errors in the submissions were considered to be either "entry" or "technical" errors.

"Entry" errors, such as pages missing from the Form R or a submittal on a wrong form, prohibited the data from being entered into the Agency's computer database. The Illinois EPA contacts the facility with a letter or by

phone asking the owner or operator to correct the noted deficiency.

"Technical" errors are handled much the same way; however, the Agency is able to initially enter the data in the computer for later edits once the facility provides the correct information. It has been noted that numerous "technical" errors are made by facilities in the areas of CAS numbers and chemical name spellings.

To ensure data accuracy and completeness and timely submission of data, various compliance activities are planned or have been carried out.

LIMITATIONS ON USE OF INFORMATION

It is emphasized that the reported toxic chemical release information on which this annual report is based includes total annual amounts of specific chemicals which are released to the environment. Reporting of information about concentrations or rate of release of toxic chemicals is not currently required. For that reason, this information cannot be used to assess specific instances of chemical exposure. Other factors such as meteorologic information must be known as well for such an assessment. See the next section for additional information.

CHEMICAL HAZARD ASSESSMENT

Having the data now available under EPCRA is only the first step in assessing the potential chemical hazards in Illinois. In order to comprehend this information and begin to realize how it may impact communities, other factors must be considered. The chemical properties and associated toxicology of the chemicals of concern should be considered.

TOXICOLOGY

In order to assess the significance of a chemical release of any kind, it is necessary to discuss some fundamentals of toxicology. Above all, it is necessary to appreciate the most basic concept of toxicology, “the dose makes the poison.”

This fact indicates that all substances are poisons, even common items like table salt and sugar, if the dose is high enough. On the other hand, some substances are poisonous at relatively low doses. Many of the chemicals addressed by EPCRA Section 313 fall into this category.

Even with relatively poisonous substances no harm can occur unless there has been exposure to the substance (the dose). If there is no exposure, no matter how potent the poison, there can be no toxic response. For most types of chemical exposures, the body has defense mechanisms to protect against or repair the damage done by the chemical. As long as the protection and repair mechanisms are able to keep up with the effects of the chemical, no adverse effect is seen.

Once this threshold is exceeded, however, the magnitude of the response will be in direct proportion to the magnitude of the exposure. Eventually, if the exposure is long enough or severe enough, the chemical causes failure of some organ or organ system, resulting in incapacitation and ultimately death of the organism. This points out two concepts in toxicology, the concept of a threshold of toxicity and the concept of a target organ of a chemical.

For certain types of toxic actions, it is generally accepted that, in theory, any amount of toxin, even the smallest, has an effect. Certain types of cancer and reproductive effects fall into this “no threshold” category. Specifically, it is thought that this theory pertains to damage of genetic material by chemicals, by biological agents such as certain viruses, or by physical agents such as ionizing radiation.

Repair mechanisms are known to exist for genetic material, and damage often occurs in areas of the genetic material having no expressed function. Nevertheless, the theory holds that even one unrepaired injury to a key

area of the genetic material can result in a mutated cell. If this cell continues to divide, it will produce a colony of genetically different cells. The consequences of this type of damage can be expressed as a birth defect, a mutation, a tumor, or the damage can cause a "silent mutation" in which there is no obvious effect (if the damage occurs in an area of the genetic material having no expressed function).

Since it is impossible to detect a single injury or even small numbers of injuries to the genetic material at this time, scientific studies to determine whether a chemical can cause genetic damage are designed to expose laboratory test organisms to high doses of the chemical in order to maximize the chances of seeing a response. For cancer tests, the results of positive tests at the high doses (doses which are almost always much larger than expected levels of human exposures) are then extrapolated downward to doses which are relevant to expected human exposures.

These extrapolations are usually expressed as the extra risk of contracting cancer above the "background" cancer incidence due to exposure to low levels of the chemical, such as one extra chance in 100,000 or one in a million. An extra risk of one chance in a hundred thousand or one in one million is generally considered insignificant, since there exists for everyone a similarly small, unavoidable risk of death due to natural disasters such as floods, tornadoes, lightning, etc.

These concepts of:

1. "the dose makes the poison";
2. the requirement for a route of exposure;
3. there may be specific target organs for a chemical;
4. thresholds exist for some responses; and
5. there are insignificant risk levels for those chemicals for which no threshold is thought to exist;

are concepts which may be used as part of the regulatory control strategy for releases of toxic chemicals to the environment.

As a result of spills, derailments, past disposal practices, industrial accidents, illegal dumping, etc., environmental, public safety and health agencies must on occasion respond to unplanned chemical releases to the environment. In fact, accidental conditions which result in major releases of toxic chemicals to the environment were the driving force behind passage of EPCRAs Community Right-to-Know requirements.

In cases of chemical emergencies it is critical to know the chemical, physical and toxicological properties of the chemical(s) released so that appropriate counter-measures can be undertaken as soon as possible. Knowledge of all important routes of exposure, any critical target organs, any especially sensitive populations, threshold and acutely toxic levels, and antidotes are all important in planning what to do should an emergency arise.

Even in cases which are not of an emergency nature, such as some spill cleanups, illegal dumpings or past disposal practices, it is important to know the toxicological properties of the chemicals involved. Relevant routes of exposure, sensitive organs or populations, threshold levels or levels of insignificance, and the potential fate of the chemicals in all environmental media are important subjects which must be addressed in assessing the amount of cleanup which may be necessary in the incident. In some cases, where similar-acting chemicals are involved, special care must be taken to account for additive effects on sensitive organs.

Information on the toxicological aspects of many chemicals of concern and on toxicology in general can be obtained from the references listed in Appendix B.

Many references are available which explain the properties and usage of various chemicals. An abbreviated listing of these references is presented in Appendix D.

ILLINOIS EPA REGULATORY PROGRAMS

The Illinois EPA operates a number of programs which identify, limit, monitor or otherwise control releases of various chemicals including many toxic chemicals regulated under Section 313. The following is a brief summary of those programs.

Bureau of Air

Pollutant Monitoring - A statewide system of air monitoring instruments provides information on various air pollutants either continuously or every two to six days depending on instrument operation.

Permitting - Permits are required for processes and machinery that emit air pollutants. Permit conditions are imposed which are designed to ensure that state emission restrictions are met. Approximately 21,000 operating permits have been issued for 7,600 facilities in Illinois.

Chemical releases to the air can occur from point sources such as stacks and vents or from non-point (fugitive) sources such as emissions from open-top holding tanks, wastewater streams or ponds, or from production losses. If these releases are subsequently captured or destroyed, no exposure occurs and, therefore, no toxic response is possible.

For some permitted releases, permit requirements are written to control chemicals of toxicological importance to the extent possible such that any exposure would be at a level of insignificance to the general public. Certain releases not covered by permits can be monitored by the Agency's statewide air monitoring network.

Air Toxics Program - The Agency is delegated to implement and enforce the federal standards under Section 112 of the CAAA which limit the air releases of Hazardous Air Pollutants (HAPs). Expanded air toxics regulation has been authorized by legislation which added Section 9.5 to the Illinois Environmental Protection Act for the purpose of identifying and limiting releases of toxic air contaminants. Pursuant to Section 9.5, the Agency has evaluated a number of toxic air contaminants. As a result of this evaluation, a revised list of 343 chemicals and compounds has been adopted by the Illinois Pollution Control Board (IPCB) as the Illinois Toxic Air Contaminants List. The list consists of Illinois Toxic Air Contaminants, Hazardous Air Pollutants (HAPs) and Great Lakes and Great Waters pollutants.

Compliance/Enforcement - More than 3,000 facility inspections are conducted each year to verify compliance with regulations and permit conditions. Violations are referred to the Office of the Attorney General for prosecution.

Bureau of Land

Pollutant Monitoring - Information on waste stream characteristics, groundwater quality, hydrological and geological parameters and soil contamination are collected by the Illinois EPA and in many instances are also supplied to the Illinois EPA by regulated facilities.

Permitting - Permits are required for persons who treat, store or dispose of certain wastes. Applicants have to demonstrate that landfills are properly designed and constructed so as to prevent or minimize any adverse impacts to human health or the environment. In addition, any special wastes, industrial process, pollution control residual or hazardous wastes, have to be properly identified and analyzed before they can be permitted to be landfilled. In many cases, hazardous wastes have to be recycled, incinerated, treated to certain standards or rendered non-hazardous prior to landfilling. Permits for land disposal facilities require the applicant to monitor groundwater and submit reports to the Agency. The groundwater monitoring programs thus identify whether there have been releases from regulated facilities, and the need for remedial action. Permits have been issued to approximately 190 public and private waste treatment, storage and disposal facilities.

Compliance/Enforcement - To ensure that treatment, storage and disposal facilities continue to meet

interim or final operating, monitoring and reporting requirements, on-site investigations, sampling visits and records review are done to verify compliance with regulations and permit conditions. Through non-compliance letters, meeting with the facilities and appropriate referral of enforcement actions compliance is tracked and maintained.

Resource Conservation and Recovery Act (RCRA) - Subtitle C of RCRA provides the authority for the development and implementation of a comprehensive hazardous waste management program. The intent of the Act is to control hazardous wastes; to eliminate environmentally unsound disposal practices; to increase the opportunity for resource conservation and recovery; and to provide for the environmentally acceptable disposal of hazardous wastes.

The Hazardous and Solid Waste Amendments to RCRA in 1984 include, among other changes, the authority to make a facility take corrective action for any release.

Subtitle D of RCRA establishes a voluntary program through which states receive federal technical support to develop and implement solid waste management plans. These plans are intended to promote waste reduction and recycling of solid wastes, and require the closing or upgrading of all environmentally unsound dumps. Additionally, minimum technical standards are in place for all solid waste landfills.

Approximately 200 facilities are subject to regulation under the provisions of RCRA.

Bureau of Water - Division of Water Pollution Control

Pollutant Monitoring - A statewide network of 207 stream monitoring locations is routinely used to assess physical, chemical, biological and bacteriological properties of all surface water and also provides information on ambient conditions and water quality trends. This network is augmented by periodic intensive surveys of the 15 major river basins in the state as well as ongoing programs to measure pollutant levels in sediment and fish flesh.

Permitting - Specific pollutant concentration and mass limitations and monitoring/reporting requirements are incorporated into permits for discharge to surface waters for the approximately 2500 municipal, industrial and commercial dischargers in the state. Chemical releases to surface waters may be permitted if it can be shown that the release will conform to state and federal requirements for technology-based treatment and will not cause or contribute to violations of water quality standards established by the IPCB to protect designated uses of these waters. Thus, it may be required that the chemical be treated, removed, broken down or otherwise controlled to a point where the remaining amount will not be harmful to humans, fish and other aquatic life and wildlife, depending on the designated use of the body of water. Revisions of the toxic provisions of the state's water quality standards currently before the IPCB are designed to increase the Agency's ability to protect these waters.

Compliance/Enforcement - Field staff visit several hundred facilities a year to determine compliance with permit conditions. Sampling by field staff and subsequent analyses characterize the chemical and physical make-up of the discharge. Biomonitoring and facility-related stream surveys are also used to quantify this impact on aquatic life in the receiving stream. Self-monitoring reports submitted by facilities, as required by permits, are evaluated for compliance. Unresolved violations are referred to the Office of Attorney General for prosecution.

Bureau of Water - Division of Public Water Supplies

Pollutant Monitoring - Monitoring is conducted through regular testing of samples of raw and treated water from each public water supply. Testing includes microbiological, inorganic and organic chemicals, and radiological parameters.

Permitting - Owners or official custodians of facilities that wish to install new equipment or water mains or to modify existing equipment or distribution systems are required to obtain a construction permit. Once construction has been completed, an operating permit must be obtained prior to start of operation before putting new construction into operation. Agency personnel review permit applications to insure proper system design and

compliance with applicable regulations. Approximately 1,930 community water supply systems throughout the state are subject to the construction and operating permit requirements of the Agency. Permits are also issued for algae control, for pesticide application upstream of public water supply intakes, and for the waste disposal permit requirements that apply to public water supply treatment wastes.

The Agency administers the minimum and maximum setback zone procedures, which provide for a buffer area between public water supply wells and sources of possible chemical contamination of those wells, and is responsible for the hazard certification program, which registers all sites posing minimum hazard and provides an exemption from setback requirements.

Compliance/Enforcement - Agency field personnel regularly inspect public water supply systems and also respond to complaints and requests for assistance. Technical assistance provided by the Agency has proven to be extremely cost effective in helping supplies maintain adequate operations. In addition, other aspects of the groundwater protection program are conducted by the Agency. In cases of violations of water supply standards, permit requirements or certification requirements, the Agency will initiate enforcement action through the Office of the Attorney General.

Office of Emergency Response

Emergency Response - Regulations require immediate reporting of emergency releases of many chemicals to the state. The Illinois EPA works within the State response system to provide technical advice to spillers and responding governmental units during response, mitigation and cleanup of incidents involving chemical emergencies. Over 2,865 such incidents were handled by the Agency in 1999.

Emergency Preparedness - The Agency also administers certain provisions of the Illinois Chemical Safety Act (ICSA). The ICSA requires facility contingency planning for dealing with releases of chemical substances, and provides for review and recommendations for improvement of contingency plans by the Illinois EPA following significant releases of chemical substances. Approximately 2,300 facilities are regulated under the provisions of the ICSA.

Federal PCB Compliance - The use of certain toxic substances such as Polychlorinated Biphenyls are regulated by the federal government under the authority of the Toxic Substances Control Act. Pursuant to a cooperative agreement, OCS staff conduct compliance inspections of such substances for the U.S. EPA who initiate any subsequent enforcement actions. This is one of the few Agency programs that addresses the use aspect of chemicals in contrast to addressing them as a waste, release or residue.

Compliance/Enforcement - Spills reported as emergencies are evaluated to determine the need for prevention and remediation measures. Cooperation is achieved in most cases, but formal compliance actions or even referral for prosecution are sometimes necessary to obtain the desired relief.

Pollution Prevention

The Illinois Pollution Prevention Act was passed in 1992. This act may lead to new approaches to preventing pollution in Illinois. The Toxic Pollution Prevention Act of 1989 provides that manufacturing industries in Illinois may elect to develop toxic pollution prevention innovation plans in order to reduce the releases of toxic substances by various manufacturing processes which operate in the state. The Illinois EPA is to concur in innovation plans which will be effective in preventing toxic pollution, provided the plan will achieve the level of toxic pollution prevention of other available processes, and provided the plan will not reasonably be expected to have any significant adverse effect on public health or the environment.

The Illinois Materials Exchange Service, operated by the Agency, identifies potential waste materials for which a facility is attempting to find a potential user so that the materials can be recycled instead of being discarded as a waste. The Illinois EPA also identifies potential waste materials which are being sought by facilities for use in their process as a raw material.

The Illinois EPA also operates an internship program in cooperation with several universities, in an effort to work with Illinois industries to identify opportunities to reduce the generation of waste through the manufacturing process.

UTILIZATION OF FORM R DATA

Data reported on Form R has been utilized in many ways. Some examples are as follows:

AIR PROGRAM

Form R data is being used in conjunction with seasonal emissions reports to help evaluate performance by participants in the Emissions Reduction Market System. The Bureau of Air also utilizes Form R data to identify facilities for regulation under delegated provisions of the federal Clean Air Act Amendments.

ILLINOIS CHEMICAL SAFETY ACT (ICSA)

Section 313 (Form R) data is utilized in the process of adding facilities for coverage under the ICSA. Form R data is also being reviewed to determine compliance with the ICSA by facilities reporting under Section 313.

STORM WATER PERMITS

Form R data is used to identify facilities for storm water permitting activities under the federal Clean Water Act Amendments.

HAZARDOUS WASTE SITE OPERATIONS

Form R information is used by the Illinois EPA's Bureau of Land to identify toxic chemicals present at hazardous waste sites for a number of programmatic reasons.

POLLUTION PREVENTION

Beginning with reporting year 1991, Form R data has been utilized as a tool for analyzing pollution prevention efforts.

NON-ROUTINE RELEASES

Beginning with reporting year 1991, Form R information is being utilized to verify that appropriate emergency notification has been given by facilities which have experienced non-routine releases of toxic chemicals.

FREEDOM OF INFORMATION ACT

Various individuals and citizen groups have requested Form R data for a variety of purposes, including generation of a report to a citizen group's constituency. Many such requests are made to support site investigations related to property transfer.

ENVIRONMENTAL TOXICOLOGY ACT

The Illinois Department of Public Health may use Form R data as input to the health assessments mandated by this Act for Superfund and Clean Illinois sites.

HEALTH AND HAZARDOUS SUBSTANCES REGISTRY ACT

The Illinois Department of Public Health has requested and received Form R data to use as inputs to this Registry.

INFORMATION SUPPORT DURING CHEMICAL EMERGENCIES

The Illinois EPA has used Form R data to determine what chemicals might have been released during facility chemical emergencies involving fire or explosion.

LOCAL SAFETY ACTIVITIES

In addition to handling planning and response activities under the Illinois Chemical Safety Act, local governments have been actively developing and pursuing emergency response and preparedness capabilities under Title III. Local officials used Form R data as input to their emergency response plans.

CHEMICAL EXPOSURE SCREENING

Local public health departments and the U. S. Occupational Safety and Health Administration (OSHA) have requested identification of facilities in certain areas which release specific chemicals for the purpose of targeting exposure screening for facility employees.

ENVIRONMENTAL PERFORMANCE

The Illinois EPA uses Form R data as indicators of environmental performance in its Annual Environmental Conditions Report.

OTHER USES

An industrial trade association has requested pollution prevention information from Form Rs for some of its member facilities.

Form R data from the Illinois Toxic Chemical Inventory has been provided to be used, along with other data, to analyze critical environmental trends in Illinois.

Utility companies in Illinois have requested Form R information for their customers to support them in release reduction.

The Illinois EPA used Form R information, along with EPCRA Section 312 information, to assess the Year 2000 preparedness of chemical facilities in Illinois.

