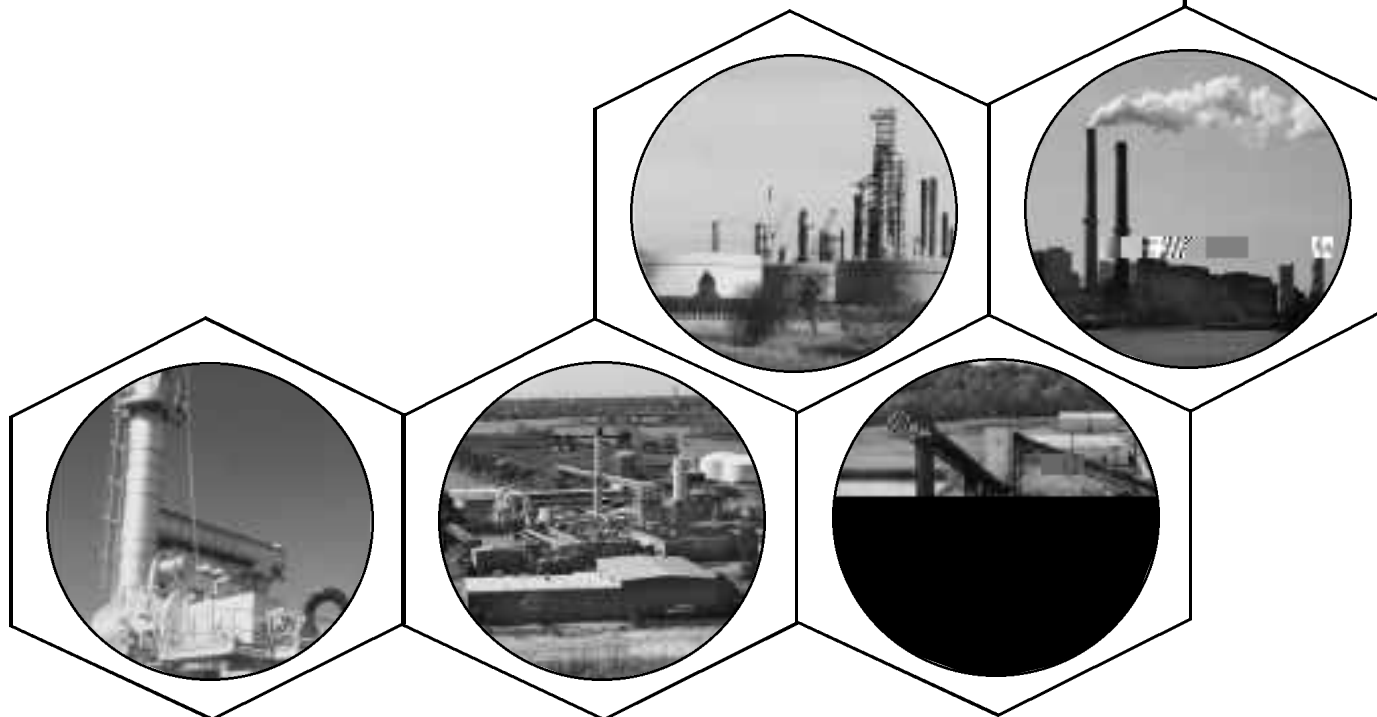
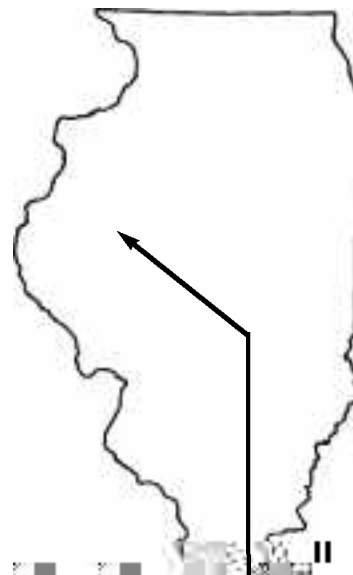




Twelfth Annual Toxic Chemical Report

- Coal Mines
- Power Plants
- Solvent Recovery
- Chemical Distributors
- Petroleum Bulk Terminals
- Hazardous Waste Treatment & Disposal



**TWELFTH ANNUAL
TOXIC CHEMICAL REPORT**

MAY 2000

Illinois Environmental Protection Agency
Springfield, Illinois

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PREFACE

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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 1,300 facilities have reported each year, with the actual number ranging between 1,105 and 1,398.

Facilities in seven new industrial categories were required to report for the first time for 1998. They are coal mining, metal mining, electricity generation (limited to coal and/or oil fired power plants), hazardous waste treatment and disposal facilities, bulk petroleum plants and terminals, chemical wholesale and solvent recycling. Illinois facilities in all seven of the new categories submitted reports.

For calendar year 1998, 1,322 facilities submitted 4,814 individual toxic chemical release reports showing a total of 204.4 million pounds of releases and transfers. Of this total, 70.5 million pounds were reported by the new industrial categories. Zinc compounds had the highest reported releases and transfers, at 48.8 million pounds. The combined total of fugitive and stack air emissions topped all other environmental areas at 91 million pounds. Facilities in Standard Industrial Classification (SIC) Code 4911 (Electric Services - coal and/or oil fired power plants), a new industrial category for 1998, exceeded all other industrial categories with reported releases and transfers of 38.6 million pounds.

Duplicate reporting is possible for 1998. Facilities report offsite transfers for treatment or disposal to hazardous waste treatment and disposal facilities, a new industrial category. These hazardous waste facilities, in turn, report on site disposal of the same toxic chemicals, meaning the environmental releases are sometimes reported twice. Due to the difficulty of analyzing data for the hazardous waste facilities, especially those outside of Illinois, the extent of duplicate reporting is very difficult to determine and cannot be accurately presented in this report.

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 1988-1998. 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 44 percent from 1988 to 1998. The toxic chemical with the greatest quantity reduction in that period was toluene (17 million pounds, or 78 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 (8.3 million pounds, or 57 percent).

The toxic chemical with the greatest amount of releases from 1994 through 1998 was zinc compounds, totalling 135.7 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 40.7 million pounds.

The group of facilities in SIC Code 3312 reported 171.7 million pounds of releases from 1994 through 1998, the greatest for any industrial category, and also had the highest total of 48.7 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 1994 through 1998, totalling 19.6 million pounds. Considering only those toxic chemicals with significant human health effects, facilities located in ZIP Code 61832 also reported the highest total of 19.6 million pounds.

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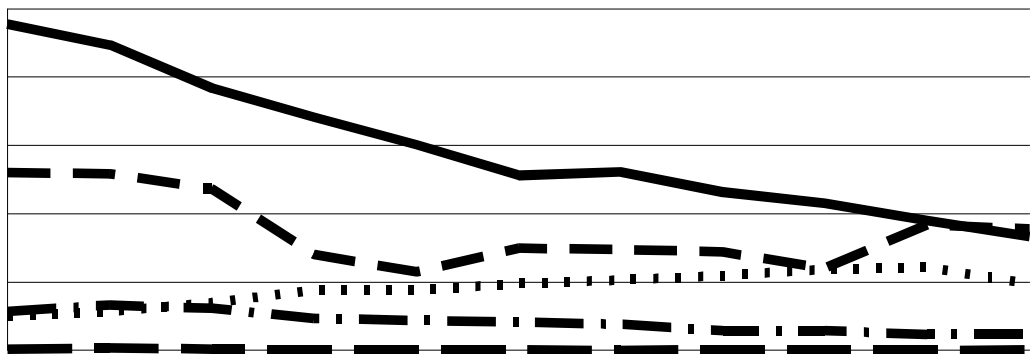


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INTRODUCTION

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

"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

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 EPCRA's Community Right-to-Know requirements.

In cases of chemical emergencies it is critical to know the chemical, physical and toxicological properties

- 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

- 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.

- 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.

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.

- 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

- 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.

- Owners or official custodians of facilities that wish to install new equipment or water mains or to modify existing equipment or distributional lines or

significant releases of chemical substances. Approximately 2,300 facilities are regulated under the provisions of the ICSA.

- 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.

- 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 TOXICS PROGRAM

Illinois EPA's Bureau of Air utilizes the Agency's Section 313 database to determine quantities of stack and fugitive air emissions of reported substances to support continuing development of regulatory proposals in response to legislation passed in 1987 to address air toxics. 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

Form R data is being used to prioritize facilities for initiatives contained in the Illinois Toxic Pollution Prevention Act. Beginning with reporting year 1991, Form R data is being 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.

For the current calendar year analysis, all valid reports for chemicals reportable in 1998 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 1998 in the "Trend Analysis, 1988-1998" section.

A total of 69 new facilities in the new industrial categories listed above reported for the first time in 1998. These new facilities reported total releases and transfers of 70.5million pounds, which was 35% of the total (202.5 million pounds) for all facilities reporting for 1998. The 25 facilities in SIC code 4911 (coal and oil-fired power plants) reported total releases and transfers of 38.6 million pounds, which was 55% of the total for facilities in the new industrial categories. The chemical with the highest reported releases and transfers for these new facilities was Hydrochloric Acid, totalling 21.9 million pounds, which was 31% of all release and transfer totals for the new industrial categories .

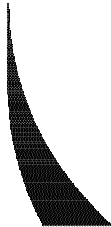
A possibility for duplicate reporting of TRI release and transfer quantities exists beginning with 1998 reporting. Many facilities not in the new SIC categories report offsite transfers for treatment or disposal to the new reporting facilities in SIC facility code 4953 (hazardous waste treatment, storage and disposal facilities). This includes not only SIC code 4953 facilities in the same state as the facility by SIC code 4953 facilities in other states.

FACILITIES

Total Releases and Transfers

Figure 1 shows the distribution of total releases and transfers for 1998.

