

Hazardous Waste Generation and Management

1987-2013

This report has been prepared in accordance with Section 20.1
of the Illinois Environmental Protection Act.

Illinois Environmental Protection Agency
Bureau of Land
Waste Reduction & Compliance Section
Annual Report & Data Analysis Unit

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Executive Summary

Each year, Illinois hazardous-waste generators tell the Illinois EPA the amounts and kinds of hazardous waste they produced during the previous year. Generators indicate by code the types of wastes produced and the steps they took to manage these wastes. If some or all of these wastes were sent to commercial treatment, storage, and disposal facilities (TSDFs), that information and the identity of each receiving facility also are submitted.

Illinois TSDFs likewise report the types and quantities of wastes received from in-state and out-of-state generators; they also report the procedures they used to manage these wastes.

This publication summarizes waste generation and management data reported by Illinois generators and TSDFs for the years 1987-2013. The information has been summarized and presented graphically rather than in tabular format in order to better show trends.

The data reveals, for example, that most Illinois-generated hazardous waste is managed at the site of generation.

Hazardous Waste Generation and Management

This material is intended to help the general public better understand certain aspects of hazardous waste. It is not intended as a comprehensive review nor is it a substitute for the statute or its implementing regulations. It cannot impose any legally binding requirements on the Illinois EPA, the US EPA, or the regulated community. It is not intended to modify or affect in any way existing statutory or regulatory requirements or Agency policies.

What are Hazardous Wastes?

Congress has determined that certain wastes by their nature pose a threat to human health and the environment and has passed several statutes aimed at identifying and safely managing these wastes.

One of these statutes and its subsequent amendments is known as the Resource Conservation and Recovery Act (“RCRA”), which establishes a management system to regulate certain wastes from the moment of generation until ultimate disposal, or from cradle to grave. There are ten subtitles, and this report concerns waste regulations known as Subtitle C, regarding the generation, transportation, and treatment, storage, and disposal of hazardous wastes.

RCRA has four broad goals:

- to protect human health and the environment from hazards posed by waste disposal;
- to conserve energy and natural resources through waste recycling and recovery;
- to reduce or eliminate the amount of waste generated, including hazardous waste;
- and to ensure that wastes are managed in an environmentally safe manner.

The generator or producer of the wastes must determine if the waste is a hazardous waste. The first step is to determine if the waste meets the definition of a “solid waste,” which is any discarded material, which may be discarded by being disposed of, burned or incinerated, applied to the land, burned for energy recovery, reclaimed, or accumulated speculatively, or a material that is inherently waste-like. Note that this definition may be somewhat misleading as a liquid or sludge may meet the legal definition and be considered a solid waste. The generator then determines if any specific exclusion applies to the waste. One of the exclusions is for households or residences.

After determining a waste is a solid waste and is not excluded, the generator must then determine if it is a hazardous waste. Several hundred discarded commercial chemicals are listed as hazardous wastes, and the generator determines if the waste is one of those listed. Additional wastes from about 80 specific and nonspecific common industrial and manufacturing processes are also listed.

Additionally the generator must determine if the waste exhibits certain characteristics. This determination is usually made through specific chemical and physical tests in a laboratory. These characteristics include ignitability, corrosivity, reactivity, and toxicity.