CHANGES IN REPORTING REQUIREMENTS

The EPCRA Section 313 Chemical List (Table II) has not changed since last year.

ANALYSIS OF FORM R INFORMATION

CALENDAR YEAR 1999

BASIS

For the current calendar year analysis, all valid reports for chemicals reportable in 1999 are included in the release and transfer totals. This includes both new chemicals (reportable for the first time in 1998, if any), chemicals which may be reportable in a different form than when they were first listed and reports from the new SIC major group codes and facility codes ("new industrial categories") which are required to report beginning with 1998. For this reason, release totals in this section differ from those given for 1999 in the "Trend Analysis, 1988-1999" section.

FACILITIES

Total Releases and Transfers

For calendar year 1999, 1,318 facilities submitted 4,820 toxic chemical release reports totaling 197.9 million pounds.

Table 1 lists the facilities reporting the top 20 total release and transfer amounts, not including offsite transfers for recycle or energy recovery.

Table 1
Total Releases and Transfers

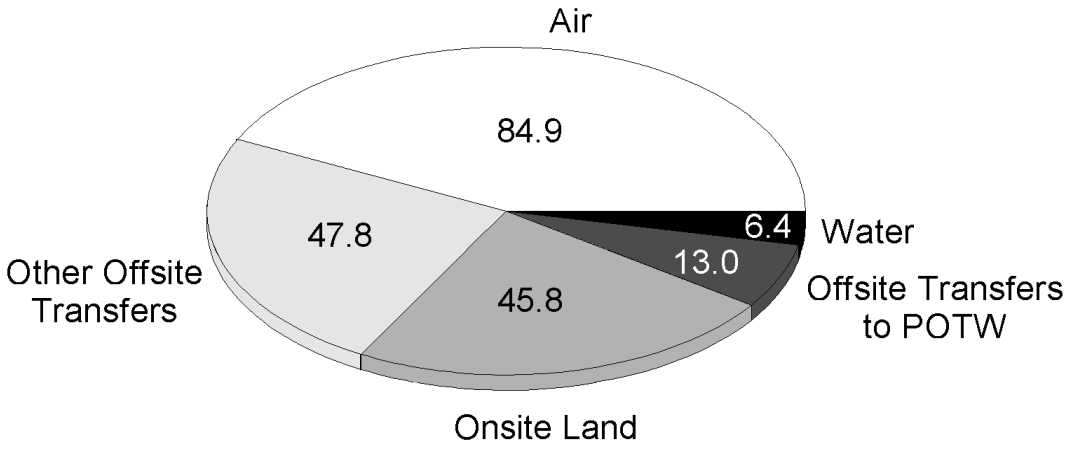
(Million Pounds)
Top 20 Facilities

		Releases						Transfers	
Facility Name	City	Fugitive Air	Stack Air	Water	Under-ground Injection	On-Site Land	POTW	Off-Site	Other Releases & Transfers	Total
1. Peoria Disposal Company #1	Peoria	0.0	0.0	0.0	0.0	18.7	0.0	0.0	18.7	
2. Baldwin Power Station	Baldwin	0.0	11.7	0.2	0.0	1.1	0.0	0.0	13.0	
3. Northwestern Steel & Wire	Sterling	0.1	0.1	0.0	0.0	9.8	0.0	0.1	10.0	
4. Keystone Steel & Wire Co.	Peoria	0.0	0.0	0.0	0.0	0.0	0.0	6.5	6.6	
5. Granite City Steel	Granite City	0.1	0.1	0.1	0.0	5.4	0.0	0.0	5.8	
6. Birmingham Steel Corp. Kankakee IL Steel Div.	Bourbonnais	0.0	0.0	0.0	0.0	0.0	0.0	5.2	5.2	
7. Coffeen Power Station	Coffeen	0.0	4.6	0.0	0.0	0.0	0.0	0.4	5.0	
8. Devro-Teepak	Danville	0.1	3.5	0.0	0.0	0.0	0.0	0.0	3.7	
9. E. D. Edwards Station	Bartonville	0.0	2.8	0.0	0.0	0.4	0.0	0.1	3.3	
10. Koppers Industries, Inc.	Cicero	0.0	0.2	0.0	0.0	0.0	0.0	3.0	3.2	
11. IBP, Inc. - Joslin, IL	Joslin	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	
12. Wood River Power Station	Alton	0.0	2.8	0.0	0.0	0.2	0.0	0.0	2.9	
13. City Water, Light and Power, City of Springfield	Springfield	0.0	2.8	0.0	0.0	0.0	0.0	0.0	2.9	
14. ADM Bioproducts	Decatur	0.0	2.4	0.0	0.0	0.0	0.0	0.3	2.7	
15. Flexsys America, L.P. - Krummrich	Sauget	0.1	0.1	0.0	0.0	0.0	2.1	0.2	2.5	
16. Williams Ethanol Services, Inc.	Pekin	0.1	0.4	1.3	0.0	0.6	0.0	0.1	2.5	
17. Vermillion Power Station	Oakwood	0.0	2.2	0.0	0.0	0.1	0.0	0.0	2.3	
18. Tosco Wood River Refinery	Roxana	0.5	1.3	0.2	0.0	0.0	0.0	0.0	2.0	
19. Corn Products Argo Plant	Bedford Park	0.3	1.0	0.0	0.0	0.0	0.7	0.0	2.0	
20. Newton Power Station	Newton	0.0	0.3	0.0	0.0	1.7	0.0	0.0	2.0	
Totals for Top 20 Facilities:		1.3	36.3	4.8	0.0	38.0	2.8	15.9	99.3	
Totals for All Reporting Facilities:		12.6	72.3	6.4	0.0	45.8	13.0	47.8	197.9	

Figure 1 shows the distribution of total releases and transfers for 1999.

FIGURE 1
TOTAL RELEASES & TRANSFERS INFORMATION

(MILLION POUNDS)



*** UNDERGROUND INJECTION IS VIRTUALLY ZERO FOR ALL YEARS**

CHEMICALS

Releases and transfers of 305 different toxic chemicals and categories during 1999 were reported by Illinois facilities. Table 2 lists release and transfer information for the 20 chemicals with the highest reported total amounts.

Table 2
Total Releases and Transfers
(Million Pounds)
Top 20 Chemicals

CAS Number & or Category	Chemical Name	Releases					Offsite Transfers		Total Releases
		Fugitive Air	Stack Air	Water	Under-ground Injection	Land	POTW	Other	
1. 000010982	Zinc compounds	0.3	0.5	0.0	0.0	28.1	0.0	14.7	43.6
2. 007647010	Hydrochloric Acid	0.0	28.9	0.0	0.0	0.0	0.0	0.1	29.1
3. 000010450	Manganese Compounds*	0.0	0.1	0.1	0.0	6.6	0.0	5.4	12.4
4. 000010511	Nitrate Compounds	0.0	0.0	5.9	0.0	0.2	5.5	0.4	12.0
5. 007664939	Sulfuric acid	0.0	7.9	0.0	0.0	0.0	0.7	0.1	8.7
6. 000110543	n-Hexane*	2.0	5.7	0.0	0.0	0.0	0.0	0.0	7.7
7. 007664417	Ammonia	0.6	4.1	0.1	0.0	0.0	1.3	0.6	6.7
8. 000067561	Methanol	0.5	1.3	0.0	0.0	0.0	1.7	1.9	5.3
9. 000010040	Barium compounds	0.0	0.1	0.1	0.0	3.4	0.0	1.4	5.1
10.000108883	Toluene*	2.2	1.5	0.0	0.0	0.0	0.0	0.9	4.7
11.000078933	Methyl Ethyl Ketone*	0.8	0.9	0.0	0.0	0.0	0.4	1.9	3.9
12.000010090	Chromium Compounds*	0.0	0.0	0.0	0.0	1.9	0.0	1.8	3.8
13.000010420	Lead Compounds*	0.0	0.0	0.0	0.0	2.0	0.0	1.7	3.7
14.000075150	Carbon Disulfide*	0.1	3.4	0.0	0.0	0.0	0.0	0.0	3.6
15.000085449	Phthalic Anhydride	0.0	0.1	0.0	0.0	0.0	0.0	2.8	3.0
16.001330207	Xylene (Mixed Isomers)*	0.8	1.6	0.0	0.0	0.0	0.0	0.5	3.0
17.000010230	Glycol Ethers	0.7	1.6	0.0	0.0	0.0	0.2	0.3	2.8
18.007440666	Zinc (Fume or Dust)	0.0	0.1	0.0	0.0	0.6	0.0	2.0	2.7
19.000100425	Styrene*	0.5	2.0	0.0	0.0	0.0	0.0	0.2	2.6
20.007664393	Hydrogen fluoride	0.0	2.5	0.0	0.0	0.0	0.0	0.0	2.5
Totals for Top 20 Chemicals, Compounds:		8.5	62.3	6.2	0.0	42.8	9.8	36.7	166.9
Totals for All Reported Chemicals & Compounds:		12.6	72.3	6.4	0.0	45.8	13.0	47.8	197.9

* Known to have “Significant” human health effects (i.e. are known or probable human carcinogens, teratogens, reproductive toxicants or fetal toxicants).

STANDARD INDUSTRIAL CLASSIFICATION (SIC) CATEGORIES

Facilities in 255 individual four-digit SIC codes have reported toxic chemical releases and transfers for calendar year 1999. Table 3 summarizes the information for the 20 SIC codes reporting the highest release and transfer totals.

Table 3
Total Releases and Transfers
(Million Pounds)
Top 20 SIC Codes

			Releases					Offsite Transfers		
	SIC & Code	Description	Fugitive Air	Stack Air	Water	Under-ground Injection	Land	POTW	Other	Total Releases & Transfers
1.	4911	Electric Services	0.0	34.5	0.2	0.0	4.9	0.0	2.1	41.7
2.	3312	Steel Works, Blast Furnaces (Including Coke Ovens) and Rolling Mills	0.4	0.5	0.2	0.0	15.5	0.4	12.6	29.5
3.	4953	Refuse Systems	0.0	0.0	0.0	0.0	19.5	0.7	4.9	25.2
4.	2869	Industrial Organic Chemicals, Not Elsewhere Classified	0.7	1.8	1.3	0.0	0.6	2.8	1.0	8.2
5.	2075	Soybean Oil Mills	1.1	5.3	0.0	0.0	0.0	0.0	0.0	6.5
6.	2821	Plastic Materials, Synthetic Resins and Nonvulcanizable Elastomers	0.6	3.3	0.2	0.0	0.1	0.1	1.3	5.5
7.	2865	Cyclic Organic Crudes & Intermediates, and Organic Dyes and Pigments	0.4	0.7	0.1	0.0	0.0	0.8	3.5	5.5
8.	3089	Plastic Products, Not Elsewhere Classified	0.2	3.9	0.0	0.0	0.0	0.0	0.2	4.4
9.	2046	Wet Corn Milling	0.4	1.7	0.0	0.0	0.0	1.2	1.1	4.4
10.	3471	Electroplating, Plating, Polishing, Anodizing and Coloring	0.3	0.3	0.0	0.0	0.0	1.6	1.9	4.2
11.	2911	Petroleum Refining	1.0	2.0	0.7	0.0	0.0	0.0	0.2	3.9
12.	2819	Industrial Inorganic Chemicals, Not Elsewhere Classified	0.0	0.3	0.0	0.0	0.2	1.2	1.7	3.5
13.	2011	Meat Packing Plants	0.1	0.0	3.1	0.0	0.1	0.1	0.0	3.5
14.	2048	Prepared Feed & Feed Ingredients for Animals & Fowls, Except Dogs & Cats	0.0	2.4	0.0	0.0	0.0	0.0	0.3	2.8
15.	2843	Surface Active Agents, Finishing Agents, Sulfonated Oils, and Assistants	0.2	0.5	0.0	0.0	0.0	0.3	1.5	2.4
16.	3086	Plastic Foam Products	0.3	1.8	0.0	0.0	0.0	0.0	0.0	2.1
17.	2752	Commercial Printing, Lithographic	1.7	0.4	0.0	0.0	0.0	0.0	0.0	2.1
18.	3339	Primary Smelting and Refining of Nonferrous Metals, Except Copper and Aluminum	0.0	0.1	0.0	0.0	0.9	0.0	0.9	1.9
19.	3366	Copper Foundries	0.0	0.0	0.0	0.0	0.0	0.0	1.8	1.8
20.	3341	Secondary Smelting & Refining of Nonferrous Metals	0.1	0.3	0.0	0.0	0.0	0.0	1.4	1.8
Totals for Top 20 SIC Codes:			7.5	59.8	5.8	0.0	41.8	9.2	36.4	161.0
Totals for All SIC Codes:			12.6	72.3	6.4	0.0	45.8	13.0	47.8	197.9

ZIP CODES - AIR EMISSIONS

Air emissions for calendar year 1999 in the 20 ZIP codes with the highest reported totals are summarized in Table 4.

Table 4

Total Air Emissions
(Million Pounds)
Top 20 ZIP Codes

Zip Code	County	City	Total Air Emissions Fugitive	Stack	Total
1. 62217	Randolph	Baldwin	0.0	11.7	11.7
2. 62526	Macon	Decatur	0.6	5.8	6.4
3. 62739	Montgomery	Coffeen	0.0	4.6	4.6
4. 61832	Vermilion	Danville	0.4	4.1	4.6
5. 62707	Sangamon	Springfield	0.0	2.8	2.8
6. 61607	Peoria	Bartonville	0.0	2.8	2.8
7. 62002	Madison	Alton	0.0	2.8	2.8
8. 61858	Vermillion	Oakwood	0.0	2.2	2.2
9. 62084	Madison	Roxana	0.5	1.3	1.8
10. 60501	Cook	Summit	0.3	1.4	1.7
11. 60450	Grundy	Morris	0.1	1.2	1.3
12. 61327	Putnam	Hennepin	0.0	1.3	1.3
13. 61025	Jo Daviess	East Dubuque	0.0	1.2	1.2
14. 61554	Tazewell	Pekin	0.1	1.0	1.1
15. 62655	Morgan	Meredosia	0.0	1.1	1.1
16. 61350	La Salle	Ottawa(Rural)	0.1	1.0	1.0
17. 62206	St. Clair	Sauget	0.4	0.5	1.0
18. 61054	Ogle	Mt. Morris	0.7	0.3	0.9
19. 61938	Coles	Mattoon	0.9	0.0	0.9
20. 62306	Adams	Quincy	0.1	0.8	0.9
Top 20 Zip Codes:			4.2	47.9	52.1
Total for All Reporting Facilities:			12.6	72.3	84.9

COUNTY SUMMARY

Table 5 presents a five-year summary of the total releases and facilities reporting for each county.

Table 5

Total Releases/Number of Reporting Facilities For Each County

(Release Amounts in Million Pounds)

County	Base Year	Last Five Years					Total
	1988	1995	1996	1997	1998	1999	95-99
1. Cook	56.2/613	22.8 /506	23.8 / 461	24.9 / 440	21.7 / 486	28.8 / 509	122.0
2. Whiteside	7.8 /13	20.5 /15	14.8/ 13	15.1 /13	13.1 /15	10.1 /13	73.6
3. Peoria	6.6 / 22	7.5 /16	8.0 /15	6.6 /15	6.2 /14	31.1 /18	59.4
4. Madison	12.6/34	9.2 /28	9.0 /25	9.7 /20	10.2/23	14.6/26	52.7
5. St. Clair	13.2 /19	4.5 /18	5.0 /21	4.6 /21	4.6 /22	8.8 /25	27.5
6. Vermilion	3.6 / 13	4.5 /17	4.4 /17	4.3 /15	4.0 /16	7.6 /17	24.8
7. Will	7.9 / 44	2.5 /42	4.3 /47	5.6 /47	3.0 /52	7.3 /52	22.7
8. Kankakee	0.8 / 19	1.1 /15	1.0 /17	6.2 /16	5.9 /16	6.3 /15	20.5
9. Macon	1.4 / 13	0.8 /20	0.9 /20	2.0 /19	2.4 /19	11.2 /18	17.3
10. LaSalle	5.0 / 28	3.3 /26	2.7 /24	2.7 /18	2.7 /23	3.0 /23	14.4
11. Randolph	0.1 / 5	0.0 /3	0.0 /3	0.0 /2	0.0 /3	13.0 /4	13.0
12. Ogle	6.5 / 14	4.1 /10	3.9 /11	1.8 /11	1.5 /14	1.7 /13	13.0
13. Lake	4.9 / 44	2.2 /42	1.6 /42	1.9 /37	1.9 /43	3.5 /45	11.1
14. Rock Island	1.7 / 18	1.5 /17	1.4 /15	1.3 /17	1.4 /16	4.2 /17	9.8
15. Grundy	7.7 / 10	1.3 /8	1.9 /7	2.0 /7	2.2 /8	1.5 /10	8.9
16. Montgomery	0.1 / 3	0.1 /2	0.1 /2	0.5 /2	0.3 /2	6.8 /4	7.8
17. DuPage	2.9 / 65	1.7 /66	1.5 /64	1.3 /64	1.3 /76	1.5 /75	7.3
18. Marion	1.4 / 3	1.8 /5	1.5 /7	1.7 /6	1.2 /7	0.6/ 7	6.8
19. Winnebago	4.5 / 68	1.2 /58	1.1 /56	1.2 /60	0.9 /65	1.4 /60	5.8
20. McHenry	1.4 / 37	1.2 /40	0.9 /38	1.5 /37	0.6 /42	0.7 /38	4.9
21. Coles	2.6 / 13	0.8 / 9	0.3 /9	1.0 /10	1.5 /12	1.2 /9	4.8
22. Tazewell	0.8 / 8	0.2 /6	0.3 /7	0.2 /6	0.2 /8	3.3 /10	4.2
23. Sangamon	0.2 / 8	0.3 /5	0.2 /3	0.2 /3	0.2 /4	3.0 /4	3.9
24. Jo Daviess	0.4 / 5	0.4 /4	0.5 /4	0.5 /4	0.4 /5	1.4 /4	3.2
25. Franklin	0.2 / 3	0.7 /4	0.6 /4	0.6 /3	0.5 /2	0.8 /4	3.2
26. Kane	2.5 / 57	0.7 /52	0.5 /47	0.4 /46	0.8 /56	0.7 /61	3.1
27. Crawford	2.2 / 4	1.3 /4	0.4 /3	0.3 /2	0.2 /4	0.6 /4	2.8
28. Adams	0.3 / 9	0.3 /15	0.3 /13	0.3 /13	0.3 /17	1.4 /18	2.6
29. Marshall	0.1 / 2	0.4 /3	0.5 /3	0.5 /3	0.6 /3	0.6 /3	2.6
30. Washington	0.7 / 1	0.9 /2	0.5 /1	0.6 /1	0.6 /3	0.0 /2	2.6
31. McLean	0.8 / 5	0.5 /6	0.4 /6	0.5 /5	0.4 /7	0.5 /6	2.3
32. Douglas	1.1 / 1	0.5 /5	0.2 /4	0.2 /4	0.3 /3	0.9 /5	2.1
33. Jasper	0.0 / 0	0.0 /1	0.0 /1	0.0 /1	0.0 /0	2.0 /1	2.0
34. Knox	0.3 / 7	0.6 /6	0.5 /6	0.2 /6	0.2 /7	0.5 /6	2.0
35. Jackson	0.8 / 5	0.6 /5	0.5 /3	0.4 /2	0.1 /3	0.3 /4	1.9
36. Alexander	0.5 / 2	0.0 /3	0.6 /3	0.4 /3	0.4 /3	0.4 /3	1.8
37. Hardin	0.0 / 0	0.0 /0	0.0 /0	0.0 /0	0.0 /0	1.7 /1	1.7
38. Morgan	0.2 / 4	0.1 /3	0.1 /3	0.1 /3	0.1 /3	1.3 /5	1.7
39. Edgar	0.0 / 4	0.2 /3	0.2 /5	0.3 /5	0.5 /6	0.5 /5	1.7
40. Williamson	0.3 / 5	0.2 /6	0.2 /5	0.3 /4	0.1 /7	0.8 /8	1.6

