2008
Ontario Hazardous Waste Report

Prepared by
Ministry of the Environment

February 2010

Protecting our environment. Ontario

PIBS #7268

Disclaimer:

The information on hazardous waste generator site locations, shipped quantities, waste classification and characterization is supplied by the generators, carriers and receivers through Ontario's hazardous waste generator registration and shipment (manifest) reporting system. This data is only as accurate as the information supplied.

For more information on this report, please contact the Ontario Ministry of the Environment Public Information Centre at 1-800-565-4923, 416-325-4000
TTY 1-800-515-2759 or picemail.moe@ontario.ca.

Your feedback on this report is welcome. You may contact the authors of the report at the Hazardous Waste Information Network Helpdesk at 1-866-494-6663 or helpdesk@hwin.ca.

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Glossary

Carrier: means the operator of a waste transportation system, including any person engaged in the off-site transportation of hazardous and/or liquid industrial waste by air, rail, highway or water. For a definition of Carrier, please refer to Regulation 347, Section 1.

Generator: means the operator of a facility or site that generates hazardous or liquid industrial waste. This includes both companies that initially produce or create waste and companies that accept waste from another company and subsequently ship some or all of that waste. For a definition of Generator, please refer to Regulation 347, Section 1.

Hazardous Waste: includes wastes that are corrosive waste, ignitable waste, leachate toxic waste, reactive waste, pathological waste, polychlorinated biphenyl (PCB) waste, radioactive waste and listed wastes in Regulation 347. For a definition of Hazardous waste and its composite wastes, please refer to Regulation 347, Section 1.

Landfill Leachate: means liquid that has passed through a landfill. This liquid can be a result of precipitation or liquid contained within the landfill waste and is generally contaminated with dissolved and suspended organics and inorganics.

Leachate: means liquid (such as water) that has passed through a medium (such as solid waste, soil, sand, etc.).

Leachate Toxic Waste: means a waste that produces leachate containing any of the contaminants listed in Schedule 4 of Regulation 347 at a concentration equal to or in excess of a prescribed limit as determined by a standardized laboratory test. For a definition of Leachate Toxic waste, please refer to Regulation 347, Section 1.

Liquid Industrial Waste: means waste that is liquid generated from an industrial, commercial or institutional facility and does not meet the definition of hazardous waste. For a definition of Liquid Industrial waste, please refer to Regulation 347, Section 1.

Listed Waste: means hazardous waste that is an acute hazardous waste chemical, a hazardous industrial waste, a hazardous waste chemical, or a severely toxic waste. For a definition of Listed Waste and its composite wastes, please refer to Regulation 347, Section 1.

Manifest: is a numbered document supplied by the ministry in either paper or electronic form to record the transfer of hazardous waste or liquid industrial waste off-site from a generator to a receiver. For a definition of Manifest, please refer to Regulation 347, Section 1.

Pathological Waste: includes human anatomical waste, any part of an animal carcass infected with a communicable disease, and other non-anatomical waste infected with a communicable disease. For a definition of Pathological Waste, please refer to Regulation 347, Section 1.

Receiver: means the operator of any facility to which waste is transferred by a carrier. This includes transfer stations, processing facilities and disposal sites. For a definition of Receiver, please refer to Regulation 347, Section 1.

Tonnage Fee Exempt Recycling Facility: means a facility that recovers materials for beneficial reuse from hazardous waste and the waste received by this facility must be registered and manifested, but the tonnage component of the fee is waived. These facilities are listed as “Ontario Recycling Facilities” on the Hazardous Waste Information Network (HWIN) website.

Transfer Station: means a waste disposal site used for the purpose of transferring waste from one vehicle to another for transportation to another waste disposal site. For a definition of Transfer Station, please refer to Regulation 347, Section 1.

1.0 Introduction

1.1 Purpose of Report

The 2008 Ontario Hazardous Waste Report is the ministry's first public report on the generation, shipment and disposal of hazardous and liquid industrial waste as well as performance measures. Its purpose is to summarize and present the results of Ontario's hazardous and liquid industrial waste program in 2008. The information in the report is intended to be presented in an easy to follow manner using illustrative graphs and tables, along with explanations of the terminology as well as performance measures for the hazardous waste program.

The report consists of four main sections:

1) The Waste Generation section presents an overview of waste generators that were registered as hazardous and liquid industrial waste generators with the ministry and/or shipped hazardous and liquid industrial waste in 2008. Information is presented to show the distribution of generators by location and sector. The 20 top generators by volume are identified.

2) The Waste Shipment section presents an overview of waste carriers that hauled hazardous and liquid industrial waste in 2008. The types of wastes shipped are broken down by waste characterization and waste class group, and include the quantities of imported and exported waste for 2008. The top 20 carriers by volume are listed along with the quantity of hazardous and liquid industrial waste each carrier shipped in 2008.

3) The Waste Receipt section presents an overview of waste receivers: how many there are; where they are located; what they are doing with the waste; and, who the top receivers of hazardous and liquid industrial waste were in 2008.

4) The Performance Measures section focuses on the following: number of hazardous waste approvals issued; significant non-compliance (SNC) as determined through inspections; and, the resolution of exception reports.

1.2 Background

The Ministry of the Environment (ministry) works to protect, restore and enhance the natural environment through legislation and enforcement, innovative programs and initiatives, strong partnerships, and public engagement.

Hazardous and liquid industrial wastes are primarily generated by industrial and manufacturing processes, as well as municipal activities; however, they can also be generated from the commercial and institutional sectors as well as households. Hazardous and liquid industrial wastes include a broad range of materials such as manufacturing residues (e.g. waste acids, contaminated sludges and complex chemicals), landfill leachate, biomedical wastes from the health care sector, spent photo finishing chemicals, waste pesticides, PCBs, motor oil, unused cleaning products from homes and discarded batteries. These wastes require special handling to reduce potential effects on human health and the environment.

The ministry's hazardous waste program ensures that both hazardous and liquid industrial wastes in Ontario are properly managed and that the environment is protected. The program is based on five key pillars:

A. Strong policy and regulatory framework;
B. Detailed monitoring and reporting system;
C. Effective regulatory oversight, including inspections and enforcement (compliance framework);
D. Education and outreach; and,
E. Continuous improvement.

Pillar A – Policy and Regulatory Framework

Ontario has a comprehensive legislative and regulatory framework to ensure that hazardous and liquid industrial waste is managed in an environmentally safe manner. This framework consists of the *Environmental Protection Act* (EPA) and regulations under the EPA, including Regulation 347 (General – Waste Management). This framework provides the ministry with the authority to regulate and enforce cradle-to-grave management (including collection, storage, transportation, treatment, recovery, recycling and disposal) of hazardous and liquid industrial waste throughout the province.

This cradle-to-grave management system includes the following requirements for generators, carriers and receivers of these wastes:

- Generators must register annually with the ministry between January 1 and February 15 and pay the associated generator registration fee. The generator registration process provides the ministry with information that enables it to develop waste profiles that promote effective waste monitoring and control.
- Carriers and receivers of hazardous and liquid industrial waste require approvals issued under Part V of the EPA before they are allowed to manage these types of waste.
- A manifest must be used to track the movement of liquid industrial and hazardous wastes from the generator to an off-site receiving facility. The manifest is a multi-copy shipping document that allows all parties involved to confirm the transfer of the waste to an appropriately approved facility.

Pillar B – Monitoring and Reporting System

Since 2002, the ministry has used its Hazardous Waste Information Network (HWIN) as the main information management tool for generator registration and manifest data. HWIN is the first electronic hazardous waste tracking system in North America. It is an online generator registration and manifesting system for generators, carriers and receivers of hazardous and liquid industrial waste, accessible at http://www.hwin.ca. HWIN provides hazardous waste generators with a convenient way to complete their annual generator registration and pay the associated generator registration fee.

The data the ministry collects are compiled into an annual public information dataset that contains tabulated data summaries on waste generators, carriers and receivers. These datasets are available upon request, as well as on the ministry's website: http://www.ene.gov.on.ca/en/publications/dataproducts/.

Pillar C – Compliance Framework

The ministry's hazardous waste program is monitored for effectiveness through various checks and balances. The ministry validates and reconciles hazardous waste management activities through information and reports generated from HWIN as well as audits and inspections.

All parties involved in the generation, transportation, treatment and disposal of hazardous and liquid industrial wastes in Ontario have a responsibility to make sure that the cycle is completed as required by regulation. All the components of the system are assessed and evaluated for compliance with the legislated requirements through the following measures: waste classification and registration by those that generate or create the waste; approvals issued by the ministry based upon strict standards for the safe transport, treatment and disposal of waste; and, the creation, submission and reporting of shipping documents.

The ministry's approach to compliance and enforcement is embodied in the ministry's Compliance Policy published on our website at http://www.ene.gov.on.ca/en/about/penalties/CompliancePolicy.pdf. This policy, sets out the framework designed to safeguard the public interest by ensuring that the ministry's response to matters of non-compliance is proportionate to the severity of the non-compliance.

On incidents or matters of non-compliance relating to hazardous and liquid industrial waste, the ministry's legislation authorizes a variety of tools to promote compliance. The response to any incident must be proportionate to the risk presented by the incident, the compliance history, and the response of the violator to the incident. Tools include education and outreach, warnings, orders and prosecutions. Incidents reported to the ministry or identified by the ministry vary significantly in severity. Each incident is evaluated by staff on a case-by-case basis, using the Informed Judgment Matrix ("IJM"), a tool highlighted in the Compliance Policy to determine the appropriate response.

There are two primary courses of action that may be taken to address an incident that involves a violation:

- The abatement approach, where measures are taken to bring about and to maintain compliance or to prevent, reduce or eliminate the risk of adverse impact to human health or the natural environment.
- The enforcement approach, which involves prosecuting the responsible person who has committed an offence. When an incident does not involve a violation but has the potential to adversely affect human health or the natural environment, abatement tools such as the request for an abatement plan or the issuance of an order may be used to resolve the incident.

The ministry is very active in the regulatory oversight undertaken for the hazardous waste program. Through a risk-based approach:

- Selected generators who generate the most hazardous types of waste and the highest volumes of hazardous waste are inspected and assessed for compliance;
- Companies that transport waste must ensure that their staff are trained and understand the laws as they relate to waste management in Ontario;
- Facilities that ultimately receive hazardous waste for further processing and treatment facilities are regularly inspected.

Through the policies and procedures in place and ongoing commitment to program improvements, the ministry ensures that the compliance framework effectively concentrates resources to protect human health and the environment.

Pillar D – Education and Outreach

The ministry undertakes consistent education and outreach with its stakeholders. The ministry maintains a network of regional offices which offer frontline program delivery and services to the regulated community. The ministry also regularly offers specialized outreach. For example, when the ministry introduced the Land Disposal Restrictions (LDR) program in 2005, training sessions were offered to the regulated community. Several fact sheets were also prepared that provide guidance to stakeholders on the different aspects of the LDR program. Furthermore, the ministry maintains a comprehensive HWIN website which provides a range of resources to the community.

Pillar E – Continuous Improvement

The ministry is continually reviewing its hazardous waste framework in an effort to seek ways to improve both the way hazardous and liquid industrial waste is managed in Ontario and the way the ministry delivers programs. Current initiatives include:

Land Disposal Restrictions (LDR) Program

Ontario's LDR program was put in place to strengthen the regulatory framework for hazardous waste management, and to enhance the harmonization of the province's hazardous waste rules with those of the United States (U.S.), our largest hazardous waste trading partner.

In August 2005 the LDR regulation was filed. This regulation amended Ontario Regulation 347 (General Waste) made under the EPA. The regulation prohibits the land disposal of untreated hazardous waste unless it meets specific treatment requirements to reduce the toxicity and/or mobility of its hazardous components.

The regulation was phased in to allow industry time to prepare for the new requirements and respond to Ontario's increased demand for treatment capacity, to reduce the financial burden on Ontario's industry, and to provide generators the opportunity to develop changes to their business that will promote waste reduction and recycling. The first treatment requirements took effect on August 31, 2007. The remainder of the requirements took effect on December 31, 2009.

Update of Guideline C-4: The Management of Biomedical Waste in Ontario

In January, 2010, the ministry posted the updated *Guideline C-4, The Management of Biomedical Waste in Ontario.* The Guideline was updated to ensure that it is consistent with revised federal guidelines, standards and regulations dealing with the management of biomedical waste.

For generators, this guideline describes best management practices to be followed to minimize the impact of biomedical waste on the environment through appropriate packaging, segregation, treatment, storage and disposal methods.

For carriers and receivers of biomedical waste, the guideline describes best management practices and becomes part of the ministry's review of applications for Certificates of Approval for waste management systems and waste disposal sites under Part V of the EPA, as well as its setting of conditions of approval.

The underlying purpose of this guideline is to preserve the integrity of the environment and reduce potential public health risk through proper management of biomedical waste.

Municipal Hazardous or Special Waste (MHSW) Program

On September 22, 2009, the Minister of the Environment approved the consolidated Municipal Hazardous or Special Waste (MHSW) program plan. It expands on the current MHSW program (Phase 1) which started July 1, 2008. The MHSW program includes wastes discarded in the residential stream and small quantities in the business stream. The program currently collects wastes such as paints, solvents, used oil filters and non-rechargeable batteries. When expanded, it will include wastes such as fluorescent bulbs, rechargeable batteries, pharmaceuticals and aerosol containers. The program aims to divert these wastes from being disposed in landfills or sewers through a producer-responsibility diversion program. The consolidated program is

scheduled to commence in July 2010.

The consolidated program makes industry responsible for full program costs, including the collection and management of wastes, and is a good example of industry being responsible for the products it produces.

A website called "Do What You Can" (www.dowhatyoucan.ca) allows consumers to obtain information regarding local MHSW diversion options by entering postal code information.

Toxics Reduction Strategy

Ontario's Toxics Reduction Strategy focuses on reducing the use of toxic substances at the front end, augmenting the traditional "end of pipe" approach to managing chemical releases. The *Toxics Reduction Act, 2009* passed by the Ontario Legislature in June 2009 is at the core of the Toxics Reduction Strategy. The recently promulgated Toxics Reduction Regulation under the *Act* requires regulated facilities to account for the toxic materials they use, create and release beginning January 1, 2010. This regulation is a major step towards meeting the province's commitment to reduce toxic substances in our air, land and water.

For more information on hazardous waste regulations please visit:
http://www.ene.gov.on.ca/en/land/hazardouswaste/hazardouswaste.php

2.0 Waste Generation

2.1 Number of Generators

In 2002, Regulation 347 was amended to require that all hazardous and liquid industrial waste generators register with the ministry each year. Annual registration helps the ministry to actively monitor and assess the safety of hazardous and liquid industrial waste handling from its generation point to its final destination. Table 2.1 shows a total of 25,559 generators registered with the ministry in 2008.

The majority (60%) registered for both hazardous and liquid industrial waste, while the remainder was relatively evenly split between hazardous waste only and liquid industrial.

