

SECTION ONE – ENVIRONMENTAL REGULATIONS

CHAPTER 2: Waste Management

Purpose and Applicability of Regulations

Everyone generates waste on a daily basis and is subject to the waste regulations. When the waste is improperly handled and disposed of (i.e., illegal dumping along roadsides, in the woods, in illegal landfills, in wetlands, in lakes and streams, or by being improperly burned) both surface and groundwater quality, as well as air quality can be impacted. Your legal responsibility as a generator of any quantity of waste extends from “cradle to grave.” This covers the time from when the waste is first generated through its ultimate disposal. State and federal court decisions have consistently upheld that legal liability remains with the original generator, in some instances even after disposal of the waste.



Agencies and Their Laws and Rules

Several different agencies are involved with overseeing proper waste management. State agencies include the Michigan Department of Environmental Quality (DEQ); the Michigan Department of Licensing and Regulatory Affairs (DLARA); the Michigan Department of Agriculture and Rural Development (DARD); and the Michigan State Police (MSP). Federal agencies include the U.S. Environmental Protection Agency (U.S. EPA) and the U.S. Department of Transportation (U.S. DOT). In addition, local entities including wastewater treatment plant authorities; local fire departments; and county health departments may have jurisdiction.

The following identifies Michigan’s common waste regulations (laws and rules implementing the law) that are overseen by the DEQ:

- Solid waste regulations under [Part 115](#) (Solid Waste Management) of the Natural Resources and Environmental Protection Act, Public Act 451 of 1994, as amended (Act 451), and the Part 115 [administrative rules](#). (Summarized in Chapter 2.2)
- Scrap tire regulations under [Part 169](#) (Scrap Tires) of Act 451. Part 169 includes management standards for transportation, storage, and disposal of tires by tire retailers, scrap tire haulers, and scrap tire collection site owners. Local authorities, including local fire departments, also have scrap tire jurisdiction under the fire prevention regulations. (Summarized in Chapter 2.2)
- Liquid industrial waste regulations under [Part 121](#) (Liquid Industrial Waste) of Act 451. (Summarized in Chapter 2.3)
- Hazardous waste requirements under [Part 111](#) (Hazardous Waste Management) of Act 451 and the Part 111 [administrative rules](#). (Summarized in Chapter 2.4)

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- Transportation of hazardous materials requirements, which includes both liquid industrial waste and hazardous waste, under the Hazardous Materials Transportation Act ([Public Act 138 of 1998](#)); the Part 111 (Hazardous Waste Management) of Act 451 [administrative rules](#); and [Part 121](#) (Liquid Industrial Waste) of Act 451. (Summarized in Chapter 2.3 and 2.4)
- Used oil recycling regulation under [Part 167](#) (Used Oil Recycling) of Act 451
- Disposal of batteries regulations under [Part 171](#) (Battery Disposal) of Act 451
- Medical waste requirements under [Part 138](#) (Medical Waste Regulatory Act) of the Public Health Code, Act 368 of 1978, as amended (Act 368) and the Part 138 [administrative rules](#). (Summarized in Chapter 2.5)
- Poly Chlorinated Biphenyl (PCB) waste under [Part 147](#) (PCB Compounds) of Act 451; the Part 147 [administrative rules](#); and [Part 121](#) of Act 451 (Summarized in Chapter 6.4)
- Radioactive waste under [Part 135](#) (Ionizing Radiation Rules) of Act 368; the Part 135 [administrative rules](#); [Part 111](#) (Hazardous Waste Management) of Act 451; and the Part 111 [administrative rules](#) (Summarized in Chapter 10)
- Wastewater regulations under [Part 31](#) (Water Resource Protection) of Act 451 and the Part 31 [administrative rules](#). (Summarized in Chapter 3)
- Air pollution regulations under [Part 55](#) (Air Pollution Control) of Act 451 and the Part 55 [administrative rules](#) (Summarized in Chapter 1)

The following identifies common federal waste regulations (laws and rules implementing the law):

- Federal hazardous waste regulations implementing the federal [Resource Conservation and Recovery Act \(RCRA\)](#) are contained in [Title 40, Parts 260-279](#), of the [Code of Federal Regulations](#) (40 CFR 260-279).
- Transportation regulations for hazardous materials overseen by U.S. DOT and MSP are contained in [49 CFR Parts 100-199](#). (See Chapter 4)
- PCB materials and waste regulations overseen by the U.S. EPA are in the federal [Toxic Substances Control Act \(TSCA\)](#) and [Title 40, Part 761](#) (40 CFR 761). (See Chapter 6.4)
- Radioactive waste regulations are overseen by the [U.S. Nuclear Regulatory Commission \(NRC\)](#). (See Chapter 10)
- Controlled substance regulations are overseen by the [U.S. Drug Enforcement Administration](#).
- Federal wastewater regulations implementing the federal [Clean Water Act](#). (See Chapter 3)
- Federal air pollution regulations implementing the federal [Clean Air Act](#). (See Chapter 1)

2.1 Waste Reduction and Recycling

Different terms are used in regards to waste reduction practices. “Waste minimization” is a term found in RCRA that refers to source reduction and environmentally sound recycling of RCRA hazardous waste. “Pollution prevention” or P2 is a term found in the federal [Pollution Prevention Act](#) of 1990 that refers to source reduction of all toxic wastes, including those released to air, water and land resources. Source reduction includes any practice that reduces the quantity and/or toxicity of pollutants



entering a waste stream prior to recycling, treatment, or disposal. Examples include equipment or technology modifications, reformulation or redesign of products, substitution of less toxic raw materials, improvements in work practices, maintenance, worker training, and better inventory control. There are specific [mandates under the federal statutes](#) to evaluate and implement waste minimization and pollution prevention activities.

Per the provisions of the Pollution Prevention Act, when Small Quantity and Large Quantity Generators of hazardous waste (see Chapter 2.4.3) sign their waste manifest when shipping hazardous waste, they must certify that as a:

- Large Quantity Generator, they have a program in place to reduce the volume and toxicity of waste generated to the degree they have determined to be economically practicable and have selected the practicable method of treatment, storage, or disposal currently available which minimizes the present and future threat to human health and the environment. Large Quantity Generators are required to have a written waste minimization program in place that reduces the volume and/or toxicity of hazardous waste and promotes recycling of wastes; or as a
- Small Quantity Generator, they have made a good faith effort to minimize their waste generation and selected the best waste management method that is available and that they could afford.

No matter what waste minimization term is used, you need to know what types of waste and how much waste is being generated before beginning a waste reduction or recycling program, and to determine what waste regulations apply to the facility. Resources to help you in this task include:

- DEQ publications center resources found at www.deq.state.mi.us/pubcenter/.
- Chapter 2.4.1. and 2.4.2 regarding waste determinations and Chapter 12 for pollution prevention tips.
- U.S. EPA guidance and tools for identifying hazardous waste minimization practices like the U.S. EPA P2 Resource Exchange at www.epa.gov/oppt/p2home/pubs/p2rx.html, the waste minimization resources at www.epa.gov/osw/hazard/wastemin/index.htm, and the pollution prevention resources at www.epa.gov/p2/.
- [Retired Engineer Technical Assistance Program \(RETAP\)](#), a free, non-regulatory, voluntary waste assessment program, is available to Michigan businesses with 500 or fewer employees. Chapter 12 summarizes RETAP services and also provides additional tips on potential savings by incorporating pollution prevention.

Identifying Wastes and Waste Reduction Opportunities

A business owner or manager can conduct a waste survey to identify the many waste types they generate, the quantities of waste generated, and evaluate how to reduce waste volumes. A survey also helps to identify waste streams that may be a regulated hazardous waste (see Chapter 2.4 for more information). When you conduct your waste survey:

- Tour the whole facility and ask employees questions about work processes and the waste generated. Identify what is regulated as a hazardous waste, liquid waste, solid waste, or other waste type and how much waste is generated. Ask for suggestions about how waste could be reduced. Consider all wastes that are being generated from the different facility areas, Look both inside and outside the facility, including drains and sewers that may collect leaks. Look at discontinued operations that may have waste

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within them and equipment requiring disposal. Look at product storage areas to see if you have expired materials or items no longer used in your operation, and look at wastes generated through general office operations. Make sure to routinely purge of unwanted materials and equipment to reduce the likelihood of having a single month where you generate a much larger volume of hazardous waste subjecting your facility to additional regulations, higher fees, and more reporting.

- Trace all chemical purchases for each step of every process or activity in the facility. Consider whether materials can be substituted that would generate less or no hazardous waste.
- Identify where in-house recovery and reuse of hazardous and non-hazardous materials are possible. If you are interested in recycling on-site, see Chapter 2.4 for management requirements for some materials. Review the regulations or contact the DEQ, [District Office](#), Hazardous Waste Program (see Appendix C for telephone numbers) to determine if you need to be permitted as a hazardous waste treatment facility. Also, check with the [District Office](#), Air Quality Division (AQD) to see if you need an air quality permit for your proposed recycling process.
- Observe to see if employees are creating more hazardous waste by mixing other waste with known hazardous waste. For example, your facility can reduce its volume of hazardous waste by not placing non-hazardous paints in the same container as waste solvents.
- Determine if different wastes are being mixed together. This mixing usually makes recycling difficult, if not impossible, and disposal more expensive.
- Develop and maintain accurate inventory control of all products. This helps to eliminate excessive inventory. Buying in bulk or ordering on a schedule will not be cost effective if the product has to be disposed of because it has expired.

If your facility finds it has unwanted materials that can be used as a product, it might be possible to find another company looking for the material by using a [materials exchange](#). You may also go to www.michigan.gov/deqrecycling to locate recycling options.

Once you know where the wastes are being generated, you may be able to reduce disposal costs by implementing waste reduction and recycling programs. Along with saving money on disposal costs, you might save money by purchasing less material and even earn money by selling the collected materials. You need to have both management and worker support to make these programs work.

Waste reduction involves implementing activities that result in less waste being generated. These activities include the following:

- Change processes so less scrap is created.
- Purchase supplies that are made of less toxic materials
- Purchase supplies that have less packaging.
- Have materials shipped in returnable and reusable containers.
- Use materials on a “first in, first out” basis so products don’t expire.
- Replace disposable materials with reusable and recyclable materials.
- Establish an incentive program that encourages workers to suggest ways to reduce waste.

- Train employees in waste reduction methods.
- Install reclamation units to reduce the amount of waste needing disposal. For example, recover spent solvents from parts washers.

Recycling involves converting materials from the waste stream into other usable goods. The first step for facilities involves the collection of those materials. If the materials cannot be used in-house, then the collected materials are marketed through private brokers or local community recycling programs. Several areas in Michigan now have reuse centers that offer these materials for community or school activities.

Check with your broker or local program (see www.michigan.gov/wasterecycling) to find out what they accept, how the materials must be prepared, and other collection details. You may need to use different brokers or several different recycling programs to market your collected materials because the individual broker or program might not handle the type or volume of material you have.

Commonly collected materials include:

- Drums and other containers
- Glass
- Paper, including office paper and corrugated cardboard
- Scrap metal
- Wood pallets
- Other materials as described in Chapter 2.4.9

To find companies in your area that accept the recyclable materials you collect, search the “[Recycled Materials Market Directory](#)” various categories via the DEQ’s Web site at www.michigan.gov/rmmd or select link to the “[Popular Lists from the RMMD](#)”. If you do not have access to the Internet or have a material not listed, call the Environmental Assistance Center at 800-662-9278 for assistance.

SPECULATIVE ACCUMULATION AND SOLID WASTE EXEMPTIONS

Recycling of solid waste is regulated under [Part 115 of Act 451](#) and the Part 115 [administrative rules](#). Discuss recycling and other waste requirements with the DEQ, [District Office](#), Solid Waste Program (Appendix C). Materials must not be accumulated speculatively for recycling purposes. At least 75 percent of the collected material must be recycled into marketable raw materials or new products, or transferred to a different site for recycling within 1 year or 3 years if it is low-hazard industrial waste.

It is possible to petition a waste to be considered for an exemption as a site or source separated recyclable material: For example, see the exemptions for:

- [Electronics](#)
- [Scrap Wood](#)
- [Gypsum Drywall](#)
- Agricultural use of [inert materials](#)
- [Other](#) materials approved on individual basis

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Some solid wastes may meet the definition of “inert materials” and may be used on land if all the conditions in Rule 114 of the Part 115 rules ([R 299.4114](#)) are met. See the rule for specific requirements.

- Uncontaminated brick, masonry, pavement and broken concrete uses as fill, riprap, slope stabilization or other construction. Concrete can not have exposed rebar.
- Excavated soil.
- Rock.
- Trees, stumps, or other land clearing debris.
- Some low hazardous industrial waste uses.
- Chipped tires.
- [Other materials approved by DEQ, Solid Waste Program.](#)
 - [Scrap Tire Designation of Inertness #04-1-001](#)

2.2 Solid Waste Disposal

No matter how effective your waste reduction and recycling programs are, you probably will still need to dispose of some solid waste. Solid waste includes garbage, rubbish, yard waste, ashes, incinerator ash and residue, industrial sludges, and solid commercial and industrial waste. Solid waste management as discussed in this section does not pertain to hazardous waste that is in a solid form.



Examples of solid waste that usually require disposal include: non-recyclable office paper, break room waste such as discarded food, non-recyclable packaging materials including empty containers (see Chapter 2.4.1.d.2 for definition of “empty”), and other materials which are not hazardous waste.

Wastes prohibited from landfill disposal under Part 115 of Act 451 include:

- Used oil
- Whole tires
- Liquid waste
- Returnable beverage containers
- Lead acid batteries
- Yard clippings (see the registered composting facility information at www.michigan.gov/deqwaste, select “Solid Waste,” then “Composting” for facilities managing more than 200 cubic yards of yard clippings)
- Medical waste
- Sewage
- Asbestos unless landfill meets specific federal requirements
- Empty drums unless crushed
- Hazardous waste from Small Quantity Generators and Large Quantity Generators (see Chapter 2.4)
- Low level radioactive waste
- PCB waste unless landfill meets specific requirements

For more information about banned waste, go to www.michigan.gov/deqprohibitedwaste.

Open dumping and open burning of business waste is prohibited (see Chapter 2.2.1).

Before solid waste is hauled to a licensed disposal facility:

- Store it in leak-proof, covered containers and control odors. This will prevent contaminated stormwater runoff, help keep the waste from blowing away, prevent access by rodents and other animals, and reduce odor problems. If odors are a concern due to the nature of the waste, consider double bagging, scheduling more frequent pick-ups, or both.
- Check if your local authorities have an ordinance that requires a privacy-type fence around the dumpster.
- Discuss using solid waste piles and necessary permits with your DEQ, [District Office](#), Solid Waste Program (Appendix C).
- Check if the licensed disposal facility accepts your type of waste. They may request documentation, like test results, showing it is not a hazardous or liquid waste.

Solid waste must be disposed of at licensed disposal facilities.

- You can haul your own waste to a licensed landfill, incinerator, or transfer/processing facility. If you are considering shipping your solid waste out of your county, check with your [county planning agency](#) after reviewing the county planning [import/export report](#) and [description](#) (see the [list of Designated County Solid Waste Management Planning Agencies](#) at www.michigan.gov/deqwaste “Solid Waste” “Solid Waste Planning”) to confirm that is acceptable under the provisions of your county’s, and the receiving county’s, solid waste management plans. Those plans identify where solid waste can be transported for disposal within Michigan.
- You can also contract with a solid waste hauler to transport your solid waste to an approved facility in accordance with the county solid waste plan(s).

Currently there are no DEQ licensing requirements for haulers of solid waste (except scrap tires—see Chapter 2.2.2), but there are requirements regarding the waste carrying portion of the vehicle. See the [Solid Waste Hauler Resources](#) at www.michigan.gov/deqwaste “Solid Waste”. Some counties do require a local solid waste hauler license. You should know how the hauler handles and disposes of waste because you can be held liable for damages and cleanup costs if the waste is improperly managed. You may contact your DEQ, [District Office](#), Solid Waste Program (see Appendix C) about:

- Shipping solid waste out-of-county.
- Handling sludge from industrial processes and trench or drain cleanout residue under either the solid waste or liquid industrial waste regulations (see Chapter 2.3).
- Whether or not your waste is regulated as a solid waste, or how to properly manage it.

Manifests are not required for hauling and disposing of solid waste, with the exception of scrap tires (see Chapter 2.2.2). Although you don’t have to manifest solid waste, you may want to keep records of when, where, and how much solid waste was removed from your business. This practice gives you an accurate record of waste disposal for management purposes and is valuable if a liability question arises.

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Contact your DEQ, [District Office](#), Solid Waste Program (see Appendix C), for information on the permitting, licensing, and solid waste planning requirements that may apply to:

- storing solid waste at a location other than the site where it was generated;
- treating or processing solid waste; and/or
- disposing of solid waste.

2.2.1 Open Burning

Open burning is the burning of unwanted materials, where smoke and other emissions are released directly into the air without passing through a chimney or stack. Open burning is regulated by air quality and solid waste regulations, and sometimes under local ordinance.

Open burning of trash from a business is prohibited. Open burning of brush, logs, stumps, and trees is prohibited within 1,400 feet of an incorporated city or village limit. The open burning of grass clippings and leaves is not allowed in municipalities having a population of 7,500 or more unless the local governing body has specifically enacted an ordinance authorizing it. A burn permit may be required prior to conducting open burning. For information on obtaining a burn permit go to www.michigan.gov/burnpermit. Structures may not be burned for the purpose of demolition. Air quality regulations allow structures to be intentionally burned for the purpose of [fire suppression training](#) only.

Open burning may also be regulated by the local unit of government. Contact local authorities about their ordinances. Additional information about open burning can be found at the DEQ's Open Burning website at www.michigan.gov/openburning (see also Chapter 1.3.3).

2.2.2 Scrap Tires

It is illegal for anyone to discard scrap tires on property which is not in compliance with storage, bonding, and registration requirements under Part 169 (Scrap Tires) of Act 451. Scrap tires include any used vehicle tires and also hi-low or forklift and other equipment discarded tires. Scrap tire information is available online by going to www.michigan.gov/scrap tires.



The basic requirements for scrap tire generators are as follows:

- Store scrap tires in a safe manner at the location of generation to reduce safety and fire risks. Check with the local fire department about local requirements. If you have 500 or more scrap tires, you must register as a scrap tire collection center and meet additional storage requirements. Requirements and [common violations](#) can be found at the above Web site.
- Ensure scrap tires are taken to registered scrap tire collection sites and scrap tire processors such as licensed energy recovery facilities, reuse, retreading, or recycling facilities. You can:
 - Haul seven or fewer of your own tires without being a registered hauler but make sure the loads are secure so tires do not fall out of the vehicle. If you haul more than seven of your own tires, you must register as a hauler.



- Hire a currently registered scrap tire hauler for the removal of scrap tires. [Lists of registered haulers and sites where to haul tires](#) is at the above Web site under the “Information” heading titled “List of Scrap Tire Facilities.” Many solid waste haulers won’t accept used tires in the trash because whole scrap tires are prohibited by law from being landfilled. If you are offered extremely low prices for scrap tire disposal, you might want to question whether the hauler and/or disposal facility is simply accumulating the tires without intending to comply with the regulations.
- Haulers must register annually under the DEQ, Scrap Tire Program. Haulers must carry their registration, which includes the expiration date and a list of collection sites where they can take the tires, and the original manifest when transporting scrap tires. In addition, they must visibly display their registration number on the vehicle transporting the tires. Compare the disposal site listed on the manifest to the sites listed on the hauler’s current registration. If a hauler is not taking the scrap tires to a disposal site listed on its registration, question it before shipping your scrap tires.
- Obtain and keep the following copies of the scrap tire manifest for each shipment of scrap tires for at least 3 years after shipment:
 - Copy of the scrap tire manifest/transportation record signed by the scrap tire hauler and generator at time of each pickup (form EQP 5128 or EQP 5128a for consolidated loads)
 - Copy of the scrap tire manifest/transportation record signed and returned from the end user, processor, or disposer within 30 days of their receipt of the scrap tires.

You can call the DEQ, Scrap Tire Program at 517-241-2924 or the DEQ, [District Office](#), Scrap Tire Program (see Appendix C) for information about the compliance status of a hauler or disposal site, or if you have questions about becoming a hauler yourself.

Scrap tire collection site and generator/hauler inspection forms are available at www.michigan.gov/deqwaste, “[Scrap Tire](#),” and “[Scrap Tire General Documents and Operational Memos](#)” for performing internal compliance evaluations.

2.3 Liquid Industrial Waste

Liquid industrial waste includes any waste that meets all the following conditions:

- Fails the paint filter test (see Chapter 2.4.2.c), and
- Is not exempted under [Part 121 of Act 451](#), and
- Is not regulated as hazardous waste (see Chapter 2.4). Although hazardous waste generated by a Conditionally Exempt Small Quantity Generator (CESQG) is not required to be manifested under Part 111 of Act 451, if it is a liquid the Conditionally Exempt Small Quantity Generator still must manifest it under the liquid industrial waste regulations and use the hazardous waste codes.

Common examples of liquid industrial waste include used oil that is being recycled, storm sewer and sanitary sewer clean-out residue, grease trap clean-out residue, industrial wastewater, uncontaminated precipitation removed from secondary containment structures, antifreeze that isn’t a hazardous waste, some off-specification commercial chemical products, liquids exempted from hazardous waste regulation, and other liquid waste.

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Liquid industrial waste management is overseen by several entities:

- The DEQ, Hazardous Waste Program oversees the management of liquid industrial waste at generator sites, when in transport, and at destination facilities.
- The DEQ, Hazardous Waste Transporter Program oversees the permitting and registering of liquid industrial waste transporters.
- The DEQ, Water Resource Division (WRD) oversees the discharge and permitting of liquid wastes into surface water and groundwater (see Chapter 3).
- Local publicly owned treatment works (POTW) if the business is connected to a municipal sanitary sewer system. You must obtain permission from the sanitary sewer authority before discharging waste to the sanitary sewer system. Discharge to storm sewers is prohibited.
- Other local agencies, which vary between communities, that oversee local ordinances. Authority is often under the county, city, or township zoning or building office, the public health department's environmental health section, or the fire department.
- The [Michigan State Police, Commercial Vehicle Enforcement Division](#) and [U.S. DOT](#) oversee transportation requirements if the liquid waste is a U.S. DOT hazardous material (see Chapter 4).
- Insurance companies may have requirements for storage and shipping.

If you generate liquid industrial waste, you need to:

- Characterize the waste to determine if non-hazardous or hazardous (see Chapter 2.4.2).
 - ✓ Keep records of waste evaluations and other information used to determine the type of waste at least three years after the waste is shipped for treatment, storage, or disposal.
- Meet storage requirements:
 - ✓ Protect containers from weather, fire, physical damage and vandals.
 - ✓ Containers must be labeled so workers know what is in it (e.g. "Used Oil" - see Chapter 2.4.9.a for more used oil requirements and see Chapter 13).
 - ✓ Manage waste to prevent releases into air, soil, drains, surface water or groundwater
 - Containers must be maintained in good condition.
 - Any leaking containers must be replaced.
 - Containers must be kept closed except when adding or removing waste.
 - Containers must be compatible with the type of waste being stored in them. The MSDS for the virgin ingredients may provide some recommendations or see Web sites like www.flw.com/datatools.
 - Incompatible wastes must not be placed in the same container.
 - ✓ Liquid industrial waste that has a flashpoint at or above 140 degrees and below 200 degrees Fahrenheit and stored in aboveground containers and tanks would also be regulated as a flammable and combustible liquid by the DEQ, Storage Tank Program and/or by the MIOSHA General Industry Safety Standards - Part 75, Flammable and Combustible Liquids, and the local municipality's fire prevention code (see Chapters 4, 34 and 38 for more information).