	Base Year	Last Five Years					
Total County	1988	1995	1996	1997	1998	1999	95-99
41. Putnam	0.2 / 1	0.0 /1	0.0 /1	0.0 /1	0.0 /1	1.5 /2	1.5
42. Kendall	1.6 / 3	0.4 /5	0.3 /4	0.4 /4	0.3 /4	0.1 /3	1.5
43. McDonough	0.1 / 3	0.1 /4	0.1 /4	0.1 /4	0.1 /5	1.0 /6	1.4
44. Christian	0.0 / 2	0.0 /2	0.0 /2	0.0 /2	0.0 /2	1.3 /2	1.3
45. Boone	2.5 /7	0.4 /10	0.3 /9	0.2 /8	0.1 /11	0.2 /8	1.2
46. Massac	0.0 /3	0.0 /3	0.0 /3	0.0 /3	0.0 /3	1.0 /4	1.0
47. Stephenson	0.7 /11	0.2 /9	0.1 /8	0.2 /9	0.1 /11	0.4 /10	1.0
48. DeKalb	0.8 /15	0.2 /9	0.2 /10	0.2 /11	0.2 /11	0.2 /9	1.0
49. Ford	0.0 /1	0.0 /1	0.0 /1	0.0 /1	0.0 /1	0.9 /1	0.9
50. Fulton	0.0 /0	0.0 /0	0.0 /0	0.0 /0	0.0 /0	0.8 /1	0.8
51. Moultrie	0.6 /1	0.1 /1	0.1 /1	0.1 /1	0.1 /1	0.2 /1	0.6
52. Livingston	0.3/5	0.1/8	0.2/7	0.1/7	0.1/8	0.1/8	0.6
53. Mason	0.0 /1	0.0 /1	0.0 /1	0.0 /1	0.0 /1	0.5 /2	0.5
54. Logan	0.1 /4	0.0 /1	0.0 /1	0.1 /0	0.0 /2	0.4 /3	0.5
55. Effingham	0.8 /5	0.1 /6	0.2 /5	0.1 /4	0.0 /5	0.1 /6	0.5
56. Wayne	0.1 /2	0.1 /2	0.1 /2	0.2 /2	0.1 /2	0.0 /2	0.5
57. Iroquois	0.1 /2	0.1 /1	0.0 /1	0.0 /1	0.0 /2	0.3 /2	0.4
58. Jefferson	0.1 /5	0.1 /5	0.0 /5	0.1 /4	0.1 /4	0.1 /4	0.4
59. Champaign	0.4 /9	0.1 /6	0.1 /6	0.0 /7	0.1 /8	0.1 /9	0.4
60. Bureau	0.5 /9	0.1 /4	0.1 /3	0.1 /4	0.1 /8	0.0 /6	0.4
61. Lee	0.1 /4	0.1 /7	0.1 /6	0.1 /6	0.1 /9	0.0 /9	0.4
62. Pike	0.0 /3	0.0 /1	0.0 /1	0.0 /1	0.0 /2	0.3 /3	0.3
63. Cass	0.0 /1	0.0 /1	0.0 /1	0.0 /1	0.0 /2	0.3 /1	0.3
64. Clay	0.1 /3	0.1 /2	0.0 /2	0.1 /2	0.0 /2	0.1 /3	0.3
65. Richland	0.2 /2	0.2 /1	0.1 /1	0.0 /1	0.0 /1	0.0 /1	0.3
66. Woodford	0.0 /3	0.0 /2	0.0 /2	0.0 /2	0.0 /3	0.2 /3	0.2
67. Warren	0.0 /1	0.0 /3	0.0 /2	0.0 /2	0.0 /3	0.1 /2	0.1
68. Lawrence	0.0 /0	0.1 /1	0.0 /0	0.0 /0	0.0 /0	0.0 /0	0.1
69. Henry	0.0 /3	0.0 /4	0.0 /3	0.0 /3	0.1 /4	0.0 /5	0.1
70. Clark	0.5 /3	0.0 /1	0.0 /1	0.0 /2	0.0 /2	0.0 /2	0.0
71. White	0.1 /1	0.0 /2	0.0 /2	0.0 /2	0.0 /2	0.0 /2	0.0
72. DeWitt	0.1 /1	0.0 /1	0.0 /1	0.0 /1	0.0 /1	0.0 /2	0.0
73. Bond	0.0 /2	0.0 /2	0.0 /2	0.0 /2	0.0 /2	0.0 /2	0.0
74. Perry	0.0 /1	0.0 /1	0.0 /1	0.0 /1	0.0/1	0.0/2	0.0
75. Wabash	0.0 /2	0.0 /1	0.0 /1	0.0 /1	0.0 /1	0.0 /1	0.0
76. Hancock	0.0 /2	0.0 /1	0.0 /0	0.0 /0	0.0 /1	0.0 /3	0.0
77. Macoupin	0.0 /0	0.0 /2	0.0 /1	0.0 /0	0.0 /0	0.0 /2	0.0
78. Stark	0.0 /1	0.0 /1	0.0 /1	0.0 /1	0.0 /1	0.0 /1	0.0
79. Clinton	0.0 /1	0.0 /0	0.0 /1	0.0 /1	0.0 /2	0.0 /1	0.0
80. Shelby	0.0 /0	0.0 /0	0.0 /0	0.0 /1	0.0 /1	0.0 /2	0.0
81. Union	0.0 /0	0.0 /1	0.0 /1	0.0 /1	0.0 /1	0.0 /1	0.0
82. Piatt	0.1 /2	0.0 /2	0.0 /2	0.0 /2	0.0 /2	0.0 /2	0.0
83. Mercer	0.0 /1	0.0 /1	0.0 /1	0.0 /1	0.0 /1	0.0 /1	0.0
84. Fayette	0.0 /1	0.0 /1	0.0 /1	0.0 /1	0.0 /2	0.0 /3	0.0
85. Carroll	0.0 /2	0.0 /4	0.0 /3	0.0 /3	0.0 /3	0.0 /3	0.0
86. Cumberland	0.0 /1	0.0 /0	0.0 /0	0.0 /0	0.0 /0	0.0 /0	0.0
87. Saline	0.0 /0	0.0 /0	0.0 /0	0.0 /0	0.0 /0	0.0 /1	0.0

* Large increases or decreases in yearly emissions may be due to a change in facilities required to report

TREND ANALYSIS, 1988-1999 SUMMARY

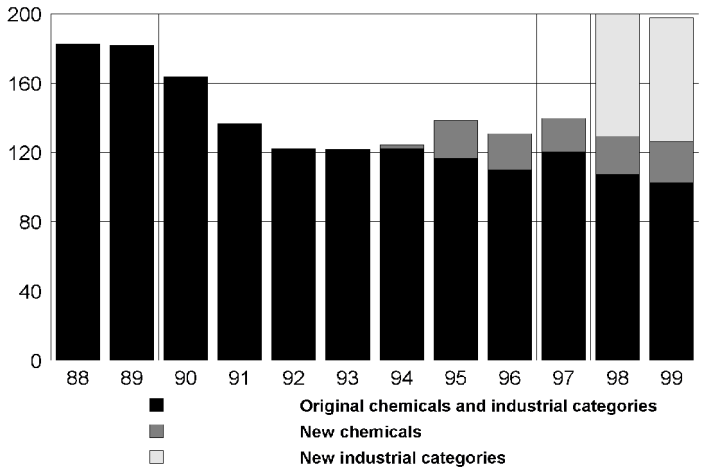
From 1988 to 1999, there have been many additions to and deletions from the list of toxic chemicals, and published guidance has modified chemical reporting. Coupled with the facts that the quality of data reported for 1987 is questionable and that reporting threshold amounts decreased from 1987 to 1989, it is nearly impossible to evaluate trends using all reported information from all facilities for all years.

Considering the dynamic nature of the Form R reporting program, in order to perform meaningful analyses of toxic chemical releases, especially with regard to evaluating release trends, the Illinois EPA utilizes information provided by facilities for toxic chemicals which have been reportable in the same form for all years, 1988 through 1999. This approach is called "normalizing". Offsite transfers for recycle or energy recovery, which were reportable beginning with calendar year 1991, are not considered in trend analysis for this period. Other reported information may be used, as indicated, to illustrate specific points.

Illinois toxic chemical release data trends are analyzed from several different perspectives in this annual report, including specific facilities, specific chemicals, SIC code groups and ZIP codes. In each of these, separate analyses are shown for: (1) all reported chemicals; and for (2) those reported chemicals which are known to have "significant" human health effects (i.e., are known or probable human carcinogens, teratogens, reproductive toxins or fetal toxins). For display purposes, release amounts are shown for the base year, 1988, and for the last five years.

Total "normalized" releases and transfers have decreased 48 percent from 1988 to 1999. The toxic chemical with the greatest quantity reduction was toluene (17.6 million pounds, or 81 percent), which is a teratogen, reproductive toxin and fetal toxin. Facilities in the SIC category 2821 (Plastic Materials, Synthetic Resins and Nonvulcanizable Elastomers) as a group had the greatest quantity reduction (10.3 million pounds, or 71 percent).

Even though the "normalizing" approach is necessary to properly characterize trends, of necessity it omits some information about TRI releases. Specifically, releases of hydrochloric acid, sulfuric acid and ammonia are not included in "normalized" quantities because the reporting guidance for these chemicals changed in 1995. Also, new TRI chemicals which have been added, notably in 1995, and also the new industrial categories reporting for the first time in 1998, are not included. The chart below shows release and transfer quantities in million pounds, including a) chemicals reportable by the original industrial categories in the same form for all years plus aerosols of hydrochloric and sulfuric acid and ammonia air emissions (it is impossible to approximate changes to ammonia releases other than air emissions prior to 1995 based on the guidance issued in 1995) ("original chemicals and industrial categories"), b) new chemicals added ("new chemicals"), and c) the new industrial categories added for 1998 ("new industrial categories"):

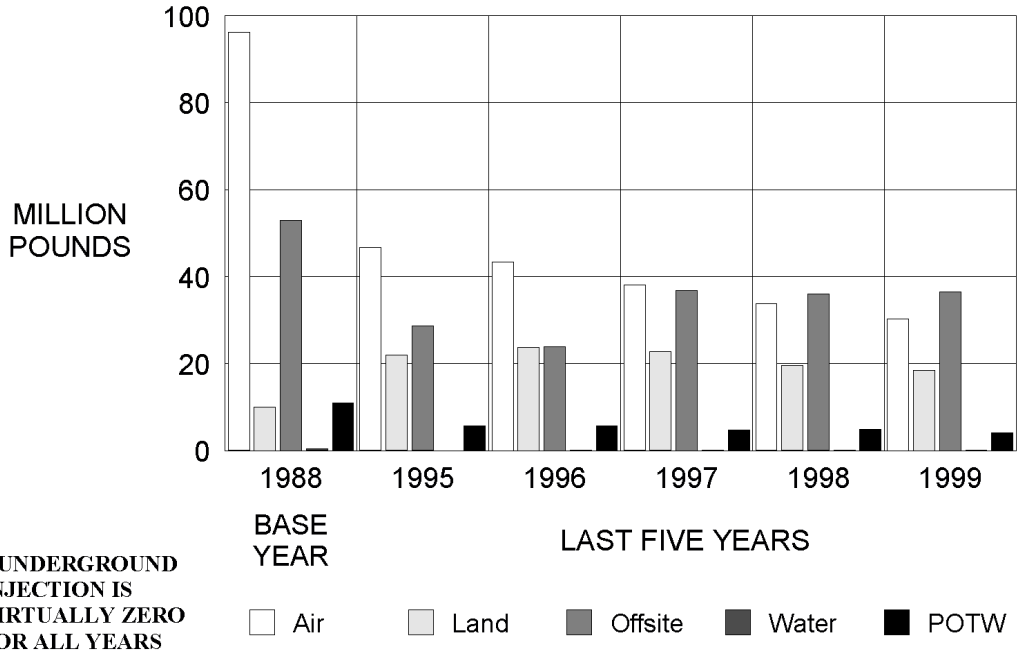


SUMMARY

Figures 2 and 3 summarize the overall totals for releases and transfers from 1988 through 1999.

FIGURE 2

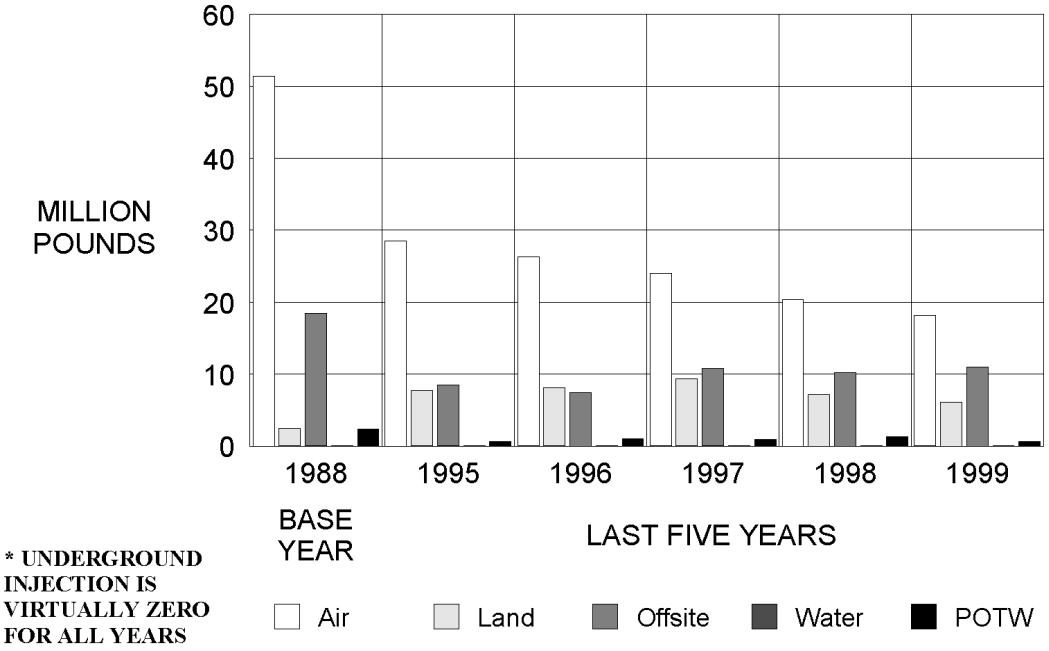
TOTAL RELEASES AND TRANSFERS - ALL CHEMICALS



*** UNDERGROUND INJECTION IS VIRTUALLY ZERO FOR ALL YEARS**

FIGURE 3

TOTAL RELEASES AND TRANSFERS - CHEMICALS WITH SIGNIFICANT HUMAN HEALTH EFFECTS



*** UNDERGROUND INJECTION IS VIRTUALLY ZERO FOR ALL YEARS**

FACILITIES

Tables 5 through 12 list information about facilities which have filed one or more Form Rs for toxic chemicals reportable each year in the same form. The "Totals For All Reporting Facilities" are for all facilities which reported toxic chemicals which were reportable in the same form each year.

Total Releases and Transfers

Facilities reported releases totaling 487.6 million pounds from 1995 through 1999. During this period, the top 20 facilities accounted for approximately 53 percent of those releases and transfers, as shown in Table 6.