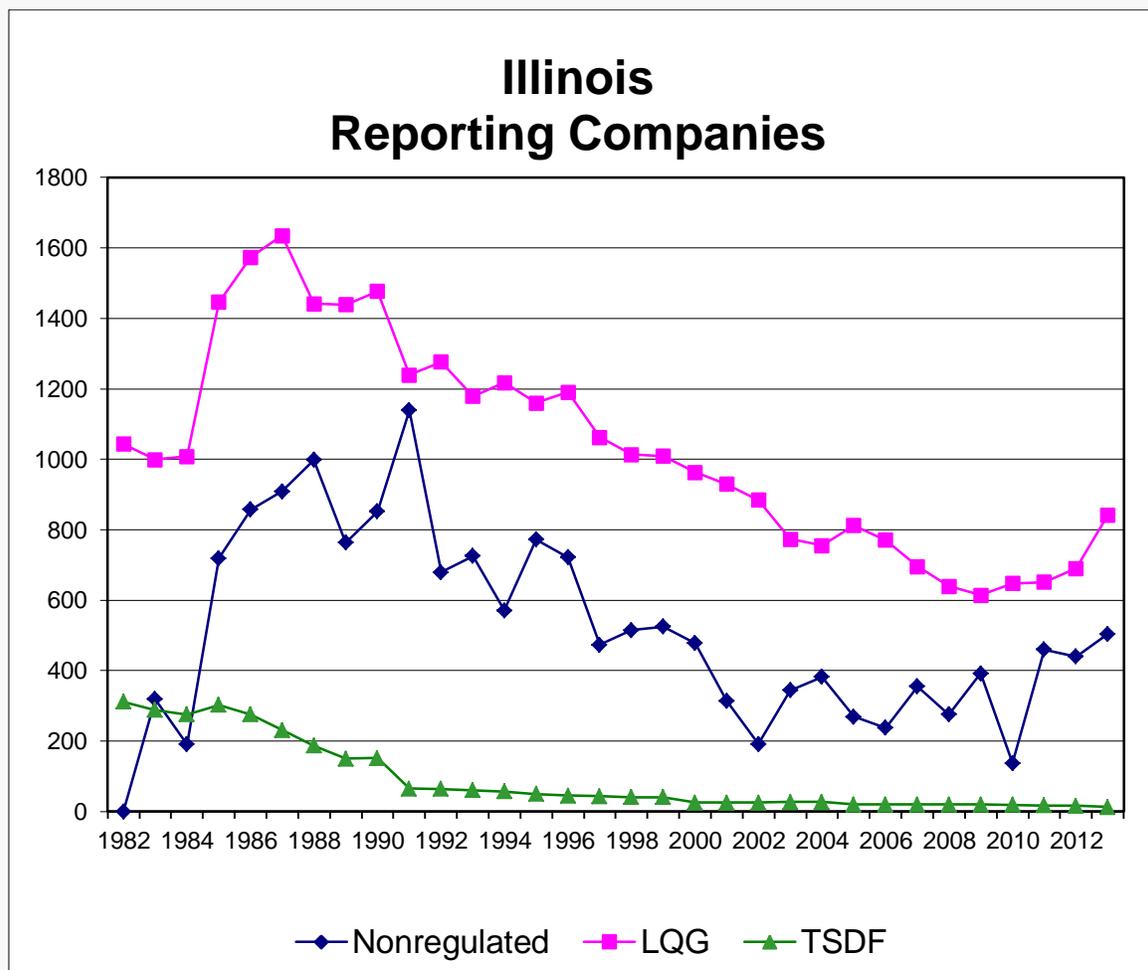
Wastes that are both listed and characteristic may have more extensive restrictions than those that are only listed or only characteristic.

Illinois' companies that intend to manage discarded materials by disposing, burning or incinerating, applying to the land, burning for energy recovery, reclaiming, or accumulating speculatively a hazardous waste must receive a permit from the Illinois EPA or the US EPA before conducting these activities. Companies who have received permits to conduct these activities are known as Treatment, Storage, or Disposal Facilities (TSDF). These permits may be written so the company may manage the waste it generates at its location, and usually only companies with large amounts of waste attempt to be permitted. These companies are often referred to as on-site generators, meaning generators who manage their own waste on the site of generation. Permits may also be written so the company may manage wastes generated by other companies, and these companies are known as commercial facilities or commercial TSDFs.