- ✓ Liquid industrial waste in an underground storage tank that is a [regulated substance](#) under Part 211 (Underground Storage Tanks) of Act 451 would have additional requirements under the tank regulations implemented by the DEQ, Storage Tank Program (see Chapter 4).
- ✓ There are no state time limits requirements on storing liquid industrial waste at your facility, but local ordinances may have limits.
- If operating an on-site reclamation, treatment, or disposal facility, keep records of all liquid industrial waste produced and reclaimed, treated or disposed at the facility for at least three years unless facility is under investigation which requires them to be kept longer. Many companies keep records indefinitely to document they have properly managed their waste when they want to sell the business or property.
- If liquid industrial waste is treated, stored or disposed of in a surface impoundment, obtain the applicable Part 31 (Water Resources Protection) of Act 451 discharge permit (see Chapter 3) and manage leachate appropriately. Discuss specific requirements with the DEQ, [District Office](#), WRD (see Appendix C).
- Obtain a [Site Identification Number](#) when shipping waste off-site with a manifest if one is not already assigned to the site (see Chapter 2.4.4)

| Table 2.1 LIQUID INDUSTRIAL WASTE CODES | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------|
| If the waste is regulated under Part 121 and is a hazardous waste, the hazardous waste code must be utilized. Following are the required non-hazardous liquid industrial waste (___L) and consolidated waste codes (___LC) to put in Box 13 on the manifest: | | |
| Mixed Solvents | 007L | 007LC |
| Pharmaceutical | 014L | 014LC |
| Crankcase Oil | 017L | 017LC |
| Coolants and Water Soluble Oils | 019L | 019LC |
| Other Oil | 021L | 021LC |
| Brine | 022L | 022LC |
| PCB | 026L | 026LC |
| Other wastes * | 029L | 029LC |
| Antifreeze | 030L | 030LC |
| Storm Sewer Cleanouts | 031L | 031LC |
| Sanitary Sewer Cleanouts | 032L | 032LC |
| X-Ray/Photo Cleaning Solutions | 033L | 033LC |
| Water Based Cleaning Solutions | 034L | 034LC |
| Car Wash Sludges | 035L | 035LC |
| Grease Trap Wastes | 036L | 036LC |
| * Include a description in Box 14 Special Handling Instructions and Additional Information. | | |

- Use the [Uniform Hazardous Waste Manifest](#) (Uniform Manifest) when shipping, or meet alternative shipping record requirements, as described in Chapter 2.4.5. Use the liquid industrial waste codes in Table 2.1 above on the Uniform Manifest. If the waste is a hazardous waste that meets an exemption or is generated by a Conditionally Exempt Small Quantity



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Generator, use the hazardous waste codes that are included in Part 2 of the hazardous waste rules. When a consolidated manifest is being used for the shipment, the record provided to the generator may include either the waste code or a description of the waste. See Chapter 2.4.5.a for more information about consolidated manifests.

A liquid industrial waste generator inspection form is available at www.michigan.gov/deqwaste, “**Hazardous and Liquid Industrial Waste**,” “**Hazardous and Liquid Industrial Waste Management**” for performing an internal compliance evaluation.

- Hire a [permitted and registered transporter](#) to take the waste to an appropriate disposal facility (see Chapter 2.4.10) or meet the requirements to haul the company’s own waste (see Chapter 2.4.5)
- Report releases to the Pollution Emergency Alerting System at (800) 292-4706 that could threaten the public health, safety, or welfare, or environment, or that has reached surface water or groundwater unless the release was already reported as required under a different state regulation. Prepare a written report summarizing incident and response measures and keep on-site and submit copy to DEQ if requested. A [summary table](#) of state and federal regulations that require release reporting is included in Chapter 6 and at www.michigan.gov/chemrelease. Some liquid industrial waste may also be subject to the Part 5 rules of Part 31 (Water Resource Protection) of Act 451 (See chapter 6).
- Cleanup all spills (see Chapter 6).
- Depending on the liquid waste, emergency planning may be required under other regulations (e.g. Part 5 rules mentioned above) if threshold management quantities are reached (see Chapter 6).
- If using pump and haul tanks, see the [Liquid Non-hazardous Waste Holding Tank](#) guidance for more information.
- If emptying tanks or containers, see the [Emptying Tanks or Containers](#) guidance.

TABLE 2.2 LIQUID INDUSTRIAL WASTE GENERATOR SUMMARY (includes most used oil)

| | Amount generated in calendar month | Maximum amount that can be accumulated on-site | Maximum time period before waste must be shipped |
|------------------------------------------------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Liquid Industrial Waste and Used Oil Generator | Any amount ¹ | No maximum amount under state regulations. ² If the generator is also a designated facility there is 1 year storage limit. | No state time limit as long as containers in good shape and closed, but check local ordinances for any time limits. |

¹See Parts 111 and 121 for possible liquid industrial waste exemptions.

²Other regulations requiring containment and emergency planning may apply when threshold management quantities are met e.g. [federal Spill Prevention Control and Countermeasure \(SPCC\)](#) for oils and [state Part 5 rules](#) “Spillage of Oil and Polluting Materials” of Part 31 (Water Resource Protection) of Act 451 (see Chapters 4 and 6) and any local ordinances.

2.4 Hazardous Waste

All waste generators except households are required by law to:

- Determine if any of their waste is hazardous waste.
- Keep records of waste evaluations and other information used to determine the type of waste at least three years after the waste is shipped for treatment, storage, or disposal.
- Properly manage the waste.

These requirements apply to all businesses, not just manufacturing. This includes service industries, governmental operations, health care, etc.

It is highly recommended you develop a record keeping system where all the waste determination records, manifests, land disposal restrictions records, reports, contingency plans, training records etc. are filed so you can easily provide these documents upon an inspection. When reading this guidebook, do not confuse the term “hazardous waste” with “hazardous material.” Each term has specific regulatory definitions and requirements. All hazardous waste shipped with a Uniform Manifest is also a U.S. DOT hazardous material. There are some wastes that are not regulated as a hazardous waste, yet are regulated as a U.S. DOT hazardous material. The following information discusses the general requirements regarding hazardous and universal waste. More detailed information is provided for common waste streams in Chapter 2.4.9. The specific requirements that you must follow depend upon the quantities of hazardous waste generated and accumulated within a specific time period at your business.

This chapter focuses on generator requirements and not hazardous waste treatment, storage and disposal facilities (TSDF) and transporter requirements. For information on the permitting, and licensing required for storing hazardous waste at a location other than where it was generated, or for treating or disposing of hazardous waste at any location, please contact your DEQ, [District Office](#), Hazardous Waste Program (see Appendix C).

If you have any questions about hazardous waste management, call your environmental consultant or the DEQ, District Office, Hazardous Waste Program (see Appendix C).

Hazardous waste inspection checklists are available at www.michigan.gov/deqwaste, “Hazardous and Liquid Industrial Waste,” and “Hazardous and Liquid Industrial Waste Management” for performing internal compliance evaluations.

2.4.1 Defining Hazardous Waste

Hazardous wastes are wastes that have been determined to be a threat to human health or the environment. Federal and state regulations define wastes as hazardous if they are either 1) included on specific lists within the regulations (listed hazardous waste) or 2) exhibit hazardous characteristic(s) specified in the regulations (characteristic hazardous waste). Each hazardous waste type, regardless of whether it is a listed hazardous waste or characteristic hazardous waste, is assigned a specific number for purposes of waste tracking and management. Michigan regulates more hazardous wastes than what is included in the federal regulations. Wastes that are included in both the federal and state regulations have a U.S. EPA waste number that begins with a letter followed by 3 digits. The additional Michigan hazardous waste numbers begins with the 3 digits and ends with the letter. There are some wastes that

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can have several waste numbers that apply. The regulations also allow businesses the option of handling some waste streams under streamlined management standards called the “universal waste” standards. For further information on universal wastes and their management standards, please see Chapter 2.4.1.c in addition to the following sections. If you have waste containing radioactive materials, please see Chapter 10.

2.4.1.a Listed Waste

Listed waste includes waste materials listed by name or generation source that are identified on the federal and Michigan lists of hazardous waste. If listed hazardous waste is mixed with other waste, then that mixture is defined as a listed hazardous waste under the mixture rule, unless it meets one of the regulatory exclusion identified in Rule 203(7) of the Part 111 rules (R 299.9203(7)). However, excluded wastes under Rule 9203(7) are still subject to land disposal restrictions (see Chapter 2.4.5.c). Moreover, any waste excluded from Part 111, hazardous waste regulation would generally be subject to Part 121, if liquid or Part 115, if solid.

To determine if a waste is a listed hazardous waste, you need to know the process used to produce the waste and/or the chemical names, and in some instances the chemical concentrations for the materials used to generate the wastes. To determine if a waste is a listed hazardous waste, you must review the lists of listed hazardous wastes found in the regulations. When reviewing these lists, it is helpful to know they are grouped as follows:

- **Common wastes from non-specific sources.** The list of common wastes from non-specific sources is found under Table 203a of the Part 111 rules. It includes wastes from equipment like degreasers and wastewater treatment operations used at many manufacturing and service businesses. Common wastes from non-specific sources are referred to as the “F” listed hazardous wastes because the waste codes assigned to these wastes all begin with an “F.” Many manufacturers generate F001-F005 spent solvents. To generate an “F” listed solvent waste, the virgin solvent must contain the constituents included in the waste descriptions at or above the concentration specified in the table. Besides knowing the solvent constituents and their concentration, proper characterization of “F” listed solvent waste also depends on how the solvent was used (see Chapter 2.4.9.h). Some “F” listed hazardous wastes also have an “(H)” designation included in the hazard code column of the table. An “H” hazard code designation identifies the listed hazardous waste is an acute hazardous waste that triggers full regulation as a hazardous waste if greater than 2.2 pounds are generated in one month. Michigan has the same F list as the federal regulations.
- **Waste from specific industries.** The list of wastes from specific industries is found under Table 204a of the Part 111 rules. It includes wastes from industries like the chemical manufacturing, petroleum refining, and iron and steel production, among other industries. The listed wastes from this table are referred to as the “K” listed wastes because the waste codes assigned to these wastes all begin with a “K.” Most Michigan manufacturers do not generate “K” wastes. Most Michigan “K” wastes are generated from the iron and steel production and petroleum refining industries. Michigan has the same federal K list and an additional state K waste list.
- **Discarded commercial chemical products, off-specification chemicals, and their spill or container residues.** Discarded commercial chemical products, off-specification chemicals, and their spill or container residues are a listed hazardous waste if they are found listed in Tables 205a, 205b, and 205c of the Part 111 rules. These wastes all have waste codes that begin with a “P” or “U”. Discarded commercial chemical products or off-specification chemicals are “P” or “U” listed hazardous wastes if they contain, as

their sole active ingredient, one of the chemicals identified in the “P” or “U” lists in the Part 111 rules. Formulations with a sole active ingredient have only one ingredient that serves a function. Chemicals which have a sole active ingredient may contain water, oil, or other materials that serve as a carrier for the sole active ingredient. An example of a commercial chemical product is technical grade toluene that is used for cleaning. It is a U220 hazardous waste if the product was discarded before being used even if there was another ingredient included in the formulation as a carrier. It is a F005 waste if it was used for cleaning and then is discarded. Businesses have “P” or “U” wastes when disposing of unused or off-specification chemicals, when cleaning up a spill of these listed chemical products and/or chemical intermediates having the generic names listed, or when disposing of a container with container residues from the “P” or “U” listed hazardous wastes. Pharmaceutical industries may also generate U and P wastes, especially when they are involved with take back programs with hospitals, pharmacies, and other medical facilities.

Chemicals included on the “P” list are designated as acutely hazardous and trigger full regulation as a hazardous waste if greater than 2.2 pounds are generated in one month. “U” wastes include toxic chemicals and chemicals that also display other characteristics such as ignitability. Michigan has the same federal P and U lists and has an additional state U waste list.

2.4.1.b Characteristic Waste

Waste exhibiting any of five characteristics identified in the Michigan and federal regulations is also defined as a hazardous waste. These wastes have a U.S. EPA or Michigan hazardous waste number that begins a “D” or ends with or “S”. The five characteristics are:



Ignitable - Starts burning easily; liquids with a flashpoint below 140 degrees Fahrenheit, solids that spontaneously ignite, oxidizing materials, and ignitable compressed gases. Ignitable compressed gas are those that meet the criteria in 40 CFR 261.21(a)(3), not the criteria referenced in the U.S. DOT regulations. This includes gases that form flammable mixtures in air. Examples of wastes that are characteristic hazardous wastes due to their ignitability include: mineral spirits, methyl isobutyl ketone and other solvents, solvent-based paints, solvent-soaked rags, gasoline, cleaning fluids, naphtha, sludges containing petroleum, and ignitable compressed gas like hydrogen, propane, and acetylene. These wastes have a hazardous waste number of D001.



Corrosive - Liquids that dissolve steel or aqueous wastes with a pH less than or equal to 2.0 or greater than or equal to 12.5. Examples of wastes that are characteristic hazardous wastes due to their corrosivity include caustics like alkaline cleaners and battery acid. These wastes have a hazardous waste number of D002.



Reactive – Undergoes rapid or violent chemical reaction and necessitates special handling requirements. Examples of wastes that are characteristic hazardous wastes due to their reactivity include organic peroxides, cyanides, sulfides, nitroglycerine, and explosives. These wastes have a hazardous waste number of D003.



Toxic - Poisonous to humans and other living organisms. Waste becomes regulated as a characteristic hazardous waste due to its toxicity when a toxic substance in a sample extract from the waste meets or exceeds chemical concentration levels specified in Table 201a of the Part 111 rules. See Table 2.3 for the list of toxic substances that may cause a waste to be a characteristic hazardous waste due to its toxicity. These wastes are assigned hazardous waste numbers D004 through D043.

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Wastes that are a characteristic hazardous waste due to its toxicity are sometimes called toxicity characteristic leaching procedure (TCLP) wastes because a TCLP laboratory test is used to evaluate whether the waste is a hazardous waste (see Chapter 2.4.2.c). Examples of wastes that are generally characteristic hazardous wastes due to their toxicity include: fluorescent lamps, electronic waste, dry cell batteries, various metal-bearing solutions, solvents, mercury switches, lead tire weights, some pesticides, some medical related wastes including mercury thermometers and older antiseptics containing mercury from medical kits, and other organic chemicals. An example of a D009 hazardous waste includes mercury from electric lamps or switches that have a TCLP test concentration result of 0.2 milligrams per liter (mg/l) or more of mercury and are not being managed under the universal waste rule (see Chapter 2.4.1.c). Methyl ethyl ketone (MEK) waste has a waste number of D035 if the TCLP concentration is 200 mg/l or more of MEK. MEK can also be an “F” waste if it meets any of those regulatory definitions.



Severely toxic – Severely toxic to humans and other living organisms. These Michigan hazardous wastes contain 1.0 parts per million (PPM) or more of a severely toxic material listed in Table 202 of the Part 111 rules. These materials are regulated at quantities of one kilogram, which is just over two pounds or more. The hazardous waste numbers include 001S through 007S. It is unlikely for most businesses to have severely toxic wastes.

**TABLE 2.3 Characteristic Hazardous Wastes for Toxicity
(if waste meets or exceeds the listed concentration)**

| U.S. EPA Hazardous Waste Number | Chemical Abstract Services Number | Material | Extract Concentration from TCLP analysis in milligrams per liter |
|---------------------------------|-----------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| D004 | 7440-38-2 | Arsenic | 5.0 |
| D005 | 7440-39-3 | Barium | 100.0 |
| D018 | 71-43-2 | Benzene | 0.5 |
| D006 | 7440-43-9 | Cadmium | 1.0 |
| D019 | 56-23-5 | Carbon tetrachloride | 0.5 |
| D020 | 57-74-9 | Chlordane | 0.03 |
| D021 | 108-90-7 | Chlorobenzene | 100.0 |
| D022 | 67-66-3 | Chloroform | 6.0 |
| D007 | 7440-47-3 | Chromium | 5.0 |
| D023 | 95-48-7 | o-Cresol | 200.0** |
| D024 | 108-39-4 | m-Cresol | 200.0** |
| D025 | 106-44-5 | p-Cresol | 200.0** |
| D026 | ----- | Cresol | 200.0** |
| D016 | 94-75-7 | 2,4-D (2,4-Dichlorophenoxyacetic Acid) | 10.0 |
| D027 | 106-46-7 | 1,4-Dichlorobenzene | 7.5 |
| D028 | 107-06-2 | 1,2-Dichloroethane | 0.5 |
| D029 | 75-35-4 | 1,1-Dichloroethylene | 0.7 |
| D030 | 121-14-2 | 2,4-Dinitrotoluene | 0.13* |
| D012 | 72-20-8 | Endrin (1,2,3,4,10,10-hexachloro-1,7-Epoxy-1,4,4a,5,6,7,8,8a octahydro-1,4-endo, endo-5,8-dimethano naphthalene) | 0.02 |
| D031 | 76-44-8 | Heptachlor (and its Epoxide) | 0.008 |
| D032 | 118-74-1 | Hexachlorobenzene | 0.13* |
| D033 | 87-68-3 | Hexachlorobutadiene | 0.5 |
| D034 | 67-72-1 | Hexachloroethane | 3.0 |
| D008 | 7439-92-1 | Lead | 5.0 |
| D013 | 58-89-9 | Lindane (1,2,3,4,5,6-hexa-chlorocyclohexane, gamma isomer) | 0.4 |
| D009 | 7439-97-6 | Mercury | 0.2 |

**TABLE 2.3 Characteristic Hazardous Wastes for Toxicity
(if waste meets or exceeds the listed concentration)**

| U.S. EPA Hazardous Waste <u>Number</u> | Chemical Abstract Services <u>Number</u> | Material | Extract Concentration from TCLP analysis in milligrams <u>per liter</u> |
|----------------------------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| D014 | 72-43-5 | Methoxychlor (1,1,1-trichloro-2,2-bis(p-methoxyphenyl)ethane) | 10.0 |
| D035 | 78-93-3 | Methyl ethyl ketone | 200.0 |
| D036 | 98-95-3 | Nitrobenzene | 2.0 |
| D037 | 87-86-5 | Pentachlorophenol | 100.0 |
| D038 | 110-86-1 | Pyridine | 5.0* |
| D010 | 7782-49-2 | Selenium | 1.0 |
| D011 | 7440-22-4 | Silver | 5.0 |
| D039 | 127-18-4 | Tetrachloroethylene (also called perchloroethylene) | 0.7 |
| D015 | 8001-35-2 | Toxaphene (C ₁₀ H ₁₀ C ₁₈ , Technical chlorinated camphene, 67-69 percent chlorine) | 0.5 |
| D040 | 79-01-6 | Trichloroethylene | 0.5 |
| D041 | 95-95-4 | 2,4,5-Trichlorophenol | 400.0 |
| D042 | 88-06-2 | 2,4,6-Trichlorophenol | 2.0 |
| D017 | 93-72-1 | 2,4,5 TP Silvex (2,4,5-Tri-chlorophenoxypropionic acid) | 1.0 |
| D043 | 75-01-4 | Vinyl chloride | 0.2 |

* Quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level.

**IF o-, m-, and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 mg/l.

2.4.1.c Universal Waste

The **universal waste** standards are streamlined standards for managing common types of hazardous waste. Hazardous wastes volumes managed under the universal waste standards are not included when determining your hazardous waste generator status (see Chapter 2.4.3). A primary benefit of managing hazardous waste under the universal wastes standards is that it reduces your monthly hazardous waste volumes. This may reduce your generator status and consequently reduce the overall regulatory requirements that your facility must meet when managing hazardous waste. For example, a Large Quantity Generator that manages part of its hazardous waste stream as universal waste may be able to become a Small Quantity Generator and be subject to fewer hazardous waste regulations and lower waste handler fees. The universal waste standards give facilities the choice of handling the following waste types as a universal waste or hazardous waste:

- **Electric lamps**, including fluorescent, high intensity discharge, sodium vapor, mercury vapor, neon, and incandescent lamps. Broken lamps are not universal wastes (see Chapter 2.4.9.e).
- **Batteries**, including dry cell (see Chapter 2.4.9.d) and lead acid types (see Chapter 2.4.9.c which also discusses another lead acid battery management option).
- **Mercury containing devices** such as thermostats, switches, thermometers, and other devices.
- **Pesticides**, including certain suspended, canceled, or unused pesticides.
- **Consumer electronics**, including computers, televisions and other equipment containing circuit boards commonly found in homes (see Chapter 2.4.9.m).

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- **Antifreeze** (see Chapter 2.4.9.o).
- **Pharmaceuticals** (drugs), including nicotine, coumadin, nitroglycerine, epinephrine, and other drugs (see Chapter 2.4.9.q).

There are two types of universal waste handlers – a Small Quantity Handler and a Large Quantity Handler. Do not confuse universal waste handler types with hazardous waste generator types (e.g. Small Quantity Generator and Large Quantity Generator). See Table 2.4 below which summarizes the universal waste handling requirements for large and small quantity universal waste handlers. For more detailed information on handling universal waste, please also see Chapters 2.4.4, 2.4.5, 2.4.7, 2.4.8 and 2.4.9. The requirements for universal waste transporters and destination facilities are not discussed in this guidebook.

| Table 2.4 SUMMARY OF UNIVERSAL WASTE HANDLER CATEGORIES | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| | Small Quantity Handler (SQH) | Large Quantity Handler (LQH)¹ |
| Amount of all universal waste types accumulated at any time during the calendar year beginning January 1 | Less than 5,000 kilograms (11,000 pounds) | 5,000 kilograms (11,000 pounds) or more |
| Maximum amount of all universal waste types that can be accumulated on-site during the calendar year beginning January 1 | Less than 5,000 kilograms (11,000 pounds) | No limit |
| Maximum time period before waste must be shipped | 1 year after generated or received from another facility | 1 year after generated or received from another facility |
| Notification Required² | No, unless universal waste is a liquid then use form EQP 5150 . See Chapter 2.4.4 | Yes, use form EQP 5150 See Chapter 2.4.4 |
| Employee Training & Emergency Response | Yes, see Chapters 2.4.12 and 6 | Yes, see Chapters 2.4.12 and 6 |
| Permitted and registered transporters required to be used² | No, unless liquid which is managed as liquid industrial waste (Chapter 2.4.10) | No, unless liquid which is managed as liquid industrial waste (Chapter 2.4.10) |
| Manifests³ or shipping papers² | If liquids, use Uniform Manifest or keep alternative records. See Chapter 2.4.5.a and b. | If liquids, use Uniform Manifest or keep alternative records. See Chapter 2.4.5.a and b. |
| Export/Import | Additional federal notification and reporting requirements, see Chapter 2.4.5.d | Additional federal notification and reporting requirements, see Chapter 2.4.5.d |
| <p>¹ Once the LQH status is reached, the business must keep that designation through the end of that calendar year.</p> <p>² Universal wastes that are a liquid would need to be hauled as liquid industrial waste. In addition, some universal waste may be regulated as U.S. DOT hazardous material if it meets the criteria specified in 49 CFR 173.2. For example, shipments of more than one pound of mercury per package, and many pesticides, are regulated U.S. DOT hazardous materials. The amount of mercury varies in the different devices. This material must be packaged, labeled, marked, placarded, and transported with the proper shipping papers according to U.S. DOT requirements. Contact the Michigan State Police, Commercial Vehicle Enforcement Division at 517-241-0506, the U.S. DOT at 517-853-5990 or visit their Web site at www.phmsa.dot.gov/hazmat for information about their requirements. Also see Chapter 4.4 for further discussion of these requirements.</p> <p>³ Liquid universal wastes would be shipped as Part 121 liquid industrial waste, not as hazardous waste</p> | | |

2.4.1.d Hazardous Waste Exclusions and Exemptions

Some waste streams may meet applicable exclusion and exemption criteria and not be fully regulated as a hazardous waste. These exclusions and exemptions are too numerous to include in their entirety in this publication, but the following summarizes some common ones and others are identified in Chapter 2.4.2.d. Additional management requirements are included in Chapter 2.4.9. for some specific wastes. See the U.S. EPA's [RCRA Orientation Manual](http://www.epa.gov/wastes/inforesources/pubs/orientat/) at www.epa.gov/wastes/inforesources/pubs/orientat/ and the [RCRA, Superfund, & EPCRA Hotline Training Modules](http://www.epa.gov/superfund/contacts/sfhotline/cerep.pdf) at www.epa.gov/superfund/contacts/sfhotline/cerep.pdf for more information about exclusions and exemptions and discuss exclusion or exemption questions with your DEQ, [District Office](#), Hazardous Waste Program (see Appendix C).

RECYCLING

Recycling may occur at the generator's site or off-site. Different regulations apply to companies recycling their own wastes and those offering commercial recycling services. Generators must keep records of on-site reclamation and the treatment performed must be performed in accordance with an exemption found under Rule 503 of the [Part 111 Rules](#) (R 299.9503). As provided in Rule 205(5) of the Part 111 Rules (R 299.9205), in some cases the waste may not need to be counted when determining your monthly generator status.

Companies that have submitted information that they offer recycling services are listed in the [Recycled Materials Market Directory](http://www.michigan.gov/rmmd) at www.michigan.gov/rmmd. As the generator, you should ensure the recyclers are meeting the applicable environmental regulations. For example, if the recycling company offers transportation services, ask if they meet the applicable transporter regulations to haul your type of waste.

It is necessary to consider all the regulations (e.g. Parts 31, 55, 111, 115, and 121) that may be applicable to meet requirements to recycle materials. In some cases recycling a material may be exempt under all the waste regulations but the recycling process itself may be subject to air regulations (Part 55) and wastewater discharge limitations (Part 31). In other situations, some hazardous waste that is recycled is excluded from being regulated as a hazardous waste but it is regulated as liquid industrial waste. For example, gas removed from an abandoned storage tank or a gas/water mixture that is shipped off site to be burned as a fuel at a cement kiln is exempt from being a hazardous waste, but it must be shipped and manifested as a liquid industrial waste. See Rule 206 of the Part 111 rules (R 299.9206) and discuss specific recycling requirements with your DEQ, [District Office](#), Hazardous Waste Program (see Appendix C).