Table 6

Total Release and Transfer Amounts
Top 20 Facilities

		Total Releases and Transfers (Million Pounds):						
		Base Yr.	Last Five Years					Total
Facility	City	1988	1995	1996	1997	1998	1999	95-99
1. Northwestern Steel & Wire Co.	Sterling	7.0	20.1	14.6	15.0	13.0	10.0	72.9
2. Keystone Steel & Wire Co.	Peoria	4.5	6.6	6.9	5.9	5.3	6.6	31.1
3. Granite City Steel	Granite City	4.8	5.4	6.0	6.1	5.9	5.6	29.0
4. Devro-Teepak	Danville	2.0	3.8	3.9	3.9	3.6	3.5	18.8
5. Birmingham Steel Corp. Kankakee, IL Steel Division	Bourbonnais	0.0	0.0	0.0	5.3	5.0	5.2	15.5
6. Koppers Industries, Inc.	Cicero	1.3	0.2	2.6	3.0	4.0	3.1	12.9
7. Equistar Chemicals, LP	Morris	4.9	1.0	1.6	1.7	2.0	1.2	7.5
8. Acme Steel Co. - Riverdale Plant	Riverdale	1.9	0.8	0.9	3.3	2.1	0.3	7.4
9. Big River Zinc Corporation	Sauget	2.0	1.2	1.4	1.1	1.2	1.9	6.9
10. Carus Chemical Company	LaSalle	1.6	1.4	1.1	1.3	1.4	1.4	6.6
11. Flexsys America, L.P., Krumrich	Sauget	0.0	0.0	1.5	1.6	1.6	1.4	6.2
12. Viskase Corp.	Bedford Park	1.2	1.7	1.7	1.6	0.9	0.0	6.0
13. American Steel Foundries	Granite City	0.0	1.6	1.3	1.2	0.8	1.1	6.0
14. GE Company	Ottawa	2.4	1.5	1.0	1.0	1.1	0.9	5.1
15. Mueller Company, Plant #4	Decatur	0.0	0.0	0.0	1.5	1.7	1.8	5.1
16. Cabot Corp., Cab-O-Sil Division	Tuscola	3.9	2.4	2.0	0.2	0.2	0.2	5.1
17. Solutia Inc.- Krummich, Il	Sauget	6.2	2.1	0.8	0.8	0.6	0.7	5.0
18. Quebecor Printing, Inc.	Mt. Morris	1.7	0.9	1.3	0.9	0.7	0.9	4.7
19. Ford Motor Company, Chicago Assembly	Chicago	2.0	1.3	0.7	0.8	1.0	0.9	4.6
20. Abbott Laboratories, North Chicago Plant	North Chicago	0.7	1.0	0.7	0.8	0.7	1.2	4.4
Totals for Top 20 Facilities:		48.0	53.0	55.3	55.5	51.0	64.5	164.9
Totals for All Reporting Facilities:		170.8	103.4	97.2	102.8	94.5	89.7	487.6

Considering only toxic chemicals known to have significant human health effects, facilities reported total releases and transfers of 209.4 million pounds during those same years. The top 20 facilities accounted for 54 percent of that total, as show in Table 7.

Table 7

Total Release and Transfer Amounts
Chemicals With Significant Human Health Effects
Top 20 Facilities

		Total Releases and Transfers (Million Pounds):						
		Base Yr.	Last Five Years					Total
Facility	City	1988	1995	1996	1997	1998	1999	95-99
1. Northwestern Steel & Wire Co.	Sterling	2.7	6.7	6.2	7.3	5.7	4.0	29.8
2. Devro-Teepak	Danville	2.0	3.8	3.9	3.9	3.6	3.5	18.7
3. Viskase Corp.	Bedford Park	1.2	1.7	1.7	1.6	0.9	0.0	6.0
4. Carus Chemical Company	LaSalle	1.3	1.1	0.9	1.1	1.2	1.4	5.8
5. Keystone Steel & Wire Co.	Peoria	0.4	1.2	1.2	1.0	0.9	1.2	5.4
6. GE Company	Ottawa	2.3	1.0	1.0	1.0	1.0	0.8	4.8
7. Quebecor Printing Mt. Morris	Mount Morris	1.7	0.8	1.2	0.8	0.6	0.9	4.4
8. Salem Gravure	Salem	0.7	1.2	1.1	1.3	0.6	0.0	4.3
9. Granite City Steel	Granite City	1.2	0.7	0.8	0.8	0.8	0.8	4.0
10. Birmingham Steel Corp. Kankakee, IL Steel Division	Bourbonnais	0.0	0.0	0.0	1.1	1.4	1.5	4.0
11. American Steel Foundries	Granite City	0.0	0.4	0.7	0.7	0.7	1.0	3.6
12. R.R. Donnelley & Sons Co.	Mattoon	2.3	0.6	0.3	0.7	0.8	0.9	3.3
13. Abbott Laboratories North Chicago Plant	North Chicago	0.6	0.7	0.4	0.6	0.4	1.0	3.2
14. GFC-Bridgeview	Bridgeview	0.2	0.8	0.7	0.5	0.5	0.3	2.8
15. No-Sag Foam Products Corp.	West Chicago	0.0	0.5	0.5	0.6	0.5	0.5	2.5
16. Allied Tube & Conduit Corp.	Harvey	0.4	0.5	0.6	0.5	0.4	0.3	2.3
17. Able Electro Polishing	Chicago	0.0	0.1	0.7	0.7	0.3	0.5	2.2
18. Acme Steel Company - Riverdale Plant	Riverdale	1.0	0.5	0.4	0.7	0.3	0.3	2.2
19. Crownline Boats, Inc.	West Frankfort	0.0	0.4	0.3	0.4	0.4	0.6	2.1
20. 3M Tape Manufacturing Div.	Bedford Park	1.6	0.4	0.3	0.4	0.3	0.3	1.8
Totals for Top 20 Facilities:		19.6	23.1	22.9	25.7	21.3	19.8	113.2
Totals for All Reporting Facilities:		75.1	45.7	43.1	45.2	39.3	36.1	209.4

Decreases in Releases and Transfers

The top twenty facilities with decreases in releases and transfers of toxic chemicals from 1995 through 1999 are shown in Table 8.

Table 8

Total Release and Transfer Decreases
Top 20 Facilities

Total Facility	City	Total Releases and Transfers (Million Pounds): Base Yr. 1988	Last Five Years 1995	1996	1997	1998	1999	Decrease 95-99
1. Northwestern Steel and Wire Co.	Sterling	7.0	20.3	14.6	15.0	13.0	10.0	-10.3
2. Cabot Corporation, Cab-O-Sil Division	Tuscola	3.9	2.4	2.0	0.2	0.2	0.2	-2.2
3. Viskase Corp.	Bedford Park	1.2	1.7	1.7	1.6	0.9	0.0	-1.7
4. Borden Chemical, Inc.	Forest Park	0.8	1.5	1.8	0.7	0.0	0.0	-1.5
5. Solutia, Inc. - Krummrich, IL	Sauget	6.2	2.1	0.8	0.8	0.6	0.7	-1.3
6. World Color Press Salem Gravure	Salem	0.8	1.2	1.1	1.3	0.6	0.0	-1.2
7. Dana Corp. Victor Products Div.	Robinson	1.8	1.0	0.1	0.0	0.0	0.0	-1.0
8. Chicago Specialties, Inc.	Chicago	3.0	1.1	0.5	0.2	0.1	0.1	-1.0
9. Nascote Industries	Nashville	0.7	0.8	0.5	0.6	0.6	0.0	-0.8
10. Equilon Wood River Refining Co.	Roxana	1.7	0.5	0.6	0.5	0.6	0.0	-0.5
11. American Steel Foundry	Granite City	0.0	1.6	1.3	1.2	0.8	1.1	-0.5
12. No-Sag Foam Products	West Chicago	0.1	0.5	0.0	0.0	0.0	0.0	-0.5
13. Acme Steel, Riverdale Plant	Riverdale	1.9	0.8	0.9	3.3	2.1	0.3	-0.4
14. Monsanto - University Park, IL	University Park	2.2	0.4	0.2	0.0	0.0	0.0	-0.4
15. GFC - Bridgeview	Bridgeview	0.2	0.8	0.7	0.5	0.5	0.3	-0.4
16. Ford Motor Company, Chicago	Chicago	2.0	1.3	0.7	0.8	1.0	0.9	-0.4
17. Brunswick Laboratories	Murphysboro	0.3	0.4	0.4	0.3	0.1	0.0	-0.4
18. Zenith Electronics Corp, Rauland Div.	Melrose Park	0.9	0.9	0.3	0.5	0.1	0.5	-0.4
19. 3M Cordova Plant	Cordova	0.9	0.8	0.7	0.5	0.8	0.5	-0.4
20. Akzo Nobel Chemicals Inc.	McCook	0.4	0.4	0.2	0.1	0.1	0.0	-0.4
Totals for Top 20 Facilities:		36.0	40.5	28.6	28.1	22.1	14.6	-25.9
Totals for All Reporting Facilities:		170.8	103.4	97.2	102.8	94.5	89.7	-13.8

The top twenty facilities with decreases in releases and transfers of chemicals with significant human health effects are shown in Table 9.

Table 9

Total Release and Transfer Decreases
Chemicals With Significant Human Health Effects
Top 20 Facilities

Total Releases and Transfers (Million Pounds):

Facility	City	Base Yr. 1988	Last Five Years 1995	1996	1997	1998	1999	Decrease 95-99
1. Northwestern Steel and Wire Co.	Sterling	2.7	6.7	6.2	7.3	5.7	4.0	-2.7
2. Viskase Corp.	Bedford Park	1.2	1.7	1.7	1.6	1.0	0.0	-1.7
3. World Color Press, Salem Gravure	Salem	0.7	1.2	1.1	1.3	0.6	0.0	-1.2
4. Dana Corp. Victor Products Div.	Robinson	1.4	1.0	0.1	0.0	0.0	0.0	-1.0
5. Nascote Industries	Nashville	0.5	0.6	0.2	0.3	0.5	0.0	-0.6
6. No-Sag Foam Products	West Chicago	0.1	0.5	0.0	0.0	0.0	0.0	-0.5
7. GFC - Bridgeview	Bridgeview	0.2	0.8	0.7	0.5	0.5	0.3	-0.4
8. Equilon Wood River Refining Co.	Roxana	1.2	0.3	0.4	0.3	0.4	0.0	-0.3
9. Devro - Teepak	Danville	2.0	3.8	3.9	3.9	3.6	3.5	-0.3
10. Solutia, Inc. - Krummrich, IL	Sauget	2.6	0.4	0.1	0.1	0.1	0.1	-0.3
11. Zenith Electronics Corp. Rauland Div.	Melrose Park	0.8	0.5	0.2	0.4	0.1	0.2	-0.3
12. Wheatland Tube Company	Chicago	0.0	0.3	0.1	0.1	0.0	0.0	-0.3
13. The Remline Company	Yorkville	0.0	0.3	0.2	0.3	0.2	0.0	-0.3
14. Cerro Copper Products Company	Sauget	0.2	0.4	0.3	0.3	0.1	0.1	-0.3
15. Senior Flexonics, Inc.	Bartlett	0.1	0.3	0.6	0.3	0.1	0.1	-0.2
16. Maytag, Refrigeration Products	Galesburg	0.1	0.2	0.2	0.0	0.0	0.0	-0.2
17. Eakas Corporation	Peru	0.0	0.2	0.1	0.0	0.0	0.0	-0.2
18. Sun Chemical - GPI	Northlake	0.0	0.2	0.0	0.0	0.0	0.0	-0.2
19. Acme Steel Co. Riverdale Plant	Riverdale	1.0	0.5	0.4	0.7	0.3	0.3	-0.2
20. Amoco Petroleum Additives	Wood River	0.1	0.2	0.0	0.0	0.0	0.0	-0.2
Totals for Top 20 Facilities:		14.9	20.1	16.5	17.4	13.2	8.6	-11.5
Totals for All Reporting Facilities:		75.1	45.7	43.1	45.2	39.3	36.1	-9.6

Increases in Releases and Transfers

Release and transfer amounts reported by a number of facilities increased from 1988 through 1999. Table 10 shows the top twenty facilities ranked according to total release and transfer increases in pounds per year for the eight-year period.

Table 10

Total Release and Transfer Increases
Top 20 Facilities

Facility	City	Total Releases and Transfers (Million Pounds): Base Yr. 1998	1999	Total Increase 1988 95-99	Last Five Years 1995	1996	1997	
1. Birmingham Steel Corporation - Kankakee Illinois Steel Division	Bourbonnais	0.0	0.0	0.0	5.3	5.0	5.2	5.2
2. Koppers Industries, Inc.	Cicero	1.3	0.2	2.6	3.0	4.0	3.1	2.9
3. Mueller Co. Plant #4	Decatur	0.0	0.0	0.0	1.5	1.7	1.8	1.8
4. Mc Intyre Group, Ltd.	University Park	0.0	0.0	0.0	0.2	0.9	1.6	1.6
5. Flexsys America, L.P Krummrich	Sauget	0.0	0.0	1.5	1.6	1.6	1.4	1.4
6. ADM Corn Processing	Decatur	0.0	0.0	0.0	0.0	0.0	1.0	1.0
7. Shell Chemical Company	Bedford Park	0.0	0.0	0.0	0.0	0.8	0.8	0.8
8. Williams Ethanol Services	Pekin	0.0	0.0	0.0	0.0	0.0	0.8	0.8
9. Big River Zinc Corp	Sauget	2.0	1.2	1.4	1.1	1.2	1.9	0.7
10. Tosco Wood River Refinery	Roxana	0.0	0.0	0.0	0.0	0.0	0.6	0.6
11. PMP Fermentation Products	Peoria	0.0	0.0	0.0	0.2	0.3	0.5	0.5
12. Toyal America, Inc	Lockport	0.0	0.0	0.0	0.0	0.0	0.5	0.5
13. Imco Recycling of America	Chicago Heights	0.0	0.0	1.2	0.7	0.8	0.5	0.5
14. Monsanto - Searle, Parkway, IL	Skokie	0.0	0.0	0.0	0.3	0.6	0.5	0.4
15. Able Electro Polishing	Chicago	0.0	0.1	0.7	0.7	0.4	0.5	0.4
16. AC Humko DBA Morgan Co.	Paris	0.0	0.0	0.1	0.3	0.4	0.4	0.4
17. Mossville Complex/Caterpillar, Inc	Mossville	0.0	0.0	0.0	0.2	0.3	0.3	0.3
18. Clark Refining & Marketing	Hartford	0.0	0.0	0.1	0.1	0.1	0.4	0.3
19. R.R. Donnelly & Sons	Mattoon	2.4	0.6	0.3	0.8	0.8	0.8	0.3
20. Burkart Foam	Cairo	0.5	0.0	0.6	0.4	0.4	0.3	0.3
Totals for Top 20 Facilities:		6.2	2.1	8.5	16.4	19.3	22.0	19.9
Totals for All Reporting Facilities:		170.8	103.4	97.2	102.8	94.5	89.7	-13.8

Table 11 shows the top twenty facilities reporting increases in releases and transfers of toxic chemicals with significant human health effects.

Table 11

Total Release and Transfer Increases
Chemicals With Significant Human Health Effects
Top 20 Facilities

Total Releases and Transfers (Million Pounds):

Facility	City	Base Yr. 1988	Last Five Years 1995	1996	1997	1998	1999	Total Increase 95-99
1. Birmingham Steel Corporation - Kankakee Illinois Steel Division	Bourbonnais	0.0	0.0	0.0	1.1	1.4	1.5	1.5
2. Shell Chemical Company	Bedford Park	0.0	0.0	0.0	0.0	0.8	0.8	0.8
3. American Steel Foundry	Granite City	0.0	0.4	0.7	0.7	0.7	1.0	0.5
4. Flexsys America, L.P.	Sauget	0.0	0.0	0.4	0.4	0.4	0.4	0.4
5. Able Electro Polishing	Chicago	0.0	0.1	0.7	0.7	0.3	0.5	0.4
6. Tosco Wood River Refinery	Roxana	0.0	0.0	0.0	0.0	0.0	0.4	0.4
7. R. R. Donnelley and Sons Co.	Mattoon	2.3	0.6	0.3	0.7	0.8	0.9	0.3
8. Carus Chemical Company	LaSalle	1.3	1.1	0.9	1.1	1.2	1.4	0.3
9. Burkart Foam, Inc.	Cairo	0.5	0.0	0.6	0.4	0.4	0.3	0.3
10. Abbott Laboratories	North Chicago	0.6	0.7	0.4	0.6	0.4	1.0	0.3
11. Williams Ethanol Services	Pekin	0.0	0.0	0.0	0.0	0.0	0.3	0.3
12. Mossville Complex	Mossville	0.0	0.0	0.0	0.2	0.2	0.3	0.3
13. Parsons Company	Roanoke	0.0	0.0	0.0	0.0	0.0	0.2	0.2
14. Morton International, Inc.	Batavia	0.0	0.1	0.0	0.0	0.4	0.3	0.2
15. Mueller Company	Decatur	0.0	0.0	0.0	0.1	0.2	0.2	0.2
16. ADM Corn Processing	Decatur	0.0	0.0	0.0	0.0	0.0	0.2	0.2
17. Zarco Industrial Finishes	Chicago	0.0	0.0	0.2	0.1	0.1	0.2	0.2
18. Domino Amjet, Inc.	Gurnee	0.0	0.0	0.0	0.0	0.2	0.2	0.2
19. Crownline Boats, Inc.	West Frankfort	0.0	0.4	0.3	0.4	0.4	0.6	0.1
20. Monsanto - Searle, Parkway	Skokie	0.0	0.0	0.0	0.1	0.1	0.2	0.1
Totals for Top 20 Facilities:		4.7	3.4	4.5	6.1	8.0	10.7	7.3
Totals for All Reporting Facilities:		75.1	45.7	43.1	45.2	39.3	36.1	-9.6

Pollution Prevention Efforts

Reporting of information about source reduction (pollution prevention) efforts has been required beginning with reporting year 1991. A total of 779 facilities have indicated undertaking such activities for one or more years from 1995 through 1999. The top twenty facilities in this category are shown in Table 12.

The fact that a facility claimed source reduction activities for a chemical does not necessarily mean that the reduction in releases and transfers of the chemical are attributable to those activities.