Reporting Requirements

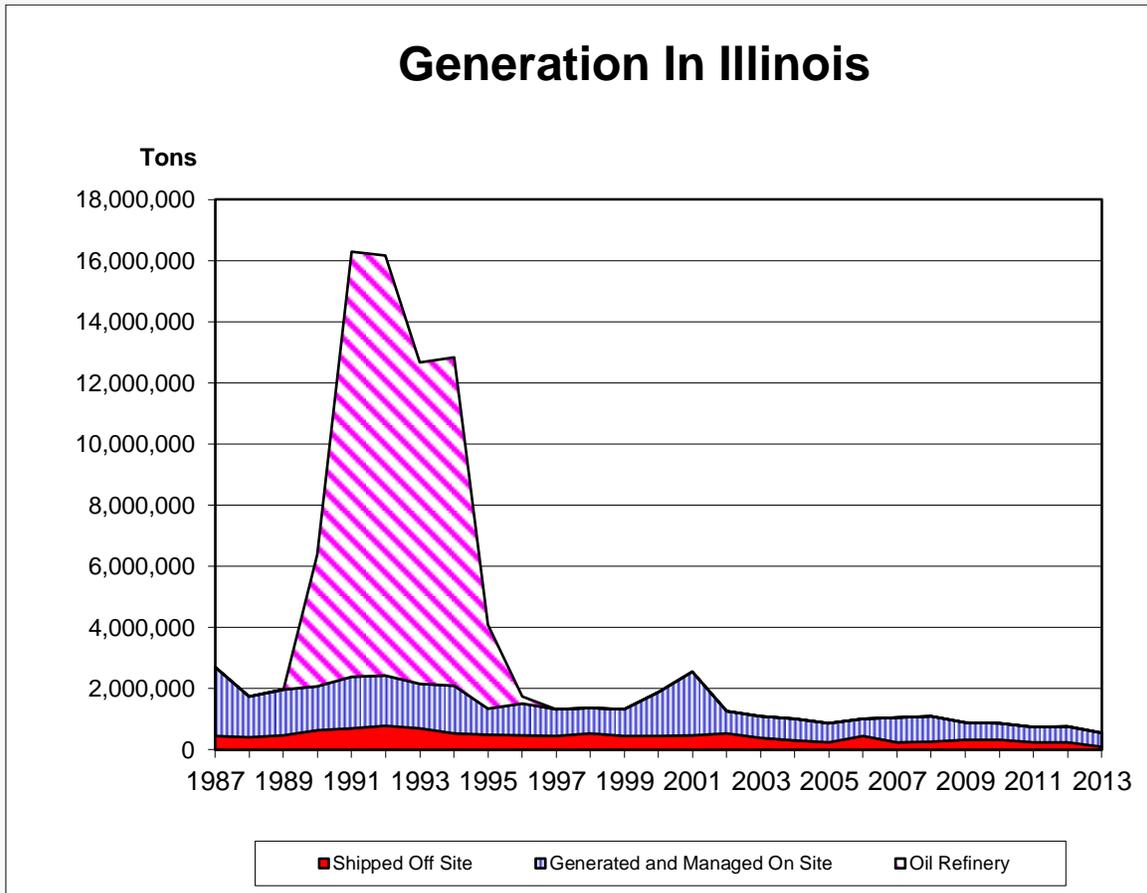
Both generators and facilities have certain requirements to report their waste activity. Generators are required to report if in any (one or more) month they generate 1000 kilograms (2200 pounds) or more of hazardous waste (or 100 kg or more of acutely hazardous waste) and must report where they have shipped the waste; generators of this quantity of waste are considered Large Quantity Generators (LQG). On-site generators who manage their own waste must also report. Facilities who manage the waste from other companies must report all waste received.

The specific companies that must report change yearly, as some businesses close or discontinue certain practices and other businesses open or add certain practices. Companies that were previously regulated report as nonregulated generators, and then do not continue to report. The number of regulated companies is on a downward trend. This is believed to be at least partially the result of successful waste minimization efforts.