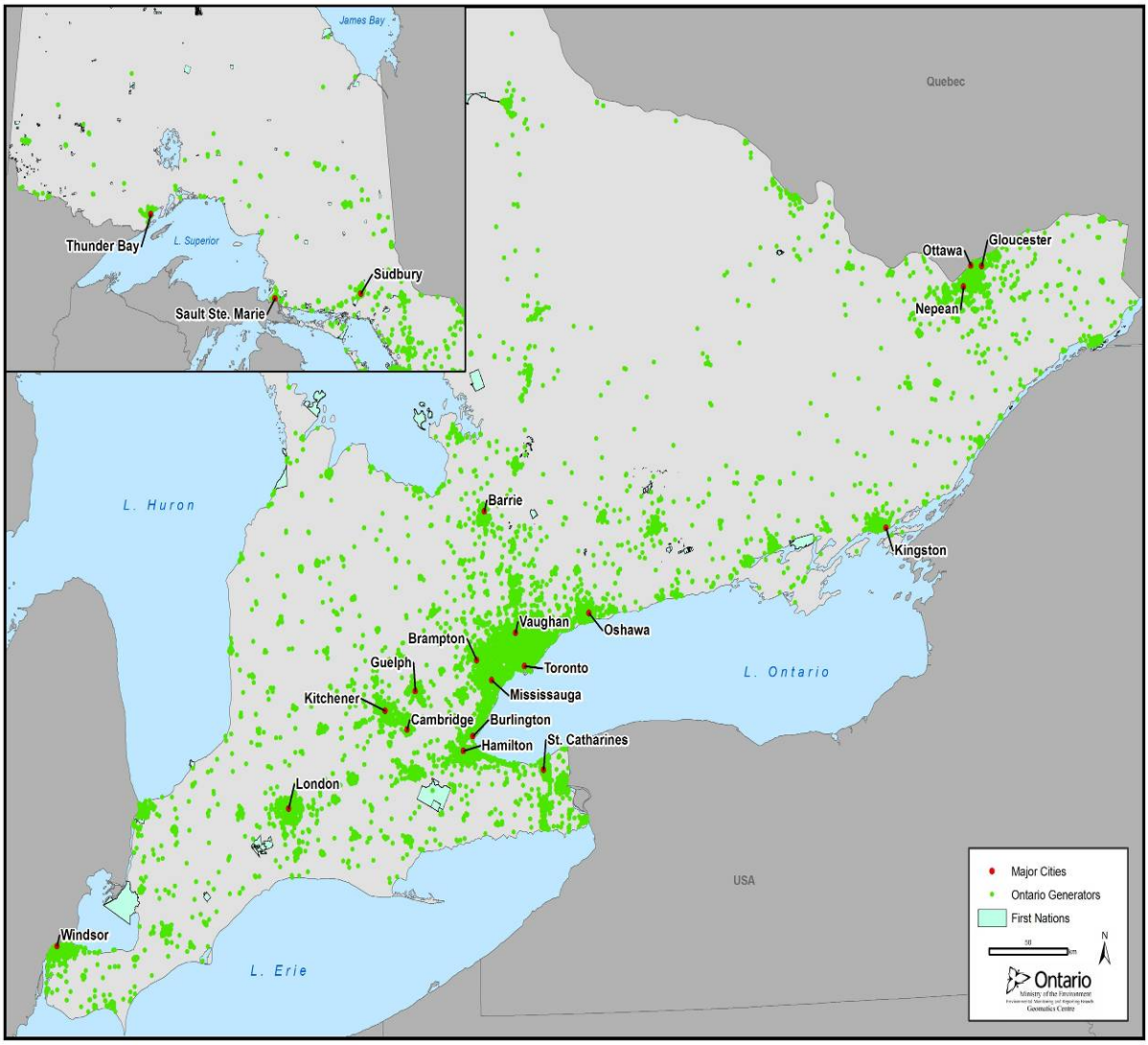
Table 2.1 – Number of Registered Generators, 2008

Total Number of Generators Registered for Hazardous and/or Liquid Industrial Waste	Number of Generators Registered for Hazardous and Liquid Industrial Waste	Number of Generators Registered for Hazardous Waste only	Number of Generators Registered for Liquid Industrial Waste only
25,559	15,455	4,753	5,351

2.2 Location of Ontario Waste Generators

Figure 2.1 shows the location of each generator in Ontario for the year 2008. The highest concentrations of generators are in urban areas of the province.

Figure 2.1 – Location of Ontario Waste Generators, 2008



The same pattern observed in Figure 2.1 can be found in Table 2.2. The counties with the largest number of generators also tend to be the counties with the largest population concentrations.

Table 2.2 – Number of Waste Generators Registered in Ontario by County, 2008

County	Number of Generators	County	Number of Generators
Metropolitan Toronto	3494	Stormont Dundas Glengarry	235
Peel (R. M.)	2453	Northumberland	228
York (R. M.)	2148	Nipissing District	215
Ottawa Carlton (R.M.)	1477	Perth	215
Waterloo (R. M.)	1243	Grey	209
Halton (R. M.)	1148	Kenora District	192
Hamilton-Wentworth (R. M.)	1038	Cochrane	191
Niagara (R. M.)	1024	Muskoka District	177
Durham (R. M.)	858	Huron	175
Simcoe	858	Sudbury (R. M.)	169
Essex	761	Elgin	166
Middlesex	750	Dufferin	151
Wellington	596	Prescott & Russell	141
Thunder Bay	449	Bruce	130
Brant	377	Lanark	129
Lambton	365	Timiskaming District	108
Hastings	317	Victoria	100
Frontenac	313	Parry Sound District	90
Sudbury District	300	Lennox And Addington	87
Oxford	294	Rainy River District	78
Peterborough	282	Prince Edward	57
Kent	276	Haliburton	47
Algoma District	250	Timmins Crawford	38
Haldimand-Norfolk (R.M.)	250	Manitoulin Island District	28
Renfrew	249	Matheson Twp	20
Leeds & Grenville	247		

Table 2.3 shows 32 other provinces and states that generated waste that shipped to Ontario. Quebec had, by far, the greatest number of generators, exceeding the second place jurisdiction, New York, tenfold.

Table 2.3 – Number of Waste Generators Registered Outside of Ontario by State/Province, 2008

Outside of Ontario	Number of Generators	Outside of Ontario	Number of Generators
Quebec	240	Massachusetts	4
New York	24	Kentucky	4
Nova Scotia	22	West Virginia	3
Ohio	20	Texas	3
Alberta	19	Tennessee	2
Manitoba	18	Nunavut	2
New Brunswick	15	North Carolina	2
Michigan	15	Connecticut	2
British Columbia	15	Washington	1
Saskatchewan	11	Virginia	1
New Jersey	9	South Carolina	1
Pennsylvania	8	Northwest Territories	1
Newfoundland	6	Maryland	1
Illinois	6	Delaware	1
Indiana	5	Colorado	1
Prince Edward Island	4	California	1

2.3 Sectors by North American Industry Classification System (NAICS) Code

During registration, each generator is required to specify what type of business they operate using the North American Industry Classification System (NAICS). *See Appendix A for a list of sectors by NAICS Code.*

In the figures below, generators that registered in 2008 are grouped by sector as indicated by their primary NAICS code. The tables provide information on the number of generators by sector as well as the percentage each sector contributes to the total waste shipped in Ontario.

The manufacturing sector represents the largest contributor to the total number of generators.

Figures 2.2 and 2.3 present data for all hazardous and liquid industrial waste generators in 2008. Figure 2.2 shows that manufacturing sector represents by far the greatest number of generators (7,228), whereas Figure 2.3 shows that the waste management and remediation services sector shipped the most hazardous and liquid industrial waste (45.83%). This sector is in the business of handling hazardous and liquid industrial waste.

Figure 2.2 – Hazardous and Liquid Industrial Waste Generator per Sector by Number of Generators, 2008

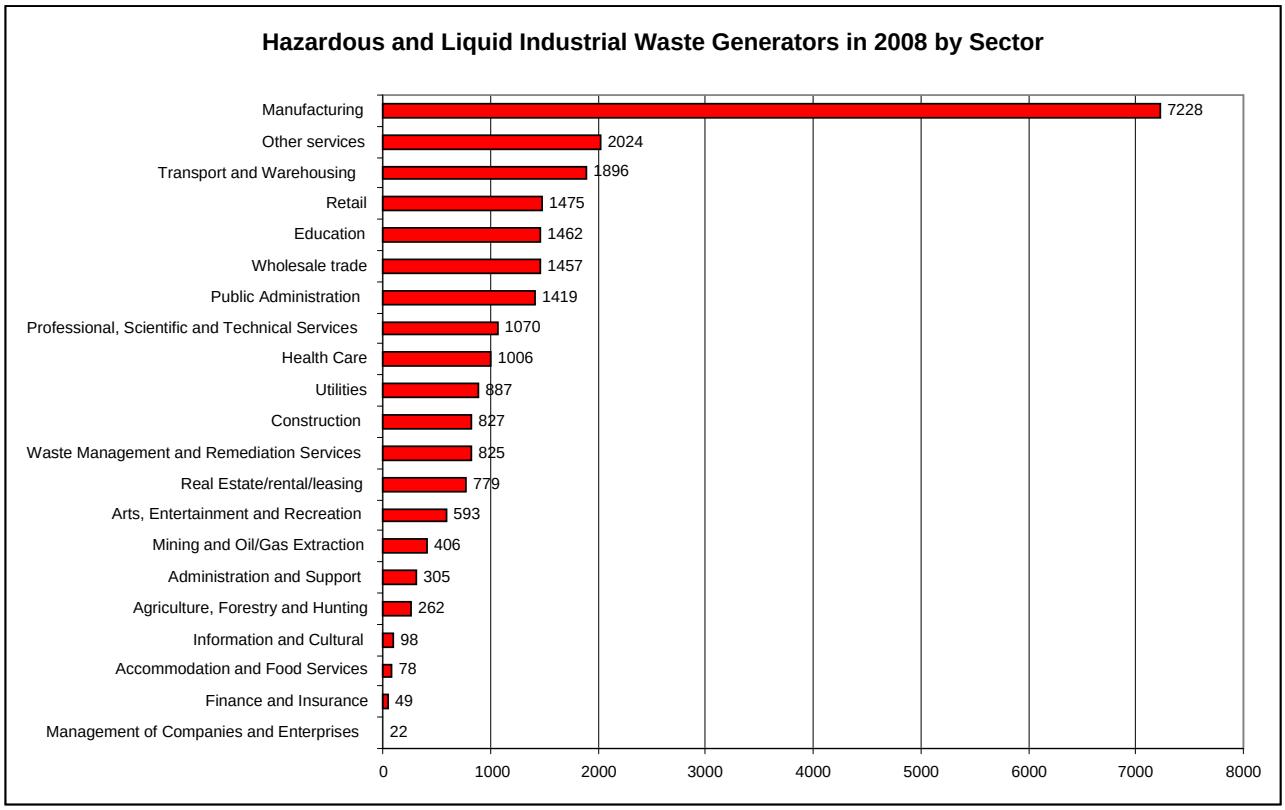
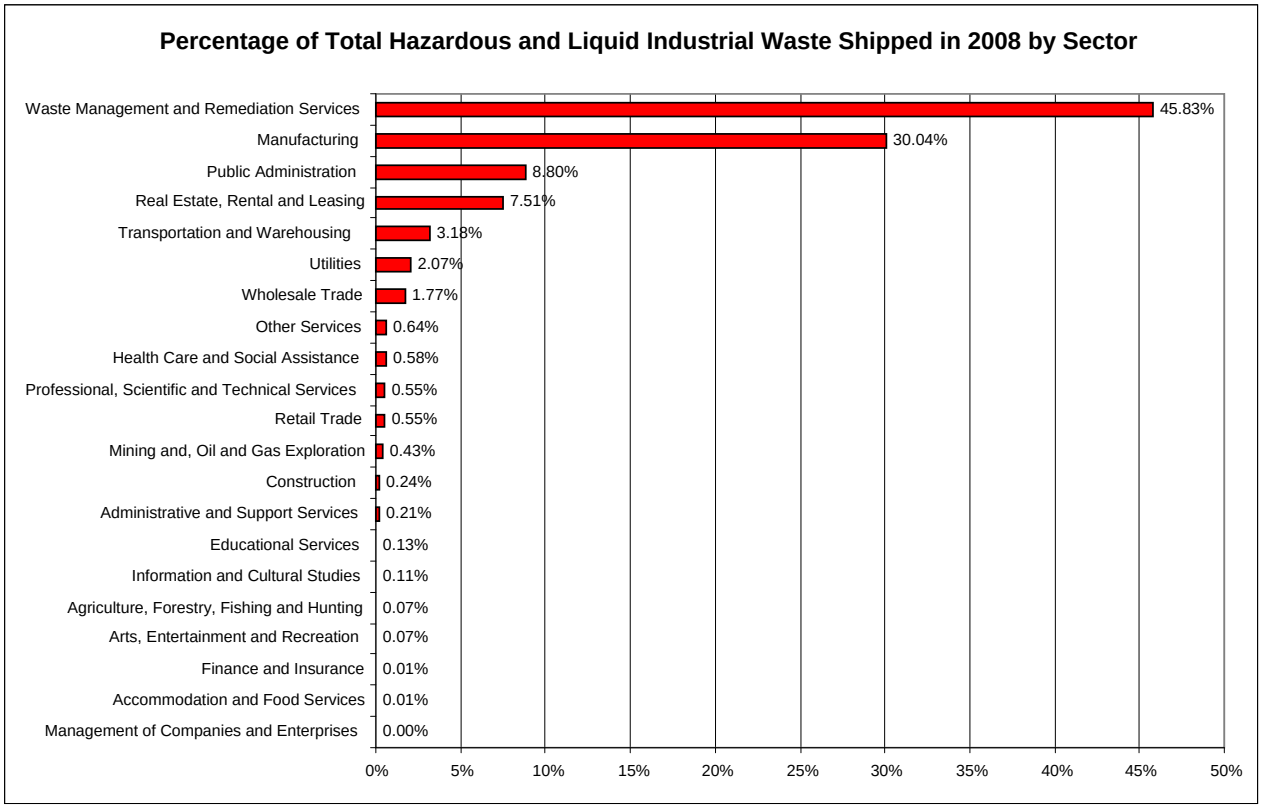


Figure 2.3 – Hazardous and Liquid Industrial Waste Quantity Shipped per Sector in 2008, by Percentage of Total Quantity Shipped



Figures 2.4 and 2.5 show that manufacturing is still the dominant sector by number of hazardous waste generators (5,935). Three sectors – waste management and remediation services, manufacturing, and real estate rental and leasing – account for over 90% of the quantity of hazardous waste shipped.

Figure 2.4 – Hazardous Waste Generators per Sector by Number of Generators, 2008

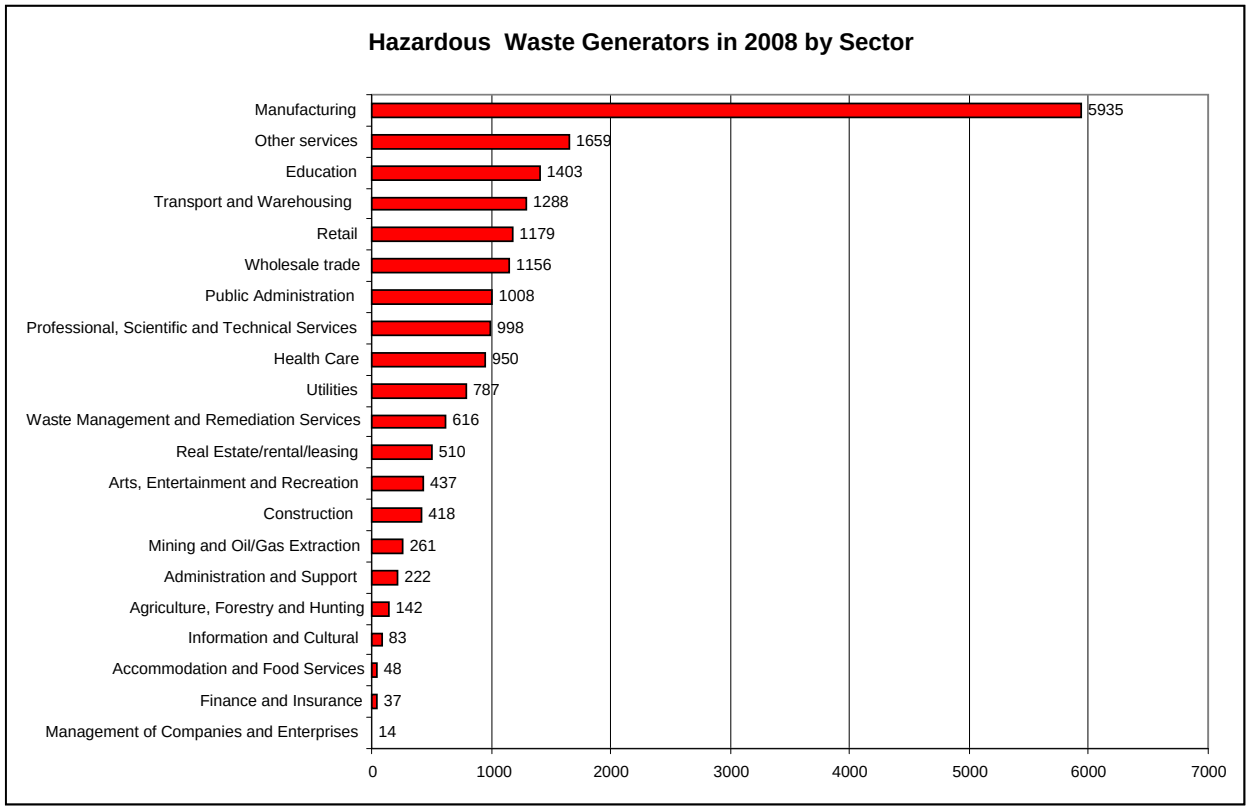
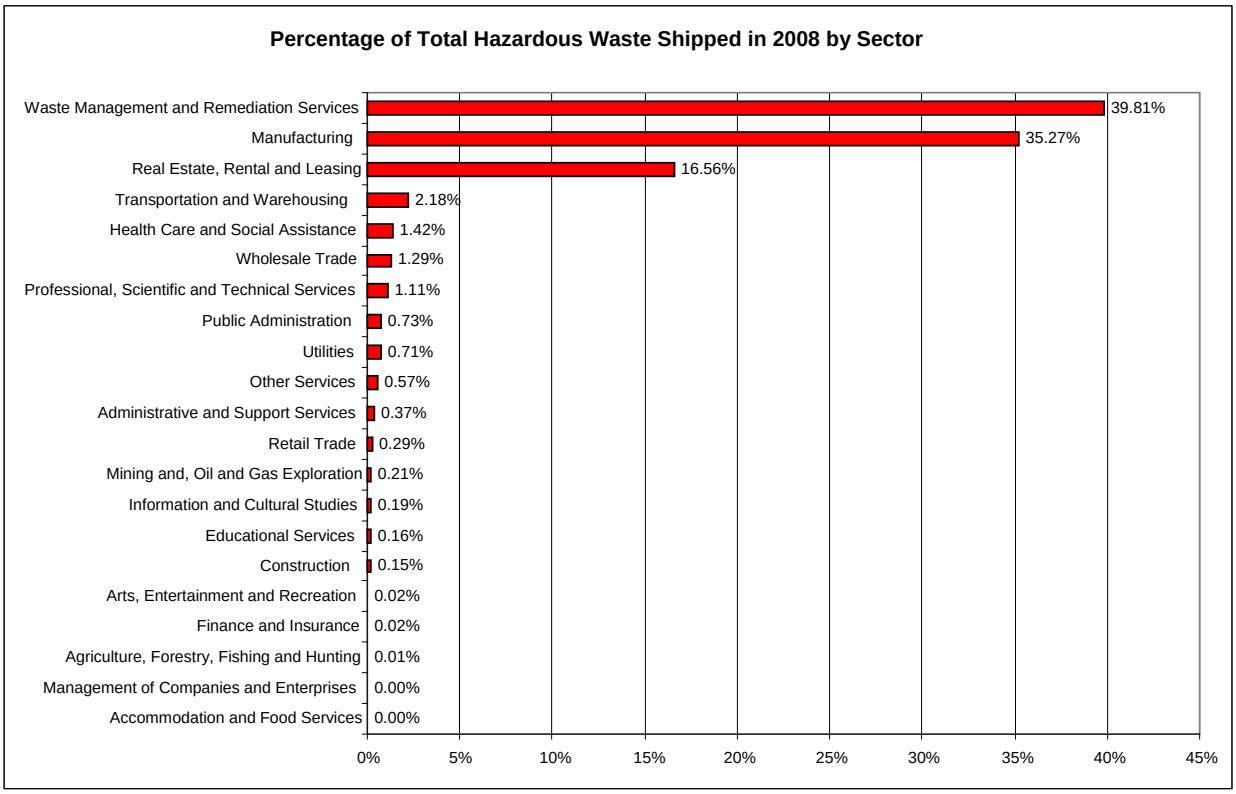