FIGURE 1
TOTAL RELEASES & TRANSFERS DISTRIBUTION
(Million Pounds)



CHEMICALS

Releases and transfers of 243 different toxic chemicals and categories during 1998 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 & Transfers
		Fugitive Air	Stack Air	Under- ground Water	Injection	Land	POTW	Other	
000010982	Zinc compounds	0.3	0.5	0.0	0.0	30.8	0.1	17.1	48.8
007647010	Hydrochloric Acid	0.1	25.0	0.0	0.0	0.0	0.0	0.0	25.1
000010450	Manganese Compounds*	0.1	0.1	0.0	0.0	8.1	0.0	4.0	12.3
000110543	n-Hexane*	3.2	7.0	0.0	0.0	0.0	0.0	0.0	10.2
007664417	Ammonia	0.5	6.4	0.1	0.0	0.0	1.4	0.8	9.2
007664939	Sulfuric acid	0.0	8.7	0.0	0.0	0.0	0.0	0.0	8.7
000010511	Nitrate Compounds	0.0	0.0	6.1	0.0	0.0	2.0	0.2	8.3
000108883	Toluene*	2.1	2.2	0.0	0.0	0.0	0.0	1.7	6.0
000010040	Barium compounds	0.0	0.3	0.0	0.0	3.5	0.0	0.9	4.7
000067561	Methanol	0.5	1.3	0.0	0.0	0.0	1.2	1.6	4.6
000075150	Carbon Disulfide*	0.0	4.4	0.0	0.0	0.0	0.2	0.0	4.6
000078933	Methyl Ethyl Ketone*	0.7	1.0	0.0	0.0	0.0	0.3	2.1	4.1
001330207	Xylene (Mixed Isomers)*	0.7	1.9	0.0	0.0	0.0	0.0	1.4	4.0
000010420	Lead Compounds*	0.0	0.0	0.0	0.0	2.3	0.0	1.7	3.9
000085449	Phthalic Anhydride	0.0	0.1	0.0	0.0	0.0	0.0	3.8	3.9
007664393	Hydrogen fluoride	0.0	3.7	0.0	0.0	0.0	0.0	0.0	3.7
000010090	Chromium Compounds*	0.0	0.0	0.0	0.0	1.8	0.0	1.7	3.5
000010230	Glycol Ethers	0.8	1.70	0.0					
						0001006.4			0.0

STANDARD INDUSTRIAL CLASSIFICATION (SIC) CATEGORIES

Facilities in 250 individual four-digit SIC codes have reported toxic chemical releases and transfers for calendar year 1998. 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

SIC Code	Description	Releases				Offsite Transfers		Total Releases & Transfers	
		Fugitive Air	Stack Air	Under-ground Water	Injection	Land	POTW	Other	Transfers
4911	Electric Services*	0.0	32.1	0.0	0.0	4.8	0.0	1.7	38.6
3312	Steel Works, Blast Furnaces (Including Coke Ovens) and Rolling Mills	0.4	0.5	0.0	0.0	18.4	0.4	14.5	34.2
4953	Refuse Systems*	0.0	0.0	0.0	0.0	21.8	0.4	6.0	28.2
2865	Cyclic Organic Crudes & Intermediates, and Organic Dyes and Pigments	0.6	1.1	0.1	0.0	0.0	2.9	4.7	9.4
2075	Soybean Oil Mills	1.8	6.7	0.0	0.0	0.0	0.0	0.0	8.5
2821	Plastic Materials, Synthetic Resins and Nonvulcanizable Elastomers	0.7	4.4	0.2	0.0	0.0	0.1	2.1	7.5
2869	Industrial Organic Chemicals, Not Elsewhere Classified	0.6	1.7	2.2	0.0	0.0	0.5	0.7	5.7
3089	Plastic Products, Not Elsewhere Classified	0.2	4.7	0.0	0.0	0.0	0.2	0.3	5.4
2048	Prepared Feed & Feed Ingredients for Animals & Fowls, Except Dogs & Cats	0.0	3.5	0.0	0.0	0.0	0.0	0.5	4.0
2011	Meat Packing Plants	0.1	0.0	3.2	0.0	0.0	0.1	0.0	3.4
2046	Wet Corn Milling	0.4	1.7	0.0	0.0	0.0	1.1	0.2	3.4
2911	Petroleum Refining	0.7	1.7	0.2	0.0	0.0	0.0	0.1	2.7
3471	Electroplating, Plating, Polishing, Anodizing and Coloring	0.3	0.2	0.0	0.0	0.0	0.5	1.6	2.6
2873	Nitrogenous Fertilizers	0.0	2.4	0.1	0.0	0.0	0.0	0.0	2.5
2752	Commercial Printing, Lithographic	1.6	0.7	0.0	0.0	0.0	0.0	0.0	2.3
3086	Plastic Foam Products	0.4	1.8	0.0	0.0	0.0	0.0	0.0	2.2
2819	Industrial Inorganic Chemicals, Not Elsewhere Classified	0.0	0.3	0.0	0.0	0.2	0.1	1.5	2.1
3341	0.0 0.0 0.0 plating, Pe Elastomers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

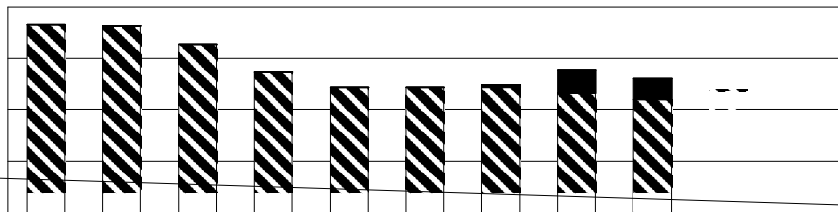
ZIP CODES - AIR EMISSIONS

Air emissions for calendar year 1998 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
62217	Randolph	Baldwin	0.0	8.5	8.5
62526	Macon	Decatur	0.8	7.3	8.1
61832	Vermilion	Danville	0.5	4.4	4.9
62739	Montgomery	Coffeen	0.0	4.5	4.5
61607	Peoria	Bartonville	0.0	2.8	2.8
62707	Sangamon	Springfield	0.0	2.8	2.8
62540	Christian	Kincaid	0.0	2.6	2.6
61025	Jo Daviess	East Dubuque	0.0	2.4	2.4
60450	Grundy	Morris	0.1	2.3	2.4
60501	Cook	Summit	0.4	1.4	1.8
62084	Madison	Roxana	0.5	1.3	1.8
62002	Madison	Alton	0.0	1.5	1.5
61327	Putnam	Hennepin	0.0	1.3	1.3
61350	La Salle	Ottawa	0.1	1.2	1.3
62206	St. Clair	Sauget	0.5	0.7	1.2
62448	Jasper	Newton	0.0	1.1	1.1
62306	Adams	Quincy	0.1	1.0	1.1
61554	Tazewell	Pekin	0.0	1.0	1.0
60410	Will	Channahon	0.2	0.8	1.0
60633	Cook	Chicago	0.1	0.9	1.0
Top 20 Zip Codes:			3.3	49.8	53.1
Total for All Reporting Facilities:			14.0	77.0	91.0



SUMMARY

Figures 2 and 3 summarize the overall totals for releases and transfers from 1988 through 1998.

FIGURE 2

TOTAL RELEASES AND TRANSFERS - ALL CHEMICALS

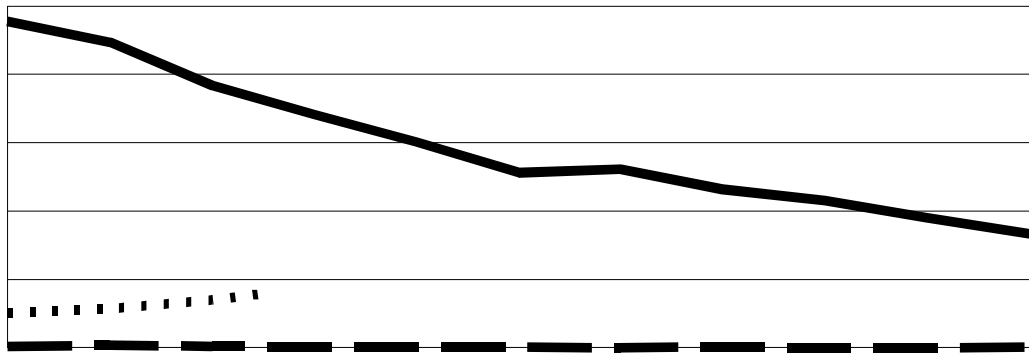
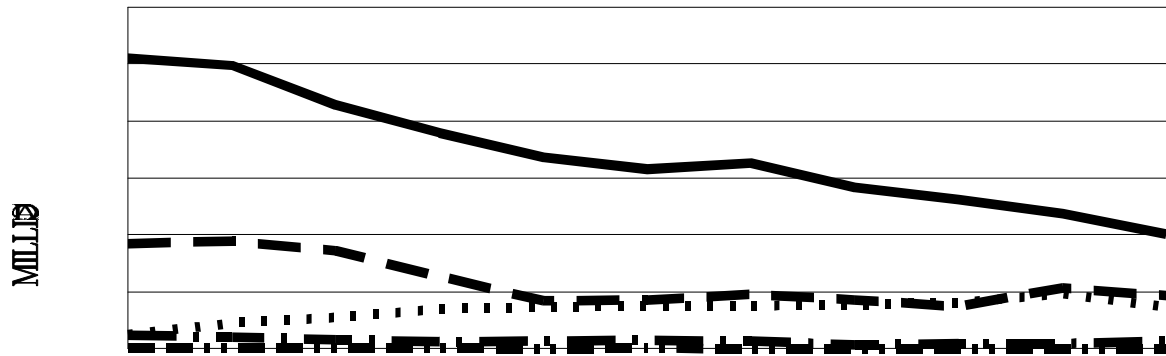


FIGURE 3

TOTAL RELEASES AND TRANSFERS - CHEMICALS WITH SIGNIFICANT HUMAN HEALTH EFFECTS



Total Releases and Transfers

Facilities reported releases totalling 509.7 million pounds from 1994 through 1998. During this period, the top 20 facilities accounted for approximately 52 percent of those releases and transfers, as shown in Table 5.