Materials that are directly used or reused are not regulated as hazardous waste when they are:

- Used as an ingredient to make a product without first being reclaimed. A material is "reclaimed" if it is processed to recover a usable product, or if it is regenerated which may include filtering or any other processing before reuse.
- Used as an effective substitute for a commercial chemical product.
- Returned to the original process from which it was generated, without first being reclaimed. However, if the material is reclaimed prior to reuse or is used to produce products that are applied to or placed on the ground or burned for energy recovery, the material and the recycling process are fully regulated.

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Note too that the hazardous waste regulations require that any exemption or exclusion claim be demonstrated by the generator. There are also speculative accumulation limits for materials being collected for recycling. Speculative accumulation under the hazardous waste regulations does not include collected materials when at least 75 percent of the material (either by volume or weight) is recycled, or transferred to another site for recycling, within the calendar year beginning January 1. See Rule 107(z) of the Part 111 rules (R 299.9107(z)) for the definition of hazardous waste speculative accumulation and see Section 12112(3) of Part 121 for liquid industrial waste.

LABORATORY SAMPLES

A waste sample that is sent to a laboratory to determine if it is a hazardous waste is exempt from most of the hazardous waste regulations if it meets certain conditions. Send the smallest amount needed for the test (typically this is less than one gallon) to the laboratory, and the laboratory may return any remaining sample to the generator. If the waste is determined to be a hazardous waste this exemption no longer applies to the sample after it is no longer needed for waste characterization purposes. See Chapter 2.4.2.b for shipping record requirements.

EMPTY CONTAINERS

Empty containers, liners, and residue from “empty containers” are not subject to the hazardous waste requirements if the following conditions are met:

1. The containers or the inner lining that held non-acute hazardous waste have had as much material removed as possible using practices commonly used to remove that material (e.g. pouring, pumping, and aspirating), AND the amount of hazardous waste residue in the container or liner meets any of the following:
 - One inch or less; OR
 - No more than three percent by weight of the total capacity for containers 119 gallons or less in size; OR
 - No more than 0.3 percent by weight of the total capacity for containers over 119 gallons.
2. The containers that held acutely or severely toxic hazardous waste (e.g., waste identified on the “P” or “S” lists and “F” wastes with a “H” hazard code) have been triple-rinsed using a material capable of removing the product or by another proven cleaning method, or the inner lining that prevented contact of the chemical with the container has been removed from the container. For containers or inner liners that held acute hazardous waste listed solely for a hazardous waste characteristic and the formulation in the container or inner liner no longer exhibits that characteristic, the container or inner liner is empty if the above requirements in condition #1 are met. Any rinsate generated from rinsing a container or tank that held acutely or severely toxic hazardous waste is a listed hazardous waste unless it meets an exemption under the hazardous waste regulations (e.g. it is direct discharged to a POTW under an authorization issued by the sanitary sewer authority and there is no accumulation or storage prior to the discharge to the sanitary sewer).
3. Compressed gas cylinders have been emptied to the point where the pressure in the container approaches atmospheric pressure.

WASTEWATER DISCHARGES TO MUNICIPAL SANITARY SEWER SYSTEMS

Wastewater that contains hazardous waste and is discharged through sanitary sewers to the publicly owned treatment works (POTW) is exempt from the hazardous waste regulations at the point of discharge into the sanitary sewer system IF the discharge is approved by the POTW (see Chapter 3.2.1). However, any hazardous waste generation, treatment, or storage prior to that discharge may be subject to the hazardous waste regulations. This exemption does not apply to any hazardous waste that is transported by truck or rail to a POTW and cannot be used for the discharge of any wastewater to a storm sewer.

An exemption from the mixture rule exists if very small amounts, or de minimis amounts, of listed hazardous waste are discharged to a wastewater treatment plant with large volumes of non-hazardous wastewater. De minimis losses are inadvertent releases to a wastewater treatment system. There are additional requirements if claiming the de minimus exemption including meeting wastewater discharge requirements.

If hazardous waste is discharged to a POTW for disposal, keep a copy of the federal clean water act permit application or the submission to the POTW at the facility with their approval and records of your hazardous waste discharges for at least three years. See Chapter 3 for more information. If a facility is doing any on-site treatment, including waste neutralization, that involves discharges to a sanitary sewer system, they need to have a certified wastewater operator (see Chapter 3.5).

Discuss this exemption with your DEQ, [District Office](#), Hazardous Waste Program and WRD, as well as the local POTW (see Appendix C).

2.4.2 Determining If You Generate Hazardous Waste

All facilities must determine if the waste they generate is hazardous or non-hazardous. If the materials used, or the process generating the waste changes, or there are other impacts from business operations that may change the waste (e.g. cross contamination from aerosol overspray), it will be necessary to re-evaluate the waste determination. The regulations do not require a specific timeframe like annually to re-evaluate the waste; however it should periodically be re-evaluated. You may want to check if the disposal company has a retesting schedule. Keep any records obtained during waste determinations (i.e., test analysis results, material safety data sheet (MSDS) (see Appendix E), or other documentation such as product information from a supplier or manufacturer) at least three years from the time the waste stream was last sent for treatment, storage, or disposal.

If Large Quantity Generators are doing on-site treatment, they must also have a waste analysis plan (WAP) under the land disposal restriction regulations (40 CFR 268.7(a)(5)). See U.S. EPA guidance at www.epa.gov/Compliance/resources/policies/civil/rcra/wasteanalygman-rpt.pdf.

2.4.2.a Who can do waste determinations for a business?

A business may either:

- [Hire a consultant](#) or use a disposal company's waste characterization services. Be aware the waste generator is still ultimately responsible for meeting the waste regulations.
- Characterize the waste themselves by either:

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- ✓ Using knowledge of the material and the process it came from. Information from the material safety data sheets (MSDS), supplier and manufacturer literature, or other documentation may be useful when you have unused product needing disposal. A MSDS often provides information about the flashpoint, pH, or if a discarded product is a hazardous waste. A MSDS is not completely reliable for determining if a used material is hazardous waste because:
 - it does not include information about contaminants that might be in the waste as a result of its use, and
 - it may not list all hazardous constituents of concern for disposal, since the MSDS may only identify hazardous constituents of concern for occupational safety.

The MSDS can be obtained from the suppliers or manufacturers of the products you are using. If using a MSDS to characterize the waste, confirm with the manufacturer that all hazardous constituents in the product are listed on the MSDS, making note of your confirmation, as part of your waste evaluation record. Some MSDS are also available on several Internet sites like www.hazard.com. A waste stream may be presumed to contain certain constituents above regulatory thresholds for compliance purposes, but disposal facilities may still require testing before accepting a waste stream. Applying your knowledge is more useful when declaring something is a hazardous waste than when saying a waste is NOT hazardous.

- ✓ Having a representative sample of the waste tested.

2.4.2.b What are testing requirements?

It is recommended a business or consultant contact the disposal company before collecting samples and submitting them for testing. The disposal company might require specific tests or only accept data from specific laboratories. Ask the disposal company for a list of these tests, the purpose of the tests, approved testing methods, and acceptable laboratories. This step will prevent you from spending money on laboratory tests that are not necessary or do not meet the disposal company's requirements. The waste rules identify which laboratory methods can be used. If the waste is from cleanup activities, see the methods in the [Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria](#), but before testing discuss your cleanup situation with the DEQ, Remediation Division (see Appendix C).

It is wise to obtain estimates from two or more [laboratories](#). A list of testing laboratories is available at the [DEQ online publication center](#) when you search on key words "testing lab." In some cases, the tests will save you money by showing that you do not have hazardous waste. When hiring testing services, use a reputable firm and obtain a written contract. The contract should clearly identify which specific services the company will provide. For example, instead of vague language about sampling waste, identify:

- ✓ Who is responsible for collecting samples?
- ✓ Who will arrange to have it analyzed?
- ✓ Who will arrange to have an expert look at the analysis results?
- ✓ Who will determine if the waste is hazardous and at which regulatory limit?

Waste samples being sent to laboratories are exempt from most of the hazardous waste regulations if it meets certain conditions. Submit the smallest sample amount as possible for testing (typically less than one gallon), and the laboratory may return any remaining waste

sample to the generator. The exemption no longer applies when the sample is determined to be hazardous waste and is no longer needed for waste characterization purposes.

Contact the laboratory about its procedures for accepting samples. When shipping the sample, you must meet U.S. Postal Service or U.S. DOT labeling and shipping requirements. U.S. DOT questions can be directed to Michigan State Police, Commercial Vehicle Enforcement Division at 517-241-0506 or the U.S. DOT at 800-467-4922. If these agencies' regulations do not apply to the sample, it must be packed so it does not leak, spill, or vaporize. Waste samples being shipped to a laboratory are not required to be manifested, but the following information must accompany the shipment:

- ✓ Sample collector's name, mailing address, and telephone number.
- ✓ Laboratory's name, mailing address, and telephone number.
- ✓ Date of shipment.
- ✓ Quantity of the sample.
- ✓ Description of the sample.

2.4.2.c What are common laboratory tests?

The hazardous waste rules reference the acceptable test methods that are to be used to determine if wastes are hazardous or not. These methods can be found in the U.S. EPA publication "SW-846" at www.epa.gov/epawaste/hazard/testmethods/sw846/index.htm.

The **paint filter test** is [U.S. EPA Method 9095A](#) that is used to determine the presence of free liquids in a representative sample of waste. A predetermined amount of material is placed in a paint filter. If any portion of the material passes through and drops from the filter within the 5-minute test period, it contains free liquids. If these wastes are not regulated under the hazardous waste regulations, they are regulated under Part 121 of Act 451 as a liquid industrial waste.

The **Toxicity Characteristic Leaching Procedure (TCLP)** is [U.S. EPA Method 1311](#) that is used to determine if a waste has toxicity characteristics in amounts that meet or exceed regulatory limits causing it to be regulated as hazardous waste. The TCLP was designed to predict whether a waste is likely to leach chemicals into groundwater. It simulates the conditions a waste might encounter in a typical municipal solid waste landfill. Be aware that it is not necessary to identify every chemical component of the waste in order to meet the hazardous waste regulations and ensure adequate treatment or disposal. It may not be necessary to run a TCLP for every constituent included on the "D" list in Table 201a of the [Part 111 rules](#) if you are familiar with your process. For example, you may only need to have a TCLP done for metals and volatiles if you know that the other constituents are not present in the waste. If you are unsure of the types and concentrations of hazardous contaminants present in the waste, a cost-effective option to running a TCLP test is to first run a total waste analysis to demonstrate if a waste exhibits toxicity characteristics. If the waste is 100 percent solids, divide the total constituent concentration by 20 and then compare the resulting theoretical concentration to the regulatory limit in Table 2.3. This is sometimes called the 20 times rule. If no theoretical concentration equals or exceeds the regulatory limit, the solid cannot exhibit the toxicity characteristic and the TCLP does not need to be run. If the waste is a liquid or contains both liquids and solids, go to www.epa.gov/rcraonline and search for "Total Waste Analysis" for more information and a formula to convert totals results.

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In other situations, you may only need to know if a liquid waste is ignitable and can request a flashpoint test; or to find out if it is corrosive, a pH test can be done. Special tests might be required if you have drums or containers of mixed or unidentified old waste. You may be able to minimize laboratory testing costs by providing information about your waste streams and operations that were previously collected during your waste survey.

Although it is not commonly done, you may be able to conduct some tests on your own to determine if you have hazardous waste. For example, used oil can be tested on-site by using a commercial test kit to determine if it contains total halogens greater than 1,000 PPM requiring it to be handled as a hazardous waste. Discuss these testing options with your permitted and registered waste transporter; treatment, storage, and disposal facility (TSDF); or recycling company to see if they will accept these test results.

2.4.2.d Steps when doing waste determinations

- A. Conduct a waste survey as described in Chapter 2.1 to identify all your waste streams. Hazardous waste may be generated in many areas of your business from the shop floor to offices. Following are some commonly overlooked wastes. Reasons why it may be a hazardous waste are noted in parenthesis.
- Spent fluorescent tubes and other lighting fixtures (toxic for mercury).
 - Disposable rags containing free liquids with a flashpoint of less than 140 degrees Fahrenheit or used with a listed solvent (ignitability, spontaneous combustion, used with "F" listed solvents).
 - Spent activated carbon media, included in some air filters and other equipment (contains "F" listed solvents).
 - Used solvents with low flashpoint (toxic, ignitability).
 - Used solvents with high flashpoints (toxic, ignitability).
 - Drain or sump sludge, including loading/unloading area trenches (contains toxic metals or "F" solvents, ignitability due to gasoline from trucks).
 - Painting materials and waste including paint thinners, enamel reducers, epoxies, primers, enamels, solvent-based paints, and paint booth filters (contains "F" solvents, metals, ignitability).
 - Aerosol cans that are not empty (contains "U" or "P" chemicals, ignitability).
 - Solvent-based adhesives (ignitability).
 - Batteries - lead acid and dry cell (toxic for lead and mercury, corrosive).
 - Used water-based or synthetic lubricating fluids containing high concentrations of heavy metals (toxic metals of concern include lead, chromium, cadmium, and barium).
 - Listed wastes mixed with another non-hazardous waste.
 - [Office computer equipment](#) (may contain lead in the cathode ray tubes, mercury switches, batteries, heavy metals in the circuit boards).
 - Discarded, unused chemical products from inventory reduction activities (any of the commercial chemical products on the "P" and "U" lists in the state or federal regulations).
 - Medical kits containing mercury thermometers or antiseptics containing mercury (toxic).

- B. Identify if the material can be used “as is” without any processing, filtering, etc. and thus can be used as a product and not be disposed of as a waste. Consider using business connections to find another company to use the product.
- C. Identify if the material is a characteristic and/or listed hazardous waste as identified in Part 2 (Identification and Listing of Hazardous Waste) of the [hazardous waste rules](#) and [Part 111](#) of Act 451. Be aware Michigan regulations identify more hazardous wastes than does the U.S. EPA under the federal [Resource Conservation and Recovery Act \(RCRA\)](#) and [rules](#).

Consider these five questions when doing a hazardous waste characterization:

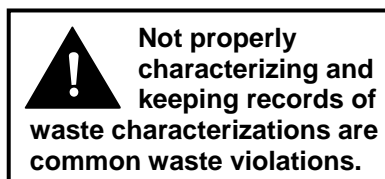
1. Is the unwanted material a waste (solid, semisolid, liquid, or gas)?
2. Is the material specifically excluded or exempted from the hazardous waste regulations? See the complete descriptions in the [Part 111 rules](#). Some common materials include:
 - [Universal waste](#), which includes electric lamps (e.g. fluorescent and other light bulbs (see Chapter 2.4.9.e), batteries (see Chapter 2.4.9.c and d), devices containing mercury, consumer electronics including computers (see Chapter 2.4.9.m), certain pesticides, antifreeze (see Chapter 2.4.9.o), and pharmaceuticals (see Chapter 2.4.9.q, 2.5 and 2.6).
 - Rags and other textiles being cleaned for reuse (see Chapter 2.4.9.h)
 - The remaining residue in “empty containers” (see Chapter 2.4.1.d)
 - Solvents (see Chapter 2.4.9.i)
 - Oils and filters (see Chapter 2.4.9.a and 2.4.9.b)
 - Lead acid batteries (see Chapter 2.4.9.c),
 - Spent chlorofluorocarbon refrigerants
 - Scrap metal when recycled (see Chapter 2.4.9.l and p). Be aware that [scrap metal](#) from sealed radioactive sources, typically installed in measurement gauges used in manufacturing operations or in hospital equipment and other sources, may also contain radioactive materials (see Chapter 10). Companies hauling industrial scrap metal for hire must meet requirements overseen by the Department of Labor and Economic Growth, Michigan Public Service Commission (MPSC) under the [Motor Carrier Act](#) (Act 254 of 1933). Contact the Motor Carrier Credentials & Customer Service Section at 517-241-6030 or the MPSC Customer Intake Center at 1-800-292-9555.
3. Is the waste a "listed" hazardous waste? To be considered listed waste, either the chemical or the process used to generate the waste is specifically included in the listed hazardous waste tables in the Part 111 rules. Listed wastes include “F,” “K,” “P,” and “U” in the hazardous waste number (see Chapter 2.4.1.a). When listed hazardous waste is combined with other non-hazardous waste, the mixed waste is generally all regulated as listed hazardous waste. See Chapter III of the U.S. EPA [RCRA Orientation Manual](#) for an overview of the “mixture and derived from” and the “contained in” rules along with an overview of hazardous waste characterization and exemptions/exclusions. For a printed copy, call 800-424-9346 to order document # EPA 530-R-02-016. To minimize the amount of hazardous generated and the amount of regulations your facility is subject to, do not mix listed hazardous waste with non-hazardous solid waste.

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4. Does the waste exhibit a characteristic of hazardous waste? The waste could be flammable, corrosive, reactive, or it meets or exceeds the toxicity levels identified for the materials identified in Tables 201a and 202 of the part 111 rules (see Chapter 2.4.1.a). Characteristic wastes include “D” and “S” in the hazardous waste number. Use all waste codes that apply when managing your hazardous waste.
 5. Is the waste subject to the [Land Disposal Restrictions \(LDR\)](#)? (See Chapter 2.4.5.c)
- D. If the waste is not hazardous waste, does it contain free liquids which would make it a [Part 121](#) liquid industrial waste in Michigan? Does it meet any exclusion listed in Part 121 of Act 451? If you are unsure if liquids are present, it may be necessary to have a paint filter test done. Please note [used oil](#) has requirements under both Parts 111 and 121. Process wastewater discharged to a septic system is normally regulated as Part 121 waste and not septage waste regulated under [Part 117](#) (Septage Waste Servicers) of Act 451. The septic system will need a [groundwater discharge permit](#) or exemption from the DEQ, WRD (see Chapter 3). Waste from medical treatment may also be subject to regulation as a [medical waste](#) and hazardous waste if medical waste is mixed with pharmaceuticals or drugs subject to hazardous waste regulation (see Chapters 2.5 and 2.6).
- E. If it is not hazardous waste or a liquid industrial waste, is it a solid waste regulated under [Part 115](#) of Act 451, a scrap tire regulated under [Part 169](#) of Act 451, or a [NESHAP regulated asbestos waste](#)? Does it meet any exclusion included in these regulations? (See Chapter 2.2.)
- F. In some instances, it may be necessary to determine if the material is a [medical waste](#) (see Chapter 2.5), a [radioactive waste](#) (see Chapter 10), or regulated under the federal Toxic Substances Control Act (TSCA) such as [PCB waste](#) (see Chapter 4.5).

2.4.2.e Additional waste determination resources

- U.S. EPA – “[Hazardous Waste Generator Regulations A User-Friendly Reference Document](#)”
- U.S. EPA “[Guide for Industrial Waste Management, Chapter 2 Guide for Waste Characterization](#)”
- [RCRA Training Modules](#) including “Hazardous Waste Identification”, “Exclusions”, and “Definition of Solid Waste and Hazardous Waste Recycling”
- Federal [List of Lists](#) can help identify federal RCRA listed and toxic hazardous wastes. It does not include all characteristic wastes or the additional listed Michigan hazardous wastes.
- Use Internet tools such as the [U.S. EPA Envirofacts Master Chemical Integrator](#) and MSDS information to search for chemical and hazardous waste information. MSDS can be obtained from the product supplier, manufacturer, or Internet.
- Purchase characterization publications from private companies or associations. For example, the American Society for Testing and Materials has their “[ASTM Manual 42 RCRA Waste Management: Planning, Implementation, and Assessment of Sampling Activities](#).” This is not a DEQ endorsement for this manual.
- Discuss waste determination requirements with the DEQ, [District Office](#), Hazardous Waste Program (see Appendix C).



2.4.3 Hazardous Waste Generator Status & Requirements Summary Chart

Under the regulations, businesses must evaluate their generator status on a continual basis. A facility's hazardous waste generator status is based on 1) the total quantity of the hazardous waste generated each calendar month and 2) the amount of hazardous waste accumulated at a site at any one time. A facility's generator status is used to determine the disposal requirements that apply to disposing of the waste generated from a site. The more hazardous waste generated in a month, the more regulations that apply when disposing of the waste. Therefore, to minimize the regulations that apply to your facility, you should initiate measures to minimize the volume of hazardous waste generated. Moreover, your generator status and the regulations that apply to your facility when disposing of waste can vary month to month. Since there is no exclusion for one time generating events that change a facility's generator status, facilities that periodically generate large volumes of hazardous waste may be best able to meet the regulatory requirements by meeting the additional regulation that periodically apply on a routine basis. See Table 2.5 for a summary of the different generator categories and Table 2.6 for a summary of the hazardous waste generator requirements for the different generator types.

You must notify the DEQ of your facility's generator status and other waste handling activities when you apply for a [Site Identification Number](#), also known as Site ID or EPA Number, or EPA ID (see Chapter 2.4.4). Facilities are subject to [annual handler and manifest user fees](#) based on the largest hazardous waste generator status they operated at during the previous calendar year. Just like the requirements, the fees increase as the business generates more hazardous waste. For each of the generator status types, there are storage time limits and accumulation volume limits. If the generator does not exceed these limits, a hazardous waste storage operating license is not required.

When calculating your hazardous waste generator status, use the results from your waste survey (see Chapter 2.1) and waste determinations that identified all of the hazardous waste streams your business generates (see Chapter 2.4.2). You DO NOT count the following hazardous wastes when determining your monthly generator status:

- Waste that is not a regulated hazardous waste.
- Hazardous waste that is being managed as a universal waste (see Chapters 2.4.1.c, 2.4.9.d, 2.4.9.e, and 2.4.?).
- Reusable shop towels or other textiles that do not contain free liquid and are sent to a commercial cleaning service (see Chapter 2.4.9.h).
- Scrap metal being recycled (see Chapter 2.4.9.p).
- Some materials being recycled such as used oil and filters (see Chapter 2.4.9.a and 2.4.9.b) and lead acid batteries (see Chapter 2.4.9.c).
- The remaining residue in "empty containers" (see Chapter 2.4.1.d.2).
- See Rule 205(5) of the Part 111 rules (R 299.9205(5)) for additional wastes that are recycled, reclaimed or treated on-site which are not counted.

You also DO NOT count the volume of liquid industrial waste when determining your hazardous waste generator status.

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Keep in mind that different activities at the site may change the facility's generator status. For example, when a facility is taking product tanks, totes, other containers, or equipment containing liquids or residues out of service for maintenance, repair or permanent closure, it is necessary to determine if the materials removed are a product or a waste. If the material is a waste that is subject to hazardous waste regulation, it must be counted when determining your hazardous waste generator status unless specified otherwise under Rule 205(5) of the Part 111 rules (R 299.9205(5)). See the [Emptying Tanks or Containers](#) guidance for more information.

If a business is on the border of a generator category, it is recommended a simple written log be kept by the waste container that shows when and how much hazardous waste was generated per month. This will provide documentation to support the generator status level at which they notified. For example:

| <u>Waste Paint Solvent</u> | | | |
|-----------------------------------|------------------------|------------------|--------------------------------|
| Date waste added: | How much added: | By: | Running total for month |
| 1/3/06 | 1 gal | George G. | 1 gallon |
| <i>1/15/06</i> | <i>9 gal</i> | <i>Pat M.</i> | <i>10 gallons</i> |
| 2/9/06 | 2 gal | Sammy Jo | 2 gallons |
| | | | |

A company may lower their hazardous waste generator status and the regulations they must meet if they implement [waste minimization](#) and other [pollution prevention practices](#) and reduce the amount of waste generated (see Chapter 2.1). In addition, when they sign a manifest (see Chapter 2.4.5), they are certifying they have tried to reduce the amount and toxicity of the waste generated.

The waste management requirements are based on the total weight of hazardous waste generated in a calendar month. A facility may need to convert the amount of waste generated in gallons to pounds to determine their generator status. You can weigh the containers of your hazardous waste. If you have unused products that need to be disposed of, you can also use the MSDS information in your calculations. The specific gravity, also called the relative density, can be found in the "Physical & Chemical Properties" section of the MSDS. It is a unit-less number that tells how much the substance weighs relative to the weight of water. If the specific gravity is 1, the substance weighs the same as water.

Specific gravity of the product x 8.34 lb/gal (weight of water) = weight of the product in lb/gal

Since waste generated from a process may not be same weight as the original products, this calculation may not be accurate for the waste. It may weigh more due to contamination from use.