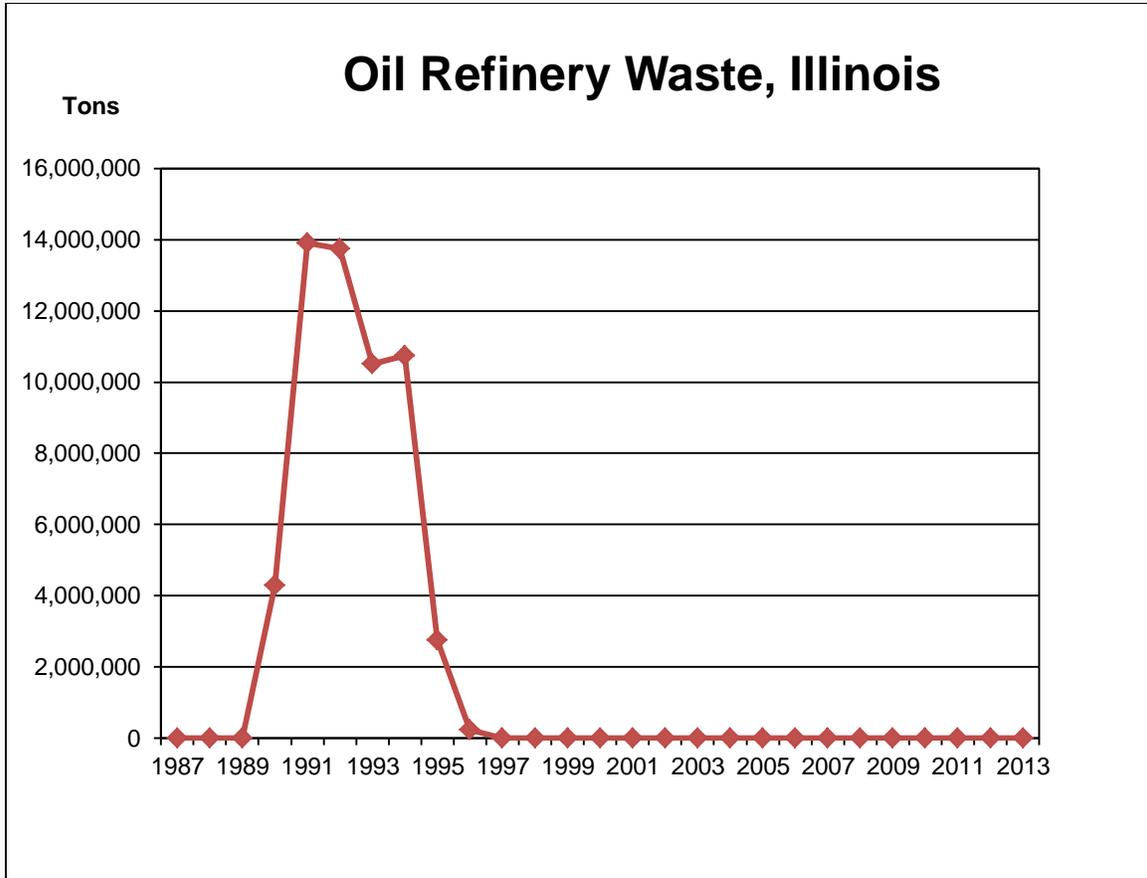


Waste Generation

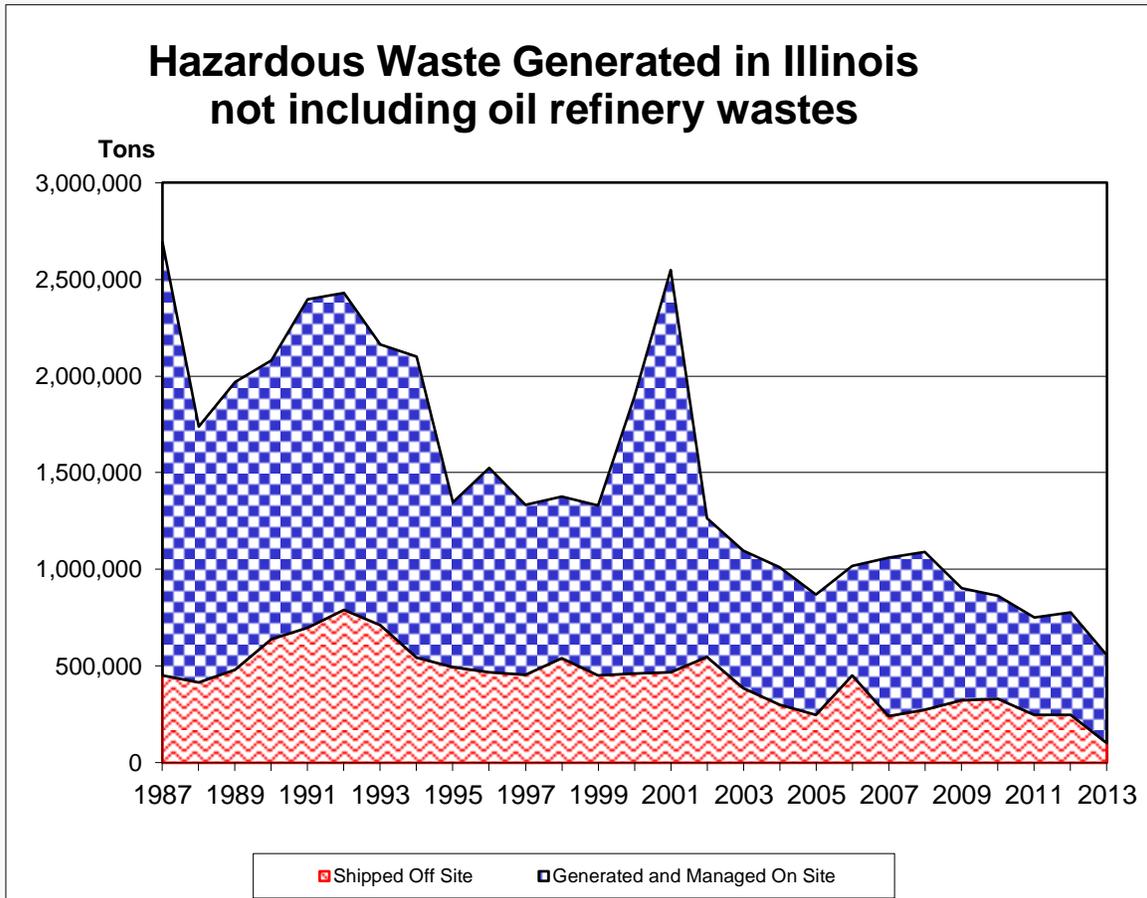
Waste generated in Illinois is managed both at the site of generation and at commercial facilities located both within Illinois and outside the state. The following graph shows the total generation in Illinois.