Table 5

Total Release and Transfer Amounts Top 20 Facilities

Facility	City	Total Releases and Transfers (Million Pounds):							Total 94-98
		Base Yr.	Last Five Years				Total		
		1988	1994	1995	1996	1997		1998	
Northwestern Steel & Wire Co.	Sterling	7.0	15.1	20.3	14.6	15.0	13.0	78.0	
Keystone Steel & Wire Co.	Peoria	4.5	6.3	6.6	6.9	5.6	5.3	30.7	
Granite City Steel	Granite City	4.9	5.0	5.4	6.0	6.1	6.0	28.5	
Devro-Teepak	Danville	2.1	3.8	3.8	3.9	3.9	3.6	19.0	
Birmingham Steel Corp. Kankakee, IL Steel Division	Bourbonnais	0.0	0.0	0.0	0.0	5.3	5.1	10.4	
Koppers Industries, Inc.	Cicero	1.3	0.1	0.2	2.6	3.0	4.0	9.9	
Cabot Corp., Cab-O-Sil Division	Tuscola	3.9	3.5	2.4	2.0	2.0	0.3	8.4	
Acme Steel Co. - Riverdale Plant	Riverdale	1.9	0.9	0.8	0.9	3.3	2.1	8.0	
Viskase Corp.	Bedford Park	1.2	1.7	1.7	1.7	1.6	0.9	7.6	
Millennium Petrochemical - Morris Plant	Morris	4.9	1.3	1.0	1.6	1.7	2.0	7.6	
La Clede Steel Company	Alton	0.7	4.1	0.4	0.0	0.7	1.7	6.9	
Carus Chemical Company	LaSalle	1.6	1.7	1.4	1.1	1.3	1.4	6.9	
Monsanto-Krummrich, IL	Sauget	6.3	1.9	2.1	0.8	0.7	0.7	6.2	
Big River Zinc Corporation	Sauget	2.0	1.2	1.2	1.4	1.1	1.2	6.1	
Salem Gravure	Salem	0.8	1.6	1.2	1.1	1.3	0.6	5.8	
American Steel Foundries	Granite City	0.0	0.5	1.6	1.3	1.2	0.8	5.4	
Borden Chemical, Inc.	Forest Park	0.8	1.3	1.5	1.8	0.7	0.0	5.3	
GE Company	Ottawa	2.4	1.0	1.1	1.0	1.0	1.1	5.2	
Chicago Assembly Plant	Chicago	2.0	1.3	1.3	0.7	0.8	1.0	5.1	
Austeel Lemont Co., Inc.	Lemont	0.0	0.0	0.1	1.8	3.0	0.1	5.0	
Totals for Top 20 Facilities:		48.3	52.3	54.1	51.2	57.6	50.8	266.0	
Totals for All Reporting Facilities:		170.2	110.4	103.4	97.0	104.4	94.5	509.7	

Decreases in Releases and Transfers

The top twenty facilities with decreases in releases and transfers of toxic chemicals from 1994 through 1998 are shown in Table 7.

Table 7

**Total Release and Transfer Decreases
Top 20 Facilities**

Facility	City	Total Releases and Transfers (Million Pounds):							Total Decrease 94-98
		Base Yr. 1988	1994	Last Five Years			1998		
			1995	1996	1997				
Cabot Corporation, Cab-O-Sil Division	Tuscola	3.9	3.5	2.4	2.0	0.3	0.2	3.3	
Chicago Specialties, Inc.	Chicago	3.1	2.5	1.1	0.5	0.2	0.1	2.4	

The top twenty facilities with decreases in releases and transfers of chemicals with significant human health effects are shown in Table 8.

Table 8

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

Facility	City	Total Releases and Transfers (Million Pounds):							Total Decrease 94-98
		Base Yr.		Last Five Years					
		1988	1994	1995	1996	1997	1998		
Salem Gravure	Salem	0.7	1.6	1.2	1.1	1.3	0.6	1.0	
Zenith Electronics Corp. Rauland Div.	Melrose Park	0.8	1.0	0.5	0.2	0.4	0.1	0.9	
Abbott Laboratories North Chicago Plant	North Chicago	0.6	1.0	0.7	0.4	0.6	0.1	0.9	
Solutia, Inc. - Krummrich, IL	Sauget	2.6	0.9	0.4	0.1	0.1	0.1	0.8	
3M Tape Manufacturing Division	Bedford Park	1.6	1.1	0.4	0.3	0.4	0.3	0.8	
Viskase Corp.	Bedford Park	1.2	1.7	1.7	1.7	1.6	0.9	0.8	
Chicago Specialties, Inc.	Chicago	1.5	0.7	0.0	0.0	0.0	0.0	0.7	
Northwestern Steel and Wire Co.	Sterling	2.7	6.2	6.7	6.2	7.3	5.7	0.5	
Dana Corp. Victor Products Div.	Robinson	1.4	0.5	1.0	0.1	0.0	0.0	0.5	
Shell Wood River Refining Company	Roxana	1.2	0.8	0.3	0.4	0.3	0.4	0.4	
GFC - Bridgeview	Bridgeview	0.2	0.9	0.8	0.7	0.5	0.5	0.4	
Huntsman Chemical Company Joliet Polystyrene Plant	Joliet	0.2	0.4	0.1	0.1	0.1	0.0	0.4	
Heatcraft Inc.	Danville	0.0	0.3	0.1	0.0	0.0	0.0	0.3	
Quebecor Printing Mt. Morris, Inc.	Mount Morris	1.7	1.0	0.8	1.2	0.8	0.7	0.3	
Tesa Tape, Inc.	Carbondale	0.3	0.3	0.1	0.0	0.0	0.0	0.3	
Wheatland Tube Company	Chicago	0.0	0.3	0.3	0.2	0.1	0.1	0.2	
Devro - Teepak	Danville	2.1	3.8	3.8	3.9	3.9	3.6	0.2	
Acme Steel Co. Riverdale Plant	Riverdale	1.0	0.5	0.5	0.4	0.7	0.3	0.2	
FP Webkote, Inc.	Peoria	0.3	0.2	0.0	0.0	0.0	0.0	0.2	
Ligma Corporation	Nashville	0.0	0.2	0.1	0.0	0.0	0.0	0.2	
Totals for Top 20 Facilities:		20.1	23.4	19.5	17.0	18.1	13.4	10.0	
Totals for 591 Facilities With Net Decreases:		46.9	45.7	37.5	33.1	31.3	23.6	22.2	

Increases in Releases and Transfers

Release and transfer amounts reported by a number of facilities increased from 1988 through 1998. Table 9 shows the top twenty facilities ranked according to total release and transfer increases in pounds per year for the eight-year period.

Table 9

Total Release and Transfer Increases Top 20 Facilities

Facility	City	Total Releases and Transfers (Million Pounds):							Total Increase 94-98
		Base Yr. 1988	1994	Last Five Years			1998		
		1988	1994	1995	1996	1997	1998		
Birmingham Steel Corporation - Kankakee Illinois Steel Division	Bourbonnais	0.0	0.0	0.0	0.0	0.0	5.3	5.1	5.1
Koppers Industries, Inc.	Cicero	1.3	0.1	0.2	2.6	3.0	4.0	3.9	
Flexsys America, L.P Krummrich	Sauget	0.0	0.0	0.0	1.5	1.5	1.6	1.6	
Mueller Co. Plant #4	Decatur	0.0	0.1	0.0	0.0	1.5	1.7	1.6	
Acme Steel Company - Riverdale Plant	Riverdale	1.9	0.9	0.8	0.9	3.3	2.1	1.2	
Granite City Steel	Granite City	4.9	5.0	5.4	6.0	6.1	6.0	1.0	
Mc Intyre Group, Ltd.	University Park	0.0	0.0	0.0	0.0	0.2	0.9	0.9	
Metal Mark Inc.	Chicago Heights	0.0	0.0	0.0	1.2	0.7	0.8	0.8	
Equistar Chemicals, LP	Morris	4.9	1.3	1.0	1.6	1.7	2.0	0.7	
Able Electro Polishing	Chicago	0.0	0.0	0.1	0.9	1.0	0.7	0.7	
Abbott Laboratories	Abbott Park	0.0							

Table 10 shows the top twenty facilities reporting increases in releases and transfers of toxic chemicals with significant human health effects.

Table 10

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

Facility	City	Total Releases and Transfers (Million Pounds):							Total Increase 94-98
		Base Yr.		Last Five Years					
		1988	1994	1995	1996	1997	1998		
Birmingham Steel Corporation - Kankakee Illinois Steel Division	Bourbonnais	0.0	0.0	0.0	0.0	0.0	1.1	1.4	1.4
Shell Chemical Company	Bedford Park	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8
Anamet Electrical Inc.	Mattoon	0.1	0.0	0.0	0.0	0.0	0.2	0.6	0.6
Abbott Laboratories	Abbott Park	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
Flexsys America, L.P.	Sauget	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4
Able Electro Polishing	Chicago	0.0	0.0	0.1	0.7	0.7	0.7	0.4	0.4
Morton International, Inc. Batavia Facility	Batavia	0.0	0.0	0.1	0.0	0.0	0.0	0.4	0.4
The BF Goodrich Company	Henry	0.1	0.0	0.2	0.3	0.3	0.3	0.3	0.3
American Steel Foundry	Granite City	0.0	0.4	0.4	0.7	0.7	0.7	0.7	0.3
Mossville Complex	Mossville	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
Mueller Co. Plant #4	Decatur	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2
Big River Zinc Corporation	Sauget	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2
A. E. Staley Manufacturing Company	Decatur	0.1	0.0	0.1	0.1	0.1	0.1	0.2	0.2
Werner Co., Chicago Division	Franklin Park	0.0	0.1	0.2	0.2	0.2	0.3	0.3	0.2
Domino Amjet, Inc.	Gurnee	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.2
R. R. Donnelley and Sons Company	Mattoon	2.3	0.7	0.6	0.3	0.7	0.7	0.8	0.1
Morton International, Inc.	Ringwood	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1
Titan Wheel Corporation	Quincy	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Monsanto - Searle, Parkway	Skokie	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
Totals for Top 20 Facilities:			13.9	5.6	7.2	9.6	13.0	15.4	9.8
Totals for 318 facilities With Increases:									

Pollution Prevention Efforts

Reporting of information about source reduction (pollution prevention) efforts has been required beginning with reporting year 1991. A total of 617 facilities have indicated undertaking such activities for one or more years from 1994 through 1998. The top twenty facilities in this category are shown in Table 11.

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 11

Source Reduction-Based Release and Transfer Decreases
 Top 20 Facilities
 (Chemicals for Which Source Reduction Activities
 Were Claimed Any Year, 94-98)

Facility	City	Base Yr. 1991	Total Releases and Transfers (Million Pounds):					Total Reduction 94-98	3.3 17	0.9 2.0 7	Dha
			1994	1995	1996	1997	1998				
Cabot Corporation, Cab-O-Sil	Tuscola	0.0	3.5	2.44	2.0	0.2	0.2				

Table 12 shows the twenty facilities reporting the greatest reductions based on source reduction efforts for chemicals with significant human health effects.