Figure 2.5 – Hazardous Waste Quantity Shipped per Sector by Percentage of Total Quantity Shipped, 2008



Figures 2.6 and 2.7 show that for liquid industrial waste, the sectors are similar to hazardous waste, with manufacturing having the greatest number of generators (6,348). Three sectors – waste management and remediation services, manufacturing, and public administration – account for over 90% of liquid industrial waste by quantity shipped. The public administration sector accounts for about 14%. This waste is likely landfill leachate which is regularly taken to waste water treatment plants from municipal landfills.

Figure 2.6 – Liquid Industrial Waste Generators per Sector by Number of Generators, 2008

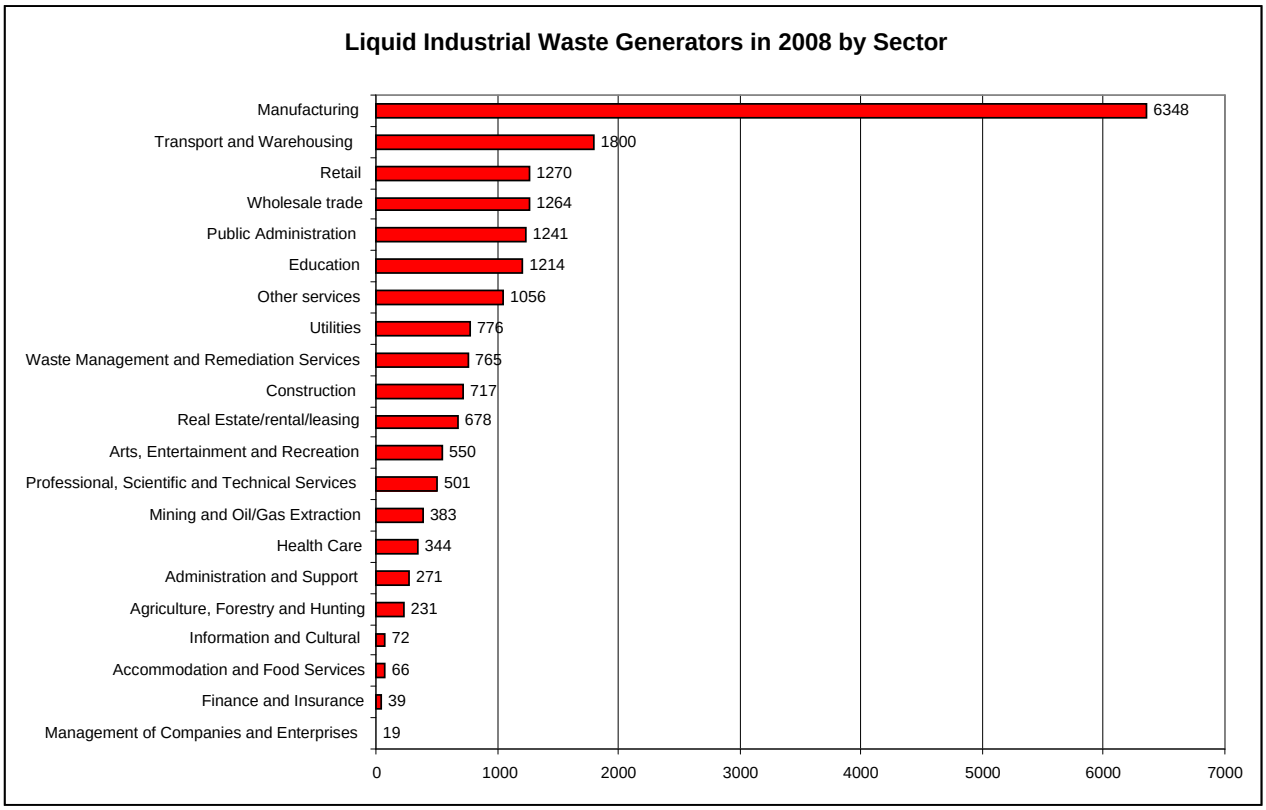
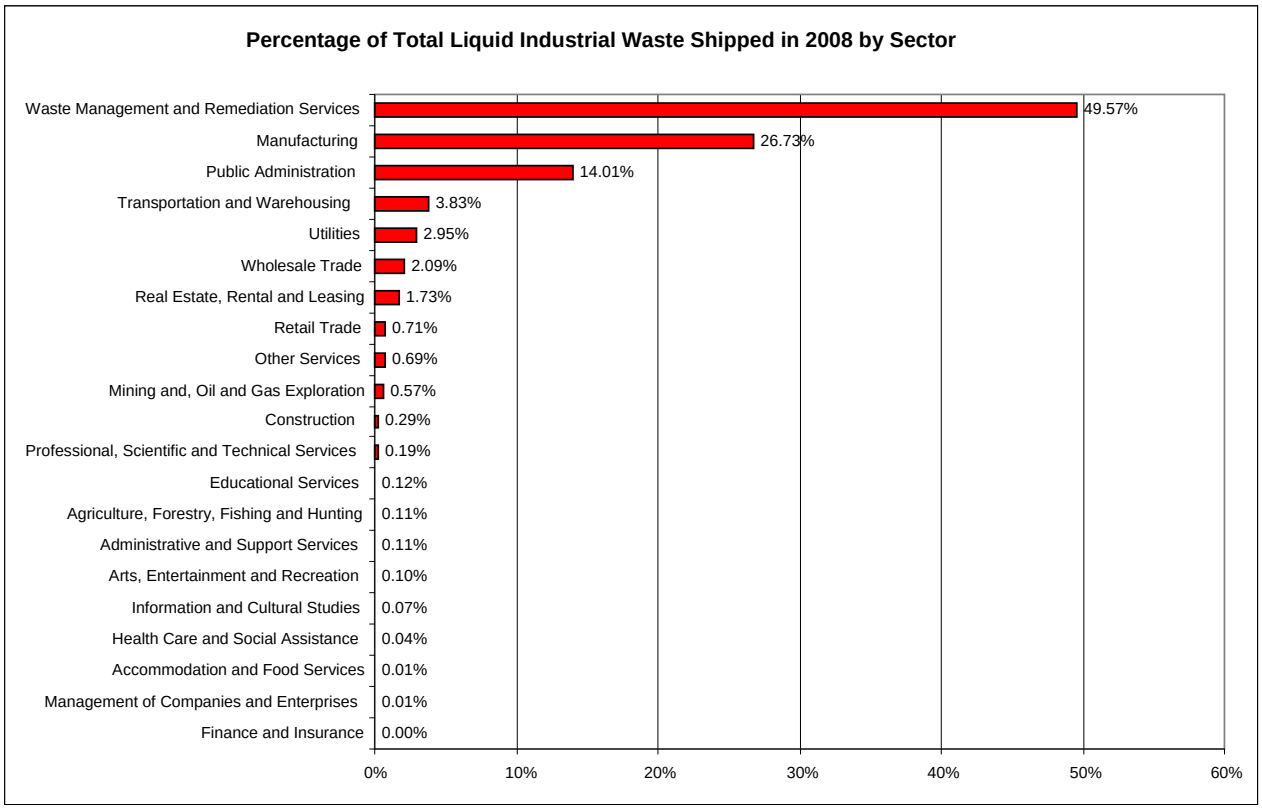


Figure 2.7 – Liquid Industrial Waste Quantity Shipped per Sector by Percentage of Total Quantity Shipped, 2008



2.4 Top Generators by Quantity of Waste Shipped

Tables 2.4 and 2.5 list the top 20 generators of hazardous waste and top 20 generators of liquid industrial waste, respectively, by quantity of waste shipped in 2008 excluding Ontario transfer stations and transfer processing stations.

While transfer and transfer/processing stations must register under Regulation 347 as "generators," they ship waste from their facilities that consists primarily of an accumulation of hazardous waste received from other generators. Transfer and transfer/processing stations are therefore excluded from the list below, as it is intended to represent the generators who create the most hazardous and liquid industrial waste.

Twelve of the top 20 hazardous waste generators are located out of province. Clean Harbors Environmental Services Inc. and Safety-Kleen Systems Inc. operations in the U.S. represent the two top generators on the list. Both companies are part of the waste management industry with the majority of hazardous waste from Safety-Kleen in Quebec and New York going to a Tonnage Fee Exempt Recycling Facility in Ontario.

Table 2.4 – Top 20 Generators of Hazardous Waste (Excluding Ontario Transfer and Transfer/ Processing Stations), 2008

Generator Name	County/Province or State	Quantity Shipped (Tonnes)	Percentage of waste sent to Tonnage Fee Exempt Recycling Facilities *
Clean Harbors Environmental Services, Inc.	Michigan	80,617	>1%
Safety-Kleen Systems, Inc.	New York	59,313	100%
Imperial Oil Ltd.	Haldimand-Norfolk (R.M.)	30,001	90%
Arcelormittal Dofasco Inc.	Hamilton-Wentworth (R.M.)	15,051	0%
Gerdau Ameristeel Whitby	Durham (R.M.)	12,374	0%
Everclear of Ohio	Ohio	12,374	>1%
Clean Harbors Quebec, Inc.	Quebec	11,496	0%
ConocoPhillips Co.	New Jersey	10,654	0%
Ivaco Rolling Mills 2004 LP	Prescott & Russell	7,938	>1%
Clean Harbors Quebec Inc.	Quebec	7,765	0%
Safety-Kleen Canada Inc.	Quebec	7,389	85%
Imperial Oil Ltd.	Lambton	6,959	0%
Chemtura Canada Co.	Toronto	6,522	0%
Plasco Energy Group	Ottawa-Carleton (R.M.)	6,490	0%
Ormet Primary Aluminum Corp.	Ohio	5,635	0%
Newalta Corp.	Quebec	5,536	>1%
Century Aluminum of Kentucky	Kentucky	5,510	0%
Spring Grove Resource Recovery	Ohio	5,374	0%
Petro-Chem Processing Group of Nortru, Ltd.	Michigan	4,461	0%
Chemtura Canada Co.	Waterloo (R.M.)	4,004	0%

** Rounded to the nearest per cent.*

Landfill sites make up the majority of the top generators of liquid industrial waste in Ontario. Leachate from the landfill is collected and generally sent to water pollution control plants for treatment and discharge. In Table 2.5, 12 of the top 20 generators are landfills.

Table 2.5 – Top 20 Generators of Liquid Industrial Waste (Excluding Ontario Transfer and Transfer/Processing Stations), 2008

Generator Name	County/Province or State	Quantity Shipped (Tonnes)	Percent of Waste that is Landfill Leachate*
Ottawa, City of	Ottawa-Carleton (R.M.)	159,552	100%
Essex-Windsor Solid Waste Authority	Essex	87,680	100%
Halton, Regional Municipality of	Halton (R.M.)	65,112	100%
London, City of	Middlesex	62,272	100%
Haldimand-Norfolk, Regional Municipality of	Haldimand-Norfolk (R.M.)	53,449	100%
Waste Management of Canada Corp.	York (R.M.)	37,966	100%
Essex-Windsor Solid Waste Authority	Essex	29,921	100%
Oxford, County of	Oxford	29,829	100%
Northumberland, County of	Northumberland	27,231	100%
Transalta Energy Corporation	Lambton	22,657	0%
Waste Management Of Canada Corp.	Lambton	19,774	100%
Faraday, Corporation of The Township of	Hastings	19,696	100%
Nestle Waters Canada	Wellington	18,962	0%
Waste Management of Canada Corp.	Lambton	17,575	100%
Owen Sound, Corp. of The City of	Grey	17,454	100%
Waste Services (Ca) Inc.	Ottawa-Carleton (R.M.)	17,295	100%
Simcoe, County of	Simcoe	17,283	100%
General Motors of Canada Ltd.	Niagara (R.M.)	14,322	0%
Abitibi-Consolidated Company of Canada	Rainy River District	13,836	0%
Mid-Huron Landfill Site Board	Huron	12,723	100%

** Rounded to the nearest per cent.*

3.0 Waste Shipment

3.1 Number of Carriers

In the province of Ontario, all operators of a waste transportation system (carriers) are required to have a valid Certificate of Approval in order to transport hazardous and liquid industrial waste within the province. Regulation 347 states that all carriers in possession of hazardous and/or liquid industrial waste must ensure that the waste was generated from a facility or site that is registered with the ministry as a hazardous waste generator.

Table 3.1 shows that there were 303 hazardous and liquid industrial waste carriers active in Ontario in 2008. The majority (61%) of approved carriers operating in Ontario haul both hazardous and liquid industrial waste.

Table 3.1 – Number of Approved Carriers, 2008

Total Number of Carriers that Hauled Hazardous and/or Liquid Industrial Waste	Number of Carriers that Hauled Hazardous and Liquid Industrial Waste	Number of Carriers that Hauled Hazardous Waste Only	Number of Carriers that Hauled Liquid Industrial Waste Only
303	186	61	56

3.2 Total Quantity of Waste Shipped

Table 3.2 lists the total quantity of both hazardous and liquid industrial waste shipped in Ontario in 2008. Of the two million tonnes shipped, two-thirds was liquid industrial waste.

Since the shipments originating from transfer stations contain waste that was previously shipped to the transfer station, the same waste may be shipped twice and sometimes multiple-counts occur for the same waste. To better understand the amount of waste generated within the province and imported into the province during 2008, Table 3.2 shows the quantities of first shipments of waste which exclude all shipments from waste transfer and transfer/processing stations.

Table 3.2 – Quantity of Hazardous and Liquid Industrial Waste Shipped, 2008 (Tonnes)

	Hazardous Waste	Liquid Industrial Waste	Total Hazardous & Liquid Industrial Waste
Waste Shipped	718,519	1,362,873	2,081,392
Waste Shipped (First Shipment Only)	551,955	1,179,761	1,731,716

3.3 Waste Classes

Ontario waste classes are a vital tool in the tracking and management of hazardous and liquid industrial waste. Generators are required to identify the appropriate waste class for each hazardous or liquid industrial waste they generate in their annual generator registration. The generator is also required to identify each waste contained in a shipment on the shipment's manifest document. The carrier transporting the waste shipment must have the waste classes they are transporting listed on their Certificate of Approval. Likewise, the receiver of the waste shipment must be authorized to receive the classes of waste shipped to them. Using the waste class allows for a better understanding of the nature of the waste and the risks involved in its shipment.

In Ontario, the Ministry of the Environment identifies 53 waste classes. These waste classes are divided into three major categories: inorganic wastes; organic wastes; and, other wastes. In turn, these three major categories are further subdivided into waste class groups and individual waste classes. *Refer to Appendix B for a listing of the waste classes with their description.*

Table 3.3 and Figure 3.1 provide a breakdown of the hazardous and liquid industrial waste shipped in 2008 by waste class group. Figures 3.2 and 3.3 show the breakdown by waste class for hazardous waste and liquid industrial waste separately.