Table 12

Source Reduction-Based Release and Transfer Decreases
Top 20 Facilities
(Chemicals for Which Source Reduction Activities
Were Claimed Any Year, 95-99)

Total Reduction Facility 99	City	Total Releases and Transfers (Million Pounds): Base Yr. 1991	Last Five Years 1995	1996	1997	1998	1999	95-99
1. Cabot Corporation, Cab-O-Sil Division	Tuscola	0.0	2.4	2.0	0.2	0.2	0.0	-2.4
2. World Color Press - Salem Gravure	Salem	0.4	1.2	1.1	1.3	0.6	0.0	-1.2
3. Chicago Specialties, Inc.	Chicago	2.0	1.1	0.5	0.0	0.1	0.0	-1.1
4. GE Company	Ottawa	0.8	1.0	0.0	0.4	0.0	0.0	-1.0
5. Dana Corporation Victor Products Division	Robinson	0.0	1.0	0.1	0.0	0.0	0.0	-1.0
6. R.R Donnelly & Sons Co.	Mattoon	1.9	0.6	0.3	0.8	0.8	0.0	-0.6
7. Nascote Industries	Nashville	0.7	0.6	0.2	0.6	0.6	0.0	-0.5
8. Brunswick Laboratories	Murphysboro	0.3	0.4	0.4	0.3	0.1	0.0	-0.4
9. Equilon Wood River Refining Co.	Roxana	1.1	0.4	0.4	0.4	0.5	0.0	-0.4
10. Tru Vue	Chicago	0.0	0.3	0.2	0.3	0.0	0.0	-0.3
11. Stepan Company-Millsdale Road	Elwood	0.0	0.6	0.7	0.5	0.3	0.3	-0.4
12. Ethyl Petroleum Additives, Inc.	Sauget	0.0	0.3	0.0	0.0	0.0	0.0	-0.3
13. Chicago Heights Steel	Chicago Heights	0.1	0.2	0.2	0.0	0.0	0.0	-0.2
14. American National Can Company Chicago Plant	Chicago	0.0	0.2	0.2	0.0	0.0	0.0	-0.2
15. Brunswick Bicycles	Olney	0.2	0.2	0.1	0.0	0.0	0.0	-0.2
16. Zenith Electronics, Rauland Div.	Melrose Park	0.4	0.2	0.0	0.0	0.0	0.0	-0.2
17. Case Corporation	East Moline	0.0	0.2	0.2	0.1	0.0	0.0	-0.2
18. Edsal Manufacturing	Chicago	0.0	0.2	0.1	0.0	0.0	0.0	-0.2
19. Belvidere Assembly Plant	Belvidere	0.2	0.2	0.0	0.1	0.0	0.0	-0.2
20. Quality Metal Finishing	Byron	0.0	0.2	0.2	0.1	0.1	0.0	-0.2
Totals for Top 20 Facilities:		8.9	11.4	7.1	4.4	2.8	1.5	- 9.9
Totals for All Reporting Facilities:		36.4	20.0	15.1	17.0	14.8	13.8	-6.2

Table 13 shows the twenty facilities reporting the greatest reductions based on source reduction efforts for chemicals with significant human health effects.

Table 13

Source Reduction-Based Release and Transfer Decreases
Top 20 Facilities
(Chemicals for Which Source Reduction Activities
Were Claimed Any Year, 95-99)
Chemicals With Significant Human Health Effects

Total Reduction Facility		Total Releases and Transfers (Million Pounds): Base Yr.	Last Five Years					
			City 1996	1997	1991 1998	1995 1999	95-99	
1. World Color Press -Salem Gravure	Salem	0.4	1.2	1.1	1.3	0.6	0.0	-1.0
2. Dana Corporation Victor Products Division	Robinson	0.0	1.0	0.1	0.0	0.0	0.0	-1.0
3. GE Company	Ottawa	0.8	1.0	0.0	0.4	0.0	0.0	-1.0
4. R.R. Donnelly & Sons, Inc.	Mattoon	1.8	0.6	0.3	0.7	0.8	0.0	-0.6
5. Nascote	Nashville	0.5	0.6	0.2	0.3	0.5	0.0	-0.5
6. Equilon Wood River Refining Co.	Roxana	0.9	0.3	0.3	0.3	0.4	0.0	-0.3
7. Zenith Electronics, Rauland Div.	Melrose Park	0.0	0.2	0.0	0.0	0.0	0.0	-0.2
8. Quality Metal Finishing Co.	Byron	0.0	0.2	0.2	0.1	0.1	0.0	-0.2
9. Belvidere Assembly Plant	Belvidere	0.2	0.1	0.0	0.0	0.0	0.0	-0.1
10. 3M Tape Manufacturing Div.	Bedford Park	0.2	0.2	0.1	0.1	0.1	0.1	-0.1
11. Mariah Boats, Inc.	Benton	0.0	0.1	0.0	0.0	0.0	0.0	-0.1
12. Brunswick Bicycles	Olney	0.1	0.1	0.1	0.0	0.0	0.0	-0.1
13. Tesa Tape Inc.	Carbondale	0.0	0.1	0.0	0.0	0.0	0.0	-0.1
14. Case Corporation	East Moline	0.0	0.1	0.1	0.0	0.0	0.0	-0.1
15. MBL USA Corporation	Ottowa	0.0	0.1	0.0	0.0	0.0	0.0	-0.1
16. Cambridge Industries, Inc.	Centralia	0.3	0.1	0.1	0.0	0.0	0.0	-0.1
17. Heatcraft Inc.	Danville	0.0	0.1	0.0	0.0	0.0	0.0	-0.1
18. Wheatland Tube Company Chicago Division	Chicago	0.0	0.1	0.1	0.0	0.0	0.0	-0.1
19. John Crane Inc.	Morton Grove	0.0	0.1	0.1	0.0	0.0	0.0	-0.1
20. Acme Finishing Company, Inc.	ElkGroveVillage	0.0	0.1	0.1	0.1	0.0	0.0	-0.1
Totals for Top 20 Facilities:		5.2	6.2	2.9	2.9	1.9	0.1	-6.1
Totals for All Reporting Facilities:		22.3	10.2	7.8	9.9	7.7	6.4	-3.8

Significant Environmental Achievement

A number of the facilities which have submitted toxic chemical release have demonstrated performance which sets them apart from other facilities. Several criteria have been considered to identify these facilities:

- Toxic chemical release and transfer reduction greater than 1 million pounds, 1988 through 1999 (most current information)
- Low or decreasing number of accidental chemical releases, 1995-2000 (most current information)
- No significant releases as defined by the Illinois Chemical Safety Act (ICSA) from 1995 through 2000
- Past participation in the Agency's voluntary Partners in Pollution Prevention program

The three facilities meeting these criteria are listed in Table 14.

Table 14

Facilities Demonstrating Environmental Excellence

Facility	City	Total Release/ Transfer Reduction 88-99 (Million Pounds)	Number of Reported Spills 96	97	98	99	00
1. Cabot Corp. - Cab-O-Sil Div.	Tuscola	2.2	4	3	1	1	3
2. Viskase Corporation	Bedford Park	1.7	0	0	1	0	0
3. Solutia, Inc.	Sauget	1.3	0	0	0	1	2

CHEMICALS

A total of 309 toxic chemicals and chemical categories have been reportable on Form R in the same form from 1988 through 1999.

Tables 15 through 26 summarize toxic chemical release and transfer amounts for each environmental media. The top twenty chemicals are listed for each media unless a smaller number of chemicals had non-zero release and transfer amounts.

Table 15

Total Air Emissions
Top 20 Chemicals

Combined Stack and Fugitive Emissions (Million Pounds):

CAS Number or Category	Chemical Name	Base Yr.	Last Five Years					Total
		1988	1995	1996	1997	1998	1999	95-99
1. 000108883	Toluene	18.4	6.4	4.9	5.2	4.3	3.7	24.6
2. 000075150	Carbon Disulfide	3.3	5.3	5.3	5.4	4.4	3.5	24.0
3. 001330207	Xylene (Mixed Isomers)	7.0	3.4	3.5	2.9	2.6	2.4	14.9
4. 000010230	Glycol Ethers	2.8	2.8	2.5	2.5	2.5	2.3	12.5
5. 000079016	Trichloroethylene	4.7	3.4	3.0	2.6	1.6	1.2	11.9
6. 000075092	Dichloromethane	4.3	2.7	2.5	2.0	1.8	1.6	10.6
7. 000100425	Styrene	1.9	2.1	2.0	1.9	2.1	2.4	10.5
8. 000067561	Methanol	3.7	2.4	2.3	2.2	1.8	1.7	10.5
9. 000078933	Methyl Ethyl Ketone	5.1	2.7	2.2	1.9	1.7	1.6	10.2
10. 000074851	Ethylene	5.2	1.1	1.6	1.6	1.4	1.4	7.2
11. 007782505	Chlorine	4.4	2.5	2.0	0.3	0.3	0.3	5.3
12. 000010982	Zinc Compounds	2.1	0.7	1.7	0.7	0.7	0.7	4.5
13. 000071363	n-Butyl Alcohol	1.4	1.1	0.8	0.9	0.9	0.8	4.5
14. 000108101	Methyl Isobutyl Ketone	1.7	1.4	0.7	0.8	0.6	0.5	4.1
15. 000108952	Phenol	0.5	0.8	0.7	0.5	0.4	0.5	3.0
16. 000115071	Propylene	0.7	0.3	0.5	0.5	0.9	0.3	2.6
17. 000071432	Benzene	1.6	0.4	0.4	0.4	0.4	0.4	2.0
18. 000107131	Acrylonitrile	1.1	0.4	0.4	0.4	0.4	0.3	2.0
19. 000074873	Chloromethane	1.1	0.4	0.4	0.4	0.4	0.3	1.9
20. 000095636	1,2,4-Trimethylbenzene	0.4	0.4	0.3	0.4	0.4	0.4	1.8
Totals for Top 20 Chemicals:		71.4	40.7	37.7	33.5	28.9	26.3	153.7
Totals for All Chemicals:		96.2	46.7	43.5	38.2	33.8	30.4	192.7

Table 16

Total Air Emissions
Chemicals With Significant Human Health Effects
Top 20 Chemicals

CAS Number or Category	Emissions Chemical Name	Combined Stack and Fugitive Emissions (Million Pounds): Base Year 1988	Last Five Years 1995	1996	1997	1998	1999	Total 95-99
1. 000108883	Toluene	8.4	6.4	4.9	5.2	4.3	3.7	24.6
2. 000075150	Carbon Disulfide	3.3	5.3	5.3	5.4	4.4	3.5	24.0
3. 001330207	Xylene (Mixed Isomers)	6.7	3.4	3.5	2.9	2.6	2.4	14.9
4. 000079016	Trichloroethylene	4.6	3.4	3.0	2.6	1.6	1.2	11.9
5. 000075092	Dichloromethane	4.3	2.7	2.5	2.0	1.8	1.6	10.6
6. 000100425	Styrene	1.9	2.1	2.0	1.9	2.1	2.4	10.5
7. 000078933	Methyl Ethyl Ketone	5.1	2.7	2.2	1.9	1.7	1.6	10.2
8. 000071432	Benzene	1.6	0.4	0.4	0.4	0.4	0.4	2.0
9. 000107131	Acrylonitrile	1.1	0.4	0.4	0.4	0.4	0.3	1.9
10. 000127184	Tetrachloroethylene	2.0	0.5	0.4	0.3	0.2	0.1	1.5
11. 000075003	Chloroethane	0.5	0.2	0.2	0.2	0.2	0.2	1.0
12. 000075014	Vinyl Chloride	0.1	0.1	0.1	0.1	0.1	0.1	0.6
13. 000010450	Manganese Compounds	0.0	0.1	0.2	0.1	0.1	0.1	0.6
14. 000075070	Acetaldehyde	0.1	0.1	0.1	0.1	0.1	0.1	0.5
15. 000010420	Lead Compounds	0.1	0.1	0.2	0.1	0.0	0.0	0.4
16. 007439965	Manganese	0.2	0.1	0.1	0.1	0.1	0.1	0.4
17. 000106990	1,3-Butadiene	0.0	0.0	0.1	0.1	0.1	0.1	0.3
18. 000079107	Acrylic Acid	0.1	0.0	0.0	0.1	0.0	0.0	0.2
19. 000050000	Formaldehyde	0.1	0.0	0.0	0.0	0.0	0.0	0.2
20. 007440020	Nickel	0.1	0.0	0.1	0.0	0.0	0.0	0.2
Totals for Top 20 Chemicals:		50.3	28.0	25.7	23.9	20.2	18.0	116.5
Totals for All Chemicals:		51.1	32.7	28.4	26.2	23.8	20.2	131.4

Table 17

Total Water Releases
Top 20 Chemicals

CAS Number or Category	Chemical Name	Water Releases (Thousand Pounds): Base Yr. 1988	Last Five Years 1995	1996	1997	1998	1999	Total Releases 95-99
1. 000067561	Methanol	16.5	26.9	32.4	60.2	28.7	23.7	171.9
2. 000010982	Zinc Compounds	16.3	16.7	19.1	16.9	14.7	14.4	81.8
3. 000010230	Glycol Ethers	2.1	6.1	16.9	16.7	16.5	17.5	73.6
4. 000111422	Diethanolamine	60.1	15.8	0.6	0.5	0.5	43.3	60.7
5. 007439965	Manganese	26.3	10.9	9.4	9.2	10.0	7.3	46.9
6. 000107211	Ethylene Glycol	172.8	6.0	1.6	11.3	0.1	14.1	33.1
7. 007440508	Copper	10.8	7.4	6.4	5.7	5.1	4.8	29.5
8. 000091203	Naphthalene	1.0	23.6	0.1	0.5	0.5	0.5	25.2
9. 000010450	Manganese Compounds	4.1	6.1	5.5	3.3	4.5	5.8	25.1
10. 000440020	Nickel	2.7	5.2	3.7	3.9	5.0	2.6	20.3
11. 007723140	Phosphorus (Yellow or White)	2.0	2.1	3.5	3.1	3.5	3.5	15.8
12. 000108952	Phenol	4.4	3.7	2.9	2.4	2.3	2.0	13.2
13. 000010420	Lead Compounds	7.0	4.7	2.9	1.8	1.8	1.8	13.0
14. 000050000	Formaldehyde	2.2	1.8	2.1	2.6	2.9	2.8	12.3
15. 000010090	Chromium Compounds	8.7	3.7	2.6	1.8	1.6	1.3	10.9
16. 007782505	Chlorine	41.7	2.3	1.6	2.5	2.4	1.7	10.6
17. 000010100	Copper Compounds	3.6	1.1	2.1	1.2	1.2	1.3	7.0
18. 007440473	Chromium	2.4	2.3	1.1	1.5	1.0	0.9	6.9
19. 000075058	Acetonitrile	0.9	0.2	0.3	0.3	2.9	2.9	6.6
20. 000440360	Antimony	0.0	1.2	1.3	1.2	1.3	1.3	6.2
Totals for Top 20 Chemicals:		385.6	147.8	116.1	146.6	103.0	153.5	670.6
Totals for All Chemicals:		449.5	174.8	129.3	157.7	117.2	163.6	742.6

Table 18

Total Water Releases
Chemicals With Significant Human Health Effects
Top 20 Chemicals

CAS Number Releases or Category	Chemical Name	Water Releases (Thousand Pounds): Base Yr. 1988	Last Five Years 1995	1996	1997	1998	1999	Total 95-99
1. 007439965	Manganese	26.3	10.9	9.4	9.2	10.0	7.3	46.9
2. 000010450	Manganese Compounds	4.1	6.0	5.5	3.3	4.5	5.8	25.1
3. 007440020	Nickel	2.7	5.1	3.7	3.9	5.0	2.6	20.3
4. 000010420	Lead Compounds	7.0	4.7	2.9	1.8	1.8	1.8	13.0
5. 000050000	Formaldehyde	2.2	1.8	2.1	2.6	2.9	2.9	12.3
6. 000010090	Chromium Compounds	8.7	3.7	2.6	1.8	1.6	1.3	10.9
7. 007440473	Chromium	2.4	2.3	1.1	1.5	1.0	1.0	6.9
8. 000075150	Carbon Disulfide	0.0	0.0	0.0	1.4	1.6	1.6	4.7
9. 000010495	Nickel Compounds	3.2	1.1	1.1	1.1	0.6	0.6	4.6
10. 000108883	Toluene	1.5	0.9	1.8	0.6	0.5	0.6	4.5
11. 001330207	Xylene (Mixed Isomers)	0.6	0.7	0.9	0.8	0.7	0.7	3.9
12. 007439921	Lead	2.1	1.2	0.6	0.5	0.6	0.4	3.3
13. 000071432	Benzene	1.3	1.3	0.6	0.1	0.1	0.1	2.3
14. 000107131	Acrylonitrile	0.6	0.0	0.1	0.5	0.5	0.4	1.7
15. 000075014	Vinyl Chloride	0.4	0.5	0.5	0.0	0.0	0.0	1.1
16. 000100425	Styrene	1.6	0.1	0.6	0.0	0.0	0.0	0.7
17. 007440382	Arsenic	0.0	0.1	0.1	0.1	0.1	0.1	0.5
18. 000079107	Acrylic Acid	1.8	0.1	0.1	0.1	0.1	0.1	0.4
19. 000075092	Dichloromethane	0.9	0.1	0.0	0.1	0.1	0.1	0.3
20. 000106990	1,3-Butadiene	0.0	0.0	0.0	0.0	0.01	0.1	0.3
Totals for Top 20 Chemicals:		67.4	40.6	33.7	29.4	31.7	27.5	163.7
Totals for All Chemicals:		68.7	41.1	33.9	29.7	32.1	27.8	164.6