In order to make other yearly fluctuations more apparent, one waste stream was removed from the above graph. This waste stream was generated by oil refineries, mostly at one site. This waste stream is wastewater containing benzene. It had been generated for a long period of time but was not regulated as a hazardous waste until September 1990, when regulatory changes were enacted making it a RCRA hazardous waste. After this change, the refineries installed new equipment and received permits that caused it to be regulated under the Clean Water Act. The waste is still being generated but is no longer reported or regulated as a RCRA waste. The following graph shows this single large waste stream.

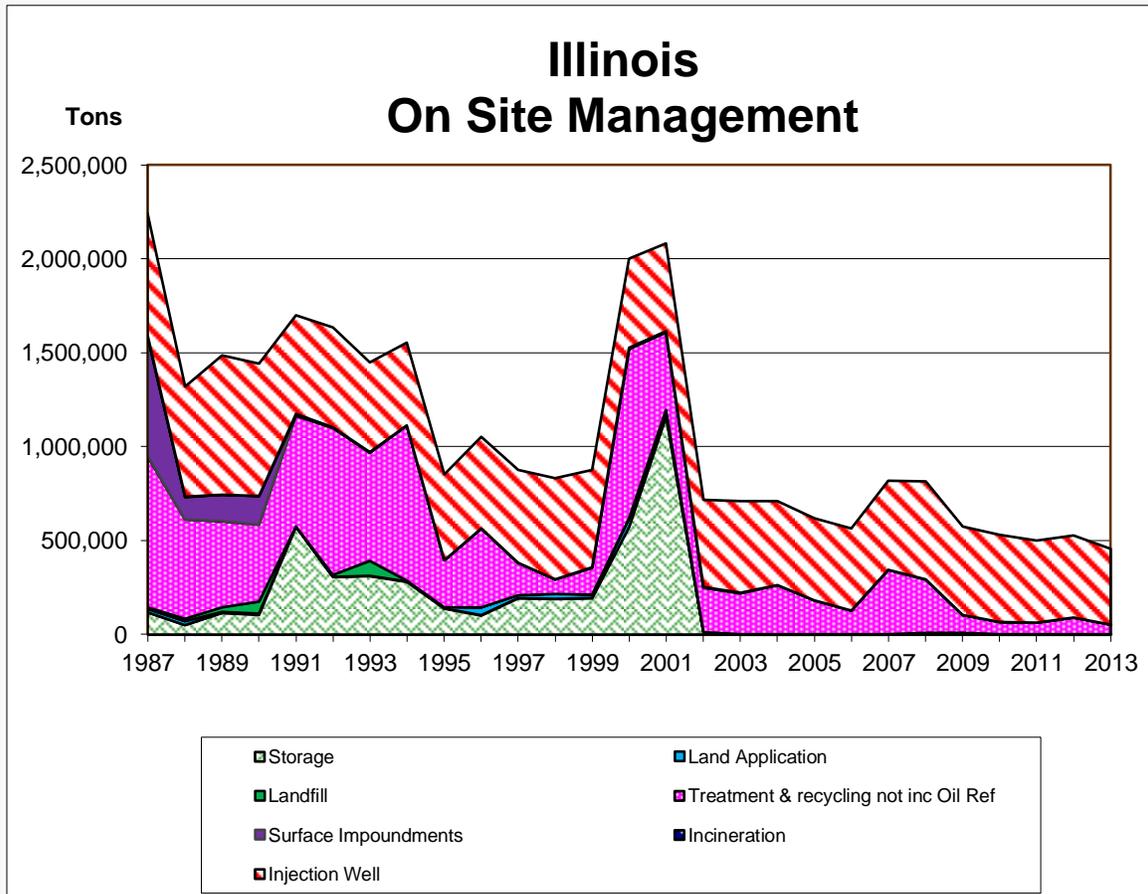


When this oil refinery waste is removed from the generation amounts, the resulting graph is depicted below.