Table 12

Source Reduction-Based Release and Transfer Decreases
 Top 20 Facilities
 (Chemicals for Which Source Reduction Activities
 Were Claimed Any Year, 94-98)
 Chemicals With Significant Human Health Effects

Facility	City	Total Releases and Transfers (Million Pounds):						Total Reduction 94-98
		Base Yr. 1991	1994	1995	1996	1997	1998	
GE Company	Ottawa	0.8	1.0	1.0	0.0	0.4	0.0	1.0
Salem Gravure	Salem	0.4	1.6	1.2	1.1	1.3	0.6	1.0
Quebecor Printing	Mount Morris	0.0	1.0	0.0	0.0	0.0	0.0	1.0
Chicago Specialties, Inc.	Chicago	0.7	0.7	0.0	0.0	0.0	0.0	0.7
Abbott Laboratories - North Chicago Plant	North Chicago	1.4	0.6	0.6	0.3	0.5	0.0	0.6
Dana Corporation Victor Products Division	Robinson	0.0	0.5	1.0	0.1	0.0	0.0	0.5
Shell Wood River Refining Company	Roxana	0.9	0.7	0.3	0.3	0.3	0.4	0.3
Tesa Tape Inc.	Carbondale	0.0	0.3	0.1	0.0	0.0	0.0	0.3
Clear-Lam Packaging	Elk Grove Village	0.2	0.2	0.0	0.0	0.0	0.0	0.2
FP Webkote, Inc.	Peoria	0.0	0.2	0.0	0.0	0.0	0.0	0.2
Cambridge Industries, Inc.	Centralia	0.3	0.2	0.1	0.1	0.0	0.0	0.2
Jefferson Smurfit Corporation	Carol Stream	0.0	0.1	0.0	0.0	0.0	0.0	0.1

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:

- Significant toxic chemical release and transfer reduction from 1994 through 1998 (most current information)
- Low or decreasing number of accidental chemical releases, 1995-1999 (most current information)
- No significant releases as defined by the Illinois Chemical Safety Act (ICSA) from 1995 through 1999
- Participation in the Agency's voluntary Partners in Pollution Prevention program

The four facilities meeting these criteria are listed in Table 13.

Table 13

Facilities Demonstrating Environmental Excellence

Facility	City	Total Release/ Transfer Reduction 94-98 (Million Pounds)	Number of Reported Spills				
			95	96	97	98	99
Cabot Corp. - Cab-O-Sil Division	Tuscola	3.3	4	3	1	1	3
3M Tape Manufacturing Division	Bedford Park	1.1	1	0	0	0	0
Abbott Laboratories North Chicago Plant	North Chicago	1.0	3	2	0	0	1
Amoco Chemical Company - Joliet Plant	Channahon	0.4	2	1	0	2	1

CHEMICALS

A total of 279 toxic chemicals and chemical categories have been reportable on Form R in the same form from 1988 through 1998. A total of 120 of these have been reported in Illinois every year.

Tables 14 through 25 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 14

Total Air Emissions
Top 20 Chemicals

Combined Stack and Fugitive Emissions (Million Pounds):

CAS Number	Base Yr.	Last Five Years	Total Emissions
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Table 16

Total Water Releases
Top 20 Chemicals

CAS Number or Category	Chemical Name	Water Releases (Thousand Pounds):						Total Releases 94-98
		Base Yr.	Last Five Years					
		1988	1994	1995	1996	1997	1998	
000067561	Methanol	16.5	10.1	26.9	32.4	60.2	28.7	158.3
007664382	Phosphoric Acid	43.6	1.0	1.0	1.0	0.0	89.7	92.7
000010982	Zinc Compounds	16.3	25.2	16.7	19.0	16.9	14.7	92.5
000010230	Glycol Ethers	2.1	2.4	6.1	16.9	16.2	16.5	58.1
007439965	Manganese	25.8	11.9	10.9	9.4	9.2	10.0	51.4
007440508	Copper	10.8	8.6	7.4	6.4	5.7	5.1	33.2
000010450	Manganese Compounds	4.1	6.6	6.1	5.5	3.3	4.5	26.0
000091203	Naphthalene	1.0	0.1	23.6	0.0	0.5	0.5	24.7
007440020	Nickel	2.7	5.1	5.2	3.7	3.6	5.0	22.6
000111422	Diethanolamine	60.1	0.9	15.8	0.6	0.5	0.5	18.3
007723140	Phosphorus (Yellow or White)	2.0	2.2	2.2	3.5	3.1	3.5	14.5
000108952	Phenol	4.4	3.0	3.7	2.9	2.4	2.3	14.3
007782505	Chlorine	41.7	5.4	2.3	1.6	2.4	2.4	14.1
000010420	Lead Compounds	7.0	2.7	4.7	2.9	1.8	1.8	13.9
000010090	Chromium Compounds	8.7	4.1	3.7	2.6	1.8	1.6	13.8
000107211	Ethylene Glycol	172.8	3.7	6.0	1.6	2.3	0.1	13.7
000050000	Formaldehyde	2.2	1.7	1.8	2.1	2.6	2.9	11.1
007429905	Aluminum (Fume or Dust)	2.5	9.6	0.0	0.0	0.0	0.0	9.6
007440473	Chromium	2.4	2.0	2.3	1.1	1.5	1.1	8.0
007440666	Zinc (Fume or Dust)	17.3	4.6	2.9	0.0	0.0	0.1	7.6
Totals for Top 20 Chemicals:		444.0	110.9	149.3	113.2	134.0	191.0	698.4
Totals for All Chemicals:		491.4	135.8	175.8	130.1	147.8	206.4	795.9

Table 17

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

CAS Number or Category	Chemical Name	Water Releases (Thousand Pounds):						
		Base Yr.	Last Five Years					Total Releases
		1988	1994	1995	1996	1997	1998	94-98
007439965	Manganese	25.8	11.9	10.9	9.4	9.2	10.0	51.4
000010450	Manganese Compounds	4.1	6.6	6.1	5.5	3.3	4.5	26.0
007440020	Nickel	2.7	5.1	5.2	3.7	3.6	5.0	22.6
000010420	Lead Compounds	7.0	2.7	4.7	2.9	1.8	1.8	13.9
000010090	Chromium Compounds	8.7	4.1	3.7	2.6	1.8	1.6	13.8
000050000	Formaldehyde	2.2	1.7	1.8	2.1	2.6	2.9	11.1
007440473	Chromium	2.4	2.0	2.3	1.1	1.5	1.1	8.0
000010495	Nickel Compounds	3.2	2.6	1.1	1.1	1.1	0.6	6.5
000108883	Toluene	1.5	1.5	0.9	1.8	0.6	0.5	5.3
007439921	Lead	2.1	1.7	1.2	0.6	0.5	0.6	4.6
001330207	Xylene (Mixed Isomers)	0.6	1.1	0.7	0.9	0.8	0.7	4.2
000071432	Benzene	1.3	1.0	1.3	0.6	0.1	0.1	3.1
000075150	Carbon Disulfide	0.0	0.0	0.0	0.0	1.4	1.6	3.0
000100425	Styrene	1.6	0.7	0.1	0.6	0.0	0.0	1.4
000107131	Acrylonitrile	0.6	0.1	0.0	0.1	0.5	0.5	1.2
000075014	Vinyl Chloride	0.4	0.0	0.5	0.5	0.0	0.0	1.0
007440382	Arsenic	0.0	0.1	0.1	0.1	0.1	0.1	0.5
000079107	Acrylic Acid	1.8	0.1	0.1	0.1	0.1	0.1	0.5
000075092	Dichloromethane	0.9	0.1	0.1	0.1	0.1	0.1	0.5
000106990	1,3-Butadiene	0.0	0.0	0.0	0.0	0.1	0.1	0.2
Totals for Top 20 Chemicals:		66.9	43.1	40.8	33.8	29.2	31.9	178.8
Totals for All Chemicals:		71.1	43.0	41.0	33.9	29.5	32.1	179.5

Table 18

Total On-Site Land Releases
Top 12 Chemicals

CAS Number or Category	Chemical Name	Base Yr. 1988	On-Site Land Releases (Million Pounds):					Total Releases 94-98
			1994	Last Five Years			1998	
			1995	1996	1997	1998		
000010982	Zinc Compounds		3.8					

Table 19

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

CAS Number or Category	Chemical Name	On-Site Land Releases (Thousand Pounds):						Total Releases 94-98
		Base Yr. 1988	1994	Last Five Years			1998	
		1988	1994	1995	1996	1997	1998	94-98
000010450	Manganese Compounds	833.5	4,902.2	5,626.4	5,083.6	6,143.1	4,568.4	26,323.7
000010090	Chromium Compounds	72.8	1,073.7	643.8	1,390.5	1,754.4	1,230.5	6,092.9
000010420	Lead Compounds	250.4	721.5	791.5	823.6	1,027.3	503.3	3,867.2
007439965	Manganese	520.5	653.8	596.7	727.1	741.9	732.6	3,452.1
007440473	Chromium	184.0	76.2	77.3	70.0	49.5	60.0	333.0
007440439	Cadmium	0.0	0.0	0.0	0.0	0.0	141.7	141.7
007439921	Lead	177.8	119.3	10.5	1.7	0.0	0.0	131.5
007440020	Nickel	42.0	16.5	8.6	8.6	8.3	21.3	63.3
000108883	Toluene	42.8	2.3	15.3	0.6	10.3	1.5	30.0
000078933	Methyl Ethyl Ketone	0.1	6.9	8.8	5.4	0.0	2.3	23.4
000071432	Benzene	0.6	0.6	3.8	0.9	2.8	2.0	10.1
001330207	Xylene (Mixed Isomers)	16.8	3.2	2.1	3.0	0.1	0.1	9.5
000050000	Formaldehyde	330.8	2.8	1.9	0.2	0.2	0.1	5.2
000127184	Tetrachloroethylene	0.0	0.0	0.0	4.4	0.0	0.0	4.4
000010078	Cadmium Compounds	0.0	0.0	0.0	0.0	2.0	1.0	3.0
000010495	Nickel Compounds	13.0	0.0	0.0	1.2	1.1	0.1	2.4
000075150	Carbon Disulfide	0.0	0.0	0.0	0.0	0.0	1.7	1.7
000107131	Acrylonitrile	0.0	0.0	0.0	0.0	0.5	0.0	0.5
000117817	Di-(2-ethylhexyl) Phthalate	0.0	0.0	0.0	0.5	0.0	0.0	0.5

Table 20

Total Off-Site Transfers to POTW
Top 19 Chemicals

Off-Site Transfers to POTW (Million Pounds):