Table 3.3 – Quantity of Hazardous and Liquid Industrial Waste Shipped by Waste Class Group, 2008 (Tonnes)

Waste Class Group*	Hazardous Waste	Liquid Industrial Waste
Acid Solutions	67,176	7,859
Alkaline Solutions	45,587	18,944
Aqueous Solutions	22,660	32,721
Miscellaneous Inorganic Wastes and Mixed Wastes	131,301	835,833
Non-halogenated Spent Solvents	63,845	20,885
Fuels	13,825	11,475
Resins and Plastics	2,534	8,736
Halogenated Organic Wastes	30,657	784
Oily Wastes	204,274	383,000
Miscellaneous Organic Wastes and Mixed Wastes	80,067	42,582
Processed Organic Wastes from Transfer Stations	42,718	49
Plant and Animal Wastes	11,559	0
Explosive Manufacturing Wastes	0	0
Compressed Gasses	2,315	4.9

Figure 3.1 – Proportion of Hazardous and Liquid Industrial Waste Shipped by Waste Class Group, 2008

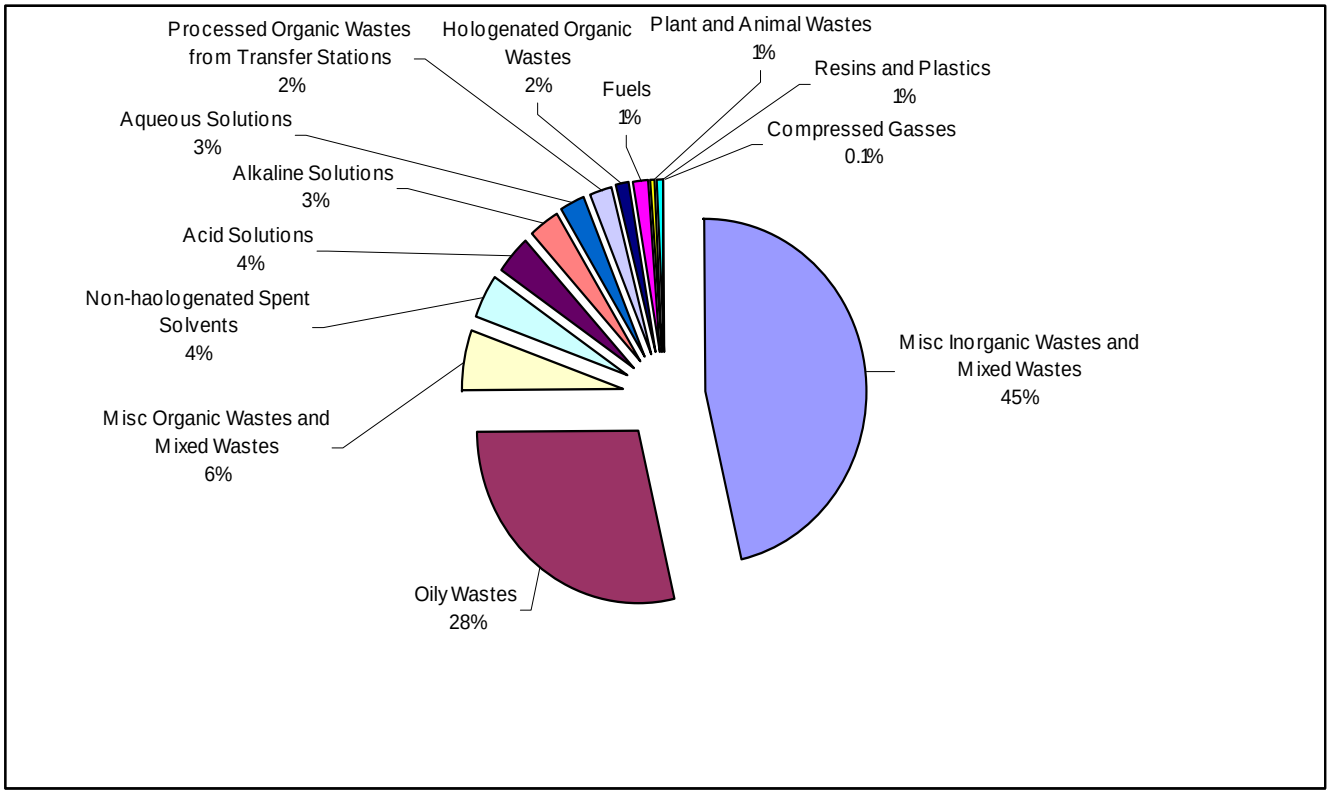


Figure 3.2 – Proportion of Hazardous Waste Shipped by Waste Class Group, 2008

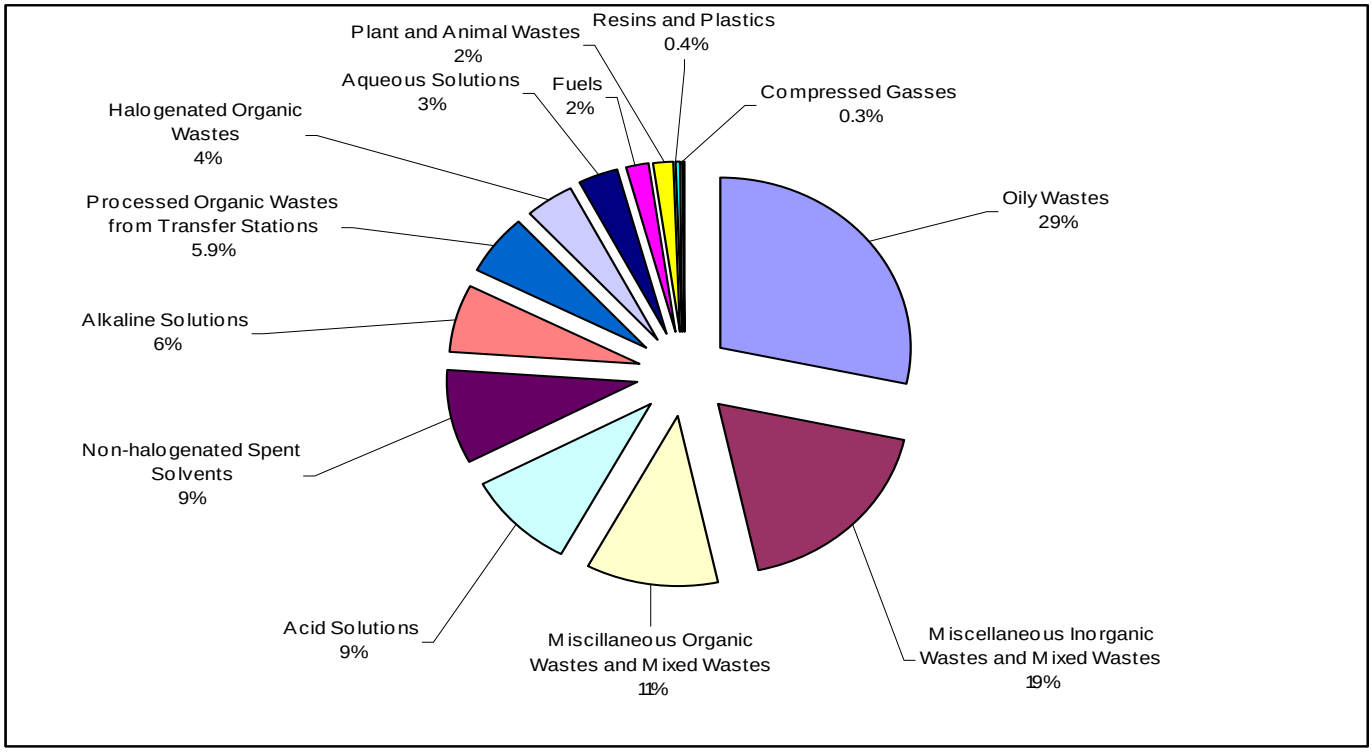
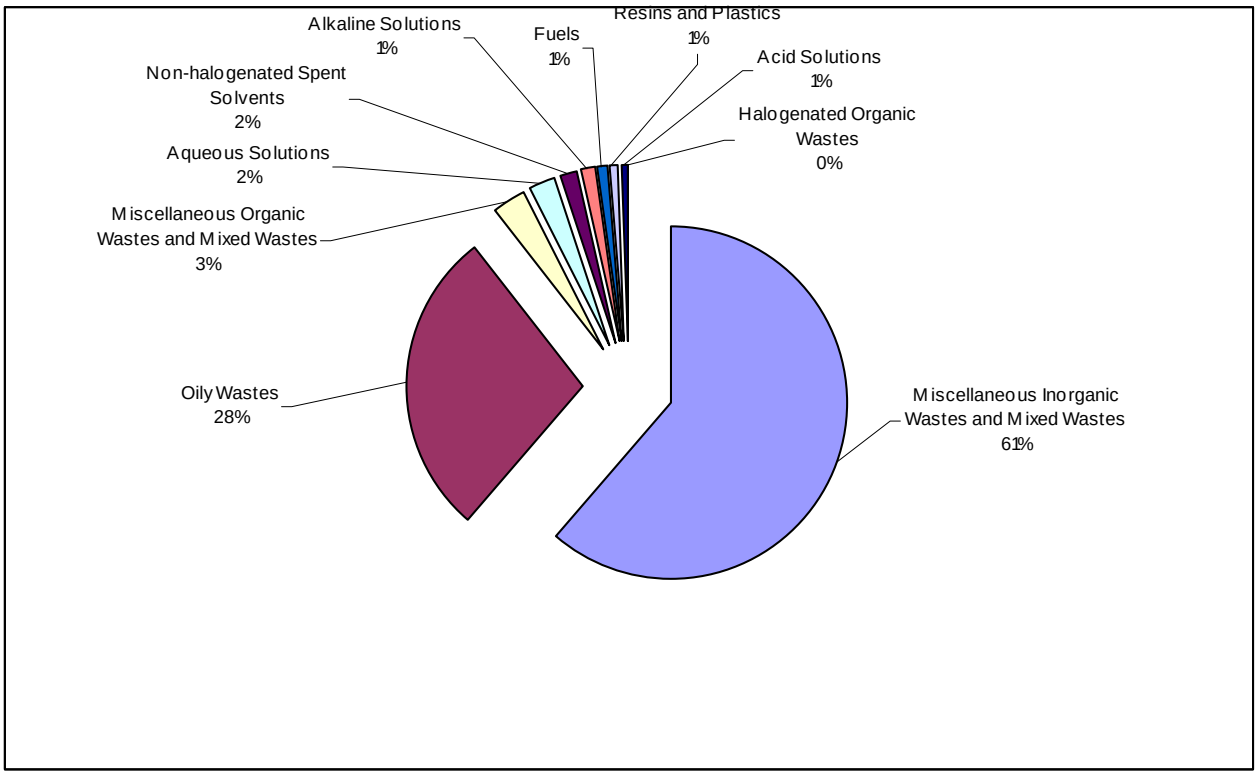


Figure 3.3 – Proportion of Liquid Industrial Waste Shipped by Waste Class Group, 2008



3.4 Waste Characterizations

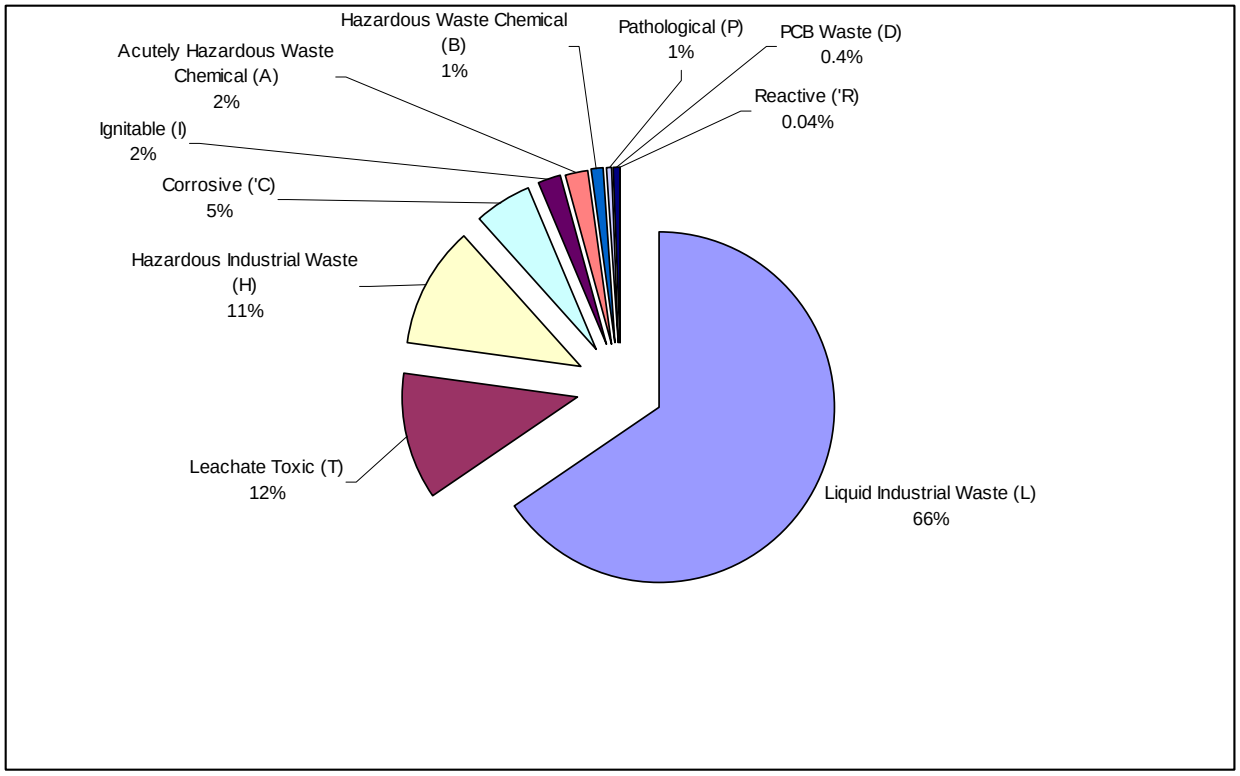
Regulation 347 requires the generator to identify the appropriate waste characterization for each waste it generates in their annual generator registration. The generator is also required to identify the characteristics for each waste contained in a shipment on the shipment's manifest document. This knowledge assists the receiver in selecting an appropriate treatment or disposal method.

Table 3.4 and Figure 3.4 show the total quantity of waste shipped in 2008 by Waste Characterization. Liquid industrial waste (L), a single characterization, represents 66 % of the total waste shipped in 2008. The next two largest waste characterizations are leachate toxic (T) and hazardous industrial waste (H), contributing 12% and 11% of the total quantity shipped respectively. The least significant waste characterization is severely toxic waste (S), for which less than one tonne of waste was shipped in 2008.

Table 3.4 – Quantity of Waste Shipped by Waste Characterization, 2008 (Tonnes)

Waste Characterization	Quantity
Hazardous Waste	
Leachate Toxic Waste (T)	243,966
Hazardous Industrial Waste (H)	234,194
Corrosive Waste (C)	107,700
Ignitable Waste (I)	43,962
Acutely Hazardous Waste Chemical Waste (A)	41,530
Hazardous Waste Chemical Waste (B)	26,459
Pathological Waste (P)	11,559
PCB Waste (D)	8,340
Reactive Waste (R)	810
Severely Toxic Waste (S)	<1
Total Hazardous Waste	**718,519**
Liquid Industrial Waste (L)	**1,362,873**
Total Hazardous and Liquid Industrial Waste	**2,081,392**

Figure 3.4 – Proportion of Waste Shipped by Waste Characterization, 2008



3.5 Municipal Hazardous or Special Wastes (MHSW) Collected by Depots

Many products that Ontarians use every day such as household cleaners, pesticides, paints, stains and personal care products can be called municipal hazardous or special waste (MHSW) once they are discarded. Most municipalities hold events each year where residents can dispose of these wastes at no charge. The Minister of the Environment has recently approved the producer-led MHSW diversion program (for more detail, see Section 1.1). The purpose of these efforts is to ensure the appropriate disposal and, if possible, diversion of hazardous or special wastes.

Table 3.5 shows the quantity of hazardous and liquid industrial waste that was shipped from designated MHSW depots.

Table 3.5 – Quantity of Hazardous and Liquid Industrial Waste Shipped from MHSW Depots, 2008 (Tonnes)

	2008
Quantity shipped from Municipal Hazardous or Special Waste Depots (tonnes)	2,178

3.6 Transboundary Waste Shipments – Imports and Exports

Hazardous wastes move freely in North America due to the integrated nature of the waste management industry and the relative proximity of disposal or recycling facilities between jurisdictions.