**TABLE 2.5
SUMMARY OF THE HAZARDOUS WASTE GENERATOR CATEGORIES**

| | Conditionally Exempt Small Quantity Generator (CESQG)¹ | Small Quantity Generator (SQG)¹ | Large Quantity Generator (LQG) |
|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------|
| Amount of acute or severely toxic hazardous waste generated or accumulated at any time² | 1 kilogram (2.2 pounds) or less | 1 kilogram (2.2 pounds) or less | More than 1 kilogram (2.2 pounds) |
| Amount of acute spill residue or contaminated soil generated or accumulated at any time² | 100 kilograms (220 pounds) or less | 100 kilograms (220 pounds) or less | More than 100 kilograms (220 pounds) |
| Amount of non-acute hazardous waste generated in 1 calendar month | Less than 100 kilograms (220 pounds) | At least 100 kilograms (220 pounds) but less than 1,000 kilograms (2,200 pounds) | 1,000 kilograms (2,200 pounds) or more |
| Approximate volume of non-acute hazardous waste³ | Less than half of a 55gallon drum, or 25 gallons | One-half to five drums, or 25 to 250 gallons | Five full drums, or 200-250 gallons or more |
| Maximum amount of non-acute hazardous waste that can be accumulated on-site | 1,000 kilograms (2,200 pounds) | 6,000 kilograms (13,200 pounds) | No maximum amount |
| Maximum time period before waste must be shipped | No time limit unless if never exceed 2,200 pounds | 180 days, unless shipping over 200 miles, then 270 days | 90 days |

¹ If you are registered at one generator status but have a monthly hazardous waste shipment larger than the quantities allowed at that status, then you will need to update your generator status by renotifying and meet the additional hazardous waste management requirements (see Chapter 2.4.4).

² Acute hazardous wastes are those in the "P" list and certain wastes in other lists indicated with an "(H)" hazard code; severely toxic wastes are those with an "S" in their number.

³ The liquid volume is only given as an estimate and is based on the waste having approximately the same weight and volume as water. Your liquid hazardous waste might have a different volume based on its weight. The regulations state amounts by weight.

**TABLE 2.6
SUMMARY OF THE HAZARDOUS WASTE GENERATOR REQUIREMENTS**

| | Conditionally Exempt Small Quantity Generator (CESQG) | Small Quantity Generator (SQG) | Large Quantity Generator (LQG) |
|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Off-site Treatment, Storage or Disposal Destination for Waste | Licensed solid waste disposal facility (solids); Liquid industrial waste designated facility (liquids); licensed or exempt recycler; or licensed hazardous waste facility. Also, universal waste handler or universal waste destination facility for hazardous waste managed as universal waste. | Licensed hazardous waste facility; or exempt hazardous waste recycling facility. Also, universal waste handler or universal waste destination facility for hazardous waste managed as universal waste. | Licensed hazardous waste facility; or exempt hazardous waste recycling facility. Also, universal waste handler or universal waste destination facility for hazardous waste managed as universal waste. |

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**TABLE 2.6
SUMMARY OF THE HAZARDOUS WASTE GENERATOR REQUIREMENTS**

| | Conditionally Exempt Small Quantity Generator (CESQG) | Small Quantity Generator (SQG) | Large Quantity Generator (LQG) |
|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Maximum Time Period Before Waste Must Be Shipped | No time limit if never exceed 2,200 pounds. | 180 days, unless shipping over 200 miles, then 270 days. Storage beyond time period requires a hazardous waste permit/license for storage. | 90 days and storage beyond time period requires a hazardous waste permit/license for storage unless meeting Rule 306(7) (R 299.9306(7)). |
| Maximum Amount Of Hazardous Waste That Can Be Accumulated On-site | 2,200 pounds non-acute and/or 2.2 pounds or less acute. If exceed 2,200 pounds non-acute, subject to SQG requirements. If exceed 2.2 pounds acute, subject to LQG requirements. | 13,200 pounds non-acute and/or 2.2 pounds or less acute. If exceed 13,200 pounds non-acute, requires a hazardous waste permit/license for storage. If exceed 2.2 pounds acute, subject to LQG requirements. | No maximum amount |
| On-site Treatment, Disposal, & Waste Analysis Plan | Small and Large Quantity Generator on-site treatment is allowed without a hazardous waste permit or license if conditions in Rule 503 or Rule 206 of the Part 111 rules are met. CESQGs can treat on-site and are not subject to Rule 503. Facilities with waste discharges to a POTW (municipal sanitary sewer system authorized under the Clean Water Act) may need wastewater operator certification depending on process (Chapter 3.5), require POTW approval for discharge, and require records of disposal. LQGs doing on-site treatment must have Waste Analysis Plan and keep records (Chapter 2.4.2) to meet Land Disposal Restrictions. | | |
| Waste Characterization | Records of waste characterization required for all businesses generating waste (Chapter 2.4.2). Keep records at least 3 years from date waste was last sent for on or off site treatment, storage, or disposal. | | |
| Generator Status Determination | Records of monthly generator status determinations required (for all businesses generating hazardous waste Chapter 2.4.3). Keep records at least 3 years from date hazardous waste was last sent for on or off site treatment, storage, or disposal. | | |
| Site/EPA identification Number | Yes if liquids shipped by registered transporter (Chapter 2.4.4) | Yes (Chapter 2.4.4) | Yes (Chapter 2.4.4) |
| Weekly Accumulation Area Inspections | No, and recommend meet SQG requirements. May be subject to other regulations depending on waste (Chapter 2.4.7) | Yes, and recommend written inspection logs (Chapter 2.4.7) | Yes, and written inspection logs required (Chapter 2.4.7) |
| Labeling Requirements | Yes under MIOSHA and used oil rule (Chapters 2.4.8, 2.4.9, & 13) | Yes (Chapters 2.4.8 & 2.4.9) | Yes (Chapters 2.4.8 and 2.4.9) |
| Air Emissions Control for Volatile Organic Compounds Hazardous Wastes | No | No | Yes (Chapter 2.4.7.b) |
| | A facility may have requirements under the AQD regulations that are not referenced in this chapter. | | |
| Manifests/Shipping Records | Yes if liquids or use alternative records (Chapter 2.4.5) | Yes OR meet tolling agreement recordkeeping (Chapter 2.4.5) | Yes (Chapter 2.4.5) |
| Land Disposal Restriction Records | No | Yes (Chapter 2.4.5.c) | Yes (Chapter 2.4.5.c) |

**TABLE 2.6
SUMMARY OF THE HAZARDOUS WASTE GENERATOR REQUIREMENTS**

| | Conditionally Exempt Small Quantity Generator (CESQG) | Small Quantity Generator (SQG) | Large Quantity Generator (LQG) |
|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Contingency plan¹ | No Recommend meet SQG requirements (Chapter 6.2.1). U.S. DOT security plan if shipping excess of 1000 pounds hazardous waste (Chapter 6.2.7) | Yes Basic plan and emergency posting by phones required (Chapter 6.2.1). U.S. DOT security plan if shipping excess of 1000 pounds hazardous waste (Chapter 6.2.7) | Yes Written plan required (Chapter 6.2.10). U.S. DOT security plan if shipping excess of 1000 pounds hazardous waste (Chapter 6.2.7) |
| Emergency procedures¹ | No Recommend meet SQG requirements (Chapter 6.2.1) | Yes (Chapter 6.2.1). | Yes (Chapter 6.2.1) |
| Personnel training¹ | No Recommend meet SQG requirements (Chapter 2.4.12). U.S. DOT training required when shipping hazardous waste (Chapters 4.4.10 & 6.2.7). MIOSHA training may also be required (Chapter 13) | Yes Basic training required (Chapter 2.4.12). U.S. DOT training required when shipping hazardous waste (Chapters 4 & 6). MIOSHA training may also be required (Chapter 13) | Yes Written documentation also required (Chapter 2.4.12). U.S. DOT training required when shipping hazardous waste (Chapters 4 & 6). MIOSHA training may also be required (Chapter 13) |
| Requirements to use Permitted and Registered Transporter | Self haul option (see Chapter 2.4.5.a) or permitted and registered transporter if liquid (Chapter 2.4.10) | Permitted and registered transporter (Chapter 2.4.10) | Permitted and registered transporter (Chapter 2.4.10) |
| Waste minimization requirements | Recommend meet SQG requirements (Chapter 2.1) | Yes (Chapter 2.1) | Yes (Chapter 2.1) |
| Closure of Accumulation Areas | Meet Part 201 of Act 451 cleanup requirements (Chapter 6.4) | Meet requirements in 40 CFR Parts 265.111 and 265.114: Decontaminate and remove all contaminated equipment, structures, and soil, and minimize the need for further maintenance of your site. Meet unit-specific closure standards for tanks, containment buildings, and drip pads. Also meet Part 201 cleanup requirements (Chapter 6.4) | Meet requirements in 40 CFR Parts 265.111 and 265.114: Decontaminate and remove all contaminated equipment, structures, and soil, and minimize the need for further maintenance of your site. Meet unit-specific closure standards for tanks, containment buildings, and drip pads. Also meet Part 201 cleanup requirements (Chapter 6.4) |

¹ May also be subject to other emergency planning and training regulations in Chapter 6 (table continued on next page)

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**TABLE 2.6
SUMMARY OF THE HAZARDOUS WASTE GENERATOR REQUIREMENTS**

| | Conditionally Exempt Small Quantity Generator (CESQG) | Small Quantity Generator (SQG) | Large Quantity Generator (LQG) |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Annual Handler and Manifest User Fees | No fees at this time However, if a facility was on file as a SQG or LQG during any period of the billing cycle, they will receive an invoice for those activities | \$100 user charge \$8.00/manifest used for hazardous waste shipments in the calendar year | \$400 user charge when generates < 900,000 kg in calendar year; OR \$1000 user charge when generates ≥ 900,000 kg in the calendar year AND \$8.00/manifest used for hazardous waste shipped in the calendar year. |
| Hazardous Waste/Biennial Report | No | No | Yes (Chapter 2.4.6) |
| Used Oil Biennial Report | Not required for generators. Used oil processors, re-refiners, and transfer facilities storing used oil more than 35 days are required to submit used oil biennial reports by March 1 of each even numbered year that covers the previous calendar year's activities. See summary at www.michigan.gov/documents/deq/deq-ess-p2tas-usedoilreport_225479_7.pdf . | | |
| Annual Import/Export Report | Yes for hazardous and universal wastes (Chapter 2.4.5.d). | | |
| U.S. DOT Transport Requirements | Yes, when required by U.S. DOT (Chapters 2.4.8 & 4) | Yes (Chapters 2.4.8 & 4) | Yes (Chapters 2.4.8 & 4) |

2.4.4 Identification Numbers

Businesses are required to have a unique **Site Identification Number** assigned to each site that manages regulated waste. Some people refer to this as a Site ID, EPA ID, or EPA Number. This numbering system applies to:

- **Hazardous waste and liquid industrial waste** generators, transporters, treatment, storage, and disposal or destination facilities; hazardous waste fuel burners and marketers.
- **Universal waste** large quantity handlers and destination facilities.
- **Used oil** generators, collection and aggregation sites, transporters, processors or re-refiners, burners, and marketers.

If it isn't known for sure if a business has a Site Identification Number, or what activities are on file, search the **Waste Data System (WDS)** at www.deq.state.mi.us/wdsp. If you don't know the Site

| Registered under authority of the Michigan Department of Environmental Quality, Act 424, as amended. Failure to comply with this regulation may result in civil or criminal penalties. | | MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY Waste and Hazardous Materials Division | | DEQ | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------|--|
| SITE IDENTIFICATION | | | | | |
| I. The form to be being submitted CHECK CORRECT BOX(ES) If submitting a subsequent notification you can contact the MDEQ-WHMD District or Lansing office for a pre-populated form. For locations and phone numbers go to www.michigan.gov/deq | | <input type="checkbox"/> an initial notification to notify as a new site or new owner for the site. Mail this form and the user charge fee with either a check from paying the \$50.00 fee online using a MasterCard, VISA, or Discover Card (https://www.treasury.com/creditcards) or by check made payable to the State of Michigan. Mail to: MDEQ Revenue Office - WHMD, PO Box 30057, Lansing, MI 48906-0157. OR <input type="checkbox"/> an subsequent notification to change, update, or verify site information for an existing owner of a site with a previously issued site ID number. Mail checks to: MDEQ-WHMD, 1400 Michigan Hall, PO Box 30241, Lansing, MI 48903-7741. If a fee is not required. Otherwise submit to MDEQ Revenue Office (see above). AND ANY OF THE FOLLOWING: <input type="checkbox"/> as a component of a Hazardous Waste Permit Part A (submit to WHMD-MDEQ) <input type="checkbox"/> as a component of the Hazardous Waste (biennial) Report (submit to WHMD-MDEQ) | | | |
| II. Site's ID Number | | A. Site's Identification ID Number: | | | |
| III. Name of Site | | A. Legal Company Name: | | | |
| TYPE OR PRINT CLEARLY | | B. Site Specific Name (only): | | | |
| IV. NAICS for this site | | A. B. C. D. | | | |
| V. Site Location Address and Other Site Information | | Street Address line 1: | | | |
| TYPE OR PRINT CLEARLY | | Address line 2: City, Town, or Village: | | | |
| | | State, Province or Subdivision (2 letters): | | Country: | |
| | | Zip or Postal Code: | | - | |
| | | County Name (all only): | | Tax Number: | |
| | | Approver / Ave. Number of Employees: | | | |
| VI. Site Mailing Address | | Street Address line 1 or PO Box: | | | |
| TYPE OR PRINT CLEARLY | | Address line 2: | | | |
| | | City, Town, or Village: | | State, Province or Subdivision (2 letters): | |
| | | Country: | | Zip or Postal Code: - | |
| VII. Site Contact Person | | First Name: | | Last Name: | |
| TYPE OR PRINT CLEARLY | | Phone Number: () | | Phone number extension: | |
| | | email address: | | Fax number: () | |
| VIII. Indian Reservation | | Facility on Indian Reservation Land <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |

Identification Number, it is recommended to first search on the street number and zip code in the appropriate address fields. By searching on an address, you avoid getting no matches when a business may be in the system under one name, but commonly known as something else. If you know the Site Identification Number, type that in the WDS Quick Search field. If you need help or do not have Internet access, call your DEQ, [District Office](#), Hazardous Waste Program (see Appendix C) or the Environmental Assistance Center at 800-662-9278 for assistance.

See the information posted on the [Waste Data System](#) (WDS) web page at www.deq.state.mi.us/wdsp about applying for a Site Identification Number. If an existing facility needs to update information on file with DEQ, Hazardous Waste Program, they should request a pre-populated [Site Identification Form \(EQP 5150\)](#) by calling (517) 335-2690 and requesting to be transferred to the DEQ site notification program coordinator. Facilities needing a new Site Identification Number must file the Michigan [Site Identification Form \(EQP 5150\)](#) (select initial notification in box I). This form is also used for out of state companies whose state does not issue identification numbers for shipping their non-hazardous liquid or PCB waste to Michigan destination facilities. For Michigan facilities, this form replaces the U.S. EPA Notification of Regulated Waste Activity Form 8700-12, the U.S. EPA Hazardous Waste Permit Part A Form 8700-23, the Michigan Notification of Regulated Waste Activity Form, and the U.S. EPA Notification Identification and Certification Form 8700-13A/B. The Site Identification Form is also used in conjunction with the Michigan Hazardous Waste Permit Part A Form (EQP5111). It can also be used to notify of PCB waste management activities. When a Site Identification Number is needed or there is a change in company name or ownership/operators, there is a \$50 application fee. Facilities have the option to pay online or pay with a check or money order.



Tip: Make sure to completely fill out the EQP 5150 form. Some commonly missed fields are the tax number, number of employees, no day, month and year in the approximate date when your company became owner or operator, signature, email, and applicable NAICS codes. The NAICS codes can be found at www.naics.com.

Do not use outdated versions of the form EQP 5150 (the current version at time of this publication's printing was 5/10). Go to www.michigan.gov/deqwaste and select Michigan Site Identification Form EQP5150. If you are uncertain about whether you have the correct form or if you need a different Site Identification Number, or have questions about hazardous waste and liquid industrial waste management, contact your DEQ, [District Office](#), Hazardous Waste Program (see Appendix C) or call the Environmental Assistance Center at 800-662-9278. If you have questions about an application for a Site Identification Number, call the DEQ, site notification coordinator at 517-335-2690. When submitting the form, make sure your form is filled out completely and correctly. Sign the certification section and mail or fax the form to the address or number listed on the form. If paying on-line, fax verification of payment with your updated form for owner or operator charges.

Companies are currently issued new numbers beginning with the prefix MIK. Companies may have numbers issued previously with a prefix of MIR, MID, MIT, MIE, or MIO or have a Michigan identification number which has a prefix MIG, MIH, or MIP.

A facility may need to update notification information previously submitted if there are changes regarding their regulated waste activities at the site. It is necessary to check all the boxes that apply to the regulated waste. A used oil generator needs to notify as a liquid industrial waste

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generator. Examples when a new or updated notification must be submitted by using the form EQP 5150 include:

- A company that had previously only shipped used oil and had a Site Identification Number, but now also generates hazardous waste in amounts making them a Small Quantity Generator or Large Quantity Generator. Check the appropriate box in Section A for hazardous waste generator and check box in Section X. E. for liquid industrial waste generator.
- A company moves to a new location and will be generating or managing regulated waste at the new site. Check all applicable boxes on the form. See the next bullet if there was a Site Identification Number issued for the site where they used to operate.
- A company no longer generates waste that had previously required a Site Identification Number at a location but the company is still in operation at that site, or it has gone out of business. Check the box in Section X. F. that states it is no longer in business or not generating waste at that location.
- A company wants to haul used oil in volumes of 55 gallons or less from their other locations they own or operate to a central location. Check the box in Section X.C. for collection center or aggregation point and check boxes in Section X.E. for liquid industrial waste generator and transporting own waste.
- A company wants to offer a community used oil collection service to accept used oil from individuals changing their own oil and they generate their own used oil. Check the boxes in Section X.C. for collection center or aggregation point that accepts DIY oil and in Section X.E. for liquid industrial waste generator.
- A company handles total accumulated amount of 11,000 pounds or more of all universal wastes. Check appropriate boxes in Section X.D.
- A facility accepts liquid industrial waste from other sites. Check the box in Section X. E. for liquid industrial waste designated facility and any other regulated activities.

A facility may have an identification number issued under a different program, such as a medical waste identification number issued by the DEQ, Medical Waste Program or a federal identification number for PCBs assigned by the [U.S. EPA TSCA Program](#). The TSCA number may be used on a manifest but only when shipping the waste regulated under the TSCA program. Shipments of regulated liquid industrial waste or hazardous waste require the use of the Site Identification Number issued by the DEQ, Hazardous Waste Program, or previously issued by the U.S. EPA, on the manifest.

2.4.5 Manifests and Shipping Records

The following summarizes the waste manifest and shipping records requirements under the waste regulations. See Chapter 4.4 for additional shipping requirements overseen by the Michigan State Police and U.S. DOT. The DEQ has prepared a [manifest tracking log](#) to help you track your waste shipments and record keeping; however, you are not required to use this specific log to track your shipments.

2.4.5.a Hazardous and Liquid Industrial Waste Uniform Manifests

All states now use the federal [Uniform Manifest](#). In Michigan, that U.S. EPA Form 8700-22 is used for shipping both hazardous and liquid industrial waste, as well as PCB waste. Manifest forms are designed to track hazardous and liquid industrial waste shipments of waste from their point of generation to their final destination. Specific requirements depend on the type of waste shipped. You are required to list up to six hazardous waste numbers, or some people call them waste codes, for each hazardous and liquid industrial waste you ship with the manifests. See Table 2.1 for the liquid industrial waste numbers. Table 2.3 includes the toxicity hazardous waste numbers, and all the hazardous waste numbers are in Part 2 of the Part 111 administrative rules.



The generator of the waste, the transporter, and the TSDF that receives the waste must each sign and keep a copy of the manifest as they handle the waste. Manifests will be required for the majority of hazardous and liquid industrial waste shipments. However, there are four circumstances when individual manifests are not required:

1. A waste manifest is not required for companies transporting their own liquid industrial waste including used oil, and Conditionally Exempt Small Quantity Generator's transporting their own liquid hazardous waste, in amounts of 55 gallons or less to a designated facility, if the following conditions are met:
 - It is not necessary to notify the DEQ, Hazardous Waste Program of this activity if this is the only waste the company generates because a Site Identification Number is not required to be used. However, if the company has other regulated waste activities requiring the submittal of the EQP 5150 form, check the box for those activities, along with being a liquid industrial waste generator, and for transporting own liquid industrial waste (see Chapter 2.4.4). These companies are not required to be a permitted and registered transporter if they are hauling only their own liquid industrial waste generated from equipment in which they have an ownership interest.
 - Transport the waste with a record of the date of shipment, where the waste is generated, what the waste is, the quantity of waste transported, and where the waste is being transported with the waste shipment.
 - Obtain a signature from the designated facility acknowledging receipt of the waste and provide a copy of the record to the designated facility accepting the waste for disposal.
 - Keep a copy of shipment records for at least three years after the date of shipment.
 - Manage the waste according to the liquid industrial waste regulations (see Chapter 2.3). The designated facility must have notified the DEQ, Hazardous Waste Program of their activities and if they are accepting used oil, the notification would include they are a used oil aggregation point or collection center. To verify a designated facility has a Site Identification Number and has notified as a designated facility for your waste, search the [Waste Data System](#) (WDS) at www.deq.state.mi.us/wdsp. If you don't know the Site Identification Number, it is recommended to first search on the street number and zip code in the appropriate address fields.

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- Have required insurance specified under [Act 138](#) for transporting liquid industrial waste.
 - The generator should check if their insurance company will cover accidents involving the transportation of this waste. The DEQ will not enforce the requirement for insurance when a generator is transporting the above waste to a local household hazardous waste collection program that accepts business waste, provided the generator is in compliance with the state and federal waste requirements and the federal transportation requirements (see [Operational Memo 121-2](#)).

NOTE: If a company is transporting shipments more than 55 gallons of that company's own generated liquid industrial waste, then the generator must meet the following requirements:

- Notify the DEQ, Hazardous Waste Program of regulated waste activities on the form EQP 5150 (see Chapter 2.4.4). A generator hauling their own liquid industrial waste is not required to be a permitted and registered transporter when only hauling their own liquid industrial waste generated from equipment in which they have an ownership interest. If there is no ownership interest in the equipment from which the waste is generated, the company transporting the liquid industrial waste must be permitted and registered under [Act 138](#).
 - Manage the waste according to the liquid industrial waste regulations (see Chapter 2.3).
 - Use waste manifests and take waste to designated facilities that have notified the DEQ, Hazardous Waste Program of their activities and are meeting Part 121 designated facility requirements. To verify a designated facility has a Site Identification Number and has notified as a destination facility for your waste, search the Waste Data System (WDS) at www.deq.state.mi.us/wdsp. If you don't know the Site Identification Number, it is recommended to first search on the street number and zip code in the appropriate address fields.
 - Have insurance coverage as required by [Act 138](#), Hazardous Materials Transportation Act, and manifest the waste shipment.
 - If using vehicles under 10,000 pounds gross vehicle weight, have fleet coverage of at least \$300,000.
 - If using vehicles equal to or greater than 10,000 pounds gross vehicle weight, have fleet coverage of at least \$750,000. Note you have additional federal insurance requirements of \$5,000,000 if you have cargo tanks, portable tanks, or hopper-type vehicles with over 3500 water gallons capacity and are hauling hazardous materials identified in section 9 of 49 CFR 387.
 - Get a copy of the MCS-90 Form (endorsement for motor carrier policies of insurance for public liability under Section 29 or 30 of the Motor Carrier Act of 1980) from your insurance company and submit it to the DEQ, Hazardous Waste Transportation Program, Attn: Transportation Program Technician, Southeast Michigan District Office, 27700 Donald Ct, Warren MI 48092-2793.
2. When consolidated manifests are used by a permitted and registered transporter for liquid industrial waste shipments or Conditionally Exempt Small Quantity Generator hazardous waste shipments, a generator does not need to use individual manifests. A consolidated manifest may be used when a transporter is picking up the same type of waste from numerous generators and it is being commingled on a single vehicle. The transporter must provide a receipt for each individual pickup to the actual generator of the waste. The receipt must include all the following:

- Transporter's company name
- Driver's signature
- Date of pickup
- Type and quantity of waste removed
- Consolidated [Uniform Manifest](#) number
- Designated facility

For more information about consolidated manifests see [Operational Memo 121-3](#)

3. Small Quantity Generators with a "tolling arrangement" are exempted from manifesting hazardous waste if that waste is being transported off-site and reclaimed under a contractual agreement and if certain procedures are followed. However if it is a liquid, it still must be manifested as a liquid industrial waste.
 - The contract must specify the type of waste and the frequency of shipments.
 - The vehicle used to transport the waste to the recycling facility and deliver the regenerated material back to the generator is owned and operated by the reclaimer. The reclaimer would need to be a permitted and registered liquid industrial waste transporter.
 - The generator maintains a copy of the reclamation agreement for at least three years after the contract expires.
 - The generator must also meet the land disposal restriction requirements per 40 CFR 268.7(a)(10) (see Section 2.4.5.c). Keep a copy of the notification and certification on-site with the tolling agreement for at least three years after termination of the agreement.
4. A Conditionally Exempt Small Quantity Generator is not required to manifest solid hazardous waste that is being transported to an authorized disposal facility where the waste has been approved to be accepted.