CAS Number or Category	Chemical Name	Off-Site Transfers to POTW (Million Pounds):						Total Transfers 94-98
		Base Yr. 1988	1994	Last Five Years			1998	
			1995	1996	1997			
000067561	Methanol	3.0	2.0	1.7	1.8	1.3	1.2	8.0
000108952	Phenol	1.2	0.9	1.1	1.4	0.9	0.6	4.9
000106445	p-Cresol	0.7	1.7	0.9	0.4	0.0	0.0	3.0
000010230	Glycol Ethers	0.5	0.4	0.3	0.2	0.3	0.3	1.5
007664393	Hydrogen Fluoride	0.0	0.3	0.6	0.2	0.3	0.0	1.2
000078933	Methyl Ethyl Ketone	0.0	0.1	0.2	0.3	0.3	0.3	1.2
000075150	Carbon Disulfide	0.0	0.3	0.2	0.3	0.2	0.2	1.2
007439965	Manganese	0.0	0.0	0.0	0.0	0.2	0.6	0.8
000062533	Aniline	0.7	0.6	0.1	0.0	0.0	0.1	0.8
007664382	Phosphoric Acid	0.8	0.1	0.1	0.1	0.3	0.1	0.7
000107211	Ethylene Glycol	0.4	0.2	0.1	0.1	0.2	0.1	0.7
000095476	o-Xylene	0.0	0.0	0.2	0.2	0.1	0.1	0.6
000100027	4-Nitrophenol	0.4	0.0	0.0	0.0	0.0	0.6	0.6
000010982		0.4	0.0	0.0	0.0	0.0	0.6	0.6
Methyl Ethyl Ketone	0.7 0.0	0.6	0.30.6	0.30.6	0.30.6	0.30.6	0.30.6	0.30.6

Table 21

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

CAS Number or Category	Chemical Name	Off-Site Transfers to POTW (Thousand Pounds):						
		Base Yr. 1988	1994	Last Five Years 1995 1996 1997			1998	Total Transfers 94-98
000078933 000075150	Methyl Ethyl Ketone	14.2	73.2	161.1	341.5	321.0	307.0	1,203.8

Table 22

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):						Total Transfers 94-98
		Base Yr. 1988	Last Five Years					
			1994	1995	1996	1997	1998	
000010982	Zinc Compounds	10.3	13.0	14.0	8.2	16.4	15.8	67.4
000010450	Manganese Compounds	2.4	2.8	2.4	2.1	3.2	3.2	13.7
000085449	Phthalic Anhydride	3.3	0.0	0.0	2.4	2.9	3.8	9.1
000067561	Methanol	3.7	1.8	1.0	0.6	0.7	1.5	5.6
000010420	Lead Compounds	1.3	1.0	0.7	0.6	1.5	1.3	5.1
007440508	Copper	1.1	0.9	0.8	0.8	1.5	0.9	4.9
000010090	Chromium Compounds	0.9	0.7	0.6	1.2	1.4	0.7	4.6
000078933	Methyl Ethyl Ketone	2.2	0.5	0.5	0.3	0.6	1.7	3.6
001330207	Xylene (Mixed Isomers)	1.6	0.7	0.7	0.4	0.6	0.7	3.1
000108883	Toluene	3.5	0.7	0.5	0.6	0.6	0.5	2.9
007697372	Nitric Acid	0.2	0.4	0.8	0.7	0.5	0.4	2.8
007429905	Aluminum (Fume or Dust)	0.2	0.1	0.1	0.6	0.8	0.7	2.3
000075092	Dichloromethane	0.4	0.5	0.5	0.3	0.5	0.4	2.2
007439965	Manganese	1.1	0.4	0.5	0.7	0.3	0.2	2.1
000100027	4-Nitrophenol	0.0	0.4	0.4	0.5	0.5	0.0	1.8
007664382	Phosphoric Acid	0.2	0.3	0.2	0.3	0.5	0.4	1.7
000010100	Copper Compounds	1.4	0.4	0.3	0.3	0.3	0.3	1.6
007440473	Chromium	1.0	0.2	0.3	0.2	0.8	0.1	1.6
000100425	Styrene	0.7	0.2	0.4	0.3	0.4	0.3	1.6
000010040	Barium Compounds	2.5	0.4	0.4	0.3	0.2	0.2	1.5
Totals for Top 20 Chemicals:		38.2	25.4	25.1	21.4	34.2	33.1	139.2
Totals for All Chemicals:		52.2	29.6	28.9	24.1	36.9	36.4	155.9

Table 23

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

CAS Number or Category	Chemical Name	Other Off-Site Transfers (Million Pounds):						
		Base Yr. 1988	Last Five Years					Total Transfers 94-98
			1994	1995	1996	1997	1998	
000010450	Manganese Compounds	2.4	2.8	2.4	2.1	3.2	3.2	13.7
000010420	Lead Compounds	1.3	1.0	0.7	0.6	1.5	1.3	5.1
000010090	Chromium Compounds	0.9	0.7	0.6	1.2	1.4	0.7	4.6
000078933	Methyl Ethyl Ketone	2.2	0.5	0.5	0.3	0.6	1.7	3.1
001330207	Xylene (Mixed Isomers)	1.6	0.7	0.7	0.4	0.6	0.7	3.1
000108883	Toluene	3.5	0.7	0.5	0.6	0.6	0.5	2.9
007439965	Manganese	1.1	0.4	0.5	0.7	0.3	0.2	2.1
000075092	Dichloromethane	0.4	0.5	0.5	0.3	0.5	0.4	2.2
007440473	Chromium	1.0	0.2	0.3	0.2	0.8	0.1	1.6
000100425	Styrene	0.7	0.2	0.4	0.3	0.4	0.3	1.6
007439921	Lead	1.3	0.2	0.1	0.1	0.2	0.3	0.9
000067663	Chloroform	0.1	0.3	0.1	0.1	0.1	0.1	0.7
000010495	Nickel Compounds	0.2	0.2	0.1	0.1	0.2	0.1	0.7
007440020	Nickel	0.6	0.1	0.1	0.1	0.1	0.2	0.6
000079016	Trichloroethylene	0.5	0.2	0.1	0.1	0.1	0.1	0.6
000117817	Di-(2-ethylhexyl)phthalate (DEHP)	0.0	0.2	0.1	0.1	0.0	0.1	0.5
000071432	Benzene	0.0	0.3	0.1	0.0	0.0	0.0	0.4
000127184	Tetrachloroethylene	0.2	0.1	0.1	0.1	0.0	0.0	0.3
000062533	Aniline	0.2	0.2	0.0	0.0	0.0	0.0	0.2
000050000	Formaldehyde	0.1	0.0	0.1	0.0	0.0	0.0	0.1
Totals for Top 20 Chemicals:		18.3	9.5	8.0	7.4	10.6	10.0	45.5
Totals for All Chemicals:		18.5	9.6	8.6	7.5	10.7	10.2	46.7

Table 24

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

CAS Number or Category	Chemical Name	Total Releases and Transfers (Million Pounds):						Total 94-98
		Base Yr. 1988	Last Five Years					
		1988	1994	1995	1996	1997	1998	
000010982	Zinc Compounds	16.6	22.5	28.0	24.7	31.6	28.9	135.7
000010450	Manganese Compounds	3.3	7.8	8.2	7.4	9.5	7.8	40.7
000108883	Toluene	21.8	8.3	7.0	5.5	5.9	4.9	31.6
000075150	Carbon Disulfide	3.3	5.5	5.7	5.7	5.6	4.6	27.1
000067561	Methanol	10.0	6.2	5.1	4.7	4.4	4.6	25.0
001330207	Xylene (Mixed Isomers)	9.3	5.9	4.1	4.0	3.5	3.3	20.8
000078933	Methyl Ethyl Ketone	7.1	4.1	3.4	2.9	2.7	3.8	16.9
000010230	Glycol Ethers	3.8	3.4	3.3	2.7	2.9	3.1	15.4
000079016	Trichloroethylene	5.2	4.1	3.5	3.1	2.8	1.7	15.2
000075092	Dichloromethane	4.8	3.4	3.2	2.8	2.4	2.1	13.9
000100425	Styrene	2.6	2.5	2.5	2.3	2.3	2.3	11.9
000010090	Chromium Compounds	1.0	1.8	1.3	2.6	3.1	2.0	10.8
000085449	Phthalic Anhydride	3.4	0.2	0.4	2.7	3.1	3.9	10.3
000010420	Lead Compounds	1.6	1.8	1.6	1.7	2.6	1.8	9.5
000108952	Phenol	2.3	1.7	2.1	2.3	1.6	1.1	8.9
007782505	Chlorine	7.1	3.7	2.5	2.0	0.3	0.3	8.8
000074851	Ethylene	5.3	1.3	1.1	1.6	1.6	1.4	7.0
007439965	Manganese	1.8	1.1	1.2	1.5	1.4	1.6	6.8
007440508	Copper	1.3	1.0	1.0	1.0	1.6	1.0	5.6
000108101	Methyl Isobutyl Ketone	2.5	1.3	1.6	0.9	0.9	1.0	5.7
Totals for Top 20 Chemicals:		114.1	87.7	86.8	82.0	89.8	81.2	427.6
Totals for All Chemicals:		170.2	110.4	103.4	97.0	104.4	94.5	509.7

Table 25

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.	Last Five Years					Total
		1988	1994	1995	1996	1997	1998	94-98
000010450	Manganese Compounds	3.3	7.8	8.2	7.4	9.5	7.8	40.7
000108883	Toluene	21.8	8.3	7.0	5.5	5.9	4.9	31.6
000075150	Carbon Disulfide	3.3	5.5	5.7	5.7	5.6	4.6	27.1
001330207	Xylene (Mixed Isomers)	9.3	5.9	4.1	4.0	3.5	3.3	20.8
000078933	Methyl Ethyl Ketone	7.1	4.1	3.4	2.9	2.7	3.8	16.9
000079016	Trichloroethylene	5.2	4.1	3.5	3.1	2.8	1.7	15.2
000075092	Dichloromethane	4.8	3.4	3.2	2.8	2.4	2.1	13.9
000100425	Styrene	2.6	2.5	2.5	2.3	2.3	2.3	11.9
000010090	Chromium Compounds	1.0	1.8	1.3	2.6	3.1	2.0	10.8
000010420	Lead Compounds	1.6	1.5	1.6	1.7	2.6	1.8	9.5
007439965	Manganese	1.8	1.1	1.2	1.5	1.4	1.6	6.8
000071432	Benzene	2.1	0.9	0.6	0.5	0.4	0.4	2.8
007440473	Chromium	1.3	0.3	0.4	0.3	0.9	0.2	2.1
000127184	Tetrachloroethylene	2.2	0.6	0.5	0.5	0.3	0.2	2.1
000107131	Acrylonitrile	1.1	0.4	0.4	0.4	0.4	0.4	2.0
007439921	Lead	1.5	0.3	0.2	0.1	0.3	0.4	1.3
000062533	Aniline	1.0	0.8	0.1	0.1	0.1	0.1	1.2
000075003	Chloroethane	0.5	0.3	0.2	0.2	0.2	0.2	1.1
007440020	Nickel	0.7	0.2	0.2	0.2	0.2	0.3	1.1
000010495	Nickel Compounds	0.3	0.2	0.1	0.2	0.2	0.2	0.9
Totals for Top 20 Chemicals:		72.5	50.3	44.4	42.0	44.8	38.3	219.8
Totals for All Chemicals:		74.6	51.4	45.5	42.9	45.4	39.1	224.2

STANDARD INDUSTRIAL CLASSIFICATION (SIC) CATEGORIES

Facilities in 332 individual four-digit SIC codes have reported toxic chemical releases from 1988 through 1998. Tables 26 and 27 summarize the release and transfer information for these SIC codes.