Ontario has put in place a land disposal restrictions (LDR) program which bans the land disposal of untreated hazardous wastes in the province. The LDR program further harmonizes the province's hazardous waste requirements with those of the United States, Ontario's largest hazardous waste trading partner.

Hazardous waste that is shipped from generators outside of Ontario to Ontario receivers represents the waste import. Hazardous waste that is shipped from Ontario generators to receivers outside Ontario represents the waste export. Table 3.6 shows the total quantities of hazardous and liquid industrial waste imported and exported in 2008.

Table 3.6 – Quantity of Waste Imports and Exports, 2008 (Tonnes)

	Total Hazardous and Liquid Industrial Waste	**Liquid Industrial Waste**	**Hazardous Waste**
Quantity Imported	301,937	11,722	290,215
Quantity Exported	216,189	112,851	103,339

3.7 Top Carriers by Quantity of Waste Hauled

Tables 3.7 and 3.8 list the top 20 carriers of hazardous waste and top 20 carriers of liquid industrial waste, respectively, by quantity of waste hauled in 2008.

Table 3.7 – Top 20 Carriers of Hazardous Waste by Quantity Hauled, 2008 (Tonnes)

Carrier Name	Quantity Hauled
Clean Harbors Canada, Inc.	141,915
Fortress Trucking Ltd.	57,144
Safety-Kleen Canada Inc.	50,292
Newalta Industrial Services Inc.	46,349
Harold Marcus Ltd.	40,523
Railink Canada Ltd., O/A Southern Ontario Railway	26,913
Clean Harbors Environmental Services, Inc.	18,459
Veolia Es Matieres Residuelles Inc.	18,149
U.S. Bulk Transport Inc.	16,447
Laidlaw Carriers Tank Gp Inc.	13,906
Beelman Truck Co.	13,108
Horwith Trucks, Inc.	12,320
Laidlaw Carriers Bulk Gp Inc.	12,176
Kreutzer & Co. Ltd.	12,079
Drain-All Ltd.	12,012
Clean Harbors Quebec, Inc.	10,773
Aimco Solrec Ltd.	10,470
Hotz Environmental Services Inc.	9,663
Stericycle Inc.	9,283
Everclear of Ohio Ltd.	8,801

Table 3.8 – Top 20 Carriers of Liquid Industrial Waste by Quantity Hauled, 2008 (Tonnes)

Carrier Name	Quantity Hauled
Vanson Construction Ltd.	164,697
Windsor Disposal Services Ltd.	117,600
New Alta Industrial Services Inc.	84,678
Terratec Environmental Ltd.	78,824
Geo. Barnes and Sons Ltd.	58,074
Canflow Environmental Services Corp.	48,239
Safety-Kleen Canada Inc.	47,344
Buckham Transport Ltd.	45,827
Direct Line Environmental Corp.	37,241
Sutcliffe Septic Services Ltd.	36,372
Clean Harbors Canada, Inc.	35,064
Benko Sewer Maintenance Ltd.	31,101
Wessuc Inc.	30,781
Salcin Haulage Inc.	29,829
HD Industrial Services Inc.	24,891
Fortress Trucking Ltd.	23,144
Noco Canada Inc.	20,659
Ontario Clean Water Agency	19,696
G.A. Foss Transport Ltd.	18,794
Flochem Leasing Ltd.	18,543

4.0 Waste Receipt

4.1 Number of Receivers

Receivers are facilities to which hazardous or liquid industrial waste is hauled by a carrier. Receivers include transfer stations, processing facilities and disposal sites such as landfills and incinerators.

All receivers in the province of Ontario are required to hold a valid Certificate of Approval from the Ministry of the Environment for the collection, handling, storage, processing or disposal of hazardous or liquid industrial waste.

Table 4.1 shows that in 2008 there were almost 300 receivers of hazardous and liquid industrial waste that was shipped from Ontario or received in Ontario in 2008.

Table 4.1 – Number of Receivers that Received Hazardous and Liquid Industrial Waste, 2008

Total Number of Receivers that Received Hazardous and/or Liquid Industrial Waste	Number of Receivers that Received Hazardous and Liquid Industrial Waste	Number of Receivers that Received Hazardous Waste Only	Number of Receivers that Received Liquid Industrial Waste Only
296	127	74	95

4.2 Location of Ontario Waste Receivers

Figure 4.1 shows the location of all of the receivers in Ontario for 2008.

Although there is a significant concentration of receivers in southern Ontario, particularly the Greater Toronto Area, there is reasonable coverage throughout the rest of the province. Higher concentrations of receivers occur in areas where there are higher concentrations of generators.

Table 4.2 breaks down the number of receivers by Ministry of the Environment District and Table 4.3 shows the number of receivers located outside Ontario.

Figure 4.1. – Location of All Hazardous and Liquid Industrial Waste Receivers in Ontario, 2008

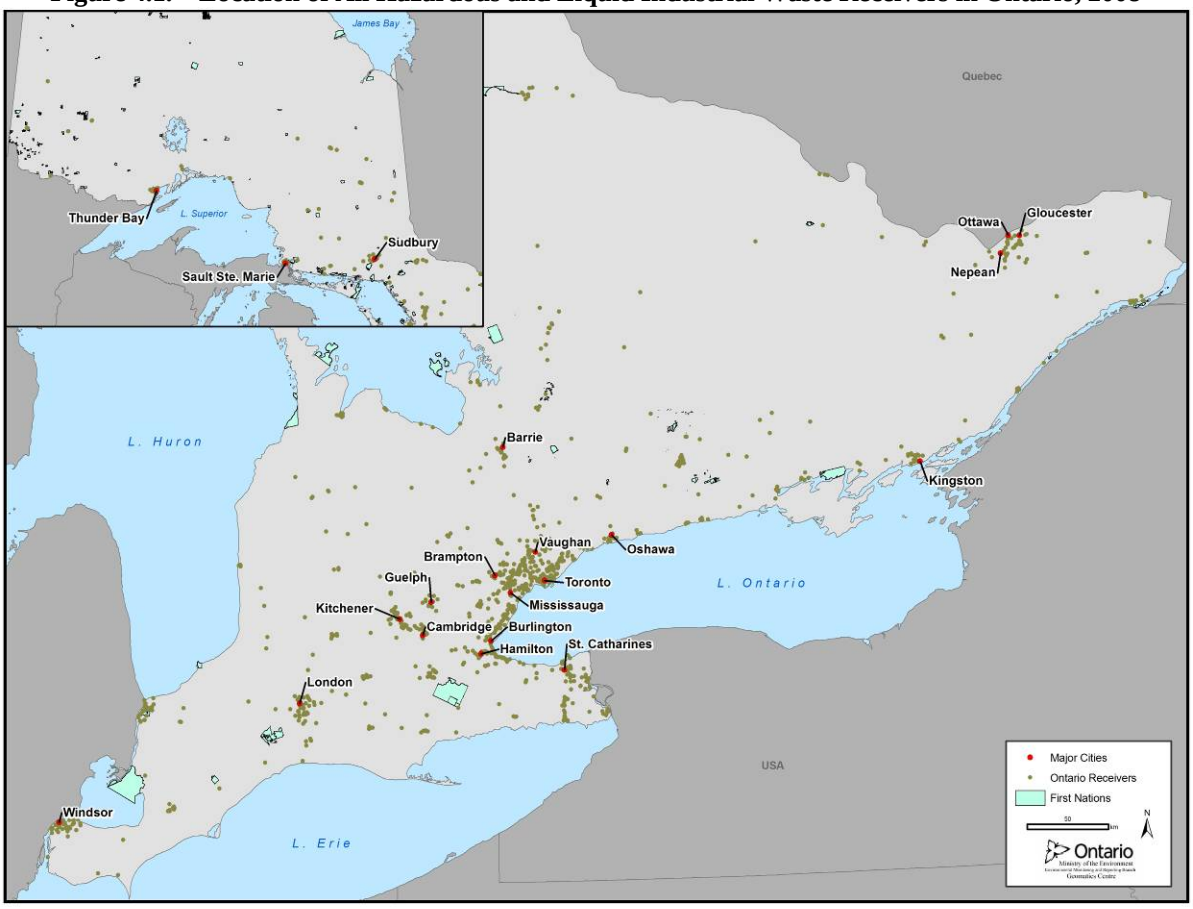


Table 4.2 – Number of Receivers by Ministry District, 2008

Ministry District	No. of Active Receivers	Ministry District	No. of Active Receivers
London	7	Ajax	9
Windsor	9	Kingston	6
Sarnia	13	Ottawa	7
Owen Sound	2	Cornwall	3
Hamilton	16	Sudbury	4
Guelph	11	South Porcupine	5
St. Catharines	12	Sault Ste. Marie	3
Toronto	4	North Bay	1
Barrie	11	Thunder Bay	4
Peterborough	5	Kenora	4
Burlington	17		

**Note: Please see Appendix G for a map of Ministry Districts*

Table 4.3 – Number of Receivers Outside of Ontario by Province/State, 2008

Province/State	No. of Active Receivers	Province/State	No. of Active Receivers
Nova Scotia	1	Minnesota	1
Quebec	32	New Jersey	1
Manitoba	4	New York	7
Saskatchewan	4	Ohio	5
Alberta	2	Pennsylvania	2
Arizona	1	Rhode Island	1
Illinois	3	South Carolina	1
Indiana	2	Texas	1
Kentucky	1	Wisconsin	1
Michigan	8		

4.3 Receiver Types

Hazardous and liquid industrial waste receivers are divided into nine receiver types. Tables 4.4 and 4.5 show the number of receivers belonging to each receiver type and the quantity of waste they received.

In Ontario, transfer stations and transfer/processing stations are the most common receiver types, representing 17% and 29% respectively in 2008. In 2008, 46% of receivers were located outside of Ontario.

Table 4.4 – Number of Receivers that Received Hazardous Waste by Receiver Type, 2008

Receiver Type	Landfill Site	Private Landfill Site & Sludge Farm	Incinerator	Water Pollution Control Plant	Transfer Station	Transfer /Processing Station	Out-of-Ontario Receiver *	Reclaimer	PCB Storage Site
No. of Receivers	1	3	2	4	35	58	89	4	1
Quantity Received (tonnes)	169,345	2,408	63,739	2,519	14,350	194,293	146,690	124,451	12

Table 4.5 – Number of Receivers that Received Liquid Industrial Waste by Receiver Type, 2008

Receiver Type	Landfill Site	Private Landfill Site & Sludge Farm	Incinerator	Water Pollution Control Plant	Transfer Station	Transfer /Processing Station	Out-of-Ontario Receiver *	Reclaimer
No. of Receivers	3	3	3	40	39	58	70	3
Quantity Received (tonnes)	2,960	15,369	4,951	802,809	60,325	331,584	123,843	20,782

The receiver types are also shown in Figures 4.2 and 4.3 by the proportion of waste received by each receiver type.

Figure 4.2 – Proportion of Receivers that Received Hazardous Waste by Receiver Type, 2008

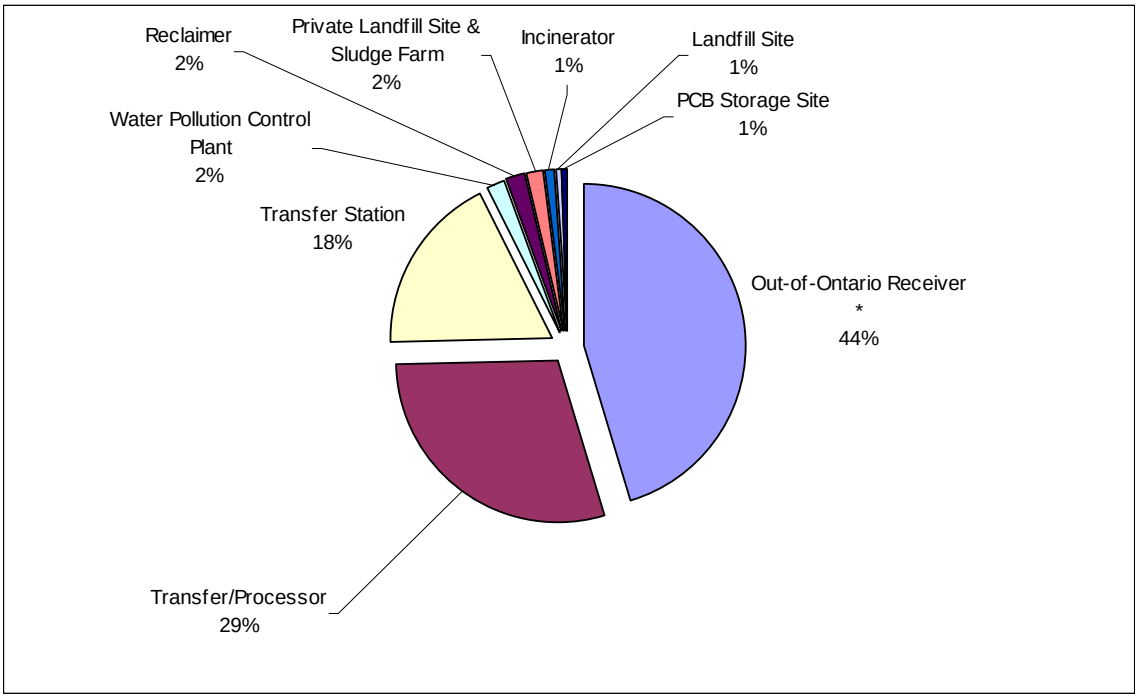


Figure 4.3 – Quantity of Hazardous Waste Received by Receiver Type, 2008 (Tonnes)

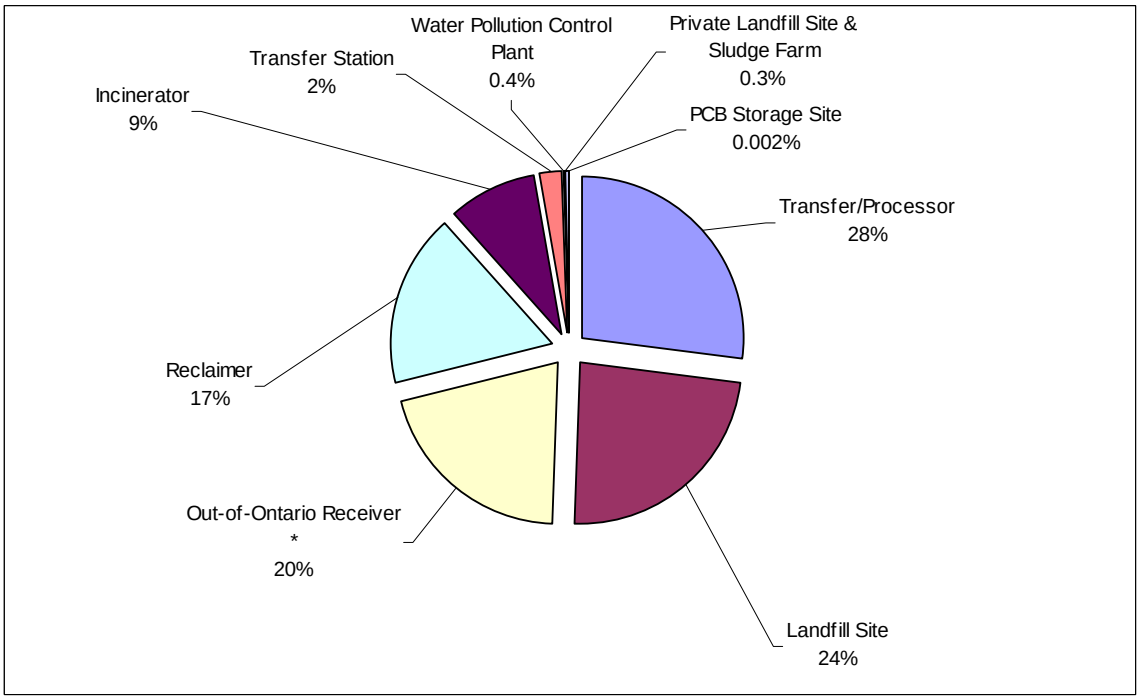


Figure 4.4 – Proportion of Receivers that Received Liquid Industrial Waste by Receiver Type, 2008