You may want to discuss these manifest exemptions with your DEQ District Office, Hazardous Waste Program (see Appendix C).

Most waste companies will provide the [Uniform Manifest](#). If you need to get your own forms, order them from U.S. EPA registered printers. A link to those printers is at www.michigan.gov/deqwaste (select "Uniform Manifest Information" under Announcement heading). Your hazardous waste transporter and treatment, storage and disposal facility will often be able to help you complete the manifest, or you may contact the Manifest Tracking and Data Management Unit at 517-335-2690 or your DEQ, [District Office](#), Hazardous Waste Program (see Appendix C) if you have any questions. If someone else prepares the manifest for you, check it over carefully because you must sign a certification statement that confirms all of the listed information is correct. Anyone who signs the manifests must meet the U.S. DOT training requirements described in Chapter 4.4.10.

All generators are required to submit the appropriate manifest copy to the DEQ, Hazardous Waste Program within 10 days after the end of the month in which the waste was shipped. When shipping your waste out of state, you may need to photocopy the manifest if there are not enough pages and submit that copy to the DEQ. The TSDF operator must send a copy to the DEQ, Hazardous Waste Program after they receive the waste, and they must send you a signed copy to assure that your shipment of waste arrived. You are required to keep this copy signed by the transporter and TSDF on file for at least three years.

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Tip: Make sure the copy you submit to the DEQ is readable. If necessary write over the information on the copy so it is legible. Make sure the information on the edge of the form hasn't been "cut off" when photocopying. Talk to your disposal company about getting better copies, or if you are ordering the manifests for your company, contact the printer about the problems getting legible copies.

If the transporter gives you the first page of the manifest to send to the DEQ, Hazardous Waste Program, line out "Designated Facility to Destination State (if Required)" and write in Generator Copy.

There are time limits in which you should receive the manifest copy from the TSDf. If you do not get your copy within the time frames given, you need to submit the following information to the appropriate agency:

If you shipped liquid industrial waste or are a Conditionally Exempt Small Quantity

Generator and have not received a copy of the manifest from the TSDf within 35 days, contact the transporter and TSDf operator to determine what happened with your shipment. If you still have not received the manifest copy within 45 days after the waste was shipped, file an exception report with the DEQ, Hazardous Waste Program. Include a copy of the manifest and a letter explaining what contacts you have had with the transporter and TSDf and any information you have regarding the shipment.

If you are a Small Quantity Generator, make sure that you received a manifest copy from the TSDf within 60 days after you shipped the hazardous waste. If you have not received it, send a copy of the manifest along with an explanation to the DEQ, Hazardous Waste Program stating you have not received confirmation of the delivery from the TSDf.

If you are a Large Quantity Generator, make sure that you have received a copy of the manifest from the TSDf within 35 days after you shipped the hazardous waste. If you have not received it, contact the transporter and TSDf about the shipment. If you still haven't received a copy within 45 days after shipment, file an exception report with the DEQ, Hazardous Waste Program. This report must include a copy of the manifest and a letter signed by you which explains what efforts you have taken to locate the shipment of hazardous waste and any results of those efforts.

Mail exception reports to: DEQ, HAZARDOUS WASTE PROGRAM
 WASTE TRACKING AND DATA MANAGEMENT UNIT
 PO BOX 30038
 LANSING, MI 48909-7538

2.4.5.b Universal Waste

Liquid universal waste shipments (e.g. antifreeze, pesticides, some pharmaceuticals) need to have manifests as liquid industrial wastes (see Chapter 2.4.5.a) because there is no exemption in Part 121 for universal wastes. Universal wastes not accompanied by a waste manifest may require U.S. DOT shipping papers if it meets the definition of hazardous materials per the [U.S. DOT regulations](#) under 49 CFR 172 and 49 CFR 171.8 (e.g. packages containing one pound or more of mercury). See the following sections pertaining to specific waste streams and contact the Michigan State Police, Commercial Vehicle Enforcement Division at 517-241-0506 or U.S. DOT at 800-467-4922 for more shipping information.

The universal waste rule does not specifically state that a Small Quantity Handler is required to keep records of their universal waste shipments but they would need to meet the waste manifest requirements if it liquid. Additionally, Small Quantity Handlers need to have records to demonstrate they did not accumulate the waste for greater than 1 year and to verify shipment to an appropriately authorized destination facility. As such, shipment documentation that shows your waste was handled properly is necessary to meet the regulations.

Large Quantity Handlers are required to keep records of universal waste they receive and universal waste shipped off-site. These records must be kept at least three years. The records can be in the form of a log, invoice, manifest, bill of lading, or other shipping document. The following information must be recorded:

- ✓ Name and address where the universal waste came from and/or to where it was shipped.
- ✓ Quantity of each waste type (i.e., batteries, electric lamps, pesticides, etc.) received and/or shipped out.
- ✓ Date when you received the shipment and/or when you sent out the shipment.

See Chapter 2.4.7 for details on tracking accumulated universal waste.

2.4.5.c Land Disposal Restrictions

For each waste sent to each TSD, Small Quantity and Large Quantity Generators must send a one-time written notice with the initial shipment of hazardous waste to the TSD. The notice must contain specific language advising the TSD whether or not the hazardous waste shipment is prohibited from land disposal. A new notification must be sent when there is a waste or facility change. This is commonly called a land ban notification and also known as a land disposal restriction (LDR) notification. The LDR regulations require hazardous waste to undergo physical or chemical changes so that there is less threat to the groundwater, surface water, and air when the hazardous waste is disposed in landfills, surface impoundments, injection wells, concrete vaults, underground mines or caves, waste piles, or other land disposal locations. Both listed and characteristic hazardous wastes must meet the LDR treatment standards before being land disposed. The notification is required for wastes sent to non-land based units. For waste treated on-site prior to shipment, you must evaluate whether the waste meets the LDR standards prior to treatment, not after and you must have a waste analysis plan detailing how the treatment meets the LDRs. LDRs are also required for Small Quantity Generators using tolling agreements to ship hazardous waste for recycling (see Chapter 2.4.5.a). Compare the standards that are found in [40 CFR 268.42](#) with the hazardous waste numbers generated at the facility.

The specific treatment standards are too numerous to include in this guidebook. Go to www.epa.gov/wastes/hazard/tsd/ldr/ldr-sum.pdf and www.epa.gov/wastes/inforesources/pubs/training/ldr05.pdf for more information. Also discuss your specific LDR requirements with your TSD or local DEQ, [District Office](#), Hazardous Waste Program (see Appendix C). Many TSDs have preprinted the specific statements on forms that you can use to meet this requirement and will help you properly fill out the information. You are required to keep copies of the LDR notifications, certifications, and LDR waste analysis plan if treating to meet the LDRs for at least three years after the last shipment of that waste.

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Common violations regarding land ban notifications include:

- ✓ Failing to keep a copy
- ✓ Missing a category or subcategory of waste information
- ✓ Listing incorrect (outdated) treatment standards or information that is inconsistent with the waste characterization

2.4.5.d Export/Import Records

Companies importing or exporting hazardous waste and universal waste must meet additional federal notification and other requirements overseen by the U.S. EPA. See the following rules:

- Rule 309 of the Part 111 rules (R 299.9309) for hazardous waste exports and [40 CFR 262 Subpart E](#)
- Rule 310 of the Part 111 rules (R 299.9310) for hazardous waste imports and [40 CFR 262 Subpart F](#)
- Rule 312 of the Part 111 rules (R 299.9312) and [40 CFR 262 Subpart H](#) for transfrontier shipments for recovery within OECD-Organization for Economic Cooperation and Development

Contact the U.S. EPA at least 60 days before the intended date of shipment to obtain written consent. The U.S. EPA's "Acknowledgement of Consent" document must accompany the shipment at all times. Contact the following for more information:

- For hazardous waste or universal waste exportation: contact Robert Heiss, U.S. EPA Headquarters at 202-564-4108
- Hazardous waste importation: contact William Damico, U.S. EPA Region 5 at 312-353-8207
- If above contacts not available: contact U.S. EPA Region 5, Land and Chemicals Division, Information Management Section at 312-353-5069 or 800-353-2000

The hazardous waste regulations do not require annual reporting in Michigan for shipments in the United States. If you export hazardous waste out of the country, annual reports are submitted to the U.S. EPA (see Chapter 2.4.5.d).

2.4.6 Biennial Reports

If you are a Large Quantity Generator at any time during an odd numbered year, or are a TSDf, you are required to submit a Biennial Report to the DEQ, Hazardous Waste Program by March 1 of every even-numbered year. The Hazardous Waste Report summarizes the previous calendar year's waste activities at your facility.

Do NOT use the U.S. EPA biennial report form because the data is not compiled in the format used by the DEQ!

The DEQ, Hazardous Waste Program will mail a pre-populated report form and information packet with instructions to the facility normally by the end of the first week in February as a part of the annual invoice packet. You need to confirm this information is correct for all the hazardous waste generated at your business during the previous odd numbered year, and then add any missing source and management codes for the hazardous wastes. In addition, if you generated and managed any hazardous waste on-site in a unit that is not exempt, you must report the volume of

waste, the source code and the management code (e.g., treatment of waste in containers). Wastes exported out of the country are not included in this report. Contact the treatment, storage and disposal facility your manifested waste was shipped to if you need assistance with the management codes. If you did not receive the forms by March of the year they are due or if you have questions about information the DEQ sent, contact the Environmental Assistance Center at 800-662-9278. If you have questions regarding your regulatory status or need to see reports submitted to DEQ beginning with the 1999 reporting period, contact your DEQ, [District Office](#), Hazardous Waste Program (see Appendix C). If you have questions about your 1997 or earlier reports, contact the U.S. EPA Region 5 at 312-353-5069 or 800-353-2000. Keep a copy of the report in your records for at least 3 years from the due date.

The hazardous waste regulations do not require annual reporting in Michigan for shipments in the United States. If you export hazardous waste out of the country, annual reports are submitted to the U.S. EPA (see Chapter 2.4.5.d).

Any used oil processors, refiners, and marketers are required to submit used oil biennial reports. Used oil generators are not required to submit used oil biennial reports. See summary of used oil biennial reporting requirements at www.michigan.gov/documents/deq/deq-ess-p2tas-usedoilreport_225479_7.pdf.

2.4.7 Hazardous Waste and Universal Waste Accumulation On-site

There are specific requirements regarding the accumulation of waste, including how long you can accumulate it before shipping and how the containers must be labeled. These requirements are detailed in the following sections and Table 2.7 below.

2.4.7.a Accumulation Time and Amount Limits

You are allowed to accumulate your hazardous waste and universal waste on-site in containers or tanks for a specified number of days.

| TABLE 2.7: ACCUMULATION TIME AND AMOUNT LIMITS | | | | | |
|------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------|----------------------------------------------------------|----------------------------------------------------------|
| | CESQG | SQG | LQG | SQH | LQH |
| Storage Time Limit | No state time limit if don't exceed volume limit | 180 days (or 270 if distance to disposal site is over 200 miles) | 90 days | 1 year from generation or receiving from another handler | 1 year from generation or receiving from another handler |
| Total Limit | 2,200 pounds non-acute or 2.2 pounds of acute or severely toxic hazardous waste | 13,200 pounds non-acute or 2.2 pounds of acute or severely toxic hazardous waste | No limit | <11,000 pounds | No limit |

If you wish to exceed this period, you must obtain an operating license for the storage of hazardous waste PRIOR to the storage activity. These limits are determined by your generator status and detailed in Table 2.7 above. In the event a brief extension is required due to an unforeseen, temporary, and uncontrollable circumstance, contact your DEQ, [District Office](#), Hazardous Waste Program (see Appendix C) PRIOR to accumulating hazardous waste beyond the exemption period.

Hazardous Waste

During this time period, hazardous waste must be properly stored at your facility to prevent contamination of the environment. You must comply with specific state and federal regulations if your company has a Small Quantity Generator or a Large Quantity Generator status (see Table 2.6 which summarizes the hazardous waste generator requirements). If you are a Conditionally Exempt Small Quantity Generator, you are not required by law to meet all of the requirements provided you do not exceed the 2,200 pounds of non-acute hazardous waste or 2.2 pounds acute hazardous waste accumulation limit. However, you must still operate your business in a manner that meets the exemption requirements to be subject to the reduced disposal requirements. All generators are required to prevent contamination and responsible for any contamination they cause. Conditionally Exempt Small Quantity Generators are recommended to practice storage, secondary containment, and inspection procedures similar to those required of the Small Quantity Generators to provide safeguards against environmental contamination.

Universal Waste

Universal waste handlers can accumulate universal waste up to one year after generation or after receiving the waste from another handler. A longer storage time may be allowed if it is proven that it's necessary to accumulate enough universal waste to facilitate proper recovery, treatment, or disposal. A handler must be able to show how long they have had the waste. This can be done by one of the following:



- Labeling the container with the first date universal waste was put into it or when the container was received.
- Labeling the individual item with the date it was considered a waste or received as a universal waste.
- Maintaining an inventory system on-site which identifies the date it became a waste or was received.
- Placing the universal waste in a specific accumulation area and identifying the earliest date that any universal waste was put in that area.
- Using any other method that clearly demonstrates how long the universal waste has been accumulating.

Transporters may store universal waste up to ten days. If transporters exceed this period, they need to manage the universal waste according to the respective handler requirements.

2.4.7.b Container and Tank Requirements

Hazardous Waste

Hazardous waste is commonly stored in either portable containers with lids such as pails, 55-gallon drums, totes, or in aboveground storage tanks. It can also be stored in underground storage tanks, although it is not usually practical for Small Quantity or Conditionally Exempt Small Quantity Generators due to the costs to install, maintain, and monitor the tanks.

Hazardous waste tanks have more regulations than containers. Generally, hazardous waste tanks must have secondary containment and leak detection systems, be certified by a professional engineer, be labeled, meet special requirements for ignitable, reactive, and incompatible wastes, and meet closure and post-closure requirements. Once each operating day the overfill/spill control equipment, monitoring equipment data, and the level of the waste in aboveground storage tank systems must be inspected. For underground storage tanks containing hazardous waste, a complete inventory of the contents must be conducted at least twice every month. Records of these inspections and analyses must be kept for three years. If you have waste tanks, you may want to review the tank [inspection checklist](#) for your company's generator status for more requirements. It is available at www.michigan.gov/deq/waste after selecting "Hazardous and Liquid Industrial Waste," "Hazardous and Liquid Industrial Waste Management," and "Hazardous Waste Program Inspection Forms."



Contact your local DEQ, [District Office](#), Hazardous Waste Program (see Appendix C) for information regarding specific hazardous waste storage tank requirements. See Chapter 2.4.8.a for used oil requirements. In addition, the DEQ, Storage Tank Program regulates the storage of flammable and combustible liquids, including waste, with a flashpoint of less than 200 degrees Fahrenheit (see Chapter 4.3 for more information). The aboveground storage of flammable and combustible liquids may also be regulated by the [MIOSHA General Industry Safety Standards - Part 75, Flammable and Combustible Liquids](#), and the local municipality's fire prevention code (see Chapters 34 and 38 for more information).

Different containers should be used to segregate different types of waste. It is a good management practice to keep a waste log for liquid wastes noting the type and quantity of waste added to the container. Avoid overfilling containers, especially if they are stored outdoors. Fifty-five gallons of some hazardous liquids can expand to 60 gallons or more when exposed to the heat and sun and may overflow. It is also a good idea to use drip pans under the spigots of containers storing liquid materials. Make sure the drip pans are routinely emptied into the appropriate waste container.



The waste regulations do not require generators to post Hazardous Waste Storage Area signs alerting people of hazardous waste accumulation areas although it is considered a good management practice. Post "No Smoking" signs in areas where ignitable, reactive or incompatible wastes are located.

BASIC CONTAINER STORAGE REQUIREMENTS

See Chapter 2.4.8.a for satellite container operating requirements. General requirements for all other hazardous waste storage containers include:

- Containers must be labeled (see Chapter 2.4.8).
- Containers must be maintained in good condition.

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- Any leaking containers must be replaced.
- Containers must be kept closed except when adding or removing waste.
- Containers must be compatible with the type of waste being stored in them. The DEQ does not maintain a list of compatible materials but companies can look at the MSDS sheets for suggestions and Web sites such as www.flw.com/material/index.html.
- Incompatible wastes must not be placed in the same container.
- All containers holding hazardous materials must be inspected weekly for signs of corrosion and leaks. The rules do not define "weekly" and a facility can decide what will be the days they want to be considered their "week." The inspections do not have to be done on the same day. The inspectors are looking at whether or not inspections have been done on a regular basis.
 - ✓ Large Quantity Generators are required to keep written documentation of inspections for at least three years.
 - ✓ Small Quantity Generators and Conditionally Exempt Small Quantity Generators are encouraged to keep records.

DEQ has a [Required Weekly Hazardous Waste Maintenance Checklist](#) available for your use in meeting this record keeping requirement, but you are not required to use this form.

- Containers must be kept in an area that meets the required isolation distance from property lines. Check for any local requirements. Large Quantity Generators must have ignitable and reactive hazardous waste stored at least 50 feet from the property line. If a company can not meet the isolation distance, see Rule 306(1)(a) of the Part 111 rules (R 299.9306(1)(a)) which allows compliance with local fire code to be acceptable. A copy of an approved letter indicating the containers are stored in compliance with the fire prevention code and signed by the authority having oversight of that code shall be maintained at the generator's site.
- Containers must be protected from weather and fire and secure from vandalism and physical damage such as that caused by fork lifts or other equipment. Weather protection is to avoid bulging and damaged drums caused by contents freezing in cold temperatures or expanding due to heat.
- Containers must be accumulated in a manner that provides adequate aisle space for unobstructed movement of emergency equipment and personnel. The waste regulations do not specify a minimum specific distance for aisle space. You should review applicable MIOSHA regulations, local fire code, and [NFPA standards](#) to see if a minimum aisle space is applicable to your facilities.
- Precautions must be taken to prevent containers holding flammable and combustible hazardous waste from igniting. Sources of ignition include but are not limited to open flames; lightning; smoking; cutting and welding; hot surfaces; frictional heat; static, electrical, and mechanical sparks; spontaneous ignition, including heat producing chemical reactions; and radiant heat.

The flammable and combustible liquid rules require metal containers to be bonded and/or grounded usually by using a bonding strip and ground clamps. Bonding physically connects two conductive objects together with a bond wire to eliminate a difference in static charge potential between them, but there is still the change of difference between

objects and ground. Grounding uses a ground wire to eliminate the difference in the static charge between objects and the ground. The flammable and combustible liquid regulations also prohibit smoking except in designated localities and “No Smoking” signs must be conspicuously posted where hazard from flammable liquid vapors is normally present. No smoking signs are also required for Large Quantity Generators storing reactive hazardous waste. Also see Chapter 34 for additional MIOSHA requirements for containers containing flammable and combustible liquids.

Some insurance companies may require all hazardous waste drums to be grounded. In addition, some local fire ordinances may require grounding clamps on hazardous waste containers. If a facility is considering using metal flooring, the flooring and containers must have bond wires and meet MIOSHA standards. Contact your local electrical or building code inspector to see what is required including if the use of a grid or steel floor would be acceptable.

SECONDARY CONTAINMENT

Secondary containment of the hazardous waste accumulation area is required for the following generators but is not required for satellite containers:

- Small Quantity Generators accumulating over 1,000 kg (2,200 pounds) of liquid hazardous waste and F020, F021, F022, F023, F026, and F027 waste.
- Large Quantity Generators accumulating any amount of liquid hazardous waste and F020, F021, F022, F023, F026, and F027 waste.

Liquid hazardous waste and the above-mentioned “F” wastes must have secondary containment or be managed according to the following:

- The base must be free of cracks and have an impervious surface.
- The containment area for containers must be constructed so that it is able to hold either 10 percent of the total liquid volume of all the containers or 100 percent of the volume of the largest container, whichever is greater. If, however, a loss from one container can lead to losses from other containers, the enclosed area must be able to contain 100 percent of all the liquid portion stored in all the containers. Tank secondary containment must be able to contain 100 percent of the capacity of the tank and precipitation from the 25 year 24 hour storm.
- The secondary containment area must be designed to prevent run-on or be designed with sufficient excess capacity to contain any rainwater or snowmelt or other precipitation that might accumulate in the storage area. It is recommended that containers be stored in areas protected from the weather, if possible.
- The containers must be elevated or put on a sloped base that prevents them from coming into contact with any liquid accumulating within the containment area.
- All spills, leaks, and precipitation must be removed in a timely manner to prevent overflow from the containment area.

Other solid hazardous waste in containers can be put in containment areas where the containers are not in contact with accumulated liquids including precipitation. The containers can be either:

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- Elevated, or otherwise protected; OR
- Stored on a sloped surface, or the containment area can be of another design and operated to drain and remove precipitation.

The hazardous waste regulations do not specify exactly how secondary containment areas must be constructed. You can install a curb, a ramped pad, or a containment room; have structures custom-made for your situation; or use commercially available portable pallets that have a holding structure included in their design. Be aware that the spill pallets are not sufficient to meet the secondary containment requirements for liquid hazardous waste because they do not provide adequate protection for “squirt distance,” which is the distance a liquid would spurt out if a leak occurred. As a general rule for containers holding liquids, the secondary containment outer boundary should be at least as far away as the height of the container(s) holding liquid hazardous waste unless the container is adjacent to a wall. Other design factors and regulations should also be considered when planning secondary containment. See Chapter 6.1 for more information about secondary containment and storage of other materials besides waste.

AIR EMISSION CONTROL REQUIREMENTS (SUBPART AA, BB, CC)

There are additional federal hazardous waste regulations regarding air emissions of hazardous waste. The RCRA air emission standards were promulgated in phases. The first phase includes 40 CFR Part 264/265, Subparts AA and BB. These subparts address air emissions from process vents associated with certain types of hazardous waste management processes (Subpart AA) and leaks from certain types of equipment at TSDFs and Large Quantity Generators (Subpart BB). At such facilities, owners and operators are required to install control equipment and employ management practices to reduce air emissions from affected units and equipment. Phase II of the RCRA air emission standards, Part 264/265, Subpart CC, regulates organic air emissions from tanks, surface impoundments, and containers located at hazardous waste treatment storage and disposal facilities and Large Quantity Generators. If applicable, use various monitoring and control mechanisms to meet Subpart CC requirements:

- Control volatile organic compound (VOC) emissions from hazardous waste management activities.
- Reduce organic emissions from process vents associated with certain recycling activities and equipment that is in contact with hazardous waste that has significant organic content.
- Control VOCs from hazardous waste tanks, surface impoundments, and containers using fixed roofs, floating roofs, or closed-vent systems routed to control devices.

The air emissions standards in Part 265, Subpart CC, do not extend to containers used for satellite accumulation. These requirements are too complex to include in this guidebook. Discuss the requirements for your company with your environmental consultant or the DEQ, [District Office Hazardous Waste Program](#) (see Appendix C), or go to the U.S. EPA www.epa.gov/wastes/inforesources/pubs/training/air.pdf and [RCRA Organic Air Emission Standards for TSDFs and Generators](#) for U.S. EPA information on these requirements.

Universal Waste

Universal waste must be stored in a way that prevents any spills or releases. Containers must be kept closed, in good condition, and be compatible with the type of universal waste stored in them.

2.4.8 Labeling Requirements

The proper labeling of waste helps to ensure that it is not mismanaged. It is a good idea to put one person in charge of making sure the wastes are correctly identified and labeled. Labeling also helps to protect the workers. If the contents of drums are not known, the chances of a worker being exposed to hazards or being injured are great. An explosion can occur if wastes that are incompatible are mixed with unknown wastes in a drum.



Labeling requirements differ for hazardous waste being accumulated on-site and that being shipped. More extensive information is required on labels for shipping. In addition to meeting the labeling requirements for containers, you should also clearly mark the accumulation area so employees know that hazardous waste is being kept there, and any special precautions like no smoking signs, etc.

The U.S. DOT regulations specify which containers, packaging, labels, and placards must be used for shipping hazardous materials. The hazardous waste regulations require Small Quantity and Large Quantity Generators and Universal Waste Handlers to have the appropriate placards available for the transporter. Placards are required for hazardous waste shipments in excess of 1000 pounds. For more information about these shipping requirements, go to the Michigan State Police, Commercial Vehicle Enforcement Division at www.michigan.gov/motorcarrier and the U.S. DOT at hazmat.dot.gov Web sites. Also see Chapter 4.4.