Table 27

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

		Total Releases and Transfers (Million Pounds):							
SIC Code	Description	Base Yr.		Last Five Years			Total	% Increase/ Decrease(-)	
		1988	1994	1995	1996	1997	1998	88-97	94-98
3312	Steel Works, Blast Furnaces (Including Coke Ovens) and Rolling Mills	6.4	9.0	9.2	9.1	12.0	9.4	48.7	4.4
3089	Plastic Products, NEC*	4.4	6.4	6.1	6.1	5.8	5.1	29.2	-16.4
2821	Plastic Materials, Synthetic Resins and Nonvulcanizable Elastomers	5.5	3.1	2.6	2.5	2.4	3.5	14.1	12.9
2752	Commercial Printing, Lithographic	5.7	1.7	1.4	1.8	2.9	2.1	9.9	23.5
3086	Plastic Foam Products	0.7	1.8	2.0	1.9	1.6	1.5	8.8	-16.7
2819	Industrial Inorganic Chemicals, NEC	1.3	1.5	1.1	0.9	1.1	1.3	5.9	-13.3
3471	Electroplating, Plating, Polishing, Anodizing and Coloring	1.4	0.9	0.9	1.3	1.4	0.9	5.4	-0-
3325	Steel Foundries, NEC	0.1	0.7	0.9	1.1	0.9	0.9	4.5	28.6
2672	Coated and Laminated Paper, NEC	2.0	1.6	0.8	0.6	0.6	0.4	0.4	-75.0
2851	Paints, Varnishes, Lacquers, Enamels and Allied Products	3.1	0.7	0.7	0.8	0.8	1.0	4.0	42.9
2754	Commercial Printing, Gravure	5.0	1.6	1.2	0.9	0.0	0.0	3.7	100.0
2911	Petroleum Refining	1.9	1.2	0.6	0.7	0.6	0.7	3.8	-41.7
2865	Cyclic Organic Crudes and Intermediates, and Organic Dyes and Pigments	4.2	1.6	0.6	0.6	0.5	0.5	3.8	-56.2
3711	Motor Vehicles and Passenger Car Bodies	2.3	1.0	0.7	0.6	0.6	0.7	3.6	-30.0
3317	Steel Pipe and Tubes	0.5	0.9	0.8	0.7	0.5	0.5	3.4	-44.4
3499	Fabricated Metal Products, NEC	1.1	0.5	0.5	0.9	0.9	0.8	3.6	60.0
3732	Boat Building and Repairing	0.2	0.7	0.7	0.6	0.6	0.5	3.1	-28.6
3479	Coating, Engraving, and Allied Services, NEC	1.3	0.8	0.6	0.5	0.5	0.3	2.7	-62.5
2869	Industrial Organic Chemicals, NEC	0.8	0.3	0.6	0.6	0.5	0.5	2.5	66.7
3469	Metal Stampings, NEC	0.2	0.5	0.5	0.5	0.4	0.4	2.3	-20.0
Totals for Top 20 SIC Codes:		48.0	36.2	32.5	32.7	34.6	31.0	167.0	
Totals for All SIC Codes:		74.6	51.4	45.5	42.9	45.4	39.1	224.2	

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 28 and 29 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 28

Total Air Emissions
Top 20 ZIP Codes

ZIP Code	County	City	Total Air Emissions (Million Pounds):						Total 94-98
			Base Yr.	Last Five Years					
			1988	1994	1995	1996	1997	1998	
61832	Vermilion	Danville	2.5	4.2	3.9	4.0	3.9	3.6	19.6
61953	Douglas	Tuscola	5.0	3.7	2.5	2.1	0.4	0.3	9.0
60450	Grundy	Morris	5.4	1.7	1.3	1.9	1.9	2.2	9.0
60638	Cook	Bedford Park	1.8	1.6	1.6	1.5	1.5	0.9	7.1
62881	Marion	Salem	0.7	1.7	1.3	1.2	1.5	0.8	6.5
61350	LaSalle	Ottawa (Rural)	2.1	1.2	1.2	1.1	1.1	1.1	5.7
60633	Cook	Chicago	1.9	1.3	1.2	0.7	0.8	1.0	5.0
61054	Ogle	Mount Morris	1.6	1.0	0.9	1.3	0.9	0.7	4.8
62206	St. Clair	Sauget	3.6	0.7	0.8	0.8	0.9	0.7	3.9
60455	Cook	Bridgeview	0.3	1.0	0.9	0.8	0.5	0.6	3.8
60410	Will	Channahon	1.6	0.9	0.8	0.7	0.7	0.6	3.7
60501	Cook	Summit	1.5	1.6	0.6	0.5	0.5	0.5	3.7
60185	Du Page	West Chicago	0.7	0.6	1.0	0.7	0.6	0.5	3.4
61938	Coles	Mattoon	2.4	0.7	0.6	0.3	0.8	0.8	3.2
62084	Madison	Roxana	1.6	1.1	0.5	0.5	0.5	0.5	3.1
62454	Crawford	Robinson	2.1	0.9	1.2	0.4	0.3	0.2	3.0
60609	Cook	Chicago	0.8	0.7	0.8	0.4	0.5	0.5	2.9
60426	Cook	Harvey	1.0	0.7	0.6	0.6	0.5	0.5	2.9
60007	Cook	Elk Grove Village	1.1	0.7	0.7	0.6	0.4	0.4	2.8
60131	Cook	Franklin Park	1.0	0.6	0.4	0.4	0.6	0.6	2.6
Totals for Top 20 ZIP Codes:			38.7	26.6	22.8	20.5	18.8	17.0	105.7
Totals for All ZIP Codes: 95.7			52.4	46.4	43.1	38.0	33.5	213.4	

Table 29

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

Total Air Emissions (Million Pounds):										
ZIP Code	County	City	Base Yr.		Last Five Years					Total 94-98
			1988	1994	1995	1996	1997	1998		
61832	Vermilion	Danville	2.3	4.2	3.9	4.0	3.9	3.6	19.6	
60638	Cook	Bedford Park	1.6	1.6	1.6	1.5	1.5	0.9	7.1	
62881	Marion	Salem	0.6	1.6	1.2	1.1	1.4	0.7	6.0	
61350	LaSalle	Ottawa (Rural)	2.1	1.1	1.1	1.1	1.1	1.1	5.5	
61054	Ogle	Mount Morris	1.6	1.0	0.8	1.2	0.8	0.7	4.5	
60455	Cook	Bridgeview	0.2	0.9	0.7	0.7	0.5	0.5	3.3	
60185	DuPage	West Chicago	0.4	0.2	0.9	0.6	0.6	0.5	3.0	
61938	Coles	Mattoon	2.4	0.7	0.6	0.3	0.7	0.8	3.1	
60501	Cook	Summit	1.5	1.1	0.4	0.3	0.4	0.3	2.5	
60426	Cook	Harvey	0.5	0.6	0.5	0.5	0.5	0.4	2.5	
60410	Will	Channahon	1.2	0.6	0.5	0.4	0.4	0.3	2.2	
62896	Franklin	West Frankfort	0.0	0.4	0.5	0.4	0.4	0.4	2.1	
62084	Madison	Roxana	1.1	0.7	0.3	0.3	0.3	0.4	2.0	
60007	Cook	Elk Grove Village	0.8	0.5	0.5	0.4	0.3	0.3	2.0	
62454	Crawford	Robinson	1.6	0.5	1.1	0.2	0.1	0.1	2.0	
62914	Alexander	Cairo	0.5	0.4	0.0	0.6	0.4	0.4	1.8	
60633	Cook	Chicago	0.8	0.4	0.3	0.3	0.2	0.4	1.6	
60103	Cook	Streamwood	0.1	0.3	0.3	0.6	0.3	0.1	1.6	
60160	Cook	Melrose Park	0.8	1.0	0.5	0.0	0.0	0.0	1.5	
60131	Cook	Franklin Park	0.7	0.5	0.3	0.3	0.3	0.1	1.5	
Totals for Top 20 ZIP Codes:			20.8	18.5	16.0	14.8	14.1	12.0	75.4	
Totals for All ZIP Codes: 51.1			32.7	28.4	26.2	23.8	20.2	131.4		