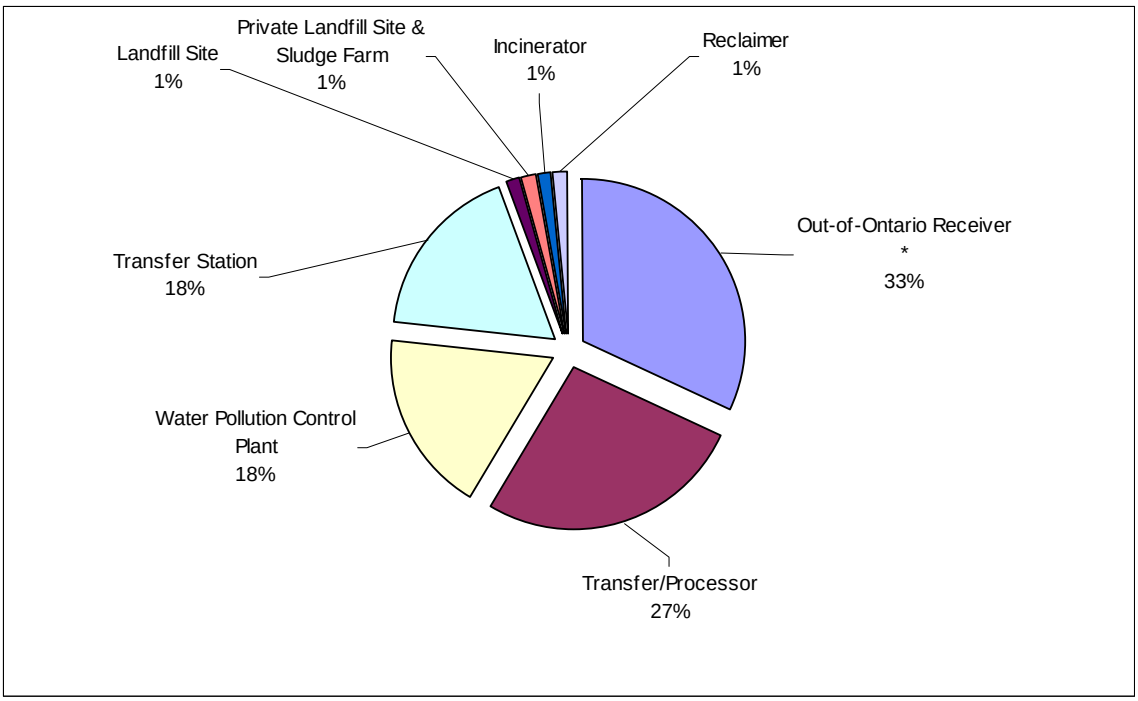
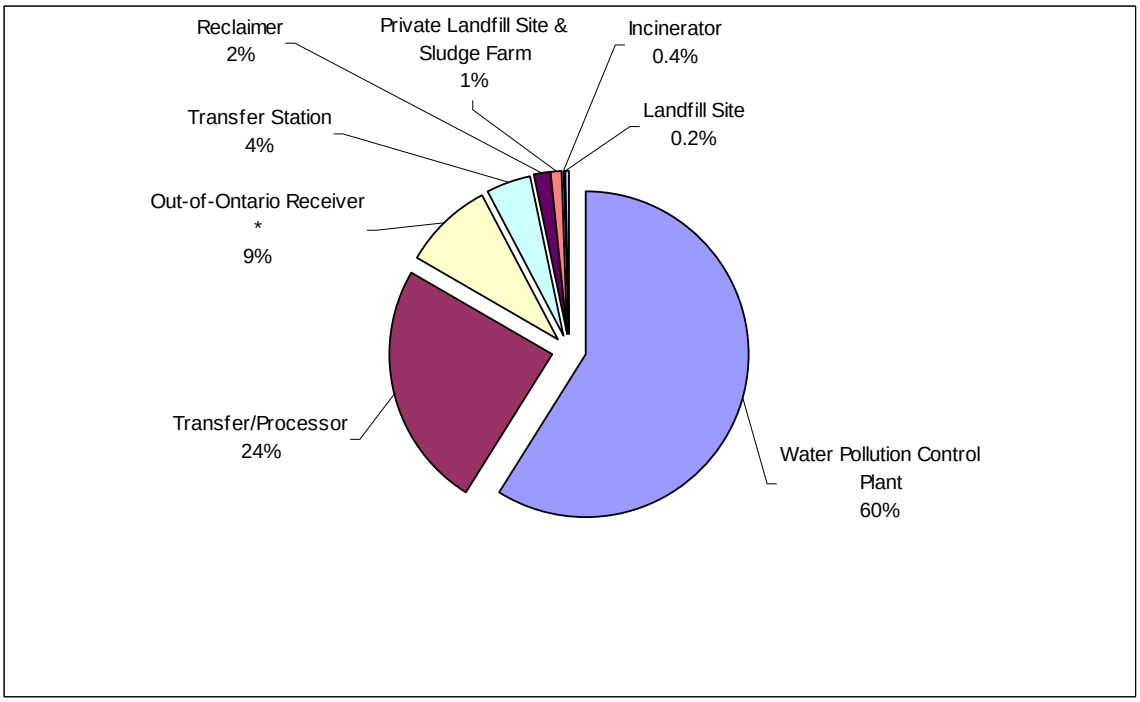


Figure 4.5 – Quantity of Liquid Industrial Waste Received by Receiver Type, 2008 (Tonnes)



4.4 Proportion of Hazardous Waste Recycled

Hazardous waste receivers eligible for an exemption on the tonnage component are facilities that process wastes to recover some portion of the waste. These facilities are required to have a valid Certificate of Approval (if located inside Ontario) or other permit (if located outside Ontario) to operate. The exemption on is designed as an incentive to encourage hazardous waste recycling.

Table 4.6 – Quantity of Hazardous and Liquid Industrial Waste Received by Tonnage Fee Exempt Recycling Facilities, 2008 (tonnes)

Total Quantity received by Tonnage Fee Exempt Recycling Facilities	Total Quantity Received in Ontario	Total Quantity Received out of Ontario
219,997	163,943	56,054

4.5 Top Receivers by Quantity of Waste Received

Tables 4.7 and 4.8 list the Ontario receivers of hazardous waste and the top 20 Ontario receivers of liquid industrial waste, respectively, by quantity of waste received in 2008.

While transfer stations and transfer/processing stations receive waste, the waste they receive is in turn shipped out to a final receiver. Transfer and transfer/processing stations are therefore excluded from Table 4.7 as it represents the receivers who undertake the final treatment or disposal of hazardous and liquid industrial waste. Because out-of-province receivers of Ontario hazardous and liquid industrial waste are not subject to Ontario approvals, the nature of their operations are unknown and they may be transferring wastes. For this reason they have also been excluded from Tables 4.7 and 4.8.

Table 4.7 shows the majority of hazardous waste in 2008 was disposed of at four large receivers consisting of 2 recyclers, a landfill and an incinerator.

Table 4.8 shows liquid industrial waste in 2008 was treated and disposed of at a much larger number of receivers, most of which are municipal water pollution control plants. These plants are treating mainly landfill leachate.

Table 4.7 – Ontario Receivers of Hazardous Waste (Excluding Transfer and Transfer/Processing Stations), 2008

Receiver Name	Receiver Type	County	Quantity Received (Tonnes)
Clean Harbors Canada, Inc.	Landfill	Lambton	169,345
Safety-Kleen Canada Inc.	Reclaim	Waterloo (R. M.)	111,984
Clean Harbors Canada, Inc.	Incineration	Lambton	61,739
U.S. Steel Canada Inc.	Reclaim	Haldimand-Norfolk (R.M.)	12,374
Abitibi-Consolidated Company of Canada	Private Landfill & Sludge Farms	Rainy River District	690
Lanxess Inc.	Water Pollution Control Plant	Lambton	602
Apex Environmental Services Inc.	Reclaim	York (R.M.)	89
Dofasco Inc.	PCB Storage Site	Hamilton-Wentworth	12
Woodington Systems Inc.	Reclaim	Niagara (R.M.)	6
Nova chemicals (Canada) Ltd.	Water Pollution Control Plant	Lambton	1
Shell Canada Products Limited	Private Landfill & Sludge Farms	Lambton	1

Table 4.8 – Top 20 Ontario Receivers of Liquid Industrial Waste (Excluding Transfer and Transfer/Processing Stations), 2008

Receiver Name	Receiver Type	County	Quantity Received (Tonnes)
Robert O. Pickard Environmental Centre (RMOC)	Water Pollution Control Plant	Ottawa-Carleton (R.M.)	177,630
City of London	Water Pollution Control Plant	Middlesex	98,479
West Windsor WPCP	Water Pollution Control Plant	Essex	59,496
City of Windsor	Water Pollution Control Plant	Essex	58,315
Town of Coburg	Water Pollution Control Plant	Northumberland	43,870
U.S. Filter Operation Services	Water Pollution Control Plant	Haldimand-Norfolk (R.M.)	40,089
The Corporation of the County of Oxford Woodstock Wastewater Treatment Plant	Water Pollution Control Plant	Oxford	29,829
Barrie WPCP	Water Pollution Control Plant	Simcoe	28,904
Lanxess Inc.	Water Pollution Control Plant	Lambton	26,636
Hamilton-Wentworth WPCP, Azurix	Water Pollution Control Plant	Hamilton-Wentworth	25,935
Safety-Kleen Canada Inc.	Reclaim	Waterloo (R. M.)	20,573
Mid-Halton WPCP	Water Pollution Control Plant	Halton (R.M.)	18,895
The Corporation of the County of Norfolk	Water Pollution Control Plant	Haldimand-Norfolk (R.M.)	17,888
Abitibi-Consolidated Company of Canada	Private Landfill & Sludge Farms	Rainy River District	13,773
Town of Goderich	Water Pollution Control Plant	Huron	12,724
Niagara, Regional Municipality of Port Dalhousie WPCP	Water Pollution Control Plant	Niagara (R.M.)	6,067
Niagara, Regional Municipality of Welland WPCP	Water Pollution Control Plant	Niagara (R.M.)	4,235
Region of York	Water Pollution Control Plant	York (R.M.)	2,868
Corporation of the City of Barrie	Landfill	Simcoe	2,568
The Corporation of the City of Thunder Bay	Water Pollution Control Plant	Thunder Bay District	1,916

5.0 Performance Measures

The ministry undertook a jurisdictional scan of other regulatory agencies in order to determine appropriate performance measures to report publicly on the hazardous and liquid industrial waste in Ontario. The ministry established three performance measures:

- Number of Certificates of Approval Issued,
- Rate of Significant Non-Compliance as Determined through Inspections, and,
- Resolution of Exception Reports.

These performance measures allow the ministry to address how the policy and regulatory framework, in addition to compliance activities, impact the management of hazardous and liquid industrial waste.

The ministry's hazardous waste program performance measures can be divided into two categories:

- Hazardous Waste Management (Number of Certificates of Approval Issued); and,
- Hazardous Waste Compliance (Rate of Significant Non-Compliance as Determined through Inspections, and, Resolution of Exception Reports)

Detailed explanations for these performance measures are included in sections 5.1 and 5.2.

This report will set the benchmark year (2008) for a more detailed trend analysis in the future, along with an assessment of compliance by the regulated community within the hazardous waste management regulatory framework.

5.1 Hazardous Waste Management

Number of Certificates of Approval Issued

The issuance of Certificates of Approval by the ministry is part of the process of ensuring the appropriate handling, transport and disposal of hazardous waste in Ontario. All carriers and receivers of hazardous waste and liquid industrial waste are required to obtain a Certificate of Approval that authorizes handling of the specific waste type.

The ministry continues to improve efforts to ensure that all carriers and receivers of hazardous and liquid industrial waste have the appropriate approvals, and that any applications received by the ministry are properly assessed and approved on a timely basis.

In 2008, a total of 111 hazardous and liquid industrial waste approvals were issued by the ministry, with the details provided in Table 5.1.

Table 5.1 – Number of Hazardous Waste Approvals Issued, 2008

Type of Hazardous Waste Approval	Number of Approvals issued in 2008 [1]
Waste Management System	11
Transfer Site	37
Transfer Site & Processing Site	25
Processing Site	20
Landfill Site [2]	7
Landfill and Transfer Site [2]	6
Landfill, Transfer and Processing Site [2]	1
Thermal Treatment Site	1
Landfarming	1
Mobile Unit	1
Household Hazardous Waste Depot	1
Chemical Fertilizer Waste Site	0
Total	**111**

[1] The number of approvals includes new certificates of approval and amendments to existing certificates of approval.
[2] Non-hazardous landfill sites that were approved for collection of household hazardous waste are included in the number of hazardous waste approvals.

This 2008 data can be used to set a baseline for future reports to present trends in the number of new and amended applications received and processed by the ministry each year. This can be further expanded to include trends on the number of new, expanded, and closed sites over time.

5.2 Hazardous Waste Compliance

Rate of Significant Non-Compliance as Determined through Inspections

Each year, the ministry inspects a number of facilities and operations within the hazardous waste management program to assess and evaluate compliance with various legislative requirements. Inspections reflect a "snap shot" in time and are reflective of the observations made at the time of the inspection. Although not all facilities are inspected each year, efforts are focused on areas such as repeat violators, large volume generators, carriers and receivers, as well as inspecting facilities which fail to re-register on an annual basis or those generators who abruptly cease shipping waste. Using this risk-based approach, the ministry can effectively utilize resources to ensure the safe and responsible management of hazardous waste.

In 2008, the ministry conducted 1096 hazardous and liquid industrial waste inspections. These inspections included:

- Hazardous Waste Management Systems (or Carriers);
- Hazardous Waste Transfer and Processing Sites;
- PCB Storage Sites;
- Subject Waste Generators; and,
- Hazardous Waste Disposal Sites.

Most of the compliance issues identified during an inspection can be rectified prior to the inspector leaving the site; these usually include minor administrative concerns which are easily corrected. Of the facilities and operations inspected, 79% were in full compliance with ministry legislation or had minor administrative issues which were addressed in short order following the inspection.

The remaining 21% of inspections had varying degrees of non-compliance with ministry laws, and are grouped into the 'Significant Non-Compliance' category (Table 5.2). A review of the inspection findings shows that based on observations made during the inspection along with the compliance history of the facility or operation, approximately 90% of these non-compliances indicated either a known or suspected violation of a legal requirement (such as not having a Certificate of Approval or, not complying with terms and conditions of the Certificate of Approval, companies not registering their waste or failing to submit to the ministry a 90 day storage report), or a potential for environmental impairment (such as visible signs of spills or leaks, or storage and containment issues). The remaining non compliances (approximately 10%) indicated that there was a known or anticipated human health or environmental impact.

All instances of non-compliance identified during inspections were followed up by the ministry through a variety of abatement actions to ensure that these facilities or operations achieved compliance with the required laws within a reasonable timeframe. They were evaluated on a case-by-case basis to determine the appropriate abatement response. The majority of all non-compliance issues identified were addressed through a voluntary abatement approach. Voluntary abatement may include the documentation of the violation within a detailed letter (informal order) from the ministry to the company outlining set timelines for the operation or facility to achieve compliance. All the remaining non-compliance issues identified during inspections were addressed through mandatory abatement measures, such as the issuance of orders or tickets, or referral to the ministry's Investigations and Enforcement Branch.

In addition, the ministry continues to take tough enforcement action in the area of hazardous waste. In 2008, there were a total of 17 cases in the hazardous waste program area that resulted in convictions following an investigation by the ministry's Investigations and Enforcement Branch, with fines totaling $168,600.

Table 5.2 – Rate of SNC in the Hazardous Waste Program as Determined through Inspections, 2008

Number of Hazardous and Liquid Industrial Waste Inspections	Significant Non-Compliance (SNC) Identified	SNC Rate
1096	234	21%

Resolution of Exception Reports

When a shipment of hazardous waste or liquid industrial waste is suspected to violate the registration or approval requirements of Regulation 347, as flagged by the manifest information, an "Exception Report" is generated in the HWIN system. This Exception Report is a flag or a warning within the system indicating that based on the manifest there may be a breach in the "cradle-to-grave" program. For example, these reports identify all shipments originating from unregistered or expired generators, shipped by carriers, or received by receivers not authorized by their Certificates of Approval to transport or receive the specific waste type.

Monitoring and ensuring appropriate resolution of these reports in a timely manner emphasizes the ministry's continuing oversight of hazardous waste shipments and the timely resolution of potential compliance issues.

In April 2008, a centralized exception report follow-up process was implemented. Table 5.3 outlines the overall resolution of Exception Reports. By the end of 2008, 3,645 Exception Reports were reviewed. Of these, 98% were followed up centrally with actions such as a telephone call to the generator. Only 2% of the Exception Reports, representing 25 generators and one carrier, required additional follow-up actions by a District Environmental Officer.

The combined centralized and district follow-up efforts resulted in a 94% resolution of Exception Reports. The following is a list of instances where an Exception Report would be referred to the local District Office for additional follow up:

- A facility has a history of non-compliance;
- A facility is shipping waste while HWIN shows the site as "Closed";
- Discrepancies in the waste class being documented by the Generator, Carrier or Receiver; and,
- Concerns over the number of Exception Reports for one generator, carrier or receiver over time.