Table 19

Total On-Site Land Releases
Top 14 Chemicals

CAS Number or Category	Chemical Name	On-Site Land Releases (Million Pounds): Base Yr. 1988	Last Five Years 1995	1996	1997	1998	1999	Total Releases 95-99
1. 000010982	Zinc Compounds	3.8	13.3	14.6	13.1	12.3	12.1	65.4
2. 000010450	Manganese Compounds	0.8	5.6	5.1	5.9	4.6	3.3	24.5
3. 000010090	Chromium Compounds	0.1	0.6	1.4	1.7	1.2	1.4	6.4
4. 007439965	Manganese	0.5	0.6	0.7	0.7	0.7	0.8	3.5
5. 000010420	Lead Compounds	0.3	0.8	0.8	0.8	0.5	0.4	3.3
6. 007429905	Aluminum (Fume or Dust)	0.1	0.8	0.9	0.3	0.0	0.0	2.0
7. 007440473	Chromium	0.2	0.1	0.1	0.0	0.1	0.0	0.3
8. 007440666	Zinc (Fume or Dust)	3.1	0.1	0.0	0.0	0.0	0.0	0.2
9. 007440439	Cadmium	0.0	0.0	0.0	0.0	0.1	0.0	0.2
10. 007440020	Nickel	0.0	0.0	0.0	0.0	0.0	0.1	0.1
11. 007440508	Copper	0.0	0.0	0.1	0.0	0.0	0.0	0.1
12. 007439921	Lead	0.2	0.0	0.0	0.0	0.0	0.1	0.1
13. 000074851	Ethylene	0.0	0.0	0.0	0.0	0.0	0.1	0.1
14. 007440382	Arsenic	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Totals For Top 14 Chemicals:		9.1	21.9	23.7	22.5	19.5	18.4	106.3
Totals for All Chemicals:		10.1	22.0	23.8	22.7	19.6	18.5	106.6

Table 20

Total On-Site Land Releases
Chemicals With Significant Human Health Effects
Top 20 Chemicals

CAS Number Releases or Category	Chemical Name	On-Site Land Releases (Thousand Pounds): Base Yr. 1988	Last Five Years 1995	1996	1997	1998	1999	Total 95-99
1. 000010450	Manganese Compounds	833.5	5,626.3	5,083.5	5,927.5	4,568.4	3,301.7	24,507.6
2. 000010090	Chromium Compounds	72.7	643.8	1,390.5	1,745.3	1,230.5	1,414.9	6,425.0
3. 007439965	Manganese	520.7	596.7	727.0	741.9	732.5	783.6	3,581.8
4. 000010420	Lead Compounds	261.9	791.5	823.6	840.7	503.2	364.0	3,323.1
5. 007440473	Chromium	184.0	77.3	70.0	49.4	60.0	48.8	305.5
6. 007440439	Cadmium	0.0	0.0	0.0	0.0	141.7	28.4	170.2
7. 007440020	Nickel	42.0	8.6	8.6	8.3	21.3	70.6	117.5
8. 007439921	Lead	177.8	10.4	1.6	0.0	0.0	61.2	73.3
9. 007440382	Arsenic	0.0	0.0	0.0	0.0	0.0	68.8	68.8
10. 000108883	Toluene	42.8	15.3	0.6	10.2	1.5	0.3	27.9
11. 000078933	Methyl Ethyl Ketone	0.3	8.7	5.4	0.0	2.3	0.1	16.6
12. 000071432	Benzene	0.6	3.7	0.9	2.8	2.0	0.7	10.2
13. 000010495	Nickel Compounds	13.0	0.0	1.1	1.0	0.0	5.1	7.4
14. 001330207	Xylene (Mixed Isomers)	16.9	2.0	2.9	0.1	1.1	0.1	6.4
15. 000127184	Tetrachloroethylene	0.0	0.0	4.4	0.0	0.0	0.0	4.4
16. 000010020	Arsenic Compounds	0.0	0.0	0.0	0.0	0.0	4.1	4.1
17. 000010078	Cadmium Compounds	0.0	0.0	0.0	2.0	1.0	0.0	3.0
18. 000050000	Formaldehyde	330.8	1.8	0.2	0.1	0.0	0.1	2.4
19. 000075150	Carbon Disulfide	0.0	0.0	0.0	0.0	1.6	0.0	1.6
20. 000100425	Styrene	0.1	0.0	0.0	0.0	0.0	0.5	0.5
Totals for Top 20 Chemicals:		2,497.1	7,786.1	8,120.3	9,329.3	7,267.1	6,153.0	38,657.3
Totals for All Chemicals:		2,497.8	7,786.6	8,121.3	9,330.4	7,267.6	6,153.6	38,659.7

Table 21

Total Off-Site Transfers to POTW
Top 18 Chemicals

CAS Number or Category	Chemical Name	Off-Site Transfers to POTW (Million Pounds): Base Yr. 1988	Last Five Years 1995	1996	1997	1998	1999	Total Transfers 95-99
1. 000067561	Methanol	3.0	1.7	1.8	1.6	1.2	1.7	7.9
2. 000108952	Phenol	1.2	1.1	1.4	0.9	0.6	0.5	4.6
3. 000078933	Methyl Ethyl Ketone	0.0	0.2	0.3	0.3	0.3	0.4	1.5
4. 000106445	p-Cresol	0.7	0.9	0.4	0.0	0.0	0.0	1.4
5. 000010230	Glycol Ethers	0.5	0.3	0.2	0.3	0.3	0.2	1.3
6. 007664393	Hydrogen Fluoride	0.0	0.3	0.2	0.3	0.3	0.0	1.2
7. 000100027	4-Nitrophenol	0.4	0.0	0.0	0.0	0.6	0.5	1.1
8. 000075150	Carbon Disulfide	0.0	0.2	0.3	0.2	0.2	0.1	1.0
9. 007439965	Manganese	0.0	0.0	0.0	0.2	0.6	0.0	0.8
10. 000095476	o-Xylene	0.0	0.2	0.2	0.1	0.1	0.1	0.8
11. 000107211	Ethylene Glycol	0.5	0.1	0.1	0.2	0.0	0.0	0.4
12. 000010982	Zinc Compounds	0.2	0.1	0.0	0.1	0.1	0.0	0.3
13. 000062533	Aniline	0.7	0.1	0.0	0.0	0.1	0.1	0.3
14. 000108101	Methyl Isobutyl Ketone	0.0	0.0	0.0	0.0	0.0	0.0	0.2
15. 000095487	o-Cresol	0.0	0.1	0.0	0.0	0.0	0.0	0.2
16. 000010100	Copper Compounds	0.1	0.0	0.0	0.0	0.0	0.0	0.1
17. 007697372	Nitric Acid	0.3	0.0	0.0	0.1	0.0	0.0	0.1
18. 000079016	Trichloroethylene	0.0	0.0	0.1	0.0	0.0	0.0	0.1
Totals for Top 18 Chemicals:		7.6	5.0	5.0	4.3	4.4	3.5	22.3
Totals for All Chemicals:		11.0	5.8	5.8	4.9	4.9	4.1	25.5

Table 22

Total Off-Site Transfers to POTW
Chemicals With Significant Human Health Effects
Top 20 Chemicals

CAS Number Transfers or Category	Chemical Name	Off-Site Transfers to POTW (Thousand Pounds): Base Yr. 1988	Last Five Years 1995	1996	1997	1998	1999	Total 95-99
1. 000078933	Methyl Ethyl Ketone	14.2	161.1	341.5	321.0	307.0	355.4	1,203.8
2. 000075150	Carbon Disulfide	37.0	247.3	336.7	174.8	158.9	51.6	969.5
3. 007439965	Manganese	26.0	3.6	3.1	243.1	575.5	3.7	829.1
4. 000062533	Aniline	688.4	69.4	36.0	41.0	74.6	70.3	291.3
5. 000079016	Trichloroethylene	4.5	2.8	69.1	24.2	38.4	0.5	135.1
6. 000108883	Toluene	14.1	35.9	39.8	19.9	17.8	15.5	129.1
7. 000010450	Manganese Compounds	1.0	17.01	21.0	23.4	26.5	26.2	114.3
8. 000075218	Ethylene Oxide	5.7	21.0	21.0	21.0	21.0	4.6	88.6
9. 000050000	Formaldehyde	47.5	21.7	24.4	9.9	16.3	13.5	85.9
10. 000010495	Nickel Compounds	57.6	12.7	17.2	15.4	12.2	14.4	72.2
11. 000010090	Chromium Compounds	35.7	16.5	14.6	13.0	14.0	12.6	70.9
12. 001330207	Xylene (Mixed Isomers)	769.0	11.4	21.5	14.2	5.4	5.2	57.8
13. 007440020	Nickel	11.9	9.2	12.4	12.1	11.1	11.1	56.0
14. 000079107	Acrylic Acid	0.5	0.0	0.3	0.0	34.3	20.9	55.6
15. 000075092	Dichloromethane	9.3	16.1	17.0	15.8	1.5	2.5	52.9
16. 000071432	Benzene	494.5	11.1	18.6	6.4	7.4	2.8	46.5
17. 000109864	2-Methoxyethanol	0.0	6.0	2.5	2.1	.0	17.0	32.6
18. 000067663	Chloroform	0.0	2.5	8.3	8.3	0.5	0.5	20.1
19. 007440473	Chromium	28.5	3.9	4.7	3.6	4.1	3.2	19.7
20. 000075070	Acetaldehyde	0.5	2.7	2.6	5.1	5.2	0.0	15.8
Totals for Top 20 Chemicals:		2,245.9	671.9	1,012.3	974.3	1,331.7	631.5	4,346.8
Totals for All Chemicals:		2,378.9	686.9	1,023.6	986.1	1,349.7	639.3	4,685.8

Table 23

Total Other Off-Site Transfers
Top 20 Chemicals
(Does Not Include Amount Recycled)

CAS Number or Category	Chemical Name	Other Off-Site Transfers (Million Pounds): Base Yr. 1988	Last Five Years 1995	1996	1997	1998	1999	Total Transfers 95-99
1. 000010982	Zinc Compounds	11.0	14.0	8.2	16.5	16.0	13.4	68.0
2. 000010450	Manganese Compounds	2.4	2.4	2.0	3.2	3.2	3.6	14.4
3. 000085449	Phthalic Anhydride	3.3	0.0	2.4	2.9	3.8	2.89	11.9
4. 000067561	Methanol	3.7	1.0	0.6	0.7	1.5	1.8	5.7
5. 000010420	Lead Compounds	1.3	0.7	0.6	1.5	1.3	1.3	5.4
6. 000078933	Methyl Ethyl Ketone	2.2	0.5	0.3	0.6	1.7	1.7	4.9
7. 007440508	Copper	1.1	0.8	0.8	1.4	0.8	0.8	4.7
8. 000010090	Chromium Compounds	0.9	0.6	1.2	1.4	0.7	0.8	4.7
9. 007429905	Aluminum (Fume or Dust)	0.2	0.0	0.6	0.8	0.7	1.0	3.2
10. 007697372	Nitric Acid	0.2	0.8	0.7	0.4	0.4	0.6	3.2
11. 001330207	Xylene (Mixed Isomers)	1.6	0.7	0.4	0.5	0.7	0.3	2.8
12. 000108883	Toluene	3.4	0.5	0.5	0.6	0.5	0.5	2.7
13. 007440666	Zinc (Fume or Dust)	1.8	0.1	0.1	0.2	0.2	2.0	2.7
14. 000075092	Dichloromethane	0.4	0.5	0.3	0.5	0.4	0.7	2.4
15. 007439965	Manganese	1.0	0.5	0.7	0.3	0.2	0.4	2.2
16. 000010100	Copper Compounds	1.6	0.3	0.3	0.3	0.3	0.4	1.7
17. 007440473	Chromium	1.0	0.3	0.2	0.8	0.1	0.2	1.6
18. 000100425	Styrene	0.7	0.4	0.3	0.4	0.3	0.2	1.6
19. 000100027	4-Nitrophenol	0.0	0.4	0.5	0.5	0.0	0.0	1.4
20. 000010040	Barium Compounds	2.6	0.4	0.3	0.2	0.2	0.1	1.1
Totals for Top 20 Chemicals:		40.4	24.9	21.0	33.3	33.0	32.7	146.3
Totals for All Chemicals:		52.9	28.8	23.9	36.8	36.1	36.5	162.1

Table 24

Total Other Off-Site Transfers
Top 20 Chemicals
Chemicals With Significant Human Health Effects
(Does Not Include Amount Recycled)

CAS Number / Transfers or Category	Chemical Name	Other Off-Site Transfers (Million Pounds): Base Yr. 1988	Last Five Years 1995	1996	1997	1998	1999	Total 95-99
1. 000010450	Manganese Compounds	2.4	2.4	2.0	3.2	3.2	3.6	14.4
2. 000010420	Lead Compounds	1.3	0.7	0.6	1.5	1.3	1.4	5.4
3. 000078933	Methyl Ethyl Ketone	2.2	0.5	0.4	0.6	1.7	1.7	4.9
4. 000010090	Chromium Compounds	0.9	0.6	1.2	1.4	0.7	0.8	4.7
5. 001330207	Xylene (Mixed Isomers)	1.6	0.7	0.7	0.4	0.6	0.7	3.1
6. 000108883	Toluene	3.5	0.5	0.6	0.6	0.5	0.5	2.7
7. 000075092	Dichloromethane	0.4	0.5	0.3	0.5	0.4	0.7	2.4
8. 007439965	Manganese	1.0	0.5	0.7	0.3	0.2	0.4	2.2
9. 007440473	Chromium	1.0	0.3	0.2	0.8	0.1	0.2	1.6
10. 000100425	Styrene	0.7	0.4	0.3	0.4	0.3	0.2	1.6
11. 007439921	Lead	1.3	0.1	0.1	0.2	0.3	0.3	1.1
12. 000010495	Nickel Compounds	0.2	0.1	0.1	0.2	0.1	0.2	0.8
13. 000067663	Chloroform	0.0	0.1	0.1	0.1	0.1	0.3	0.7
14. 007440020	Nickel	0.6	0.1	0.1	0.1	0.2	0.1	0.7
15. 000079016	Trichloroethylene	0.5	0.1	0.1	0.1	0.1	0.1	0.5
16. 000117817	Di-(2-ethylhexyl)phthalate (DEHP)	0.0	0.1	0.1	0.0	0.1	0.0	0.3
17. 000127184	Tetrachloroethylene	0.2	0.1	0.1	0.1	0.0	0.0	0.2
18. 000050000	Formaldehyde	0.1	0.1	0.0	0.0	0.0	0.0	0.2
19. 000071432	Benzene	0.0	0.1	0.0	0.0	0.0	0.0	0.2
20. 000010078	Cadmium Compounds	0.1	0.1	0.0	0.0	0.0	0.0	0.1
Totals for Top 20 Chemicals:		18.0	8.1	7.7	10.5	9.9	9.8	47.8
Totals for All Chemicals:		18.6	8.6	7.5	10.8	10.2	11.1	48.2

Table 25

Total Releases and Transfers
Top 20 Chemicals
(Does Not Include Amount Recycled)

CAS Number or Category	Chemical Name	Total Releases and Transfers (Million Pounds): Base Yr. 1988	Last Five Years 1995	1996	1997	1998	1999	Total 95-99
1. 000010982	Zinc Compounds	17.2	28.0	24.7	30.4	29.0	26.2	138.3
2. 000010450	Manganese Compounds	3.3	8.2	7.4	9.3	7.8	7.0	39.7
3. 000108883	Toluene	21.8	7.0	5.4	5.9	4.9	4.2	27.5
4. 000075150	Carbon Disulfide	3.3	5.7	5.7	5.5	4.6	3.6	25.0
5. 000067561	Methanol	10.0	5.2	4.8	4.6	4.6	5.2	24.3
6. 001330207	Xylene (Mixed Isomers)	9.4	4.2	4.0	3.5	3.4	2.7	17.8
7. 000078933	Methyl Ethyl Ketone	7.3	3.4	2.9	2.8	3.8	3.7	16.6
8. 000010230	Glycol Ethers	3.8	3.3	2.8	2.9	3.1	2.8	15.1
9. 000085449	Phthalic Anhydride	3.4	0.4	2.7	3.1	3.9	3.0	13.1
10. 000075092	Dichloromethane	4.8	3.2	2.8	2.4	2.1	2.4	13.0
11. 000079016	Trichloroethylene	5.2	3.5	3.1	2.8	1.7	1.3	12.5
12. 000100425	Styrene	2.6	2.5	2.3	2.3	2.4	2.6	12.1
13. 000010090	Chromium Compounds	1.0	1.3	2.6	3.1	2.0	2.2	11.3
14. 000010420	Lead Compounds	1.7	1.6	1.6	2.4	1.8	1.8	9.2
15. 000108952	Phenol	2.3	2.1	2.3	1.5	1.1	1.1	8.2
16. 000074851	Ethylene	5.2	1.1	1.6	1.6	1.4	1.5	7.3
17. 007439965	Manganese	1.8	1.2	1.5	1.4	1.6	1.3	7.0
18. 007429905	Aluminum (Fume or Dust)	0.4	1.0	1.6	1.3	0.9	1.1	5.9
19. 007440508	Copper	1.3	1.0	1.0	1.6	1.0	0.9	5.4
20. 007782505	Chlorine	7.1	2.5	2.0	0.3	0.3	0.3	5.3
Totals for Top 20 Chemicals:		112.9	86.4	82.8	88.7	81.4	74.9	414.6
Totals for All Chemicals:		170.8	103.5	97.2	102.8	94.5	89.7	487.6

Table 26

Total Releases and Transfers
Top 20 Chemicals
Chemicals With Significant Human Health Effects
(Does Not Include Amount Recycled)

CAS Number or Category	Chemical Name	Total Releases and Transfers (Million Pounds): Base Yr. 1988	Last Five Years 1995	1996	1997	1998	1999	Total 95-99
1. 000010450	Manganese Compounds	3.3	8.2	7.4	9.3	7.8	7.0	39.7
2. 000108883	Toluene	21.9	7.0	5.5	5.9	4.9	4.2	27.5
3. 000075150	Carbon Disulfide	3.3	5.7	5.7	5.6	4.6	3.6	25.0
4. 001330207	Xylene (Mixed Isomers)	9.4	4.2	4.0	3.5	3.4	2.7	17.8
5. 000078933	Methyl Ethyl Ketone	7.3	3.4	2.9	2.8	3.8	3.7	16.6
6. 000075092	Dichloromethane	4.8	3.2	2.8	2.4	2.1	2.4	13.0
7. 000079016	Trichloroethylene	5.2	3.5	3.1	2.8	1.7	1.8	12.5
8. 000100425	Styrene	2.6	2.5	2.3	2.3	2.4	2.6	12.1
9. 000010090	Chromium Compounds	1.0	1.3	2.6	3.1	2.0	2.2	11.3
10. 000010420	Lead Compounds	1.7	1.6	1.6	2.3	1.8	1.7	9.2
11. 007439965	Manganese	1.8	1.2	1.5	1.4	1.6	1.3	7.0
12. 000071432	Benzene	2.0	0.5	0.5	0.4	0.4	0.4	2.3
13. 007440473	Chromium	1.3	0.4	0.3	0.9	0.2	0.2	2.1
14. 000107131	Acrylonitrile	1.1	0.4	0.4	0.4	0.4	0.2	1.9
15. 000127184	Tetrachloroethylene	2.3	0.5	0.5	0.3	0.2	0.2	1.7
16. 007439921	Lead	1.5	0.2	0.1	0.2	0.3	0.4	1.3
17. 007440020	Nickel	0.7	0.2	0.2	0.2	0.3	0.2	1.0
18. 000075003	Chloroethane	0.5	0.2	0.2	0.2	0.2	0.2	0.9
19. 000010495	Nickel Compounds	0.3	0.1	0.2	0.2	0.2	0.2	0.9
20. 000067663	Chloroform	0.0	0.1	0.1	0.1	0.1	0.3	0.7
Totals for Top 20 Chemicals:		72.0	40.9	41.9	44.3	38.0	31.3	204.5
Totals for All Chemicals:		75.1	45.7	43.1	45.2	39.3	36.1	209.4

STANDARD INDUSTRIAL CLASSIFICATION (SIC) CATEGORIES

Facilities in 315 individual four-digit SIC codes have reported toxic chemical releases from 1988 through 1999. Tables 27 and 28 summarize the release and transfer information for these SIC codes.