2.4.8.a Labeling Hazardous Waste Satellite Containers

It is permissible to accumulate up to a total of 55 gallons of hazardous waste, or one quart of acutely or severely toxic hazardous waste, in labeled container(s) at the point of generation as long as the operator has control of the processes generating the waste. This accumulation is generally referred to as using satellite containers. These containers must be labeled with the words “Hazardous Waste” AND the waste number OR the chemical name of the contents, and be kept closed at all times except when waste is being added. There is no limit on the number of containers used at one satellite location or how long the satellite container can be kept at its location, as long as it is being used on a regular basis and the total volume limit of 55 gallons is not exceeded. Once the volume meets the allowable amount, the container(s) holding the accumulation must be:

For more information about satellite accumulation areas see [Operational Memo 111-2](#)

- Labeled with that date (which would be considered the accumulation date)
- Labeled with the hazardous waste number if the chemical name was initially used on the label
- Moved into the accumulation area within three days

2.4.8.b Labeling Hazardous Waste for Accumulation On-Site

Each container must be labeled with the following when a waste is accumulated on-site and not in a satellite area:

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- The words “Hazardous Waste”
- The hazardous waste numbers
- An accumulation date (meaning the date waste was first put into the container, unless it was first a satellite container – then it would be the date the volume in the container(s) in the satellite area met or exceeded the 55 gallon allowable amount).

Although not required of accumulation containers, it is helpful for employees to also label the storage containers with the common name of the waste in the container. For example, containers might be labeled with “Used Parts Washer Solvent.” Tanks must also be labeled with the words “Hazardous Waste.”

You are not required to use any specific label to meet these requirements. You can stencil the information on the containers and/or tanks or you can purchase commercially made labels. You may also use the shipping label as long as the required information specified above is filled out. Make sure the label you use does not become unreadable and the label is visible for inspection (e.g. not on the back of a drum against the wall or elevated so high it cannot be readily viewed). Maintaining readable labels is more problematic for containers holding solvents.

2.4.8.c Labeling Hazardous Waste for Shipment

Hazardous waste must be shipped in containers acceptable for transportation and properly labeled. Each container of 110 gallons or less must have the hazardous waste number identifying the waste as well as the following statement:

“Hazardous Waste – Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.”

A container must also have the headings “Generator Name and Address” and “Manifest Document Number,” with that information provided. This label and others are available from commercial firms including mail order companies. Properly labeled containers also include:

- Labels clearly identifying the type of waste and its hazards in that particular container
- The accumulation date
- Words or symbols for characteristics such as “flammable” and “corrosive” that are clear and understandable to employees
- Label protection from solvents and weather

You may want to cover the label with varnish or clear packing tape. Your hazardous waste transporter should be able to help you properly label the containers for transport. Contact the U.S. DOT for additional transportation requirements.

2.4.8.d Labeling Universal Waste for Accumulation On-Site

You need to label the individual universal waste (such as each thermostat) or the container holding the universal waste with the following while it is being accumulated:



- Electric lamps: the words “universal waste electric lamps,” or “waste electric lamps,” or “used electric lamps.”
- Consumer electronics: “universal waste electronics” or “universal waste consumer electronics”
- Batteries: the words “universal waste battery(ies),” or “waste battery(ies),” or “used battery(ies).”
- Mercury devices: the words “universal waste mercury thermometers,” or “waste mercury thermometers,” or “used mercury thermometers,” and substitute the name of the device if it is not a thermometer.
- Pesticides: include the legible label that was on or accompanied the original product and the words “universal waste pesticide(s)” or “waste pesticide(s).” If the pesticide label is not readable, then use the appropriate label as required by the U.S. DOT.
- Pharmaceuticals: use the original label. If unreadable, it is suggested to label as “universal waste pharmaceuticals.”

2.4.8.e Labeling Universal Waste for Shipment

Before shipping the universal waste to another universal waste handler, the originating handler must have made arrangements so that the shipment will be received. If the universal waste is a hazardous material under U.S. DOT regulations, then that waste has to be packaged, labeled, marked, and placarded according to the requirements under 49 CFR 172-180. Discuss these requirements with MSP or U.S. DOT (see Chapter 4.4).

2.4.9 Managing Specific Waste Streams

This section provides details regarding the proper management of various types of waste that are commonly generated by businesses.

- 2.4.9.a Used Oil
- 2.4.9.b Used Oil Filters
- 2.4.9.c Lead Acid Batteries
- 2.4.9.d Dry Cell Batteries
- 2.4.9.e Fluorescent Lamps and Other Lights
- 2.4.9.f Small Capacitors and Ballasts
- 2.4.9.g Sorbents
- 2.4.9.h Shop Towels and Other Textiles
- 2.4.9.i Spent Parts Washer and Other Solvents
- 2.4.9.j Aerosols
- 2.4.9.k Painting Wastes
- 2.4.9.l Wastes Containing Silver and Other Precious Metals
- 2.4.9.m Electronic Waste (computers etc)
- 2.4.9.n Waste Containing Radioactive Materials
- 2.4.9.o Antifreeze
- 2.4.9.p Scrap metal
- 2.4.9.q Pharmaceuticals

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2.4.9.a Used Oil

Used oil in a liquid form CANNOT be disposed of by any of the following methods:

- Dumped down drains or sewers or into surface or groundwater.
- Disposed of in landfills.
- Burned in municipal solid waste incinerators or other incinerators without energy recovery.
- Used as dust control or weed control.

The specific management requirements depend on the type of oil, its flashpoint, how it is stored, hazardous waste generator status, and how much oil storage capacity is on-site. When evaluating what requirements apply to your used oil, keep in mind different regulations define oil differently. Used oil defined by [Part 111](#) of Act 451 rules, federal used oil regulations in [40 CFR Part 279](#), and [Part 121](#) is “any oil which has been refined from crude oil, or any synthetic oil, which has been used and as a result of use, is contaminated with physical or chemical impurities.” Examples of used oil include:

- ◆ used motor oil.
- ◆ used hydraulic oil.
- ◆ used transmission and brake fluids.
- ◆ spent synthetic cutting and machine oils.
- ◆ spent mineral seal oils.
- ◆ spent quench oils.
- ◆ spent gear oils.
- ◆ non-PCB transformer oils.
- ◆ CFC-contaminated oils from air-conditioning and refrigeration units.
- ◆ Oil-water mixtures if sufficient oil exists for legitimate recycling and oil does not arise from “de minimis” sources. De minimis means small spills, leaks, or other drippings from pumps, machinery, pipes, and other similar equipment during normal operations. (40CFR 279.10(f)).
- ◆ Oil drippings from metal shavings from turning and drawing operations, etc.

Used oil under the hazardous waste regulations does not include petroleum-based products that are not used as lubricating agents or in other protective applications. It does not include fuels (gasoline, diesel, and fuel oils), mineral spirits, animal fats and vegetable oils, along with test and calibration fluids. Note: all of these above materials would be subject to the federal SPCC regulations (see Chapter 6.2.3) and state Part 5 rules of Part 31 of Act 451 (Water Resource Protection (see Chapter 6.2.2)).

If used oil has a flashpoint below 200 degrees Fahrenheit, then it is also regulated as flammable and combustible liquids in addition to the waste regulations (see Chapters 4.3.2 and 34).

Used oil being recycled which contains less than 1,000 PPM total halogens is not considered hazardous waste and is managed as a liquid industrial waste under Part 121 of Act 451 when it is accumulated, stored, or treated. However, the following oils are not presumed to be hazardous waste even if the total halogens are greater than 1,000 PPM:

- Metalworking oils or fluids that contain chlorinated paraffin's which are recycled and handled by a tolling arrangement per 40 CFR 279.24(c). A tolling arrangement is a contractual agreement where the oil or fluid is reclaimed and returned to the generator as a lubricant, cutting oil, or coolant. These oils would still need to be manifested as liquid industrial waste (see Chapter 2.4.5.a).
- Oils containing chlorofluorocarbons (CFCs) removed only from refrigeration units and being reclaimed. These oils would still need to be manifested as liquid industrial waste.

Used oil is presumed to be mixed with hazardous waste under Part 111 of Act 451 if it contains more than 1,000 PPM total halogens - a test for chlorine, bromine, fluorine, and iodine content. Most haulers will do a quick test for total halogens before picking up the oil, require you to provide characterization information, or both.

You have the option to demonstrate that the used oil does not contain significant concentrations of halogenated hazardous constituents that are listed in 40 CFR 261, Appendix VIII, and thus would not be regulated as hazardous waste. This demonstration is commonly called the "rebuttable presumption." Rebutting the presumption through analysis is costly. It becomes even more difficult and costly for used oil processors and re-refiners to rebut the presumption. As such, to ensure you can easily locate used oil handlers that will recycle your used oil, the DEQ recommends you not mix your used oil with other waste.

The generator may use knowledge or testing to rebut the mixing presumption. If the generator has a MSDS sheet for the oil being recycled which shows that it contains chlorinated paraffins, and can also demonstrate that no chlorinated solvents are used in the facility, this should be sufficient knowledge. A facility could also have a laboratory run a chlorinated solvent scan for common halogenated constituents including PERC also known as tetrachloroethylene, 1,1,1-trichloroethane, trichloroethylene, carbon tetrachloride, chloroform, and other halogenated solvents suspected of contaminating the oil. If each halogenated constituent is below 100 PPM, then the oil would be considered to be liquid industrial waste. See the U.S. EPA [RCRA Used Oil Rebuttable Presumption Guidance](http://www.epa.gov/wastes/conservematerials/usedoil/oil-rebut.pdf) at www.epa.gov/wastes/conservematerials/usedoil/oil-rebut.pdf for more information.

Often the used oil transporter will conduct one or two tests at your site to determine if the used oil is a hazardous waste before accepting it. They usually charge a small fee for these tests. As an alternative, they may require you to determine if the used oil is a hazardous waste and provide them with documentation supporting your results. If the used oil is a hazardous waste, then it must be managed as such.

See the following guidance documents for more details about managing used oil. They are available online at the DEQ publication center at www.deq.state.mi.us/pubcenter.

"Household Do-It-Yourselfer Used Motor Oil and Filters" — if employees are asking how to manage their own private vehicle's motor oil and also have used oil filters

"Used Motor Oil Generator Requirements" — for facilities that generate motor oils from servicing their own vehicles and equipment that meets certain conditions

"Other Used Oil Generator Requirements" — for facilities that generate other used oil types like cutting fluids, lubricating oils, oils from transformers, etc., or generate oils that don't meet the conditions listed in the used motor oil generator guidance

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“Used Oil Filters Generator Requirements” — for facilities that generate used oil filters

“Burning Used Oil” — for facilities burning used oil generated on-site or operating an off-spec fuel burner

“Used Oil Sorbents, Oil Contaminated Textiles, & Other Petroleum Contaminated Materials” — for facilities that generate these wastes from cleaning up oil spills

“Oil Water Separators” — for facilities operating separators and managing the collected oil

“Used Oil Collection Centers and Aggregation Points” — for locations that collect oils from do-it-yourselfers, other companies, or from other locations owned by the same facility

“Mobile Oil Changing Business” — for companies that offer mobile services where they go to another business or residential location to change oil in vehicles or equipment

“Emptying Product Tanks and Containers” — for facilities removing materials due to tank closure, maintenance or repair activities

BASIC REQUIREMENTS FOR USED OIL STORAGE ON-SITE:

- Do not mix other wastes with used oil. This restriction applies to Large Quantity Generators and Small Quantity Generators mixing hazardous waste with used oil. Conditionally Exempt Small Quantity Generators of hazardous waste cannot mix halogenated wastes with used oil as of December 16, 2004. Check with recycler before mixing any wastes with used oil.
- Store only in containers or tanks that are in good condition and compatible with oil.
- Keep containers closed except when filling or emptying, and keep the exterior clean of waste and residue.
- Label each container or tank, including fill pipes to underground storage tanks, with the words “USED OIL.”
- Protect the accumulation containers from weather, fire, physical damage, and vandals.
- Regularly inspect tanks and accumulation areas for leaks or potential problems.
- Secondary containment is recommended for all oil storage, and is required when threshold management quantities are met e.g. [federal Spill Prevention Control and Countermeasure \(SPCC\)](#) for oils and [state Part 5 rules](#) under Part 31 of Act 451 (Water Resource Protection) “Spillage of Oil and Polluting Materials” (see Chapters 4 and 6).
- Check if any local ordinances pertain to oil storage.
- Provisions should be made to prevent further release if a leak occurs.

USED OIL BURNING AND ON-SITE USE:

A generator may use their used oil at the site:

- As a rust preventative coating on farm or construction equipment.
- By mixing it with diesel fuel and using it as a fuel in the generator’s own vehicles. Until mixed, the oil must be managed under the used oil regulations.
- As a fuel in a heater. See the *“Burning Used Oil”* guidance for the conditions under which it may be burned.



If you have questions about burning used oil, contact the DEQ [District Office](#), AQD to determine if an air permit is required and DEQ [District Office](#), Hazardous Waste Program to determine if other waste regulations apply (see Appendix C for phone numbers and Chapter 1.1 for more details regarding air permitting).

2.4.9.b Used Oil Filters

The DEQ recommends all used oil filters be recycled as scrap metal. Recyclers of used oil filters are listed in Oils and Solvents category of the [Recycled Materials Market Directory](#) available at www.michigan/rmmd. When properly drained and recycled as scrap metal, the filters are not subject to hazardous waste regulations. Used oil filters being disposed are exempt from hazardous waste regulations if they are non-terne plated and hot-drained in a manner that removes the oil. See the [Used Oil Filter Generator Requirements](#) guidance for more information how to drain and prepare them for recycling or disposal.



2.4.9.c Lead Acid Batteries

Lead acid batteries are banned from disposal in Michigan's landfills and incinerators, so you need to return them for recycling. Recyclers can be found in the miscellaneous category of the [Recycled Materials Market Directory](#) available online at www.michigan.gov/rmmd. They can also be returned to retailers, distributors, or manufacturers.

Facilities have two options for managing lead acid batteries. Both options are described in more detail in the Universal Waste guidance at www.deq.state.mi.us/documents/deq-ead-tas-univwaste.pdf.

- Recycle them under Rule 804 of the Part 111 rules (R 299.9804) which exempts them from most of the requirements of Part 111 of Act 451. The generator must characterize the waste batteries and meet land disposal restrictions (see Chapter 2.4.5.c). You do not have to include the battery volume when determining your generator status or use manifests when shipping the used batteries to a recycler. In addition, there is no time limit in the state regulations on how long you may store the batteries before shipping. There may be local ordinances that have time limits or other requirements.
- Manage them as a universal waste. Universal waste batteries or containers need to be labeled with the words "universal waste battery(ies)," or "waste battery(ies)," or "used battery(ies)." Meet the universal waste requirements as outlined in Chapters 2.4.1.c, 2.4.5.b, 2.4.8 and 2.4.12 and the universal waste guidance specified above.

2.4.9.d Dry Cell Batteries

Dry cell batteries (AA, C, D etc) are used to power portable power tools, flashlights, calculators, etc. and found in computers, clocks, and other equipment.



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Facilities have the option to:

- Assume they are hazardous waste and manage them as universal waste. Recyclers can be found in the miscellaneous category of the [Recycled Materials Market Directory](http://www.michigan.gov/deqrmmd) available online at www.michigan.gov/deqrmmd. Universal waste batteries or containers need to be labeled with the words “universal waste battery(ies),” or “waste battery(ies),” or “used battery(ies).” Meet the other universal waste requirements as outlined in Chapters 2.4.1.c, 2.4.5.b, 2.4.8 and 2.4.12, or
- Determine if the batteries exhibit hazardous waste characteristics and dispose of them in accordance to the facility’s generator status.

Both options are described in more detail, along with other regulations that pertain to batteries, in the Universal Waste guidance at www.michigan.gov/documents/deq/deq-ead-tas-univwaste_320878_7.pdf.

2.4.9.e *Fluorescent Lamps and Other Lights*

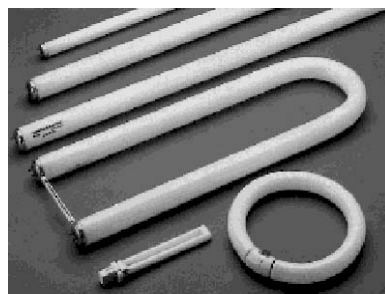
Lamp management and disposal options depends on the type of bulbs and the company’s generator status. See the Electric Lamp and Small Ballast guidance at

www.deq.state.mi.us/documents/deq-ead-tas-eleclamp.pdf

for more specific management requirements. The DEQ recommends companies handle and recycle their spent lamps.

Recyclers can be found in the glass category of the [Recycled Materials Market Directory](http://www.michigan.gov/deqrmmd). Drum top crushers require an air permit prior to installation and operation. For more information

on drum crushers, see the guidance at www.michigan.gov/deqair when selecting “Clean Air Assistance.” If you are considering the use of a lamp crusher, contact the DLARA, Consultation Education and Training Program at 517-322-1809 to discuss operating and permitting requirements that address worker safety.



Basic lamp management options include:

1. Determine if you have low mercury bulbs, commonly called green tip bulbs, which are designed by the manufacturers not to be a hazardous waste. Keep documentation supporting that determination like the MSDS or sales literature that may have a statement the lamps are not a hazardous waste or not a RCRA waste. Recycling of low mercury bulbs is recommended to reduce a company’s liability in case contamination eventually occurs at the landfill where the solid waste was sent. However, at this time these non-hazardous bulbs can be put in the trash if the hauler and licensed disposal facility will accept them.

2. Assume they are hazardous waste and manage them as universal waste. Most recyclers only want to handle unbroken/uncrushed lamps. Broken lamps can not be handled as universal waste in Michigan. Label the unbroken individual lamps or containers with the words “Universal Waste Electric Lamps,” “Waste Electric Lamps”, or “Used Electric Lamps.” Meet the other universal waste requirements as outlined in Chapters 2.4.1.c, 2.4.5.b, 2.4.8 and 2.4.12.

3. Determine if the bulbs or residue are a hazardous waste when the lamps are not handled as universal waste or are broken by either assuming they are hazardous waste, using knowledge about the lamps, such as documentation from the lamp manufacturer, or by testing. If testing is done, the commonly used lamps would be hazardous waste if the Toxicity Characteristic

Leaching Procedure (TCLP) results meet or exceed the following limits:

- ✓ Fluorescent and HID lamps or other lamps containing mercury at concentrations of 0.2 mg/l or more are a D009 hazardous waste.
- ✓ Incandescent or other lamps containing lead at concentrations of 5.0 mg/l or more are a D008 hazardous waste.

Disposal options of hazardous waste bulbs will depend on the company's generator status. At this time Conditionally Exempt Small Quantity Generator may put the bulbs in the trash if the hauler and licensed solid waste disposal facility will accept them and authorized under MIOSHA standards. Some disposal facilities and haulers will not take them because of safety concerns for their employees. A Small Quantity Generator and Large Quantity Generator would need to dispose of them as hazardous waste when they are not recycled.

2.4.9.f *Small Capacitors and Ballasts*

If small capacitors and ballasts are intact, non-leaking, and contain less than 50 PPM polychlorinated biphenyls (PCBs), they may be disposed of in a licensed landfill if the landfill will accept them. Some ballasts will have "No PCBs" on the label.



Contact the landfill about their acceptance policy. If a company is doing a re-lamping project or getting rid of a number of devices at one time, the landfill may not take them. It is recommended to pack the devices in an U.S. DOT approved drum with adequate absorbent such as sawdust or soil to absorb any potential liquid in the device and label the container. If no free liquids are present, there are no manifesting requirements.

If the devices are leaking and contain 50 PPM PCBs or more, you need a list of PCB disposal sites, for more information about PCBs in other devices, see Chapter 4.5.4 and the U.S. EPA TSCA information online at www.epa.gov/pcb. In Michigan, wastes containing 100 PPM PCBs or greater must be disposed in a Part 111 hazardous waste disposal facility specifically authorized to dispose of the PCB waste. This is necessary to meet the disposal requirements of Part 147 of Act 451 in addition to any required TSCA permit. Otherwise, PCB waste managed in accordance with TSCA will be managed in a manner that meets the requirements of Part 147 of Act 451 addressing PCB wastes. They must be manifested for disposal on a Uniform Manifest. Use the Liquid Industrial Waste codes in Table 2.1 for PCB liquids and the solid PCB codes required by your disposal facility. Also be sure to update your Site ID (see Chapter 2.4.4)



Questions regarding management and disposal of PCB articles under TSCA should be directed to EPA, Region 5 PCB Contact who can be reached at 312-886-7890. Questions regarding Part 147 of Act 451 should be directed to the DEQ District Office, Hazardous Waste Program (See Appendix C).

2.4.9.g *Sorbents*

Sorbents used to clean up spills can be sent to a licensed sanitary landfill (Type II) if:

1. The landfill will accept them. Check with the landfill operator; and
2. The sorbents contain no free liquids (they pass the paint filter test); and

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3. The materials are either of the following:
 - ✓ Are not a hazardous waste, including sorbents used for oil spills or
 - ✓ Are a hazardous waste generated by a Conditionally Exempt Small Quantity Generator.

Except under specific circumstances, it is not permissible to intentionally add wastes, including used oil, to sorbents for disposal in a landfill. Used sorbents that are not considered hazardous waste and do not pass the paint filter test must be handled as a liquid industrial waste.

Generators must handle the sorbents as hazardous waste if the material was used to clean up listed hazardous waste. Generators must also evaluate used sorbents to determine whether they exhibit one or more hazardous waste characteristics and manage them appropriately. This volume of hazardous waste needs to be included in calculating your generator status. Remember that this quantity could affect your generator status and, therefore, your regulatory requirements.

A DEQ, Hazardous Waste Program permit is not required to add absorbent materials to hazardous waste in a container if all the conditions in Rule 503(1)(i) of the Part 111 rules (R 299.9503(1)(i)) are met and the treatment does not violate the land disposal restriction requirements.

Some companies offer services where used sorbents are returned to them for oil recovery and then the sorbents are able to be reused. Search for recyclers listed in the oils and solvents category of the [Recycled Materials Market Directory](http://www.michigan.gov/rmmd) online at www.michigan.gov/rmmd by using the term “sorbent” in the key word field. For manufacturers and suppliers of sorbents containing recycled materials, go to www.epa.gov/cpg/ and select products, then sorbents.

2.4.9.h Shop Towels and Other Textiles

Disposable rags, uniforms, gloves, and other textiles must be handled as a hazardous waste if they contain free liquids that have a flashpoint below 140 degrees Fahrenheit, were used with a listed waste (commonly the F001-F005 solvents), or exhibit any other hazardous waste characteristics. This also applies to reusable materials that are being discarded. If textiles were used as a sorbent to clean up spills, also see Chapter 2.4.9.g.



Textiles that are spontaneously combustible are a D001 hazardous waste. When determining the waste code for the textiles used with solvents, it is necessary to determine if it is a listed or characteristic hazardous waste. This distinction is based on whether the solvent is a waste before or after the textile is used.

- If a listed solvent is put onto the textile and the textile is subsequently used to clean a part, the facility needs to determine if the resulting waste is characteristically hazardous.
- If a listed solvent is put onto the part and the textile is then used to remove the excess solvent waste, the textile is automatically a listed hazardous waste because the textile is used to absorb a listed hazardous waste and the mixture rule applies.

Note: The U.S. EPA is considering a proposed rule that may change the above regarding listed solvents and textiles. Contact your DEQ, [District Office](#) Hazardous Waste Program (see Appendix C) with questions on this.

MIOSHA has requirements that rags or waste be put into metal waste cans immediately after use. In addition, the contents of the waste cans are to be properly disposed of at least once daily at the end of each shift. Discuss with MIOSHA Consultation Education and Training Program at 517-322-1809.

The volume of discarded textiles needs to be included when calculating your hazardous waste generator status. It is estimated that a 55-gallon drum holds approximately 125 pounds of used rags without free liquids, but the weight varies with the textiles. Reusable textiles are exempt from the hazardous waste regulations if the textiles meet all of the following requirements:

- Textiles are being laundered or dry-cleaned and reused.
- Textiles do not contain free liquids (i.e., you cannot squeeze any liquid from the textiles).
- The containers used to store the textiles do not contain free liquids.
- Hazardous waste is not mixed with the textile after its original use.



Caution: There have been some instances where textiles have been exposed to chemicals from other business operations when shipped off site for cleaning. If your company has a sensitive process, you may want to make arrangement with the cleaning company that your textiles are cleaned separately from other rags and only your rags are returned to your company.