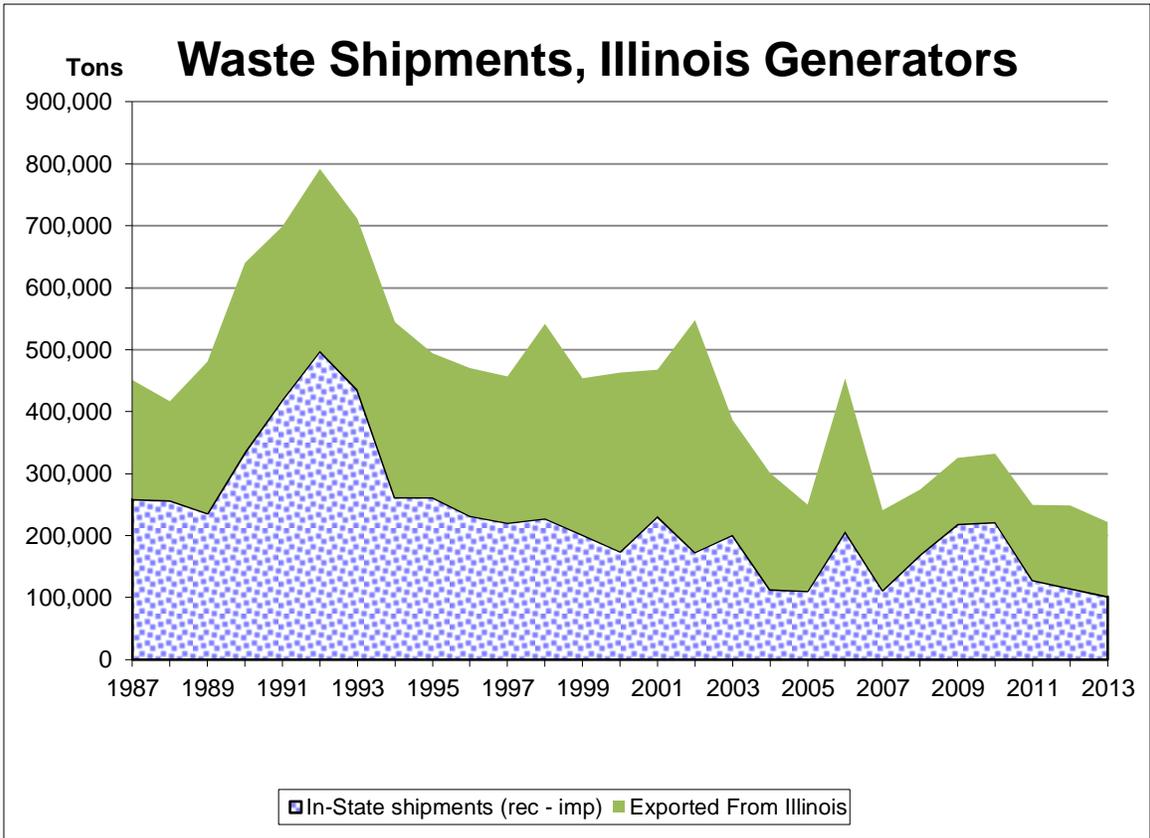


The following graph shows waste that was managed on the site of generation. A significant portion of the waste in every year is managed by a few companies who inject their wastes into deep wells. The next largest management method is treatment and recycling of wastes; however, most wastes managed in this manner are exempt from RCRA regulations and reporting. These wastes are instead managed under other regulations such as the Clean Water Act and the Clean Air Act. The amounts incinerated on site are so small they do not show up on the graph.

Also of significance is the decreased volume being stored more than 90 days at the end of the year. Most of this is the result of one company closing.



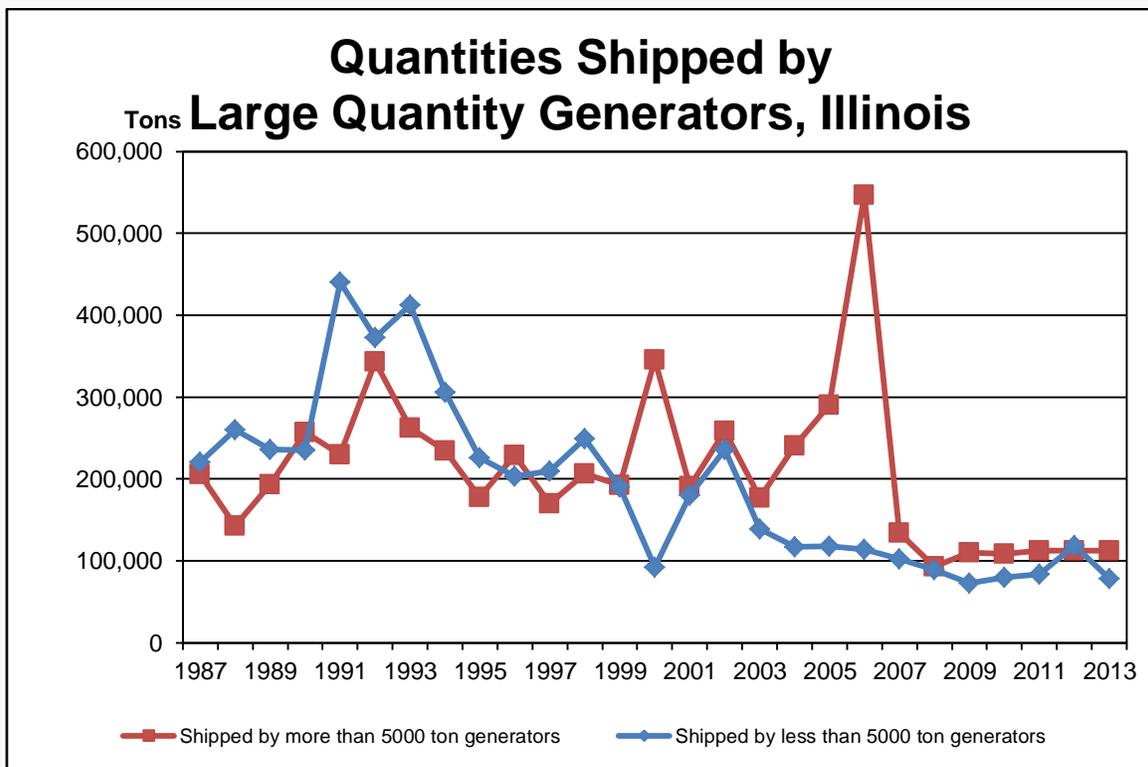
The following graph shows the amounts of hazardous waste reported by LQG who have shipped waste off-site, and whether it was managed within Illinois or in another state.