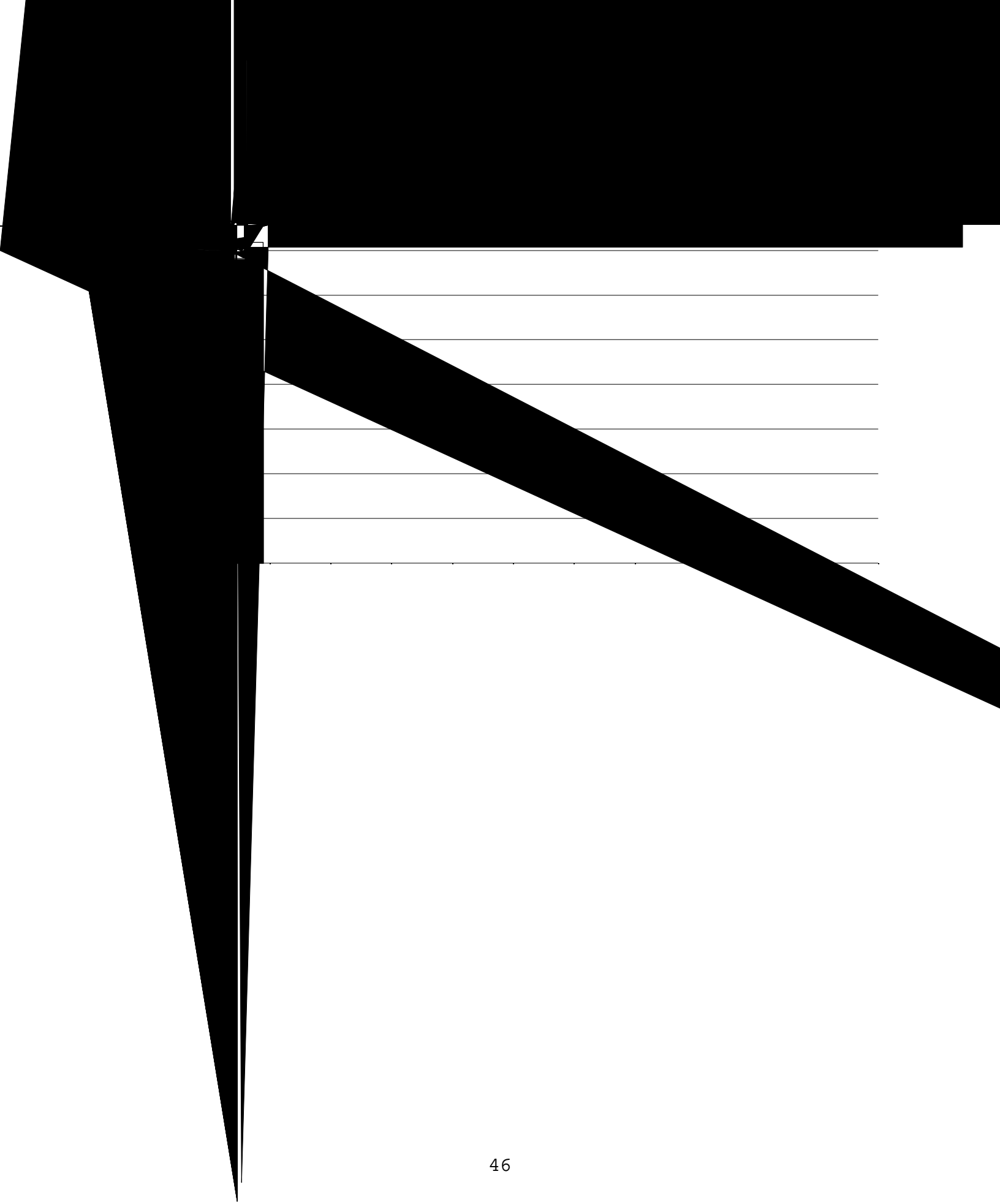


FIGURE 6

TOTAL RELEASES & TRANSFERS - ALL FACILITIES

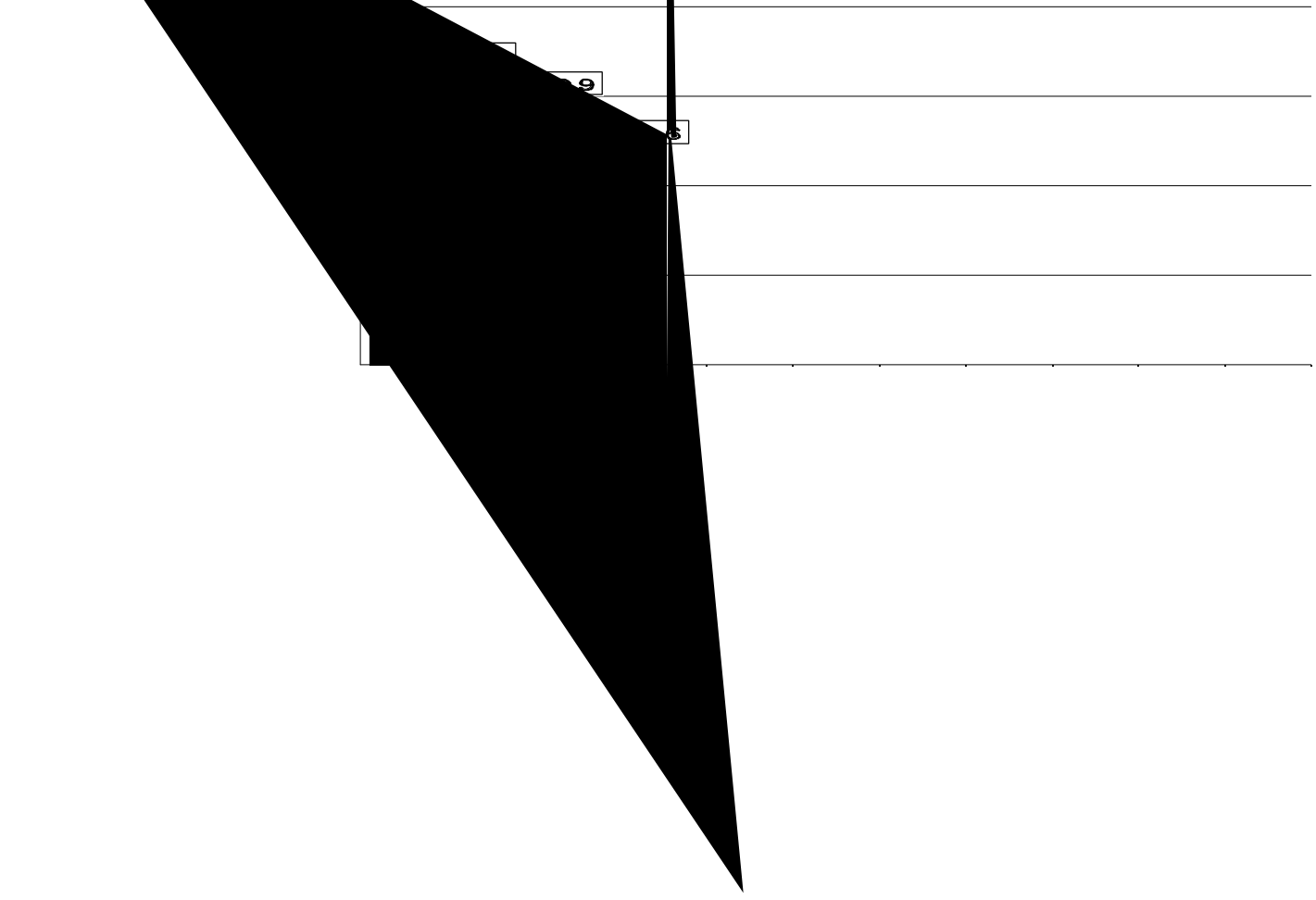


FIGURE 8

TOTAL WATER DISCHARGES

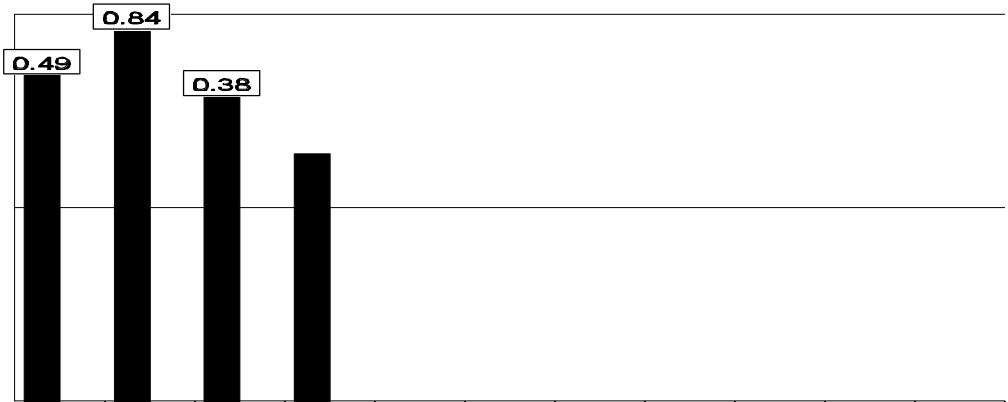


FIGURE 10

TOTAL OFFSITE TRANSFERS TO POTW

APPENDIX A - FORM R

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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.

P.O Box 3348

EPA FORM R
PART II. CHEMICAL-SPECIFIC INFORMATION

TRI Facility ID Number
Toxic Chemical, Category or Generic Name

1.1	
1.2	
1.3	

2.1	
-----	--

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

3.1		3.2		3.3	
If produce or import:					

4.1	<input type="checkbox"/>
-----	--------------------------

		C. % From Stormwater
Fugitive or non-point air emissions	<input type="checkbox"/>	
Stack or point air emissions	<input type="checkbox"/>	
Discharges to receiving streams or water bodies (enter one name per box)		
Stream or Water Body Name		
5.3.3		
5.4.1	<input type="checkbox"/>	
5.4.2	<input type="checkbox"/>	

	TRI Facility ID Number

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				
8.3				
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				
Did your facility engage in any source reduction activities for this chemical during the reporting year? If not,				
8.10				
	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.	
			YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>

injecting, escaping, leaching, dumping, or disposing into the environment." Do not include any quantity treated onsite or offsite.

APPENDIX B - TOXICOLOGY REFERENCES

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APPENDIX C - CHEMICAL REFERENCES

, New York: Van Nostrand Reinhold Company, 1993.

, Willoughby, OH: Meister Publishing Co., 1997.

, National Fire Protection Association, NFPA #HAZ-91, 1991.

Sax, N. Irving,

, New York: Van Nostrand Reinhold Co., 1984.