Let your cleaning company know what type of chemicals you use with these materials so they can determine the best way to clean them and the affect on their own waste stream. Reusable textiles being sent for cleaning are not included when calculating your hazardous waste generator status.

2.4.9.i Spent Parts Washer and Other Solvents

There are several different types of solvents used in parts washers, and the management requirements that apply to the used solvent and any sludge depends on if it is a hazardous waste or not (see Chapter 2.4.9.h for information about solvents on rags). Spent solvent and sludge can be either a listed or characteristic hazardous waste, depending on the chemicals used and contamination sources from use. Cross contamination is also a concern, especially in facilities without strict policies prohibiting employees from using parts washer fluids to clean other equipment or mixing other wastes with it or in facilities using aerosols. Two common situations when cross contamination occurs are when employees:

- Mix solvents used to clean paint guns from the maintenance area with the used parts washer fluids creating a listed F005 hazardous waste by the mixture rule; or
- Add other degreasers that contain tetrachloroethylene (TCE), which is also known as perchloroethylene (PERC), to the parts washer solvents. One suspected practice that may cause contamination involves using aerosol products containing TCE on a part to accelerate the cleaning action and then putting that part into the parts washer. The used parts washer may also become a D039 waste if the TCLP concentration for TCE exceeds 0.7 milligrams per liter or an F listed hazardous waste.

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Common parts washer fluids include the following:

- Mineral spirits (naphtha or stoddard solvent) are commonly used. Products containing mineral spirits have varying flashpoints. Mineral spirits with a flashpoint of 140 degrees Fahrenheit and above are not a hazardous waste due to their ignitable characteristic but may be contaminated with other hazardous constituents through use, requiring them to be managed as hazardous waste. Mineral spirits with a flashpoint below 140 degrees Fahrenheit are classified as a D001 hazardous waste. Where economical, the solvents may be recycled instead of being disposed.
- Aqueous cleaners are a recommended replacement for solvent cleaners for several reasons. The aqueous cleaners contain less volatile organic compounds (VOCs), are usually less toxic, and generally result in the waste being non-hazardous unless it is contaminated with a listed waste or has acquired a contaminant that causes the solvent to exhibit a hazardous waste characteristic. One way to manage spent aqueous washers is to discharge this waste stream to a POTW (municipal sanitary sewer system), if the company has permission from the POTW to do so.

Note: Some aqueous cleaning formulations contain solvent additives such as terpenes, glycol ethers, and alcohols.

- Methylene chloride is occasionally used as a paint remover or to clean carburetors or “white metals” such as die cast zinc or aluminum. Spent methylene chloride used for degreasing usually has a waste code of F001. If it is contaminated with other wastes, however, it may also have a waste code of F005.

Facilities should evaluate the parts washers they are using to determine if an alternative product can provide the same desired results without generating hazardous waste. Management can also reduce the chance of cross contamination by controlling the inventory of products used at the facility and educating their employees on the importance of not contaminating the parts washer with other wastes. See Chapter 1 or discuss with your [District Office](#), AQD (see Appendix C) questions regarding VOCs emission calculations and operating requirements under Part 55 of Act 451. Air quality regulations require that parts washer lids be kept closed when not in use if the solvents used contains regulated VOCs (see Chapter 1.4). If facility is a Large Quantity Generator, also see Chapter 2.4.7.b section on VOC air emissions.

ON-SITE SOLVENT RECYCLING

Facilities that use large volumes of solvents should consider recycling the used solvents on-site. See Chapter 12.1.5.e for information on solvent pollution prevention options.



Tip: Go to www.cleansolutions.org for information and resources about solvent and process alternatives for parts cleaning and degreasing. See Chapter 12.1 for other tips on pollution prevention.

It is not necessary to obtain a hazardous waste permit to recycle solvents at the site of generation, but there are requirements to operate a solvent distillation unit or still at the site where the used solvents are generated. If recycling on-site generated solvents:

- Manage the solvents both prior to and after recycling under the appropriate hazardous or liquid industrial waste regulations depending on the type of solvent.
- Keep a log of the amount of waste treated on-site. This amount needs to be included when calculating the company's hazardous waste generator status (see sample calculation below). These logs can also be helpful to document how you handled your waste when you want to sell your business and a Baseline Environmental Assessment is being done (see Chapter 7).
- Meet the generator hazardous waste requirements or liquid industrial waste requirements while managing solvents on-site (e.g. labeling, containers, containment, etc).
- Use units approved or listed in accordance with UL 2208 Standard for Solvent Distillation Units
- Locate still according to manufacturers' instructions and away from ignition sources.
- Only use with materials specifically listed on the still label or instruction booklet.
- Meet flammable and combustible liquids and waste storage requirements. The NFPA 30 adopted in the flammable and combustible liquid rules have requirements for stills. However, there are several types of operations that are exempted in Chapter 5.11 including stills used in research, testing, or experimental processes, petroleum refineries, chemical plants, or dry cleaners.
- Do not exceed 55 gallon batch capacity. An air quality permit is required in advance of installation if there are air emissions from a distillation unit that exceeds the 55 gallon batch capacity. Check with the DEQ, [District Office](#), AQD (see Appendix C) if you are considering using a still and have questions.
- Check if the local fire department and your insurance company have requirements for still operations.
- Periodically review the servicing schedule to determine if the best solvent is being used and the schedule meets the facility's solvent requirements.

OFF-SITE SOLVENT RECYCLING

A manufacturer may ship the used solvents off-site to a commercial recycler for reclamation. Recyclers can be found in the oils and solvents category of the [Recycled Materials Market Directory](#) available online at www.michigan.gov/rmmd. Confirm they are a permitted and registered transporter and meet waste manifest requirements. This waste would be counted towards your generator status. A Small Quantity Generator may ship solvents for reclamation under a tolling arrangement as discussed in Chapter 2.4.5.a. Call the DEQ, District Office, Hazardous Waste Program (see Appendix C) if you have any questions about reuse or recycling of solvents.

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How do I calculate the amount of hazardous waste generated from a recycling still?

The following scenario is given as an example on how to count the used solvent reclaimed through a recycling unit when determining your generator status. The original solvent is counted once during the calendar month, plus any additional solvent added during the month, and any generated still bottoms. The count starts new every calendar month. Counting waste is addressed in Rule 205(5) of the Part 111 rules (R 299.9205(5)).

A company with a painting line uses acetone to clean the paint gun and line. Acetone is a F003 listed solvent. To save on purchasing costs of buying more cleaning chemicals and reduce hazardous waste disposal costs, the company weekly uses a 5 gallon capacity still to recycle the used acetone waste. They collect spent acetone in satellite containers until they put the used solvent into the recycling unit.

June Week 1, an employee put 5 gallons of spent solvent in the still and got 4 ½ gallons cleaned solvent and ½ gallon sludge. Need to count the 5 gallons of spent solvent. They then took the 4 ½ reclaimed gallons and added ½ gallon new virgin solvent and used it to clean the equipment.

June Week 2, an employee put another 5 gallons of spent solvent in the still and got 4 ½ gallons cleaned solvent and ½ gallon sludge. Since 4 ½ gallons of solvent had already been included in the Week 1 calculation, this week they only count the ½ gallon of additional virgin solvent that was used and ½ gallon sludge towards the generator status.

June Week 3, repeat of week 2

June Week 4, repeat of week 2

In this scenario, they add $5 + \frac{1}{2} + \frac{1}{2} + \frac{1}{2}$ (solvent) + $\frac{1}{2} + \frac{1}{2} + \frac{1}{2}$ (sludge) = 8 ½ gallons of hazardous waste was generated in June from solvent use and recycling.

| Week | Solvent in gallons | Sludge in gallons | |
|----------|----------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| 1 | 5 | | The sludge is not counted this first week because the waste is included in the initial amount of used solvent put into the still. |
| 2 | ½ | ½ | Need to count the new solvent that was used and the amount of sludge generated this week |
| 3 | ½ | ½ | |
| 4 | ½ | ½ | |
| Subtotal | 6 ½ | 1½ | |
| | 6 ½ gallons X 6.64 (acetone weight in lbs/gallon) | | 43.16 pounds of liquid acetone hazardous waste generated in month |
| | 1.5 gallons X 8.5 (sludge weight in pounds/gallon) | | 12.75 pounds of hazardous waste sludge generated in month |
| | Acetone liquid waste + sludge | | 55.91 pounds of hazardous waste |

2.4.9.j Aerosols



Aerosols are a commonly overlooked hazardous waste and industry uses numerous spray cans including degreasers, paints, etc. Residues in aerosol containers are exempt from the hazardous waste regulations if the cans are “empty,” which means the pressure in the container approaches atmospheric pressure and they contain less than one inch of non-acute residue. One practical test is to turn the aerosol can upside down and press down on the nozzle. If you don’t hear or see anything and the can feels light, it is

usually empty. This quick test is not accurate if the nozzle is blocked. It is recommended to recycle empty cans for scrap metal where possible. Unfortunately, salvage yards in some areas of the state will not accept them at this time. Check with your local salvage yard or look for recyclers of empty cans in the [Recycled Materials Market Directory](#) under the metals category.

If the spray can contains product and it needs to be disposed of, you must determine if it is a hazardous waste. Not only is it illegal to intentionally spray out the can's contents just so it meets the "empty" definition, it is also costly in lost product. Look at the MSDS or label to help determine if its contents are a hazardous waste:

- Are the cans contaminated with "F" listed solvents? On occasion an aerosol is F-listed if, for example, the outside of the aerosol can was contaminated with a spent solvent on the "F" list. That is because the container would be considered to be contaminated by the waste and therefore due to the "mixture rule" it would be an "F" listed waste. Unwanted solvents in the aerosol cans are not normally "F" listed because the solvent has not yet been used.
- Do the contents have the single active ingredient on the "U" or "P" list?
- Do the contents display one or more of the characteristics? Cans containing flammable propellants or other ingredients would be ignitable (D001). Some products may be reactive (D003).

For example, aerosols products containing a mixture of tetrachloroethylene (PERC) in regulated concentrations (0.7 mg/L when tested using TCLP) or more with other ingredients is a D039 waste. If the unwanted aerosol product is PERC, it would be U210.



Tip: Consider using products in refillable containers to reduce disposal costs of containers that are hazardous waste only because of the aerosol propellant. There are some metal containers that can be pressurized with air compressors or plastic containers that are pressurized by hand pumps or squeeze triggers.

AEROSOL CAN CRUSHERS AND PUNCTURING DEVICES

Aerosol can crushing and puncturing devices normally fit onto a 55-gallon drum. If you are considering operating an aerosol can device, first contact your District Office, AQD and Hazardous Waste Program (see Appendix C) and MIOSHA, Consultation Education and Training Program at 517-322-1809 to discuss any operating and permitting requirements. It may be possible to meet air permitting and generator on-site waste treatment exemptions if you are only crushing your own aerosol cans at the site where they were used and became a waste. To be exempt from a DEQ, Hazardous Waste Program hazardous waste permit and license, Small Quantity Generators and Large Quantity Generators must meet the requirements of Rule 503(1)(i) (R 299.9503(1)(i)). This includes, but is not limited to, meeting the on-site treatment requirements for container management, secondary containment, and preparedness and prevention specified under this rule. Conditionally Exempt Small Quantity Generators are not subject to this rule.

If you have a can crushing device, determine if the treatment is occurring in a satellite container or a hazardous waste accumulation container and meet the applicable requirements for your generator status for the container and the Rule 503 exemption requirements. See Chapter 2.4.8. for the management requirements that apply to a satellite containers and Chapter 2.4.7 and 2.4.8 for the requirements that apply to hazardous waste accumulation containers.

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Facilities must characterize the carbon filters when they are replaced, and any liquids collected in the process, to determine if these materials are a hazardous waste. The collected waste is often flammable (D001) waste so you will want to ensure that no sparking or smoking occurs near the device and meet the other regulations pertaining to flammable and ignitable liquids (See Chapter 4). Other waste codes may apply depending on the products being used. In addition, Large Quantity Generators may be subject to the 40 CFR 264 and 265 Subpart BB and CC air emission requirements. Direct any questions to the DEQ, [District Office](#), Hazardous Waste Program (see Appendix C).

2.4.9.k *Painting Wastes*

Proper characterization of air filters, paints, solvents, and other wastes resulting from painting operations requires knowing which chemicals are in the paints and other products used, what is used to clean out the paint guns and lines, and how the solvent was used (also see Chapters 2.4.9.i and 2.4.9.h regarding solvents). If you have any questions about your waste generated from painting operations, call your DEQ, District Office, Hazardous Waste Program (see Appendix C).

Identify if any of the paints and chemicals used are listed or characteristic hazardous waste. If the product ingredients are listed as an “F” waste, determine if the product was used as a cleaning solvent or as an ingredient in a paint product. If it was used as a solvent, then the “F” listing applies (see Chapter 2.4.9.i). Most common paint wastes include F005, F003, D001, D035, and occasionally D039. Paint formulations vary, but metals in paints such as barium, cadmium, lead, and chromium may be in amounts that fail the TCLP, making the waste a toxic characteristic hazardous waste. Confirm with your paint manufacturer that all the chemicals in Table 201a are listed on the MSDS and note your review on your waste characterization records. MSDS’ were developed for occupational health reasons and some manufacturers do not list all chemicals of concern for disposal on the MSDS. Paint filters and waste rags may also be a D001 waste because they are spontaneously combustible or contain enough ignitable liquid waste. Some paint and solvent recyclers are listed in oils and solvents category of the [Recycled Materials Market Directory](#). Confirm they are a permitted and registered transporter (see Chapter 2.4.10).

Example 1: A paint booth operation at the facility uses a solvent product (that contained methyl ethyl ketone [MEK] and other listed solvents which resulted in a blend that was over 10 percent by volume of the product). This solvent was used to clean out the paint gun and line and directly sprayed into the filters. The waste solvent would be an F005 waste because the solvent was used for its cleaning properties. The hazardous waste mixture rule would apply to the paint booth filters and they would also be an F005 waste because the F005 solvent was sprayed onto the filters. If the solvent used to clean up the paint gun and line was sprayed into a container instead, the paint booth filters would not be a F005 waste but the used solvent would be a F005 listed hazardous waste.

Example 2: A paint product contained MEK and was used for its intended purpose as a paint. The waste paint and paint booth filter waste would not be an “F” listed waste as long as other listed solvents were not used as a gun and line cleaning agent. In this case, the MEK was not used as a solvent. However, it could be a D035 toxic characteristic hazardous waste if the concentration met or exceeded 200 PPM in the waste.

Example 3: A solvent based paint was thinned with lacquer thinner before being sprayed. Any leftover paint would probably be an ignitable characteristic hazardous waste. Paints and

related wastes may also be regulated hazardous waste because the ingredients contained metals or other chemicals included in the “D” wastes in regulated concentrations or because it met ignitable characteristics.

See Chapter 1 or discuss with your [District Office](#), AQD (see Appendix C) questions regarding VOC emission from painting operations. Also see Chapter 19 for information about the [MIOSHA Standard - Part 76 Spray Finishing and Dip Tanks](#).

2.4.9.1 Wastes Containing Silver and Other Precious Metals

Some industries may have wastes from photo or x-ray processing or other processes that generate wastes containing silver or other regulated wastes. If waste contains economically significant amounts of precious metals (silver, gold, platinum, palladium, iridium, osmium, rhodium, ruthenium, or any combination), it can be managed under alternative standards found under Rule 803 of the Part 111 rules (R 299.9803). A facility is required to include the amount in determining its hazardous waste generator status, obtain a Site Identification Number (see Chapter 2.4.4), include the waste in the biennial report for Large Quantity Generators of hazardous waste (see Chapter 2.4.6), and the waste must be shipped using [the Uniform Manifest](#) (see Chapter 2.4.5). Additionally, these materials must not be accumulated speculatively, meaning that 75 percent must be sent for reclamation each calendar year.

The following summarizes requirements when these specific wastes are not managed under the precious metals rule.

Used fixer and other solutions:

Used fixer or other solutions may contain silver in amounts that can not be discharged to a wastewater treatment plant or septic system. It may be necessary to install a silver recovery unit. Before purchasing or leasing a unit, check with the wastewater treatment plant for any local requirements to discharge processed liquids. Off-site shipments of the silver recovery unit cartridges and solutions by Small Quantity and Large Quantity Generators must be done by a permitted and registered hazardous waste transporter and manifested as a D011 hazardous waste if the solution has a TCLP concentration of 5.0 milligrams per liter (mg/l) or more of silver.

Conditionally Exempt Small Quantity Generators may take the silver recovery unit cartridges and liquid solution waste to a destination facility themselves if meeting the conditions in Chapter 2.4.5, or hiring a permitted and registered liquid industrial waste transporter to haul the liquid wastes. Liquid solutions, and cartridges that contain free liquids, that do not meet this silver concentration would be manifested and shipped using a 033L liquid industrial waste (see Table 2.1).

Recovered silver flake which does not contain liquids is considered product and is not manifested or shipped as regulated waste when sent off-site. All shipments must comply with U.S. DOT requirements regardless of the status under waste regulations.

Used developer and system cleaners:

Check if the wastewater treatment plant will allow discharges of used developer and system cleaners. If not, check if the fixer recycler will accept the used developer. If the printer is not taking the used developer themselves to a destination facility, hire a permitted and registered transporter when shipping used developer off-site as liquid industrial waste and manifest the load using a 033L liquid industrial waste code. Do not mix used fixer and developer.

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Cleaners used in developer systems may contain chromium. Review the MSDS and other information to determine if the waste cleaner has a chromium TCLP concentration of 5.0 mg/l or more. If so, it would be considered a D007 hazardous waste. If possible, switch to a non-chromium cleaner.

Used film:

The DEQ recommends that used film be recycled for silver. Recyclers can be found in the [Recycled Materials Market Directory](#) under the metal category. Conditionally Exempt Small Quantity Generators may dispose used film in the trash. Small Quantity and Large Quantity Generators may also put it in the trash unless the used film has a silver TCLP concentration of 5.0 mg/l or more classifying it as a hazardous waste although this is unusual. Unused or expired film can normally be returned to the dealer or manufacturer.

2.4.9.m *Electronic Waste including Computers*

In Michigan consumer electronics can be managed as universal waste. Consumer electronics means devices containing an electronic circuit board, liquid crystal display, or plasma display commonly found in homes and offices and those devices when used in other settings. Common consumer electronic wastes includes computers, printers, telephones, two way radios, and televisions. Label the devices or the containers with “Universal Waste Electronics” or “Universal Waste Consumer Electronics” and meet the applicable universal waste handler requirements (see Chapters 2.4.1.c, 2.4.4, 2.4.5, 2.4.7, and 2.4.8).



Universal waste handlers of electronics may do any of the following and still be a handler:

- Repair the device for potential direct reuse
- Remove other universal waste e.g. batteries from the device
- Remove individual modular components for direct reuse
- Perform processing exempt under Part 111 of Act 451 and its rules when notified as a universal waste destination facility

See the [Electronic Equipment](#) guidance available in the DEQ publication center at www.deq.state.mi.us/pubcenter for more for more information about consumer electronics, when they are a waste, where to recycle, recycling exemptions, and more. Electronics that are not typically found in a home are generally a hazardous waste because they fail the TCLP test for metals. For more information on this topic, including exemptions for handling electronics that are cannot be managed as a consumer electronic under the universal waste regulations, see the electronic equipment guidance at www.michigan.gov/electronicwaste.

2.4.9.n *Waste containing radioactive materials*

Some companies may generate “mixed waste” which contains both hazardous waste and source special nuclear, or byproduct material subject to the Atomic Energy Act of 1954. This waste is managed under both the hazardous waste and the radioactive material regulations described in Chapter 10. See Rule 822 of the Part 111 rules (R 299.9822) regarding low-level mixed waste (LLMW) and Rule 823 of the Part 111 rules (R 299.9823) regarding LLMW and

naturally occurring and/or accelerator-produced radioactive materials (NARM). Discuss requirements with the DEQ by calling 517-241-1275 or the DEQ, [District Office](#), Hazardous Waste Program (see Appendix C). See Chapter 10 for management of exit signs and industrial smoke detectors.

2.4.9.o Spent Antifreeze

Used antifreeze (ethylene glycol and propylene glycol) may be removed from transportation equipment or cooling/heating systems or the chemicals may have been used for deicing aircraft. Spent antifreeze may be either hazardous or non-hazardous waste depending on its characteristics. There have been increased incidents of antifreeze meeting hazardous waste toxicity characteristics when removed from radiators and equipment that contained lead solder. As such, the universal waste antifreeze was added in the 2008 rule amendments. Non-hazardous antifreeze may be managed as liquid industrial waste or a universal waste. See the [Antifreeze](#) guidance available in the DEQ publication center at www.deq.state.mi.us/pubcenter for more information on antifreeze management requirements.

2.4.9.p Scrap Metal

Scrap metal is excluded from the hazardous waste and solid waste regulations when it is recycled. Scrap metal is defined as "bits and pieces of metal parts such as bars, turnings, rods, sheets, wire, or metal pieces which may be combined together with bolts or by soldering such as radiators, scrap automobiles, and railroad box cars, which when worn or superfluous may be recycled." It can also include solder sponges that can be recycled for scrap metal.

Accumulation of scrap metal prior to recycling under the hazardous waste regulations is limited to the speculative accumulation conditions under the solid waste regulations (see Chapter 2.1). At least 75 percent of the scrap metal must be recycled in a calendar year to be exempt from the hazardous waste regulations.

To find recyclers, look in the [Recycled Materials Market Directory](#) under the metals category or look in the yellow pages under the heading "Scrap Metal." If you have precious metals, see Chapter 2.4.9.l.

2.4.9.q Pharmaceuticals

Pharmaceuticals are drugs, regardless if they're used in the diagnosis, cure, mitigation, treatment, therapy, or prevention of disease in humans or animals. Pharmaceuticals, like any business waste, must be characterized. A small percentage of pharmaceuticals meet the definition of hazardous waste and need to be managed in accordance with the hazardous waste regulations found under Part 111 of Act 451 and the Part 111 rules. Pharmaceutical waste that is not subject to hazardous waste regulation but is liquid, may be subject to regulation as a liquid industrial waste under Part 121 of Act 451, unless specifically exempted. Part 121 of Act 451 has an exemption for empty containers that mirrors the empty container regulations for non-acute hazardous waste discussed in Chapter 2.4.1. Pharmaceutical containers that are empty can be disposed of as a non-hazardous solid waste or recycled. For additional information on empty containers, please also see the [Emptying Tanks or Containers](#) guidance available at our DEQ publication center at www.deq.state.mi.us/pubcenter/ for more information.

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To simplify the management requirements that apply to hazardous waste pharmaceuticals, Michigan adopted pharmaceuticals as a [universal waste](#) type in 2007. See the [universal waste guidance](#) on-line at www.michigan.gov/documents/deq/deq-ead-tas-univwaste_320878_7.pdf For more information on managing pharmaceutical waste under the universal waste regulations or Part 121 exemptions, contact the DEQ, District Office, Hazardous Waste Program (see Appendix C). For more information on managing mixed medical waste, please see Chapter 2.5 and 2.6.

2.4.10 Selecting a Transporter and TSDF

Because transporter and treatment, storage and disposal facilities (TSDF) services and costs are highly varied, you should contact and interview several facilities to obtain price estimates before making a selection. Transporters may be independent companies or may be affiliated with a TSDF. There are requirements for transporters hauling either hazardous waste or liquid industrial waste. A transporter needs to be registered and permitted under [Act 138](#) to haul either of these wastes.

You might want to tour the TSDF yourself to see its operations. Remember that, as the generator, you are ultimately responsible for how your waste is transported and disposed, so it is wise to choose a company on more than price alone. Use the following list of questions as a starting point for your interviews, and compare the companies' responses before making your selection. It is important to select a waste transporter and TSDF that you are comfortable doing business with and who provides the best services for your particular circumstances, at a reasonable price.

Questions to Ask Prospective Transporters and TSDFs

1. **Hazardous waste** - Is the hazardous waste transporter currently permitted and registered in Michigan to transport hazardous waste under Act 138? Does the TSDF where the hazardous waste is being taken have a current operating license? You may search the [Waste Data System](#) at www.deq.state.mi.us/wdsp/ for hazardous waste transporters and TSDFs. You may also look for companies in your telephone directory under the heading "Waste Reduction, Disposal, and Recycling Service."

A TSDF can accept only those types of wastes allowed by its permit or operating license. Special fees may be charged for small quantities of hazardous waste requiring extra handling by the facility.

2. **Liquid industrial waste** - Is the liquid industrial waste transporter currently permitted and registered to transport liquid industrial waste under Act 138? Is the liquid industrial waste being taken to a facility that is notified the DEQ, Hazardous Waste Program as a designated facility that accepts liquid industrial waste? You may search the [Waste Data System](#) for companies that have notified as being liquid industrial waste designated facilities and liquid industrial waste transporters. You may also look for companies that deal with liquid industrial waste in your phone directory under the heading "Waste Reduction, Disposal, and Recycling Service," or for used oils look under the heading "Oils-Waste."
3. What type and amount of insurance does the transporter or TSDF carry? Permitted and registered transporters are required to have insurance coverage to cover accidents and environmental spills. You may want to ask for proof of current insurance coverage for your records.