Table 5.3 – Number and Percentage Resolution of Exception Reports, 2008

Number of Manifests Reviewed	Centralized Follow up	District Follow up	Exception Reports Resolved (Centrally and District)
3645	3563 (98%)	82 (2%)	**3437 (94%)**

Appendices

Appendix A: Sectors by North American Industry Classification (NAICS) Code

Agriculture, Forestry, Fishing and Hunting
111 Crop Production
112 Animal Production
113 Forestry and Logging
114 Fishing, Hunting and Trapping
115 Support Activities for Agriculture and Forestry

Mining and Oil and Gas Extraction
211 Oil and Gas Extraction
212 Mining (except Oil and Gas)
213 Support Activities for Mining and Oil and Gas Extraction

Utilities
221 Utilities

Construction
236 Construction of Buildings
237 Heavy and Civil Engineering Construction
238 Specialty Trade Contractors

Manufacturing
311 Food Manufacturing
312 Beverage and Tobacco Product Manufacturing
313 Textile Mills
314 Textile Product Mills
315 Clothing Manufacturing
316 Leather and Allied Product Manufacturing
321 Wood Product Manufacturing
322 Paper Manufacturing
323 Printing and Related Support Activities
324 Petroleum and Coal Products Manufacturing
325 Chemical Manufacturing
326 Plastics and Rubber Products Manufacturing
327 Non-Metallic Mineral Product Manufacturing
331 Primary Metal Manufacturing
332 Fabricated Metal Product Manufacturing
333 Machinery Manufacturing
334 Computer and Electronic Product Manufacturing
335 Electrical Equipment, Appliance and Component Manufacturing
336 Transportation Equipment Manufacturing
337 Furniture and Related Product Manufacturing
339 Miscellaneous Manufacturing

Transportation and Warehousing
481 Air Transportation
482 Rail Transportation
483 Water Transportation
484 Truck Transportation
485 Transit and Ground Passenger Transportation
486 Pipeline Transportation
487 Scenic and Sightseeing Transportation
488 Support Activities for Transportation
491 Postal Service
492 Couriers and Messengers
492 Warehousing and Storage

Information and Cultural Industries
511 Publishing Industries (except Internet)
512 Motion Picture and Sound Recording Industries
515 Broadcasting (except Internet)
516 Internet Publishing and Broadcasting
517 Telecommunications
518 Internet Service Providers, Web Search Portals, and Data Processing Services
519 Other Information Services

Finance and Insurance
521 Monetary Authorities – Central Bank
522 Credit Intermediation and Related Activities[US]
523 Securities, Commodity Contracts, and Other Financial Investment and Related Activities
524 Insurance Carriers and Related Activities
525 Funds and Other Financial Vehicles[CAN]

Real Estate and Rental and Leasing
531 Real Estate
532 Rental and Leasing Services
533 Lessors of Non-Financial Intangible Assets (Except Copyrighted Works)

Professional, Scientific and Technical Services
541 Professional, Scientific and Technical Services

Management of Companies and Enterprises
551 Management of Companies and Enterprises

Administrative and Support, Waste Management and Remediation Services
561 Administrative and Support Services
562 Waste Management and Remediation Services

Educational Services
611 Educational Services

Health Care and Social Assistance
621 Ambulatory Health Care Services

Wholesale Trade
411 Farm Product Wholesaler-Distributors[CAN]
412 Petroleum Product Wholesaler-Distributors[CAN]
413 Food, Beverage and Tobacco Wholesaler-Distributors[CAN]
414 Personal and Household Goods Wholesaler-Distributors[CAN]
415 Motor Vehicle and Parts Wholesaler-Distributors[CAN]
416 Building Material and Supplies Wholesaler-Distributors[CAN]
417 Machinery, Equipment and Supplies Wholesaler-Distributors[CAN]
418 Miscellaneous Wholesaler-Distributors[CAN]
419 Wholesale Agents and Brokers[CAN]

Retail Trade
441 Motor Vehicle and Parts Dealers[US]
442 Furniture and Home Furnishings Stores[US]
443 Electronics and Appliance Stores[US]
444 Building Material and Garden Equipment and Supplies Dealers[US]
445 Food and Beverage Stores[US]
446 Health and Personal Care Stores[US]
447 Gasoline Stations[US]
448 Clothing and Clothing Accessories Stores[US]
451 Sporting Goods, Hobby, Book and Music Stores[US]
452 General Merchandise Stores[US]
453 Miscellaneous Store Retailers[US]
454 Non-Store Retailers[US]

Hospitals
622 Nursing and Residential Care Facilities
623 Social Assistance

Arts, Entertainment and Recreation
711 Performing Arts, Spectator Sports and Related Industries
712 Heritage Institutions
713 Amusement, Gambling and Recreation Industries

Accommodation and Food Services
721 Accommodation Services
722 Food Services and Drinking Places

Other Services (except Public Administration)
811 Repair and Maintenance
812 Personal and Laundry Services
813 Religious, Grant-Making, Civic, and Professional and Similar Organizations
814 Private Households

Public Administration
911 Federal Government Public Administration[CAN]
912 Provincial and Territorial Public Administration[CAN]
913 Local, Municipal and Regional Public Administration[CAN]
914 Aboriginal Public Administration[CAN]
919 International and Other Extra-Territorial Public Administration[CAN]

Appendix B: Ontario Waste Classes

INORGANIC WASTES

Acid Solutions		**EXAMPLES**
111	Spent pickle liquor	Acid solutions of sulphuric and hydrochloric acids containing ferrous salts from steel pickling.
112	Acid solutions, sludges and residues containing heavy metals	Solutions of sulphuric, hydrochloric and nitric acids containing copper, nickel, chromium, zinc, cadmium, tin, lead or other heavy metals; chromic acid waste; acidic emission control sludges from secondary lead smelting.
113	Acid solutions, sludges and residues containing other metals and non-metals	Solutions of sulphuric, hydrochloric, hydrofluoric and nitric acids containing sodium, potassium, calcium, magnesium or aluminum; equipment cleaning acids; cation regenerant; reactor acid washes; catalyst acid and acid washes.
114	Other inorganic acid wastes	Off-specification acids; by-product hydrochloric acid; dilute acid solutions; acid test residues.
Alkaline Solutions		
121	Alkaline solutions, sludges and residues containing heavy metals	Metal finishing wastes; plating baths; spent solutions containing metals such as copper, zinc, tin, cadmium; case hardening sludges; spent cyanide destruction residues; dewatered solids from metal and cyanide finishing wastes and cyanide destruction.
122	Alkaline solutions, sludges and residues containing other metals and non-metals, not containing cyanides	Alkaline solutions from aluminum surface coating and etching; alkali cleaner waste; waste lime sludges and slurries; anion regenerants.
123	Alkaline phosphates	Bonderizing waste; zinc phosphates; ferrous phosphates; phosphate cleaners.
Aqueous Salts		
131	Neutralized solutions, sludges and residues containing heavy metals	Metal finishing waste treatment sludges containing copper, nickel, chromium, zinc or cadmium; neutral salt bath sludges and washes; lime sludge from metal finishing waste treatment; dewatered solids from these processes
132	Neutralized solutions, sludges and residues containing other metals	Aluminum surface coating treatment sludges; alum and gypsum sludges.
133	Brines, chlor-alkai sludges and residues	Waste brines from chlor-alkali plants; neutralized hydrochloric acid; brine treatment sludges; dewatered solids from brine treatment.
134	Wastes containing sulphides	Petroleum aqueous refinery condensates.
135	Wastes containing other anions	Waste containing chlorates; hypochlorite; bromate or thiosulphate.
Miscellaneous Inorganic Wastes and Mixed Wastes		
141	Inorganic waste from pigment manufacturing	Wastewater and sludges from the production of chrome yellow, molybdate orange, zinc yellow, chrome green and iron pigments; dewatered solids from these sources.
142	Primary lead, zinc and copper smelting wastes	Slurries, sludges and surface impoundment solids; treatment plant sludges; anode slimes and leachate residues; dewatered solids from these sources.
143	Residues from steel making	Emission control sludges and dusts; precipitator residues from steel plants; dewatered solids from these sources.

144	Liquid tannery waste sludges	Lime waste mixtures; chrome tan liquors; dehairing solutions and sludges.
145	Wastes from the use of paints, pigments and coatings	Paint spray booth sludges and wastes; paper coating wastes; ink sludges; paint sludges.
146	Other specified inorganic sludges, slurries or solids	Flue gas scrubber wastes; wet fly ash; dust collector wastes; metal dust and abrasives wastes; foundry sands; mud sediment and water; tank bottoms from waste storage tanks that contained mixed inorganic wastes; heavy sludges from waste screening/filtration at transfer/processing sites not otherwise specified in this table.
147	Chemical fertilizer wastes	Solutions, sludges and residues containing ammonia, urea, nitrates and phosphates from nitrogen fertilizer plants.
148	Miscellaneous waste inorganic chemicals	Waste inorganic chemicals including laboratory, surplus or off-specification chemicals, that are not otherwise specified in this table.
149	Landfill leachate	Surface run-off and leachate collected from landfill sites.
150	Inert inorganic wastes	Sand and water from catch basins at car washes; slurries from the polishing and cutting of marble.
ORGANIC WASTES		
Non-halogenated Spent Solvents		
211	Aromatic solvents and residues	Benzene, toluene, xylene solvents and residues
212	Aliphatic solvents and residues	Acetone, methylethylketone and residues, alcohols, cyclohexane and residues.
213	Petroleum distillates	Varsol, white spirits and petroleum distillates, thinners.
Fuels		
221	Light fuels	Gasoline, kerosene, diesel, tank drainings/washings/bottoms, spill clean-up residues.
222	Heavy fuels	Bunker, asphalts, tank drainings/washings/bottoms, spill clean-up residues.
Resins and Plastics		
231	Latex wastes	Waste latexes, latex crumb and residues.
232	Polymeric resins	Polyester, epoxy, urethane, phenolic resins, intermediates and solvent mixtures.
233	Other polymeric wastes	Off-specification materials, discarded materials from reactors.
Halogenated Organic Wastes		
241	Halogenated solvents and residues	Spent halogenated solvents and residues such as perchloroethylene, halogenated still bottoms; residues and catalysts from trichloroethylene and carbon tetrachloride (dry cleaning solvents); halogenated hydrocarbon manufacturing or recycling processes.
242	Halogenated pesticides and herbicides	2,4-D, 2,4,5-T wastes, chlordane, mirex, silvex, pesticide solutions and residues.
243	Polychlorinated biphenyls (PCB)	Askarel liquids such as Aroclor, Pydraul, Pyranol, Therminol FR, Inerteen, and other PCB contaminated materials.
Oily Wastes		
251	Waste oils/sludges (petroleum based)	Oil/water separator sludge; dissolved air flotation skimming; heavy oil tank drainage; slop oil and emulsions.
252	Waste crankcase oils and lubricants	Collected service station waste oils; industrial lubricants; bulk waste oils.
253	Emulsified oils	Soluble oils; waste cutting oils; machine oils.
254	Oily water/waste oil from waste transfer/processing	Waste oil and oily water limited to classes 251, 252 and 253 that have been bulked/blended/processed at a waste transfer/processing site.

	sites	
Miscellaneous Organic Wastes and Mixed Wastes		
261	Pharmaceuticals	Pharmaceutical and veterinary pharmaceutical wastes other than biologicals and vaccines; solid residues and liquids from veterinary arsenical compounds.
262	Detergents and soaps	Laundry wastes.
263	Miscellaneous waste organic chemicals	Waste organic chemicals including laboratory surplus or off-specification chemicals that are not otherwise specified in this table.
264	Photo processing wastes	Photochemical solutions, washes and sludges.
265	Graphic arts wastes	Adhesives; glues; miscellaneous washes; etch solutions.
266	Phenolic waste streams	Cresylic acid; caustic phenolates; phenolic oils; creosote.
267	Organic acids	Carboxylic or fatty acids; formic, acetic, propionic acid wastes; sulphamic and other organic acids that may be amenable to incineration.
268	Amines	Waste ethanolamines; urea; tolidene; Flexzone waste; Monex waste.
269	Organic non-halogenated pesticide and herbicide wastes	Organophosphorus chemical wastes; arsenicals; wastes from MSMA and cacodylic acid.
270	Other specified organic sludges, slurries and solids	Tank bottoms from mixed organic waste bulking tanks at waste transfer sites; mixed sludges from waste screening/filtration at waste transfer/processing sties not otherwise specified in this table.
Processed Organic Wastes from Transfer Stations		
281	Non-halogenated rich organics	Blended/bulked non-halogenated solvents, oils and other rich organics prepared at transfer/processing sites for incineration.
282	Non-halogenated lean organics	Blended/bulked aqueous wastes prepared at transfer/processing sites for incineration and contaminated with non-halogenated solvents, non-halogenated oils and other non-halogenated organics.
Plant and Animal Wastes		
311	Organic tannery wastes	Fleshings; trimmings; vegetable tan liquors; Bate solutions.
312	Pathological wastes	Human anatomical waste; infected animal carcasses; other non-anatomical waste infected with communicable diseases; biologicals and vaccines.
OTHER WASTES		
Explosive Manufacturing Wastes		
321	Waste from the manufacture of explosives and detonation products	Wastewater treatment sludge; spent carbon; red/pink waters from TNT manufacturing; residues from lead base initiating compounds.
Compresed Gases		
331	Waste compressed gases, including cylinders	Methane(natural gas); nitrous or nitric oxide; propane; butane

Appendix C: Waste Characterizations

Waste Characterization	
A	Acute Hazardous Waste Chemical
B	Hazardous Waste Chemical
C	Corrosive Waste
D	PCB Waste
H	Hazardous Industrial Waste
I	Ignitable Waste
L	Liquid Industrial Waste
P	Pathological Waste
R	Reactive Waste
S	Severely Toxic Waste
T	Leachate Toxic Waste

Appendix D: Tonnage Fee Exempt Recycling Facilities

Tonnage Fee Exempt Recycling Facilities in Ontario				
Part V C of A number	**Company Name**	**Location**	**Waste Stream Restrictions (If any)**	**Start Date**
A100135	Dofasco Inc.	Hamilton	spent pickle liquor only (waste class 111)	
A100136	Dofasco Inc.	Hamilton	spent pickle liquor only (waste class 111)	
A140704	Safety-Kleen	Breslau		
A220143	Fielding Chemical	Mississauga		
A042105	Oakside Chemicals Ltd	London		
A210527	Maratek Environmental Inc.	Bolton		
A210315	Aimco-Solrec Ltd	Milton	Spent solvents (waste Class 211, 212 and handling code 07, recycling)	July 1, 2005
A220209	Johnson Mathey Ltd.	Brampton	N/A	
A310303	Chem-Ecol Ltd.	Cobourg	N/A	
A680065	Extox Industries Inc.	Mississauga	Spent cartridges (waste class 241, solid)	July 1, 2005
A650137	Fluorescent Lamp Recyclers Inc.	Cambridge		Removed from Recyclers list October 31, 2003 with its closure
A220129	Tonolli Canada Ltd.	Mississauga	N/A	
A311507	Gary Steacy Dismantling Ltd.	Cramahe Twp.	Electrical equipment only (waste class 243, solid)	
A740182	Trans-Cycle Industries (TCI)	Kirkland Lake	Electrical equipment only (waste class 243, solid)	
A420011	Material Resource Recovery	Cornwall	Electrical equipment only (waste class 243, solid)	

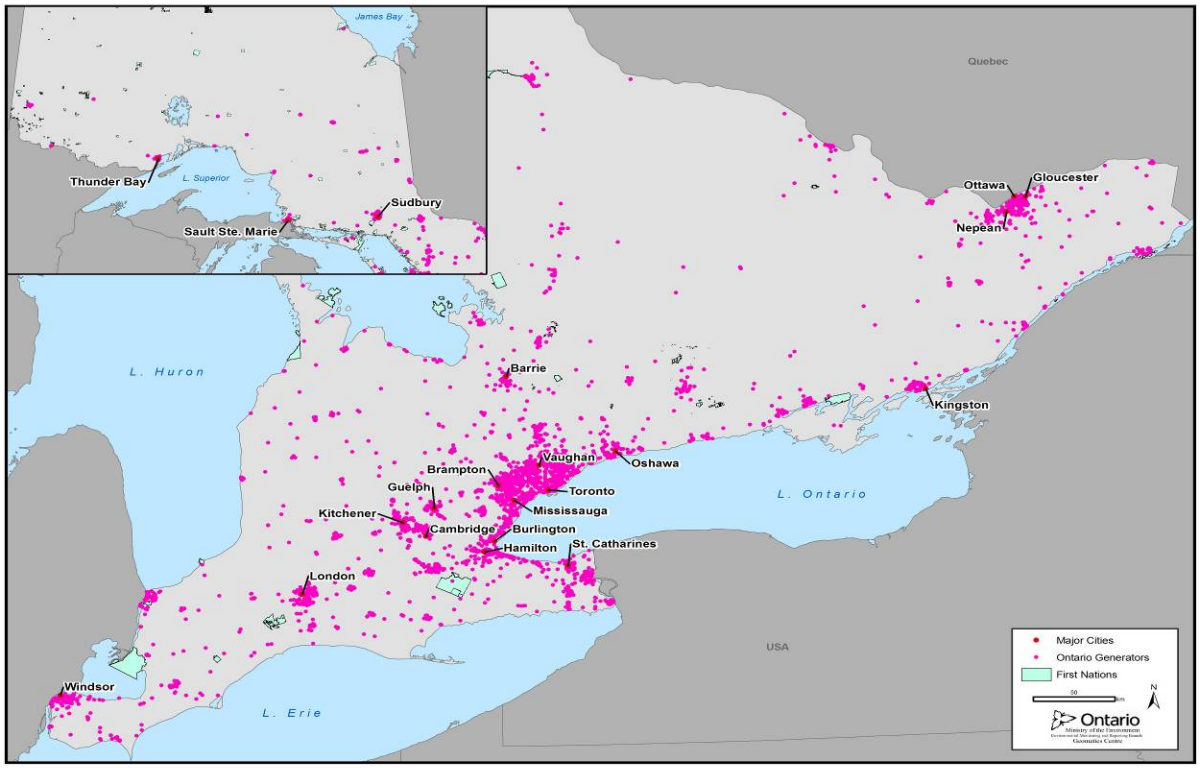
Tonnage Fee Exempt Recycling Facilities in Ontario				
Part V C of A number	**Company Name**	**Location**	**Waste Stream Restrictions (If any)**	**Start Date**
A650089	Hotz Environmental Services Inc.	Hamilton	Latex and alkyd waste paints only (waste class 145)	
1638-4YGL5B	Aevitas Inc.	Ayr	Mercury containing waste (waste classes 146, 148, handling code 07 recycling) Electrical equipment (waste class 243, solid) Low level PCB contaminated oil (waste class 243 liquid, handling code 07 recycling)	July 1, 2003
0362-6V5JME	Lake Erie Steel GP Inc.	Haldimand	Restricted to waste class 254, generated by #OHR000015792 as per receiver's CofA	May 7, 2008