Table 27

Total Release and Transfer Amounts
Top 20 SIC Codes

			Total Releases and Transfers (Million Pounds):							
										%
Increase(+)										
	SIC		Base Yr.	Last Five Years					Total	or
Decrease(-)										
	Code	Description	1988	1995	1996	1997	1998	1999	95-99	95-99
1.	3312	Steel Works, Blast Furnaces (Including Coke Ovens) and Rolling Mills	24.0	34.3	31.1	38.3	33.9	29.0	166.6	-15
2.	2821	Plastic Materials, Synthetic Resins and Nonvulcanizable Elastomers	14.7	6.4	5.8	5.6	6.4	4.3	28.5	-33
3.	2865	Cyclic Organic Crudes & Intermediates, and Organic Dyes and Pigments	10.8	4.3	6.3	6.3	7.0	4.5	28.4	5
4.	3089	Plastic Products, NEC*	2.2	6.2	6.1	5.9	5.2	4.1	27.5	-33
5.	2869	Industrial Organic Chemicals, NEC	8.6	2.8	3.4	2.0	2.2	4.5	14.9	61
6.	2819	Industrial Inorganic Chemicals, NEC	5.7	3.8	3.3	2.0	2.0	2.0	13.2	-45
7.	2752	Commercial Printing, Lithographic	6.3	1.7	1.9	3.1	2.3	2.1	11.1	24
8.	3341	Secondary Smelting and Refining of Non Ferrous Metal	4.5	1.5	2.7	2.3	2.0	1.8	10.4	18
9.	3471	Electroplating, Plating, Polishing, Anodizing and Coloring	2.0	1.7	2.1	2.3	1.8	2.0	9.9	19
10.	3086	Plastics Foam Products	0.8	2.0	2.0	1.6	1.5	1.3	8.4	-36
11.	3711	Motor Vehicles and Passenger Car Bodies	4.5	2.0	1.4	1.4	1.5	1.4	7.8	-30
12.	3325	Steel Foundries, NEC	0.3	2.1	1.7	1.3	1.0	1.4	7.6	-36
13.	2843	Surface Active Agents, Finishing Agents, Sulfonated Oils, and Assistants	3.8	1.4	1.2	1.0	1.5	2.2	7.4	62
14.	3339	Primary Smelting and Refining of Nonferrous Metals, Except Copper and Aluminum	2.0	1.2	1.4	1.2	1.3	1.9	7.0	59
15.	2851	Paints, Varnishes, Lacquers, Enamels and Allied Products	3.9	1.2	1.3	1.4	1.5	1.5	6.9	27
16.	2911	Petroleum Refining	3.0	1.3	1.4	1.3	1.2	1.6	6.7	27
17.	3479	Coating, Engraving, and Allied Services, Not Elsewhere Classified	1.8	1.2	1.1	1.3	1.2	1.3	6.0	9
18.	3411	Metal Cans	1.0	1.2	1.1	1.2	1.1	1.0	5.8	-14
19.	3499	Fabricated Metal Prod., NEC	1.4	0.9	1.2	1.2	1.3	0.7	5.2	-22
20.	3366	Copper Foundries	0.0	0.0	0.0	1.5	1.7	1.8	5.0	16917
Totals for Top 20 SIC Codes:			101.3	77.2	76.5	82.2	77.6	70.4	384.3	
Totals for All SIC Codes:			170.8	103.5	97.2	102.8	94.5	89.7	487.6	

*NEC - Not Elsewhere Classified

Table 28

Total Release and Transfer Amounts
Chemicals With Significant Human Health Effects
Top 20 SIC Codes

			Total Releases and Transfers (Million Pounds):							
				Base Yr.	Last Five Years					%
Increase(+) SIC Total Decrease(-)										
Code	99	Description	1988	1995	1996	1997	1998	1999	95-99	95-
1.	3312	Steel Works, Blast Furnaces (Including Coke Ovens) and Rolling Mills	6.5	9.1	9.1	11.6	9.4	7.9	47.2	-13
2.	3089	Plastic Products, NEC*	2.0	6.1	6.1	5.8	5.1	4.1	27.2	-34
3.	2821	Plastic Materials, Synthetic Resins and Nonvulcanizable Elastomers	5.5	2.6	2.5	2.4	3.4	2.6	13.5	-2
4.	2752	Commercial Printing, Lithographic	5.7	1.4	1.8	2.9	2.1	1.9	10.1	30
5.	3086	Plastic Foam Products	0.7	2.0	1.9	1.6	1.5	1.3	8.3	-35
6.	2819	Industrial Inorganic Chemicals, NEC	1.3	1.1	0.9	1.1	1.3	1.5	5.9	29
7.	3471	Electroplating, Plating, Polishing, Anodizing and Coloring	1.1	0.9	1.3	1.4	0.9	1.1	5.7	14
8.	3325	Steel Foundries, NEC	0.1	0.9	1.1	0.9	0.9	1.2	4.9	28
9.	2851	Paints, Varnishes, Lacquers, Enamels and Allied Products	3.1	0.7	0.8	0.8	1.0	1.0	4.3	34
10.	3499	Fabricated Metal Products, NEC	1.1	0.5	0.9	0.9	0.9	0.5	3.7	-5
11.	2869	Industrial Organic Chemicals, NEC	0.8	0.6	0.6	0.5	0.5	1.2	3.5	106
12.	2911	Petroleum Refining	1.9	0.6	0.7	0.6	0.7	0.7	3.3	8
13.	3732	Boat Building and Repairing	0.2	0.7	0.6	0.6	0.6	0.9	3.1	28
14.	3711	Motor Vehicles and Passenger Car Bodies	2.3	0.7	0.6	0.5	0.7	0.7	3.2	-11
15.	3317	Steel Pipe and Tubes	0.5	0.8	0.7	0.5	0.5	0.4	3.0	-55
16.	2672	Coated and Laminated Paper, NEC	1.7	0.8	0.6	0.6	0.4	0.5	2.9	-36
17.	3479	Coating, Engraving, and Allied Services, NEC	1.3	0.6	0.5	0.5	0.3	0.6	2.6	-11
18.	2833	Medicinal Chemicals and Botanical Products	0.0	0.0	0.4	0.6	0.4	1.0	2.5	0
19.	2865	Cyclic Organic Crudes and Intermediates, and Organic Dyes and Pigments	4.2	0.6	0.6	0.5	0.5	0.2	2.4	-69
20.	2754	Commercial Printing, Gravure	5.0	1.2	0.9	0.0	0.0	0.0	2.2	-100
Totals for Top 20 SIC Codes:			45.0	31.9	32.6	34.3	31.1	29.3	159.5	-94
Totals for All SIC Codes:			75.1	45.7	43.1	45.2	39.3	36.1	209.4	

ZIP CODES - AIR EMISSIONS

In an attempt to localize the reported information in an understandable format, the following summaries of toxic chemical release information presented in Tables 29 and 30 are based on five-digit zip codes. Also, the analysis presented here is restricted to air emissions to give some indication of the possibility of human exposure. Of course, ZIP code areas vary in size and population. Also, as the case has always been, toxic chemical release and transfer amounts are annual totals, so no inferences can be made from the following rankings relative to exposure dose and resultant human health effects of these air emissions in any of the ZIP codes listed.

Table 29

Total Air Emissions
Top 20 ZIP Codes

				Total Air Emissions (Million Pounds):						
ZIP Code	County	City	Base Yr. 1988	Last Five Years 1995	1996	1997	1998	1999	Total 95-99
1. 61832	Vermilion	Danville	2.5	3.9	4.0	3.9	3.6	3.5	18.9
2. 60450	Grundy	Morris	5.4	1.3	1.9	1.9	2.2	1.2	8.5
3. 60638	Cook	Bedford Park	1.8	1.6	1.5	1.5	0.9	0.0	5.6
4. 61953	Douglas	Tuscola	5.0	2.5	2.1	0.4	0.3	0.3	5.6
5. 61350	LaSalle	Ottawa (Rural)	2.1	1.2	1.1	1.1	1.1	0.9	5.5
6. 62881	Marion	Salem	0.7	1.3	1.2	1.4	0.8	0.2	5.1
7. 61054	Ogle	Mount Morris	1.6	0.9	1.3	0.9	0.7	0.9	4.6
8. 60633	Cook	Chicago	1.9	1.2	0.7	0.8	0.9	0.8	4.4
9. 62206	St. Clair	Sauget	2.7	0.8	0.8	0.9	0.7	0.6	3.8
10. 61938	Coles	Mattoon	2.4	0.6	0.3	0.8	0.8	0.9	3.4
11. 60185	Du Page	West Chicago	0.6	0.9	0.6	0.6	0.5	0.6	3.4
12. 60455	Cook	Bridgeview	0.3	0.9	0.8	0.6	0.6	0.4	3.3
13. 60609	Cook	Chicago	0.8	0.8	0.6	0.5	0.5	0.5	2.9
14. 60410	Will	Channahon	0.6	0.8	0.4	0.7	0.6	0.4	2.9
15. 60421	Lake	Elwood	0.4	0.6	0.7	0.6	0.4	0.4	2.7
16. 60426	Cook	Harvey	1.0	0.6	0.5	0.5	0.5	0.5	2.7
17. 62084	Madison	Roxana	1.6	0.5	0.5	0.5	0.5	0.6	2.6
18. 60007	Cook	Elk Grove Village	1.1	0.7	0.6	0.5	0.2	0.5	2.5
19. 60501	Cook	Summit	1.6	0.6	0.5	0.5	0.5	0.4	2.4
20. 62454	Crawford	Robinson	2.1	1.2	0.4	0.3	0.2	0.3	2.3
Totals for Top 20 ZIP Codes:			36.2	22.9	20.5	18.9	16.5	13.9	87.9
Totals for All ZIP Codes:			95.7	47.7	43.6	38.2	33.8	30.4	192.7

Table 30

Total Air Emissions
Chemicals With Significant Human Health Effects
Top 20 ZIP Codes

ZIP Total Code 99	County	City	Total Air Emissions (Million Pounds) Base Yr. 1988	Last Five Years 1995	1996	1997	1998	1999	95-99
1. 61832	Vermilion	Danville	2.2	3.9	3.9	3.9	3.6	3.5	18.9
2. 60638	Cook	Bedford Park	1.5	1.6	1.5	1.5	0.9	0.0	5.5
3. 61350	LaSalle	Ottawa (Rural)	2.1	1.1	1.1	1.1	1.1	0.9	5.2
4. 62881	Marion	Salem	0.6	1.2	1.1	1.4	0.7	0.1	4.5
5. 61054	Ogle	Mount Morris	1.6	0.8	1.2	0.8	0.6	0.9	4.4
6. 61938	Coles	Mattoon	2.4	0.6	0.3	0.7	0.8	0.9	3.3
7. 60185	DuPage	West Chicago	0.4	0.9	0.6	0.6	0.5	0.6	3.3
8. 60455	Cook	Bridgeview	0.2	0.7	0.7	0.5	0.6	0.4	2.9
9. 60426	Cook	Harvey	0.5	0.5	0.5	0.4	0.4	0.3	2.2
10. 62896	Franklin	West Frankfort	0.0	0.4	0.4	0.4	0.4	0.6	2.1
11. 60007	Cook	Elk Grove Village	0.8	0.5	0.4	0.3	0.1	0.4	1.8
12. 60410	Will	Channahon	0.6	0.5	0.4	0.4	0.3	0.3	1.8
13. 60501	Cook	Summit	1.5	0.4	0.3	0.4	0.3	0.3	1.7
14. 61537	Marshall	Henry	0.1	0.3	0.4	0.3	0.3	0.4	1.7
15. 62084	Madison	Roxana	1.1	0.3	0.3	0.3	0.4	0.4	1.7
16. 62914	Alexander	Cairo	0.5	0.0	0.6	0.4	0.3	0.3	1.7
17. 62454	Crawford	Robinson	1.6	1.1	0.2	0.1	0.1	0.1	1.5
18. 60633	Cook	Chicago	0.8	0.3	0.3	0.2	0.4	0.3	1.5
19. 61761	McLean	Normal	0.0	0.3	0.2	0.3	0.3	0.3	1.4
20. 60103	Cook	Streamwood	0.1	0.3	0.6	0.3	0.1	0.1	1.4
Totals for Top 20 ZIP Codes:			18.7	15.8	15.0	14.3	12.2	12.0	68.6
Totals for All ZIP Codes:			51.2	28.6	26.3	24.0	20.5	18.2	117.6

GENERAL TRENDS

The following charts depict the general trends of toxic chemical release information from 1988 through 1998. Figure 4 indicates the number of reporting facilities in each year. Figure 5 shows totals for all reporting facilities. Figures 6 through 10 show the totals for each release and transfer route.