U.S. EPA Chemical Profiles

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

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**APPENDIX D - TOTAL RELEASES/NUMBER
OF REPORTING FACILITIES
FOR EACH COUNTY**

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Total Releases/Number of Reporting Facilities
For Each County
(Release Amounts in Million Pounds)

County	Base	Last Five Years					Total	
	Year	1994	1995	1996	1997	1998	94-98	
Cook	56.2 / 613	27.1 / 549	22.8 / 506	23.8 / 461	24.9 / 440	21.7 / 486	120.2	
Whiteside	7.8 / 13	15.3 / 14	20.5 / 15	14.8 / 13	15.1 / 13	13.1 / 15	78.7	
Madison	12.6 / 34	13.3 / 30	9.2 / 28	9.0 / 25	9.7 / 20	10.2 / 23	51.5	
Peoria	6.6 / 22	7.4 / 16	7.5 / 16	8.0 / 15	6.6 / 15	6.2 / 14	35.8	
St. Clair	13.2 / 19	4.0 / 20	4.5 / 18	5.0 / 21	4.6 / 21	4.6 / 22	22.7	
Vermilion	3.6 / 13	5.2 / 17	4.5 / 17	4.4 / 17	4.3 / 15	4.0 / 16	22.4	
Will	7.9 / 44	3.0 / 46	2.5 / 42	4.3 / 47	5.6 / 47	3.0 / 52	18.4	
Ogle	6.5 / 14	5.3 / 15	4.1 / 10	3.9 / 11	1.8 / 11	1.5 / 14	16.6	
Kankakee	0.8 / 19	1.3 / 21	1.1 / 15	1.0 / 17	6.2 / 16	5.9 / 16	15.6	
LaSalle	5.0 / 28	3.7 / 28	3.3 / 26	2.7 / 24	2.7 / 18	2.7 / 23	15.1	
Lake	4.9 / 44	2.1 / 48	2.2 / 42	1.6 / 42	1.9 / 37	1.9 / 43	9.7	
Grundy	7.7 / 10	1.7 / 8	1.3 / 8	1.9 / 7	2.0 / 7	2.2 / 8	9.1	
Marion	1.4 / 3	2.2 / 5	1.8 / 5	1.5 / 7	1.7 / 6	1.2 / 7	8.5	
Rock Island	1.7 / 18	1.9 / 17	1.5 / 17	1.4 / 15	1.3 / 17	1.4 / 16	7.6	
DuPage	2.9 / 65	1.7 / 70	1.7 / 66	1.5 / 64	1.3 / 64	1.3 / 76	7.5	
Macon	1.4 / 13	0.6 / 20	0.8 / 20	0.9 / 20	2.0 / 19	2.4 / 19	6.7	
Winnebago	4.5 / 68	1.5 / 68	1.2 / 58	1.1 / 56	1.2 / 60	0.9 / 65	6.0	
McHenry	1.4 / 37	0.8 / 40	1.2 / 40	0.9 / 38	1.5 / 37	0.6 / 42	5.0	
Coles	2.6 / 13	0.9 / 9	0.8 / 9	0.3 / 9	1.0 / 10	1.5 / 12	4.6	
Washington	0.7 / 1	0.9 / 2	0.9 / 2	0.5 / 1	0.6 / 1	0.6 / 3	3.6	
Crawford	2.2 / 4	1.1 / 6	1.3 / 4	0.4 / 3	0.3 / 2	0.2 / 4	3.3	
Kane	2.5 / 57	0.7 / 62	0.7 / 52	0.5 / 47	0.4 / 46	0.8 / 56	3.1	
Franklin	0.2 / 3	0.7 / 4	0.7 / 4	0.6 / 4	0.6 / 3	0.5 / 2	3.1	
McLean	0.8 / 5	0.5 / 7	0.5 / 6	0.4 / 6	0.5 / 5	0.4 / 7	2.3	
Jackson	0.8 / 5	0.7 / 5	0.6 / 5	0.5 / 3	0.4 / 2	0.1 / 3	2.3	
Marshall	0.1 / 2	0.2 / 3	0.4 / 3	0.5 / 3	0.5 / 3	0.6 / 3	2.2	
JoDaviess	0.4 / 5	0.3 / 5	0.4 / 4	0.5 / 4	0.5 / 4	0.4 / 5	2.1	
Knox	0.3 / 7	0.6 / 6	0.6 / 6	0.5 / 6	0.2 / 6	0.2 / 7	2.0	
Kendall	1.6 / 3	0.4 / 5	0.4 / 5	0.3 / 4	0.4 / 4	0.3 / 4	1.9	
Alexander	0.5 / 2	0.4 / 3	0.0 / 3	0.6 / 3	0.4 / 3	0.4 / 3	1.9	
Douglas	1.1 / 1	0.4 / 4	0.5 / 5	0.2 / 4	0.2 / 4	0.3 / 3	1.6	
Boone	2.5 / 7	0.5 / 10	0.4 / 10	0.3 / 9	0.2 / 8	0.1 / 11	1.5	
Adams	0.3 / 9	0.3 / 13	0.3 / 15	0.3 / 13	0.3 / 13	0.3 / 17	1.5	
Edgar	0.0 / 4	0.1 / 4	0.2 / 3	0.2 / 5	0.3 / 5	0.5 / 6	1.3	
Tazewell	0.8 / 8	0.3 / 7	0.2 / 6	0.3 / 7	0.2 / 6	0.2 / 8	1.2	
DeKalb	0.8 / 15	0.3 / 10	0.2 / 9	0.2 / 10	0.2 / 11	0.2 / 11	1.2	
Montgomery	0.1 / 3	0.1 / 3	0.1 / 2	0.1 / 2	0.5 / 2	0.3 / 2	1.1	
Williamson	0.3 / 5	0.3 / 7	0.2 / 6	0.2 / 5	0.3 / 4	0.1 / 7	1.0	
Sangamon	0.2 / 8	0.2 / 6	0.3 / 5	0.2 / 3	0.2 / 3	0.2 / 4	1.0	
Stephenson	0.7 / 11	0.3 / 8	0.2 / 9	0.1 / 8	0.2 / 9	0.1 / 11	0.9	
Effingham	0.8 / 5	0.2 / 7	0.1 / 6	0.2 / 5	0.1 / 4	0.0 / 5	0.7	
Moultrie	0.6 / 1	0.2 / 1	0.1 / 1	0.1 / 1	0.1 / 1	0.1 / 1	0.7	
Jefferson	0.1 / 5	0.3 / 3	0.1 / 5	0.0 / 5	0.1 / 4	0.1 / 4	0.7	
Richland	0.2 / 2	0.2 / 1	0.2 / 1	0.1 / 1	0.0 / 1	0.0 / 1	0.6	

County	Base Year		Last Five Years						Total				
	1988		1993	1994	1995	1996	1997	88-97					
Wayne	0.1 /	2	0.0 /	2	0.1 /	2	0.2 /	2	0.1 /	2	0.6		
Livingston	0.3 /	5	0.2 /	10	0.1 /	8	0.2 /	7	0.1 /	7	0.1 /	8	0.6
Bureau	0.5 /	9	0.2 /	7	0.1 /	4	0.1 /	3	0.1 /	4	0.1 /	8	0.5
McDonough	0.1 /	3	0.1 /	6	0.1 /	4	0.1 /	4	0.1 /	4	0.1 /	5	0.4
Morgan	0.2 /	4	0.1 /	3	0.1 /	3	0.1 /	3	0.1 /	3	0.1 /	3	0.3
Lee	0.1 /	4	0.1 /	7	0.1 /	7	0.1 /	6	0.1 /	6	0.1 /	9	0.3
Champaign	0.4 /	9	0.0 /	9	0.1 /	6	0.1 /	6	0.0 /	7	0.1 /	8	0.3
Lawrence	0.0 /	0	0.1 /	1	0.1 /	1	0.0 /	0	0.0 /	0	0.0 /	0	0.2
Clay	0.1 /	3	0.0 /	2	0.1 /	2	0.0 /	2	0.1 /	2	0.0 /	2	0.2
Iroquois	0.1 /	2	0.1 /	3	0.1 /	1	0.0 /	1	0.0 /	1	0.0 /	2	0.2
Logan	0.1 /	4	0.0 /	4	0.0 /	1	0.0 /	1	0.1 /	0	0.0 /	2	0.1
Henry	0.0 /	3	0.0 /	6	0.0 /	4	0.0 /	3	0.0 /	3	0.1 /	4	0.1
Clark	0.5 /	3	0.1 /	1	0.0 /	1	0.0 /	1	0.0 /	2	0.0 /	2	0.1
White	0.1 /	1	0.0 /	2	0.0 /	2	0.0 /	2	0.0 /	2	0.0 /	2	0.0
Woodford	0.0 /	3	0.0 /	3	0.0 /	2	0.0 /	2	0.0 /	2	0.0 /	3	0.0
DeWitt	0.1 /	1	0.0 /	2	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0
Bond	0.0 /	2	0.0 /	2	0.0 /	2	0.0 /	2	0.0 /	2	0.0 /	2	0.0
Perry	0.0 /	1	0.0 /	2	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0
Putnam	0.2 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0
Massac	0.0 /	3	0.0 /	3	0.0 /	3	0.0 /	3	0.0 /	3	0.0 /	3	0.0
Cass	0.0 /	1	0.0 /	2	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	2	0.0
Wabash	0.0 /	2	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0
Hancock	0.0 /	2	0.0 /	2	0.0 /	1	0.0 /	0	0.0 /	0	0.0 /	1	0.0
Macoupin	0.0 /	0	0.0 /	1	0.0 /	2	0.0 /	1	0.0 /	0	0.0 /	0	0.1
Christian	0.0 /	2	0.0 /	1	0.0 /	2	0.0 /	2	0.0 /	2	0.0 /	2	0.0
Stark	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0
Randolph	0.1 /	5	0.0 /	3	0.0 /	3	0.0 /	3	0.0 /	2	0.0 /	3	0.0
Warren	0.0 /	1	0.0 /	3	0.0 /	3	0.0 /	2	0.0 /	2	0.0 /	3	0.0
Clinton	0.0 /	1	0.0 /	0	0.0 /	0	0.0 /	1	0.0 /	1	0.0 /	2	0.0
Shelby	0.0 /	0	0.0 /	0	0.0 /	0	0.0 /	0	0.0 /	1	0.0 /	1	0.0
Union	0.0 /	0	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0
Piatt	0.1 /	2	0.0 /	2	0.0 /	2	0.0 /	2	0.0 /	2	0.0 /	2	0.0
Mercer	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0
Fayette	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	2	0.0
Jasper	0.0 /	0	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	0	0.0
Carroll	0.0 /	2	0.0 /	3	0.0 /	4	0.0 /	3	0.0 /	3	0.0 /	3	0.0
Pike	0.0 /	3	0.0 /	2	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	2	0.0
Cumberland	0.0 /	1	0.0 /	1	0.0 /	0	0.0 /	0	0.0 /	0	0.0 /	0	0.0
Ford	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0
Mason	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0 /	1	0.0