Tonnage Fee Exempt Recycling Facilities Outside Ontario				
Part V C of A number	**Company Name**	**Location**	**Waste Stream Restrictions (If any)**	**Start Date**
PAD002395887	Horsehead Resource Development Co. Inc.	Palmerton, PA USA		
PAD087561015	Inmetco	Ellwood City, PA USA		
MID005338801	Gage Products Company	Ferndale, MI, USA		
27898006	Chemrec Inc.	Cowansville, QC		
23406218	Nova Pb Inc.	Ville Ste-Catherine, QC	Alkaline waste (waste class 122) Non-halogenated rich organics (waste class 281)	
ILD062480850	Phibro-Tech Inc.	Joliet, IL, USA	Copper etchant (waste classes 112 and 121)	
ILD980613913	Safety-Kleen	Dolton, IL, USA	Restricted to waste classes 145, 211, and 213, handling code 07 recycling	September 1, 2009
INR000000463	Micronutrients	Indianapolis, IN, USA	Copper etchant (waste classes 112 and 121)	
NYD980592497	Eastman Kodak Company	Rochester, NY, USA	Silver containing mud (waste class 112)	
NJD002182897	Safety-Kleen	Linden, NJ, USA	Restricted to waste classes 145, 211, and 213 handling code 07 recycling	September 1, 2009
NJD052204864	Old Bridge Metals & Chemicals, Inc.	Old Bridge, NJ, USA	Copper etchant (waste classes 112 and 121)	January 1, 2006
IND001859032	Rhodia Inc.	Hammond, IN, USA	Sulphuric acid catalyst (waste classes 113 and 114)	January 1, 2006
TXD074195678	Gulf Chemical and Metallurgical Corporation	Freeport, TX, USA	Spent catalyst (waste class 146)	January 1, 2006
TXD106829963	Eurecat U.S., Incorporated	Pasadena, TX, USA	Spent catalyst (waste class 146)	January 1, 2006

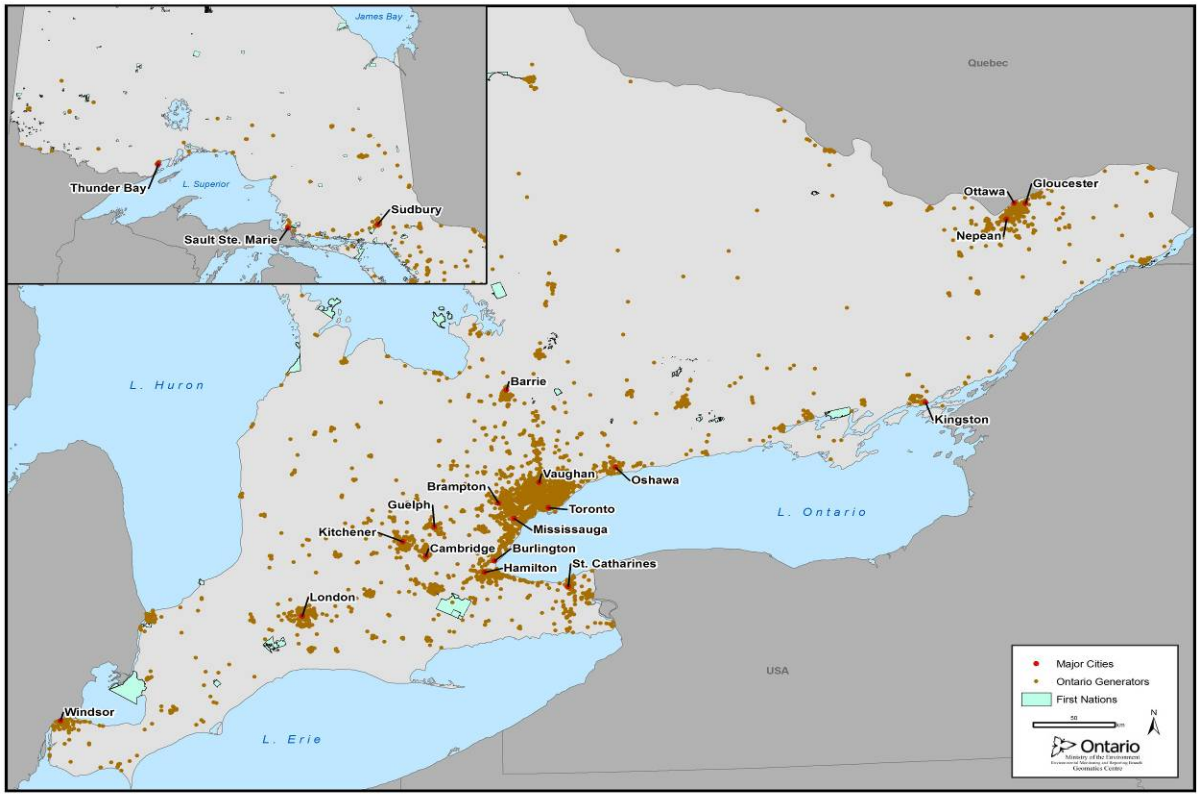
Tonnage Fee Exempt Recycling Facilities Outside Ontario				
Part V C of A number	**Company Name**	**Location**	**Waste Stream Restrictions (If any)**	**Start Date**
PAD004379194	Langeloth Metallurgical Co.	Langeloth, PA, USA	Metal Bearing waste (waste classes 112, 113, 114, 121, 122, 123, 131, and 146, handling code 07 recycling)	January 1, 2007
OHD986976348	Agmet Metals Inc.	Oakwood Village, OH, USA	Metal Bearing waste (waste classes 112, 113, 114, 121, 122, 123, 131, and 146, handling code 07 recycling)	
WIR000000356	Mercury Waste Solutions LLC (MWS)	Union Grove, WI, USA	Mercury containing waste (waste classes 146, 148, handling code 07 recycling)	September 1, 2009

Appendix E: Location of Waste Generators

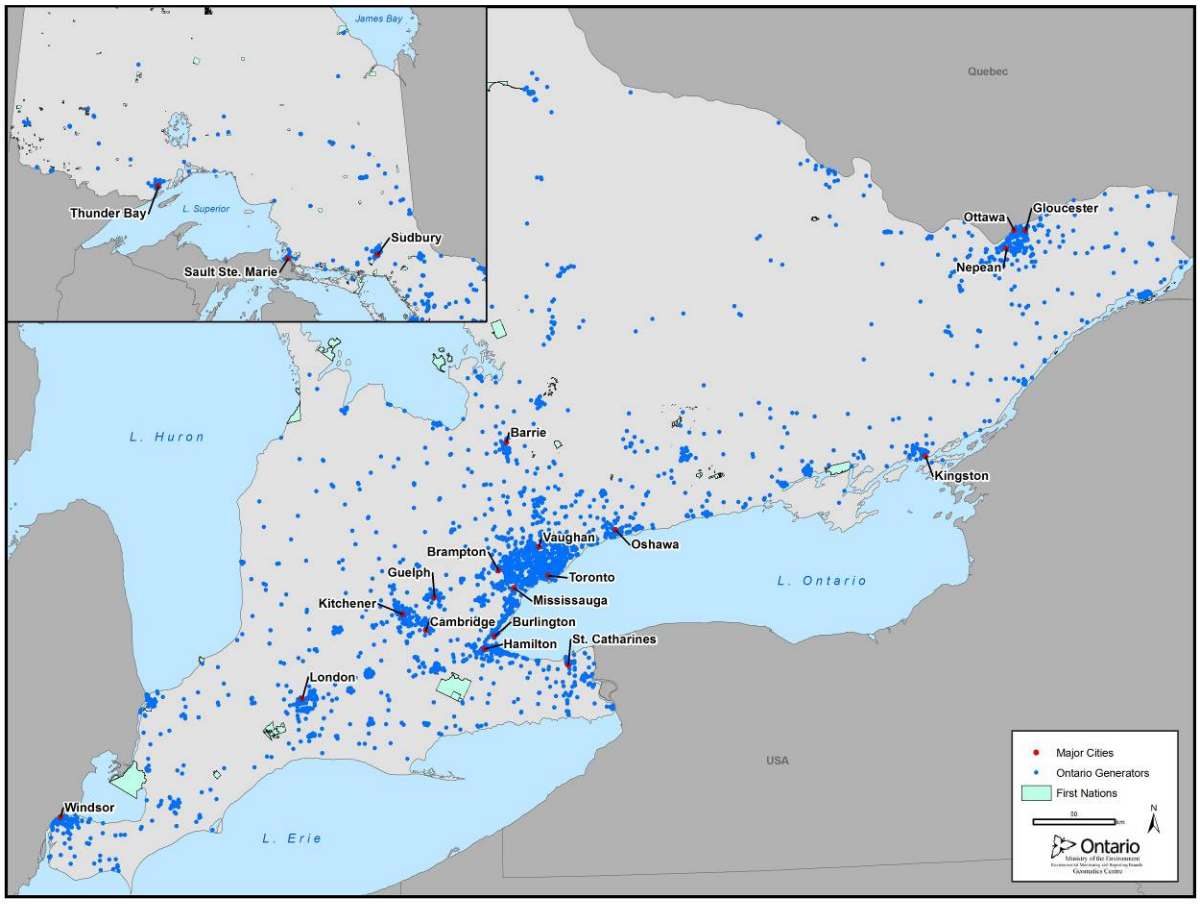
E.1 – Location of Ontario Waste Generators that Shipped both Hazardous and Liquid Industrial Waste 2008



E.2 – Location of Ontario Waste Generators that Shipped only Hazardous Waste 2008



E.3 – Location of Ontario Waste Generators that Shipped only Liquid Industrial Waste 2008



Appendix F: Top 20 Transfer and Transfer/ Processing Stations as Generators

F.1 – Top 20 Transfer and Transfer/Processing Facilities that Shipped Hazardous and Liquid Industrial Waste, 2008

Generator Name	County/Province or State	Quantity Shipped (tonnes)
Clean Harbors Canada, Inc.	Peel (R.M.)	27,902
Safety-Kleen Canada Inc.	Waterloo (R.M.)	24,274
Newalta Corporation	Essex	19,209
Direct Line Environmental Corp.	Dutrham (R.M.)	18,416
Noco Lubricants Company.	Toronto	15,599
Da-Lee Waste Oil Services	Hamilton-Wentworth (R.M.)	12,729
Drain-All Ltd.	Ottawa-Carleton (R.M.)	12,008
Aimco Solrec Limited	Halton (R.M.)	11,666
Safety-Kleen Canada Inc.	Waterloo (R.M.)	11,227
Newalta Corporation	Brant	10,237
Detox Environmental Ltd.	Durham (R.M.)	9,700
Lacombe Waste Services	Ottawa-Carleton (R.M.)	9,637
Canflow Environmental Services	Lambton	7,735
Hotz Environmental Services Inc.	Hamilton-Wentworth (R.M.)	7,518
Newalta Corporation	Hamilton-Wentworth (R.M.)	7,496
Safety-Kleen Canada Inc.	Waterloo (R.M.)	7,269
Enviro West Inc.	Thunder Bay District	6,896
Safety-Kleen Canada Inc.	Ottawa-Carleton (R.M.)	6,198
Tonolli Canada Ltd.	Peel (R.M.)	6,094
1049585 Ontario Inc.O/A Rpr Environmental Services	Hamilton-Wentworth (R.M.)	6,050

Appendix G: Map of Ministry of Environment Districts

Figure G.1 – Ministry of Environment Districts

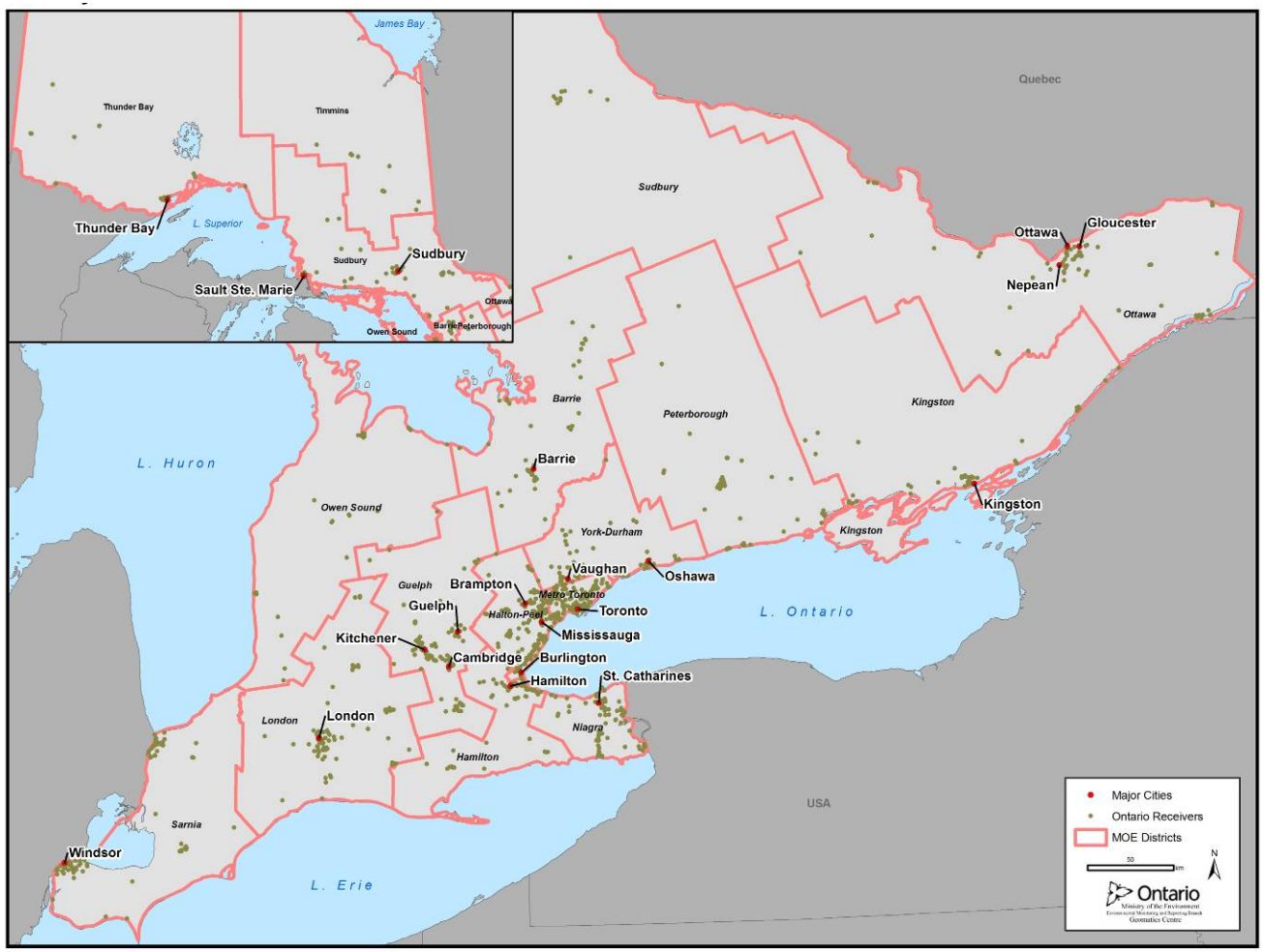


Figure G.2 – Ontario Counties