FIGURE 4

NUMBER OF FACILITIES REPORTING

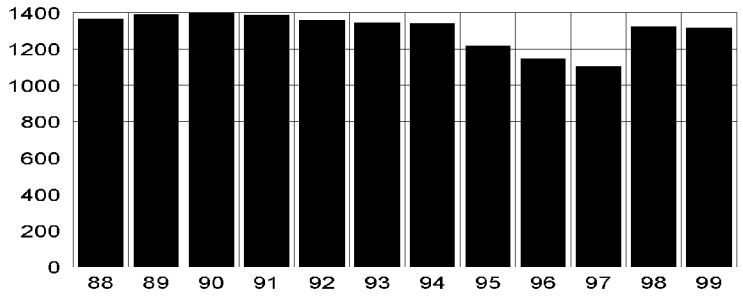


FIGURE 5

TOTAL RELEASES AND TRANSFERS - ALL FACILITIES

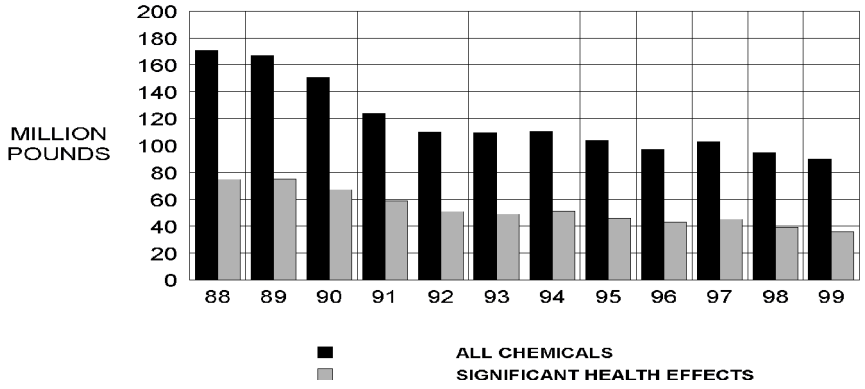


FIGURE 6

TOTAL AIR EMISSIONS

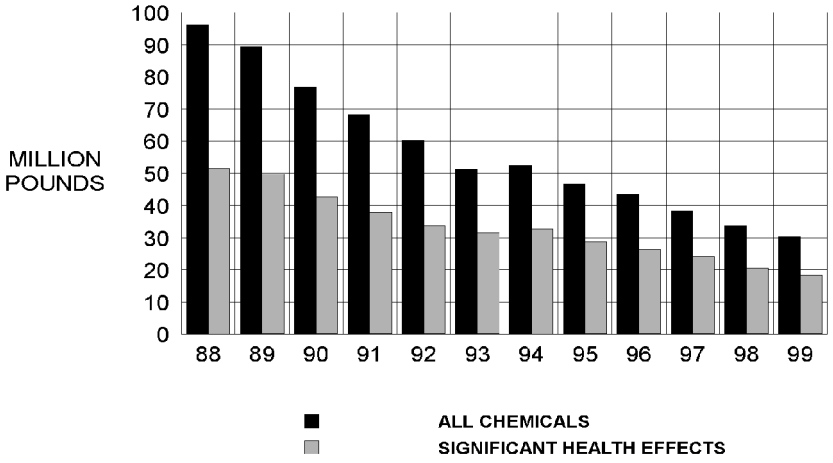


FIGURE 7

TOTAL WATER DISCHARGES

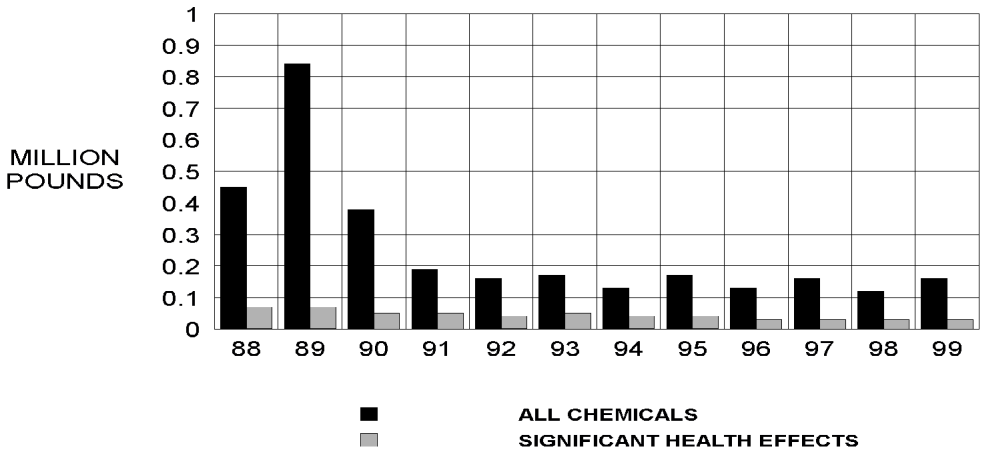


FIGURE 8

TOTAL RELEASES TO LAND ONSITE

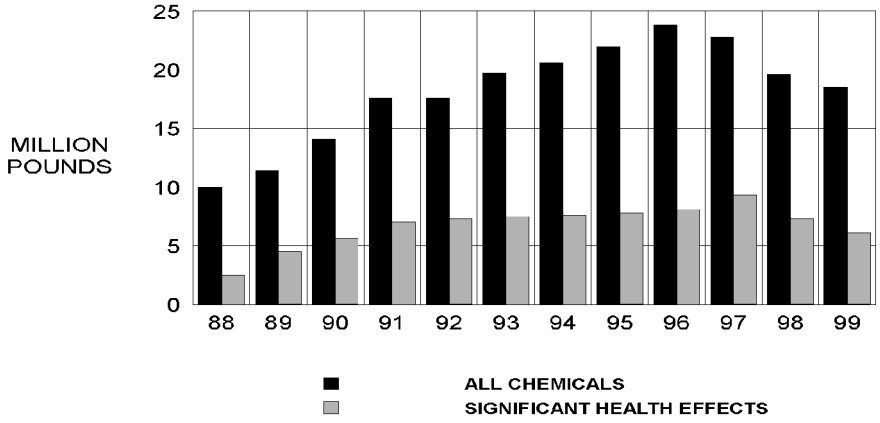


FIGURE 9

TOTAL OFFSITE TRANSFERS TO POTW

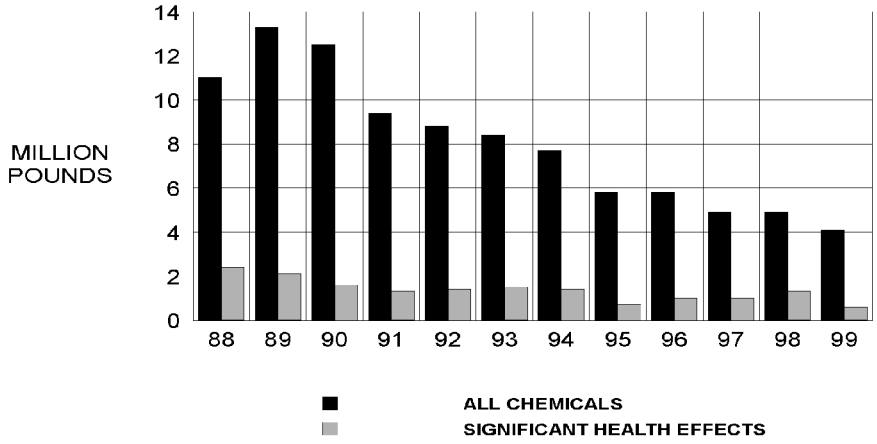
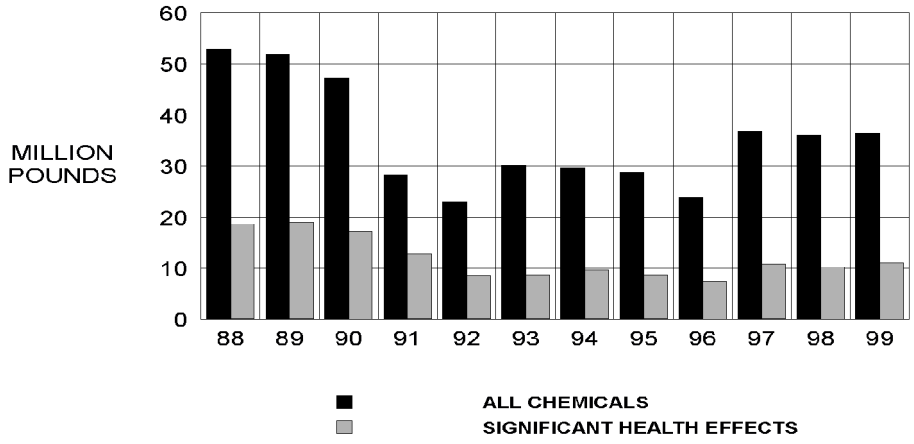


FIGURE 10

TOTAL OTHER OFFSITE TRANSFERS



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APPENDIX A - FORM R

(Note: Due to the length of the instructions for completing Form R, only the form for RY99 is included in Appendix A.)

(IMPORTANT: Type or print; read instructions before completing form)

Form Approved OMB Number: 2070-0093
Approval Expires: 01/01/2001

EPA United States Environmental Protection Agency

FORM R

TOXIC CHEMICAL RELEASE INVENTORY REPORTING FORM

Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986, also known as Title III of the Superfund Amendments and Reauthorization Act

WHERE TO SEND COMPLETED FORMS: 1. EPCRA Reporting Center, P.O Box 3348, Merrifield, VA 22116-3348, ATTN: TOXIC CHEMICAL RELEASE INVENTORY 2. APPROPRIATE STATE OFFICE (See instructions in Appendix F)

Enter "X" here if this is a revision ☐

For EPA use only

Important: See instructions to determine when "Not Applicable (NA)" boxes should be checked.

PART I. FACILITY IDENTIFICATION INFORMATION

SECTION 1. REPORTING YEAR_____

SECTION 2. TRADE SECRET INFORMATION

2.1 Are you claiming the toxic chemical identified on page 2 trade secret? ☐ Yes (Answer question 2.2; Attach substantiation forms) ☐ No (Do not answer 2.2; Go to Section 3)

2.2 Is this copy ☐ Sanitized ☐ Unsanitized (Answer only if "YES" in 2.1)

SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.)

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

Name and official title of owner/operator or senior management official:	Signature:	Date Signed:

SECTION 4. FACILITY IDENTIFICATION

4.1 TRI Facility ID Number

Facility or Establishment Name	Facility or Establishment Name or Mailing Address(if different from street address)
Street	Mailing Address
City/County/State/Zip Code	City/County/State/Zip Code

4.2 This report contains information for: (Important : check a or b; check c if applicable) a. ☐ An entire facility b. ☐ Part of a facility c. ☐ A Federal facility

4.3	Technical Contact Name					Telephone Number (include area code)	
4.4	Public Contact Name					Telephone Number (include area code)	
4.5	SIC Code (s) (4 digits)	Primary a.	b.	c.	d.	e.	f.
4.6	Latitude	Degrees	Minutes	Seconds	Longitude	Degrees	Minutes	Seconds

4.7 Dun & Bradstreet Number(s) (9 digits)	**4.8** EPA Identification Number (RCRA I.D. No.) (12 characters)	**4.9** Facility NPDES Permit Number(s) (9 characters)	**4.10** Underground Injection Well Code (UIC) I.D. Number(s) (12 digits)
a.	a.	a.	a.
b.	b.	b.	b.

SECTION 5. PARENT COMPANY INFORMATION

5.1	Name of Parent Company	NA ☐	
5.2	Parent Company's Dun & Bradstreet Number	NA ☐	

EPA FORM R
PART II. CHEMICAL-SPECIFIC INFORMATION

TRI Facility ID Number

Toxic Chemical, Category or Generic Name

SECTION 1. TOXIC CHEMICAL IDENTITY (Important: DO NOT complete this section if you completed Section 2 below.)

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
1.3	Generic Chemical Name (Important: Complete **only** if Part 1, Section 2.1 is checked "yes". Generic Name must be structurally descriptive.)

SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above.)

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY
(Important: Check all that apply.)

3.1 Manufacture the toxic chemical:	3.2 Process the toxic chemical:	3.3 Otherwise use the toxic chemical:
a. ☐ Produce b. ☐ Import		
If produce or import:		
c. ☐ For on-site use/processing	a. ☐ As a reactant	a. ☐ As a chemical processing aid
d. ☐ For sale/distribution	b. ☐ As a formulation component	b. ☐ As a manufacturing aid
e. ☐ As a byproduct	c. ☐ As an article component	c. ☐ Ancillary or other use
f. ☐ As an impurity	d. ☐ Repackaging	

SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ONSITE AT ANY TIME DURING THE CALENDAR YEAR

4.1	☐ (Enter two-digit code from instruction package.)

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE

			A. Total Release (pounds/year) (Enter range code or estimate*)	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1	Fugitive or non-point air emissions	NA ☐			
5.2	Stack or point air emissions	NA ☐			
5.3	Discharges to receiving streams or water bodies (enter one name per box)				
	Stream or Water Body Name				
5.3.1					
5.3.2					
5.3.3					
5.4.1	Underground Injection onsite to Class I Wells	NA ☐			
5.4.2	Underground Injection onsite to Class II-V Wells	NA ☐			

If additional pages of Part II, Section 5.3 are attached, indicate the total number of pages in this box ☐
and indicate the Part II, Section 5.3 page number in this box. ☐ **(example: 1,2,3, etc.)**

 * Range Codes: A= 1 - 10 pounds; B= 11- 499 pounds; C= 500 - 999 pounds.

EPA FORM R PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)	TRI Facility ID Number Toxic Chemical, Category or Generic Name

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE (Continued)

		NA	A. Total Release (pounds/year) (enter range code* or estimate)	B. Basis of Estimate (enter code)
5.5	Disposal to land onsite			
5.5.1A	RCRA Subtitle C landfills	☐		
5.5.1B	Other landfills	☐		
5.5.2	Land treatment/application farming	☐		
5.5.3	Surface Impoundment	☐		
5.5.4	Other disposal	☐		

SECTION 6. TRANSFERS OF THE TOXIC CHEMICAL IN WASTES TO OFF-SITE LOCATIONS

6.1 DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTWs)

6.1.A Total Quantity Transferred to POTWs and Basis of Estimate

6.1.A.1. Total Transfers (pounds/year) (enter range code* or estimate)	6.1.A.2 Basis of Estimate (enter code)

6.1.B.__	POTW Name						
POTW Address							
City		State		County		Zip	
6.1.B.__	POTW Name						
POTW Address							
City		State		County		Zip	

If additional pages of Part II, Section 6.1 are attached, indicate the total number of pages in this box ☐ **and indicate the Part II, Section 6.1 page number in this box** ☐ **(example: 1,2,3, etc.)**

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS

6.2. ___ Off-Site EPA Identification Number (RCRA ID No.)							
Off-Site Location Name							
Off-Site Address							
City		State		County		Zip	

Is location under control of reporting facility or parent company? ☐ Yes ☐ No

 * Range Codes: A = 1 - 10 pounds; B = 11 - 499 pounds; C = 500 - 999 pounds.

EPA FORM R

PART II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number

Toxic Chemical, Category or Generic Name

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS (Continued)

A. Total Transfers (pounds/year) (enter range code* or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1.	1.	1. M
2.	2.	2. M
3.	3.	3. M
4.	4.	4. M

6.2.___ Off-Site EPA Identification Number (RCRA ID No.)

Off-Site location Name

Off-Site Address

City | State | County | Zip

Is location under control of reporting facility or parent company? ☐ Yes ☐ No

A. Total Transfers (pounds/year) (enter range code* or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1.	1.	1. M
2.	2.	2. M
3.	3.	3. M
4.	4.	4. M

SECTION 7A. ON-SITE WASTE TREATMENT METHODS AND EFFICIENCY

☐ Not Applicable (NA) - Check here if no on-site waste treatment is applied to any waste stream containing the toxic chemical or chemical category.

a. General Waste Stream (enter code)	b. Waste Treatment Method(s) Sequence [enter 3-character code(s)]	c. Range of Influent Concentration	d. Waste Treatment Efficiency Estimate	e. Based on Operating Data ?
7A.1a	7A.1b 1 2 3 4 5 6 7 8	7A.1c	7A.1d %	7A.1e Yes ☐ No ☐
7A.2a	7A.2b 1 2 3 4 5 6 7 8	7A.2c	7A.2d %	7A.2e Yes ☐ No ☐
7A.3a	7A.3b 1 2 3 4 5 6 7 8	7A.3c	7A.3d %	7A.3e Yes ☐ No ☐
7A.4a	7A.4b 1 2 3 4 5 6 7 8	7A.4c	7A.4d %	7A.4e Yes ☐ No ☐
7A.5a	7A.5b 1 2 3 4 5 6 7 8	7A.5c	7A.5d %	7A.5e Yes ☐ No ☐

If additional pages of Part II, Section 6.2/7A are attached, indicate the total number of pages in this box ☐
and indicate the Part II, Section 6.2/7A page number in this box : ☐ **(example: 1,2,3, etc)**

* Range Codes: A = 1 - 10 pounds; B = 11 - 499 pounds; C = 500 - 999 pounds.

EPA FORM R PART II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)	TRI Facility ID Number Toxic Chemical, Category or Generic Name

SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES

☐ Not Applicable (NA) - Check here if no on-site energy recovery is applied to any waste stream containing the toxic chemical or chemical category.

Energy Recovery Methods [enter 3-character code(s)]

1 ☐ 2 ☐ 3 ☐ 4 ☐

SECTION 7C. ON-SITE RECYCLING PROCESSES

☐ Not Applicable (NA) - Check here if no on-site recycling is applied to any waste stream containing the toxic chemical or chemical category.

Recycling Methods [enter 3-character code(s)]

1. ☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐

6. ☐ 7. ☐ 8. ☐ 9. ☐ 10. ☐

SECTION 8. SOURCE REDUCTION AND RECYCLING ACTIVITIES

		Column A Prior Year (pounds/year)	Column B Current Reporting Year (pounds/year)	Column C Following Year (pounds/year)	Column D Second Following Year (pounds/year)
8.1	Quantity released **				
8.2	Quantity used for energy recovery onsite				
8.3	Quantity used for energy recovery offsite				
8.4	Quantity recycled onsite				
8.5	Quantity recycled offsite				
8.6	Quantity treated onsite				
8.7	Quantity treated offsite				
8.8	Quantity released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes (pounds/year)				
8.9	Production ratio or activity index				

8.10	Did your facility engage in any source reduction activities for this chemical during the reporting year? If not, enter "NA" in Section 8.10.1 and answer Section 8.11.			
	Source Reduction Activities [enter code(s)]	Methods to Identify Activity (enter codes)		
8.10.1		a.	b.	c.
8.10.2		a.	b.	c.
8.10.3		a.	b.	c.
8.10.4		a.	b.	c.
8.11	Is additional information on source reduction, recycling, or pollution control activities included with this report ? (Check one box)			YES ☐ NO ☐

** Report releases pursuant to EPCRA Section 329(8) including "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment." Do not include any quantity treated onsite or offsite.

APPENDIX B - TOXICOLOGY REFERENCES

General Public

Chemical Manufacturers Association, *Chemicals in the Community: Methods to Evaluate Airborne Chemical Levels*, May, 1988.

Kamrin, Michael A., Toxicology for the Citizen; Center for Environmental Toxicology, Michigan State University, 1985.

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Public Health Practitioners

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Gosselin, Robert E.; Smith, Roger P.; Hodge, Harold C.; Braddock, Jeanett E., *Clinical Toxicology of Commercial Products*, Baltimore: Williams and Wilkins, 1984.

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"Guidelines for the Health Risk Assessment of Chemical Mixtures," Ibid.

"Guidelines for Mutagenicity Risk Assessment," Ibid.

"Guidelines for the Health Assessment of Suspect Developmental Toxicants." Ibid.

"Guidelines for Estimating Exposures," Ibid.

Hays, Wayland J., Jr., *Pesticides Studied in Man*, Baltimore: Williams and Wilkins, 1982.

IRIS, Integrated Risk Information System; USEPA; http://www.epa.gov/iris.

Kamrin, Michael A., *Toxicology - A Primer on Toxicology Principles and Applications*; Chelsea, MI: Lewis Publishers, 1988.

APPENDIX C - CHEMICAL REFERENCES

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Farm Chemicals Handbook, Willoughby, OH: Meister Publishing Co., 1997.

Fire Protection Guide on Hazardous Materials, National Fire Protection Association, NFPA #HAZ-91, 1991.

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U.S. EPA Chemical Profiles

World Wide Web site http://ww.epa.gov