In each year, 40-80% of the waste shipments are from 10-15 companies that shipped over 5000 tons. Most results from process or production problems and from regular on-going processes, although remediation efforts can also impact the quantity

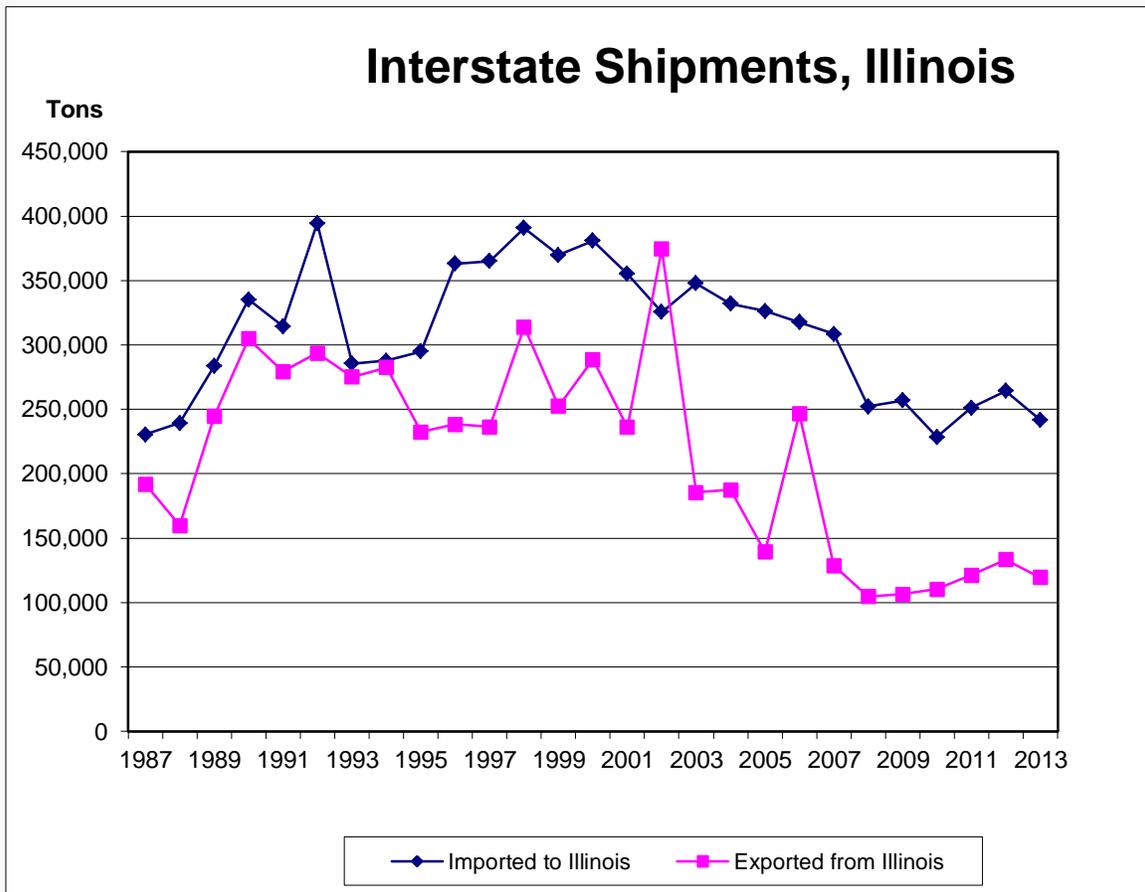
In the years covered by this report, 89 companies shipped over 5000 tons in one or more years but only one company shipped these amounts in every year. This company is a commercial waste management facility, and their waste is the residual from the treatment of wastes received from many companies.