4. If you are hiring an independent transporter, find out what TSDF the transporter uses for your type of waste. Do they use a transfer facility? If the waste is going to a treatment facility before disposal, where is the ultimate place of disposal for the treated wastes?
5. Does the transporter or the facility offer special services for small volumes of waste? Some transporters might not service Small Quantity or Conditionally Exempt Small Quantity Generators.
6. Does the transporter or TSDF initially prepare the waste manifests or will they assist you by reviewing manifests you prepare for correct and complete information (see Chapter 2.4.5)? Does the TSDF provide the land ban or land disposal restriction notice forms (see Chapter 2.4.5.c) and do they help complete them?
7. Does the transporter test used oil prior to picking up the waste or do they require you to do any testing (see Chapter 2.4.9.a)? Does the TSDF require specific tests or laboratories to be used (see Chapter 2.4.2).
8. Is there anything additional to the labeling requirements you must do before your waste is picked up by the transporter or accepted at the TSDF? Some facilities have their own requirements as to how they accept waste material. For example, some companies will not accept hazardous waste in drums even though this is a common method of storage and only pick up bulk loads.
9. Does the transporter or TSDF serve other businesses similar to yours? If so, obtain telephone numbers and contact these companies to evaluate the services they received.
10. Does the transporter deliver waste to the treatment, storage, or disposal facility the same day that it's picked up? If not, ask questions about the company/location where the waste will be stored while in transport. Hazardous waste must reach its final destination within 10 days.
11. What steps does the transporter or TSDF operator take to avoid spills or leaks and minimize the facility's own legal liability? You may want to note for your records the method of temporary waste storage used at a treatment or recycling facility. If your waste is going to a hazardous waste landfill, ask about their leachate control and ground water monitoring provisions. Use this information when comparing companies. A company that costs more to take your waste but practices an extensive environmental protection program may actually be cheaper in the long run than a company that initially costs less but does not practice adequate environmental protection. If contamination occurs, you can be held financially responsible for the site cleanup costs.
12. Have any violations of state regulations occurred? You may also search the [Waste Data System](#) for information regarding a company's compliance history. Call the appropriate DEQ, [District Office](#), Hazardous Waste Program (see Appendix C) to discuss the compliance history for prospective transporters or a TSDF. Transporter and TSDF inspection files are kept by the Hazardous Waste Program at the DEQ, District Office responsible for the area where the business is located. If you want to review the files, contact the District Office to confirm the appropriate office and set up an appointment to review the records.

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13. Will they enter into a written contract with you? For liability protection, it is a good idea to have a written contract that clearly identifies what specific services the company will provide. Be cautious of firms who do not want to offer a written contract for services.

Conditionally Exempt Small Quantity Generators are not required to hire a permitted and registered hazardous waste transporter or dispose of hazardous waste at a hazardous waste TSDF, but it must be disposed of at a facility that can legally accept the waste. It is recommended that CESQG exempted hazardous waste be sent to a hazardous waste disposal facility or waste recycler. In a few Michigan areas, local household hazardous waste collection programs accept hazardous waste from Conditionally Exempt Small Quantity Generators for a fee. A [list of local collection sites](#) is available at www.michigan.gov/wasterecycling. Your waste that is not considered a liquid waste (passes the paint filter test) can be disposed of at a municipal solid waste landfill if the landfill authority will accept it. Your liquid waste must be hauled by a permitted and registered transporter, unless you haul your own generated waste and meet the requirements outlined in Chapter 2.4.5.a.

2.4.11 Disposing Hazardous Waste On-Site

You may NOT dispose of hazardous waste on your site unless you have obtained a construction permit or operating license for disposal from the DEQ, Hazardous Waste Program. Under limited circumstances, it might be legal to dispose of certain types of waste through a discharge to the sanitary sewers to the publicly owned treatment works (POTW). Any such discharge is only legal IF the discharge is approved by the POTW (see Chapters 2.4.1.d and Chapter 3.2). The POTW authorization should be in writing, and made available for review upon inspection.

Any on-site POTW authorized discharge only becomes excluded from regulation as a hazardous waste at the point of discharge to the sanitary sewer. Therefore, any management of the waste in advance of authorized POTW discharge is subject to the hazardous waste regulations and must be counted when determining a facility's hazardous waste generator status. Direct discharges to the sanitary sewer from process equipment are not counted if there is no on-site management of the waste. See Chapter 2.4.1.d and Chapter 3 on wastewater management for more information. Contact your local wastewater treatment facility and your DEQ, [District Office](#), Hazardous Waste Program (see Appendix C) for more information about on-site disposal of hazardous waste to the POTW and how this affects your hazardous waste generator status.

2.4.12 Employee Emergency Training

In addition to the following training requirements, see Chapter 6 for contingency planning, release reporting, and release response requirements.

HAZARDOUS WASTE TRAINING

This section discusses emergency training requirements under the hazardous waste regulations. Training is required for all employees who are involved with hazardous waste management, such as personnel at the areas of generation, their supervisors, hi-low drivers who move the hazardous waste, shipping dock employees, emergency coordinators, or anyone else who handles the hazardous waste. You must tailor your training specifically to the hazardous waste procedures relevant to your facility and employee involvement.

TABLE 2.8: HAZARDOUS WASTE TRAINING REQUIREMENTS

| | CESQG | SQG | LQG |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Training type | No specific requirements under hazardous waste rules | Informal training ¹ | Classroom setting or on the job formal instruction with written description of training program type and amount of training ¹ |
| Written training records | No specific requirements | Recommended as verification training occurred | Required written records. <ul style="list-style-type: none"> ✓ For employees who left company, keep records at least 3 years from last day worked. ✓ For current employees, keep records until facility closes. |
| Training Schedule | No specific requirements | No specific requirements | <ul style="list-style-type: none"> ✓ Initial training within 6 months of starting job involving hazardous waste ✓ Annual training (during calendar year, not necessarily 1 year from date of initial training) |
| Trainer Qualifications | No specific requirements | No specific requirements. May be someone in-house or hire outside trainer | Someone with significant experience in hazardous waste management. May be someone in-house or outside trainer. |
| Manifest & Transportation Training | This is required under U.S. DOT regulations. See Chapter 4.4.10. | | |
| The above summarize requirements under the hazardous waste regulations. Facilities may also be subject to MIOSHA requirements for training and record keeping which are not included here. | | | |
| ¹ This training can be combined with other training sessions as long as a portion of the training is clearly devoted to hazardous waste requirements. Training under the Hazard Communication Employee Right-to-Know Standard (Right-to-Know) alone, as required by MIOSHA (see Chapter 13), is not sufficient to meet the hazardous waste training requirements. Review the DEQ guidance on Personnel Training Requirements for Large Quantity Generators of Hazardous Waste found in the DEQ publication center on-line at www.deq.state.mi.us/pubcenter/ for more information on hazardous waste training requirements. | | | |

See Chapter 4.4 for training requirements under the transportation regulations including manifest training. See Chapters 13 and 23 for information about the MIOSHA regulations that require employees to be trained on proper waste handling and how to effectively respond to emergencies in a manner that protects their safety and the environment.

Hazardous waste training involves familiarizing employees with emergency procedures; emergency equipment; emergency systems (such as communication or alarm systems, response to fires or explosions, shutdown of operations, response to unplanned sudden or non-sudden releases of hazardous waste); and their roles in handling hazardous waste or on a day to day basis at your facility, including implementing the hazardous waste contingency plan relevant to their positions.

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Some common hazardous waste training violations include:

- ✓ Missing or incomplete documented records of required training for Large Quantity Generators:
 - Job title omitted
 - Job description omitted
 - Employee name omitted
- ✓ Missing written training description for Large Quantity Generators
- ✓ Using another required emergency training program which does not have a portion clearly devoted to the hazardous waste requirements intended to ensure compliance with the hazardous waste regulations
- ✓ Failing to have employees trained annually for Large Quantity Generators

UNIVERSAL WASTE TRAINING

Small Quantity Handlers and Large Quantity Handlers must inform employees who handle or have responsibility for managing universal waste about the proper handling and emergency procedures relative to their responsibilities and appropriate for the type of universal waste handled at that facility.

2.5 Medical Waste

The management of medical waste is directly or indirectly regulated under federal, state, and some local statutes, rules, and guidelines. The following summarizes the different agencies with regulatory oversight in the management of medical waste.



- The DEQ, [Medical Waste Program](#) oversees Michigan's Medical Waste Regulatory Act (Part 138 of Michigan's Public Health Code, Public Act 368 of 1978, as amended [Act 368]) and administrative rules. Part 138 of Act 368 mandates how generators of medical waste must manage their medical waste from point of generation to disposal.
- The [U.S. EPA](#) has regulations and has issued [guidelines](#) for land disposal and incineration facilities handling infectious wastes. The guidelines list minimum performance criteria and outline recommended management procedures.
- The [U.S. DOT](#) regulates packaging, labeling, transportation, and shipping of medical waste on an interstate basis (see Title 49, Part 171 of the Code of Federal Regulations [49 CFR 171]) along with the [Michigan State Police, Commercial Vehicle Enforcement Division](#). Federal guidelines and regulations are basically minimum standards that have been either adopted by Michigan statute, or Michigan has established parallel statutes and rules that are more comprehensive than the federal regulations.
- The MIOSHA Standard - [Part 554](#) "Bloodborne Infectious Diseases" (R 325.70001 through R325.70018), administered by DLARA also addresses the handling of liquids, semi-liquid blood, or other potentially infectious materials (see Chapter 22).
- For local requirements, contact the [local health department](#).

Medical waste as defined under Part 138 of Act 368 includes the following wastes that are not generated from a household, a farm, an agricultural business, a home for the aged, or a home health care agency:

- Cultures and stocks of infectious agents and associated biologicals, including laboratory waste, biological production wastes, discarded live and attenuated vaccines, culture dishes, and related devices.
- Liquid human and animal waste, including blood and blood products and body fluids, but not including urine or materials stained with blood or body fluids.
- Pathological waste which includes human organs, tissues, body parts other than teeth, products of conception, and fluids removed by trauma or during surgery or autopsy or other medical procedure, and not fixed in formaldehyde.
- Contaminated wastes from animals that have been exposed to agents infectious to humans, these being primarily research animals.
- Sharps which includes needles, syringes, scalpels, intravenous tubing with needles attached, and lancets used for checking blood glucose levels.

For wastes generated from households, please see the DEQ brochure titled “[The Point Is...Needles Hurt](#)” at www.deq.state.mi.us/documents/deq-ead-tas-newsharps.pdf.

Medical waste includes discarded unused sharps. Medical waste does not include any medications or pharmaceuticals unless they contain live or attenuated vaccines in which case they are mixed medical waste (see Chapter 2.6). Medical waste also does not include specimens that are fixed, as the fixative renders the waste non-infectious. Similarly, used, decanted formaldehyde (formalin) or other fixative is not a medical waste but is a liquid industrial waste unless commingled with hazardous waste and subject to hazardous waste regulation.

Medical waste may be infectious to humans and must be handled and treated with caution. Facilities that may generate medical waste include pharmaceutical companies, research facilities that manufacture vaccines and drugs, and medical equipment manufacturers with testing programs. Companies with in-house health care facilities may also be subject to the regulations. Medical waste producers must register and all medical waste must be incinerated or autoclaved at a facility authorized to accept medical waste. If medical waste is not mixed with pharmaceuticals, it can be treated by an authorized autoclave and then disposed in a non-hazardous solid waste landfill.



Additional information is available at www.michigan.gov/deqmedwaste.
For questions about medical waste call 517-335-1146 or send e-mail to MedicalWaste@michigan.gov.

2.5.1 Registration and Record Keeping Requirements

Registration of medical waste producing facilities is required under Section 13815 of Part 138 of Act 368. Contact the DEQ, Medical Waste Program to request an “Initial Application for Registration as a Medical Waste Producing Facility” (EQP 1700-2) form or go to www.michigan.gov/deqmedwaste and select “Initial Registration Application.” Registrations are good for three years and renewal notices are automatically sent to registrants prior to the expiration of their current registration. If you need a renewal form, contact your DEQ, Medical Waste Program at MedicalWaste@michigan.gov to send a form.

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Facilities that employ a full time nurse and/or doctor, or operate a health clinic that provides medical services to employees and generates medical waste would be required to register. Discuss requirements about the medical waste on-site management requirements with the DEQ, Medical Waste Program.

A business that has incidental amounts of medical waste from an employee accident or provides a sharps container and/or first aid kits for employee or student use is not considered a medical waste producing facility. It is recommended, however, that this waste be treated as a biohazard, put in red bags, and picked up by a medical waste hauler. A list of companies that offer medical waste disposal services can be obtained by going to www.michigan.gov/deqmedwaste and selecting “Medical Waste Disposal Services.”

2.5.2 Medical Waste Management Plans

A medical waste management plan is required and must be maintained by all medical waste producing facilities. Major components of the plan must include the following:

- The types of medical waste handled.
- The use and methods of on-site or off-site storage.
- The use of on-site or off-site incineration or disinfection services.
- The use of sanitary landfills, cemeteries, or other final disposal sites.
- The business name of solid waste haulers who transport medical waste for the producing facility’s medical waste.
- The measures used to minimize exposure of the facility’s employees to infectious agents when handling and disposing of the facility’s medical waste.

The medical waste plan must be updated whenever any changes in management of medical waste occur and the plan must be readily available for inspection. A sample medical waste management plan is available from the DEQ, Medical Waste Program or can be obtained by going online to www.michigan.gov/deqmedwaste and selecting “Sample Medical Waste Management Plan.”

2.6 Mixed Medical Waste

Medical waste should not be inadvertently mixed with other wastes because other wastes are subject to different standards and mixing the wastes together may complicate the disposal requirements. The following sections briefly summarize the requirements for managing medical waste mixed with wastes subject to other regulations. If medical waste is not mixed with pharmaceuticals waste, it may be treated at an autoclave and disposed in a non-hazardous solid waste landfill. If medical waste is mixed with pharmaceuticals, it must be incinerated at a facility authorized to take both medical waste and the pharmaceuticals commingled with the infectious waste.

2.6.1 Medical Waste Commingled with Hazardous Waste

Some unused pharmaceuticals discarded as a result of medical treatment meet the definition of hazardous wastes and need to be managed in accordance with the hazardous waste regulations found under Part 111 of Act 451 and the Part 111 rules. Pharmaceutical hazardous waste that is commingled with medical waste, more commonly sharps, must be managed in accordance with

Part 138 of Act 368 and Part 111 of Act 451 and its rules. If the pharmaceutical container is empty (see Chapter 2.4.1.d), it could be excluded from hazardous waste regulations and only be subject to the medical waste regulations.

To simplify the management requirements for hazardous wastes, Michigan established universal waste standards for pharmaceuticals. The universal waste standards can be used when managing medical waste commingled with hazardous and/or liquid industrial waste (see Chapter 2.4.1.c) if the hazardous waste TSDF is authorized to incinerate medical waste, however this is typically costly. Medical waste commingled with hazardous waste and managed as a universal waste must meet all of the requirements under both the medical waste and universal waste regulations. To simplify the management requirements that apply to the different wastes and lower costs, it may be more practical to manage medical waste separately from hazardous waste and/or liquid industrial waste.

2.6.2 Medical Waste Commingled with Liquid Industrial Waste

An example of a medical waste commingled with liquid industrial waste is a partially administered IV bag containing an antibiotic that is not a hazardous waste which remains connected to the tubing and needle used to administer the antibiotic. If the IV bag used to administer the antibiotic was empty, it could be excluded from the liquid industrial waste regulations and only be subject to the medical waste regulations. The needle and attached tubing that is a medical waste could also be removed from the IV bag and managed separately from the liquid industrial waste.

Liquid pharmaceutical waste that is not subject to the hazardous waste regulations is subject to the liquid industrial waste requirements in Part 121 of Act 451. Pharmaceuticals defined as liquid industrial waste should not to be inadvertently commingled with medical waste since the wastes are subject to different management standards. When commingled, the disposal options are limited because most medical waste treatment (e.g. autoclaves) and disposal facilities (e.g. incinerators) are not specifically authorized to accept pharmaceuticals. As such, it appears the only disposal option for medical waste commingled with liquid industrial waste is a permitted and licensed hazardous waste TSDF that is also authorized to incinerate non-hazardous liquid and medical waste.

Liquid industrial waste that is not commingled with medical waste or subject to hazardous waste regulation can be solidified on-site by the generator then managed as a non-hazardous solid waste under Part 115. It can also be managed as a liquid industrial waste under Part 121. Any liquid industrial waste commingled with hazardous waste, is a hazardous waste and it must be managed in Michigan as a universal waste or hazardous waste under the Part 111 hazardous waste regulations. If liquid industrial waste is treated and/or disposed on-site, records of character of the waste and the on-site treatment and/or disposal must be maintained. If the waste is discharged to the sanitary sewer, the activity must be approved by the POTW and the POTW approval should be in writing and made available during inspection to verify the on-site disposal authorization.

WHERE TO GO FOR HELP

SUBJECT: Compliance Assistance

CONTACT: DEQ, Environmental Assistance Center
800-662-9278 or deq-assist@michigan.gov
www.michigan.gov/environmentalassistance

SUBJECT: Confidential and Free Waste Reduction Assessments

CONTACT: DEQ, Environmental Assistance Center, RETAP Coordinator
800-662-9278
www.michigan.gov/p2 (select “RETAP” on the left)

SUBJECT: Hazardous Waste and Liquid Industrial Waste Generators

CONTACT: DEQ, [District Office](#), Hazardous Waste Program (see Appendix C)
www.michigan.gov/deqwaste (select “Hazardous and Liquid Industrial Waste,” “Hazardous and Liquid Industrial Waste Management,” then “Generators”)

SUBJECT: Hazardous and Liquid Industrial Waste Manifests

CONTACT: For questions about manifesting requirements:
DEQ, [District Office](#), Hazardous Waste Program
See Appendix C

For questions about copies of manifests submitted to DEQ:
DEQ, Hazardous Waste Program
Waste Tracking and Data Management Unit
517-335-2690
www.michigan.gov/deqwaste, “Uniform Manifest Information”
Look up facility manifests for hazardous waste transport in Waste Data System at www.deq.state.mi.us/wdsp (liquid industrial waste manifest data is not available).

PUBLICATIONS:

1. [Manifest Tracking Log](#)
2. [Large Quantity Generator’s Tracking System for Hazardous Waste Manifests](#)
3. [Small Quantity Generator’s Tracking System for Hazardous Waste and All Liquid Industrial Waste Shipments](#)
4. [Consolidated Manifest Operational Memo 121-3](#)

SUBJECT: Hazardous Waste Site Identification Number (U.S. EPA number)

CONTACT: DEQ, Hazardous Waste Program
Waste Tracking and Data Management Unit
517-335-2690
www.michigan.gov/deqwaste (select “Michigan Site Identification Form EQP 5150”)

PUBLICATIONS: [Site Identification Form \(EQP 5150\)](#)

SUBJECT: Hazardous Waste and Liquid Industrial Waste Transporters

CONTACT: DEQ, Hazardous Waste Transporter Program
586-753-3850
www.michigan.gov/deqwaste (select “Hazardous and Liquid Industrial Waste Transporters”)

SUBJECT: Hazardous Waste Licensed Treatment, Storage, and Disposal Facilities

CONTACT: DEQ, Hazardous Waste Program
517-373-9875
Perform an “Advanced Search” of the [Waste Data System \(WDS\)](#) at www.deq.state.mi.us/wdsp (select “Hazardous Waste Permitting and Corrective Action,” “Legal/Operating Status Code,” then “PIOP” for “Permitted – Operating, Actively Managing RCRA-Regulated Waste”)

SUBJECT: Hazardous, Liquid, and Solid Waste Regulation Questions and Publications

CONTACT: DEQ, Environmental Assistance Center
800-662-9278
DEQ, [District Office](#), Hazardous Waste Program (see Appendix C)
www.deq.state.mi.us/pubcenter

PUBLICATIONS:

1. [Waste Characterization](#)
2. [Universal Waste](#)
3. [Used Oil](#)
4. [Conditionally Exempt Small Quantity Generator](#)
5. [Liquid Waste Generator](#)
6. [Small Quantity Generator](#)
7. [Emergency Information Poster](#)
8. [Required Weekly Hazardous Waste Maintenance Checklist](#)
9. [Personnel Training Requirements for Large Quantity Generators of Hazardous Waste](#)

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10. [Manifest Tracking Log](#)
 11. [Emptying Tanks or Containers](#)
 12. [Non-hazardous Waste Holding Tanks](#)
 13. [Mixed Medical Waste](#)
 14. [Electronic Equipment](#)
 15. [Electric Lamps and Small Ballasts](#)
 16. [Antifreeze](#)
 17. [Directory of Environmental Testing Laboratories](#)
 18. [Recycled Materials Market Directory](#)
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SUBJECT: [Household Hazardous Waste Collection Programs](#)

CONTACT: DLARA, Green Practices Section
517-373-6734
DEQ, Solid Waste Program
517-373-1976
www.michigan.gov/deqrecycling,
www.michigan.gov/wasterecycling, and www.earth911.org

SUBJECT: **Material Safety Data Sheets**

WEB SITE: www.hazard.com
www.reade.com/MSDS_Links.html

SUBJECT: **Medical Waste Program**

CONTACT: DEQ, Medical Waste Program
517-335-1146 or 517-241-1320
e-mail: MedicalWaste@michigan.gov
www.michigan.gov/deqmedwaste

PUBLICATIONS:

1. Initial Application for Registration as a Producing Facility of Medical Waste (EQP 1700-1)
2. [Sample Medical Waste Management Plan](#)

SUBJECT: **Oil Filters Recycling**

CONTACT: Oil Filters Manufacturing Council
800-993-4583
www.filtercouncil.org

PUBLICATIONS:

1. [Household Do-It-Yourselfer Used Motor Oil and Filters](#)
2. [Used Oil Filters Generator Requirements](#)
3. [Recycling Materials Market Directory, Used Oil Popular](#)

SUBJECT: Part 147, PCB information

CONTACT: DEQ, Hazardous Waste Program
517-373-9875
www.michigan.gov/deqwaste (select “Hazardous and Liquid Industrial Waste,” “Hazardous and Liquid Industrial Waste Management,” and “Statutes and Rules”)

SUBJECT: Scrap Tire Storage and Disposal; Scrap Tire Registered Haulers and Collection Sites

CONTACT: DEQ, Scrap Tire Program
517-335-4035
www.michigan.gov/scraptires

SUBJECT: Solid Waste Landfills

CONTACT: DEQ, [District Office](#) Solid Waste Program
See Appendix C for a listing of District Office telephone numbers
www.michigan.gov/deqwaste (select “Solid Waste” then “Solid Waste Facilities” for map and list of landfills)

SUBJECT: [Solid Waste Planning Agency Contacts](#)

CONTACT: DEQ, Solid Waste Program
517-335-4035
www.michigan.gov/deqwaste (select “Solid Waste”)

SUBJECT: Storage Tank (Above and Underground)

CONTACT: DEQ, Storage Tank Program
517-335-7211
www.michigan.gov/deqland (select “Storage Tanks”)

SUBJECT: Toxic Substance Control Act, PCB information

CONTACT: U.S. EPA Region 5
312-886-7890, 800-621-8431, or 312-353-2318
www.epa.gov/pcb

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SUBJECT: U.S. DOT Hazardous Materials Transportation

CONTACT: U.S. Department of Transportation
800-467-4922 or 517-853-5990
www.hazmat.dot.gov
Michigan State Police, Commercial Vehicle Enforcement Division
517-241-0506
www.michigan.gov/msp

Michigan Center for Truck Safety
800-682-4682
www.truckingsafety.org

SUBJECT: U.S. EPA Waste Compliance Assistance Publications

WEB SITE: www.epa.gov/epawaste/index.htm

PUBLICATIONS:

1. [Hazardous Waste Generator Regulations A User-Friendly Reference](#)
2. [RCRA, Superfund, and EPCRA Hotline Training Modules](#)
3. [RCRA Online](#)
4. [U.S. EPA Waste Ask a Question](#)
5. [RCRA Orientation Manual](#)

SUBJECT: Waste Recycling

CONTACT: DEQ, [District Office](#), Hazardous Waste or Solid Waste Program
www.michigan.gov/deqrecycling

PUBLICATIONS:

1. [Local Recycling, Composting, and Household Hazardous Waste Directory](#)
2. [Recycled Materials Market Directory](#)
3. [Materials Exchange](#)