Companies whose volume exceeded 5000 tons in any year were checked for several years before and after the large volume.

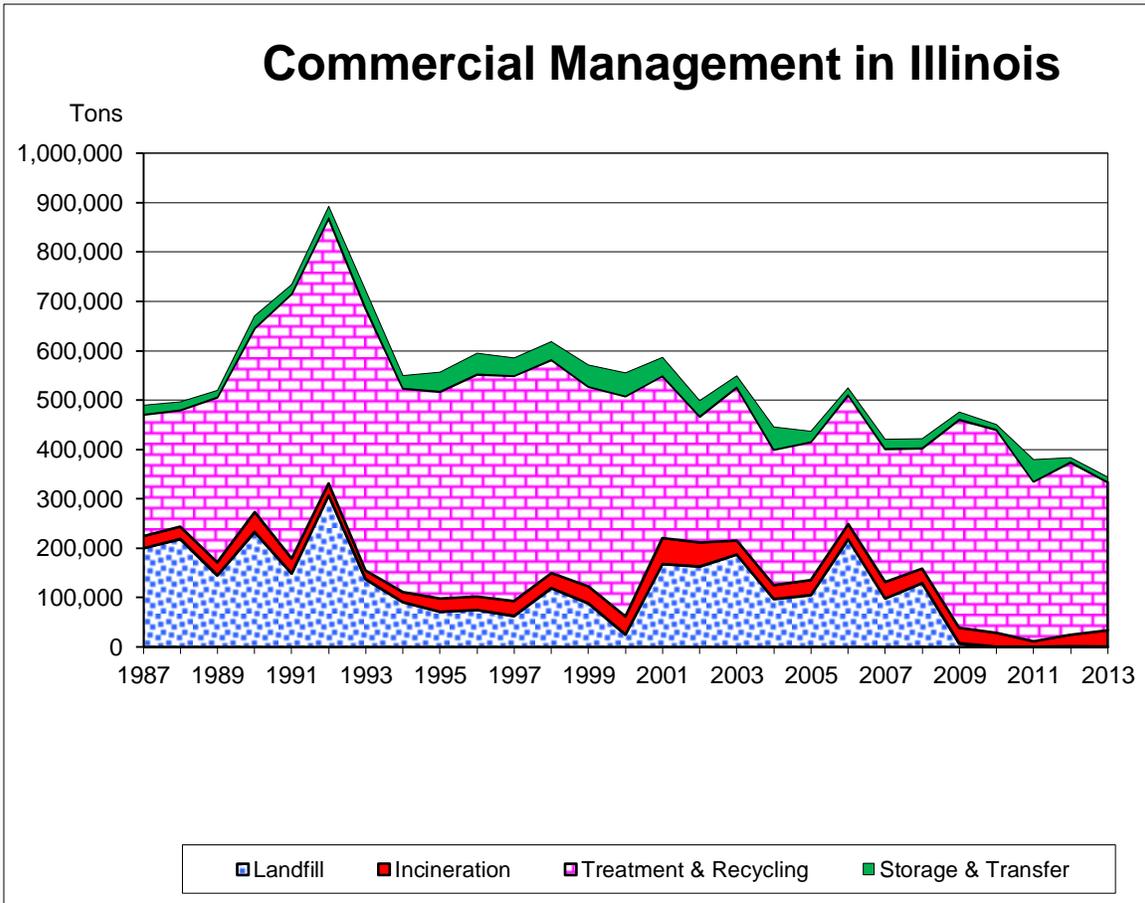


Commercial Waste Management

Illinois has several commercial management companies, who manage waste from numerous generators. Generators in Illinois may send their waste outside of Illinois for management, while generators in other states may send their waste to Illinois for management. Imports have exceeded exports in all but one year, although the difference is not significant in many years.



How is the waste at Illinois commercial facilities managed? The largest portion of the waste is managed at treatment and recycling facilities, while incineration is the smallest management method.



The number of Illinois companies who manage waste from other companies has decreased from 51 in 1987 to 13 in 2013. Of these 13, 8 managed 5000 or more tons in 2013, or 99% of the hazardous waste managed by commercial facilities in Illinois.
